Mr. Thomas G. Somrak
District Ranger
Walker Ranger District
201 Minnesota Avenue East
Walker, MN 56484

Dear Mr. Somrak:

This document transmits the U.S. Fish and Wildlife Service's (Service) final biological opinion based on our review of the biological assessment (BA) for the Leech Lake River Resource Management Project, Walker and Deer River Ranger Districts, Chippewa National Forest, and its effects on the threatened Canada lynx (*Lynx canadensis*) in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C., 1531 et seq.). The Forest Service transmitted the BA for this project on March 23, 2004, and requested Service concurrence with a "may affect but not likely to adversely affect" determination. A complete administrative record of this consultation is on file in this office.

The District Court for the District of Columbia issued an order on December 26, 2002, that enjoins the Service from issuing any "written concurrence[s]" that actions proposed by any federal agencies "may affect but are not likely to adversely affect" the Canada lynx. Until further notice, all consultations concerning effects to Canada lynx must be conducted in accordance with the direction of the Court. Specifically, any actions subject to consultation that may affect Canada lynx require formal consultation as described in 50 CFR 402.14. This requires the preparation of a biological opinion that addresses how the proposed action is expected to affect Canada lynx in order to complete the procedural requirements of section 7 of the Act.

Your BA also assessed the effects of the Leech Lake River Resource Management Project on the bald eagle (*Haliaeetus leucocephalus*) and the gray wolf (*Canis lupus*). We concur with your determinations in the biological assessment concluding that the proposed project may affect but will not likely adversely affect the federally threatened bald eagle and gray wolf or adversely modify gray wolf critical habitat. Our concurrence is based on your recommendations for removing, avoiding, or compensating for any adverse effects through compliance with the road density and accessibility threshold for Wolf Management Zone 4 as defined in the Eastern Timber Wolf Recovery Plan (U.S. Fish and Wildlife Service 1992), closing all temporary roads effectively, limiting activities within 0.25 miles of eagle nests to the period after October 1 and before February 15, and reinitiating consultation in the event that wolf rendezvous or den sites or

new bald eagle nests are discovered in the action area. These species will not be considered further in the attached biological opinion.

Consultation History

On March 23, 2004, Walker District biologist John Casson transmitted to the Twin Cities Ecological Services Field Office a BA for the Leech Lake River Resource Management Project in the Walker and Deer River Ranger Districts. The analysis provided in the biological assessment, email transmissions, and telephone discussions with biologist Casson form the basis for this consultation.

If you have any questions or comments on this biological opinion, please contact Ms. Susan Rogers, Fish and Wildlife Biologist, at 612-725-3548 ext 219.

Sincerely,

Dan P. Stinnett
Field Supervisor

enclosure

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The Leech Lake River Resource Management Project involves timber harvest, reforestation, prescribed burning, stream restoration, road construction and maintenance, and road decommissioning in the Mud-Goose Lake, Sixmile Lake, and Boy River area of the Chippewa National Forest. This project area comprises 123,125 acres located in Cass County, Minnesota.

Timber management in the project area would consist of 3,435 harvested acres. Harvest treatments would include clearcutting, thinning, and shelterwood, among others. These harvested areas would be treated after harvest by a variety of methods, including site preparation (mechanical or burning) and underplanting. Prescribed burning would occur on an additional 408 acres to reduce hazardous fuels. Four miles of existing roads would be improved and maintained for timber access, and four miles of temporary roads would be constructed and obliterated effectively and monitored after use.

The transportation system would be managed to access timber, improve natural drainages, and reduce maintenance costs. Twenty-two miles of existing roads would be decommissioned and obliterated, and 4.8 miles of streams and natural drainages would be improved by the removal of road prisms that impound waterways.

STATUS OF THE SPECIES

Species Description

The lynx is a medium-sized cat with long legs; large, well-furred paws; long tufts on the ears; and a short tail whose tip is entirely surrounded by black (McCord and Cardoza 1982); the tips of bobcat tails are black only on the upper side. The lynx's long legs and large, well-furred paws make it highly adapted for hunting in deep snow.

