Keweenaw Bay Indian Community Wolf Management Plan

V.8 December 3, 2012

Photo taken of Ma'iingan by remote camera during wolf surveys funded with BIA Endangered Species Funds

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1. INTRODUCTION

1.1 PURPOSE

The purpose of this plan is to provide a course of action that will ensure the long-term survival of a self-sustaining, wild gray wolf (*Canis lupus*) population in the 1842 ceded territory in the western Upper Peninsula of Michigan. It is written to encourage cooperation among agencies, communities, private and corporate landowners, special interest groups, and all Michigan residents. The Plan conforms to the provisions of the *Federal Eastern Timber Wolf Recovery Plan*, which includes Michigan (U.S. Fish and Wildlife Service 1992), Michigan *Gray Wolf Recovery and Management Plan* (Michigan Department of Natural Resources 1997), and the *Michigan Wolf Management Plan* (Michigan Department of Natural Resources 2008).

The U.S. Fish and Wildlife *Recovery Plan for the Eastern Timber Wolf* (1992) indicated that a population of at least 200 wolves would be large enough and genetically diverse enough to be self-sustaining. The 1997 *Michigan Wolf Recovery and Management Plan*, written by the MI Department of Natural Resources (MI DNR), adopted this as criterion for a recovered population in Michigan. When the winter population of wolves maintained a minimum level of 200 animals for 5 consecutive years, wolves could be removed from the State list of threatened and endangered species (MI DNR 2008).

Federal delisting took place on December 28, 2011 and management authority over wolves in Michigan, Wisconsin and Minnesota was returned to State and Tribal Departments of Natural Resources officially on January 27, 2012. The federal endangered species act required that the U.S. Fish and Wildlife Service, as a part of the delisting process, be able to ensure that the species is not likely to return to the list.

The implementation of this management plan demonstrates Keweenaw Bay Indian Community's (KBIC) intent, to the extent of its authority, to protect the wolf from adverse effects that could lead to a need for its relisting as a threatened or endangered species. Cooperating federal and state agencies have additional legal mandates and responsibilities for wolf management and protection.

1.2 CULTURAL SIGNIFICANCE

KBIC Tribal community members have always been spiritually connected to the wolf. According to the Anishinaabe (Ojibwa First People) creation story, original man was the last creature that the Creator sent to earth. Original Man was sent his brother, Ma'iingan (Ojibwa name of the wolf) as a companion. They traveled together to visit and name all plants, animals, and places on earth. As they finished their journey, they were instructed by the Creator to walk their separate paths but that they would forever be linked to one another. They were to experience similar social pressure of being feared,

respected and misunderstood. What happens to the Anishinaabe will happen to Ma'iingan by the people that would join them on earth (Benton-Banai 2010).

As prophesized in this sacred history with the wolf, similarities between the Anishinaabe and the wolf have been frequently noted by the Ojibwa people. Historically both shared similar social organization with extended family groups that helped to raise young, larger tribes lived within territorial boundaries from other tribes, and both are significant predators of similar prey and sometimes share common hunting techniques (David 1995, Lopez 1978). Ojibwa community members recognize that wolves share many of the qualities that Anishinaabe themselves needed to have in order to survive hardships throughout their history such as a greater understanding of the natural world, stamina, skill and a desire to work in cooperation with one another (David 1995).

Wildlife biologist with the Great Lakes Indian Fish and Wildlife Commission (GLIFWC), Peter David (1995) highlights the fact that Tribal Treaty Rights in Midwestern states were federally recognized and preserved at the same time that wolf populations began to rebound. The bond between Ojibwa tribal members and the wolf is timeless and continues to mirror each other's life experiences. Similar to rebounding wolf populations, the re-enforcement of Tribal Treaty Rights is often viewed by non-tribal citizens as a threat to sustainable wildlife populations. Continued support of tribal members for maintaining a natural level of wolves in the local environment remains essential to the long-term survival of wolves in Michigan.

1.3 LEGAL STATUS AND HUNTING SEASONS

Between 1974 and 2009 the wolf was listed as endangered under Michigan Law (Part 365, Endangered Species Protection, of the Natural Resource and Environmental Protection Act, 1994 PA 451) and until 2012 under the federal Endangered Species Act (Public Law 93-205) (ESA).

According to the U.S. Fish and Wildlife Service the western Great Lakes distinct population segment of gray wolf is recovered having maintained over 200 animals for over five consecutive years in each state (U.S. Fish and Wildlife Service 2011). Current population estimates from 2011 State generated winter survey reports are 2,921 in Minnesota, 782 in Wisconsin, and 687 in Michigan. The gray wolf was removed from the Federal Endangered Species list on December 28, 2011 and management transferred to the States on January 27, 2012 for Minnesota, Wisconsin and Michigan. Upon delisting from endangered status, two laws went into effect in Michigan, Public Act 290 and Public Act 318 that allow private individuals to eliminate problem wolves. Lethal control may be used on private lands anywhere in the State by the landowner, lessee or occupant without a permit when a wolf or wolves are in the act of killing or wounding livestock (MI Public Act 290) or domestic dog (MI Public Act 318).

Soon after the delisting, Minnesota and Wisconsin proposed hunting seasons for wolf management purposes. Today wolves in Michigan are "non-game protected species" only allowed to be killed under Public Acts designed to reduce wolf conflicts. However, with introductions of House Bill 5834

(August 2012) and Senate Bill 1350 (October 2012), regulated sport hunting is now being sought in Michigan.

