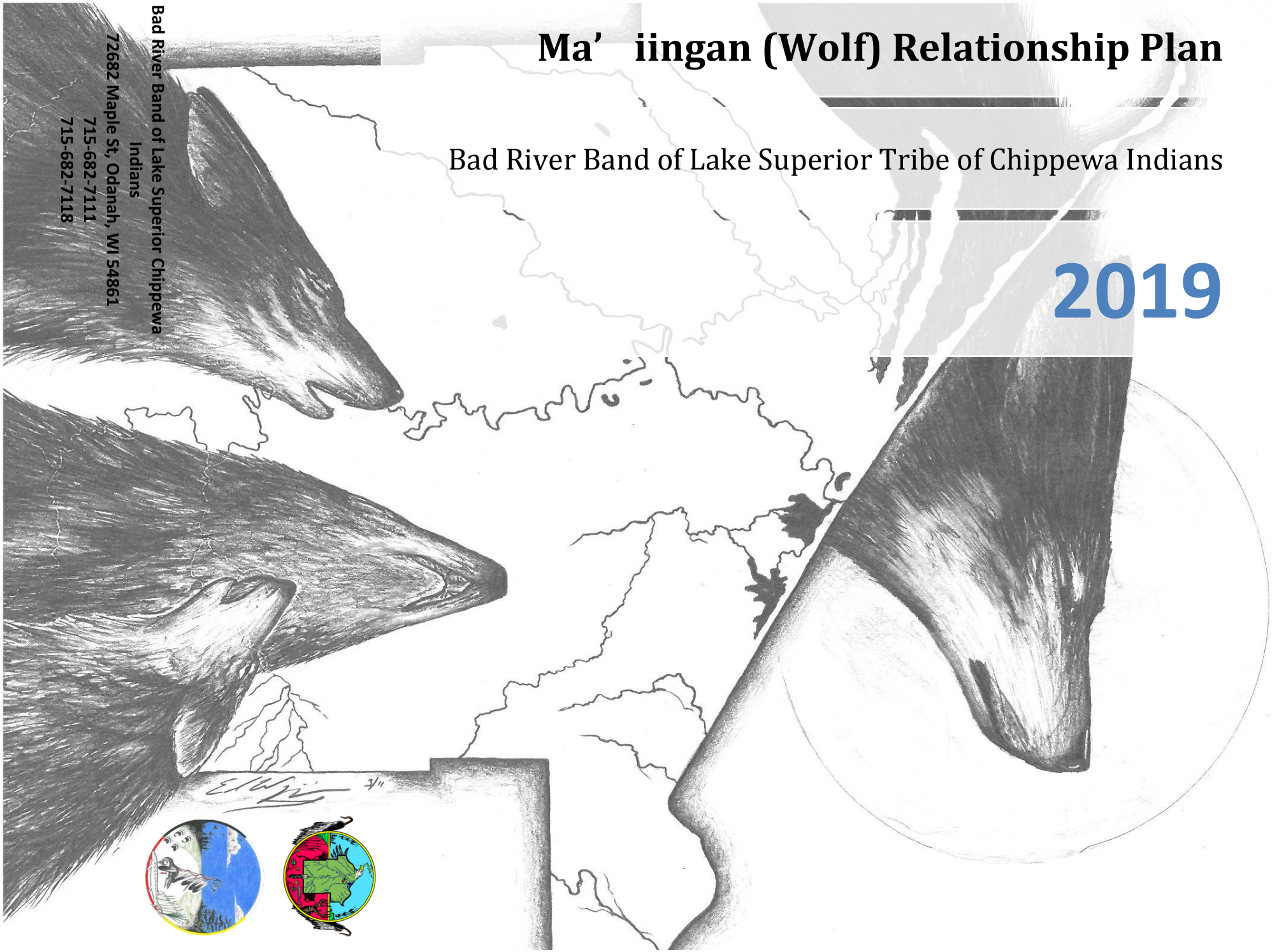
Ma’ iingan (Wolf) Relationship Plan

Bad River Band of Lake Superior Tribe of Chippewa Indians

2019



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Contents

Major Findings and Conclusions

I. Within Mashkiiziibing (Bad River Indian Reservation), including tribal lands on Mooninwaane'akaaning Minis (Madeline Island), Ma'iinganag is listed as a "Tribally Protected Species."

II. Classification of Ma'iingan and the contents of this relationship plan will be revisited by the Tribal Council and Mashkiiziibii Wildlife Program (MWP) every 5 years or sooner if deemed an emergency by Mashkiiziibii Tribal Council and MWP.

III. The Mashkiiziibii Wildilfe Program honors Ma'iingan and guides its actions based on Traditional Ecological Knowledge and scientific knowledge.

IV. The Mashkiiziibii Wildlife Program will not manage Ma'iinganag at a specific number, but will work with humans in a way that fosters human-wildlife coexistence on and around Mashkiiziibing. MWP has set a minimum Ma'iingan population goal: at least three packs within Mashkiiziibing, as has historically been the case.

V. The Mashkiiziibii Wildlife Program will continue to coordinate Ma'iingan conservation activities with tribal, state, and federal agencies as well as private landowners, to ensure the future of Ma'iinganag in Mashkiiziibing, in the state of Wisconsin, and in the Great Lakes Region.

VI. The Mashkiiziibii Tribal Wildlife Specialist is responsible for coordinating livestock or Ma'iingan mortality co-investigations within the exterior boundaries of the reservation and within the six mile buffer zone surrounding Mashkiiziibing.

VII. Any conflicts with Ma'iinganag within Mashkiiziibing or within the buffer area of Mashkiiziibing shall be reported to the Mashkiiziibii Wildlife Specialist within 24 hours of occurrence by either the individual involved in the conflict or by the immediate responding agency (WDNR or USDA-WS) dependent on location of incident.

VIII. In the event that a dead Ma'iingan is found anywhere in Mashkiiziibing or within the six mile buffer zone surrounding the reservation, the Mashkiiziibii Wildlife Specialist must be notified immediately by

either the individual that found the carcass or by the immediate investigating agency (WDNR or USDA-WS).

IX. If Ma'iingan is incidentally trapped, it shall be released immediately, if alive. If Ma'iingan is found to be dead, it shall be turned in and reported immediately to the Mashkiiziibii Wildlife Specialist.

X. The Mashkiiziibii Wildlife Specialist can assist in seeking livestock reimbursement from the state or federal agencies after a loss to a predator and MWP can offer carnivore coexistence consultation and free rental deterrent devices.

XI. MWP and the Bad River Tribal Council have placed a moratorium on collaring Ma'iingan, based on concerns for the ethical, scientific, and cultural appropriateness or lack there of in this research practice. Instead, MWP will work to understand reservation Ma'iinganag through track, scat, howl, and flying surveys as well as reports from tribal members.

Acknowledgements

Miigwech to The Creator for giving us a brother in Ma'iingan. Miigwech to Ma'iingan for teaching and protecting us. Miigwech to Lacey Hill-Kastern for creating the original Mashkiiziibii Ma'iingan Relationship Plan and for mentoring and training Abi Fergus. Miigwech to the Mashkiiziibii community for helping to shape this plan and for teaching Abi Fergus. Miigwech to Edward Benton-Banai and Joe Rose Sr. for teaching us about Ma'iingan. Miigwech to Edith Leoso, Anthony Corbine, and Stephanie Julian for providing knowledge for this plan. Miigwech to Suzi Smith of the Mashkiiziibii Natural Resources Department for reviewing the plan. Miigwech to Erick Arnold of the Bad River Legal Department for reviewing the plan. Miigwech to Philomena Kebec, Peter David and Travis Bartnick of the Great Lakes Fish and Wildlife Commission for reviewing the plan. Miigwech to Mashkiiziibii Tribal Council for reviewing and approving the plan.

Goal of the Mashkiiziibii Ma'iingan Relationship Plan

The goal of this Ma'iingan relationship plan is to set a framework of guiding principles for the Bad River Band of Lake Superior Chippewa Indians to understand and coexist with Ma'iingan and to teach others to do the same. In the 2019, the plan was renamed the Ma'iingan *Relationship* Plan. Ma'iingan is a relative and you don't "manage" a relative, you build a relationship with a relative.

Ma'iingan and Anishinaabe told by Mashkiiziibii Elder Joe Rose

"Maybe I should start by talking about the creation. The great spirit came down to the earth, took dust, took it back to the sky world. Breathed life into the dust of Mother Earth, creating Anishinaabe: spontaneous or original man. And then Gichi Manido lowered Anishinaabe to meet his mother. And so the first steps that he ever took was out of love and honor and respect, because the earth was his mother. And so it was the Great Spirit who sent a companion to travel with Anishinaabe: Ma'iingan."

Ma'iingan and Anishinaabe told by Edward Benton-Banai

Available online: https://www.upress.umn.edu/book-division/books/the-mishomis-book

Chapter 2

Original Man Walks The Earth

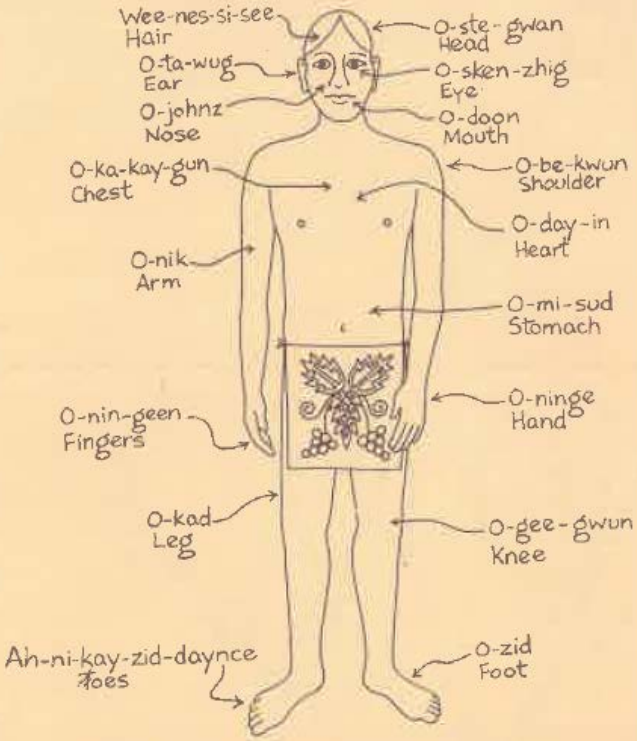
Boozhoo, I have more Ojibway stories to tell you. These e-ki-na-ma'-di-win' (teachings) have been handed down to me by my Grandfathers. In the last chapter we learned of how Original Man was created and lowered to the Earth by the Creator, Gitchie Manito.

After Original Man was placed on the Earth, he was given instructions by the Creator. He was told to walk this Earth and name all the o-way-se-ug' (animals), the plants, the hills, and the valleys of the Creator's gi-ti-gan' (garden).

Original Man had no name of his own yet. Later, people would refer to him as Anishinabe and, still later, Way-na-boo'-zhoo. But at this early time, he who had no name would name all the Creation.

As Original Man walked the Earth, he named all of the ni-bi' (water). He identified all the rivers, streams, ponds, lakes and oceans. He learned that there were rivers that ran underground. These are the veins of Mother Earth. Water is her life blood. It purifies her and brings food to her.

Original Man also named all the parts of the body. He even named the o-kun-nug' (bones) and organs inside the body.



While Original Man was carrying out the instructions given to him by the Creator, he noticed that the Earth had four seasons. All life was part of a never-ending cycle.

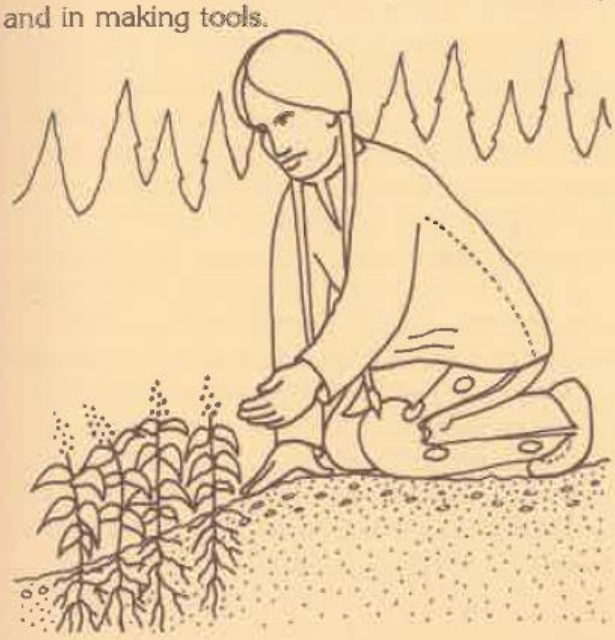
The plants were given new life in the spring. With the coming of summer, they blossomed and bore the seeds for the next generation. Some of the plants produced fruits.

5

In the fall season, the leaves of many of the plants turned from green to many spectacular colors. The leaves gradually fell to the ground as the gee-zhi-gad-doon′ (days) got shorter and the dee-bee-kad-doon′ (nights) got colder.

In winter, the cold winds of the Gee-way′-din (North) brought the purifying snows that cleansed Mother Earth. Some of the plants died and returned their bodies to their Mother. Other plants fell into a deep sleep and awoke only when Grandfather Sun and the warm winds of the Zha-wa-noong′ (South) announced the coming of spring.

As Original Man traveled the Earth, he identified what fruits were good to eat and what was not to be eaten. As he went, he found that some o-gee′-bic-coon′ (roots) were good for food. Others were good for mush-kee-ki′ (medicine). Some roots could be used to make dyes of different colors and flavorings for food. Other roots could be used as a strong thread in sewing and in making tools.



As he walked, Original Man talked with the animals. He named them as he went. He noted that some animals were good for we-sin′-ni-win′ (food) and medicine. He noticed that each type of animal had its own individual kind of wisdom. He did not know what all of these plants and animals would play an important part for all the people that would be coming to live on the Earth at a later time.

Original Man traveled everywhere. There was not one plant, animal, or place that was not touched by him.

In his travels, Original Man began to notice that all the animals came in pairs and they reproduced. And yet, he was alone.

He spoke to his Grandfather the Creator and asked, "Why am I alone? Why are there no other ones like me?"

Gitchie Manito answered, "I will send someone to walk, talk and play with you."

He sent Ma-en′-gun (the wolf).

With Ma-en'-gun by his side, Original Man again spoke to Gitchie Manito, "I have finished what you asked me to do. I have visited and named all the plants, animals, and places of this Earth. What would you now have me to do?"

Gitchie Manito answered Original Man and Ma-en'-gun, "Each of you are to be a brother to the other. Now, both of you are to walk the Earth and visit all its places."

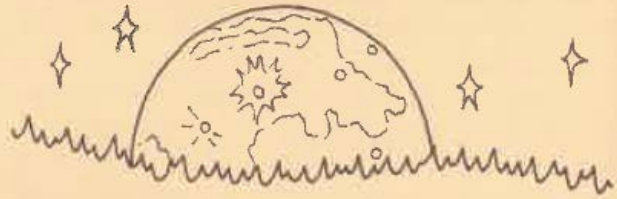
So, Original Man and Ma-en'-gun walked the Earth and came to know all of her. In this journey they became very close to each other. They became like brothers. In their closeness they realized that they were brothers to all of the Creation.

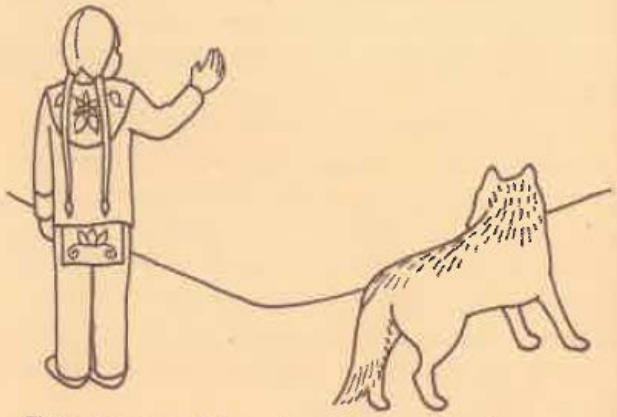
When they had completed the task that Gitchie Manito asked them to do, they talked with the Creator once again.