The winter pelage of the lynx is dense and has a grizzled appearance with grayish-brown mixed with buff or pale brown fur on the back, and grayish-white or buff-white fur on the belly, legs and feet. Summer pelage of the lynx is more reddish to gray-brown (Koehler and Aubry 1994). Adult males average 10 kilograms (22 pounds) in weight and 85 centimeters (33.5 inches) in length (head to tail), and females average 8.5 kilograms (19 pounds) and 82 centimeters (32 inches) (Quinn and Parker 1987).

Classification of the Canada lynx (also called the North American lynx) has been subject to revision. In accordance with Wilson and Reeder (1993), the lynx in North America is *Lynx canadensis*. Previously the Latin name *L. lynx canadensis* was used for lynx (S. Williams, Texas Tech University, pers. comm. 1994). Other scientific names still in use include *Felis lynx* or *F. lynx canadensis* (Jones et al. 1986; Tumlison 1987).

In 1998, the lynx was proposed for listing as a threatened species under the Act (63 FR, July 8, 1998). The lynx in the contiguous U.S. were listed as threatened effective April 23, 2000 (65 FR 16052, March 24, 2000). The Service identified one distinct population segment in the lower 48 states. No critical habitat has been designated for the threatened population of Canada lynx in the contiguous United States. As explained in the final rule (65 FR 16052, March 24, 2000), designation of critical habitat would be prudent but has been deferred until other higher priority work can be completed within the Service's current budget.

Life History

Lynx evidently require large areas containing boreal forest[1] habitat. In the northeastern U.S., lynx were most likely to occur in areas containing suitable habitat that were greater than 100 square km^2 (40 mi^2) (Hoving 2001). The requirement for large areas also is demonstrated by home ranges that encompass many square miles. The size of lynx home ranges varies with sex, age, abundance of prey, season, and the density of lynx populations (Hatler 1988; Koehler 1990; Poole 1994; Slough and Mowat 1996; Aubry et al. 2000; Mowat et al. 2000). Based on a limited number of studies in southern boreal forest, the average home range is 151 km^2 (58 mi^2) and 72 km^2 (28 mi^2) for males and females, respectively (Aubry et al. 2000). Recent home range estimates from Maine are 70 km^2 (27 mi^2) for males and 52 km^2 (20 mi^2) for females (G. Matula, in litt. 2003). Documented home ranges in both the southern and northern boreal forest, however, vary widely from 8 to 800 km^2 (3 to 300 mi^2) (Saunders 1963; Brand et al. 1976; Mech 1980; Parker et al. 1983; Koehler and Aubry 1994; Apps 2000; Mowat et al. 2000; Squires and Laurion 2000; Squires et al. 2001; G. Matula, in litt. 2003). Generally, it is believed that larger home ranges, such as have been documented in some areas in the southern extent of the species' range in the west, are a response to lower-density snowshoe hare populations (Koehler and Aubry 1994; Apps 2000; Squires and Laurion 2000).

Long-distance movements {greater than 100 km (60 mi)} are characteristic of lynx (Mowat et al. 2000). Lynx disperse primarily when snowshoe hare populations decline (Ward and Krebs 1985; Koehler and Aubry 1994; O'Donoghue et al. 1997; Poole 1997). Subadult lynx also disperse even when prey is abundant (Poole 1997), presumably as an innate response to establish home ranges. Lynx also make exploratory movements outside their home ranges (Squires et al. 2001). Lynx are capable of moving extremely long distances [greater than 500 km (300 mi)] (Mech 1977; Brainerd 1985; Washington Department of Wildlife 1993; Poole 1997; Mowat et al. 2000; Squires et al. 2001).