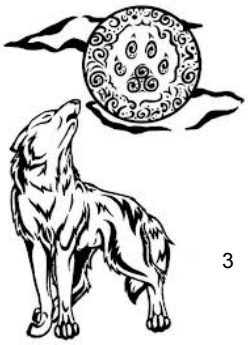
Wisconsin originally allowed hunting at night with use of dogs to track or trail wolves after firearm deer season ends. The Vice President of the United Sportsmen of Wisconsin supported the measure, stating that by hunting with dogs, wolves would eventually grow afraid of dogs. The use of dogs for hunting wolves in Wisconsin has since been challenged by a variety of special interest groups and will no longer be allowed for the 2012 hunting and trapping season; it is uncertain whether or not use of dogs will be allowed in future seasons. See Table1 for more comparisons between state wolf hunt regulations.

Table 1. Proposed wolf hunt seasons and regulations by state.

	Hunting Season Date(s)	**Trapping Season Date(s)**	**No. of Wolves allowed to be harvested**	**Fees**
Minnesota	November 3, 2012 to January 31, 2012; will close earlier if harvest targets are reached – calls and meat bait allowed	November 24, 2012 to January 31, 2012; will close earlier if harvest targets are reached	Up to 400; using a lottery system of license applications	MN State Residents $26 plus $4 lottery fee; $250 out of state license
Wisconsin	Oct. 15, 2012 to February 28, 2013; scent bait and calls allowed; night hunting allowed starting Nov. 26	Oct. 15, 2012 to February, 28 2013	Up to 201; using a lottery system of license applications (85 allotted to Tribes; 116 State)	WI State Residents $100; Out of State License $500
Michigan	H.B. 5834 introduced on August 15, 2012 Filed on September 11, 2012	NA	Number undetermined; using a lottery system of license applications	Proposed fees – Residents $100; Out of State License $500 Plus $4 application fee

1.4 KBIC STATUS AGAINST WOLF HUNTING

The wolf remains protected within the KBIC Tribal Code under Endangered Species and Protected Animals Tribal Code 10.531. Protected non-game status from the State of Michigan is still in effect but with proposed legislation HB 5834 and SB 1350, the status of the wolf may soon be that of a game species and thus open for sport hunting and possibly trapping. A Resolution (KB-



1902-2012) was passed by KBIC Tribal Council on November 1, 2012 (Appendix 1) to oppose House Bill 5834 and Senate Bill 1350 along with any changes that allows sport hunting and/or trapping of wolves in Michigan to preserve the ecological balance of predator-prey and protect the sanctity of Ma'iingan for the Anishinaabe.

In the event that legislation is approved for a wolf hunt, KBIC will designate no sport hunting on Tribal lands in L'Anse, Baraga, Marquette and Ontonagon locations. KBIC will not provide any Tribal wolf hunting permits to community members. These measures will help to protect wolves and maintain a strong culturally based stance against the killing of wolves. KBIC will also want to participate and maintain close communication with those involved in monitoring of wolves. As funding becomes available, we intend to increase monitoring of wolves on and near the Reservation preferably with tracking of radio-collared wolves to keep tabs on any changing status of wolf packs.

2. WOLF BIOLOGY AND ECOLOGY

2.1 DESCRIPTION

The gray wolf (*Canis lupus*), known as Ma'iingan in Ojibwa, is Michigan's largest member of the Canidae, or dog family. Other native Michigan canids are the coyote (*Canis latrans*), red fox (*Vulpes vulpes*), and gray fox (*Urocyon cinereoargenteus*). Michigan's gray wolf is also known as the eastern timber wolf. Previously Michigan's wolves were included with the eastern timber wolf subspecies *Canis lupus lycaon* (Young and Goldman 1944). The latest genetic studies on wolves in the Great Lakes Region have shown that they have hybrid ancestry with gray wolves (*C. lupus*) and the smaller often reddish colored subspecies of eastern wolves (*Canis lupus lycaon*) (Mech and Federoff 2002). Hybridization with coyotes (*C. latrans*) has also been detected although is rare (Fain et al. 2010, Wheeldon et al. 2010).

Wolves are large in comparison to coyotes or most domestic dogs; a wolf's body dimensions typically exceed those of a fully grown German shepherd or Alaskan malamute. Male wolves are slightly larger than females (Beyer et al. 2006). Adult gray wolves range in weight from 50-130 pounds (23-59 kg) and average about 75 pounds (34 kg). Adult gray wolves are about six feet (1.8 m) long from nose to the end of the tail. Adults range between 28-36 inches (71-91 cm) tall at the shoulder (Long 1996). The feet of wolves are large, with tracks measuring 2 7/8 - 5 inches (7.3-12.7 cm) wide and 3 ¾ - 5 ¾ inches (9.5 -14.6 cm) long (Elbroch 2003). Wolves often have longer tufted hair around the face and draped upon their shoulders in a mane-like fashion; it makes their faces appear wide especially when compared to a coyote (Long 1996).

Wolves are physically adapted as a large predator in cold and temperate climates. The dense under fur in their winter coats is protected by longer, water-resistant guard hair that may grow up five inches (12.7 cm) long over their shoulder area (Whitt 2003). Wolves' long legs and sturdy paws make them well adapted to travel. The nearly constant urge to travel appears to be for seeking prey. Wolves travel as part of regular hunting activity and during the summer months to shift pups from one rendezvous site to another. Wolves tend to travel more in the evening and

night during warm months but are active throughout the day during the winter (Mech 2007). In winter about thirty percent of their time is spent travelling between one kill to another, the remainder of the time is spent actively hunting and resting (Mech 2007).

