

A. Threatened and Endangered Species

***Canis lupis* - Gray Wolf - USF&W Threatened**

Wolves may occur in any terrestrial habitat. In Minnesota and Wisconsin, they usually occur in areas with few roads, less than 1 mile per square mile, (which increase human access and incompatible land uses) but they apparently can occupy semi-wild lands if they are adjacent to large roadless regions, ungulate prey is abundant and if not killed by humans (Nature Conservancy Species Status Sheet). Wolves are known to occur throughout the Chippewa National Forest. Risk factors for the survival of the gray wolf include illegal and/or accidental human kill of wolves, availability of adequate wild prey, availability of large tracts of land where human presence is relatively low, parasites, and disease.

Two wolf packs are believed to use portions of the project area. The Laura Lake pack uses areas west of MN 6, south of MN 200 to near the Forest boundary. The Willow River pack uses areas east of Big Rice Lake and south of MN 200, the eastern side of the project area.

Determination of Effects

This section evaluates the effects and risks associated with the project alternatives for each species evaluated in detail. Each evaluation concludes with a “determination of effect” using standardized language in accordance with legal requirements of the Endangered Species Act and the National Forest Management Act. The effects from this project are also evaluated cumulatively with other existing and foreseeable effects from other activities and conditions.

A. Threatened and Endangered Species

***Canis lupis* – Gray Wolf**

The Eastern Timber Wolf Recovery Plan (USFWS, 1992) identified five critical factors for long-term survival of the species; (1) large tracts of wild land with low human densities and minimal accessibility by humans, (2) ecologically sound management, (3) availability of adequate prey, (4) adequate understanding of wolf ecology and management, and (5) maintenance of populations that are either free of, or resistant to new parasites and diseases. Factors that are relevant to evaluation of effects of this project include (1), (3) and indirectly (5). In addition, type of human use and activity in the area is a relevant factor for evaluation, as it influences the other factors.

There are three basic effects of increased human accessibility on wolf populations (USFWS, 1992). First, increased human presence increases the chances of deliberate and accidental killing of wolves. The types of human activity in an

area, significantly influences this factor. In the Rice Lake Project Area, the majority of human use is related to hunting and other resource gathering, and recreational motor vehicle (RMV) and snowmobile operation. These activity types tend to be the most detrimental to wolves because the activities tend to cover large acreages per hour of activity, and they may involve the pursuit and exploitation of wildlife. Wolves can be killed by hunters either deliberately or accidentally. Hunting can also suppress prey populations.

Secondly, increased human presence can deter wolves from inhabiting an area. Human presence is magnified if it involves motorized vehicles because the amount of area covered in an hour of activity with a motorized vehicle is exponentially greater than that of an hour without a motorized vehicle. In addition, noise and smell created by motorized vehicles tends to increase the zone of influence significantly at any one time. Human activity tends to create an avoidance response. This interferes with necessary life support activities such as hunting, breeding and parturition and causes wolves to spend energy for avoidance rather than for these living requirements.

Finally, increased human presence also increases the chances of introducing new diseases and parasites to wolves via pets; diseases such as heartworm, CPV (Parvo) and Lyme disease.

Studies in Wisconsin, Michigan, Ontario and Minnesota indicate that wolf populations usually fail to sustain themselves in areas where rural roads open to public use have densities exceeding 0.93 miles per square mile of area (USFWS, 1992). However, higher road densities can support wolves if adjacent to large roadless regions inhabited by wolves. The Eastern Timber Wolf Recovery Plan (USFWS, 1992) recommends managing average public road densities so not to exceed 1 mile per square mile, particularly where road densities may be limiting wolf recovery. These low road densities must be maintained over areas large enough to meet the biological needs of wolf packs, free from adverse human disturbance. Average wolf pack territories in Minnesota and Wisconsin are between 20 and 214 square miles (USFWS, 1992). The Rice Lake Project Area, at about 23,500 acres, or over 36 square miles in size, constitutes an area that is large enough where wolf habitat management is a factor. There are no roadless areas in or near the Chippewa National Forest. In actuality, National Forest System Lands provide the most logical resource base in northcentral Minnesota for providing roadless, or near roadless areas for wolf conservation. It is also an obligation for the Forest Service to provide such wolf habitat on National Forest System Lands. The Endangered Species Act states "All other Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act" (Section 7(a)(1)). In other words, Federal agencies have more of a responsibility than eliminating or mitigating negative effects to listed species. The Chippewa National Forest Land and Resource Management Plan

states “The standards and guidelines for the gray wolf are based on the guidelines in the Eastern Timber Wolf Recovery Plan. The Forest Plan will be responsive to any changes in the recovery plan, including changes in the configuration of Wolf Management Zones.” The Recovery Plan states that “the more access provided to wolf range, the more detriment there will be to wolves”. Also, “the higher grade (standard) the road is, the more access it will provide”. However, the Recovery Plan also states that “An open, low standard woods road may have greater potential human impact on wolves than a national forest highway”. So, when considering human access and road densities, one should consider all roads and trails, not just higher standard roads.

