

## NORTHEASTERN MINNESOTA MOOSE MANAGEMENT - A CASE STUDY IN COOPERATION

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**ABSTRACT:** This paper provides an overview of moose management in northeastern Minnesota with an emphasis on relationships between the State and Tribal entities that share management responsibility. Specific topics discussed include settlement of treaty rights issues, harvest allocation and strategies, and the evolving State-Tribal partnerships that have been created during the past 15 years. Brief updates on the status of moose in Minnesota, population monitoring efforts, population goals, and the future direction of management are provided.

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Moose (*Alces alces*) are common in the northeastern portion of Minnesota. A small population is also found in the northwestern portion of the state. Previously much larger, the northwest population was hunted from 1971 to 1997 when the season was closed due to an unexplained, precipitous decline in that herd. However, moose numbers in northeastern Minnesota have remained relatively stable and are sufficient to support hunting by both State-licensed and Tribal hunters under several jurisdictions.

Historical Superior National Forest records for northeastern Minnesota indicate that a dramatic increase in moose numbers occurred during the late 1920s but numbers plummeted in the mid-1930s, and remained low until the mid- to late 1960s (Peek et al. 1976). Population estimates, conducted from aerial surveys since 1960, suggest that the population gradually began to increase through the 1970s and 1980s to a peak of 6,900 in 1988 and then dropped sharply to 3,700 by 1990. Recent surveys indicate that the population is relatively sta-

ble and at approximately 4,000 animals.

Human interactions with moose pre-date European settlement of the region. Local bands of Native Americans relied heavily upon moose for subsistence. Following settlement of the region, establishment of reservations, and the creation of the State of Minnesota, moose management in its various forms fell on the shoulders of the State of Minnesota. However, during the past two decades, various changes to the management process have occurred.

This paper covers the structure and history of current moose management in northeastern Minnesota with a focus on the structure of tribal management and cooperation between State and Tribal management authorities. Historical information on the development of the Tribal management agencies is presented for background. Management of moose within reservation boundaries will not be discussed in this paper.

## HISTORICAL BACKGROUND

The main population of moose in Minnesota inhabits the forested northeastern region. Much of the area is public land under State, County, and Federal ownership. Private individuals, paper companies, and Native American Chippewa bands control other land. Habitat management is generally the responsibility of the landholder, though there are cases where other jurisdictions may have say in management activities that require review prior to issuing any necessary permits. Outside of tribal reservation lands, harvest/population management primarily falls under the jurisdiction of the Minnesota Department of Natural Resources (DNR).

Prior to European settlement of the region, the local Native American Bands led a somewhat nomadic lifestyle, frequently moving their base camps from one area to another to take advantage of seasonally abundant foods. Moose were a staple large game animal taken by the Bands. As settlement of the region occurred, changes to the region, its wildlife, and its inhabitants took place. By the mid-1800s increasing pressure to settle the region led to numerous treaties between the U.S. Government and the Chippewa Bands in the Great Lakes Region. Some of these treaties established reservation boundaries, while others ceded large portions of land to the U.S. Government in exchange for various types of payments.

On 30 September 1854, 10 of the Lake Superior Chippewa bands signed a treaty ceding much of present-day northeastern Minnesota to the United States Government (Fig. 1). Article 11 of the treaty held in part, “*And such of them as reside in the territory hereby ceded, shall have the right to hunt and fish therein, until otherwise ordered by the President*” (GLIFWC 1992). In the years preceding and following the 1854 Treaty, several additional treaties

ceding lands and/or establishing reservations were signed by various Bands in the Great Lakes region, some of which contained similar language retaining off-reservation rights to hunt and fish. Of the 10 Bands that signed the 1854 Treaty, only the Bois Forte (two reservations, the main one just west of the ceded territory and a second smaller reservation within the ceded territory), Grand Portage, and Fond du Lac bands eventually ended up residing in the ceded territory (Fig. 1). Following this period of treaty signing, increased settlement of the region occurred and Minnesota was established as the 32<sup>nd</sup> State of the Union on 11 May 1858.