2.2 SOCIAL STRUCTURE AND BEHAVIOR

Wolves are social animals and live in packs. The pack (two or more wolves traveling together, with evidence of breeding behavior) is the functional unit of wolf society. It is typically comprised of two lead or "alpha" animals, the current year's pups, siblings from previous litters, and occasionally other wolves that may or may not be related to the alpha pair (Mech 1966, Beyer et al. 2006). The alpha male and female normally are the only animals that breed; the alpha pair discourages other pack members from breeding (Long 1996). The alpha animals are thought to lead many decisions for the pack such as when and where to hunt and when it is time to move, rest, or find seclusion and selecting the location of den sites, however, caring for pups appears to be communal (Mech 2007). Pack size can range from two to 13 wolves but usually ranges from four to six (Mech and Frenzel 1971). During the 2010-2011 winter survey in Michigan, the MI DNR estimated there were 131 packs with an average pack size of 5.2 (Brian Roell, MI DNR personal communication).

In addition to sight, wolves communicate extensively through the senses of smell and hearing. Scent marking is used to relay information among pack members and between packs. Wolves place scent marks on objects in their territories and may be able to discriminate individual wolves by scent (Mech1981). Wolves howl together as a pack to separated pack members and to other packs. Depending on environmental conditions, wolves apparently can hear other wolves howling four to six miles (6-10 km) away (Asa and Mech 1995). Wolves howl in long, low tones without yapping. Howling between packs and scent marking along territory edges are primary means of maintaining space between wild wolf populations.

As a result of spacing mechanisms, packs live in territories that are actively marked and defended. Territory size depends upon the density of wolves and on the density and distribution of prey. Sizes of individual wolf pack territories reported from the Great Lakes area ranged from 30 to 260 square miles (80-670 km^2) (Mech 2007, Mech and Hertel 1983) but generally range from 42 to 100 square miles (109-259 km^2) in Wisconsin and Minnesota (Wydeven et al. 1995, Fuller 1995). Based on telemetry locations from 30 wolves in Michigan's Western Upper Peninsula for bio-year 2008, (April 15, 2007 – April 14, 2008), territory size had a mean of 173.2 km^2 (66.9 mi^2) (Roell et al. 2010). Within their territory, wolves often travel up to 15 miles per day in search of prey (Mech 2007). On Isle Royale a pack travelled on average 31 miles per day during winter (Mech 1966).

Some young wolves leave the pack and move into new areas when they begin to mature at one to four years of age. New packs form when subordinate pack members disperse from the pack territory, find an animal of the opposite sex, claim and defend a territory, and eventually mate and produce offspring themselves. Wolves are capable of dispersing several hundred miles from home territories. One wolf moved over 500 miles (800 km) from Minnesota to Saskatchewan between January and October 1981 (Fritts 1983). A male wolf captured as a pup near Ely, Minnesota in August 1991 was recaptured in Iron County, Michigan, in June 1994 (Mech et al. 1995). In 2001 a wolf captured in Gogebic County was killed in Missouri, a straight-line movement of 470 miles (Brian Roell, MI DNR personal communication).

Wolves occur in rather low densities wherever they are found. One wolf per 10 square miles (1 wolf/26 km^2) is considered a high wolf density in the United States and is the current density estimate for Minnesota which has a total estimated 3,000 wolves statewide. In the Upper Peninsula of Michigan, wolves are found at a much lower density of 1 wolf per 20 square miles (1 wolf/52 km^2) (Brian Roell, MI DNR personal communication).

2.3 REPRODUCTION AND MORTALITY

Mating most often takes place in February, den sites are selected in March, and pups are usually born in mid- to late April (Peterson 1977, Fuller 1989, Beyer et al. 2006). Litter sizes can range from one to nine pups, but usually number four to six (Mech 2007). Wolves are among the best examples in the animal world of population self-regulation. Packs in the Great Lakes region limit production of pups by the predominately Alpha female allowing only the alpha pair to breed by aggressively preventing other females from being bred (Mech 2007). Pups are weaned at about nine weeks and moved to a rendezvous site where pups will linger until they are large enough to travel with the pack. As the pups grow, they are fed partially digested food brought to the den or rendezvous site and regurgitated from the stomachs of returning adults. All pack members feed and care for the pups. This activity strengthens the social bonds of dependence among pack members (Witt 2003).

Adults may live past 11 years, although most die much younger (Mech 1988, Beyer et al. 2006). Wolves face many challenges that can cause up to 60% mortality from birth to six months, up to 50% morality from six months to one year, and approximately 20% mortality rates between one year and two (Pimlott et al. 1969, Mech 2007, Mech and Frenzel 1971, Van Ballenberghe et al. 1975, Fritts and Mech 1981). Specific causes for death vary and include parasites, disease, social stress/aggression, malnutrition, starvation, injury, human persecution, and hunting/trapping (Mech 2007).

In Michigan, annual mortality estimates from 1999 to 2005 varied between 15% and 46%

depending on the method of analysis (Huntzinger et al. 2005). From 1999 to 2012, illegal killing accounted for 41% of mortality for radio collared wolves. Adding collared wolf mortality caused by vehicle strikes, depredation control, and other human caused trauma, 65% of total collared wolf mortality was directly related to human-induced causes (Brian Roell, MI DNR personal communication).

