



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LANSING



DANIEL EICHINGER
DIRECTOR

SUBMITTED: October 17, 2022
RESUBMITTED: November 14, 2022

To: Daniel Eichinger, Director
Information: Natural Resources Commission
Subject: Michigan Elk Management Plan

Authority:

The Natural Resources and Environmental Protection Act, 1994 PA 451 (NREPA), authorizes the Department of Natural Resources "the Department" to plan and conduct wildlife management within Michigan.

Discussion and Background:

The first Michigan elk management plan was written in 1975, largely due to a decline in elk abundance. The current elk management plan was finalized in 2012 and has guided management efforts since then. The Department's goal is to update species management plans every 10 years, and in 2022, the revision and update process for the elk management plan started.

The revision process began with meetings with representatives from the five tribes within the ceded area under the 1836 Treaty of Washington. These meetings helped provide an understanding of successes of the previous plan, areas where improvement is needed, and to understand the desired management direction by both the Department and the Tribes. Additionally, a scoping meeting was held in Gaylord in April 2022 to help understand the important issues of the public. Those not able to attend the meeting had an opportunity to provide input electronically.

Using guidance from the public scoping input and feedback from the Tribes, an Elk Management Advisory Team (EMAT) was assembled. This team was constructed of stakeholders impacted by elk and elk management in Northeastern Michigan. Twenty-two agencies, organizations, or Tribes representing conservation, agriculture, hunting, forest management, and public safety interests, as well as provide landowners within the elk range participated. This group met twice in May 2022 to discuss the important aspects of elk management and make recommendations for the next 10 years of elk management in Michigan.

The elk management plan outlines three principal goals: 1) manage for a sustainable elk population in balance with the habitat; 2) use hunting as the primary method to control elk numbers, herd composition and distribution; 3) enhance public understanding of elk management in Michigan. To help achieve these goals, the plan identifies strategies to address several issues. Some of these issues include habitat use and home range, population and

impact monitoring, herd health, population management, elk/human conflicts, and information and education.

The updates to the elk management plan maintain the three primary goals listed above but helps refine management direction for current and future scenarios. While not a change, the EMAT recommended maintaining a desired goal of 500-900 animals in Michigan (same as the 2012 elk management plan) within the current elk management range. While there is expressed desire by tribal partners to expand the elk range, there remains concern about human-elk conflicts and disease in our elk herd. Understanding that this is a 10-year plan, situations might arise over this time where concern for these impacts is lessened which would allow more elk across a broader range.

An added change includes language that defines how wandering elk substantially outside of their range will be managed. Elk traveling great distances can carry, contract, or spread transmissible diseases like bovine tuberculosis (bTB) and chronic wasting disease (CWD). Elk reports outside of their range will be assessed on a case-by-case basis. If elk are traveling into known areas of higher disease occurrence, elk will be lethally removed and submitted for testing. Every attempt will be made to utilize the meat should disease failed to be detected. Elk outside of the range and not in a known disease location may simply be monitored and not removed, especially if there is no conflict associated with them.

There is a recommendation to continue with openings management in the elk range to provide valuable habitat, but the recommendation incorporates shifting emphasis to native openings that can benefit both elk and other species of wildlife. This shift is likely to be experienced over time and will be incorporated with regional operational practices year to year.

The Department will also commit to increasing engagement with federal agencies and tribal councils to promote elk monitoring and discuss management trends.

While elk have been managed sustainably in Michigan for over 100 years, the Department will identify and pursue any research that may improve management of our current elk herd. The partnership between tribes and stakeholders will prove valuable in the event that research projects are pursued.

The EMAT also recommended continued monitoring of elk for the presence of Bovine Tuberculosis and Chronic Wasting Disease.

The EMAT also recommended the enhancement of public viewing locations, especially to provide more accessible viewing opportunities in the Pigeon River Country for all visitors.

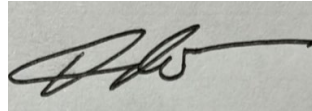
Finally, there was a stated desire by the EMAT to pursue partnerships to measure the economic and social benefits from having elk in Michigan.

The Department will provide an opportunity for the public to comment on the revised elk management plan in October and November 2022 in Gaylord, Michigan. In addition, the public can submit written comments to the Department or speak during the public appearance portion of the November and December Natural Resources Commission meetings. Input collected through this process will be reviewed and weighed for inclusion through the EMAT.

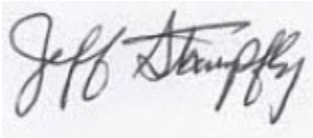
The *Michigan Elk Management Plan* was submitted for information on November 10, 2022, at the Natural Resources Commission meeting. This item appeared on the Department's November 1, 2022 calendar and may be eligible for approval on December 8, 2022.



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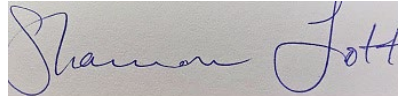
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MICHIGAN

ELK CONSERVATION AND MANAGEMENT PLAN 2023-2033



MICHIGAN
ELK CONSERVATION AND MANAGEMENT PLAN

Approved:

Daniel Eichinger, Director
Michigan Department of Natural Resources
Lansing, Michigan

Date: _____

ACKNOWLEDGEMENTS

The Michigan Department of Natural Resources appreciates the valuable contributions offered by many individuals, agencies and organizations during the development of this plan.

We thank the members of the Elk Management Advisory Team for their dedication and work as they developed a framework for elk management. Their recommendations on issues are directly reflected in many of the management strategies in this plan. Special thanks in this recent update process goes to Alexa Warwick with Michigan State University. Her knowledge, enthusiasm and skill as a facilitator helped this team build consensus around some challenging issues.

We thank our state and Tribal agency partners for their cooperation in elk management and the information and feedback they provided for this plan.

Finally, we thank the members of the public and of the Department both past and present whose efforts have helped maintain a place for elk in Michigan. We can be successful today only because of the work that brought us to where we are.

COVER ART BY JENNIFER KLEITCH

Jennifer Kleitch is a species specialist with the Michigan Department of Natural Resources and has had her art featured on Deer Management Cooperator patches, the Statewide Bear Management Plan and at the Tenth American Woodcock Symposium. Her art depicts wildlife in detail using graphite or pen and ink.

LIST OF ABBREVIATIONS

| | |
|------|-----------------------------------|
| DNR | Department of Natural Resources |
| NRC | Natural Resources Commission |
| EMAT | Elk Management Advisory Team |
| MSU | Michigan State University |
| PRC | Pigeon River Country State Forest |
| DRIP | Deer Range Improvement Program |
| CWD | Chronic Wasting Disease |
| BTB | Bovine Tuberculosis |

1. INTRODUCTION

1.1 Purpose of Plan

This plan provides strategic guidance for the conservation and management of elk in Michigan. This guidance will help: 1) manage for a sustainable elk population in balance with habitat; 2) use hunting as the primary method to control elk numbers, herd composition, and distribution; 3) enhance public understanding of elk management in Michigan.

The Michigan Department of Natural Resources (Department) has the statutory authority and primary responsibility for the management of resident wildlife in Michigan. Accordingly, this plan was developed to guide the Department's management of elk in Michigan. However, partnerships with other organizations have assisted with elk management in the past and will be increasingly important in the future. This plan identifies areas where sharing of resources, collaboration on educational campaigns, and providing technical support may be especially valuable to the management of elk. While the Department can provide leadership for maintaining partnerships and seeking to establish new ones, all parties with an interest in elk and elk management may play a role in such efforts.