The issue of treaty-reserved rights off-reservation did not become a major issue in Minnesota until late 1984. Tribal hunting and fishing within reservation boundaries falls under the jurisdiction of individual bands and except for some Federal regulations, little outside input enters into how resources are managed. The subject of who had the right to regulate Tribal hunting and fishing off-reservation had not been addressed by the courts. All of that changed in December 1984. A Grand Portage Band member legally hunting moose under Tribal jurisdiction wounded a moose on what he believed to be the Grand Portage reservation. While tracking the wounded moose the hunter eventually realized that he was off the reservation and rapidly running out of light to pursue the moose. Upon returning to the reservation, the band member talked with the Tribal game warden and Tribal council and told them that he intended to resume tracking the moose the following morning. The Tribal council offered their support of the hunter in whatever might come from his actions. The Band member also contacted the local state DNR game warden that evening and told him of his intentions. The following morning the hunter resumed tracking the moose but never was able to find it.

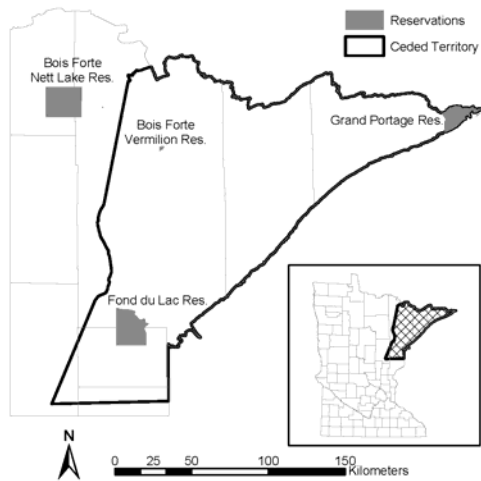


Fig. 1. Territory ceded by the Lake Superior Chippewa to the U.S. Government in a 30 September 1854 Treaty. Reservation locations of the Bois Forte, Grand Portage, and Fond du Lac bands, which retain hunting and fishing rights within the 1854 Ceded Territory, are also shown.

When the hunter returned to his truck the DNR warden was waiting for him. After discussing the events with the DNR warden, and taking a closer look at a map of reservation boundaries, it was determined that the Band member was actually about a half-mile outside the reservation when he wounded the moose. At that time the hunter was issued a state citation for hunting moose out of season. As a result, in 1985, the Grand Portage Band and 2 of its members filed a civil action in U.S. District Court claiming that the State of Minnesota had no jurisdiction over Band members exercising their treaty reserved rights to hunt and fish in lands ceded under the 1854 Treaty. In May 1987 the parties involved in the lawsuit requested that the Court remove the matter from its trial calendar to give the parties time to negotiate an out-of-court settlement. The Bois Forte and Fond du Lac Bands joined in the negotiations.

In February 1988, after lengthy negotiations, the end result of the lawsuit was

an out-of-court settlement between the 3 Bands and the State of Minnesota. The Tri-Band Authority, an inter-tribal natural resource agency governed by the duly elected officials of the 3 Bands, was formed to regulate the exercise of off-reservation treaty rights. Under the terms of the agreement the Bands agreed to forbear, or limit, the exercise of certain treaty rights in exchange for an annual monetary payment by the State of Minnesota. Included in the language of the agreement were provisions that outlined establishment of seasons, methods of take, and in some cases harvest limits. One of the terms of the agreement established that the moose season to be held by the Bands would run concurrently with the State of Minnesota's season. This agreement marked the first time that the Bands had any real say in how management of moose outside of reservation boundaries was handled.

In 1989, the situation changed yet again, when the Fond du Lac Band left the Tri-Band Authority to pursue their own settlement with the State by utilizing a provision in the agreement that allowed any party to withdraw with a 1-year notice. The Tri-Band Authority then became the 1854 Authority, governed by the Reservation Councils of the Bois Forte and Grand Portage bands. This resulted in 3 separate management "agencies" that were responsible for moose management in the 1854 Ceded Territory.

Since leaving the Tri-Band Authority the Fond du Lac Band has continued to hunt moose in the 1854 Ceded Territory under seasons, regulations, and desired harvest levels established by the Band. Discussions with the State are ongoing and ultimately it is likely that a formal agreement will be reached clarifying their role in sharing the resource. Both Bands represented by the Authority might also be involved in these discussions, depending on the proposed

final terms of the agreement.