The Creator said, "From this day on, you are to separate your paths. You must go your different ways.

"What shall happen to one of you will also happen to the other. Each of you will be feared, respected and misunderstood by the people that will later join you on this Earth."

And so Ma-en'-gun and Original Man set off on their different journeys.





This last teaching about the wolf is important for us today. What the Grandfather said to them has come true. Both the Indian and the wolf have come to be alike and have experienced the same thing. Both of them mate for life. Both have a Clan System and a tribe. Both have had their land taken from them. Both have been hunted for their wee-nes'-si-see' (hair). And both have been pushed very close to destruction.

We can tell about our future as Indian people by looking at the wolf. It seems as though the wolf is beginning to come back to this land. Will this prove that Indian people will cease to be the "Vanishing Americans?" Will Indian people emerge to lead the way back to natural living and respect for our Earth Mother?

Background

Coexisting with Ma'iingan is complicated by conflicting relationships that humans have with Ma'iingan. Ma'iingan and Anishinaabe are brothers, but colonization brought a Western mindset of fear and hate toward Ma'iingan to Turtle Island.

Few, if any, Ma'iinganag live their entire life within the boundaries of Mashkiiziibing (Bad River Indian Reservation); because of Ma'iingan's large territory sizes and dispersal characteristics, Ma'iinganag may only spend a short period of their lives within the boundaries of the reservation. In addition, Mashkiiziibing includes not only lands owned by the tribe and tribal members, but also lands owned by private non-tribal individuals and corporations. Contrasting cultural perspectives on Ma'iingan, fragmented ownership of reservation land, and Ma'iingan range sizes underline the complexity of Ma'iingan conservation within and around the reservation and the necessity of coordinating efforts and understanding with the State of Wisconsin.

Introduction

The Mashkiiziibii Tribe is a self-governing entity with which the Federal government relates to on a government-to-government basis. Mashkiiziibii has the sovereignty to develop its own Ma'iingan relationship plan independent of state jurisdiction (Federal Register, 2000).

Mashkiiziibing is located within the Lake Superior Basin and is within the 1842 treaty ceded territory in far northern Wisconsin. The reservation is comprised of 125,000 acres (505 km^2) of land in

Figure 1: Location of the Mashkiiziibing.

Ashland and Iron Counties. Mashkiiziibing is 77% forested, 11% is wetlands and sloughs, and the remainder consists of farmland, residential communities, and roads (Elias, 2001).

Anishinaabeg have a deep spiritual and cultural bond with Ma'iingan. **The purpose of this relationship plan is to foster the lasting presence of Ma'iingan in Mashkiiziibing by supporting coexistence with Ma'iingan.** Due to the research-intensive nature of this plan it is recommended the plan be revisited every five years as new research is made available and as the Mashkiiziibii Reservation continues to change through time.

"Both will be feared, respected, and misunderstood by the people that will later join you on this Earth."

History of Ma'iinganag in Mashkiiziibing and in Wisconsin

Ma'iingan and Anishinaabe

Anishinaabe, the original man, was created to walk the earth and name everything (Benton-Banai, 1988). The Original Man grew lonely and asked the Creator why he was alone. The Creator sent Ma'iingan to Anishinaabe as a companion. They traveled the Earth together as directed by the Creator. Once everything was named, Ma'iingan and Original Man were told they must now travel separate paths, but what would happen to one would happen to the other (Benton-Banai, 1988).

This relationship has held true. Peter David, wildlife biologist for Great Lakes Indian Fish and Wildlife Commission (GLIFWC), outlined the relationship in his writings. He illustrated the correlation between populations of Ma'iinganag rising and of Anishinaabeg gaining recognition of treaty rights (David,2009; figure 2).

Many people today view predators, especially Ma'iinganag, as a competitor for Waawaashkeshii (white-tailed deer). Historically, that was not the case. Ma'iinganag in northern Wisconsin depend on deer for survival and it was traditionally believed that if Ma'iingan tracks were found or Ma'iingan howling was heard in an area that the hunting would be fruitful because these signs indicated that the hunters were in deer country (David, 2009).

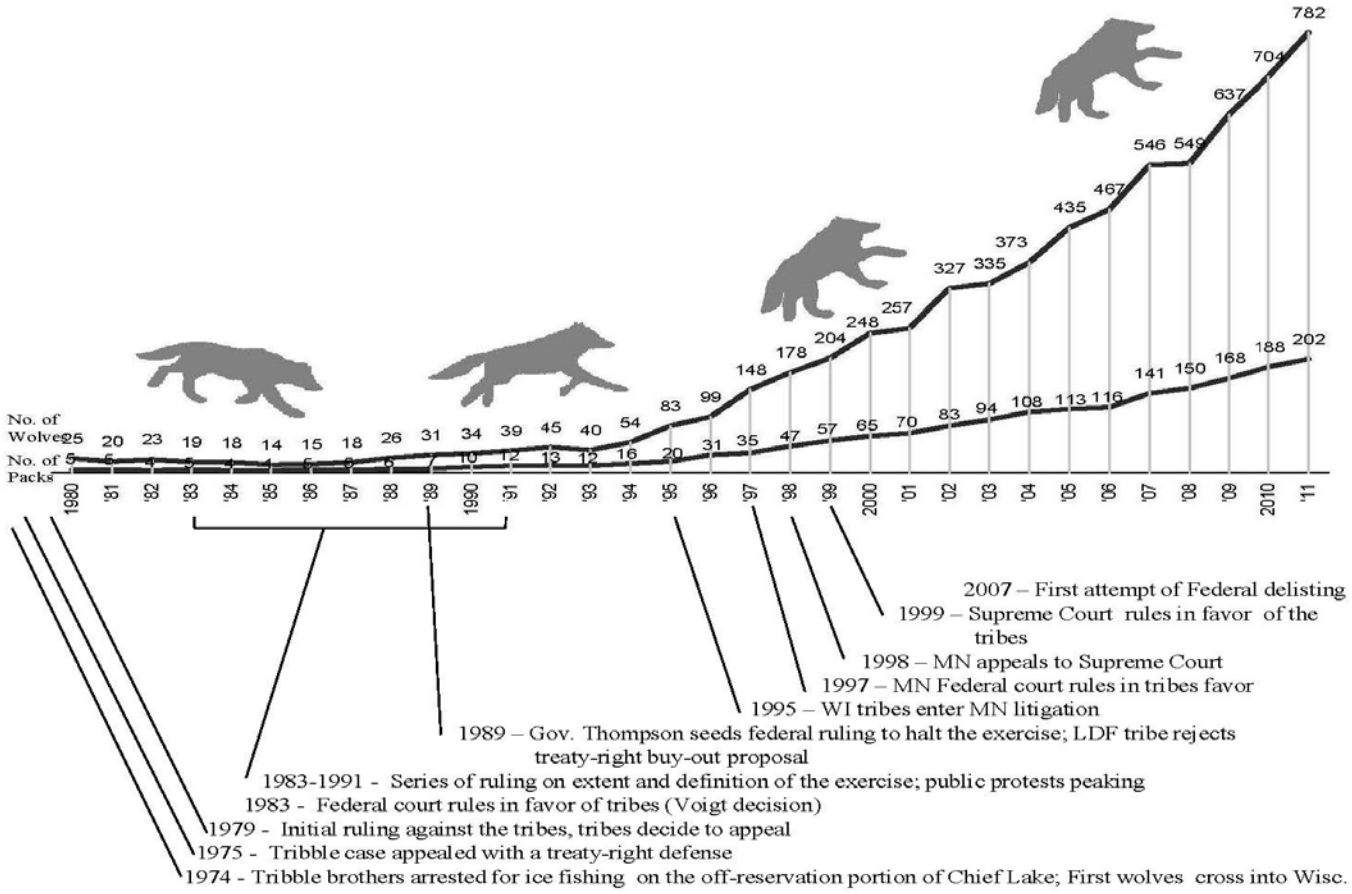


Figure 2: Timeline of battle for Anishinaabe off-reservation treaty rights and the recovery of the Ma'iingan population in Wisconsin provided by Peter David, GLIFWC.

Ma'iingan in Wisconsin

Ma'iinganag were historically present throughout the entire modern State of Wisconsin. Ma'iinganag population estimates for the state ranged from 3,000 to 5,000 individuals before European colonization (Wydeven, 2011). The war against Ma'iinganag in the United States started shortly after Europeans began colonizing the East Coast (Mech and Boitani, 2003). The hatred of Ma'iingan was brought from Europe where humans cleared the habitat of Ma'iingan and Ma'iingan's prey, causing Ma'iinganag to prey on livestock (Linnell and Cretois, 2018). The first Ma'iingan bounty was established in 1630 and by 1700 Ma'iinganag were exterminated from New England (Mech and Boitani, 2003). As colonists moved West, they brought with them their livestock and the war on Ma'iinganag. Mashkode-Bizhiki (American bison; *Bison bison*), Omashkooz (American elk; *Cervus elaphus*), Mooz (Moose; *Alces alces*), Waawaashkeshi (White-tailed deer; *Odocoileus virginianus*), and Adik (Caribou; *Rangifer tarandus*) existed in Wisconsin before European colonization. As Wisconsin was colonized, the land was logged. By 1880, Waawaashkeshiwag were the only large prey species available for Ma'iinganag in Wisconsin (Wydeven, et al. 2009).

The State of Wisconsin first initiated a bounty on Ma'iinganag in 1865 (Thiel, 1993). In 1957, the Wisconsin legislature gave Ma'iingan full protection in the state of Wisconsin (Schanning, 2009). Unfortunately, this was not enough to prevent the last known Ma'iingan in the State from being killed in 1959 (Thiel, 1993). In 1974, Ma'iingan was listed as endangered under the newly adopted federal Endangered Species Act (1973) (USFWS, 1992).

Shortly after federal protections were put into place, Ma'iingan started making a slow comeback in Wisconsin. Ma'iinganag re-entered the state from the remnant Minnesota population. The United States Fish and Wildlife Service (USFWS) developed the 1978 Timber Wolf Recovery Plan, which was last revised in 1992. The Wisconsin Department of Natural Resources (WDNR) began officially monitoring the state's Ma'iingan population in 1979 when there were an estimated 5 packs in the state (WDNR, 1999). A State Recovery Plan

was created by the WDNR in 1989. Wisconsin adopted a State Wolf Management Plan in 1999 (Wydeven et al, 2009).

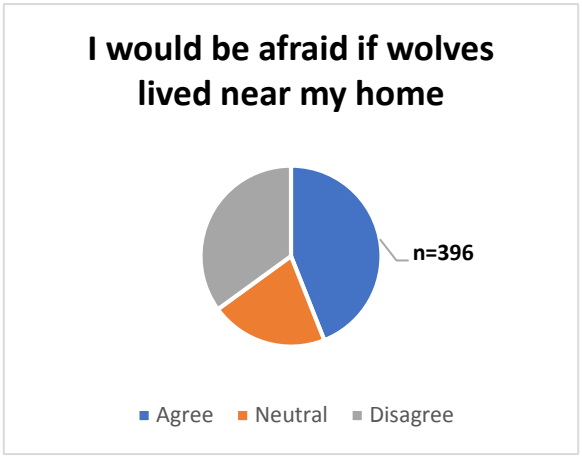
Since the inception of the Endangered Species Act, the listing status of Ma'iingan has changed many times. Ma'iingan have been listed and delisted based in two different regions: Northern Rocky Mountains and Western Great Lakes (Gray Wolf, n.d.). The Service is also involved in the experimental recovery of a sub-species of Ma'iingan, the Mexican Gray Wolf, in New Mexico and Arizona (Mexian Wolf, n.d.). At the time of drafting the 2019 update to the Ma'iingan Relationship Plan, Ma'iingan was delisted in the Northern Rockies and listed as endangered in Wisconsin and Michigan and threatened in Minnesota. The federally listed status of Ma'iingan affects reservation Ma'iingan, because the federal government holds primary conservation responsibility when Ma'iingan is listed as threatened or endangered. When Ma'iingan is delisted, states and tribes hold this sovereignty. Historically, the Service has been sued by groups such as the Humane Association in order to get Ma'iingan re-listed following delistings, because states have not always demonstrated an ability to responsibly conserve Ma'iingan. As of the drafting of this plan revision, the Wisconsin Department of Natural Resources is legally required to hold a harvest of Ma'iingan if Ma'iingan is not federally listed according to Wisconsin State Law, Chapter 29.185 . This law is not scientifically or culturally responsible to Ma'iingan.

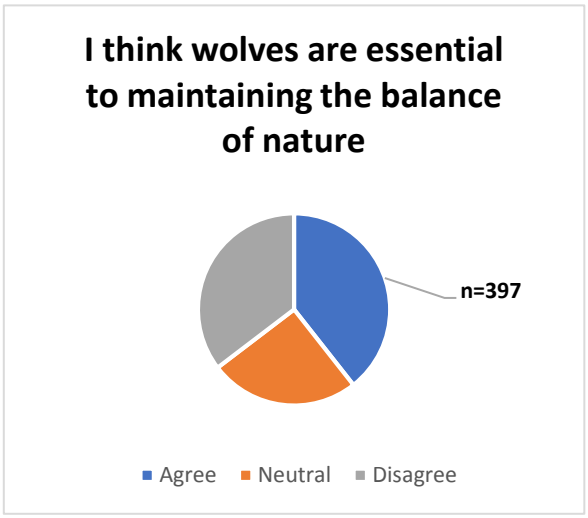
As of the 2019 update of the plan, the Fish and Wildlife Service was considering the delisting Ma'iingan across the United States, where they are not already delisted. This proposed delisting received a record number of public comments (1.8 million) and the 5 scientific peer reviews of the proposed delisting largely argued that the population and the Great Lakes States were not ready for the status change (Earthjustice, 2019; Atkins, 2019).

Tribal Views (A Study by Victoria Shelley)

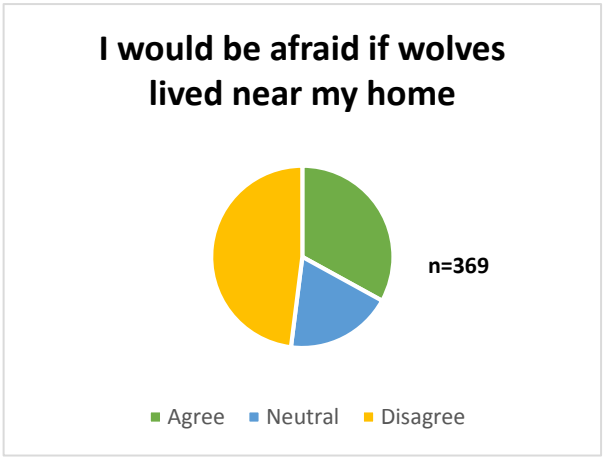
Researchers have been documenting and studying human intolerance of carnivores for many years. Carnivores are often viewed as competition for a food source or as dangerous. In 2009, Victoria Shelley, a graduate student of the Carnivore Coexistence Lab of the University of Wisconsin – Madison, conducted her dissertation research within Mashkiiziibing. Her dissertation was titled, "The Influence of Culture on Attitudes to Wolves and Wolf Policy among Ojibwe Tribal Members and Non-tribal Residents of Wisconsin's Ma'iingan Range" (Shelley, 2011). She completed this study by randomly mailing out questionnaires to Mashkiiziibii Tribal members and randomly selecting non-tribal members that live in Ma'iingan's current range in Northern Wisconsin. A community Ma'iingan Information Meeting was held at the Mashkiiziibii Casino & Convention Center on December 8, 2009 to discuss the study and its results. The study demonstrated that Mashkiiziibii Tribal members were more supportive of protective Ma'iingan policy and less supportive of a proposed Ma'iingan harvest than the non-tribal respondents (figure 3; Shelley, 2011).

