United States Department of the Interior

FISH AND WILDLIFE SERVICE
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IN REPLY REFER TO:

April 14, 2005

Memorandum

To: Assistant Regional Director, Ecological Services

From: Field Supervisor, East Lansing Field Office, Michigan

Subject: **Biological Opinion** (Log No. 05-R3-ELFO-04)
Section 7 Consultation on Issuance of sub-permit under Section 10(a)(1)(A) to Michigan Department of Natural Resources' for Gray Wolf Depredation Control Activities

Pursuant to section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (ESA), this biological opinion addresses the U.S. Fish & Wildlife Service's (Service) issuance of an Endangered Species Act section 10(a)(1)(A) sub-permit to Michigan Department of Natural Resources (MDNR) that would allow intentional take of gray wolves for conservation purposes. Specifically, the MDNR plans to lethally take gray wolves that have depredated livestock or other domestic animals. Since issuing a section 10(a)(1)(A) permit represents a Federal action, the Service must, pursuant to section 7 of the Act, ensure that issuance of the permit will not jeopardize the gray wolf. This biological opinion documents the Service's compliance with the section 7(a)(2) mandate and provides a take exemption for any incidental take which may occur.

For reasons discussed below, it is our biological opinion that issuance of a section 10(a)(1)(A) sub-permit for MDNR's Wolf Depredation Program is not likely to jeopardize the continued existence of gray wolves, nor any other listed species. Our biological opinion specifically analyzed the impact of removing up to 11% (10% intentional take, 1% incidental take) of Michigan's gray wolf population annually. Incidental take is based on the annual MDNR population estimate, so the actual number of wolves expected to be incidentally taken can be adjusted upon determination of each annual population estimate, if this sub-permit is renewed in subsequent years. The preliminary MDNR winter 2004-2005 estimate is 406 wolves in Michigan and this equates to the incidental take of up to 4 adult wolves annually.

Critical habitat has been designated for gray wolves on Isle Royale in Michigan. As planned wolf depredation abatement activities will not occur on Isle Royale, critical habitat will not be affected.

Consultation History

February 24, 2005 - The MDNR requested an Endangered Species Act section 10(a)(1)(A) permit to enhance the survival of the wolf population in Michigan. Specifically they sought the authority to use harassment and lethal control to abate wolf-related threats to human safety and domestic animals. They also sought authority to designate federal and tribal organizations as State agents to carry out these activities.

March 23, 2005 - The MDNR sent an electronic message to the Service providing an updated permit application.

March 23, 2005 – The MDNR and Service discussed the 10(a)(1)(A) permit application. As an outcome of this discussion, injurious and non-injurious harassment were removed from the proposed project. The MDNR does not need a permit to conduct non-injurious harassment (use of scare devices, cracker shells, and guard dogs) as the Service has stated that these activities should not rise to the level of take and are already authorized to the State under 50 CFR 17.21(c)(5). The Service decided to remove injurious harassment (use of bean bag projectiles and rubber bullets) from the proposed action since this was not covered under the 4(d) rule and might involve additional incidental take, which is not covered by 50 CFR 17.21(c)(5) and would require additional evaluation.

March 30, 2005 – Telephone conversations occurred between staff of the Service's U.P. Ecological Services Sub-Office and the MDNR from which additional information on specific control methods and an estimate of anticipated incidental take were received.

Biological Opinion
Log No. 05-R3-ELFO-04

1) DESCRIPTION OF THE PROPOSED ACTION

As defined in 50 CFR 402.02, "action" means all activities or programs, of any kind, authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas. The "action area" is defined as all areas directly or indirectly affected by the effects of the actions (including the proposed action and any interrelated or interdependent actions) and not merely the immediate area involved in the action. The direct and indirect effects of the actions must be considered in conjunction with the effects of other past and present federal, state, or private activities, as well as cumulative effects of reasonably certain future State or private activities within the action area in determining whether a proposed action will jeopardize the continued existence of a listed species.

Issuance of a 10(a)(1)(A) sub-permit to the Michigan Department of Natural Resources (MDNR) allowing the use of lethal control methods within the Wolf Damage Management Program (Program) is the proposed action considered in this Biological Opinion (Opinion). This Opinion considers only those species that may be affected by the proposed action. We have determined that the proposed action may affect, but is not likely to adversely affect the bald eagle (*Haliaeetus leucocephalus*) and Canada lynx (*Lynx canadensis*), and is likely to adversely affect the gray wolf (*Canis lupus*).

a) Action Area

The Program will be conducted where wolves are present in Michigan. Currently, wolves are found throughout the Upper Peninsula (U.P.) of Michigan. The U.P. encompasses approximately 10.1 million acres (2.5 million hectares), divided into fifteen counties: Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon, and Schoolcraft. Wolf damage management activities will not be conducted on Isle Royale National Park in Keweenaw County.

In late fall 2004, a wolf was trapped and shot in Presque Isle County in the northern Lower Peninsula (L.P.) of Michigan. MDNR biologists have since observed and confirmed additional wolf tracks in Presque Isle County. These observations were the first documented evidence of wolves in the L.P. since the early 1900's. If wolves become established in the L.P., the proposed action area would expand to encompass the entire state.

Activities associated with the proposed project will largely occur on privately owned land. If verified wolf depredation occurs on private land adjacent to public land, however, project activities may occasionally occur on Federal (U.S. Forest Service or U.S. Fish & Wildlife Service), State, or county owned lands. When these circumstances arise, the MDNR or its designated agent will notify the land holding agency, and obtain

permission prior to initiating project activities. Lethal control on tribal lands will only occur upon the request from a tribe.

b) Project Description

i) **Background**

European colonists brought negative views of wolves to North America. These views were largely based on myth and folklore; however, wolf depredation of livestock posed a valid threat to early settlements (Fuller et al. 2003). These negative views and threats to livestock led to the nearly complete extirpation of wolves from the contiguous U.S. In the U.S. today, farmers and ranchers still hold the most negative view of wolves (Fuller et al. 2003). When wolves prey on livestock, some form of wolf control usually follows (Fuller et al. 2003). If the State or Federal government does not act, livestock owners likely will and their actions could lead to the indiscriminate killing of wolves (Fuller et al. 2003). Because of this, livestock depredation continues to be a major problem in wolf conservation.

With an increased wolf population, depredation of livestock and domestic animals has increased (USFWS 2003a). In Minnesota, the estimated wolf population increased by 15% from 1988 to 1993 and the number of wolves killed, as a result, increased by 223% (Paul 1994). In Michigan a similar trend has begun to emerge. Of the 66 wolf-caused livestock depredation events confirmed since 1996, 39 (59%) occurred within the past two years after the late winter wolf population surpassed 300 individuals (MDNR 2005).

With the increases in livestock and pet depredation comes the increased possibility of public backlash (Mech 1995). In Michigan, public support for wolf conservation appears to be eroding with 45% of radio-collared wolf mortality in 2004 attributed to poaching. Without the authority to remove problem wolves, public support will continue to decline and the frequency of poaching will likely increase. Selective removal of depredating wolves, as would occur under the proposed section 10(a)(1)(A) sub-permit, would help reduce poaching and ensure the persistence of the wolf population in Michigan.