Snowshoe hares are the primary prey of lynx, especially in the winter when they comprise 35-97 percent of the diet throughout the range of the lynx (Koehler and Aubry 1994). Other prey species include red squirrel (*Tamiasciurus hudsonicus*), other small mammals, and birds; lynx also eat carrion and, uncommonly, large mammals such as deer (*Odocoileus virginianus*), moose (*Alces alces*), and caribou (*Rangifer tarandus*) (Saunders 1963; van Zyll de Jong 1966; Nellis et

[1] The term ''boreal forest'' broadly encompasses most of the vegetative descriptions of this transitional forest type that makes up lynx habitat in the contiguous U.S. (Agee 2000).

al. 1972; Brand et al. 1976; Brand and Keith 1979; Quinn and Parker 1987; Koehler 1990; Staples 1995; O'Donoghue et al. 1998a, b). When hare densities decline due to reduced availability of high-quality food and increased predation, birthrates and litter sizes of female lynx and survival of kittens decrease (Nellis et al. 1972; Brand et al. 1976; Brand and Keith 1979; Poole 1994; Slough and Mowat 1996; O'Donoghue et al. 1997). The reduction in production and survival of young is the primary cause of population declines in lynx, and reproduction "virtually ceases at the low point of the cycle" (Quinn and Parker 1987). Population dynamics of southern populations of snowshoe hare are understood poorly relative to those in northern latitudes (Hodges 2000b). There is some evidence that populations in Minnesota also undergo distinct fluctuations over a 10-15 year period (Fuller and Heisey 1986), although it is not yet clear whether snowshoe hare populations in Minnesota are able to grow at rates sufficient to support persistent lynx populations in the state.

Lynx populations are tied closely to snowshoe hare distribution and density. Snowshoe hares have evolved to survive in areas that receive deep snow (Bittner and Rongstad 1982) and prefer conifer habitats with dense shrub understories that provide food, cover to escape predators, and thermal protection during extreme weather (Wolfe et al. 1982; Pietz and Tester 1983; Fuller and Heisey 1986; Monthey 1986; Koehler and Aubrey 1994; Wirsing et al. 2002). Early successional forest stages generally have greater understory structure than do mature forests and therefore support higher hare densities (Pietz and Tester 1983; Hodges 2000a, b). Openings in mature forests with dense understory [e.g., some fens in north-central Minnesota (Pietz and Tester 1983)] also provide high-quality hare habitat (Buskirk et al. 2000).

Lynx use coarse woody debris, such as downed logs, root wads, and windfalls, to provide denning sites with security and thermal cover for kittens (McCord and Cardoza 1982; Koehler 1990; Koehler and Brittell 1990; Mowat et al. 2000; Squires and Laurion 2000). Mowat et al. (2000) summarized lynx selection of den sites in northern Canada and Alaska: "….female lynx appear to select den sites in a number of forest types in the North. Lynx do not appear constrained to select specific stand types; rather, the feature that was consistently chosen was the structure at the site itself. Wind-felled trees were the most common form of protection selected by female lynx, although other structures such as roots and dense live vegetation were also used." In Maine, 17 den sites have been located in a variety of stand types, including 10- to 20-year-old clear-cut and adjacent residual stands (J. Organ, U.S. Fish and Wildlife Service, in litt. 1999; G. Matula, Maine Department Inland Fisheries and Wildlife in litt. 2003). Maine den sites are characterized by regenerating hardwoods and softwoods, dense understory, and abundant coarse woody debris (J. Organ, in litt. 1999, 2003). In Washington, lynx denned in lodgepole pine (*Pinus contorta*), spruce (*Picea* spp.), and subalpine fir (*Abies lasiocarpa*) forests older than 200 years with an abundance of downed woody debris (Koehler 1990). A den site in Wyoming was located in a mature subalpine fir/lodgepole pine forest with abundant downed logs and dense understory (Squires and Laurion 2000). Downed logs and overhead cover must be available throughout the home range of females with kittens to provide alternative den and nursery sites and security when lynx kittens are old enough to travel (Bailey 1974).