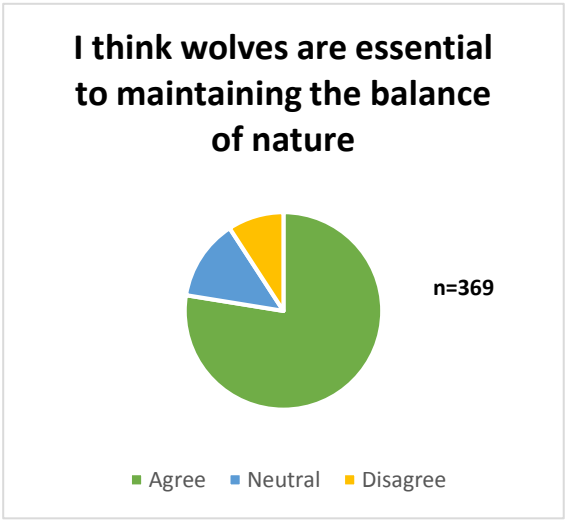
Non Tribal Respondents

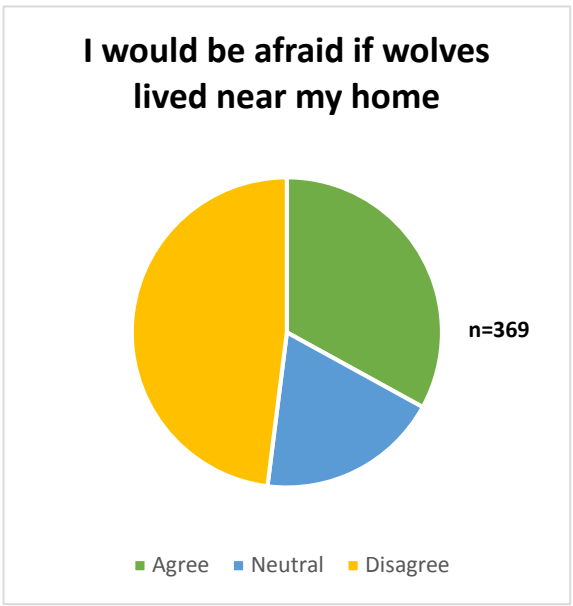




Tribal Respondents







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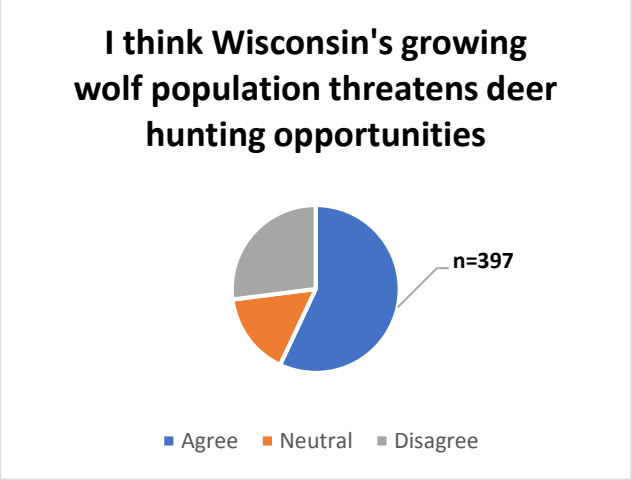

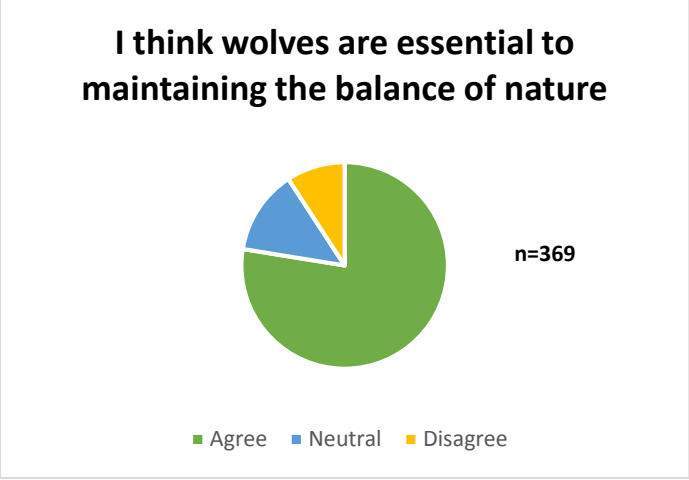

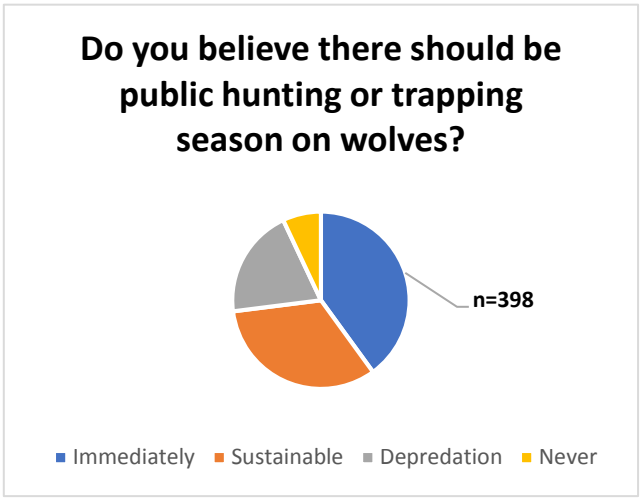

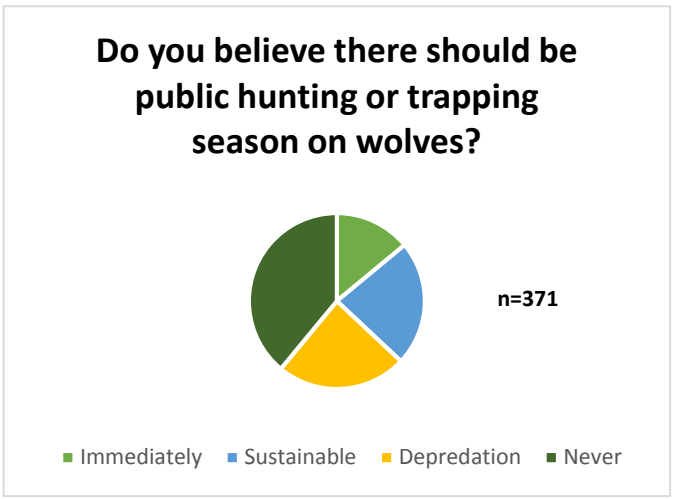

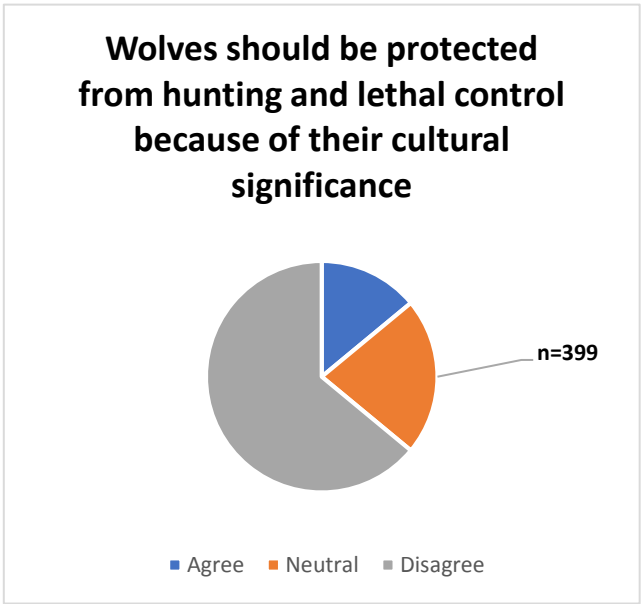

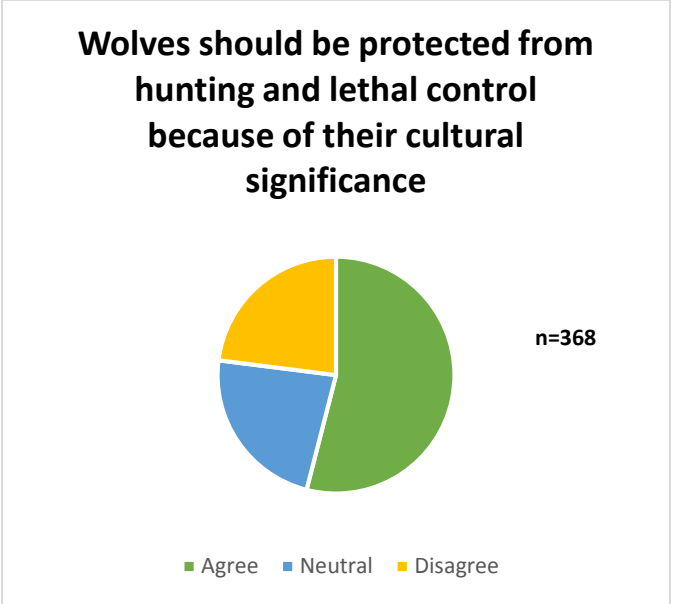

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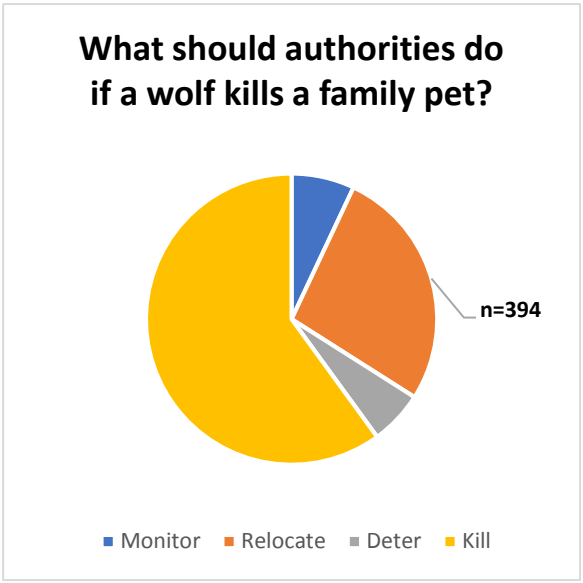
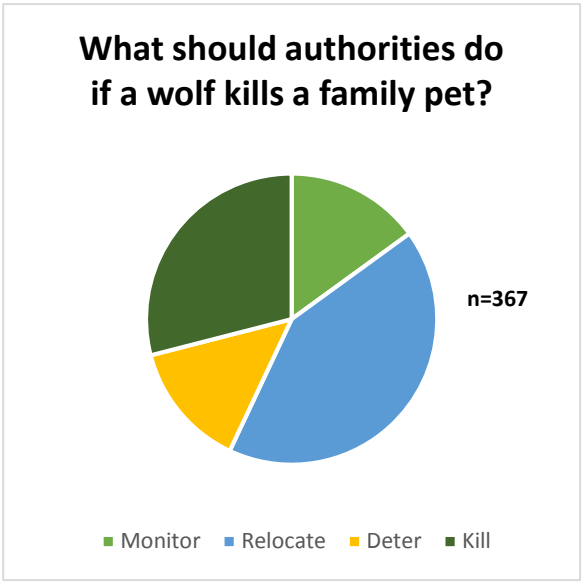
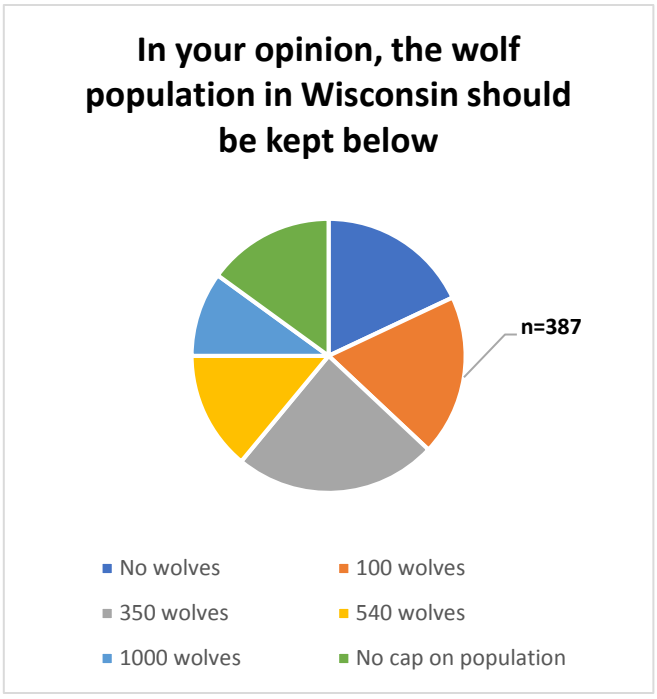






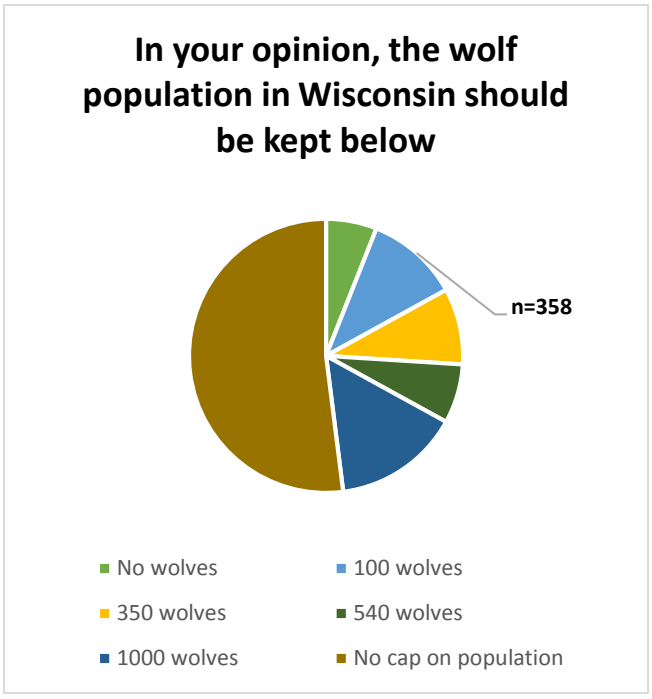


Figure 3: Results from 2009 Victoria Shelley survey of Non Tribal Northwoods residents and Mashkiiziibii Tribal Members

This study showed Mashkiiziibii Tribal members to be more supportive of protective Ma'iingan policy and to have a higher tolerance for Ma'iinganag than non-tribal members (Shelley, 2011). This relationship plan was written to support the strong relationship that Mashkiiziibii tribal members have with Ma'iingan. The Creator told Original Man and Ma'iingan that what happened to one would also happen to the other. Many Mashkiiziibii members believe that the recovery of Ma'iingan and that changing attitudes directly reflect the recovery and treatment of Anishinaabeg.

Livestock Owner, Tribal Member, and Wolf Biologist Views (A Study by Abi Fergus)

A small study of attitudes was also conducted in the summer of 2017 regarding Ma'iingan and the Tribe's Ma'iingan Management Plan. Abi Fergus was a senior at Alma College working as an intern for the Mashkiiziibii Wildlife Program at the time, and sought input from wolf biologists, tribal members, and non-tribal farmers to be considered for the 2019 update of the Ma'iingan Management Plan (Fergus, 2017).

Out of 30 farming operations contacted, three owners gave interviews on their sentiments regarding gray wolves and their conservation. Local wolf biologists were contacted once and all individuals except a representative with the WI DNR responded for an interview. This resulted in four scientists being interviewed. An official count of tribal members offered an interview in person was not kept. Around 1,800 tribal members live on the reservation and every member encountered at the tribal offices and at the daily elder lunch was offered an interview resulting in four members interviewed. A Facebook post detailing the study and providing population information on reservation Ma'iingan was also shared by the former Chief Tribal Warden and the former Tribal Wildlife Specialist as an attempt to gain more interviewees. Many members explained that they felt they were not the right person to speak on Ma'iingan. All but one interviewee had seen a wolf at least once, even if briefly. Most respondents, despite their self-reported attitude, described the event of seeing a wolf as a unique and interesting experience (Fergus, 2017).