States where the wolf is listed as an endangered species (all Midwest states except Minnesota) have limited options for controlling depredating wolves. Management options for depredating wolves are severely restricted by general prohibitions under the Endangered Species Act (Act). The Act and its implementing regulations (50 CFR 17.21) set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, in part, make it illegal to take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these) any endangered wildlife species. The Code of Federal Regulations, 50 CFR 17.21(c)(5), provides states with the authority to take endangered wildlife if, among other conditions, the taking will not keep the animal in captivity for more than 45 days or result in the death or permanent disabling of the animal. Thus, depredating wolves in Michigan were dealt with by non-injurious hazing or by live-trapping and translocation. These

techniques are no longer sufficient or practical for management of depredating wolves in the current wolf population.

In April 2003 the Service published a final rule in the Federal Register which reclassified wolves from endangered to threatened within the Eastern Gray Wolf Distinct Population Segment (which included the State of Michigan), and a special rule was promulgated under section 4(d) of the Act (USFWS 2003a). Section 4(d) provides that whenever a species is listed as a threatened species, the Service shall issue regulations deemed necessary and advisable to provide for the conservation of the species. The 4(d) rule for the EDPS allowed States, tribes or their designated agents to "take" gray wolves in Michigan, along with other Midwestern States, under certain situations. Pursuant to the 4(d) rule, wolves would be taken for depredation control. MDNR, and their designated agents, controlled depredating wolves under the 4(d) rule from April 2003 until February 2005.

On January 31, 2005, a United States District Court in Oregon enjoined and vacated the Service's Final Reclassification Rule of April 2003. The ruling effectively returned wolves in Michigan to endangered status and cancelled the 4(d) rule. After learning of the court ruling, the Service advised MDNR that the 4(d) rule was no longer valid and advised MDNR to cease any lethal wolf control activities. The MDNR applied for a 10(a)(1)(A) permit, which is the subject of this consultation, to again obtain authority to lethally control depredating wolves. The MDNR's wolf depredation abatement program which would be conducted via a section 10(a)(1)(A) sub-permit is similar to the program which was initiated under the 4(d) rule.

ii) **Proposed Action**

To manage and conserve wolves in Michigan the MDNR proposes to conduct lethal control of wolves involved in depredation of livestock or other domestic animals. Methods of lethal control to resolve wolf depredation on livestock and domestic animals will include leg-hold traps and euthanasia, snares and euthanasia, and shooting. Wolves will be killed by shooting or lethal injection. Tranquilizer/transmitter darts may also be used to facilitate removal of wolves in urban areas (Brian Roell, MDNR, pers. comm. March 2005). Lethal control could also include day or night-time shooting or use of other humane euthanasia techniques.

The MDNR also has requested the authority to designate other federal agencies and tribal governments as State agents authorized to conduct lethal control activities. Agents of the State must receive wolf training similar to MDNR depredation control trappers and they must adhere to all Conservation Measures listed below.

iii) **Conservation Measures**

Implementation of the below conservation measures could reduce impacts to the gray wolf population in the U.P. These conservation measures will be incorporated in the

10(a)(1)(A) permit and are considered part of the proposed action. The conservation measures are considered in the analysis of effects section.

(1) Wolf depredation on lawfully present domestic animals must be verified by appropriately trained personnel.
   (a) If a verified depredation has not occurred in the current calendar year, lethal control shall only proceed when all of the following conditions are met:
      (i) Verified depredation occurred at the site or in the immediate vicinity during the previous year;
      (ii) There is strong evidence one or more members of the depredating pack has remained in the area since the verified depredation;
      (iii) Based on wolf behavior and other factors, the depredation is likely to be repeated; and
      (iv) Trapping is conducted in a location and in a manner to minimize the likelihood a wolf or wolves from a non-depredating pack is captured
(2) Depredation control activities must occur within 1 mile of the depredation site.
(3) Taking, wolf handling, and euthanizing must be carried out in a humane manner, and may include use of steel leghold traps, snares, shooting, and lethal injection.
(4) Traps and snares must be checked at least every 24 hours.
(5) Young-of-year wolves trapped before August 1 must be released.
(6) Lactating females trapped before July 1 must be released near the point of capture unless they have been involved with chronic depredation problems; in this case, lactating females may be captured and euthanized.
(7) Lethal control efforts may not be implemented at livestock operations or on other private lands that fail to follow technical assistance guidelines in a timely manner.
(8) Lethal control may not be used when wolves kill dogs that are free-roaming, hunting, or training on public lands.

Species <u>Not Likely To Be Adversely Affected</u> By the Proposed Action

Bald Eagle

Bald eagles nest in every county of the U.P. and many counties of the L.P. Bald eagles could potentially be captured in foot snares and leghold traps which will be utilized as part of the Program. This effect, however, is expected to be discountable as traps will be set with pan tension devices which are intended to reduce or eliminate the possibility of capturing non-target birds and animals, including bald eagle (Turkowski et al. 1984, Phillips and Grover 1996). Furthermore, as part of on-going USDA Wildlife Services'(WS) national wildlife management program, WS has utilized spring activated foot snares and no incidental capture of bald eagle has occurred in the history of their program (WS 2003).

We conclude that issuance of a 10(a)(1)(A) sub-permit for wolf depredation control is "not likely to adversely affect" the bald eagle.

Canada Lynx

In November 2003, a lynx was trapped in Mackinac County in the eastern portion of the U.P. Scat and hair samples from the animal were tested and provided verification that the individual was a wild Canada lynx. Over the last several years two other reports of lynx observations (tracks only) have been made (Don Lonsway, Wildlife Services, pers. comm.). Unfortunately, these observations could not be verified with DNA testing. The historic data and recently verified lynx trapped in the U.P. suggests that lynx may be present throughout the U.P., within suitable habitat. However, we estimate that lynx, if actually present, are likely to be present in extremely low numbers. There are no data to suggest that a resident breeding population exists at this time.

The use of leg-hold traps, neck snares, foot snares, or shooting as associated with the Program could occur in potential lynx habitat. Lynx have been captured incidentally in leg-hold traps which were set to capture other mammal species (USFWS 2001). Therefore, there is some risk of incidental capture of lynx from MDNR's use of leg-hold traps for wolf depredation control purposes. However, based on WS program's history of no non-target lynx captures in the eastern U.S. (WS 2004), the risk is extremely low. In the unlikely event that lynx are trapped, the requirement for trap checks to occur no less frequently that every 24 hours will reduce the likelihood of serious injury; any accidentally-trapped individuals will be released in healthy condition.

Other trapping or lethal control techniques used as part of the wolf depredation control program, foot snares, and shooting or darting, should also have no or very limited risk of incidental impacts to lynx. If foot snares are used in lynx habitat, incidental take could potentially occur, but is highly unlikely; injuries will be minimized by the trap check frequency. A ten year (fiscal year 1989 to 1998) review of WS program data indicates that WS' use of snares set for wolves failed to capture any non-target lynx (WS 2004.) Shooting or darting would have no effect on lynx because positive identification of target species would be made before animals are shot. Therefore, the incidental capture or injury of lynx is discountable.

We conclude that issuance of a 10(a)(1)(A) sub-permit for wolf depredation control is "not likely to adversely affect" the Canada lynx.