Lynx breed in spring, and females give birth in late May to early June to litters of up to five kittens; hare densities are correlated positively with litter size, and age at first breeding is lower when hare populations are high. During the low phase of the hare cycle, few if any kittens are born (Brand and Keith 1979; Poole 1994; Slough and Mowat 1996). Litter sizes may be smaller in the southern lynx range due to lower peak hare densities (Koehler 1990; Squires and Laurion 2000). Kittens wean at about 12 weeks after birth and stay with females during their first winter when they may hunt cooperatively (Quinn and Parker 1987); family units break up at the onset of breeding, about mid-March (Quinn and Parker 1987).

The most commonly reported causes of lynx mortality include starvation of kittens (Quinn and Parker 1987; Koehler 1990) and human-caused mortality, mostly fur trapping (Ward and Krebs 1985; Bailey et al. 1986). Significant lynx mortality due to starvation (up to two-thirds of deaths) has been demonstrated in cyclic populations of the northern taiga during the first two years of hare scarcity (Poole 1994; Slough and Mowat 1996). Lynx also are killed by automobiles and other predators (see below), although the significance of these factors to lynx populations is unknown (Brand and Keith 1979; Carbyn and Patriquin 1983; Ward and Krebs 1985; Bailey et al. 1986).

Buskirk et al. (2000) suggested that when other hare predators, particularly coyotes (*Canis latrans*), can access lynx winter hunting areas via compacted snow they may compete for prey sufficiently to affect local lynx populations. Buskirk et al. (2000) also suggested that direct killing by coyotes, bobcats, and mountain lions (*Puma concolor*) could affect lynx numbers where these competitors' ranges overlap substantially with lynx; in addition, Quinn and Parker (1987) stated that "(G)ray wolves (*Canis lupus*) will kill lynx that they catch in the open." Bobcat home ranges often exhibit elevational or latitudinal separation from those of Canada lynx, which are better adapted to deep snow. The paws of lynx support twice as much weight on snow than bobcats (Quinn and Parker 1987). Bobcats are thought to displace Canada lynx where both felids are locally sympatric. Canada lynx occasionally may kill bobcats (Giddings et al. 1998), although the opposite also has been reported.

Hybridization of lynx with bobcats has been confirmed in both Maine and Minnesota with DNA analysis. In Minnesota, three of 19 animals (16 percent) analyzed were lynx-bobcat hybrids, whereas the remaining 16 were confirmed as lynx (U.S. Fish and Wildlife Service and U.S. Forest Service, in litt. 2003). Of the three hybrids in Minnesota, biologists possessed entire carcasses of two and only a hair sample of the third. All three were from male bobcats mating with female lynx. This constituted the first confirmed evidence of hybridization between the two species. In Maine, tests of hair and tissue from 31 individual animals identified two as hybrids (7 percent) – one male and one female – and 29 as lynx (Maine Department of Inland Fisheries and Wildlife, in litt. 2003). The female hybrid in Maine was accompanied by kittens. In both states, the hybrid animals had external physical characteristics of both species.

In Canada and Alaska, lynx populations generally undergo marked and regular fluctuations in response to similar changes in snowshoe hare populations (Mowat et al. 2000). A lack of accurate data limits our understanding of lynx population dynamics in the contiguous United

States at the southern periphery of their range and a better understanding of lynx population dynamics in the southern boreal forest "is a critical research need" (Aubry et al. 2000). Southern lynx populations may be limited naturally by the availability of snowshoe hares, competition, and hybridization with bobcats, as suggested by large home range size, high kitten mortality due to starvation, and greater reliance on alternate prey.

Status and Distribution

Canada lynx range is associated closely with the distribution of North American boreal forest inhabited by snowshoe hares (Agee 2000) and extends from Alaska, the Yukon Territories, and Northwest Territories south across the United States border in the Cascades Range and northern Rocky Mountains, through the central Canada provinces and down into the western Great Lakes region, east to New Brunswick and Nova Scotia, Canada, and south into the northeastern United States from Maine to New York (McCord and Cardoza 1982; Quinn and Parker 1987). In the western Great Lakes region, lynx range extends south from the classic boreal forest zone into the boreal/hardwood forest ecotone (Agee 2000; McKelvey et al. 2000). At the southern margins in the contiguous United States, forests with boreal features become fragmented naturally as they transition into other vegetation types, and many patches cannot support resident populations of lynx and their primary prey species.