Under its current structure, the 1854 Authority has 3 divisions: administrative, enforcement, and the biological services division. The Fond du Lac Band also created their own Resource Management Division and developed a conservation code regulating off-reservation hunting and fishing by their members.

There is often a question of whether or not the various Treaties, signed so long ago, still are legitimate law in our modern society. To answer that we will step back and examine several relevant legal rulings. First and foremost, as set forth in Article VI of the United States Constitution “...and all treaties made, or which shall be made, under the authority of the United States, shall be the supreme law of the land;...” (Woods Institute 2002). That would seem to set the question at rest. However, there are several specific court cases that have upheld the Treaty rights issues. In a 1942 ruling, the U.S. Supreme Court ruled that since a Treaty takes precedence over State law, Indians with Tribal rights cannot be required to buy a state license to exercise those rights (GLIFWC 1992). In 1969, a Federal Judge ruled that the State of Oregon could only regulate Tribal rights when “reasonable and necessary for conservation,” that State regulations should not discriminate against Indians, and must be the least restrictive means (GLIFWC 1992). Regionally, in 1983, the U.S. Court of Appeals for the 7<sup>th</sup> Circuit reaffirmed that Treaty rights to hunt, fish, and gather on ceded lands were reserved and protected through a series of Treaties (GLIFWC 1992). In 1994, a U.S. District Court decision upheld the Mille Lacs Band of Ojibwe’s Treaty rights in the 1837 Ceded Territory (GLIFWC 2002). A 1996 ruling also found that the Fond du Lac Band retained their Treaty reserved rights to hunt, fish, and gather in the 1854 Ceded Territory (GLIFWC

2002). By default, this was also a verification of Bois Forte and Grand Portage claims to the same rights since they also signed the same Treaty. Most recently, in 1999, the U.S. Supreme Court upheld the rights of the Mille Lacs Band and other signatory Bands within the 1837 Ceded Territory (GLIFWC 2002). Based on these decisions, the question of whether or not Bands retain their Treaty-reserved rights in the Midwest has been essentially laid to rest. That said, there are still questions about how Tribal management of rights and the underlying resources are to fit in with State management. Questions will continue to evolve.

### OVERVIEW OF COOPERATION

As mentioned previously, prior to 1984, no Tribal off-reservation management of Tribal hunting, fishing, and gathering in the 1854 Ceded Territory existed. That changed in 1988 with the out of court settlement and the formation of the Tri-Band Authority, now the 1854 Authority. Initially, most of the cooperation between the Bands and the State of Minnesota was limited to enforcement and a single harvest report that followed the close of hunting and trapping seasons. With the development of the Fond du Lac Resource Management Division in 1993 and the 1854 Authority’s Biological Services Division in 1994, a new era of cooperation began. At that time both the Authority and Fond du Lac began building their respective natural resources staff to become more involved in off-reservation natural resources management. Initial involvement began with attendance of Tribal staff at season setting meetings and discussing State and Tribal harvest as a combined effort.

In 1995, the 1854 Authority and Fond du Lac began contributing both funding and occasional manpower to the annual moose survey with the stipulation that there be actual involvement of the Bands in the proc-

ess. In 1997, the Band personnel started participating in the planning for the survey and were included in setting seasons and quotas for State moose hunters. In 1998, Fond du Lac and Authority personnel were included as permanent members of the survey crew and began working with the State to investigate the potential of expanding hunting opportunities through new zones. Currently, the Bands work with the State in both funding and staffing the annual survey and in evaluating annual harvest and setting season structure and quotas. In addition Tribal biologists work with State wildlife managers to fund and implement habitat improvement projects. In 2002, a new partnership between the 1854 Authority, the Fond du Lac Band, the Minnesota Department of Natural Resources, and the U.S. Geological Survey was formed. The new partnership launched a 5-year study of the northeastern Minnesota moose herd with an emphasis on causes and rates of non-hunting mortality. Since 2002, 84 moose have been fitted with radio-collars as part of this study.