This plan does not outline operational details of elk management in Michigan. Operational details will be formulated within an adaptive approach to management, in which specific management methods are routinely adjusted and updated as local conditions, technology, regulations, and other aspects of management change. Several recommendations from the EMAT included improvements to elk management operations. Though these recommendations do not appear in this Plan, the Department is committed to using that guidance to continue to improve elk management.

1.2 Current Management Authority and Process

The Department has a public trust responsibility for the management of all wildlife species and populations. Primary legal authority for wildlife management and regulation comes from the Natural Resources and Environmental Protection Act, Public Act 451 of 1994. Part 401 of Public Act 451 gives authority to the Natural Resources Commission (NRC) and the Department Director to issue orders (the Wildlife Conservation Order) specific to wildlife management and hunting.

In 1996, Michigan voters passed a referendum requiring the NRC to use "Principles of sound scientific management" when making decisions concerning the taking of game. Passage of this ballot initiative gave exclusive authority to the NRC over the method and manner of take for game species. Following passage of the initiative, it was codified as Section 40113a of Public Act No. 451 of the Public Acts of 1994, MCL 324.40113a.

Effective wildlife management incorporates assessments of both biological and social factors influencing management. Elk management is supported by quantitative data from

research, field surveys, mail surveys and published literature. Elk management also incorporates qualitative information in the form of general experience, observations in the field, and discussions with Tribal governments, stakeholders, Department staff, and other agency staff in Michigan and in other states.

Scientific management incorporates an adaptive approach to resource management, which is an iterative process whereby changes in management actions (e.g., hunting regulations or educational efforts) are monitored and evaluated to determine if these changes achieve management goals. Management efforts are modified over time as new information is obtained, new analyses are conducted, or factors that influence elk ecology change.

Several steps are involved in reaching decisions about the management of elk in Michigan. Typically, the Wildlife Division's Elk Work Group, the intra-agency team responsible for identifying and discussing current and emerging issues and potential means for addressing them, develops management recommendations that are then submitted to Wildlife Division or Department leadership for review for budgetary and policy implications. The Department provides recommendations to the NRC for issues over which they have authority. The Department conducts government-to-government consultation with the Tribes and obtains public input through informal discussions with interested stakeholders. Additional public comment is received at meetings of the NRC once recommendations have been provided for review by the Commission. The NRC approved the first formal Michigan Elk plan in 1975, second in 1984, and the last in 2012.

2. THE PLANNING PROCESS

The Department developed this plan through a process that included review of scientific information and significant involvement of affected partners, stakeholder groups and the general public. The process included the following phases:

1. Issue Scoping Meetings
2. Government-to-Government Tribal Consultation
3. Formation of the Elk Management Advisory Team (EMAT) and Meetings
4. Wildlife Division Elk Work Group Meetings
5. Plan Writing
6. Approval Process

The information compiled and evaluated during these phases was used to produce a plan that is based on sound science as well as careful and respectful consideration of the diverse perspectives held by Michigan society. Each phase of the planning process is described below.

2.1 Issue Scoping Meetings

In April of 2022, the Department hosted a public meeting and took public comment electronically to obtain information about peoples' concerns for elk and elk management. Michigan State University (MSU) hosted the meetings and asked attendees to describe the issues they had concerning elk.

2.2 Government-to-Government Tribal Consultation

The current Michigan elk range is within the area ceded by the 1836 Treaty of Washington and subsequently covered by the 2007 Inland Consent Decree. Five federally recognized Tribes reside in this area: Bay Mills Indian Community, Grand Traverse Band of Ottawa and Chippewa Indians, Little Traverse Bay Bands of Odawa Indians, the Sault Tribe of Chippewa Indians, and the Little River Band of Ottawa Indians. The Department engaged with the Tribes during this process through group discussions involving Department staff and tribal representatives. Additionally, the Department invited representatives from each tribe to participate during the EMAT meetings and to comment on the EMAT report to the NRC. The Department also asked the Tribes to help write their concerns and values in relation to elk management as part of this document.

2.3 Elk Management Advisory Team

To help develop a plan that considered a wide range of public interests, the Department assembled the EMAT to serve as an advisory committee. The EMAT's charge was to provide a series of recommendations regarding the future management of the state's elk population. The team included representatives from 22 agencies, organizations, or tribes representing conservation, agriculture, hunting, forest management, and public safety interests as well as private landowners within the elk range. Organizations were selected to represent the interests of Michigan residents that are impacted by elk. Department representatives were on the committee to provide input but not to approve or disapprove the final recommendations.

The EMAT met twice in May 2022 for facilitated meetings. Department staff made informational presentations and asked a series of questions designed to facilitate discussion on important aspects of elk management in Michigan. The EMAT reviewed biological and social information and engaged in sometimes-intense discussions to reach consensus on recommendations they provided to the Department.

The EMAT submitted its final report, Report of the Elk Management Advisory Team to the Department of Natural Resources (Appendix A), to the NRC in October 2022. The report provides guidance for successful elk management and addresses issues of elk management, habitat use and home range, population and impact monitoring, herd health, population management, elk/human conflicts, funding, and information and education. The recommendations presented by the EMAT were used extensively in the development of this management plan.

2.4 Wildlife Division Elk Work Group

The Elk Work Group has representatives from Wildlife, Law Enforcement, and Forest Management Divisions as well as MSU Department of Fisheries and Wildlife. This group meets annually to discuss elk management, herd health, law enforcement, and research issues. They make recommendations related to rule changes for the elk hunting season structure and harvest quotas to the Wildlife Division Management Team, which are subsequently taken to the NRC for approval.

2.5 Plan Writing

Between August and September 2022, the Department evaluated the information and recommendations obtained in the previous phases to develop a draft of this plan. Department staff reviewed the draft prior to its public release.

2.6 Plan Approval Process

A draft of this plan was released in October 2022 for public review and comment through the Natural Resources Commission as a topic for information for their November 2022 meeting. An open house was also held in Gaylord to solicit input in October 2022. The Department reviewed the comments received and modified the plan as appropriate and presented a final draft to the NRC for their approval in December 2022 prior to the final approval and signature by the Director.

3. HISTORY

3.1 History of Elk and Elk Hunting in Michigan

The history of elk in Michigan is a dynamic story that blends ecological, social, cultural, and economic issues. Intertwined with the story of elk is the story of the Pigeon River Country State Forest (PRC), a large contiguous block of state-owned land. The Concept of Management for the Pigeon River Country (MDNR, 2007) provides a complete history of the establishment of the lands that make up the PRC. From the establishment of the former Otsego County Wildlife Refuge in 1924 to the present, elk have been part of the management, controversy and allure of the PRC. Elk were a symbol of “The Big Wild” during the oil and gas controversy of the 1970s which resulted in restricted oil and gas development within the PRC and the creation of the Michigan Natural Resources Trust Fund. Part of the policy statement of the Pigeon River Country Concept of Management is “...to sustain a healthy elk herd...” (Page 14). While many elk thrive well beyond its border, the PRC is considered the nucleus or core range of the elk herd.

Historical accounts suggest elk inhabited the eastern United States and may have been common in the Lower Peninsula of Michigan in pre-settlement times (Bryant and Maser 1982). Elk disappeared from Michigan in the late 1800s.