In response to the emerging awareness of the uncertain status of Canada lynx populations and habitat in the conterminous United States and the onset of the listing process, an interagency Canada lynx coordination effort was initiated in March 1998. The Service, Forest Service, Bureau of Land Management, and National Park Service have participated in this effort. Three products important to the conservation of Canada lynx on federally managed lands have been produced: "The Scientific Basis for Lynx Conservation" (Ruggiero et al. 1999); the Lynx Conservation Assessment and Strategy (LCAS; U.S. Forest Service 1999); and Lynx Conservation Agreements (CA) among the Service and various land management agencies. The CA promotes the conservation of Canada lynx and its habitat on federal lands and identifies actions the federal agencies agree to take to reduce or eliminate potential adverse effects or risks to Canada lynx and their habitat. The LCAS was produced in 1999 to provide a consistent and effective approach to conservation of Canada lynx on federal lands and was used as a basis for assessing the effects of the preferred alternative on Canada lynx.

Status of the Species in Minnesota

As was true historically, northeastern Minnesota supports a substantial amount of boreal forest [roughly estimated at 12,500 km^2 (4,800 mi^2)] (Great Lakes Ecological Assessment, in litt, undated). In Minnesota, the deepest snows occur in the northeast corner of the state (Minnesota DNR, in litt. 1998). Unlike elsewhere within the Great Lakes and Northeast regions, most lynx habitat in northeastern Minnesota is on public lands.

Although Minnesota may support a resident population of lynx, the abundance of the species in the state appears to be highly influenced by population levels in Ontario. Minnesota has a

substantial number of historic lynx reports, primarily trapping records (McKelvey et al. 2000). Harvest and bounty records for Minnesota, which are available since 1930, indicate approximate 10-year population cycles, with highs in 1940, 1952, 1962, and 1973 (Henderson 1978; McKelvey et al. 2000). Because lynx numbers did not increase in the early 1980s on the expected 10-year cycle (very few were harvested or reported observed), Minnesota closed its lynx season in 1984. During a 47-year period (1930–1976), the Minnesota lynx harvest was substantial, ranging from 0 to 400 per year (Henderson 1978), and lynx were trapped in the state through periods presumed to represent both population highs and lows. Minnesota harvest levels have been consistent with cyclical patterns in Ontario. Ontario harvests were highest in 1926-27, 1962-63, and 1972-73 (Neil Dawson, personal communication 2002) and especially low during the presumed time of the 1990s "peak" (only one-fifth the 1972-73 harvest). In the 1990s there were only four verified records of lynx in Minnesota (Minnesota Department of Natural Resources in litt. 2003). Beginning in about 2000, Minnesota lynx numbers evidently began to rebound. Since 2000, there have been 87 verified[2] reports of lynx in Minnesota (Fig. 1), six of which included evidence of reproduction (kittens, Minnesota Department of Natural Resources, in litt. 2003; S. Loch, in litt. 2003). This marked increase in reports corresponds with a cyclic population high directly adjacent in Ontario (S. Loch, in litt. 2003). Research has been initiated that will help determine whether these animals are members of an established resident population in Minnesota or if these animals fail to persist when the cyclic population declines (University of Minnesota, in litt. 2002). Fifteen radio-collared animals are being monitored currently.

Snowshoe hare harvest in Minnesota (the only available long-term index to hare abundance in the state) shows a very inconsistent pattern from 1941-2000. Hare abundance, as indicated by harvest, peaked in the early 1940s and 1950s along with lynx harvest but not in the early 1950s or 1960s. In contrast, hare harvest was double any previous year from 1977-1980, yet lynx did not increase. Hares remained at relatively low densities through the 1990s (S. Loch, in litt. 2003). Based on surveys in northern Minnesota, snowshoe hare numbers are currently high (J. Erb, Minnesota DNR, in litt. 2003).