#### Areas of Cooperation

**Moose survey** — Surveys of the moose population in northeastern Minnesota began in 1960 (Lenarz 1998). Survey protocols have changed slightly over the years, but have followed the same general methodology since 1984, with very consistent conditions since 1997. The purpose of the survey is to estimate numbers and age/sex ratios for setting harvest levels and to investigate potential new hunting zones. Currently, we use a stratified random block protocol. About 10,878 km<sup>2</sup> of northeastern Minnesota are considered to be moose range, almost all of which lies within the 1854 Ceded Territory (Fig. 2). Survey plots (ranging from 70 to 847 km<sup>2</sup>) are chosen randomly from 3 different strata (expected low, medium, and high winter density) in proportion to the total area of the moose

range that falls within each category. Tribal and State staff jointly review plot stratification every 5 years. The survey itself is flown by two 3-person crews in Cessna 185s. Parallel transects 0.54 km apart are flown, with a circular resurvey area of 5.2 km<sup>2</sup> being flown following the initial run. Each moose located during the survey is sexed and located with the plane's GPS. Although survey timing has varied considerably over the years, we now start the first possible working day in January. Currently the bands contribute from 33 to 50% of the annual survey costs, in addition to providing 2 full time crew members.

Moose population estimates from 1985 to 2003 have ranged from 3,500 to 9,000 animals (Fig. 3). Ninety percent confidence intervals on the estimates have also varied from a low of 23% in 2002 to a high of 126% in 1995. Conditions for the last several years have been similar, as has survey protocol, enabling us to make better comparisons among years. Currently it appears that the herd is relatively stable around 4,000 animals.

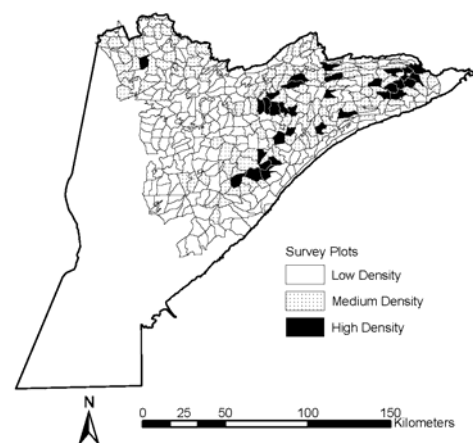


Fig. 2. Northeast Minnesota moose range in relation to the 1854 Ceded Territory. Moose range is broken into aerial moose survey plots stratified according to expected winter moose density (low < 0.2 moose/km<sup>2</sup>, medium 0.2–0.6 moose/km<sup>2</sup>, high > 0.6 moose/km<sup>2</sup>). About 30 survey plots are flown each year.

**Season setting and framework – state licensed hunters** – The first modern harvest season was held in 1971 and was continued on an every-other-year basis until 1991. In 1991 the season was closed for 1 year following a large winter die-off mainly attributed to tick (*Dermacentor albipictus*) associated mortality. At that point, it was also decided to go to a once-in-a-lifetime hunt, meaning that once you had received a license you were no longer eligible for future hunts, regardless of your success. In 1994 the decision was made to switch to annual hunts and permit levels were dropped to roughly half of their previous, every-other-year levels. Prospective hunters are required to apply in parties of 2 – 4 hunters for a lottery process. Demand for the licenses remains high, with odds of receiving a permit around 1 in 20 overall. Annual hunts have been held since 1994, though the State cancelled its 2000 season due to budget constraints. Season dates are set by law, with a current regulation that opens the season for 16 days on the Saturday nearest October 1. Each party receiving a permit is allowed to harvest 1 animal of any sex or age from the 1 zone for which their permit is valid.

**Season setting and framework - 1854 Authority** — One of the terms of the agreement established between the Bands and the State of Minnesota in 1988 was that the moose season to be held by the Bands would run concurrently with the State season. At the time that the agreement was signed, the State of Minnesota was holding a moose season in the northeastern portion of the Ceded Territory every-other-year. The agreement set a quota for Tribal off-reservation moose harvest at 60 animals every 2 years. This provision stated that in the event that the State went to an annual hunt, the Band quota would be 30 moose per year. The Tribal quota could increase if the State ever increased their permit levels, and