The current elk herd is the result of a release of seven animals from “various city parks and public institutions” (Stephenson 1942) in 1918 about three miles southeast of Wolverine. The herd grew steadily with estimates of 300-400 in 1939 (Shapton 1940) and 900 to 1,000 in 1958 (Moran 1973). The size of the elk range increased correspondingly and by the mid-1960s complaints of crop damage, reforestation problems, and concerns about elk competing with deer for limited forage were becoming more common. Concurrently, the completion of Interstate 75 in the early 1960s made it much easier for people to travel to the elk range and interest in elk as a tourist attraction was growing. While elk numbers and range were increasing, habitat quality for elk was generally declining. The habitat elk were released and expanded into, cutover hardwood hills and burned pines, became mature forest. This resulted in fewer grasses, herbs, and early successional hardwoods that provide food for elk.

As concerns about elk numbers grew, the Department began to advocate for the ability to actively manage elk numbers through hunting. The first public hunts took place in 1964 and 1965. During these two years, 596 hunters legally harvested a total of 452 elk. These hunts reduced the size of the elk herd as intended. Although the hunts were not re-authorized after 1965, elk numbers continued to decline. The decline was due in part to the continued deterioration of elk habitat but increased human activity in the elk range may have contributed as well. There was also significant local resentment over certain aspects of the elk hunt that led, in part, to noticeable losses due to illegal shooting. In 1974, 45 elk were known to have been illegally killed. In 1975, an air and ground survey counted 159 animals and estimated the population at 200.

The first Michigan Elk Plan was written in 1975 (MDNR, 1975), largely in response to the alarming decline in elk abundance. This plan helped the Department set elk as a priority species for management and outlined actions needed to maintain elk on the landscape. One important outcome of this planning effort was the assignment of additional Conservation Officers to the elk range to reduce the illegal killing of elk. Completion of many of the habitat management recommendations in the 1975 plan were made possible by the 1972 implementation of the Deer Range Improvement Program (DRIP). This \$1.50 earmark from every deer license sold was dedicated to fund habitat manipulation for deer which improved habitat for other wildlife including elk. At the same time, the trees on the forested land that had been cutover when elk were introduced were now large enough to produce timber products. A timber mill was built in Gaylord in 1964 and expanded significantly in 1978 to take advantage of the available timber. The increased demand for wood meant that commercial timber cutting could provide early successional vegetation types favored by elk. The commercial harvest along with non-commercial forest regeneration activities completed primarily for deer and funded through the DRIP program improved elk habitat greatly.

The increase in law enforcement efforts and the improving elk habitat helped elk numbers rebound in the late 1970s and early 1980s. In 1984 the Department adopted the second Elk Management Plan (MDNR, 1984) with the goal of “A viable elk population in harmony with the environment, affording optimal recreational opportunities.” This

plan designated 576 square miles of northern Michigan as elk range and set a population objective of 600-800 animals. The basic tenets of this plan were to control elk numbers through recreational hunting while maintaining a viewable elk herd with a high proportion of bulls. The Department created an Elk Management Team, which is now referred to as the Elk Work Group. This group was charged to annually review elk related issues, including research, from the past year and to make recommendations for the next year. This included assessing the most recent population estimate and making decisions related to harvesting elk. The NRC authorized an elk hunt for December of 1984. It was limited to 50 hunters with a quota of 40 antlerless and 10 any elk licenses and hunters harvested 49 elk.

In 1988, the Elk Work Group recommended expanding the area designated as elk range by including areas where elk could be tolerated without causing additional management problems. The elk range was then divided into four elk management units, which are somewhat unique in physiographic characteristics and, at the time, roughly represented discrete population segments. These units formed the basis for the current elk hunting zones (Figure 1). Based on the expanded range, the NRC established a winter population goal of 800-900 elk in 1988 (Langenau 1993).

Elk hunts have occurred annually since 1984. Between 1984 and January 2021 the Department issued 8,365 permits and hunters have taken 6,917 elk. Since 2007, the five Tribes in the 1836 Treaty-ceded territory, which includes the elk range, have issued tribal elk permits pursuant to the 2007 Inland Consent Decree. The Tribes generally issue permits equal to ten percent of the licenses issued by the state. The hunt periods have been variable with the December hunt period being the most stable. In general, elk seasons during August, September, October and January target elk outside of the elk management area. December hunt periods control overall elk numbers and reduce elk numbers within the elk management area. For each of the different hunt periods, well defined areas are open to hunting. The open area is divided into zones and a quota of hunters is assigned to each zone. All elk killed are required to be taken to a check station or checked by Department personnel in the field. The zone boundaries and how zones have been assigned to hunters has been variable. Changes are based mostly on the number of elk in an area, increased disease threat to the population, or continued nuisance issues.

The zone and quota system was designed to focus the harvest in specific areas to address crop damage or forest regeneration issues and to limit the spread of elk outside of the elk management area. Elk hunters are selected via lottery drawing from a pool of applicants that exceeds 100 times greater than the number of permits issued. Only Michigan residents are eligible to hunt, and selected applicants come from all parts of the state. Many are not familiar with the area and hire an elk hunting guide to help them locate, hunt, and process elk. The original elk population goal of 800-900 established in 1988 was used until the most recent plan in 2011, which updated the population goal to 500-900 elk. The original elk management units of 1988 have undergone many changes to address management issues and no longer represent discrete elk population segments. Elk management units now reflect clear divisions on the landscape, allowing hunters to have

access to public land and high population areas while also ensuring that effort is spaced out within the entire range.