Species <u>Likely To Be Adversely Affected</u> By the Proposed Action

We determined that the proposed action considered in this Opinion is "likely to adversely affect" the gray wolf. The remainder of this Opinion addresses whether the proposed action, including any interrelated or interdependent actions, is likely or not likely to jeopardize the continued existence of the gray wolf.

2. STATUS OF THE SPECIES AND CRITICAL HABITAT

This section presents the relevant biological and ecological information. The purpose is to provide the appropriate information on the species' life history, habitat, and range-wide distribution and conservation status for analyses in later sections. This section also documents the effects of all past human and natural activities or events that led to the current status of the species.

A. Species Description and Life History

Gray wolves are the largest wild members of the Canidae, or dog family, with adults ranging from 18 to 80 kilograms (kg) depending upon sex and subspecies (Mech 1974). Wolves' fur color is frequently a grizzled gray but it can vary from pure white to coal black. Wolves may appear similar to coyotes (*Canis latrans*) and some domestic dog breeds (such as the German shepherd or Siberian husky) (*C. familiaris*). However, wolves' longer legs, larger feet, wider head and snout, and straight tail distinguish them from both coyotes and dogs (USFWS 2003a).

Wolves primarily are predators of medium and large mammals. Wild prey species in North America include animals such as white-tailed deer (*Odocoileus virginianus*), moose (*Alces alces*), and elk (*Cervus canadensis*). Small mammals, such as snowshoe hare (*Lepus americanus*) and beaver (*Castor canadensis*), birds, and large invertebrates are sometimes taken. In the Midwest, during the last 22 years, wolves have also killed domestic animals including cattle, sheep, goats, dogs, and cats (USFWS 2003a).

Wolves are social animals, normally living in packs of 2 to 12 wolves. Packs are primarily family groups consisting of a breeding pair, their pups from the current year, offspring from the previous year, and occasionally an unrelated wolf. Packs typically occupy and defend from other packs and individual wolves, a territory of 50 to 550 square kilometers. Within the pack a single litter is produced annually, generally with only the top-ranking (alpha) male and female in each pack breeding. Litter sizes range between 1 to 11 pups, but generally include 4 to 6 pups (USFWS 2003a).

Once thought to need wilderness areas to survive, research, as well as the expansion of wolf range over the last two decades, has shown that wolves can successfully occupy a wide range of habitats, and they are not dependent on wilderness areas for their survival. Wolves tend to more readily occupy heavily forested areas and landscapes with low road densities (Mladenoff et al. 1995). Mech (1995) believes that inadequate prey density and a high level of human persecution are the main factors that limit wolf distribution.

The historical decline and near extirpation of wolves from the lower 48 states was caused by intensive control programs including bounties and widespread poisoning, intended to

eliminate wolves. This large scale extirpation effort was driven by negative views of wolves due to folklore and livestock depredation.

B. Range-wide Status and Distribution of the Species

The proposed project will occur within the range of the eastern timber wolf (*Canis lupus lycaon*), and this discussion is focused only on that gray wolf population. The eastern timber wolf was listed as an endangered species in Michigan and Minnesota in 1974. At that time, a few wolves occurred in Michigan at Isle Royale National Park. Wisconsin had scattered reports of individual wolves and occasional reports of wolf pairs (USFWS 2003A). At the time of listing, Minnesota was the stronghold for the eastern timber wolf with several hundred wolves occurring in the northern portions of that State.

i. Recovery Progress

Currently, eastern timber wolves are commonly found in Minnesota and number in the hundreds in northern Wisconsin and the U.P. of Michigan. In Minnesota, the wolf has been listed as a threatened species since 1978 and a wolf depredation control program, similar to the one described for Michigan in this BO, has been conducted since 1978.

The federal numerical recovery goals, as set out in the Eastern Timber Wolf Recovery Plan (Plan, USFWS 1992), have been met. Recovery criteria in the Plan require that at least two viable wolf populations must exist within the eastern United States. Furthermore, these two populations must satisfy the following conditions. First, the survival of the wolf in Minnesota must be stable or growing, and its continued survival must be assured. Second, another population must be reestablished outside of Minnesota and Isle Royale. The Plan provides two alternatives for reestablishing this second viable wolf population. If the population is beyond 100 miles from Minnesota population, it must contain 200 wolves for at least 5 consecutive years (USFWS 2003a). If the population is within 100 miles of the Minnesota population, it must contain at least 100 wolves for at least 5 consecutive years (USFWS 2003a).

Minnesota

In Minnesota, the wolf population size is not surveyed or estimated annually, however in 2004 Minnesota Department of Natural Resources (MNDNR) estimated the wolf population had reached approximately 3,020 individuals. The previous estimate (for the winter of 1997-98) estimated a Minnesota wolf population of 2445 wolves. Biologists generally accept that the Minnesota wolf population has increased and will continue to increase (Mech 1998, Paul 2000).

While the Plan identifies no numerical recovery criterion for Minnesota, the Plan does identify State subgoals for use by land managers and planners. For Minnesota, the Plan's subgoal is 1,251 to 1,400 wolves. The Minnesota wolf population currently is estimated to be more than double that numerical goal.

A wolf depredation control program, similar to the one described for Michigan in this BO, has been conducted in Minnesota since 1978 when wolves were reclassified as threatened and a 4(d) regulation was promulgated. After 25 years of lethal wolf control, the Minnesota wolf population continues to increase.

Wisconsin and Michigan

In Wisconsin and Michigan, wolf populations also have increased substantially. Late winter wolf population estimates in Wisconsin from 1994 to 2004 are 57, 83, 99, 148, 178, 205, 248, 257, 327, 335, and 373 animals respectively (Figure 1). In Michigan, wolf population estimates from 1994 – 2005 are 57, 80, 116, 112, 140, 174, 216, 249, 278, 321, 360 and 406, respectively (Figure 1, Table 1, 2005 is a preliminary estimate). Wisconsin and Michigan combined contained approximately 733 wolves in 2004 (Figure 1, Table 1). Final results for the late winter count of 2004 - 2005 are not yet available, but are believed to be approximately 400 animals each in Wisconsin and Michigan (Adrian Wydeven, Wisconsin Department of Natural Resources, pers. comm. 2005; Brian Roelle, MDNR, pers. comm. April 2005). (All Michigan wolf estimates exclude wolves on Isle Royale.)

The annual percent change in the wolf population from 1994 – 2004 has ranged from +3.63% to +49.49% in Wisconsin and -3.45% to +80% (the 80% increase may be a reflection of increased sampling effort, not necessarily a true 80% population increase) in Michigan (Figure 2, Table 2). In Michigan and Wisconsin the combined average annual percent change from 1994 – 2004 was +21.28%. Over the last 5 years the 2-state combined average annual percent change has decreased to +14.75% but still shows a notable increasing population trend (Figure 2, Table 2). The preliminary Michigan wolf estimate of 406 for 2005 represents a 12.78% increase from 2004.