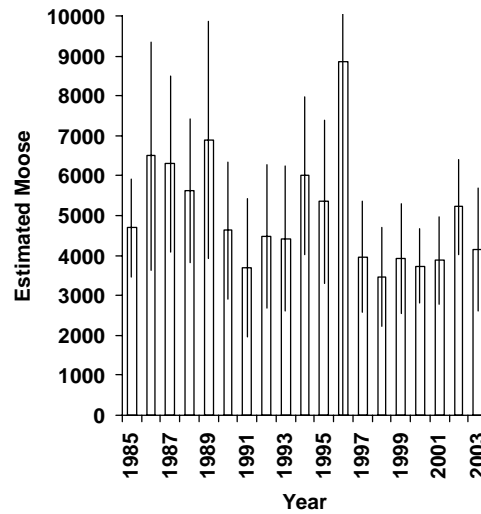


Fig. 3. Estimated moose numbers (bars) and 90% confidence intervals (lines) from aerial surveys in northeastern Minnesota, 1985–2003.

would be done so on a proportional basis. The annual base permit level upon which the 1854 Authority quota is based is 264 permits (1/2 of the 528 permits offered in 1987, the year prior to the agreement). In recent seasons, the State has been issuing roughly 200 permits per year, so it will likely be some time before an increase in the Authority's harvest quota can be discussed. In 1994, the State of Minnesota did go to an annual hunt and, as a result, the Bands' quota moved to 30 moose annually. In 1989, the Fond du Lac Band pulled out of the agreement with the other two Bands and the State of Minnesota. Since that time the Fond du Lac Band has continued to hunt moose in the Ceded Territory, but has yet to reach a final agreement with the other parties that would clarify their role in sharing the resource. Currently, the 1854 Authority must manage its moose season based on the current agreement, meaning an annual quota of 30 moose that may be taken during the same open season dates as the State. Interest in moose hunting by 1854 Authority licensed hunters is fairly high, so annual permits are distributed through a lottery process. Band members must apply

in parties of 3 or 4 for a single permit that is valid for 1 moose of any sex or age. If that party is chosen to receive a permit through the drawing, they are issued a permit for that year. The following year they are ineligible for the initial drawing. In the event that not enough applicants fill the drawing in a given year, the parties that were allowed to hunt the previous year are entered into a second chance drawing to fill any leftover permits. Generally, Band members retain the same party from year to year and most parties receive a permit every other year. Parties are allowed to hunt within any open State hunting zone. However, most parties tend to hunt in the same areas from year to year, allowing us to make some predictions as to where the 1854 Authority moose harvest is likely to occur. Permit numbers are based on average success rate from the previous 3-year period. For example, the average success rate the last 3 years has been 61%, so the Authority issued 49 permits in 2003. Included in the annual permit numbers are 4 subsistence permits which are distributed to the 1854 Authority main office, and each of the 3 Bois Forte and Grand Portage reservations without competition, allowing them to harvest a moose to provide meat for tribal elders. In essence, this means that in 2003, the Authority issued 49 permits in hopes of obtaining a moose harvest of 30 animals. Of those 49 permits 45 were available to Band members through the lottery process. There are currently no fees for Band members to obtain a license, and all duly enrolled Bois Forte and Grand Portage Band members are eligible to apply for a permit provided they have an 1854 Authority identification card, are not restricted from hunting due to court imposed sanctions, and meet hunter safety certificate requirements.

**Season setting and framework - Fond du Lac** — The Fond du Lac Band opens their moose season on the same day as the

State and the 1854 Authority. However, they generally run for an additional 8 weeks. Currently Fond du Lac has 10 moose hunting zones that combine 2 – 5 State zones. Permits are allocated through a drawing. The number of permits available for each zone varies depending on estimated moose numbers and past success rates for the zone. Band members must apply for permits in parties of 3 or 4 hunters, indicating their preferred zones on their application. A \$20 non-refundable fee is required to enter the drawing. As parties are drawn, they are assigned a permit for a given zone, following the preference indicated on their application. All parties receiving a permit are required to provide a \$50 deposit that is returned if they properly register a moose or return their unused tag following the season. Proceeds from the drawing are used to offset costs incurred in the annual moose survey. Although the number of permits varies from year to year, recently it has been around 70 permits annually. The Fond du Lac Band also has Treaty reserved rights to hunt in the 1837 Ceded Territory that lies to the immediate south of the 1854 Ceded Territory. Moose populations in the 1837 Ceded Territory are very low. Although there is a Tribal quota of 5 moose available for the 1837 Ceded Territory and 5 permits are made available annually, there has been little interest in the permits and no harvest thus far.