2.4 WOLF FOOD HABITS AND ECOLOGICAL FUNCTION

White-tailed deer particularly in winter, beaver (*Castor canadensis*), and small mammals are the primary prey species for gray wolves in Michigan (Huntzinger et al. 2004). Previous studies in the Upper Peninsula found that wolves ate, in addition to deer, shrews (*Soricidae* family), snowshoe hares (*Lepus americanus*), red squirrels (*Tamiasciurus hudsonicus*), mice (*Peromyscus spp.*), ruffed grouse (*Bonasa umbellus*), crayfish (*Cambaridae* family), and grass (Stebler 1944, 1951). Scat analyses from wolves of Wisconsin revealed that deer comprised 55% of the diet, beaver 16%, snowshoe hare 10%, and other small mammals and miscellaneous items 20% (Mandermack 1983). Beaver provided as much as 30% of a Wisconsin wolf's spring diet (Mandermack 1983).

The wolf is a top predator in the ecological food chain. The primary prey for wolves locally is white-tailed deer. Vucetich et al. 2012 estimated daily *per wolf consumption* and *per pack kill rates* for five different packs within a three county area that includes the KBIC L'Anse Reservation during four winters, 2000-2004. They found that of 701 carcasses observed to be fed on by wolves, 91% (638 of 701) were white-tailed deer, 4% snow shoe hare, 3% were grouse, and 2% were beaver. Of the 638 white-tailed deer fed on by wolves, 77% appeared to have been killed by the wolves, 10% scavenged from bobcat or coyote kills, 4% had starved, 7% had been killed by hunters, 2% had been killed by vehicles. The average kill rate from this study of all five packs was 0.68 kills/pack/day or 17 lbs (7.7 kg)/wolf/day. They also found that kill rates in late winter (March) were between 40% to 12 times greater than early winter kill rates.

Using the 77% kill rate determined by Vucetich et al. (2012) and the estimated number of white-tailed deer in the Upper Peninsula, it appears that wolves kill approximately 4.8-8.3% of the total 270,000 deer (MI Department of Natural Resources 2012). Human caused mortality to deer including hunting, auto collisions and wounding loss kills approximately 24% of the deer herd on an annual basis. Winter die offs can cause anywhere from 13-39% mortality depending on harshness of winter conditions (MI Department of Natural Resources 2012).

The affects of wolf predation on the overall deer population is dependent on a variety of factors

that complicate a generalized assessment that wolves always have a negative impact on deer populations. The ratio of wolf to deer is one factor to consider. Where there is high deer density and low wolf density, the effect on the deer population will be lower than if densities were reversed. Decreased fitness of the deer population caused by situations of disease or high stress during severely cold winters, over-browsed food supplies causing malnutrition, or shortened/poor growing seasons can make localized populations of deer more susceptible to predation by wolves.

It is a delicate balance of predator-prey further complicated by snow conditions and human induced habitat alteration particularly through logging in our local area of the Upper Peninsula. Generally speaking, logging mostly benefits the white-tailed deer by providing early stages of forest growth. In winter, a very critical season for Michigan's deer, logging provides downed tops of trees for food and cover. These winter logging areas often create "deer yards" or areas where deer concentrate in large numbers for extended periods of time to feed and avoid harsh wind chill conditions. These deer yards provide areas with high deer densities that wolves have been known to take advantage of and prey upon large numbers of deer (personal observation by Pamela Nankervis, KBIC Wildlife Biologist).

Ultimately, decades of studies have shown that top predators such as wolves typically keep deer numbers in check so that over-browsing and disease are less problematic for deer over the long term. Most deer killed by wolves are less fit by being very young, old, sickly, starved or injured (Mech 2007). Over browsed habitat by high densities of deer not only causes nutritional stress for deer it also contributes to loss of plant diversity (Rooney et al. 2004). The loss of plants may indirectly affect other species such as insects, birds and small mammals (Rooney and Waller 2003, McShea 2005). By providing carcasses for scavenging and keeping deer numbers at a level where browsing pressure is low, wolves may indirectly enhance biodiversity in some regionalized areas depending on the scale and variety of other factors such as habitat alteration, roads, and hunting pressure (Rooney and Anderson 1996).

A common misconception, often based on domestic animal predation by wolves, is that wolves kill without eating the prey. It may appear this way if wild deer killed by wolves are discovered partially eaten. However, wolves typically gorge themselves and then rest for 6-10 hours only to return later to finish feeding (Mech 2007). Domestic animals killed by wolves are often moved or otherwise disturbed which dissuades wolves from returning to finish the carcass (Pullianen 1965).

Ultimately, wolves play an important ecological role in maintaining the health of a deer population. Their predatory role offers indirect protection of adequate deer habitat from over-

browsing thus potentially encouraging greater biodiversity within the environment at some localized level.

3. WOLVES IN MICHIGAN

3.1 HISTORY

The gray wolf has lived in the Great Lakes Region since the melting of the last glacier (Holman 1975). Wolf history in Michigan is similar to that observed in the rest of the continental United States. Wolves occupied all of what is now Michigan at the time of European settlement. Settlers brought their wolf prejudices with them including werewolf mythology, fairy tales, and views that wolves were incompatible with civilization (Lopez 1978, Linnell et al. 2002).

Despite this persistent perception, wolf attacks on people are extremely rare in North America. A lengthy report published by the Norwegian Institute for Nature Research (Linnell et al. 2002), documents that there were between twenty and thirty total wolf attacks of humans in North America in the past 100 years of the 20th century. Of these, three were fatal and due to rabies infected wolves. In comparison, they noted that at least 71 fatalities were caused by grizzly bears in the past 100 years in North America. Domestic dogs on the other hand, attack and kill on average 16-18 people in the United States every year (Langley and Morrow 1997, Avis 1999).