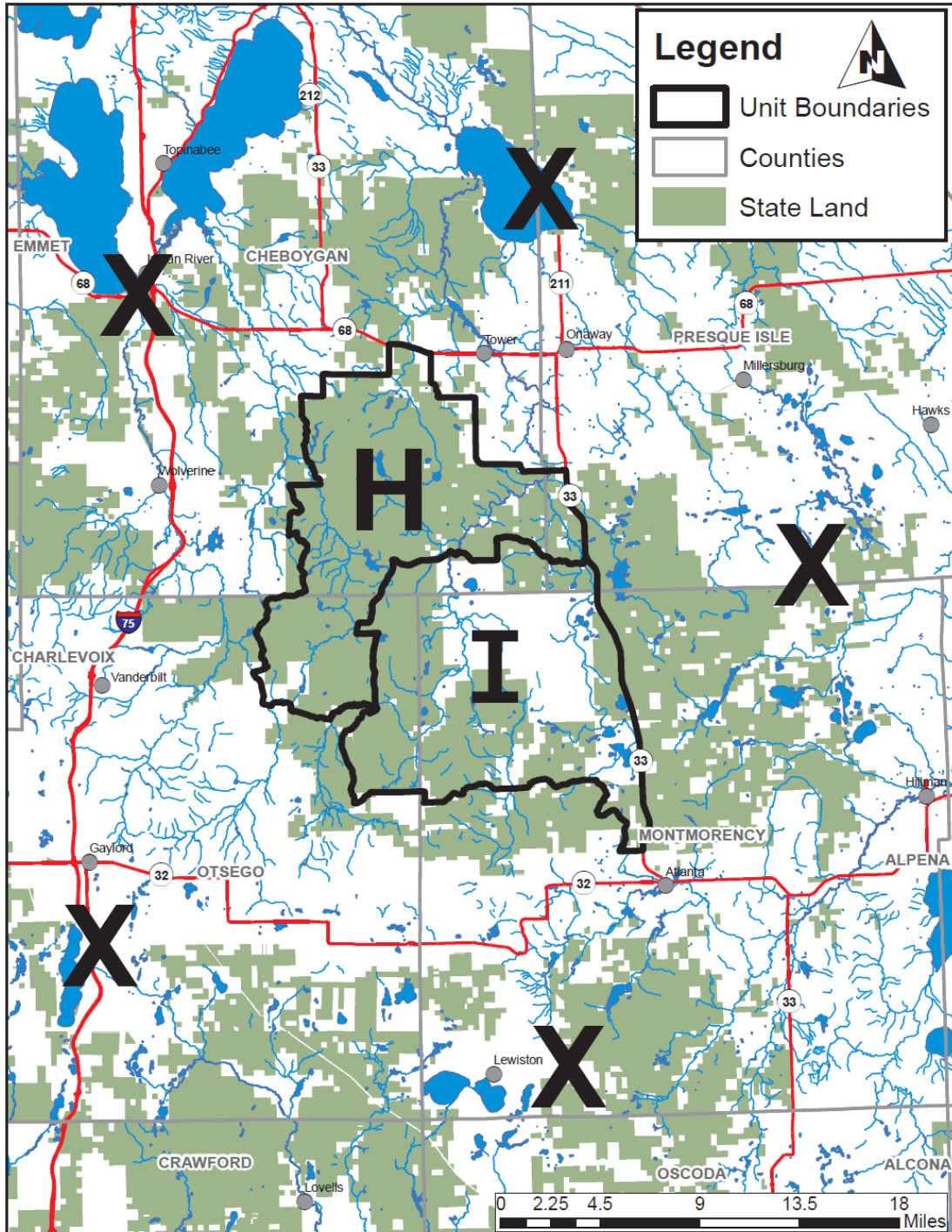


Figure 1. 2022 Elk Management Units

The continued presence of elk in Michigan is a wildlife management success story made possible by the many individuals and organizations who worked to maintain a place for this species in Michigan. The 1975 Elk Management Plan was a formal

acknowledgement by the Department that elk were an important resource to the people of the State and set the stage for increasing elk numbers. There was real concern at this time that elk could be lost from the landscape. The 1984 plan recognized the importance of elk viewing and made elk hunting the preferred method for controlling elk numbers and distribution. However, some of the consequences of the hunts in 1964-65, such as a steep drop in the population and increased illegal shooting, were major concerns. The Department implemented the hunts in the 1980s cautiously, testing and refining this tool to control elk numbers and distribution. While the hunts proved effective and were socially acceptable, there was growing concern from the mid-1990s to the present that more needed to be done to reduce elk depredation. At the same time others wanted elk numbers increased and their range expanded. The formation of the first EMAT in 2011 was an attempt by the Department to bring diverse voices to the same table and find common ground among them. The hard work from all the members of the EMAT resulted in consensus on many issues and was replicated for the most recent update. This 2023 plan draws on this consensus, considers ecological changes of the landscape and builds on the successes of the earlier planning efforts to guide elk management in the future.

3.2 Current Population Status and Range

Elk population survey techniques have changed significantly through time. From the release of the elk until the 1960s, estimates were based on track counts, personal observations of elk groups and information gathered from deer hunters and local residents. In the 1960s, elk pellet group surveys were used to try to determine the size and distribution of the elk herd. Although this technique was useful for determining population trends, the confidence intervals were too large to be a reliable census method (Moran 1973). From 1975 to 2001, the Department used a combination air and snowmobile surveys. These surveys provided a minimum count and biologists estimated the number of elk missed during the survey based on the conditions during the survey. From 2006 to the present, the Department has used a fixed wing aerial survey corrected with a sightability model (Walsh 2007, Walsh et al. 2009). The last survey, in January 2022, provided a population estimate of 1,227 elk with 95% confidence intervals of 870-1,684. The elk population increased from their release in 1918 until the mid-1960s when it declined to around 200 animals in 1975. The population increased again in the late 1970s and has varied from 682 to 1,277 animals between 2000 and 2022 (Figure 2).

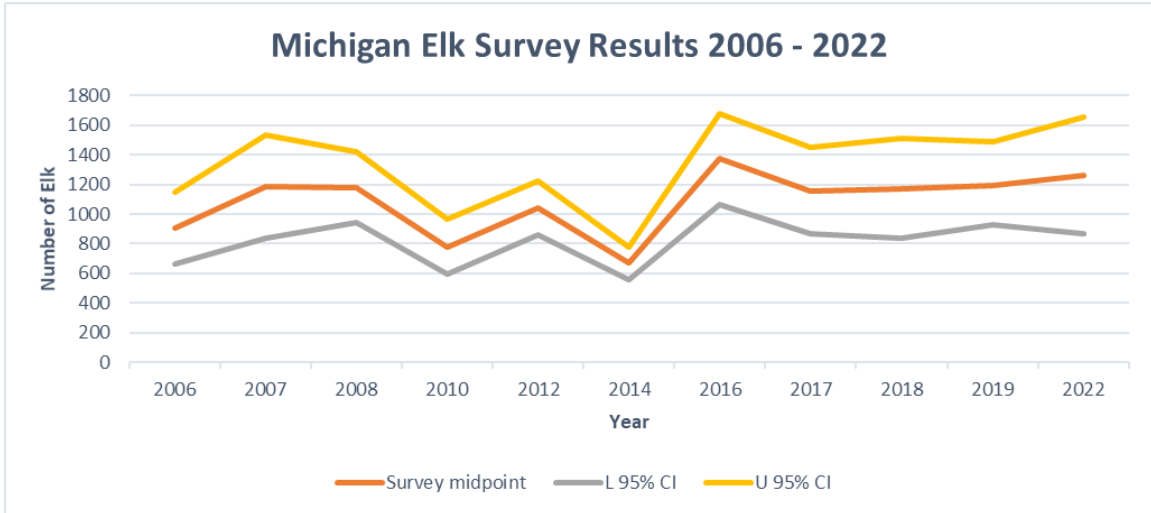


Figure 2. Michigan Elk Survey Results 2006 - 2022

The elk occupied range expanded from their release in 1918 through the 1960s, contracted through the early 1970s, and has since expanded again. Range estimates from 1940, 1960 (Moran 1973), 1975 (MDNR 1975), 2011 and present, which were derived from information from hunter kill locations, informal reports to Department staff, and the 2010 and 2022 survey respectively, also shows this pattern (Figure 3).