Respondents seemed to have the most trouble answering questions relating to how the depredation of pets, livestock, and hunting dogs should be handled. It appeared that interviewees would initially answer

one way if looking at the three categories of animals in an emotional manner and then another way when processing the question with the owner's responsibility to take care of the animal or the owners' financial loss in mind. Costs to government and the historical handling of depredations by government were also discussed in responses by interviewees. Often, the interviewees came to the conclusion that s/he wasn't sure how depredation situations should be handled (Fergus, 2017).

When asked how pet, hunting dog, and livestock owners should protect against wolves killing their animals, answers varied including the following responses (Fergus, 2017):

- Animal owners shouldn't be expected to prevent depredations
- Animal owners can't prevent depredations
- Animal owners should keep animals under control with leashes/fencing
- Animal owners should guard animals with dogs/donkeys/range riders
- Animal owners should use deterrents such as fladry (flagging) and flashing lights
- Animal owners should keep animals near the house, and they should provide a small amount of food for wolves so that they are not tempted by the live animals

In addition to addressing depredations, respondents identified the key aspects of wolf management as being education, communication, wolf monitoring, habitat preservation, effective policy, hands off methods, and understanding the connection between Ma'iingan and Anishinaabeg. A number of wolf scientists, in particular, raised the need to diversify sources of wolf management funding in order to prevent disproportionate control in the issue by a stakeholder group such as hunters, who often pay for conservation via the purchase of hunting tags. Several respondents across stakeholder groups offered applying for grants, fundraising, taxing outdoor hobbyist supplies, collecting donations, finding cheaper management methods, and using funds from special license plates as venues to achieve broader funding (Fergus, 2017).

History of Ma'iingan in Mashkiiziibing

The MWP first began conducting Ma'iingan research within Mashkiiziibing in 1996. The Tribe determined that it was imperative to gain more knowledge on the movements and behavior of Ma'iingan, such as where Ma'iingan dens and rendezvous sites were located, in the face of timber sales, home development, and snowmobile trail establishment on the reservation. In 1996, the MWP determined three Ma'iingan packs spent time within Mashkiiziibing boundaries. These packs became known as the Potato River, West Firelane, and Morrison Creek (or Little's Girls Point Packs in Michigan). Later on, the Kakagon Sloughs pack was also identified within the reservation (Doolittle, 2001).

Figure 4: Photograph of tracking Ma'iinganag using radio telemetry from an airplane, provided by Lacey Hill-Kastern.

Since 1999, MWP has put radio collars on 10 Ma'iingan in order to learn about their habitat use, denning and rendezvous patterns, mortality causes, total population, and pack distribution on the reservation. In 2019, the Wildlife Program put an indefinite moratorium on collaring Ma'iingan, unless it can clearly be determined that collaring Ma'iingan will have direct benefits for Ma'iingan that outweigh the burden and risks that VHF and GPS collars pose. The MWP continues its historical use of howl surveys and track surveys to understand reservation Ma'iingan.

Ma'iingan Biology and Ecology

Description

At first glance, some may mistake a large Ma'iingan for a large Animosh (domestic dog; *Canis lupus familiaris*). Ma'iinganag are the largest members of Canidae (dog family), in North America. They can stand 26 to 38 inches (66 to 96 cm) high at the shoulder, with a body length of 40 to 58 inches (101 to 147 cm) long, and weight of 60 to 100 pounds (27 to 45 kg) (Busch, 1995). Ma'iinganag differ from Animoshag in several ways. Ma'iingan differs from a domestic dog in that it has longer legs, larger feet, a narrower chest, a straight tail, and tufts of hair on the sides of his or her face extending from below the ear (Paquet and Carbyn, 2003).

Other members of the dog family that are found in Mashkiiziibing include Wiisagi-Ma'iingan (coyote; *Canis latrans), Waagosh* (red fox; *Vulpes vulpes*), and the gray fox (*Urocyon cinereoaryenteus*). Ma'iinganag are much larger than any of these species. Wiisagi-Ma'iingan has a narrower face and pointier ears than Ma'iingan. Ma'iinganag may be mistaken for Waawaashkeshi due to their long legs. Ma'iingan's eyes are golden brown, and when you shine the eyes at night, they appear greenish-orange in color and appear closer together than Waawaashkeshki eyes do (Busch, 1995).

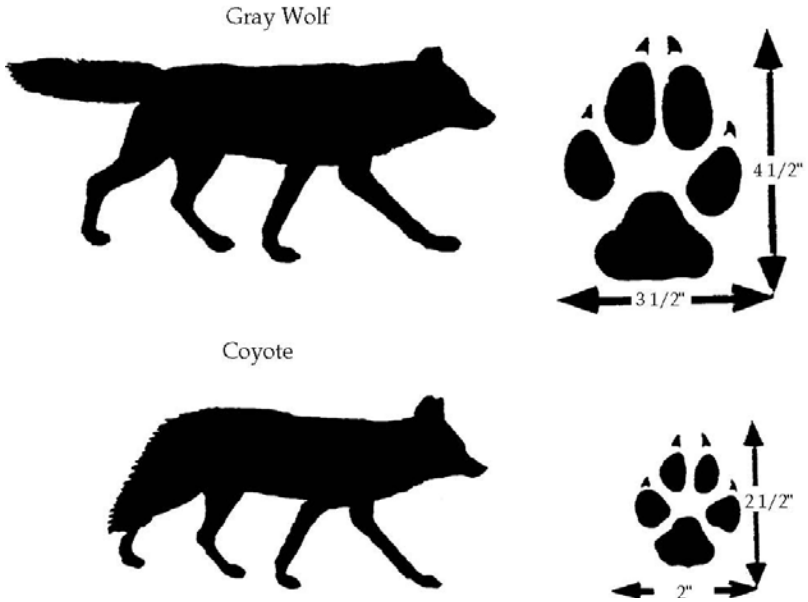


Figure 5: Ma'iingan and Wiisagi-Ma'iingan silhouettes and tracks (Paul and Gibson, 1994).

Ma'iinganag can be various shades of gray, tan, brown, white, and even all black. Each of these colorations have been observed and documented among the various packs on the reservation. Black Ma'iinganag are more common in the northern part of their range and can comprise up to one-third of the northern Ma'iingan population (Busch, 1995).

Track and Scat Identification

Ma'iingan tracks looks similar to those of Animosh. Each track consists of a pad, four toe prints, and 4 indentations above the toe pads (marks left by claws). Ma'iingan's track size is typically 4.5 to 5.5 inches (11 to 14 cm) in length and 3.5 to 5 inches (8 to 12.5 cm) in width, which is an unmistakably large paw print (Forrest, 1988). The print of Wiisagi-Ma'iingan is substantially smaller, typically 2.5 to 3.5 inches (6 to 9 cm) in length and 2 to 2.8 inches (5 to 7 cm) in width (Forrest, 1988) (Fig 5). Some Animosh breeds can leave a track similar in size to Ma'iingan. Animosh's toes point slightly outward, whereas Ma'iinganag toes will point straight ahead (Busch, 1995). Ma'iinganag also have more direct paths of travel and their tracks will often appear in a straight line versus Animosh, which will tend to wander.

Ma'iingan scat may appear similar to that of Animosh in size, but Ma'iingan scat is mostly comprised of hair and bone fragments. The feces are 0.5 to 6 inches (1 to 15.25 cm) in length and 1 to 1.5 inches (2.5 to 4 cm) in diameter and have tapering ends (Busch, 1995; Forrest, 1988). Wiisagi-Ma'iingan scat may appear similar, but is rarely over 4 inches (7.6 cm) in length or 1 inch (2.5 cm) in diameter (Forrest, 1988) (Fig 6).

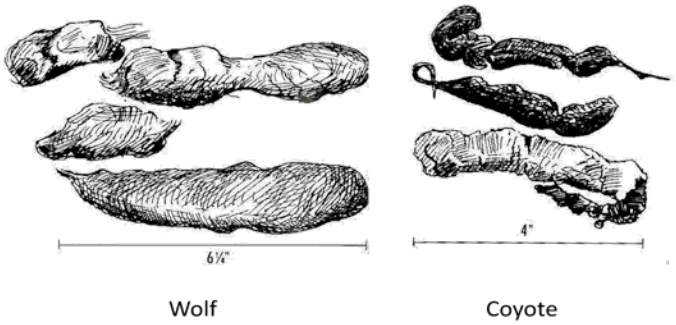


Figure 6: Ma'iingan vs Wiisagi-Ma'iingan scat (Paul and Gibson, 1994)

Mashkiiziibii's first Wildlife Specialist, Tom Doolittle, gathered habitat use data from the first three Ma'iingan to be collared and tracked on the reservation in the late 90s and early 2000s. Pack structures on the

reservation have changed since his writing, but Doolittle offers insight into reservation Ma'iingan's tie to waterways.

> "Regardless of the agency gathering relocation data from the air, all but four of 46 points were within riparian zones as defined by the IRMP set of buffers. Reservation GIS vegetation data also supports use within 200m of wetland types. Home ranges included 90% of the described vegetation types on the reservation. Sixty percent of air observations of wolves on the ground had a coniferous component in their respective habitat. Wolves avoided agricultural areas, main State highways and entered the reservation in the southeast quadrant of the reservation." (Doolittle, 2001).

Ma'iinganag are considered to be "habitat generalists" and can survive in a variety of habitat types, dependent on prey availability (Gehring and Potter, 2005; Mladenoff et al., 1999). Ma'iinganag require large tracts of land with adequate prey populations. Ma'iingan's diet has not been studied in Wisconsin since the 1980s, when Ma'iingan was first returning to Wisconsin after being extirpated. At the time of the master's dissertation study, Ma'iingan was found to be primarily eating Waawaashkeshiwag and secondarily preying on Amik (American beaver; *Castor canadensis*) with some Waabooz (snowshoe hare; *Lepus americanus*) in the diet (Mandernack, 1983). Ma'iingan's population and habits in the ceded territory have changed since this diet study, and it is a goal of the Mashkiiziibii Wildlife Program to study the diet of reservation Ma'iinganag. In more modern studies that took place elsewhere in North America, Ma'iinganag have been known to supplement their diet with rodents, birds, eggs, fish, berries, carrion, and other carnivores such as bears and river otters (Paquet and Carbyn, 2003; Chavez and Gese, 2006; Gable et al., 2019; Gable et al, 2018). A study out of Voyageurs National Park in Minnesota found that one Ma'iingan pack ate 38-42 percent of Amikwag within the pack's home range (Gable and Windels, 2017).

Ma'iinganag, as apex predators, can influence more evenly dispersed grazing by ungulates (Ripple and Beschta, 2012). Not only does this have the potential effect of preventing all individuals of a plant species from

existing only in disease-susceptible clusters, but it also can establish critical habitat. The even spread of ungulate browsing due to predation pressure from wolves may bring other benefits. For example, the woody plants that have been found to grow more successfully after wolves reoccupied Yellowstone provide shade over rivers, which cools water. This phenomenon supports cold water fish such as trout (Wilmers et al., 2012). This theory of how wolves shape an ecosystem, called top-down trophic cascades, needs to be further researched in geographical locations outside of Yellowstone, but it is an influence that various large predators around the world seem to have on their respective ecosystems (Dyer and Letourneau, 2002; Pace et al, 1999; Ripple and Beschta, 2012).

Despite the common belief that wolves are competing with people for venison, they can be beneficial for prey populations (Burt, 1952; DelGiudice, 2010; Wilmers et al., 2012). Wolves cull the old, sick, and very young from the herd, which can stimulate productivity by freeing more food and cover to support a healthy population of deer (Kurta, 1995). Various studies have shown conditions in which wolves act as compensatory predators, killing prey that would have otherwise died from causes such as disease or age (Griffin et al., 2011; Sand et al., 2012; Wright et al., 2010). Humans don't usually hunt in this way. Waawaashkeshi fawns are important prey for Ma'iinganag in the summer. Research conducted in Minnesota found that nine fawns are eaten per adult Ma'iingan and each Ma'iingan has an estimated kill rate of eighteen Waawaashkeshiwag per year (DelGiudice, 2010). However, the kill rate is not universal and is dependent on location, winter severity, and a number of other factors (DelGiudice,2010; Metz et al., 2012). Ma'iinganag are not efficient hunters of Waawaashkeshi and studies have shown that most hunts are brief and unsuccessful (Stark, 2009).

Chronic Wasting Disease (CWD) and Ma'iingan

Ma'iingan may play a part in controlling disease within prey species. One example is chronic wasting disease (CWD), an illness that degrades the brains of cervids (deer species) and leads to certain mortality (Geist et al., 2017). CWD has been a growing issue for Cervidae, such as Waawaashkeshiwag and

Omashkoozwag in North America. Similar to mad cow disease, CWD is understood to be caused by the misfolding of a protein (called a prion) and can be transferred directly between infected individuals and indirectly from contaminated habitat where the individual browsed, defecated, or died. This prion disease is classified as transmissible spongiform encephalopathy (TSE), which means it can be spread between individuals and causes holes in the nervous tissue. The contagions can then remain in the environment for years. Human hunting of contaminated cervids is not as likely to reduce the prevalence or spread of CWD as Ma'iingan predation is, because humans cannot visually detect a CWD-infected deer unless it is in the late clinical stages of the disease. Humans are not likely to control CWD because we tend to harvest the healthiest individuals rather than the young, old, or sick individuals. Current trends in CWD prevalence seem to be unaffected by human hunting practices once the disease has become established on the landscape. The disease is contagious before its symptoms in infected animals are apparent to humans. Within weeks of infection, a cervid individual may become contagious, but signs of clinical-stage infection visible to humans do not manifest until 6 to 11 months after the initial infection. The disease takes 18 to 36 months to run its course, ending with the death of the cervid (Wild et al., 2011).

Ma'iinganag may be able to pick up on CWD disease cues earlier than humans, because prey individuals that carry disease or parasites often are conspicuous to non-human predators. If Ma'iingnag were to selectively prey on Waawaashkeshiwag with CWD, this could contribute to a more stable cervid population. This is because mortality would be more consistent if caused largely by predation rather than by disease. Even if Ma'iinganag do not actually have the capability of early disease detection, Ma'iingan predation on cervid populations might CWD in check by reducing population density and thus the spread of disease. Predation behavior research, however, indicates that Ma'iinganag prefer preying on young, old, and diseased individuals and this indicates that they may be capable of detecting CWD. Canines seem to break down the CWD prion within the digestive tract rather than take up the disease or continue its spread (Wild et al., 2011).

One model projects Ma'iingan, rather than humans, having a superior ability to suppress the disease within a population of cervids. This is based on the condition that Ma'iinganag remove 15 percent of the deer

population per year. This study was by no means perfect. Future research should model the risk of CWD spread from cervid carcasses, in addition to live Waawaashkeshiwag, as an indicator for the prevalence of the disease in an environment (Wild et al., 2011). In another study that took place in Spain, cattle and wild boar within Ma'iingan range were found to have less prevalence of tuberculosis (Tanner et al., 2019). Modeling showed that if Ma'iingan populations remained stable, that tuberculosis would remain controlled, but if the Ma'iingan population crashed the disease would rebound (Tanner et al., 2019).