The United States Congress passed a wolf bounty in 1817 in what is now Michigan. A wolf bounty was passed by the First Michigan Legislature in 1838. A wolf bounty continued until the period between 1922 and 1935, when a state trapping system was in effect. The bounty was reinstated in 1935 and repealed in 1960, only after wolves were nearly eliminated from the state. Michigan wolves were given complete legal protection in 1965 (Beyer et al. 2006).

Wolves were nearly gone from the southern Lower Peninsula in the 1800's and were absent from the entire Lower Peninsula by about 1935 (Stebler 1944). In 1956, the population was estimated at 100 individuals in seven major areas in the Upper Peninsula (Arnold and Schofield 1956). By 1973 the entire Michigan wolf population was estimated at six animals in the Upper Peninsula (Hendrickson et al. 1975). It may be that a few animals survived in remote areas of the Upper Peninsula and that wolves were never completely gone from the state (Beyer et al. 2006).

One wolf introduction was attempted in Michigan in 1974. Four wolves from a Minnesota pack were released in Marquette County. All four animals died as a result of direct human activities between July and November 1974. These wolves did not reproduce and did not contribute to the current wolf population (Weise et al. 1975, Beyer et al. 2006).

Minnesota wolves began emigrating southward from their northern range in about 1975. This began the

re-occupation of their former range in Wisconsin when one pack originating in Minnesota began to occupy Douglas County in Wisconsin (Thiel 1993). Since 1975, the wolf population in Wisconsin has grown to approximately 782 animals (204 packs) occupying suitable habitat mostly in the northern counties. Wolves occupying the west and central Upper Peninsula are likely descendants of immigrants from Wisconsin (Thiel 1988) and Minnesota (Mech et al. 1995). Wolves found in the eastern Upper Peninsula were likely a result of wolves crossing the ice from Ontario at Whitefish Bay, along the St. Mary's River, and near northern Lake Huron islands (Jensen et al. 1986) as well as dispersed individuals from the western Upper Peninsula.

3.2 **CURRENT NUMBERS IN MICHIGAN**

Wolf numbers in the Midwest are considered recovered with current population estimates from 2011 State generated winter survey reports at 2,921 in Minnesota, 782 in Wisconsin, and 687 in Michigan - a steady increase from only three wolves detected in 1989 (Figure 1) (Brian Roell, MI DNR personal communication).

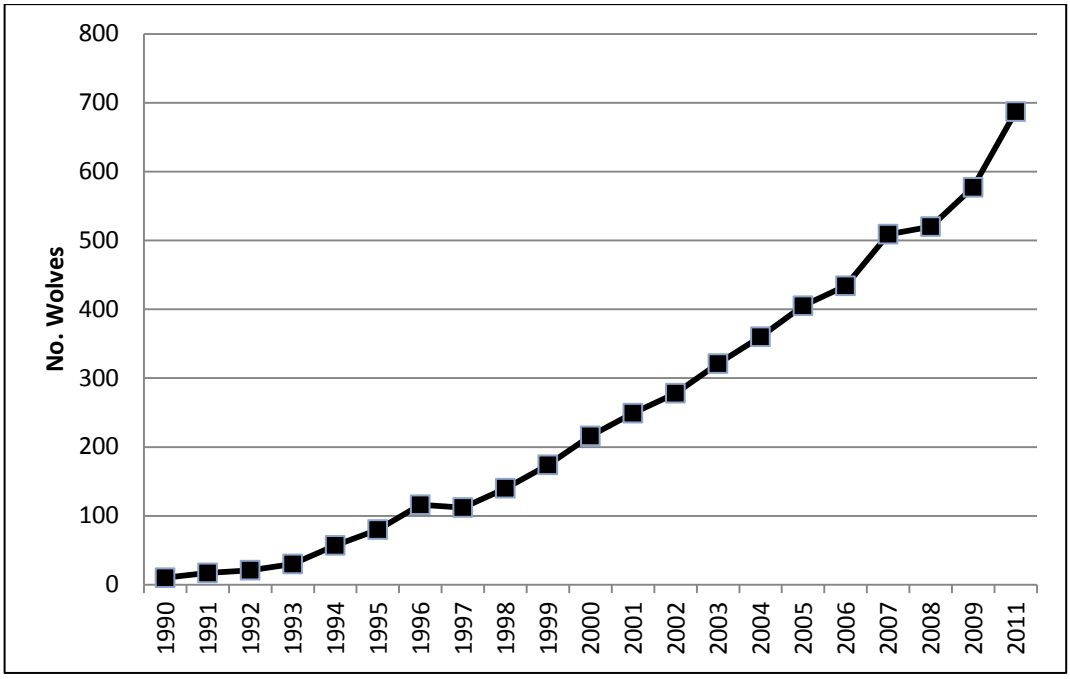


Figure 1. Number of wolves detected from annual winter track counts by MI Department of Natural Resources. The 2011 information was obtained through personal communication with Brian Roell, MI DNR.

3.3 WOLF MONITORING ON KBIC RESERVATION

KBIC conducted wolf tracking and monitoring from 2007 through the present. Monitoring includes a total of 73 sites monitored with remote cameras (twelve active monitoring sites in 2012), four track routes patrolled during four winters (2008 through 2011), as well as opportunistic recording of wolf track/sign during routine field outings.