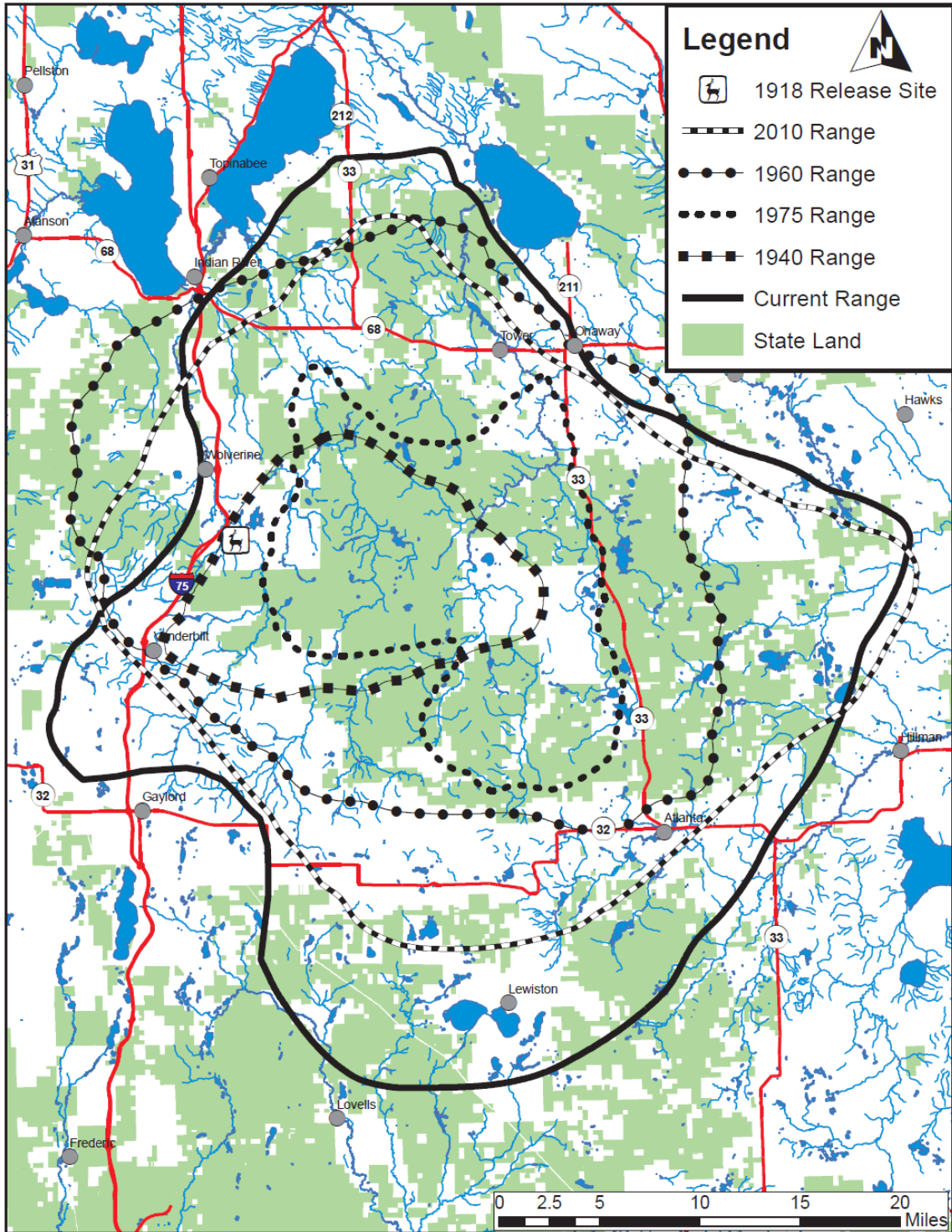


Figure 3. Historical and Current Elk Distribution

An important factor that affects elk distribution is food availability. Aspen stands less than 15 years old are a preferred vegetation type for elk in Michigan because of the food provided by the aspen and other plants in this community. The acreage of young aspen available to elk on state land within the elk range has also changed significantly over time. Young aspen increased from around 4,000 acres in the 1960s to almost 20,000 acres in the 1970s. Aspen acreage remained fairly high through the 1990s but decreased to the earlier low levels from 2001-2010 (Figure 4). Current acreages are midway between the highs and the lows of the past 40 years and following the updated State Forest Management Plan should stabilize at or near that level for the foreseeable future. While the previous plan predicted that this increase in young aspen would reduce the potential for forest regeneration issues on state and private lands within the core range, regeneration has continued to be a challenge. This is likely due to the combination of both elk and deer populations impacting regeneration locally.

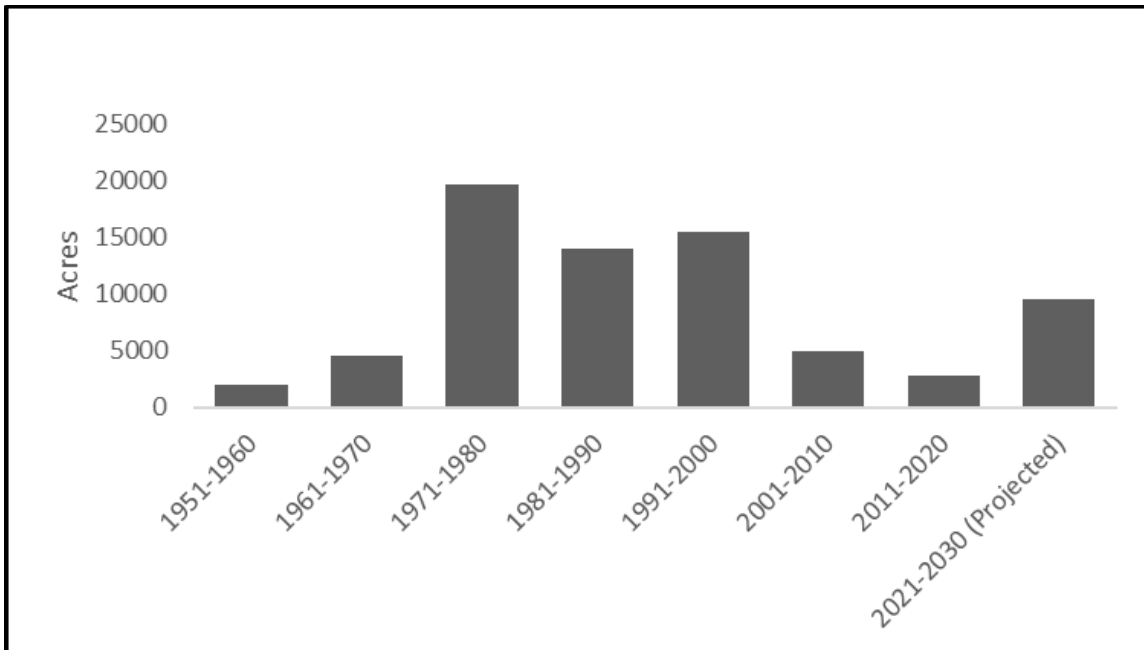


Figure 4. Acres of 0-10 year old aspen in the elk range of Michigan 1951-2030.

One factor mentioned in many Michigan elk planning and research documents is change in land use and how it can affect elk distribution. On private lands in the elk management area, there has been a continuation of both the subdivision of land into smaller parcels and a shift from owning lands for hunting to owning it for other purposes. On public lands there has been increasing pressure to accommodate new forms of recreation such as mountain biking and horseback riding. Both of these trends are expected to continue. Recent research funded by the Department demonstrated home range-scale changes in elk space-use and resource selection patterns in response to peak periods of summer trail-based recreation in northern lower Michigan. However, they found no evidence of landscape-level elk avoidance of areas with recreational activity (Williamson et al. 2021).

As a species, elk can tolerate a variety of land use activities. Like white-tailed deer, Canada geese, and coyotes, elk occupy remote wilderness areas to agricultural areas and wooded subdivisions. Since their reintroduction to Michigan in 1918, elk have expanded their range. Even in suitable habitat, every year there have been elk that leave the elk range and make exploratory movements outside of the “core” range.

The combination of elk being highly visible, adaptable, and tending to range long distances, along with the changes taking place on both private and public land can lead to conflicts. These conflicts may be between neighbors who may hold differing views of whether elk are desired in the area or between users of state forest land who have differing views of the importance of elk in the area. The Department must address these conflicts as part of the continued effort necessary to maintain elk on the landscape. Since the last plan was finalized, the Department has hired a seasonal full time wildlife assistant to focus on elk conflicts, primarily those on agricultural lands.

The Department first designated a specific management area for elk in the 1975 Elk Plan. The 1984 plan adopted the same management area lines and the management area expanded in 1988. The management area has remained similar through present day, though minor changes have occurred due to landscape level changes (Figure 3). There are benefits and consequences to defining distinct boundaries to designate zones of management. The largest benefit is that a boundary makes it easy for everyone to understand where the priority is for elk management. Operationally, the goals for habitat management and decisions as to how the Department addresses elk/human conflicts may differ within and outside of the elk management boundary. Defining habitat priorities and how the Department will react to elk/human conflicts in relation to whether they are within the elk management area or outside of it makes it easier for both citizens and Department personnel to anticipate and respond to elk issues.