The second criterion for successful recovery of the eastern timber wolf is the formation of a second viable population, which is more than 100 miles away from Minnesota, of at least 200 wolves for 5 years. The Michigan/Wisconsin wolf population is more than 100 miles from Minnesota and recent surveys indicate more than 700 wolves in these two states. The 200 wolf second population size has been exceeded for nine consecutive years (Fig 1). Also, while no numerical individual state recovery criteria for Michigan and Wisconsin are listed in the Plan, State subgoals were incorporated. For Wisconsin and Michigan, the Plan's subgoals are 80 and 80 – 90 wolves, respectively (USFWS 1992). Current populations in both these States are more than triple these numerical subgoals.

3. ENVIRONMENTAL BASELINE

This section describes the species status and trend information within the action area. It also includes an analysis of past, present and future impacts from past and ongoing State, tribal, local, private actions or from such actions that will occur contemporaneously with the proposed action. The anticipated impacts from unrelated Federal actions that have

Figure 1. Wolf population estimates for Wisconsin, Michigan, and Wisconsin and Michigan combined (total) from 1973 - 2004.

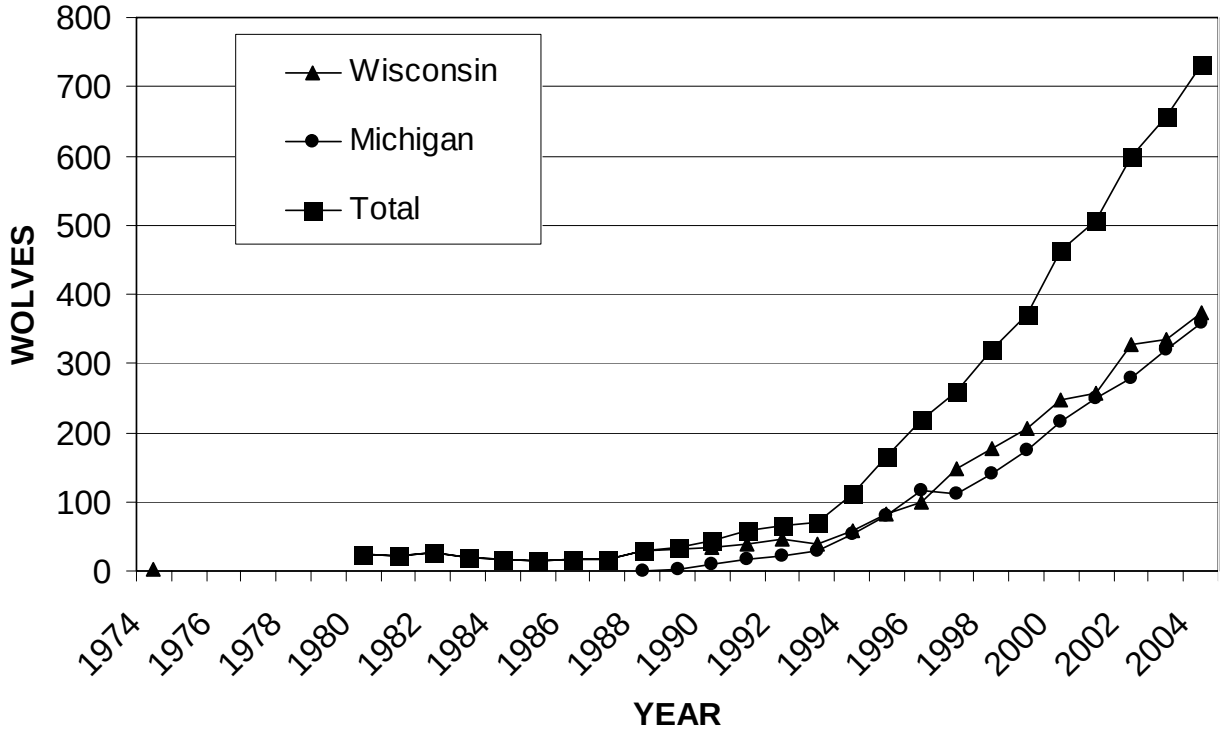

Table 1. Wolf population estimates for Wisconsin, Michigan, and Wisconsin and Michigan combined (Total) from 1980 - 2004. "Year" indicated is an estimate made during the winter ending that year; e.g., the 2004 row gives population data for the winter of 2003-2004. *Preliminary* winter 2004-2005 estimates for Wisconsin and Michigan are included.

YEAR	WISCONSIN	MICHIGAN	TOTAL
1980	25	0	25
1981	21	0	21
1982	27	0	27
1983	19	0	19
1984	17	0	17
1985	15	0	15
1986	16	0	16
1987	18	0	18
1988	28	0	28
1989	31	3	34
1990	34	10	44
1991	40	17	57
1992	45	21	66
1993	40	30	70
1994	54	57	111
1995	85	80	165
1996	102	116	218
1997	148	112	260
1998	180	140	320
1999	197	174	371
2000	248	216	464
2001	257	249	506
2002	327	278	598
2003	335	321	656
2004	373	360	733
2005	*400*	*406*	*806*

Figure 2. Annual percent change of gray wolf population in Wisconsin, Michigan and Wisconsin and Michigan combined (Total) from 1981 – 2004.