Thirty-two detections of wolf were recorded within the L'Anse Reservation boundaries during a wetland inventory of 28 wetland study sites on the L'Anse Reservation between 2007 and 2009 funded through the U.S. Fish and Wildlife Service. Remote cameras recorded 9 detections in 4 of 28 (0.14 detection rate) wetland study locations, and 23 detections of track/sign such as scat, tracks and sightings from 13 of 28 (0.46 detection rate) wetland study areas. Updated camera equipment was purchased through BIA and ANA grants for inventory on upland and riparian areas where KBIC monitored 50 total study sites. There were a total of 36 wolf detections using remote cameras from 15 of the 50 upland/riparian study site locations (0.30 detection rate). Track and sign were also detected from 17 of the 50 study locations (0.34 detection rate).

From MI DNR data, it is possible that wolves from five different packs (Arnheim, Limestone, Baraga Plains, Alberta and Mount Curwood) may use the L'Anse Reservation; however, none reside wholly on Tribal ownership (Figure 2). From the monitoring data, KBIC NRD believes at least three separate wolf packs regularly use the L'Anse Reservation. In winter of 2011, three separate females in estrus were detected in three different areas on the L'Anse Reservation. The pattern of use detected through track and sign suggests that the packs, although overlapping in their ranges, appear to utilize three separate areas more exclusively. This information may be additionally confirmed with the radio collaring of more wolves on the L'Anse Reservation through cooperation with the MI DNR.

Figure 2. Map showing wolf pack locations nearest the L'Anse Reservation according to winter wolf track and aerial monitoring of radio-collared wolves by the MI Department of Natural Resources in 2011. (Personal communication, Brian Roell)

4. KBIC COMMUNITY INPUT ON WOLF MANAGEMENT

KBIC Natural Resource Department staff attended KBIC Natural Resource Committee meetings and Cultural Committee meetings to discuss wolf management options in 2009. A semi-annual hunter survey was administered to registered Tribal hunters in 2009 that included newly added wolf specific questions from previous surveys (KBIC 2010).

We asked respondents to choose one of four management options for wolves:

- KBIC should promote complete protection and not allow our Tribal members to take wolves for any reason on the Reservation.
- KBIC should promote protection, but allow the taking of wolves in the event that there is some negative impact to humans (i.e. livestock damage, pet killed, etc.).
- KBIC should promote limited harvest opportunity for Tribal members and work to provide control measures for wolf populations, if needed (i.e. limited hunting/trapping season).
- Other: (Please explain)

A total 208 Tribal members (95%) responded to this wolf management question. Some Tribal respondents felt that wolves warrant complete protection on the reservation (11%; n=23), limited taking of only negative impact animals was supported by 39% (n=82) respondents, and management of the population through limited hunting/trapping was supported by 47% (n=98), while 2% (n=5) felt that wolves should be removed entirely from the reservation.

Many respondents made wolf specific comments and approximately 57% of the wolf related comments were interpreted as being negative towards wolves. Negative comments ranged from concern over the predation on deer, to human safety, and increased encounters with wolves near urban areas. Roughly 31% of the wolf related comments were interpreted as being positive towards wolves. The remaining 12% of wolf related comments were interpreted as being neutral. Neutral comments regarded wolf sighting information such as numbers and locations.

Additional input will be solicited in a Tribal Community natural resource survey scheduled for 2013. Opinions and input regarding this plan will also be considered and incorporated in future updates to the KBIC Tribal Wolf Management Plan.

5. WOLF MANAGEMENT

5.1 Wolf Management Mission

The mission for KBIC is to maintain a healthy, self-sustaining population of wolves on and near Reservation boundaries thus preserving the cultural and ecological benefits for the next seven generations and beyond.

5.2 Management *Goals* set to achieve this mission are to:

1) ***Establish and maintain active partnerships to ensure the most effective management and monitoring protocols possible***
2) ***Protect and maintain suitable wolf habitat***
3) ***Maintain active levels of inventory and population monitoring***
4) ***Provide public education regarding wolf ecology and behavior***
5) ***Minimize wolf-related conflicts with Tribal Members and the general public***

5.3 Activities to achieve *goals*

1) Establish and maintain active partnerships to ensure effective management and monitoring

Cooperating with other management partners (i.e. State and Federal agencies, Tribes, and Private Organizations) ensures that education, monitoring and management efforts are most widely distributed and effective. Wolf management occurs throughout North America at various levels where wolf populations are just beginning to re-establish (i.e. Washington State) to places where wolves are well established (i.e. Minnesota) with varying degrees of effectiveness and public approval. Utilizing partner contacts for information on methodology, educational resources and hands-on field assistance when necessary is the most affordable and effective way to approach wolf management.

Collaboration allows for sharing of information and resources that can greatly improve the effectiveness of a management strategy. An intensive collaborative monitoring program will be essential if/when the State allows a hunting season for wolves to ensure that the population does not decrease to numbers warranting the relisting to endangered species status.