In a closed population of Omashkooz (American elk; *Cervus elaphus*) within Rocky Mountains National Park (which is comparable in size to the Bad River Reservation), one researcher's modelingg showed that wolves could eradicate CWD in elk within 19 years (Hobbs, 2016). Omashkoozwag seem to have a slower transmission rate than Waawaashkeshkiwag and CWD seems to transfer more through indirect means such as scat (Hobbs, 2016). Still, this study is helpful to consider as Mashkiiziibii Wildlife Program has a goal to return Omashkoozwag to Mashkiiziibing, and their relationship to CWD is an important consideration. The restoration of Omashkoozwag to Mashkiiziibing may even cause a more dispersed Waawaashkeshiwag population on the reservation, and thus reduce the potential for direct transmission between Waawaashkeshkiwag.

The latest estimate of Ma'iingan predation on Waawaashkeshkiwag was done by the WI DNR in 2009 (WDNR, 2009). This study found that Ma'iingan was only preying on about 1.3% of the Waawaashkeshiwag population when the Ma'iingan population in the state was estimated by the WI DNR to be about 626-662 individuals (WDNR, 2009). Though the Ma'iingan population in 2018 was estimated to be about 905-944 individuals, this population would still not reach 15 percent predation on the 2019 estimate of 1.8 million Waawaashkeshiwag in Wisconsin (WDNR, 2009; WDNR, 2019).

Causes of Ma'iingan Mortality

In a given year, approximately 70% of Ma'iingan pups die, while deaths among Ma'iinganag one year or older averages 25% of the population segment (Wydeven et al. 2012). According to Wisconsin's 2018 Year

End Ma'iingan Population Monitoring Summary, 36 adult Ma'iinganag were found dead in the state during the year, 4% of the year end count population of 925-952 Ma'iinganag. Of the 36 dead Ma'iinganag: 39% were killed by vehicles and 19% were illegally shot. Humans caused 72% of 2018's Ma'iingan mortality. More disease caused deaths occurred in 2018 than in the previous two years, with 16% of deaths attributed to disease out of 28% of deaths being attributed to natural causes as a whole (Wiedenhoeft, 2018).

Ma'iinganag are susceptible to many diseases and parasites. Canine distemper, canine parvovirus, lyme disease, and blastomycosis have all been documented in Ma'iinganag in Wisconsin (WDNR, 1999). Sarcoptic mange has also been frequently observed on Ma'iinganag and has been documented in Mashkiiziibing (Jimenez, 2010; Doolittle, 2001). Ma'iinganag are also susceptible to external parasites such as flies, ticks, fleas, mosquitoes, and mites. Historically in Wisconsin, humans are the number one cause of Ma'iingan death via poaching and car accidents (Treves et al., 2019).

Ma'iingan Behavior and Social Structure

Ma'iinganag are social animals and live in family units known as "packs." By definition, a pack always consists of at least a breeding pair (formerly known as an alpha pair). Pack size changes on an annual basis and most often consists of the pups produced that year, the previous year's surviving offspring, and sometimes older offspring that have not dispersed or an unrelated adult that was accepted into the pack. The average ma'iingan pack in Wisconsin has 3 to 4

Figure 7: Gimiwan (it rains), a breeding male reservation ma'iingan, provided by Abi Fergus

members, not including pups (Paquet and Carbyn, 2003).

Ma'iinganag typically mate from January to April. A female is in estrus for five to seven days (Paquet and Carbyn, 2003). Ma'iinganag can become breeders between one to three years of age, but not all will breed. Often, 2-3 year old Ma'iinganag disperse from their packs in order to find breeding opportunities. Ma'iingan can find a mate in a new territory or form its own pack. Ma'iingan can be accepted into a pack and wait for a breeding opportunity, or it can oust a pack breeder and take over that position (Mech, 2003).

Definition:
Tribally Protected Species – *Any species that may or may not exist on the Mashkiiziibii Reservation, that the Mashkiiziibii Tribal Council and Mashkiiziibii Wildlife Program determine needs additional protections against hunting and other harms.*

Pups are born from early April to early June after a 62-63 day gestation period (Paquet and Carbyn, 2003). Litter sizes vary from one to eight pups, with an average litter size being six (Paquet and Carbyn, 2003). At four weeks old, pups will begin to leave the den; pups are able to travel

up to a mile from the den at five weeks old (Busch, 1995). Pups are moved to a "rendezvous site" once they are physically able to make the journey. A rendezvous site is an area where the pups stay while the rest of the pack hunts; it can also be referred to as a summer "nursery" site. One pack may have several rendezvous sites in its territory. At 3 months, pups will accompany adults on hunts; by seven to eight months pups actively hunt as a member of the pack (Busch, 2005).

Mashkiiziibii Ma'iingan Relationship Policy

Prior to the Ma'iingan Relationship Plan, the Tribe's Ma'iingan relationship policy had been to follow federal policy and to work cooperatively with the state, USFWS, and GLIFWC. After being delisted, Ma'iinganag were classified as a "*tribally protected species*" by the Mashkiiziibii Tribal Council. This classification, along with the Ma'iingan Relationship Plan, will be revisited every 5 years by the Mashkiiziibii

Tribal Council and MWP. Classification can be revisited sooner if deemed an emergency by Tribal Council and MWP.

MWP will honor the relationship between Ma'iingan and Anishinaabeg. MWP will not work towards a specific Ma'iingan population in and around Mashkiiziibing, but instead will work to ensure the long-term presence of Ma'iingan by supporting coexistence. MWP will work for a minimum ma'iingan population goal of three packs in Mashkiiziibing, as there historically have been three year round packs and one seasonal pack on the reservation. Non-lethal tactics, such as guard animals and deterrent devices, will be used to respond to and prevent conflict between Ma'iingan and domesticated animals. Under this plan, the only legal killing of Ma'iinganag will occur in circumstances where non-lethal methods have not worked or are not deemed feasible by MNRD staff to protect domesticated animals.

MWP will continue to use both traditional ecological knowledge and western science in monitoring the Ma'iingan population in Mashkiiziibing. The tribe will also continue to work with tribal, state, and federal agencies as well as with private landowners to ensure the sustainability of Ma'iinganag in Mashkiiziibing, in the state of Wisconsin, and in the Great Lakes Region.

If the Population Falls Below the Minimum Goal

MWP will not set a population cap on the Ma'iingan population in Mashkiiziibing or in the buffer zone. Since 1996, Mashkiiziibii Wildlife Program has monitored three to four Ma'iingan packs utilizing the lands within the reservation. Mashkiiziibii Wildlife Program has set a minimum population goal of at least three packs partially occupying the reservation.

If the population falls below this goal, immediate consultation will occur with the United States Fish & Wildlife Services and the WI DNR. Monitoring efforts and a possible reason for the population decline will be evaluated by MWP. MWP will seek to identify any major habitat changes, prey population declines, and/or possible disease outbreaks. The status of Ma'iingan outside of the reservation will also be evaluated.

Traditional Ecological Knowledge

> "In order to be involved with wolf conservation, the State and Federal government need to understand how to take care of wolves. That's what the Anishinaabe have done for years by observing and learning. Conservation of wolves is a part of our history. If we allow them to be killed, we allow ourselves to be killed." – Edith Leoso, 2017

This statement by Tribal Elder and Historic Preservation Officer Edith Leoso underlines the importance of Traditional Ecological Knowledge (TEK). TEK is passed down through generations of indigenous peoples (Service et al., 2014). This knowledge is formed over long periods of time in which an indigenous nation lives on a landscape (Adams et al., 2014). Anishinaabeg are believed to have finished the great migration to Mooninwaane'akaaning Minis (known as Madeline Island in English) around 1400 (About Anish:Timeline), but had shared the landscape of modern North America with Ma'iingan for more than 8,000 years (Our Proud History).

Generally, indigenous peoples of North America lived in a sustainable manner before colonization occurred and influenced this way of life (Wood and Wilckers, 2008). Hunter-gatherer lifestyles gave indigenous peoples an intimate knowledge of their dependency on other life, from predators to prey (Wood and Wilckers, 2008). Anishinaabeg have learned skills and morals from Awesiinhyag (animals) and animal Manidoog (spirits) (Benton-Banai, 1988). Anishinaabeg hold a wealth of knowledge in coexisting with Ma'iingan held by tribal members and in traditional stories.

In addition to the Anishinaabe creation story involving Ma'iingan, various other stories involve Ma'iingan teaching lessons to Anishinaabeg (Usik, 2015). These stories often reflect what environmental values Anishinaabeg have traditionally held. The analysis of these stories and the lessons Anishinaabeg gain from them may also help to shed light on how they successfully co-inhabited North America with Ma'iingan. One Anishinaabe value these stories exemplify is that humans are lesser than other members of their ecosystem, because of the dependence humans have on other biota to survive. This contrasts with Western attitudes of dominance over the natural world, which much the scientific community is influenced by.

The wildlife program will pursue TEK on Ma'iingan, value it along with the scientific method, and incorporate it into its conservation work. Thus far, this knowledge has been pursued at elder lunches, community events, and a conversation circle leading up to the 2018 update of the Ma'iingan Management plan. The wildlife program will accept knowledge that may help inform Ma'iingan conservation at any time. Adams et al. (2014) outlines a framework we can use to form research questions based on TEK while using the scientific method so that those who have not yet accepted TEK for its inherent value may accept the same knowledge in the form of scientific results.

Mashkiiziibii's Policy on the Harvest of Ma'iinganag

To Anishinaabeg, the loss of one Ma'iingan is equal to that of a loss of a brother/sister. All ma'iinganag are sacred to Anishinaabeg, therefore the Mashkiiziibii Tribe does not support the killing of Ma'iinganag, but does understand the importance of protecting one's animal companions.

At the Mashkiiziibii Tribal Council meeting on May 9th, 2012, the Tribal Council and the community members present spoke out against the sport killing of Ma'iinganag. At that meeting, the Mashkiiziibii Tribal Council approved an emergency rule prohibiting the harvest of Ma'iinganag within the exterior boundaries of Mashkiiziibing. The Bad River Band of Lake Superior Chippewa Indians is opposed to the recent State of Wisconsin Ma'iingan hunts and the interpretation of the 350 Ma'iingan population number in the Wisconsin Wolf Management Plan as being an upper limit on Ma'iingan's population (Appendix A). The Mashkiiziibii Tribe knows that there should be no population cap placed on Ma'iingan and that the State should focus on supporting coexistence with Ma'iingan.

Mashkiiziibii Wildlife Program Responsibilities

The Mashkiiziibii Wildlife Specialist will be responsible for the implementation of this plan. The Wildlife Specialist, with the assistance of Tribal Wardens, will also be responsible for co-investigations conducted within the buffer area surrounding the reservation, depredation investigations within the exterior

boundaries of the reservation, the coordination of inter-agency monitoring and conservation activities, and the annual recording of the reservation Ma'iingan population.

The Wildlife Specialist will also be responsible for participating in any state, federal, tribal and regional meetings regarding Ma'iingan. Summaries of these meeting will be kept on file at the MNRD office and updates will be provided to the MNRD Department Director on an annual basis. MWP will continue to provide comments on proposed state and federal Ma'iingan conservation strategies and documents. Routine coordination will occur with federal, state, and surrounding land managers to ensure proper protections for Ma'iinganag are taking place to ensure protection of the local population.

Regulations under this Ma'iingan Relationship Plan will be enforced by Mashkiiziibii Tribal Wardens and necessary coordination with federal, state, and local authorities will occur under the guidelines of this plan.

What makes a Ma'iingan a "Reservation Ma'iingan?"

During the delisting process and the introduction of Wisconsin Act 169 2011, the term "reservation wolf" or "reservation pack" was commonly used. MWP defines a reservation Ma'iingan as a Ma'iingan or pack whose home range is found, at least in part, within the exterior boundaries of Mashkiiziibing. This information has been confirmed by radio collar locations and combined tracking efforts between MNRD and WDNR. These packs shall be protected when they travel off-reservation as well as when they remain on reservation.

Conservation Responsibility in the Buffer Zone

Mashkiiziibii has sovereignty over the reservation and holds rights to hunt, fish, and gather in the ceded territory, which makes up roughly the northern third of modern-day Wisconsin. Ma'iingan does not recognize human political boundaries. Mashkiiziibii Ma'iingan research dating back to 1996 shows that reservation wolves regularly travel off reservation. The following map of a collared Ma'iingan demonstrates how reservation Ma'iinganag travel throughout the six mile buffer of Mashkiiziibing.

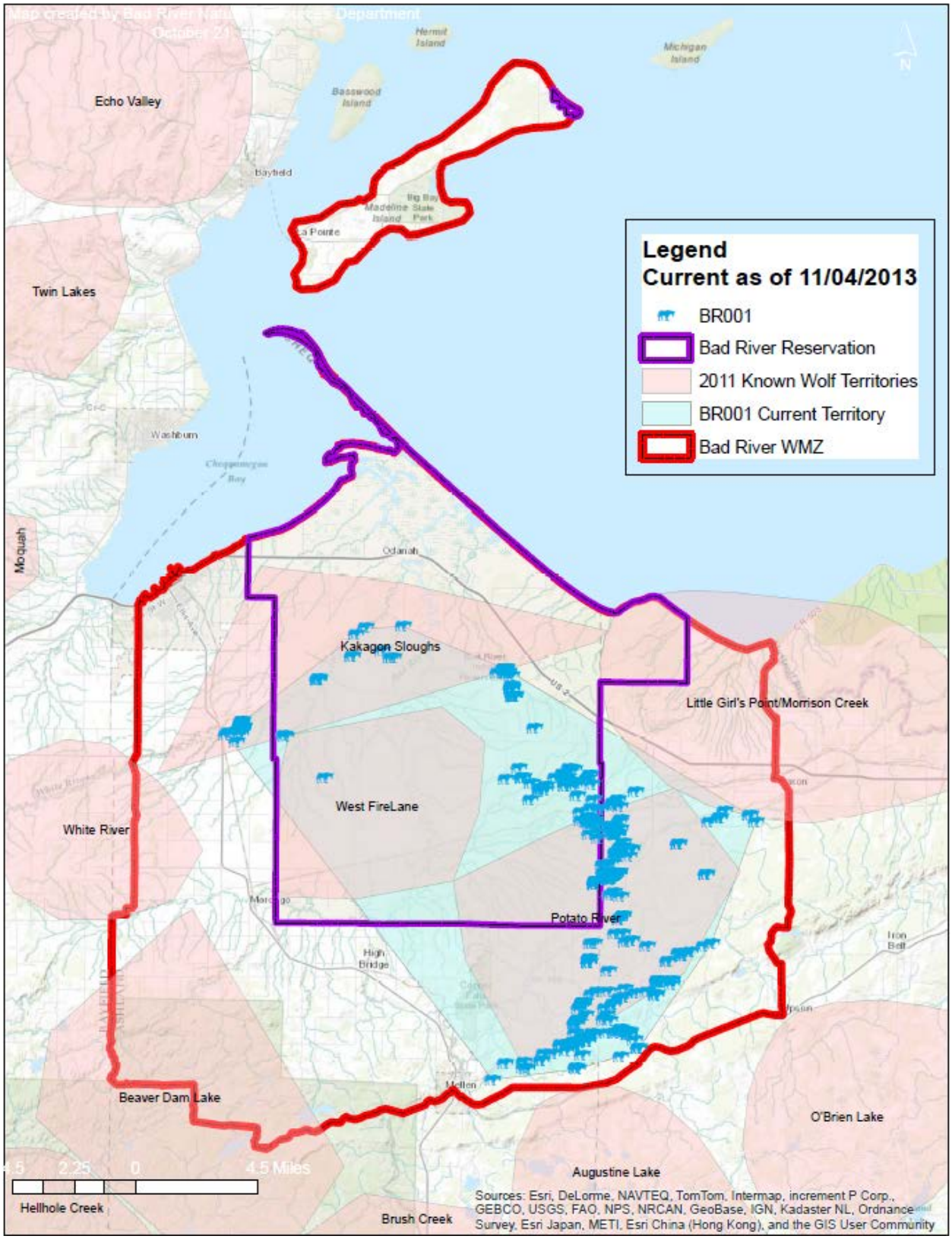


Figure 8: Movement of a formerly radio collared ma'iingan on the Mashkiiziibii reservation