Human accessibility is best measured by looking at road and trail density. With the exception of water access, nearly 100% of human use is associated with the road and trail system in the Rice Lake Project Area. To conduct a road and trail analysis, the project area was modified to omit the two largest lakes, Big Rice Lake and Laura Lake, and approximately 400 acres encompassing the City of Remer and associated city roads. All land ownerships within the project area were included in the analysis as well as all roads and trails, including State and County roads, Forest Service system roads, designated trails, and user developed and maintained roads and trails that were identified through ground reconnaissance. The road density analysis area totals 19,550 acres, or approximately 30.55 square miles. The analysis was conducted using spatially-reference vector data in the Forest Service Geographic Information System. There was a question whether to include roads that make up the project area boundary, so two analyses were conducted, one including the boundary roads, and one omitting them. These boundary roads include: FR 2103 (west boundary) – 5.8 miles, MN 200 (north boundary) – 6.5 miles, County 133 (east boundary) – 3.4 miles, and County 7 (portion of south boundary) – 1 mile, for a total of 16.7 miles of boundary road. Table 5 shows the resulting road and trail densities for the four alternatives including and excluding the boundary roads. There is no discretion made between road development and maintenance levels, or between roads and trails.

Table 5. Road and trail densities (miles per square mile) per alternative, Rice Lake Project Area.

		ALT A	ALT B	ALT C	ALT D
Without Boundary Roads	Total Miles	51.8	50.7	32.8	49.3
	Density (mi./Sq Mi.)	1.70	1.65	1.04	1.50
With Boundary Roads	Total Miles	68.5	67.4	49.5	66.0
	Density (mi./Sq Mi.)	2.24	2.21	1.62	2.16

Depending on whether one considers boundary roads part of the analysis area or not, the existing condition (Alternative A) does not provide for sustainable wolf populations as defined by the Recovery Plan. The other alternatives all reduce road densities in the project area, but none of them meet the Recovery Plan recommendations of less than 1 mile per square mile. If you do not consider the boundary roads, Alternative C comes close to meeting the objectives. To reduce the road and trail densities under Alternative C further, the designated snowmobile trails that traverse the area would have to be eliminated or relocated out of the project area. A likely solution would be to relocate the trails on or along the main road corridors that define the boundary of the project area. These are main transportation corridors that will exist regardless of National Forest management. As the Recovery Plan (USFWS, 1992) states, “the more access provided to wolf range, the more detriment there will be to wolves”. Although none of the alternatives could be said to provide a sustainable habitat condition for wolves, Alternative C is clearly better than Alternatives B and D, which provide a slight improvement over the existing condition (Alternative A). Although none of the alternatives propose to worsen habitat conditions for wolves, part of each project proposal on National Forest Lands includes a roads analysis, identifying transportation system conditions needed to meet National Forest goals and objectives. This, in effect, constitutes a decision to either improve conditions for specific resources, or not as they relate to the transportation system and human access. From this perspective, the road density threshold outlined in the Eastern Timber Wolf Recovery Plan is marginally met by Alternative C, and is exceeded by the other alternatives.

Cumulative Effects: The wolf population in Minnesota has increased by approximately 50% since 1988 (Table 6). Although one might argue that wolf populations are increasing in Minnesota despite road and trail densities above the threshold identified in the Recovery Plan, wolf populations respond not directly to road and trail densities, but to human activity. Today’s wolf population numbers

reflect the conditions under which the increase occurred, not necessarily the existing condition. To assess cumulative effects, and future wolf habitat security, one must investigate the changing human demographics and how they may influence wolf habitat. Many factors in human demographics are changing at an alarming rate in Northern Minnesota. More people are spending more leisure time in Northern Minnesota than ever before. Cass and Crow Wing Counties are experiencing unprecedented growth, including year-round residents and an expanding tourism industry (Cass and Crow Wing Counties, 2001). The population of Cass County increased by 24.6% between 1990 and 2000, twice the average growth for the State of Minnesota, resulting in a population density of 13.5 persons per square mile (US Census Bureau, 2001). Traffic volumes on regional highways are growing exponentially, resulting in highway upgrades, which with the increased traffic are likely to cause movement barriers and fragmentation of wolf habitat. Pressures on natural resources are increasing, and public forests are receiving increased use from both permanent residents and seasonal recreationists. Table 7 shows the trends in registered all-terrain vehicles (ATVs) and Table 8 shows the same for snowmobiles in the State of Minnesota since records have been kept. ATV numbers have increased by 431% between 1990 and 2000. Snowmobiles show a 46% increase.