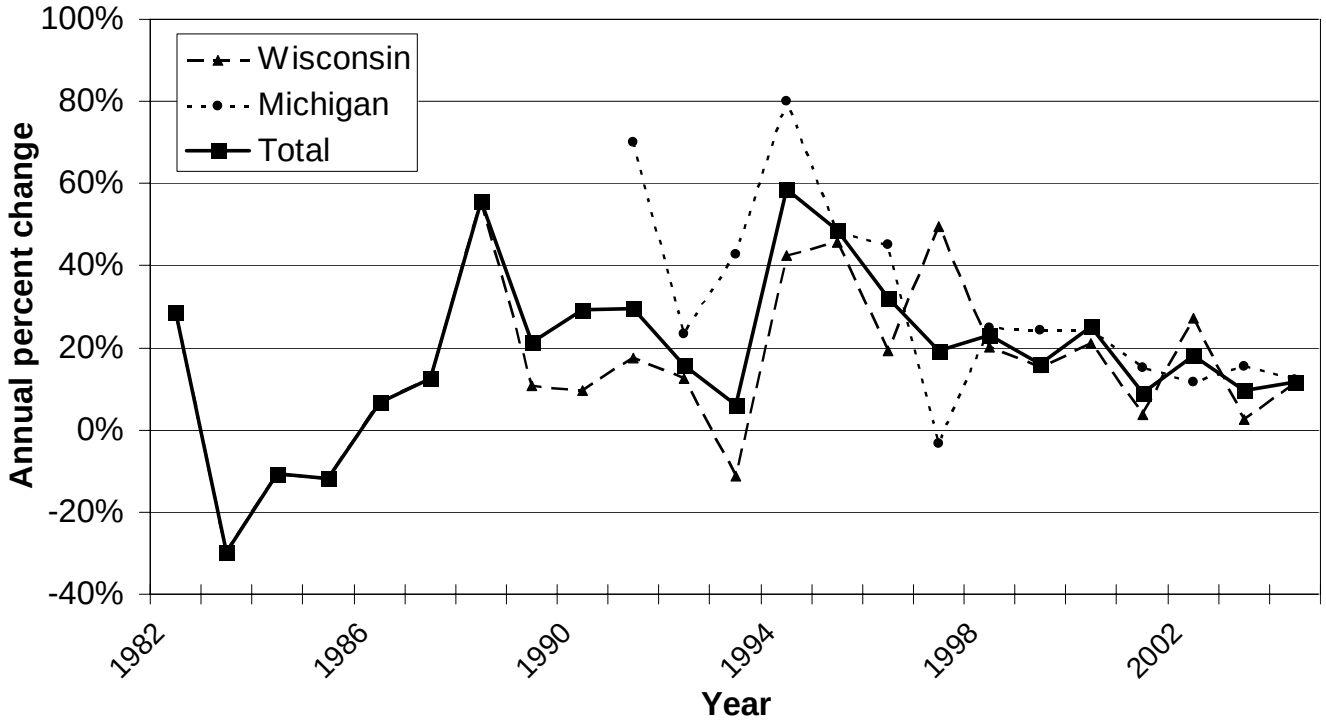

Table 2. Annual percent change of gray wolf population in Wisconsin, Michigan, and Wisconsin and Michigan combined (total) from 1981 - 2004. *Preliminary* 2005 Wisconsin and Michigan figures are included.

YEAR	WISCONSIN	MICHIGAN	TOTAL
1981	-16%	-	-16%
1982	28.57	-	28.57
1983	-29.63	-	-29.63
1984	-10.53	-	-10.53
1985	-11.76	-	-11.76
1986	6.67	-	6.67
1987	12.50	-	12.50
1988	55.56	-	55.56
1989	10.71	-	10.71
1990	9.68	-	9.68
1991	17.65	70.00	29.55
1992	12.5	23.53	15.79
1993	-11.11	42.86	6.06
1994	42.50	80.00	58.57
1995	45.61	48.15	48.65
1996	19.28	45.00	32.12
1997	49.49	-3.45	19.27
1998	20.27	25.00	23.08
1999	15.17	24.29	15.94
2000	20.98	24.14	25.07
2001	3.63	15.28	9.05
2002	27.24	11.65	18.18
2003	2.45	15.47	9.70
2004	11.34	12.15	11.74
2005	*7.24*	*12.78*	*9.96*

completed formal or informal consultation are also included in the environmental baseline.

A. Status of the Species within the Action Area

The Program's action area contains the entire gray wolf population in Michigan. Gray wolves are currently found in all counties of the U.P. Recent evidence suggests that wolves are also establishing in the northern L.P.; however, at this time a breeding population has not been confirmed. As previously stated under "Status and Distribution of the Species", the winter 2003-2004 wolf population in Michigan was estimated at 360 individuals (Figure 1, Table 1) and has grown on average about 15% annually over the last five years in Michigan (Figure 2, Table 2). Final results for the late winter count of 2005 are not yet available, but preliminary estimates indicates approximately 400 animals in each Wisconsin (Adrian Wydeven, Wisconsin Department of Natural Resources pers. comm. 2005) and Michigan (Brian Roelle, MDNR pers. comm. 2005). This suggests the Michigan and Wisconsin wolf population has increased by nearly 10% from last year.

B. Factors Affecting the Species within the Action Area

Throughout the range of the wolf, generally three factors dominate wolf population dynamics: food, people, and source populations (Fuller et al. 2003). These factors are likely to play the primary role regulating the U.P.'s wolf population, as well.

i. Food

Prey density and vulnerability are important in determining what areas wolves inhabit and at what level. It appears that, over time, absent severe human persecution, wolf numbers are mainly limited only by food (Fuller et al. 2003). In establishing populations, as in the U.P., the wolf population is likely to grow until food is a limiting factor. As the U.P. population continues to grow by approximately 15% annually (Figure 2), it is unlikely that prey is a limiting factor for wolves in the U.P. at this time.

ii. People

The indirect or direct killing of wolves by humans also is important in determining the location and density of wolf populations (Fuller et al. 2003). Direct killing of wolves still occurs, however at much lower rates than was experienced in the past. In Wisconsin, there were 32 known wolves killed as a result of poaching from 2000 to 2003. In 2004, 10 of 21 radio-collared wolf mortalities in Michigan were due to poaching.

Wolf populations do not appear to be greatly affected by other human factors such as snowmobiles, vehicles, or logging activities, except when they result in accidental or intentional killing of wolves or changes to prey density (Fuller et al. 2003). If the wolf population is large enough, even when these factors have an adverse affect on individuals, these activities seem to have little effect the wolf population (Fuller et al. 2003). From 1992 – 2002, 31 wolves have been killed in Michigan as a result of vehicle

collisions (Dean Beyer, MDNR, unpublished information). These deaths seem to have little effect on the wolf population (Figure 1, Table 1).

iii. Source Populations

Source populations are important in establishing new populations and maintaining populations that are heavily harvested or experience high mortality from other causes (Fuller et al. 2003). As the U.P. has had a resident wolf population for over 10 years and is not subject to heavy harvesting or other forms of excessive mortality, the importance of a source population is likely minimal at this time. However, it is important to note that the U.P. is not an isolated population. Immigration and emigration of wolves among the U.P., Wisconsin, Canada, and Minnesota occurs, and immigration is the probable basis for the re-establishment of the U.P. wolf population. Immigration may not have a significant annual effect on the U.P. wolf population but it likely contributes to the long-term sustainability of the population.

iv. Other Factors

Natural mortality is a factor affecting the wolf population in the U.P. The two main sources of natural wolf mortality are starvation and intraspecific strife (Fuller et al. 2003). On Isle Royale, where no human-caused wolf deaths occur, annual mortality due to starvation and intraspecific strife averaged 32.5% from 1971 – 1995 (Peterson et al. 1998). Diseases, such as mange, also can affect wolf populations. From 2000 to 2004, WDNR documented that natural mortality resulting from mange is the cause of 26% of all radio-collared wolf deaths in Wisconsin (Table 3). MDNR collects similar mortality information, however, until recently all radio-collared wolves were vaccinated and therefore did not reflect the true level of disease mortality experienced by the larger population. In Michigan, natural mortality of wolves does not seem to be adversely impacting the wolf population as it continues to increase by approximately 15% annually.

Table 3. Natural mortality of radio collared wolves in Wisconsin 2000 – 2004 (Adrian Wydevan, WDNR, pers. comm. March 2005). Number in parenthesis is percentage of total mortality (natural and human caused) observed in radio collared wolves.

Mortality Factor	**2000**	**2001**	**2002**	**2003**	**2004**	**Total**
Mange	4	4	2	6	3	19 (26%)
Other disease	1	2	1	2	-	5 (7%)
Malnutrition	-	-	2	-	-	2 (2%)
Other wolves	3	2	1	1	1	8 (11%)
Accident	-		1	-	-	1 (1%)
Total	8	8	7	8	4	35 (48%)

It is unknown how the addition of human-caused mortality would affect natural mortality rates. However, as compensation operates in wolf populations as in other populations, an increase in human caused mortality likely would result in a decrease in natural mortality.

In any case, the demonstrated annual rate of increase in the Michigan wolf population has occurred in spite of all causes of mortality.