One of the consequences of distinctly designating an elk management boundary is that a line, often designated by a road, is usually not an ecologically or a socially significant feature. Conditions on the land change regularly and elk may respond to these changes resulting in elk spending part of a year outside of the management boundary line and part within it. From both a strategic and operational management perspective, the benefits of a well-defined elk management area boundary that is clear, easy to understand, and will direct future actions outweighs the consequences of a minority of elk occupying the area near or just outside of the boundary line.

Operationally, the boundary serves to guide actions. The Department will define actions to address different elk issues within the elk management area and outside of it but there will always be a transition zone where elk occupy the land at or near the boundary of the elk management area. Actions taken in this border area will vary depending on ecological conditions and social or economic concerns. For instance, elk outside of the boundary occupying a block of state land where they are not causing damage to the resource or increasing the disease risk to any other animals will be tolerated at a higher rate than animals outside the boundary that are in a primarily agricultural or residential area.

The line on Figure 5 shows the elk management area boundary and delineates where elk management will be a priority. Outside of this line state land is in smaller blocks and the interspersed private land is greater which diminishes the Department's ability to manage elk numbers through hunting. The state land east of M-33 is fairly contiguous but the threat for transmission of BTB from deer to elk is greater than any place else that elk occupy. The Department will tolerate elk outside of the boundary at low levels as long as there are not significant negative social, economic, or ecological effects or if their occupation of an area does not lead them to other areas where they can have greater negative effects.

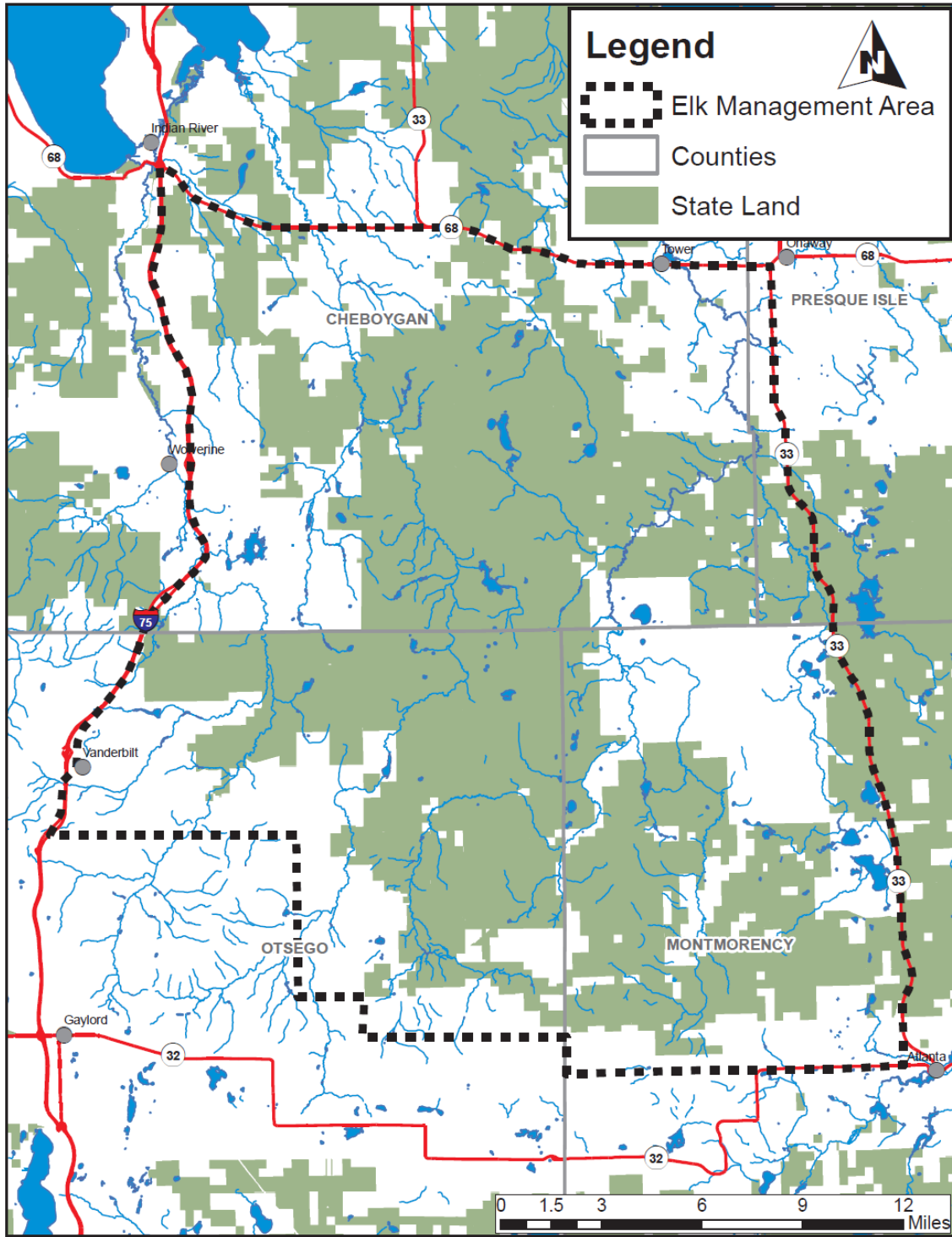


Figure 5. 2022 Michigan elk management area

3.3 Tribal Involvement in Elk Management

Tribal concerns are a significant factor in shaping elk management recommendations and the Department is obligated to consult with the Tribes. The Department must exercise its elk management authority in a way that does not infringe upon treaty rights and responsibilities. The Tribes in the 1836 treaty-ceded area participated in discussions with the Department concerning elk management.

The major strategic concern of the Tribes is the distribution of elk. Those that provided input would like to see the area that elk occupy increased where habitat is suitable. This is consistent with other Tribal efforts and the Tribes' stated desire to restore as many wildlife species to their original range as possible. The range delineated in this plan does not reflect this request. This retention of current size is due to the lack of social acceptance of elk outside of their traditional range, disease management concerns, and economic considerations for both private landowners affected by elk and the Department. While this plan guides activities for a 10-year period, a major change in conditions during this period could lead to changing one or more goals outlined in the plan. A change in social acceptance, a lack of any disease concerns, and development of practical strategies to mitigate the negative economic concerns related to elk outside of the core range would allow the Department to consider expanding the elk management area.

The Department will consult with Tribes at least once annually concerning elk management direction. A meeting with the tribes should follow the January population survey and should include discussions of operational details necessary to achieve both State and Tribal objectives. Part of this consultation will include sharing resources to address these agreed upon actions as the goals, strategies and actions in this plan are taken from a strategic level to an operational one.

4. ELK MANAGEMENT GOALS, STRATEGIES, AND ACTIONS

Goal 1. Manage for a Sustainable Elk Population in Balance with the Habitat

Elk are highly adaptable animals and exist in a variety of habitats from Ontario to Arizona. They are primarily grazers and browsers and do best in a landscape with a significant proportion of open or early successional vegetation types (Beyer 1987). Elk habitat selection can depend on a number of factors including food availability, social factors, and a need for cover related to thermoregulation, predator avoidance or calving. There is seasonal variation in habitat use driven in large part by food but also by the other factors listed. Aspen is a common forest type in the landscape occupied by elk in Michigan and one of their preferred foods. Management of aspen is integral to management of elk. Elk will use hard mast such as oak and beech when available and frequently use openings for either grazing or herding. Elk also prefer planted and fertilized areas, whether they are food plots on state land or private agricultural operations.