Activities KBIC will pursue towards active partnerships are to:

a) **Support communication and exchange of information with management partners**
b) **Collaborate on wolf related public education, monitoring of wolves, and habitat conservation on a regional basis with management partners**
c) **Seek training for KBIC Conservation and Natural Resource Department staff in wolf conflict investigation and response**
d) **Cooperate with management partners to respond to wolf conflicts on and near the Reservation.**

2) Protect and maintain suitable wolf habitat

Wolves occupy a broad range of habitat types. Suitability of an area to support wolves is related to available prey (mainly white-tailed deer) and avoidance of human caused mortality (Fuller 1995). **Therefore, through habitat management activities KBIC will:**

a) **Ensure the survival of the main prey species (white-tailed deer) by protecting conifer –dominated wintering areas for white-tailed deer.**
b) **Maintain areas of undisturbed habitat such as forested corridors that lead in and out of the Reservation to allow for dispersal of wolves where they can avoid human contact.**
c) **Minimize disturbance at known active wolf den sites. Detection of den areas is rare, but if/when a known wolf den site is identified, potential disturbance caused by off-road vehicles or logging will be postponed until dens are no longer in use.**

3) Maintain active levels of inventory and population monitoring

Monitoring the wolf population ensures that changes in the number of wolves will not go unnoticed allowing management initiatives to be more pro-active. Monitoring presence on the L'Anse Reservation has been taking place since 2007 and will continue indefinitely as funding allows. **KBIC will continue to monitor using one or more of the following methods:**

- **Track/Sign survey: purposes of track surveys are to determine the number, distribution, breeding status and territories of wolves.**
- **Remote camera survey: purposes of camera surveys are (1) detect wolf presence and distribution, (2) detect wolf pups,**
- **Wolf howl surveys: purposes of howling surveys are (1) inferring pup presence, and an estimated minimum number of wolves within a pack, (2) searching for unmarked packs in areas where consistent reports of wolves have occurred, and (3) locating rendezvous areas.**
- **Radio telemetry survey: purposes of radio telemetry are to determine boundaries of wolf pack territories and habitat use, as well as check the health of captured individuals.**
- **Seek partnerships and funding for larger projects that include but are not limited to exploring interactions between wolves and people, exploring the dynamics of predator-prey relationships, and monitoring wolf health.**

4) Provide public education regarding wolf ecology and behavior

KBIC seeks to educate Tribal Community members and the general public about wolves including their ecology, their history and cultural significance, and to dispel myths. Coordinating an education program in cooperation with other management partners can help to identify target audiences, identify information needs and help identify the most effective approaches to presenting non-biased facts about wolves that provide both cultural and ecological perspectives.

In order to increase awareness and understanding about wolves for Tribal members and the public**, KBIC will:**

1) **Develop and distribute materials (i.e. pamphlets, posters etc.) that address the needs and interests of target audiences.**
2) **Present wolf specific informational posters and presentations at a multitude of public venues (i.e. KBIC Kids Fishing Derby, KBIC Powwow, KBIC Environmental Fair etc.)**
3) **When possible, invite public and media to participate in wolf-related projects and attend presentations.**
4) **Provide wolf specific information on the KBIC Natural Resource Department website including links to partner wolf management organizations for additional facts and resources.**

5) Minimize wolf-related conflicts with Tribal Members and the general public

Wolf related conflicts range in severity from perceived conflict (i.e. visual presence of a wolf) to actual aggressive or predatory behavior (i.e. witnessed predation of domestic animals on private property). Wolves are not likely to attack any person who does not deliberately incite aggression (i.e. by provoking or feeding). Education efforts that increase awareness and understanding will be the number one tool used to minimize wolf-human conflict. However, where actual threats are identified, the severity, immediacy and frequency of safety threats will guide management responses as similarly stated in the State of Michigan Wolf Plan. **The following activities will be pursued in the event of wolf-related conflict:**

a) **Non-lethal methods will be utilized where immediacy of the threat does not warrant more aggressive action. Non-lethal methods may include eliminating wolf attractants (i.e. carcasses, domestic pet food, supplemental feeding of deer, unsupervised pets etc.), scare devices (i.e. noise makers, lights, flagging), aversive devices (i.e. rubber bullets).**

b) **If non-lethal practices prove to be ineffective, are not expected to be effective, or are infeasible, lethal control may be necessary. KBIC will coordinate with and monitor other wolf management partners that perform lethal control methods as necessary to eliminate demonstrated threats to human safety.**

Because of the sacred cultural standing of Ma'iingan for the Anishinaabe, Tribal entities such as the KBIC Conservation Department and/or the Natural Resources Department will oversee any lethal control activities on the Reservation if warranted. KBIC will not actually perform lethal control instead we will coordinate with a partner agency such as the MI DNR or U.S. Fish and Wildlife Service to actually accomplish the lethal pursuit.

6. PLAN REVIEW AND MODIFICATION

Over time and especially with the recent proposal to hunt wolves in Michigan, KBIC will utilize this plan within an "adaptive management" context. We intend to review and update the KBIC Wolf Management Plan every five years in response to changes in the wolf population, changes in attitudes, and as new information become available. If conditions that affect the wolf population in and around the Reservation change rapidly, review and modification of this management plan may be completed more often.

Wolf specific questions will continue to be included in the semi-annual KBIC Hunter Survey. A supplemental KBIC wolf summary will be included in the final hunter survey report that is provided to the Community to help track compliance and progress towards the implementation of this KBIC Wolf Management Plan.

7. CONCLUSION

In conclusion, this document provides a foundation for future wolf related projects and initiatives for Keweenaw Bay Indian Community. It provides the basic framework for future monitoring, research and management of the local wolves, as well as providing a commitment to future partnerships with other management agencies at the Federal, State, Tribal and Private levels. KBIC will use science-based decisions in management of wolves on and around the Reservation. However, because of the special relationship that the Tribe has with wolves, it is imperative that science-based solutions do not conflict with cultural values. KBIC stands ready to ensure that the gray wolf (Ma'iingan) will exist here in the Upper Peninsula of Michigan for the next seven generations and beyond.