C. Summary of the Environmental Baseline

The eastern timber wolf has reached the numerical recovery goals as listed in the Plan, and recent data suggest that the wolf population in Minnesota, Wisconsin, and Michigan continues to increase. The primary factors influencing wolf recovery in the U.P. are prey density, human related mortality, and natural mortality. However, as evidenced by the increasing population, these factors do not appear to be appreciably hindering the gray wolf population in Michigan at this time.

The current rate of population increase will likely not continue into the foreseeable future. As the wolf population in Michigan expands to fill all available habitat, or as the cultural carrying capacity is approached, the rapid population growth rate is expected to slow and eventually stop. At that time we would expect to see negative growth rates (that is, wolf population declines) in some years, due to short-term fluctuations in birth and mortality rates. However, adequate wolf monitoring programs, as identified in the Michigan Gray Wolf Recovery and Management Plan (1997), should identify excessively high mortality rates or low birth rates and would trigger timely corrective action when necessary.

4. EFFECTS OF THE ACTION

This section assesses the effects of the proposed action, including the direct and indirect effects together with the effects of other activities that are interrelated or interdependent (50 CFR 402.02). Indirect effects are those that are caused later in time, but are still reasonably certain to occur. Interrelated actions are those that are part of a larger action and depend upon the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration (50 CFR 402.02).

A. Analysis of the Effects of the Action

The proposed action is expected to result in both purposeful and incidental take of gray wolves. Purposeful take is take that is intended as part of the proposed action (e.g. capture and euthanization of target wolves). Purposeful take will be quantified here, based on the maximum amount that is expected to occur as part of this proposed action. Incidental take is take that occurs unintentionally during the conduct of an otherwise lawful activity (e.g., injury or death of pups as a result of the capture of a lactating female). Incidental take is also quantified here to the extent possible and is further discussed in the incidental take statement. In order to minimize the amount of take that may occur, the proposed action incorporates the conservation measures listed above at 1.b.iii, Conservation Measures. These measures are taken into account in our analysis of the extent of take that will occur.

i. Lethal Wolf Control

Trapping methods including land restraint snares with stops, spring activated foot snares, and leg-hold traps are all non-lethal techniques to capture wolves. When paired with euthanasia, trapping facilitates lethal wolf control. The advantage of utilizing these techniques is the trapper's ability to release non-target individuals, such as young of the year or lactating females. Purposeful take in the form of death is expected as a result of trapping and euthanasia. Incidental take could occur in the form of injury or death if young of year are captured before August 1. According to the Conservation Measures (see 1.b.iii. Conservation Measures) all young of year wolves must be released prior to August 1 (i.e. young of year can not be purposefully killed before August 1). Injury to paws or legs could be sustained as a result of trapping.

Incidental take could also occur as a result of capturing or euthanizing a lactating female. Similar to young of year, the capture of a lactating female could result in injury to paws or legs as a result of trapping. In addition, capture and release of a lactating female could result in harm to pups depending on how long the female is held before release. Euthanasia of lactating females could result in decreased pup survival or pup mortality, depending on how old the pups are at the time of separation. Conservation Measures will help ensure pup survival since most lactating females will be released prior to July 1 when pups are most dependent. Therefore, incidental take associated with capture or mortality of lactating females will likely be small as most lactating females will not be euthanized and if captured will be released in less than 24 hours (Conservation measures 4 and 6).

Other techniques which are lethal or facilitate lethal control include day or night-time shooting, aerial gunning, and darting. These techniques are virtually 100% selective for removing target animals as positive identification is made before the animal is shot. Purposeful take in the form of death is a result of these techniques. Incidental take in the form of death is expected if young of year animals are shot prior to August 1. This should occur infrequently as young of year animals should be distinguishable from adults. As discussed above, incidental take in the form of injury or death to pups is expected if lactating females are shot.

Discussion of Take and It's Potential Effect on the Eastern Timber Wolf Population

i. Estimate of Purposeful Take

The April 1, 2003, final reclassification rule (USFWS 2003a) estimated, based on Minnesota wolf depredation control data from the early 1980s when the wolf population was around 1,500 individuals, that 2 to 3 percent of Michigan's wolf population would be taken annually as a result of the 4(d) regulation. However, based upon more recent data from the Minnesota wolf depredation program and estimates based on recent Michigan and Wisconsin experiences, we believe that purposeful take may exceed this estimate.

The Minnesota WS program has conducted a wolf damage management program since 1986 (USFWS 2003a). After over fifteen years of lethal wolf control evidence indicates that Minnesota's wolf population has met recovery goals (USFWS 1982) and is still growing by about 4% a year (USFWS 2003a). According to data collected from 1993 to 2002, the number of wolves killed annually as a result of depredation control activities ranged from 78 to 216 (Table 4). Since the wolf population is much larger in Minnesota than in Michigan it is appropriate to look at what percentage of the wolf population these numbers represent. The estimated percentage of the wolf population taken each year in Minnesota ranged from 3.9% to 9.4% (Table 4). This level of take does not appear to have hindered the recovery of the gray wolf in Minnesota or the establishment and recovery of the gray wolf populations in Wisconsin and Michigan.

Table 4. Number of individuals and percentage of wolf population taken from 1993 – 2002 as a result of Minnesota USDA Wildlife Services' wolf depredation control activities (USDA 2002).

Year	Population Estimate	Wolves Taken	Percentage of Population Taken (Estimate)
1993	2000	139	7.0
1994	2000	172	8.6
1995	2000	78	3.9
1996	2200	154	7.0
1997	2300	216	9.4
1998	2400	161	6.7
1999	2500	151	6.0
2000	2600	148	5.7
2001	2750	109	4.0
2002	2750	146	5.3

From 2003 until February 2005, the MDNR and Wisconsin Department of Natural Resources (WDNR) operated a wolf damage management program under the authority of the 4(d) rule. The proposed section 10(a)(1)(A) permit for Michigan DNR would adopt very similar guidelines and have somewhat tighter restrictions than the now invalid 4(d) rule. Although only two years of data were collected, the information indicates that much less than 10% of the population was removed annually (Table 5, Table 6). The wolf population in 2004, after operation of the depredation control program for nearly one year, increased by 11.7% in Michigan and Wisconsin combined (Figure 2, Table 2).

Table 5. Number of individuals and percentage of wolf population taken from May 2003 – December 2004 as a result of implementation of the 4(d) rule in Michigan (Brian Roelle, MDNR, pers. comm. February 2005).

Year	Population Estimate	Wolves Taken	Percentage of Population Taken (Estimate)
2003	321	4	1%
2004	360	6	2%

Table 6. Number of individuals and percentage of adult wolf population taken from May 2003 – December 2004 as a result of implementation of the 4(d) rule in Wisconsin (Adrian Wydevan, WDNR, pers. comm March 2005). YOY is young of year wolves.