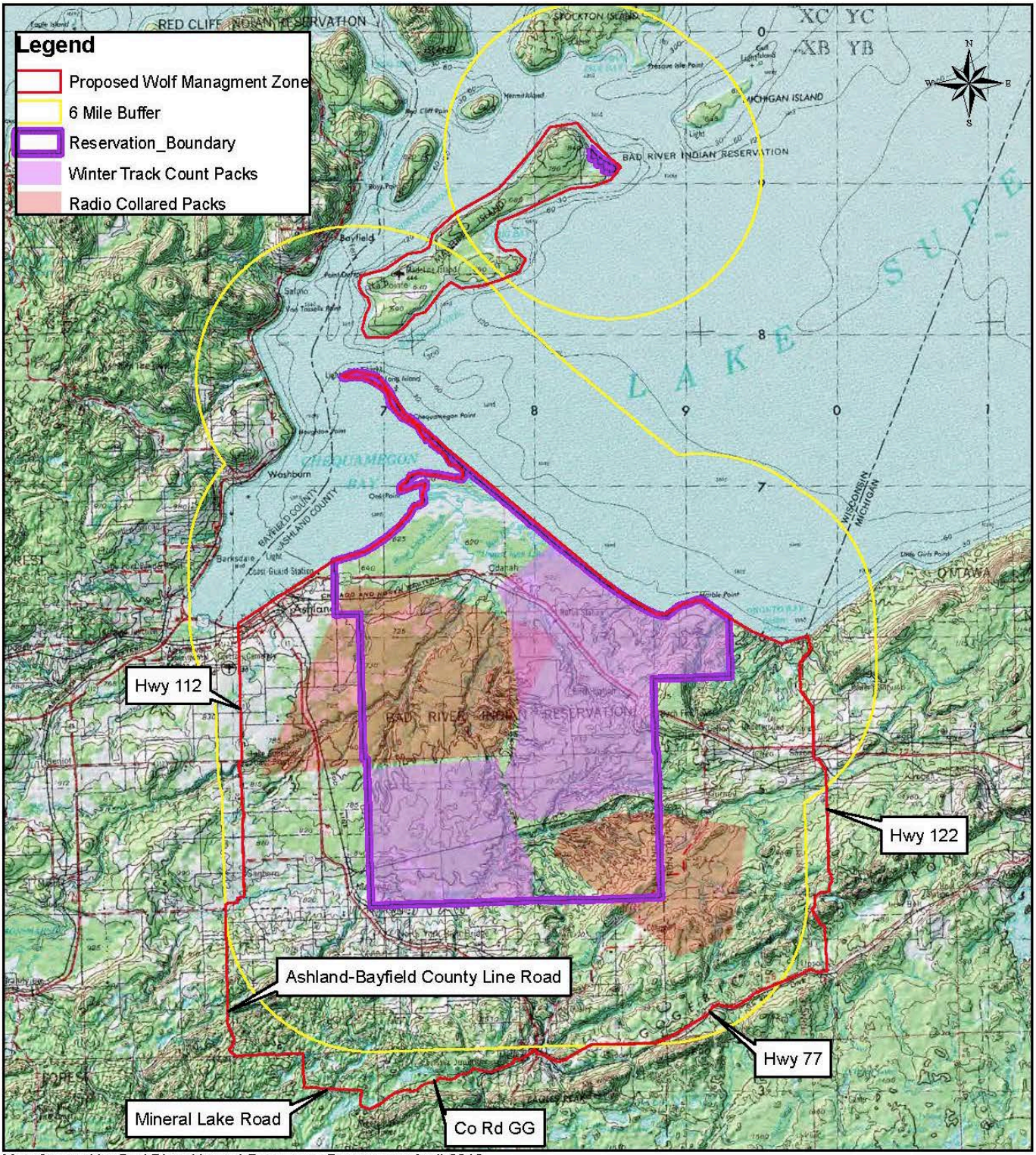
For Mashkiiziibii's sovereignty to be honored, extended protections for reservation Ma'iingan must be recognized by the state. Mashkiiziibii has been advocating to the State of Wisconsin for the protection of reservation wolves, which also travel off reservation, at least since the early 2000s (when Ma'iingan was temporarily federally delisted) (Doolittle, 2001).

In the State of Wisconsin, the WDNR, APHIS-WS, and tribes with large reservations have been working cooperatively on reservations, within a six mile buffer of the reservations, and within the ceded territories. If there is a conflict between people and Ma'iinganag within six miles of a reservation (Bad River, Red Cliff, Lac Courte Oreilles, Lac Du Flambeau, Menominee, Stockbridge-Munsee), tribal representatives are to be notified and to be given the opportunity to investigate the scene with APHIS-WS professionals. At an investigation, a reactive depredation control method is discussed with all parties including the landowner.

The Mashkiiziibii Ma'iingan Relationship Plan extends beyond the reservation's boundaries, encompassing six miles around the reservation's borders (Figure 9). The buffer zone boundary runs along easily distinguishable roads to reduce possible confusion. The unit runs from Chequamegon Bay along Hwy 112, to Ashland-Bayfield County Line Road, to Mineral Lake Road, to Co Rd GG, to Hwy 77, then back along Hwy 122, and ends at the Wisconsin-Michigan border. A portion of Mashkiiziibing is located on Mooninwaane'akaaning Minis (Madeline Island). Ma'iingan is not currently known to live on Mooninwaane'akaaning Minis, but Ma'iingan has been document on Stockton Island (the largest of the Apostle Islands) and the buffer zone extends around the reservation land on Mooninwaane'akaaning Minis (Allen et al., 2016). Within this zone, there shall be a zero quota for public harvest. The Tribe does recognize the importance of private landowners and their need to protect their domesticated animals. Therefore, the tribe is understanding of the issuance of an individual landowner permit to kill Ma'iingan **as a last resort**, as long as the following circumstances apply:

- Domesticated animal depredations have occurred within the last six months and there was tribal representation on the investigation
- Other non-lethal abatement methods were tried and documented but found unsuccessful
- Multiple domesticated animal damages (adverse health effects or death resulting from a verified ma'iingan attack) have occurred and have been verified to have been caused by ma'iingan by co-investigations with tribal staff
- After co-investigations with APHIS-WS and MNRD, it has been determined that lethal methods are appropriate

MWP understands that there are diverse, non-lethal tactics to coexist with Ma'iingan and which are ethically, scientifically, and culturally better options than lethal action. The Mashkiiziibii Wildlife Specialist needs to be involved in depredation investigations within the buffer zone. Because of the small number of Ma'iinganag associated with Mashkiiziibing and their frequent use of both on and off-reservation lands, the impact of depredation control is significant.



Map Created by Bad River Natural Resources Department April 2012

*Red polygons are Minimum Convex Polygons created from location data collected on radio collared individual by the WDNR. Purple polygons are packs known to exist from winter track counts, observations, and other infomation collected by staff. More data needs to be collected outside of the exterior boundary of the reservation to complete polygons.

1 in = 5 miles

Figure 9: Map of buffer zone and reservation packs

Ma'iingan and Livestock

In the most recent 5 year report from the USDA on cattle mortality, a historic trend continued in which predators accounted only for a small percentage of cattle deaths (Figure 10; USDA, 2017).

Figure 10: USDA data on cause of cattle mortality

More than 30 livestock operations surround the reservation within the buffer zone (Figure 9), making Ma'iingan-livestock conflict an area of concern in Ma'iingan conservation. Many factors go into whether a population of Ma'iinganag shows a preference for livestock or for their natural prey. In some cases, high populations of a single natural prey species are less appealing to Ma'iinganag than livestock predation, but multiple and smaller populations of native ungulates will draw Ma'iingan more than farm animals will (Treves et al., 2004; Meriggi and Lovari, 1996). One reason for this predation trend may be that a single species experiencing constant predation from Ma'iingnag may learn more quickly how to evade the predator. For example, Waawaashkeshi retain instinctual responses to lower their vulnerability to predation (Nelson and Mech, 1994). Domesticated animals, though, have lost their ancestor's natural defenses against predation, thanks to selective breeding (Smith-Thomas, 2016). This presents an argument for returning historically native cervids, such as Omashkooz (American elk; *Cervus elaphus*), to Mashkiiziibing.

A three-year Minnesota study of Ma'iingan movements showed that the majority of instances of the animal on pasture lands were by chance passing (Chavez and Gese, 2006). These results were based on comparisons to simulations of what random activity would look like in Ma'iingan movement. Not all Ma'iingan visits to livestock in entailed a case of depredation. During the three years of the study, eight young or vulnerable farm animals were killed by Ma'iingnag (Chavez and Gese, 2006). Chance passing of livestock land in the pursuit of natural prey, though, can result in livestock depredation due to the fact that they are an easier meal for Ma'iingan (Amirkhiz et al., 2018).

Habitat variables and secondary prey may influence whether Ma'iingan pursues livestock or natural prey. There have been studies that both show Ma'iingan to prey more heavily on livestock despite a healthy availability of natural prey (Treves et al., 2004) and show Ma'iingan to prey more heavily on natural, secondary prey despite livestock being more readily available (Chavez and Gese, 2005). In the first study, the reason for heavy livestock predation was hypothesized to be due to the landscape consisting largely of pasture rather than being intermingled with forest, wetlands and open water (Treves et al., 2004; Treves et al., 2011). In the second study Wazhashk (Muskrat; *Ondatra zibethicus*) made up the second largest percentage of Ma'iingan's

diet, which may indicate that presence of secondary prey helps to reduce livestock predation (Chavez and Gese, 2005). More research is needed to understand wolf predation on livestock, its influencing variables, and its prevention. Still, it seems that conserving biodiversity, and thus giving Ma'iingan varied prey options, may help to prevent Ma'iingan conflict with livestock.

It's also important to note that Ma'iingan predation on livestock and native prey may be overemphasized by those who have bad feelings toward Ma'iingan. Depending on the location, Makwag may prey on just as many Waawaashkeshi fawns as Ma'iingan does (Kunkel and Mech, 1994). Wiisagi-Ma'iingan are known to be a significant cause of sheep and goat depredation (Mitchell, Jaeger, and Barret, 2004).

Coexistence

Encouraging coexistence with Ma'iingan is essential to an effective relationship plan, because human caused mortality is the number one killer of Ma'iingan in Wisconsin (Treves et al., 2019). Additionally, Ma'iinganag and other predators can kill and eat domestic animals, including sheep, cows, chickens, and dogs. It doesn't happen often, but it can have great impacts to the individual experiencing the loss. Any conflicts with Ma'iinganag or other predators in Mashkiiziibing or within the buffer zone surrounding the reservation shall be reported to the MNRD Wildlife Specialist (see appendix for contact information) within 24 hours of the occurrence by either the individual or the immediate responding agency.

In order for conflict investigations to remain consistent, MNRD will follow the verification procedures provided by APHIS-WS and the WDNR and will ensure all parties are notified of predator-livestock conflict in a timely manner. Authority to make reactive decisions after Ma'iingan conflict in Wisconsin (outside of reservations) is held by the Wisconsin Department of Natural Resources (WDNR). Authority to make reactive decisions after Ma'iingan conflict on Mashkiiziibii lands is held by the MNRD. On private lands within the exterior boundaries of Mashkiiziibing and within the designated buffer area surrounding the reservation, authority shall be shared between the State and MNRD.

If a depredation does occur, all traffic in the vicinity must be kept to a minimum and the depredated animal must be covered with a tarp until designated staff are able to arrive and complete a thorough investigation. Photos shall be taken of the incident and an incident report shall be completed and kept on file at the MNRD. Copies of these reports shall also be provided to all parties involved in the conflict, and copies of reports from other agencies shall also be collected and placed on file at the MNRD.

If Ma'iinganag are again delisted federally, private landowners will have the right to shoot and kill Ma'iinganag in the act of killing, wounding, or biting a person's domesticated animals on their own private property as stated by Wisconsin NR code 10.02(1)(b). In this event, the Mashkiiziibii Wildlife Specialist and appropriate staff from WDNR and APHIS-WS must be notified immediately by the landowner or current caretaker of the property where damage has occurred to investigate the scene. See Appendix D for contact information. Any Ma'iinganag killed for the above listed reasons shall not be kept by the responsible party. All Ma'iinganag shall be respectfully handled by the Mashkiiziibii Wildlife Specialist and/or the MNRD Tribal Game Wardens.

The Tribe does not provide financial assistance for animals lost to or injured by Ma'iinganag. The MNRD can offer assistance and education on prevention tactics and on state and federal reimbursement programs. Conflict issues will be dealt with on a case by case basis. As a federal agency, APHIS-WS will co-investigate any depredation occurring within the exterior boundaries of the reservation as well as any occurring within the designated buffer area surrounding the reservation with the Mashkiiziibii Wildlife Specialist.

Preventing and Responding to Depredations on Livestock

A goal of MWP is to help identify non-lethal solutions to prevent predator-livestock conflict. The killing of individual animals that may have caused a depredation can lead to more issues, instead of effectively protecting livestock (Treves et al., 2015). Ma'iingan packs may break up if a member, especially the breeding

female, is killed (Treves et al., 2015). The breakup of a Ma'iingan pack can lead to young, dispersing Ma'iinganag or to wisagi-ma'iingan replacing the pack's niche. Young, dispersing Ma'iinganag have been shown to be more likely to go after livestock (Vucetich et al., 2013). A more promising solution is to understand the individual predators we share the landscape with and to establish an understanding with them that livestock are not acceptable prey items. This can be done with a menu of husbandry and deterrent practices.

The key to determining a long term, non-lethal solution is to determine the mechanism that is driving these depredations to occur. The impact that Ma'iinganag have on farms across Ma'iingan country is minimal compared to other negative impacts, but to one farm that has repeated depredations by Ma'iinganag, it can be emotionally and financially devasting (Breck and Meier, 2004). After an investigation has occurred in cooperation with MWP, APHIS-WS, and WDNR, the cooperating agencies will work with the landowner on site to develop a Depredation Prevention Plan with a list of recommendations to reduce the future risks of depredations. Recommendations will vary depending on the landowner and the circumstances. The Mashkiiziibii Wildlife Specialist is also available for depredation prevention consultation before and incident has occurred. This may entail signing an agreement between MWP and the livestock owner to lend out deterrents such as light makers and noise makers when available, free of charge.

In 2019, Abi Fergus began her master's education at University of Wisconsin-Madison in the Nelson Institute and Carnivore Coexistence Lab. She studied the potential of non-lethal deterrents to keep Ma'iingan and other predators away from livestock operations surrounding the reservation. By the 2023 update of the Ma'iingan Plan, findings from our research will be available to inform future carnivore-livestock coexistence on the reservation and in the buffer zone.

Disturbance Protection

Studies have shown that Ma'iinganag do not tolerate human activity around den sites (Paquet and Carbyn, 2003). MWP will establish a 1.5 mile (2.4 km) buffer around known, active Ma'iingan den locations from March 1st to July 1st. Since pups are more mobile later in summer, and since packs usually have multiple rendezvous sites, there will be no human disturbance restrictions on rendezvous sites. The buffer area around den sites will be considered when MNRD staff reviews proposed timber sales, development proposals, and certain access permits.

Incidental Ma'iingan Capture or Mortality

In the event of a trapper incidentally catching Ma'iingan, it shall be immediately released or the aid of Mashkiiziibii wardens and wildlife specialist is to be immediately requested. In the event that a dead Ma'iingan is found anywhere in Mashkiiziibing or within the buffer area surrounding the reservation, the MNRD Wildlife Specialist must be notified immediately by the party that found Ma'iingan or by the immediate investigating agency, whether it be APHIS-WS or WDNR. Depending on the location of Ma'iingan, other authorities may also need to be notified. Upon notification, the scene will be investigated by the proper authorities and Ma'iingan's remains will be handled respectfully by MWP.