Managers of elk must consider their large home ranges. Different research projects in Michigan have examined elk home range use (Ruhl 1984, Beyer 1987, Walsh 2007, Williamson 2021) and have found that the average home range of a bull is about 35 square miles and about 23 square miles for a cow. Home ranges of individual elk are highly variable and range from 2 to 100 square miles.

Large concentrations of elk feeding in an area can affect forest regeneration, especially if the elk use an individual stand or group of adjacent stands for a period of years (Campa et al. 1993). Over-browsing can lead to conversion of a preferred type for elk, such as aspen, to one that is less preferred, such as white pine. Significant areas of stand conversion might affect state forest land management goals and could reduce the capacity of the land to sustain elk in the long term. On private lands, relatively small areas of stand conversion can affect a landowner's management goals. Elk exploiting agricultural areas will have a negative effect on crop production and could affect an individual's ability to continue farming for income. The Department will manage elk such that the abundance and distribution of elk is balanced with other ecological and social needs.

Strategy 1.1 Focus habitat management efforts within the elk management area where the benefits are greatest and will maximize impact

Action 1.1.1 Forest management

Large blocks of land must be available for habitat management for elk because elk have large home ranges. The designated elk management area (Figure 5) includes the Pigeon River Country State Forest Management Unit and parts of the Atlanta and Gaylord Forest Management Units. There are also two large private inholdings that total nearly 40 square miles and numerous smaller ones. The Pigeon River Country Concept of Management has well defined goals for elk and the Department will apply these goals to the entire elk management area. These goals include: 1) maintain 6-7% as grass and upland brush types; 2) manage the forest to maintain the proportion of aspen at the same level (no net loss of aspen); 3) maintain mast production by red, white, northern pin oak and beech and increase production if silviculturally appropriate; 4) manage for mixed pine stands using natural regeneration that promotes both coniferous and deciduous species. Managers must also be cognizant of the total amount of all early successional vegetation types and make efforts to provide a consistent amount of this feature over the decades. If the Department achieves these goals, then aspen, in a variety of age classes, would represent 26% of the forest cover type in the area, grass and upland brush types would remain 6-7%, hard mast producing trees would be maintained or increased, and pine will be managed by using natural regeneration to promote mixed coniferous and deciduous stands. While the goal to maintain or increase hard mast producing trees is desirable, the occurrence and likely expansion of beech bark disease (*Neonectria faginata* and *Neonectria ditissima*) and oak wilt (*Bretziella fagacearum*) may challenge desired habitat conditions in the future, which may cause the agency to adjust management prescriptions to maintain desirable habitat conditions. Utilizing the best available models to maintain present and future habitat conditions ideal for elk as climate changes over the coming decades should be incorporated into management decisions to ensure that population level declines attributed to declining habitat quality are not realized.

Action 1.1.2 Opening management

Managed openings (planted, mowed, cleared, or burned) are highly preferred by elk and affect elk distribution on a landscape scale (Beyer and Haufler 1994). They are also focal points for elk viewing. The acreage of managed openings on state land within the elk range should be minimum 1,000 acres/year which is the same level as the last 10 years. Managed openings across the elk range will be as evenly distributed as possible considering ecological conditions but will also address smaller scale opportunities or concerns. Managed openings will increase emphasis on native forage to benefit elk and other species. Maintaining this level of effort will require continued coordination between the Department and local, state, and national conservation partners interested in elk management. The Department may manage openings outside of the primary elk range to draw elk away from where they may be causing damage on private land and make them more available to hunters.

Action 1.1.3 Private land management

Maintaining both large and small private in-holdings within the elk range in a forested state is beneficial to the Department's management of elk as well as other wildlife. The Department will make efforts to communicate the range of conservation options available to private landowners, from technical assistance concerning food plot establishment and timber management to conservation easements. Private landowners within the elk range will be able to access information concerning elk management to help meet their management objectives. Currently, the Department meets once a year with representatives from Canada Creek Ranch, one of the largest landowners within the core elk range, to talk about elk regulations. This type of meeting will continue and could include other landowners. In cases where the private landowner may be a willing seller, the parcels within the elk range should be top priority for acquisition as public land. Conservation organizations such as the Rocky Mountain Elk Foundation and the Little Traverse Conservancy have been partners in these types of efforts in the past and we will maintain these relationships.

Strategy 1.2 Monitor elk numbers, distribution and habitat

Action 1.2.1 Monitor elk numbers and distribution using best available methods

Elk numbers are currently estimated using a fixed wing aerial survey corrected with a sightability model. This survey method was developed and tested through a collaborative research project with MSU (Walsh 2007). This biennial survey provides a population estimate with a 95% confidence interval. While this survey uses scientifically tested methods and statistical techniques and provides adequate estimates of population size to guide elk management actions, the cost and effort to acquire this information is substantial. The Department will continue to evaluate new research or monitoring techniques that can improve elk population estimates with increased efficiency or cost, while not compromising the quality of the data collected.

The goal moving forward is to continue towards a blend of optimizing elk numbers to allow the greatest social and economic benefits while still addressing potential disease issues and managing the impact of elk on vegetation and private landowners. Maintaining a goal of 500-900 animals for the current management area, which was outlined in the previous plan, allows the Department to stay within the boundaries outlined above. Five hundred elk would be the lowest number of elk on the landscape since 1983. At this population level, hunting and viewing opportunities would decline from current levels and the impact of elk on forest regeneration would be minimal. If elk were evenly distributed across the core range there would be very little agricultural or forest regeneration damage. We will manage for elk numbers near the lower end of the range when there are significant disease issues, forest regeneration issues and damage to private land agricultural crops. Conversely, we will continue to manage the population for the higher end of the range if none of these issues are significant. When managing near the top of the range, hunting opportunity will be similar to 2022 levels (over 200 state permits issued annually). If elk were more concentrated in the elk management area, viewing opportunities will be greater. Putting effort into all of the strategies in this plan will help to raise the ecological and social capacity of the area for elk. If these capacities increase over the period of this plan, we may be able to raise the population goal. However, if the Department is not able to achieve all or some of the strategies, the goal range may stay the same or be lowered.

The current aerial survey gives one measure of distribution of elk in January. Distribution is also measured in the fall and early winter by hunter reports of elk seen and taken during the hunting periods. Distribution information gathered by less formal reports to Wildlife Division personnel from private landowners and other agency personnel may happen throughout the year. Biologists compile and assess this information annually. We will assess the number of elk, damage complaints, information from vegetation surveys that are part of the normal state forest operations inventory and distribution information to help make annual harvest recommendations.

Action 1.2.2 Use annual inventory data to determine habitat status of primary range

The presence of elk on the landscape will have consequences on some vegetative communities. Elk herding behavior and use of an area for a period of years will have an impact on vegetation composition, structure, and potentially plant nutritional qualities (Campa et al. 1992). Evaluation of long-term and short-term forest vegetation data collected on state land as part of the annual operations inventory will determine whether we have met the goals for range composition and whether there is evidence that elk are causing significant change to the habitat. The Department will investigate and implement methods to determine whether there are significant impacts on other wildlife species from elk and to measure habitat attributes on private and public lands over a long time period if feasible.