Year	Population Estimate	Wolves Taken	Percentage of Population Taken (Estimate)
2003	335	9 adults, 8 YOY	2.7%
2004	373	20 adults, 4 YOY	5.4%

Based on recent data collected by WS in Minnesota and limited depredation data in Michigan and Wisconsin, we estimate that between 4 and 10% of the wolf population may be purposefully taken as a result of depredation abatement program. The purposeful take will include both adult wolves and young of year wolves (killed after August 1). In Michigan, at the preliminary late winter 2005 population level of 406 wolves this would be approximately 16 to 41 wolves. As depredation events will likely increase with an increase in wolf population, it is appropriate to utilize percentage of the population versus actual numbers of individuals.

ii. Estimate of incidental take

To summarize, we anticipate incidental take will occur in the following ways:

Lethal control of depredating wolves could result in incidental take by:

1) injury or death of lactating females wolves intended for release (not involved in chronic depredation);
2) injury or death of young of year taken prior to August 1;
3) indirect injury or death of pups if lactating females are captured (prior to July 1) and die or are not released in a timely fashion;
4) indirect injury or death of pups if lactating females are euthanized;

Implementation of the conservation measures listed under section 1.b.iii will minimize incidental take. The exact level of incidental take which may occur as a result of this project cannot be determined. The estimates provided below are based on past experiences combined with a prediction of future wolf depredation control needs. It is the best estimate of incidental take available and it is used for purposes of this Opinion.

As indicated above incidental take will result from capture and release of lactating females prior to July 1, capture and euthanization of lactating females prior to July 1, and capture and release of young of year prior to August 1. At a population of 360 wolves in Michigan, MDNR anticipates that up to 4 lactating female wolves could be captured prior to July 1 (Brian Roelle, MDNR, pers. comm. March 2005). This represents about 1% of the late winter 2003 – 2004 adult wolf population estimate of 360 individuals. Out of these 4 lactating females only 1 would likely need to be euthanized due to involvement with repeat depredation (Brian Roelle, MDNR, pers. comm. March 2005). This represents the best available estimate, based on past experiences and a prediction of potential wolf depredation control needs into the future.

Associated with the capture of lactating females is the indirect incidental take of young of year wolves. The average litter size in Michigan is 5 pups. If 3 lactating females were captured and released up to 15 pups could be incidentally taken (3 females x 5 pups each = 15). We anticipate that incidental take of these pups will likely be in the form of harm or injury, not necessarily death since these lactating females will be released within 24 hours. If one lactating female was captured and euthanized, 5 pups may be incidentally taken. Depending on the pup's stage of development, the incidental take may result in harm or death. An estimated total of 20 pups may be incidentally taken as a result of the proposed action.

Additionally, we anticipate that 4 young of year wolves may be incidentally captured or injured prior to August 1 annually. Incidental take associated with trapping young of year wolves would likely be in the form of harm and injury, but not death, as young would be released in 24 hours.

Incidental take is based on the annual MDNR population estimate, so the actual number of wolves involved will be adjusted upon release of each annual population estimate. Currently, the MDNR's preliminary 2004-2005 estimate of 406 wolves in Michigan is in effect and this equates to the incidental take of up to 4 wolves (406 x 0.01 = 4) in 2005. The allowable amount of incidental take of young of year wolves will also be calculated annually by determining what 1% of the current year wolf population is, multiplying that figure by 5, and then adding 4. Using the 2004-2005 estimate of 406 wolves, 4 lactating females (1% of 406) and up to 24 young of year (4 x 5 = 20 + 4) could be incidentally taken in 2005. We anticipate that this "take" would be in the form of harm or injury not necessarily death.

iii. Impact of take on Michigan's wolf population and Eastern timber wolf population

We anticipate a combined incidental and purposeful take of up to 11% of the wolf population annually in Michigan. Many studies have examined various levels of mortality and harvest and the impacts these mortality levels have on gray wolf populations:

- Mech (1970) suggests that over 50% of wolves older than 5-10 months must be killed to "control" the wolf population. Control in this instance means keeping the wolf population below the level to which it would rise without human caused mortality.
- Gasaway et al. 1983 recorded stable wolf populations after early winter harvests of 16 to 24%, and wolf population declines of 20 – 52% after harvests of 42 - 61%.
- Ballard et al. (1997) suggests that the wolf population remained stable at 53% winter mortality, which included some natural mortality.
- Fuller (1989b) observed stable or slight increases in the wolf population at an annual mortality rate of 29%.
- USDA WS (2002) in Minnesota has taken between 4 and 10% of the wolf population for many years as a result of implementing a depredation control program in Minnesota, and the Minnesota wolf population increased during that period. Further, while the WS control program occurred, and while other natural and human caused mortality occurred, this population provided most, if not all, of the source wolves for Wisconsin and Michigan.

There is considerable variation in what researchers have found to be sustainable levels of human caused wolf mortality. A given wolf population's productivity is likely the most important factor in determining the annual percentage of a wolf population that can be killed by humans without reducing the population (Fuller et al. 2003). The higher the population's productivity, the higher the level of mortality the population may sustain. Currently, the U.P. wolf population is highly productive. Over the past 5 years the wolf population in the U.P. increased at an average of +15% annually (Figure 2).

As discussed previously, compensatory mortality operates within the wolf population. Compensatory mortality suggests that if more wolves are killed for depredation control purposes, fewer wolves will die from starvation, interspecific strife, or other natural causes. So, the removal of 11% of the population annually may not greatly influence gray wolf numbers in Michigan. Even if a portion of the 11% take is additive mortality, this additional mortality might result in a slightly decreased rate of population growth, but is not likely to reduce the recovery or survival of the wolf in Michigan.

Furthermore, wolf mortality due to poaching may decrease with the implementation of the depredation abatement program. In the absence of an abatement program, it is more likely that wolves perceived to be causing depredation would be illegally killed. Illegal killing likely would be less selective and may remove more individuals than is necessary to curtail depredation activities. Hence, a reduction in poaching may off-set some of the mortality associated with the depredation control program.

The eastern timber wolf is currently found in Michigan, Wisconsin, and Minnesota. All three states have established wolf populations which no longer rely solely on wolf immigration from other states for their survival. As Wisconsin and Minnesota both have gray wolf populations which do not depend on Michigan's population for survival, and Michigan's population is unlikely to change as a result of this program, we expect the

proposed project will have no impact on Wisconsin or Minnesota wolf populations. Implementation of the Michigan wolf depredation abatement program, therefore, is not likely to appreciably reduce the survival and recovery of the eastern timber wolf.

We are not aware of any actions that are interdependent or interrelated to the proposed action being considered in this Opinion.

5. CUMULATIVE EFFECTS

Cumulative effects include the combined effects of any future, State, local, or private actions that are reasonably certain to occur within the action area covered in this Opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

It is anticipated that future State, Tribal, local or private actions combined with this proposed program will contribute to the conservation of the gray wolf in the U.P. of Michigan. The MDNR has prepared a Michigan Gray Wolf Management and Recovery Plan (1997) and developed guidelines for managing depredating wolves, which will provide for the continued existence and conservation of gray wolves in Michigan. These efforts should contribute to the long-term survival of the gray wolf in Michigan.

6. CONCLUSION

After reviewing the current status of the gray wolf, the environmental baseline for the action area, the effects of the action and the cumulative effects, it is the Service's biological opinion that the action as proposed is not likely to jeopardize the continued existence of the gray wolf and is not likely to destroy or adversely modify designated critical habitat. Critical habitat for this species has been designated at Isle Royale National Park in Michigan, however, this action does not affect that area and no destruction or adverse modification of that critical habitat is anticipated.