**Harvest allocation** — Currently, the State of Minnesota issues permits to their hunters based on a harvest goal of 5% of the moose population in each zone. Estimates of each zone's population are conducted annually, based on the results of the annual aerial survey. Local wildlife managers and Band biologists review the estimates and adjust them accordingly if their experience indicates that the estimates are biased high or low. At that point, the State designates 5% of the moose as harvestable. The

biologists from the bands are then asked to give their best estimate as to how many moose Tribal hunters will harvest from each State zone for the upcoming season. For example, if the population estimate for zone 1 is 200 moose, State considers the total harvestable surplus as 10 moose. If total Tribal harvest is expected to be 5 moose, the remaining harvestable surplus for State hunters is 5 moose. The State then looks at their average success rates for the previous 3 seasons in that zone and issues permits based on that success rate to attempt to harvest the remaining surplus. In this example, assuming that the success rate by State hunters in zone 1 has averaged 50% in the past, the State would designate 10 permits for that zone.

This process is a little tricky due to some complicating factors. Success rates by state hunters can vary dramatically from year to year in any one zone. Another factor is the difference in permit zoning by the 3 bands and the State. State hunters are only allowed to hunt in the State permit zone for which they are drawn. Fond du Lac hunters are currently required to hunt within the Fond du Lac moose zone for which they are drawn. However the Fond du Lac zones encompass 2 - 5 State zones. Hunters receiving a permit from the 1854 Authority may hunt in any State zones. Therefore, it is currently difficult to predict exactly what the maximum Tribal harvest from any one State zone will be. However, based on knowledge of moose numbers, access, permit numbers, Tribal harvest histories, and past success rates, Tribal biologists can be reasonably close in their predictions of where harvest will occur. The other complicating factor occurs when predicted Tribal harvest from a State zone may exceed the 5% harvest goal of the State. In that situation, the State generally will offer at least 1 permit to State hunters. In cases where this is proposed, the permits are

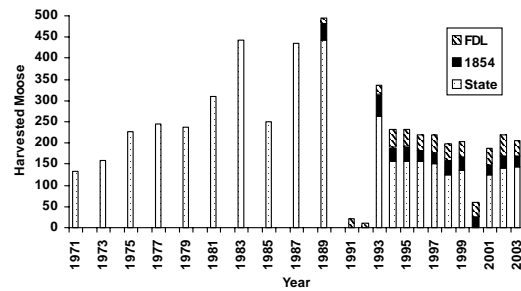


Fig. 4. Total (State and Tribal) northeast Minnesota moose harvests by State licensed hunters, 1854 Authority licensed hunters, and Fond du Lac licensed hunters, 1971 - 2003.

offered only if there is consensus among all involved that doing so is not likely to result in any long-term damage to the local population. Despite the complications in predicting harvest and the involvement of three management agencies, we have been fairly successful in keeping harvest around 5%. Since 1997, at the point at which we feel the herd has stabilized at about 4,000 animals (Fig. 3), total hunting mortality has been approximately 200 moose per year, or 5% (Fig. 4).

## SUMMARY

The development of trust and cooperation between the State of Minnesota and the Native American bands did not happen overnight. It required time, commitment to reaching a workable arrangement, and in some cases litigation or threat of litigation. Cooperative management of moose between the State of Minnesota and the 3 Bands retaining off-reservation harvest rights to moose in the 1854 Ceded Territory continues to evolve. Great strides have been made since 1988 when the initial agreement was signed between the State and the Bands. Increasing levels of trust on both sides, as well as the involvement of all parties in monitoring and managing the resource has led to a good working situation. Personalities of involved personnel also play a critical role and, fortunately, the current

suite of players involved at the local level work well together. Of course, it is unlikely that all parties will agree on all issues over time. Future changes in the moose herd, changes in tribal and state allocation, or other unforeseen issues may invite conflict. However, given the current working relationships between the natural resources staff of the Bands and the State of Minnesota there is a better chance that the parties involved will be able to reach workable arrangements without further litigation. In short, we have elevated co-existence to cooperation much to everyone's benefit.

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