ENVIRONMENTAL BASELINE

Status of the Species Within the Action Area

Unlike other Great Lakes and northeast regions of lynx range in the Unites States, most lynx habitat in northeastern Minnesota is on public lands, particularly the Superior and Chippewa National Forests. Mixed deciduous-boreal forest suitable for lynx habitat encompasses most of

[2] Because of the possibility of misidentification (e.g., overlap in the ranges of Canada lynx and bobcat (Lynx rufus) within Minnesota), the following criteria were used to "verify" a sighting as a lynx: a photo showing distinguishing characteristics was provided; conclusive behavioral observations were provided (e.g., lynx demonstrate curiosity and little fear of humans while bobcats are very secretive & elusive); DNA analysis of a tissue sample confirmed the identification; the observer is a known expert or otherwise has considerable experience with lynx; a detailed description of physical characteristics (e.g. very big feet, long hind legs, flat face, black tip of tail, etc.) was provided.

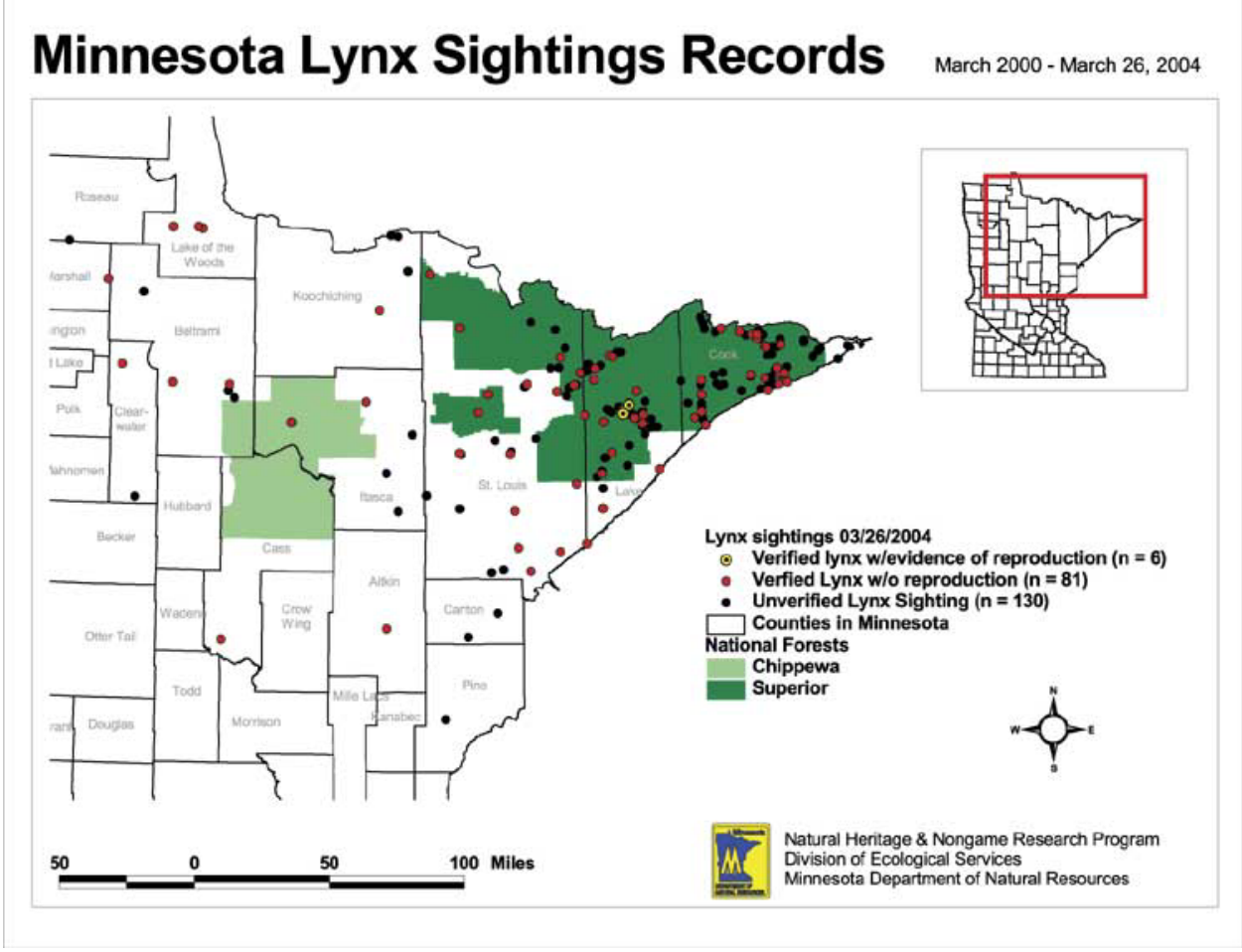

Fig. 1. Lynx records in the Minnesota Department of Natural Resources' (MNDNR) database as of March 26, 2004. MNDNR uses the following criteria to determine whether to describe a record as "verified": a photo showing distinguishing characteristics was provided; conclusive behavioral observations were provided (e.g., lynx demonstrate curiosity and little fear of humans while bobcats are very secretive & elusive); DNA analysis of a tissue sample confirmed the identification; the observer is a known expert or otherwise has considerable experience with lynx; a detailed description of physical characteristics (e.g. very big feet, long hind legs, flat face, black tip of tail, etc.) was provided.

the Chippewa National Forest, which has been mapped into Lynx Analysis Units (LAUs) to promote lynx management under the LCAS. The proposed projects would occur within LAUs 10, 15, 18, 19, 20, and 21. Recent observations of lynx on or near the Chippewa National Forest indicate that lynx may be present on these LAUs at this time.

Factors Affecting the Species Environment Within the Action Area