Any Ma'iinganag found deceased in Mashkiiziibing shall be handled in a respectful way by MWP. Samples may be taken from individuals if deemed necessary for biological studies or law enforcement investigations. MWP will cooperate with a certified lab for necropsies and biological sampling of individuals. Some furs and skulls may be kept for educational and cultural purposes.

How to Obtain a Ma'iingan Fur

Each year, a number of Ma'iinganag are obtained by the WDNR. These Ma'iinganag are either found dead (during periods of delisting) or taken legally by lethal abatement methods conducted by APHIS-WS or private landowners off-reservation. These Ma'iinganag can be made available for educational or cultural uses.

Mashkiiziibii members interested in obtaining Ma'iingan's fur or any parts of Ma'iingan should contact the Maskiiziibii Wildlife Specialist. Distributions of Ma'iingan's fur shall happen on a first come first serve basis and will ultimately need to be approved by the Mashkiiziibii Tribal Council.

Education and Outreach

MNRD shall use a variety of media to help keep the community informed about Ma'iingan in and outside of Mashkiiziibing. These media will include information at public events held by MNRD, updates in the MNRD quarterly newsletter, and information on the Tribe's website. Changes to the Ma'iingan Relationship Plan will also include at least one public meeting to enable the community to comment on the proposed changes (Appendix E). To stay updated on reservation Ma'iingan visit the wildlife website at http://www.badriver-nsn.gov/wildlife/, read Common Ground (http://www.badriver-nsn.gov/news/) the department's quarterly publication, or contact the Wildlife Specialist.

Research and Monitoring of Ma'iinganag in Mashkiiziibing

MWP has been monitoring the Ma'iingan population on the reservation since 1996. The Tribe has worked cooperatively in this effort with the WDNR, USFWS, and APHIS-WS. Methods MWP currently uses are as follows: winter track surveys, howling surveys, scat surveys, and keeping a Ma'iingan observations log book.

Winter track surveys and howling surveys are valuable tools for monitoring the reservation's Ma'iingan population. MWP follows similar winter track survey and howling survey protocols established by the WDNR, which helps in our joint effort to monitor Ma'iinganag both on and off reservation. The protocols for these surveys can be found in Appendix C and the department welcomes any Mashkiiziibii member to participate in these surveys independently or along with the Wildlife Specialist. This data collected by MWP is shared with WDNR and other cooperating agencies to help paint the full picture of how the Ma'iingan population is doing in the Great Lakes region.

MWP also keeps a Ma'iingan observation log. When people report a Ma'iingan sighting on the reservation, the department obtains information on the location, number of animals, color, and size. Following a reported sighting, the Tribal Wildlife Specialist or a Tribal Warden will investigate the sighting and obtain information that can be used to help estimate the reservation's Ma'iingan population. MWP also collects trail cam photos from hunters on the reservation to document Ma'iingan sightings. Photos can be emailed to the Wildlife Specialist at wildlife@badriver-nsn.gov or delivered to the MNRD office in the Chief Blackbird Building.

Scat is collected by MNRD Wildlife program staff when found anywhere on the reservation. This scat can be used to monitor Ma'iingan population health by examining it for viruses, parasite levels, diet, and inbreeding. MWP will coordinate with a certified lab for the analysis of the samples if/when funding is available.

Future Ma'iingan Program Needs

MWP will continue to work with state and federal agencies as well as neighboring landowners in the monitoring of and relationship building with the local Ma'iingan population. MWP will put a continued effort into building a citizen monitoring network to aid MWP in acquiring more knowledge about the resident Ma'iingan packs. Conducting howl surveys is a great opportunity for the community to connect with brother Ma'iingan and citizen monitoring would help relieve the wildlife program to diversify its wildlife monitoring work. Citizen monitoring can also be used as an education/outreach tool for children and local school groups. There is a continued need to study Ma'iingan's local diet by analyzing how many Amikwag and Waawaashkeshiwag Ma'iingan is eating from season to season. Unnatural sources of food such as bait piles and livestock carcass pits have been documented on or near the reservation, further justifying the importance of a diet analysis. Ma'iingan diets have not been studied in Wisconsin since 1980, when the population had not begun its large climb in the 1990s.

With this update to the relationship plan, MWP is moving away from putting GPS and VHF collars on brother Ma'iingan. This is an important time to demonstrate how we can come to understand Ma'iingan with tracks, scat, howls, and trail camera pictures, rather than by using invasive monitoring methods that entail some risk to Ma'iingan. Potential research partners who honor the Anishinaabe value of reciprocity are encouraged to reach out the MWP with proposals for collaborative research.

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Appendix A. Overview of ESA status and state and tribal Ma'iingan conservation

ESA: Western Great Lakes Distinct Population Segment of Gray Wolves

As of the 2019 update of this plan, Ma'iinganag in the Great Lakes Region were federally protected under the Endangered Species Act. When Ma'iingan is delisted, it is the responsibility of states and of tribes to conserve Ma'iingan cooperatively.

Figure 11: Western Great Lakes Distinct Population Segment

Summary Wisconsin's Ma'iingan Relationship Plan (1999)

In 1999, the WDNR developed a Wolf Management Plan to help formalize Ma'iingan relationship in the state. Many components of the plan could not be implemented until after federal delisting occurred. Ma'iinganag in Wisconsin were briefly delisted in both 2008 and 2009, but subsequently relisted following legal challenges, before delisting again in 2012 and then relisting in 2014.

The WDNR chose to use management zones as part of the state-wide Wolf Management Plan. There are currently four wolf management zones in the state of Wisconsin: Zone 1 – The Northern Forest Zone, Zone 2 – The Central Forest Zone, Zone 3 – The wolf buffer area, and Zone 4 – southern area that the State presumes has little to no opportunity for colonization by Ma'iingan packs. Mashkiiziibing is located in Zone 1. Zone 1 includes 634 square miles of Indian reservations, which, in most cases, will remain as protective areas

for Ma'iinganag. Zone 1 is considered to have the most suitable Ma'iingan habitat in the state, because it is a mostly forested landscape with few agricultural and urban areas.

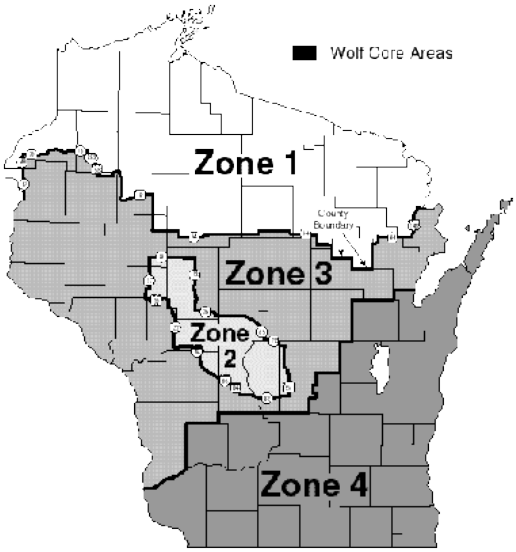

Figure 12: Wolf management zones as documented in 1999 Wisconsin Wolf Management Plan

From 2012 to 2014, when Ma'iingan was delisted in the Great Lakes region, the WI DNR primarily used lethal control at what the agency confirmed as depredation locations. Control of depredating Ma'iinganag can be done by landowners/occupants acting on private land under WDNR permit or by government trappers; landowners can also kill Ma'iinganag that are in the act of attacking pets or livestock on their land under NR 10.02(1)(b).

The WDNR's minimum population goal for the state is 350 Ma'iinganag. Ma'iinganag will be relisted as threatened by the state if the population falls below 250 Ma'iinganag for three years, and as endangered if they fall below eighty. As long as the state's Ma'iingan population remains above target levels, lethal management will continue in areas with a history of depredating Ma'iinganag or a high probability of Livestock-Ma'iingan conflict.

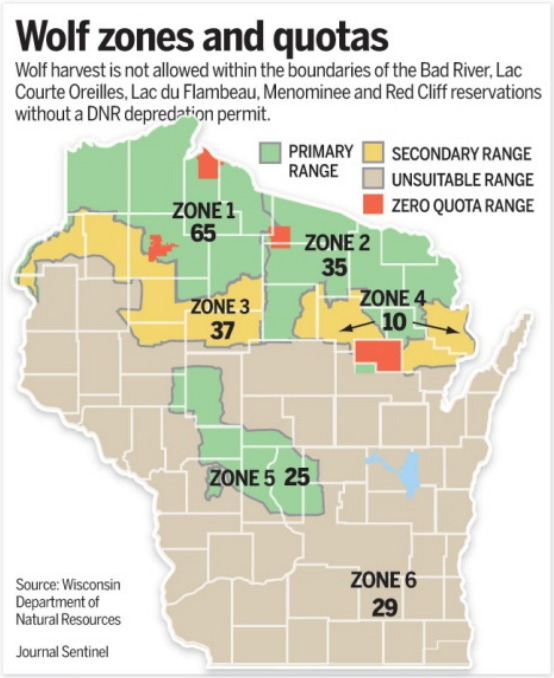

Figure13: 2012 WDNR Proposed Ma'iingan Harvest Zones and Quotas. The quotas are subject to change on an annual basis.

A Ma'iingan Season in Wisconsin

On January 31st, 2012 Senate Bill 411 was introduced by Senators Moulton, Holperin, and Lasee. The bill was related to the hunting and trapping of Ma'iinganag in Wisconsin. On March 30th, 2012 the bill was

presented to the Governor Scott Walker. The bill is now known as 2011 Wisconsin Act 169 which was published on April 16th, 2012. On October 15th, 2012, Ma'iingan hunting and trapping began under a permit/quota system with the exception that the following reservations were closed to harvesting: Mashkiiziibii, Red Cliff, Lac Courte Orielles, Lac du Flambeau, Menominee, and Stockbridge-Munsee.

The Wisconsin Natural Resources Board (NRB) chose a total harvest quota for the 2012 season to be 201 individuals. This quota predicted a reduction in the state Ma'iingan population by 14%. WDNR divided the state into six zones excluding the six reservations previously mentioned, and set there harvest goals for each zone. Twenty percent of the known minimum Ma'iingan population in zones one, two, and five would be harvested, forty percent of zones three and four, and seventy five percent of zone six would be harvested. The percentage was set high for zone six because this is deemed as unsuitable Ma'iingan habitat by the state of Wisconsin due to probability for human-Ma'iingan conflict.

The WDNR then took the quota of 201 individuals and subtracted half of the harvest quota in the ceded territories for the tribes to claim based on the LCO vs. Voigt case requirements. Half of the ceded territory quota amounted to 85 leaving the final 2012 Ma'iingan season quota at 116 individuals. The quota of 116 animals established for state harvesters was reached by December 23rd, 2012; no WI tribe allowed on or off-reservation Ma'iingan seasons for their members in 2012.

The total known human caused mortality of Ma'iinganag for 2012 was 243 individuals. There were 117 killed under the 2012 Ma'iingan hunt, 76 under depredation controls (including landowner permits), 24 documented vehicle collision, 21 known illegal kills, and 5 unknown mortalities. The minimum population count for the 2011-2012 tracking season ranged from 815-880. The midpoint of this would leave use with a minimum population estimate of 847, which would leave us with a 29% human caused mortality of the 2012 minimum population count. Now keep in mind that is a minimum count and does not include pups that were born in the spring of 2012.

Following similar hunts that took place in the modern State of Michigan, a number of well-respected ma'iingan researchers collaborated on a review of the lack of scientific or ethical justification behind the way in which the Michigan Ma'iingan hunts were conducted (which is similar to what occurred in Wisconsin). The Michigan Department of Natural Resources explained that the purpose behind its 2013 Ma'iingan Harvest season was to reduce the potential of conflict between Ma'iingan and livestock or Ma'iingan and humans. The MI DNR did not substantiate its harvest plan with any scientific evaluation. Employing scientific research, the authors of the paper pointed out issues in the reasoning behind and execution of the Michigan Harvest Season. The researchers concluded:

- Hunting Ma'iingan doesn't teach other Ma'iinganag not to visit farms
- In order to reduce the amount of depredations that occur on farms, an unacceptable 20% of the Ma'iingan population would have needed to be hunted
- The Michigan Harvest Plan does not include adaptive management language to change the plan in response to how the hunt would affect the Ma'iingan population

Wisconsin Landowner Ma'iingan Control Permits

When Ma'iingan is delisted in the Western Great Lakes Distinct Population Segment, the WDNR has had authority to issue permits for the shooting or trapping of Ma'iinganag on privately owned property. The criteria for obtaining a Ma'iingan control permit are as follows:

- At least one verified depredation has occurred within the last 2 years on owned or leased land;
- A verified depredation has occurred within one mile of the applicant's property with vulnerable animals within the current calendar year;

- Human safety concern from Ma'iinganag exists on the property as determined by U.S. Department of Agriculture Wildlife Services or WDNR; or
- Harassment of livestock is occurring and based on the judgment of Wildlife Service's a permit should be issued.

Permits are usually valid for 90 days after issuance and can be renewed by the WDNR. Hunting and trapping of Ma'iinganag is allowed under these permits, often with no limit to the number of animals to be removed or destroyed. The following are additional permit conditions:

- Authorized participants are the permittee and resident family members. Up to two additional persons may be designated at the time of permit issuance to assist with the removal of Ma'iinganag. Assistants must be listed on permit.
- Shooting hours will be normal hunting hours, unless Ma'iinganag are in the act of killing or attacking domestic animals.
- Baiting is not allowed. All livestock that is killed must be disposed of pursuant to Section 95.50, Wisconsin Statutes.
- Shooting and trapping will only be permitted on land owned or leased by the permittee.
- All Ma'iinganag shot or trapped must be reported within 24 hours and turned over to the Department.
- A trapping license is required for trapping of Ma'iinganag as are specific trapping techniques and equipment which will be conditions of any trapping permits issued.

As a result, the MWP works with the state and APHIS to investigate reports of potential Ma'iingan depredation both within the reservation's exterior boundary, and within the surrounding buffer zone. While lethal depredation control may be permitted when depredation is verified and non-lethal

methods are considered un-effective, it may also not be approved if the impacts to local packs is deemed exclusive.

Appendix B. Ma'iingan Survey Protocols and Forms

Winter Carnivore Tracking Survey Form and Protocol

Developed using standardized survey methods provided by Wisconsin Department of Natural Resources.

(Wydeven, A., et. al. 2004. Guidelines for Carnivore Tracking During Winter in Wisconsin. Wisconsin Department of Natural Resources. http://www.dnr.state.wi.us/org/land/er/mammals/volunteer/pdfs/tracking_guidelines.pdf)

Introduction

Since wildlife does not know our political boundaries, it is important to work in cooperation with neighboring agencies to better monitor and assess population trends. To standardize survey methods, the tribal survey methodology was modeled after the already existing guidelines provided by the Wisconsin Department of Natural Resources. However, some of the guidelines have been modified to better suit the need of the reservation.

Tools Needed

- Tracking guide book(s)
- Detailed map of the survey area
- Data sheet, clipboard, and pencils
- 6 in ruler and tape measure
- Camera
- GPS

Completing the Data Forms

-Please make sure forms are ***completely*** filled out. If you have any questions pertaining to the forms please call the wildlife specialist @ 715-685-7840 ext 1554

Surveyor(s): Names of people conducting track survey

Date: Month/Day/Year track survey was completed

Survey Block ID: See attached map for survey block ID's.

Survey Start Time: Time survey began.

End Time: Time Survey ended that day.

Temperature: Temperature at the beginning of the survey.

Time of Last Snow Fall: If it snowed within the last 48 hours, write down how many hours it has been since the last snowfall. If it hasn't snowed for more than 48 hours record the number of days since last snowfall.

Snow depth: Record the total snow depth in inches. Avoid areas of plowed, drifted, or under trees were snow depth is affected.

New Snow Depth on Road: Record amount of snow present on the road of survey in inches. This may change as you move onto new roads make sure to record this in the comments section.