Table 6. Results of wolf population and distribution surveys for Minnesota (Minnesota Department of Natural Resources, Section of Wildlife, Grand Rapids, MN).

	1978-79	1988-89	1997-98
Minimum primary wolf range (sq. miles)	14,038	23,165	33,971
Number of wolf packs	138	233	385
Number of wolves	1,235	1,550-1,750	2,445

Motorized activity in Minnesota's forests has grown significantly, particularly since 1990. In previous decades, logging roads and trails would gradually become inaccessible as they re-vegetated and became obstructed with brush and debris. This resulted in a relatively static road and trail density as new roads and trails were constructed and older ones became impassable. Today, almost all new roads and trails are maintained in a passable condition by four-wheel drive trucks and ATV traffic, creating a condition where newly constructed and reconstructed roads and trails result in a permanent increase in road and trail density. This is a compounding factor with the increasing number of ATVs and snowmobiles, and the increasing hours of use per vehicle. Unless remote wildland areas are managed as habitat for large mammals such as the wolf, Minnesota will likely experience a degradation of habitat capable of providing long-term survival of such species.

Determination of Effects: The proposed activities are not likely to adversely affect the gray wolf.

However, other than Alternative C, the alternatives do not achieve the intent of Section 7a1 of the Endangered Species Act and the Forest Plan as they do not provide habitat for long-term sustainability of gray wolves.

Table 7. Annual growth and total numbers of registered ATVs in Minnesota, not including tax-exempt and agricultural registrations (from Minnesota Department of Natural Resources, 2001).

Year	New Growth (First Year Registrations) *1	Total Registration (cumulative current three-year registration) *2
1984	12,235	12,235
1985	6,924	19,159
1986	9,424	23,738
1987	11,230	14,904
1988	8,493	14,323
1989	7,733	21,282
1990	8,001	30,854
1991	7,697	43,972
1992	8,146	46,068
1993	9,532	55,169
1994	9,204	56,706
1995	18,275	71,812
1996	15,582	78,992
1997	12,548	86,184
1998	16,484	93,824
1999	21,073	110,395

2000	36,558	132,994
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(*1)These figures are from Display Management Information totals.

(*2)This figure includes three expiration classes: the present year, and each of the two succeeding years. The current registration for December 31, 2000, for example, includes the following expiration dates: December 31, 2000, December 31, 2001, and December 31, 2002, (report entitled *Current Status of ATV Expiration Dates*). **In addition to these 2000 registrations, an additional 780 machines were tax-exempt (non-expiring) and 18,639 were agricultural (one-time fee).**

Source: Suellen Rau, MN/DNR Information, Education and Licensing; and Doug Julin, DNR Trails and Waterways; tabulated by the MN/DNR TAW.

Table 8. Annual growth and total numbers of registered snowmobiles in Minnesota, not including tax-exempt registrations (from Minnesota Department of Natural Resources, 2001).

Fiscal Year Ending June 30	NEW GROWTH (First Year Registration)	June 30 Registration: (Cumulative current three-year registration) *1
1968	23,235*	23,235
1969	37,392*	60,627
1970	52,269*	112,896
1971	65,409*	165,389 Est.
1972	79,509*	217,881 Est.
1973	61,866*	270,374
1974	43,266*	275,778
1975	45,310**	287,559
1976	37,315*	292,488
1977	28,753*	277,562
1978	30,134*	267,579
1979	28,458*	262,920
1980	23,426*	269,669
1981	17,557**	227,001
1982	21,047*	219,924
1983	22,902*	207,284
1984	20,495**	202,663
1985	16,305**	181,062
1986	24,756**	180,782
1987	17,546**	169,911

Fiscal Year Ending June 30	NEW GROWTH (First Year Registration)	June 30 Registration: (Cumulative current three-year registration) *1
1988	28,533**	175,856
1989	29,772**	182,554
1990	25,451**	189,586
1991	27,847**	190,695
1992	29,976**	191,456
1993	32,780**	204,621
1994	37,552**	216,461
1995	42,092**	233,443
1996	47,800**	254,510
1997	49,212	274,913
1998	39,778	277,650
1999	35,954	280,696
2000	31,039	277,290
2001	30,185	297,623

(*) These figures have been adjusted from calendar to fiscal year figures.

(**) These figures are the sum of monthly tallies (July through June) from available records or from monthly Display Management Information totals.

(*1) This figure includes three expiration classes: the present year, and each of the two succeeding years. The current registration for June 30, 2001, for example, includes the following expiration dates: June 30, 2001, June 30, 2002, and June 30, 2003. **In addition to these registrations, an additional 1,615 machines are tax exempt, (non-expiring).**

Source: Suellen Rau, MN/DNR Information, Education and Licensing; and Doug Julin, DNR -Trails and Waterways Division; tabulated by MN/DNR Trails and Waterways Unit.

References

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