In the LCAS, the Lynx Biology Team identified potential risk factors to lynx that are within the authority and jurisdiction of the federal land management agencies. These risk factors include management of timber, wildland fire, recreation, roads and trails, grazing, and other human developments. Roads, railroads, utility corridors, land ownership patterns, and developments may affect lynx movements. Risks of direct lynx mortality may come from trapping, shooting, predator control, vehicle collisions, and competition or predation as influenced by human activities. Other large-scale risk factors are fragmentation and degradation of lynx habitat. Each of these potential risk factors may occur in the action area except livestock grazing; predator control is unlikely and restricted to depredating wolves in all areas except Zone 1 (50 CFR 17.40). Timber management, wildland fire, recreational use, roads and trails, and developments on private land inholdings are most likely to affect lynx in this area. The Chippewa National Forest is implementing the LCAS and Canada Lynx Conservation Agreement (CA) between the Service and the Forest Service (February 2000) for all forest activities that occur within LAUs. Thus, the aforementioned risk factors are being minimized and managed appropriately to promote the conservation of lynx within the Chippewa National Forest and the proposed project sites on the Walker and Deer River Ranger Districts.

EFFECTS OF THE ACTION

Primary impacts to lynx could occur through the implementation of timber harvest projects and road construction. Timber harvests in suitable lynx habitat cause those areas to become unsuitable for lynx as well as prey. However, the delineation of LAUs on the Walker and Deer River Ranger Districts ensures that no more than 30 percent of potential lynx habitat may be in an unsuitable condition at any time, and no more than 15 percent of lynx habitat may be converted to an unsuitable condition in a 10 year period. Additionally, denning habitat must comprise at least 10 percent of lynx habitat within an LAU. Proposed projects that follow these guidelines are not expected to affect lynx significantly. While the project area extends into six LAUs, three of these (18, 19, and 21) have no proposed activities. The remaining three LAUs in the Leech Lake River Resource Management Project area would meet these standards; therefore, timber harvest on the proposed units should not adversely affect lynx (Table 1).

Table 1. Amount of unsuitable and denning habitat by LAU before and after project completion. Percentages refer to the percent

of total potential habitat within the LAU that is or would become unsuitable for lynx.