Amount of snow from last snowfall: Record in inches how much snow was received our last snowfall.

Percent Cloud Cover: Circle percentage nearest to the amount of cloud cover.

Rate Track Conditions:

Poor: It is snowing heavily, hasn't snowed in a while, heavy crust on snow layer impacting amount of tracks present.
OK: Tracks are visible but lack detail near road, need to follow off road a little ways to identify.
Good: Tracks register well in the snow. Some lack details necessary to distinguish between similar species.
Excellent: Tracks register well and show a good amount of detail. Tracks are easily distinguishable.

When you Encounter Tracks

1) Consult your tracking guide to identify the species that made the tracks.
    a. Some species tracks may look similar so make sure to pay close attention to the gait pattern (sequence of foot movements).
    b. Sometimes it may be necessary to follow the tracks into the woods a short distance to find a better track that is more easily identifiable.
2) When Ma'iingan tracks are encountered follow the protocols in the Ma'iingan tracking guidelines (see attached). A photo of the track next to the ruler should be taken as well as a GPS location.
3) If rare species such as: Elk, Moose, Cougar, Canada Lynx, or wolverines are identified. A GPS location should be taken at the site. (See below for GPS location protocol)
4) For all species but Ma'iinganag, all tracks encountered within 0.3 s of each other should be recorded as one animal.
    a. For Ma'iinganag follow tracks backward and forward until you can get a good count of the number of animals present. Ma'iinganag will often loop around and follow portions of a route more than once, so what appears to be the tracks of four animals may only be two Ma'iinganag.
5) Record any other related sign encountered while tracking. (Carcasses killed or scavenged by carnivores, signs of urinations (raised leg urination or squat urination), evidence of blood in the urine, scat…)

6) If you are uncertain about a track record UNK on the data sheet, record the location, and take a few photographs and ask the Wildlife Specialist about it.

Key Points to Remember

- Canines (dog family) vs. Felines (cat family)
  - To distinguish the difference between these tracks check for claw marks. Members of the cat family have retractable claws and rarely show claw marks in the snow. If they do they appear thin and knifelike.
  - The heel pad on a cat will be asymmetrical and have 3 similar sized lobes on the bottom of the track. A dog's heel pad will be symmetrical, the lobes on the bottom will not be similar in size, and the top of the pad will be more round and pointed.
- Measure any small fisher tracks to make sure they are not marten tracks. Fisher tracks will generally be at least 1.6 inches long and 1.5 inches wide.

Winter Track Survey Form

Mashkiiziibii Natural Resources Department
Questions Contact:
Lacey Hill, Wildlife/GIS Specialist
715-682-7123

Surveyor(s):_____ Date:
Survey Block ID: _____ Survey Start time:_____ End time:
Weather and Tracking Conditions:
Temperature: _____Time of last snow fall (in hours if less than 48 otherwise days**):_____**
Snow Depth (inches): _____New Snow Depth on Road: _____
Amount of Snow from last snowfall (inches): _____
Percent Cloud Cover (circle one): 0% 25% 50% 75% 100%
Rate Tracking Conditions (circle one): Poor OK Good Excellent

Species Key:

Canids: CY = Coyote, D = Dog, F = Fox, W = Ma'iingan **Mustelids:** B = Badger, FI = Fisher, O = Otter, S = Skunk, PM = Pine Martin, OW = Other Weasel **Felids:** BC = Bobcat, CT = Cat, L = Lynx, CO = Cougar **Other:** BR = Bear, BV = Beaver, P = Porcupine, R = Raccoon, WTD = White-tailed deer

Road(s) and Direction(s) of Travel	Mileage	Canids	Mustelids	Felids	Other	Notes and Comments

Ma'iingan Howling Survey Form and Protocol

HOWL SURVEYS FOR MA'IINGANAG IN WISCONSIN

By Adrian P. Wydeven

Howling surveys are conducted to determine general location, home site locations, general abundance and pup production in Ma'iingan packs. Use the article by Harrington and Mech (1982, J. Wildl. Manage. 46: 686-693) as a general guide on doing Ma'iingan howling surveys.

Surveys usually should be done from June 20 through October, with July and August being the best period. Time of day should be from ½ hour after sunset until 1:00 or 2:00 a.m. Areas to be covered should consist of a series of roads that traverse or surround the likely territory of Ma'iinganag. Howl attempts should be made at about 1.5 mile intervals, but can be modified by 0.2 to 0.3 miles to avoid hollows, occupied residences or noisy stream edge, and to take advantage of higher elevations. Also, make special attempts to howl from most intersections.

At each stop, walk about 100 feet from your vehicle. Start off with 4-5 quiet howls for about 25-30 seconds. Wait 90 seconds for a response. If no response, give 4-5 loud howls for 25-30 seconds. Again, wait 90 seconds for a response. Give a second series of loud howls followed by 90 seconds of waiting time if no response occurs. If no responses after this third howling attempt, drive to your next stop.

Use of the Howl Survey Form

General Location: List area being covered, especially the county and pack name.

Start Location: Write the legal description of the first howl attempt stop.

End Location: Write the legal description of the last howl attempt stop.

Date: Date of survey; remember that if you go past midnight the date will change.

Temp: Temperature at start of survey.

Skies: List percentage of cloud cover.

Precip: Indicate any precipitation falling; if moderate to heavy rain occurs, stop survey.

Wind: Indicate approximate wind speed; if winds exceed 8 miles/hr. stop survey.

Previous Day(s) Weather: List high and low of survey day and any precipitation that occurred

Observer(s): List all persons taking part in the survey.

Road Name: Write the name of each road you are surveying and give the odometer reading when you first enter a road.

Other Columns: At each stop, write the odometer reading and time when you initiate the howling attempt. If you get a response from Ma'iinganag write down the time when Ma'iinganag respond to your howling attempt, number of Ma'iinganag responding, direction of response, exact location (legal description) of response, and any comments. Generally the number of Ma'iinganag recorded should be 1, 2 or 2+ adults and/or 1, 2 or 2+ pups; beyond 2 adults or 2 pups it is impossible to accurately count the Ma'iinganag unless you actually get to see them. When you get no responses, under "Time Response" write "none". You may want to record responses from other animals such as owls or coyotes under "Comments". If you are not sure whether you are hearing coyotes or Ma'iinganag, write down that you are not sure.

Totals: List the total miles from the first to last stop; list the total number of stops at which you attempted howls; list the total number of responses you received under "Time Response"; and list the estimated number of Ma'iinganag responding under "Ma'iingan No.".

Equipment

Pen or pencil, clipboard, data sheet(s), watch, flashlight, compass, map of study area at scale of 1:150,000 or larger, and tape recorder with empty tape and Ma'iingan tape (optional).

Do's and Don'ts

Avoid using brights when driving through open country.

Don't attempt to shine flashlights at Ma'iinganag that may approach you.

Attempt to be as quiet and inconspicuous as possible.

Turn off all lights and avoid using flashlights when you arrive at your stops.

Never attempt to walk into an area from where you hear howling.

Don't take a large number of people with you; limit the number of people on the survey to 4 or less.

Generally only one person should do the howling, but you can trade off so no one person needs to do all the howling.

Generally no more than one survey per week per territory should be conducted; unless there is need to gather additional data.

When you have received a response, don't stay at a site too long, and do not keep howling at the same group.

Avoid disclosing exact locations of howling responses to people outside of your survey group.

Ma'iingan Howl Survey ***EXAMPLE***

General Location: *Chequamegon N.F., Sawyer Co., Log Creek Area*

Start Location: Section *25* T *40* N, R *3* E or W

End Location: Section *6* T *39* N, R *3* E or W

Date *July 10, 1992* Temp *60-65°* Skies *Clear* Precip *None* Wind *<2mph*

Previous day(s) weather *Warm, high 80° low 55°; clear skies, light wind*

Observer(s) *Jane Brown and John Smith*

Road Name	Odometer	Time Howl	Time Response	Ma'iingan No.	Direction	Comments and Estimated Location, Sec., T, & R
Co. EE & FR 161	*00.0*	----				*Going N on FR 161*
FR 161	*01.5*	*2200*	*none*			
FR 161	*03.0*	*2215*	*none*			
FR 161	*04.5*	*2230*	*none*			
FR 161	*06.0*	*2245*	*2248*	*2A 2+P*	*20°E of N*	*Probably in Sec. 2, T40N R3E*
FR 161	*07.5*	*2300*	*none*			
FR 161 & FR 162	*08.5*	*2315*	*none*			
FR 162	*10.0*	*2330*	*none*			
FR 162	*11.5*	*2345*	*none*			
FR 162	*13.0*	*2400*	*none*			
FR 162	*14.5*	*2415*	*none*			*Stop survey.*
TOTALS	*14.5 miles*	*9 stops*	*1 response*	*4+*		

Appendix C. Websites and Additional Information

For more information about Ma'iingan delisting and the USFWS go to: www.fws.gov/midwest/Ma'iingan/

For more information on the Wisconsin's State Ma'iingan Relationship Plan go to: http://dnr.wi.gov/org/land/er/publications/Ma'iinganplan/toc.htm.

For more information on Land Owner permits you can visit this website: http://dnr.wi.gov/topic/wildlifehabitat/Ma'iingan/permit.html.

2011 Wisconsin Act 169: https://docs.legis.wisconsin.gov/2011/related/acts/169

Federal Register Delisting the Gray Ma'iingan in the Western Great Lakes: http://www.fws.gov/midwest/Ma'iingan/delisting/pdf/FR_grwoWGLDelist28Dec2011.pdf

Mashkiiziibii Tribe Wildlife Program Website: http://badriver-nsn.gov/natural-resources/wildlife-program

Great Lakes Indian Fish & Wildlife Commission Website: http://glifwc.org/

Appendix D. Mashkiiziibii Carnivore Coexistence Program

The following work initiation document is used when farmers enter into an agreement with the Mashkiiziibii Wildlife Program to promote carnivore coexistence with the use of deterrents and evaluation of husbandry to protect both domesticated animals and wild predators.

Mashkiiziibii Wildlife Program Work Initiation Document for Predator Deterrent Deployment	Work Initiation Document Number 1.	Date 2.

3. Cooperator's name:
4. Cooperator's address:
5. Location of work to be performed:

I, the undersigned cooperator or cooperator's representative, do hereby give my consent and concurrence to the Mashkiiziibii Wildlife Program (to include its employees) to use at the site described in 5 the following methods and devices (owned by Mashkiiziibii Wildlife Program):

I, the cooperator or cooperator's representative, have been informed of the methods and the manner in which the devices listed in the above section will be used, and of the possible hazards associated with their use. I understand that Mashkiiziibii Wildlife Program (to include its employees) will: exercise reasonable precautions to prevent injury to animal life; guard against the mishandling of devices and materials; and exercise due caution and proper judgement in all wildlife coexistence operations. I understand that Mashkiiziibii Wildlife Program will provide copies of records or record information promptly upon the property owner's or cooperator's request. I understand that Mashkiiziibii Wildlife Program may collect Global Positioning System (GPS) coordinates, predator presence, and deterrent effectiveness data at the project site as part of anonymized research. I understand that Mashkiiziibii holds insurance for its employees which will cover any accident that may occur on the property outlined in line 5, leaving me with no liability for the potential injury of a Mashkiiziibii employee.

In consideration of these understandings and of the benefits to be derived, I, the cooperator or cooperator's representative assume responsibility for injury to my property under my control, when said injury is not the result of negligence on the part of Mashkiiziibii Wildlife Program; and to give adequate warning of possible hazards to persons I authorize to enter onto my land. Further, in recognition of the benefits to be derived from the use of specified methods and devices authorized by this Work Initiation Document, I, the cooperator or cooperator's representative, agree not to concurrently use or allow to be used upon lands covered by this Work Initiation Document lethal methods. This will allow for the collection of data on the effects of non-lethal deterrents alone. As part of this agreement, the cooperator agrees to provide Mashkiiziibii Wildlife Program a brief review of whether they found the deterrent to be beneficial, based on the impact or lack of impact they saw on their domesticated animals and on predators, within a month of the removal of deterrents.

Special Considerations:

Signature and title (Landowner, lessee, administrator)	Telephone Number	Address	Date
Signature and title (Mashkiiziibii representative)	Telephone Number	Address	Date

Appendix E. Public Comment opportunities for 2019 Update

The first update of the Ma'iingan Relationship Plan was delayed by a year, partially due to a staffing turnover in the wildlife program. Efforts were made to gain community knowledge and input for the update of this plan through the following events:

In November of 2018, former Wildlife Specialist Lacey Hill-Kastern opened a call for public comments for the update of the Ma'iingan Relationship Plan from November 1, 2018 through November 30, 2018.

On October 23, 2018 the Mashkiiziibii Wildlife Program hosted an event at the Casino to gather input for the Ma'iingan Relationship Plan and to discuss a response to Chronic Wasting Disease. Thirteen community members attended this event and mentioned Ma'iingan possibly defending the reservation against Chronic Wasting Disease, but the community members were largely focused on gaining an understanding of Chronic Wasting Disease at this meeting.

From July to August, 2017 current wildlife specialist Abi Fergus worked for Mashkiiziibii as an intern for the wildlife program to collect input for and scientifically review the Ma'iingan Relationship Plan. Fergus interviewed local wolf biologists, livestock owners within the reservation and buffer zone, and tribal members- particularly elders. Fergus has regularly attended elder lunches since this internship to gain insight from Mashkiiziibii elders. Fergus provided a report of her findings to former wildlife specialist Lacey Hill-Kastern as well as her senior thesis, which was written based on her recommended changes to the plan.

Appendix F. Contact Information

USDA-WS Ma'iingan Depredation Hotline: 1-800-228-1368

Mashkiiziibii Wildlife Specialist, Abi Fergus: 715-685-7840 x1554

Mashkiiziibii Natural Resources Department: 1-715-682-7123

Mashkiiziibii Tribal Game Wardens:

Gerald White: 715-292-7822

Brad Bigboy: 715-979-1181

Megan Mihalko: 715-292-1902

Appendix G. Mashkiiziibii Tribal Council Resolution Approving Mashkiiziibii Ma'iingan Relationship Plan

BAD RIVER BAND OF LAKE SUPERIOR TRIBE OF CHIPPEWA INDIANS

CHIEF BLACKBIRD CENTER

P.O.Box 39 • Odanah, Wisconsin 54861

Resolution No. 12-17-19-248

Approval of the 2019 update to the Mashkiiziibii Ma'iingan Relationship Plan

WHEREAS, the Bad River Band of Lake Superior Tribe of Chippewa Indians is a federally recognized Indian tribe with a Constitution enacted pursuant to the Indian Reorganization Act of 1934, 25 U.S.C. Sec. 476; and

WHEREAS, Article VI, Section 1(a) of the Constitution authorizes the Tribal Council to negotiate with Federal, State, and local government on behalf of the Band; and

WHEREAS, Article VI, Section 1(n) of the Constitution directs the Tribal Council to encourage and foster the arts, crafts, traditions, culture, wildlife, and natural resources of the Band, which necessarily includes enhancement and protection of the water resources within the boundaries of the Reservation; and

NOW, THEREFORE, BE IT RESOLVED that the Tribal Council hereby adopts the 2019 update to the Mashkiiziibii Ma'iingan Relationship Plan

Certification

I, the undersigned, as Secretary of the Bad River Band of Lake Superior Tribe of Chippewa Indians, an Indian Tribe organized under Section 16 of the Indian Reorganization Act, hereby certify that the Tribal Council is composed of seven members, of whom 7 members, constituting a quorum, were present at a meeting hereof duly called, noticed, convened, and held on the 17th day of December, 2019; that the foregoing resolution was duly adopted at said meeting by an affirmative vote of 6 members; 0 against; and 0 abstaining, and that the said resolution has not been rescinded or amended.

Jay McFee

Jay McFee, Secretary
Bad River Tribal Council

Telephone (715) 682-7123 *Natural Resources Department* Fax (715) 682-7118