The following factors were of primary importance in our jeopardy assessment:

1) The wolf population in Michigan, Wisconsin, and Minnesota has surpassed recovery goals and the wolf population continues to increase in all three States.
2) The current rate of increase for the Michigan and Wisconsin wolf population is approximately 10% annually.
3) Mortality as a result of the proposed action would likely be partially compensatory. However, the proposed action could increase the mortality rate for the U.P. wolf population by up to 11%. Currently, the wolf population in the U.P. is increasing by 15% annually.
4) Based on literature and experiences from the Minnesota wolf depredation control program, purposeful and incidental take of up to 11% is unlikely to cause a decline in the wolf population. The current rate of increase in the Michigan population may slow as a result of the proposed action.

5) In 2003 and 2004, MDNR employed the same lethal methods discussed here to resolve selected wolf depredations. Those measures appear to have had no impact on the overall Michigan wolf population.
6) Implementation of the proposed action will likely decrease illegal take of wolves, so that component of the current mortality rate will be reduced and will partially off-set the additional mortality that will occur as a result of the proposed action.
7) We believe that the proposed action is unlikely to cause a decline in annual recruitment and will not appreciably reduce the survival or recovery of the wolf in Michigan.

We believe the proposed action will not appreciably reduce the likelihood of both the survival and recovery of the eastern timber wolf in the wild by reducing their reproduction, numbers, or distribution.

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.

In general, an incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize the impacts of the take and sets forth terms and conditions which must be complied with in order to implement the reasonable and prudent measures.

AMOUNT OR EXTENT OF TAKE

In this incidental take statement, we are evaluating the incidental take of gray wolf that may result from issuance of a Endangered Species Act section 10(a)(1)(A) sub-permit for implementation of a wolf depredation control program. The Service anticipates that incidental take of gray wolves will result from the proposed activities.

Lethal control of depredating wolves could result in incidental take by:

1) injury or death of lactating females wolves intended for release (not involved in chronic depredation);
2) injury or death of young of year prior to August 1;
3) indirect injury or death of pups if lactating females are captured and die or are not released in a timely fashion (prior to July 1);
4) indirect injury or death of pups if lactating females are euthanized;

Based on this information, this incidental take statement anticipates the taking of 1% of the adult wolf population in Michigan annually. Incidental take is based on the annual MDNR population estimate, so the actual number of wolves involved will be adjusted upon release of each annual population estimate. Currently, the MDNR's preliminary winter 2004-2005 estimate of 406 wolves in Michigan is in effect and this equates to the incidental take of up to 4 wolves for the 2005 wolf depredation management year. We also anticipate that the adult incidental take could cause indirect take (in the form of harm or injury) to young of year wolves. For each lactating female captured, we anticipate that 5 young of year could be impacted (5 is the average pack size in Michigan). So, for the 2005 depredation season the incidental take of 4 adult wolves could result in take of up to 20 young of year wolves. This take would not result in pup mortality in all cases, but would likely result in harm due to separation from the lactating female. Additionally, we anticipate that 4 young of year wolves may be incidentally captured or injured prior to August 1 annually.

EFFECT OF TAKE

In the accompanying Opinion, we determined that the proposed action is not likely to jeopardize the continued existence of the gray wolf. Therefore, we believe that the level of anticipated incidental take associated with the actions completed under the Wolf Damage Management Program is not likely to jeopardize the species.

REASONABLE AND PRUDENT MEASURES

The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize the incidental take of gray wolves during the proposed action:

1. The Service will ensure that incidental and intentional take levels do not exceed the levels anticipated in this biological opinion.

2. The Service will require the permittee and its agents to follow the most current wolf capturing protocols to ensure injury potential is minimized to the fullest extent possible.

3. The Service will require the permittee and its agents to ensure all wolf trappers are properly trained in proper chemical immobilization, trapping, and medical treatment.

4. Disposition and salvage of any gray wolf specimens shall be in compliance with the conditions specified in MDNR's procedure "Disposal of Wildlife Carcasses and Parts".

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, the Service must comply with the following terms and conditions which implement the reasonable and prudent measures described above. These terms and conditions will be non-discretionary.

Terms and Conditions associated with RPM # 1

1. The Service will require the permittee and its agents to cease trapping wolves and to contact the East Lansing Field Office or the U.P. Sub-Office if 1% of the late winter wolf population have been incidentally injured or killed.

2. The Service will require that all intentional and incidental wolf injuries or mortalities as a result of their lethal wolf control activities be reported to the Service's Region 3 Endangered Species Permits Office, the East Lansing Field Office, U.P. Sub-Office, and the Service's nearest Law Enforcement Office within 5 calendar days.

Terms and Conditions associated with RPM # 2

The Service will require the permittee and its agents to follow the Michigan DNR's wolf trapping and handling protocols or, if other procedures are proven to cause fewer injuries or mortalities, those procedures shall be utilized instead.

Terms and Conditions associated with RPM # 3

The Service will require that all trappers working for the Michigan DNR, or a designated State agent, be trained in and receive annual refresher courses in the trapping, chemical immobilization, and medical handling of wild animals (with emphasis on wolves) to minimize injury and death to wolves.

REQUIREMENTS FOR MONITORING AND REPORTING INCIDENTAL AND INTENTIONAL TAKE OF GRAY WOLVES

Federal agencies have a continuing duty to monitor the impacts of incidental take resulting from their activities [50 CFR 402.14(i)(3)]. In doing so, the Service will require a report from MDNR annually which describes the progress of the action and its impact on the gray wolf.

1) Supply the Service's East Lansing Field Office with a report due by January 31st of each year, that outlines the following:

   a) the date, location, age, sex, ear tag number and general description of the physical condition of each wolf captured;
   b) description of any medications administered to captured wolves;
   c) the disposition of any wolves injured, killed, salvaged, held and transported;
   d) the results of any blood analysis;
   e) the results of efforts to address and resolve depredation issues, including repeat depredations by wolves; and
   f) a summary that includes the following for each wolf incidental and intentional injury or mortality that occurred (incidental and intentional mortality should be addressed separately in the report):
      i) the date and time of the taking;
      ii) the name of any persons involved in the takings;
      iii) the circumstances surrounding any taking, including the stimulus for the taking, and/or human activities involved;
      iv) the behavioral responses of any gray wolves taken; and
      v) any actions taken to avoid or minimize taking.

In addition, copies of all reports and publications resulting from those data must be submitted to the Service's East Lansing Field Office as they become available.

We anticipate the incidental taking of 1% of the adult gray wolf population in the U.P. annually. Further, the Service believes that between 4 and 10% of Michigan's wolf population will be intentionally taken annually as a result of the Program activities. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, the level of incidental take is exceeded, such take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

REINITIATION NOTICE

This concludes formal consultation on the actions outlined in the request. 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 retained (or is authorized by law) and if: 1) the amount or extent of incidental or intentional take 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 not considered in this Opinion; or 4) a new species is listed or critical habitat designated that may be affected by the action. Specifically, if the level of purposeful take exceeds 10%, the Service should reinitiate consultation. An increase

level of take represents new information that indicates that the effects of the action may be affecting the wolf in an extent not considered in this biological opinion (50 CFR 402.16). 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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