LAU	Current Unsuitable Acres (%)	Unsuitable Acres after Project Completion (%)	Current Denning Acres (%)	Denning Acres after Project Completion (%)
10	0 (0%)	137 (0.4%)	21,580 (56.7%)	21,443 (56.4%)
15	0(0%)	433 (1.1%)	15,451 (38.9%)	15,072 (37.9%)
20	100 (0.3%)	1,496 (4.7%)	12,422 (39.1%)	11,126 (35.0%)

Other habitat factors described in the LCAS include ensuring juxtaposition of foraging and denning habitat, ensuring these habitats are well-distributed throughout the LAU, avoiding thinning of stands currently providing hare habitat, and designing prescribed burns to regenerate hare habitat. Analysis of the distribution of lynx foraging and denning habitat reveals that these habitats are well juxtaposed and distributed through each affected LAU and will remain so after project completion. No stands proposed for thinning currently provide snowshoe hare habitat (4 – 30 years for conifers), but three stands just over 30 years would be thinned and may still provide marginal habitat for hares. There are very few acres of such stands per LAU (from 7 – 42 acres each); therefore, the effects of thinning marginal hare habitat are not expected to adversely affect lynx.

Three types of prescribed burns would occur in the Leech Lake River Resource Management Project area. Two of these, site preparation and slash disposal burns, likely would not affect hare habitat, as a shrub layer would develop regardless of whether the sites were burned. However, burning of thinned stands would prevent shrubs from developing as the canopy would remain relatively intact after thinning. However, no thinning is proposed of stands currently providing hare habitat, so these burns are not expected to affect lynx.

The LCAS prescribes road densities within LAUs to be no more than two miles/mile^2. For any LAUs that exceed that standard, existing roads should be evaluated and any unnecessary roads should be decommissioned and obliterated. Temporary roads would be built in association with this project, for a total of four miles of temporary roads throughout the project area. Although these roads would increase road density within LAUs temporarily, after use the temporary roads would be decommissioned, obliterated, and monitored after closure. Therefore, this increase would be temporary. Additionally, four miles of existing roads would be improved and maintained for timber access, which would not affect lynx other than temporary noise during construction activities. Finally, 22 miles of roads throughout the project area that are no longer needed would be decommissioned, obliterated, and monitored. This would result in a net benefit to lynx and a net decrease in road miles across the project area (Table 2). Although none of the LAUs would be below two miles/mile^2, two of the LAUs would have significantly fewer roads and trails, with LAU 20 nearly reaching the two miles/mile^2 threshold. This decrease in road density would benefit lynx.

Table 2. Road density by LAU before and after project completion. Project completion indicates the management activity

has concluded and any temporary roads have been decommissioned and obliterated.

LAU	Roads - Current (mi and density)	Roads after Project Completion (mi and density)
10	197 (2.56 mi/mi^2)	197 (2.56 mi/mi^2)
15	224 (2.72 mi/mi^2)	215 (2.61 mi/mi^2)
20	170 (2.20 mi/mi^2)	159 (2.06 mi/mi^2)

Other projects included in the Leech Lake River Resource Management Project, such as stream restoration, would affect lynx only briefly, through disturbance during project implementation. No habitat is expected to be altered; therefore, these activities would have an insignificant effect on lynx.

CONCLUSIONS

After reviewing the current status of Canada lynx, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the proposed project, implemented in conjunction with LCAS, would not likely jeopardize the continued existence of the lynx. No critical habitat has been designated for this species; therefore, none would be affected.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The Service does not anticipate that the proposed action would result in the incidental take of any Canada lynx. Reasonable and Prudent Measures and Terms and Conditions are not applicable because no incidental take is anticipated.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act requires federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. As we do not anticipate any adverse effects of the proposed action on Canada lynx, no conservation recommendations are necessary.

REINITIATION-CLOSING STATEMENT

This concludes consultation on the action outlined in your March 23, 2004, request for consultation for the Leech Lake River Resource Management Project, Walker and Deer River Ranger Districts, Chippewa National Forest. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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