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RECOMMENDED INTERNET RESOURCES

- http://www.dnr.state.mn.us/mammals/wolves/mgmt.html

Video of Dr. David Mech as he answers wolf hunt questions for MN legislators

- http://dnr.wi.gov/files/PDF/pubs/wm/WM0538.pdf

2012 Regulations for wolf hunting in Wisconsin

- http://files.dnr.state.mn.us/recreation/hunting/wolf/wolf_regs.pdf

2012 Regulations for wolf hunting in Minnesota

- http://www.legislature.mi.gov/(S(12ihaivam0magrbo0brgwcb4))/mileg.aspx?page=BillStatus&objectname=2012-HB-5834

HB5834 House Bill introduced to propose a wolf hunt in Michigan; includes bill status updates

- http://www.legislature.mi.gov/(S(fjzkkrua3bvv0035a4zydr30))/mileg.aspx?page=GetObject&objectname=2012-SB-1350

SB1350 Senate Bill introduced to propose a sport hunt of wolves in MI; includes bill status updates

NOTE: As of November 30, 2012 Wisconsin hunters harvested 101 of the 116 wolves towards the State quota.

Written by: Pamela Nankervis, KBIC Wildlife Biologist
Version 6 Revised November 30, 2012
First Draft Approved by KBIC Tribal Council on November 1, 2012

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ELIZABETH "CHIZ" MATTHEWS

RESOLUTION
KB-1902-2012

WHEREAS: The Keweenaw Bay Indian Community is a federally recognized Indian Tribe exercising inherent sovereign authority over its members and its territories, and the Keweenaw Bay Indian Community has a reservation created pursuant to the 1854 Treaty with the Chippewa, 10 Stat. 1109; and

WHEREAS: The Keweenaw Bay Indian Community is organized pursuant to the provisions of the Indian Reorganization Act of 1934, (48 Stat. 984 U.S.C. §476) with a Constitution and Bylaws duly approved by the Secretary of the United States Department of the Interior on December 17, 1936; and

WHEREAS: Article VI, Section 1 (a) of the Constitution imposes a duty on the Tribal Council to protect the health, security and general welfare of the Community; and

WHEREAS: legislation HB 5834 has been filed to designate the gray wolf as a game species and authorize the establishment of the first open season making it allowable to hunt gray wolf on an annual basis throughout the state, and

WHEREAS: the gray wolf is a species which has significant importance to the culture and way of life of the Keweenaw Bay Indian Community, and has only recently been reestablished in the State after suffering near-extinction through historical hunting and trapping pressure, and

WHEREAS: The Keweenaw Bay Indian Community believes the gray wolf is not an appropriate species to harvest for subsistence purposes, its numbers cannot withstand depletion by recreational hunting without danger of being relisted as threatened or endangered, and depleting numbers of wolves will upset the ecological balance between predator and prey, and

WHEREAS: Michigan law already contains adequate means by which depredation by a gray wolf to livestock and other animals can be remediated and problem wolves controlled.

NOW THEREFORE BE IT RESOLVED THAT: the Keweenaw Bay Indian Community Tribal Council formally states their opposition to HB 5834 and any change in the laws of the State of Michigan by which wolves are designated as a game species and a wolf hunting and/or trapping season is allowed.

(Resolution No. KB-1902-2012 Approved by KBIC Tribal Council on November 1, 2012)

RESOLUTION

KB-1902-2012

CERTIFICATION

We, Warren C. Swartz, Jr., President and Susan J. LaFernier, Secretary of the Keweenaw Bay Indian Community, do hereby certify that this Resolution No. KB-1902-2012 to be a true and exact copy as approved by the Tribal Council of the Keweenaw Bay Indian Community at a duly called meeting held on November 1, 2012 there being a quorum present, by a vote of: 6 In Favor, 1 Opposed, and 0 Abstentions, as follows:

Vice President, Elizabeth D. Mayo:	(AYE)	NAY	ABSTAIN	NOT PRESENT
Secretary, Susan J. LaFernier:	(AYE)	NAY	ABSTAIN	NOT PRESENT
Asst. Secretary, Jerry Lee Curtis:	AYE	NAY	ABSTAIN	(NOT PRESENT)
Treasurer, Toni J. Minton:	AYE	NAY	ABSTAIN	(NOT PRESENT)
Council Person, Robert R.D. Curtis, Jr.:	(AYE)	NAY	ABSTAIN	NOT PRESENT
Council Person, Fred Dakota:	AYE	NAY	ABSTAIN	(NOT PRESENT)
Council Person, Eddy Edwards:	AYE	NAY	ABSTAIN	(NOT PRESENT)
Council Person, Jean Jokinen:	(AYE)	NAY	ABSTAIN	NOT PRESENT
Council Person, Michael F. LaFernier, Sr.:	AYE	(NAY)	ABSTAIN	NOT PRESENT
Council Person, Carole L. LaPointe:	(AYE)	NAY	ABSTAIN	NOT PRESENT
Council Person, Elizabeth "Chiz" Mathews:	(AYE)	NAY	ABSTAIN	NOT PRESENT
President, Warren C. Swartz, Jr.: (If Required)	AYE	NAY	ABSTAIN	NOT PRESENT

Warren C. Swartz, Jr., President

Susan J. LaFernier, Secretary