Strategy 1.3 Monitor elk herd health

Action 1.3.1 Measure elk health parameters

Diseases that may impact Michigan's elk herd include, but are not limited to, Bovine Tuberculosis (BTB) and chronic wasting disease (CWD). Additionally, cerebrospinal nematodiasis (brainworm) can occur in individuals and is worth monitoring as deer densities and climate changes over the coming years. Michigan's elk herd is exposed to white-tailed deer and to a smaller degree, livestock operations. Currently, the Department tests all elk for BTB that are killed during the annual hunts. Animals killed by automobiles, accidents, or poaching are also checked for BTB if possible. The Department also culls animals showing abnormal behavior and checks these animals for BTB, CWD, and brainworm. Since 1996, the Department's lab has tested 4,337 elk for BTB. Seven total elk have tested positive, one each in 2000, 2001, 2006, 2012, 2017 and two in 2003. No elk have been found with CWD and 1-2 animals with brainworm are recovered each year.

The most likely source of exposure for contagious disease transmission is shared feeding sites or bait piles with white-tailed deer (O'Brien et al 2006). The risk of contagious disease to the elk herd is high because elk spend much of their time in groups and there is a high degree of interchange among groups. Establishment of a disease such as BTB or CWD could affect a significant part of the herd as well as domestic and wild animals, that may come into contact with elk. Disease monitoring in elk will continue at the current level and will be evaluated annually and modified as necessary to maintain an effective program.

While elk are desired to be managed within a core range, some elk take movements significantly outside of these locations. These elk pose a risk of carrying a disease like BTB and moving it to another location. They also present a risk of contracting a disease from outside of their range, where disease prevalence is high, and moving it elsewhere in the state or back into their home range when they return. Elk wandering outside of the core range will be assessed on a case-by-case basis. Any elk wandering into an endemic location where CWD is consistently observed or where BTB is high (ex. DMU 452) will be lethally removed and submitted for testing. Prior to removal, efforts to donate the meat will be explored in the event the animal does not have BTB or CWD.

Goal 2. Use Hunting as the Primary Method to Control Elk Numbers, Herd Composition and Distribution

Hunting is an effective wildlife management technique for controlling both numbers and distribution of game animals. Hunting is also an important recreational opportunity, and a Michigan elk hunt is likely to be a once in a lifetime event that is highly valued by Michigan hunters. For hunting to be effective and enjoyable, it takes communication among the hunter, the Department, private landowners, and elk hunting guides. More positive interaction among these groups will result in an elk hunt being more successful as a management tool and more satisfying to the hunter.

Strategy 2.1. Facilitate positive interactions among hunters, the Department, private landowners and hunting guides

Action 2.1.1 Address private landowner conflicts with elk

Hunting has been and will remain the primary tool used to address landowner conflicts with elk, but it need not be the only one. Timely response to private land concerns and having a suite of tools available to address concerns will be beneficial to both the landowner and the Department. The Department will provide information concerning elk behavior, harassment techniques, habitat manipulation, fencing options and hunting to private landowners. Assistance in implementing these tools will also be an option. An incremental approach of applying tools will be used that will depend on the severity and frequency of the conflicts, whether the conflict is within the elk management area or outside of it, and the duration of the problem. The Department will monitor the number, scale, and intensity of landowners' concerns with elk to determine if tools and strategies concerning elk distribution are successful. Increasing social tolerance for elk by responding promptly to landowners' concerns may allow the Department to manage for more elk on the landscape, providing more positive social and economic benefits.

Out-of-season lethal removal of elk is a tool used when the Department determines that no other options are available or will be effective. The Department will apply lethal control measures in instances involving suspected disease, severely injured animals, or in urgent situations where an elk threatens health, safety or welfare of citizens or livestock. All lethal control actions will be by Department personnel or their authorized representatives and not through the issuance of landowner kill permits.

Action 2.1.2 Continue and improve interactions between the Department and elk guides

The relationship between the Department and elk hunting guides has been relatively informal. Hunting guides in Michigan are required to obtain written permission in the form of a permit in order to provide hunting guiding services on Department-managed public land. The Commercial Hunting Guide Permit only gives the authorization to have a business on Department-managed public lands. The Department does not issue permits for the "act" of guiding. The Department hosts this list of guides online, and any person who has a Commercial Hunting Guide Permit is on that list. Guides have varying degrees of knowledge about elk, the area elk occupy, and the Department's goals and objectives concerning elk management. Some guides use private land only, some guide only on state land, and most use both. No permit is needed to guide on private land. Guides play an important role in the hunt by managing hunters for private landowners who are absent or unable to manage hunters on their own and providing knowledge to hunters who have a variety of hunting abilities and skills.

There is a significant amount of informal interaction between guides and Department personnel throughout the year, especially during the elk hunt periods. The only formal interaction is at a biennial meeting held before each elk hunt to discuss rule changes and management direction. Attendance by guides to this meeting is voluntary. The

Department has hosted periodic Elk Guide Meetings which encourage communication between the Department and guides. These meetings help facilitate the guides' understanding of Department goals and help the Department understand the guides' perspective about how to achieve those goals. The Department has provided opportunities for both formal and informal interaction between Department personnel and guides annually and will improve interactions when feasible.

Action 2.1.3 Increase hunter education efforts

The Department provides hunters with a packet of written information concerning the elk hunt and they are required to attend an orientation prior to hunting elk. Hunters are from all over the state of Michigan and have varying levels of information concerning the Department's management objectives for elk, elk ecology, and elk hunting and the area. Success rates for elk hunters in Michigan have been very high. Hunter success rates in the Fall hunt routinely exceed 70%, while success during the December hunt has generally varied between 80 and 90 percent. Most hunters know someone who has had an elk license or participated in a hunt in the past and expect that they too will enjoy this high level of success. The Department will work with conservation partners to increase hunter's knowledge concerning Michigan elk behavior and elk hunting strategies. Providing this and other relevant information to help a hunter have realistic expectations would be beneficial to the hunter, the Department, and the private landowner who is using hunting as a management tool.

Goal 3. Enhance Public Understanding of Elk Management in Michigan

Hunters and landowners within or near the elk range have special needs for information concerning elk and their needs are addressed in the goals above. Other individuals have different needs. Increasing general knowledge and appreciation for elk and the landscape they live in is beneficial to elk management and would increase the public's understanding and awareness of wildlife management and Wildlife Division programs.

Strategy 3.1 Coordinate with partners to develop and implement an elk communication strategy to ensure consistent and accurate information is available to the public concerning elk management.

Action 3.1.1 Maintain or increase viewing opportunities on public land

Managing for a "viewable" elk herd has been an important part of prior management plans for elk and will remain a prime consideration in elk management. Although viewing a wild animal is never guaranteed, information about how and when to have the greatest chance to see or hear an elk in a wild setting would be beneficial to many people. Working with conservation partners, the Department provides information to facilitate successful viewing at designated viewing sites. The site locations are provided through printed materials and the internet. The viewing sites provide information to the public and solicit feedback on elk management. The Department will also maintain several locations and trails that are accessible to all individuals.

Mature bulls are the most popular with the viewing public and while no formal objective has been defined for bull-to-cow ratio in the Michigan herd, it is believed that about 60 bulls to 100 cows is most desirable. This is about twice as many bulls to 100 cows as are in many western herds. Managing for this ratio will provide a larger herd with lower recruitment that provides good opportunity to view mature bull elk.

Action 3.1.2 Support educational opportunities for staff and partners related to elk and elk management

The Department will promote staff and volunteer participation in the work duties related to elk, particularly the elk hunt, to inform people of the Department's goals and objectives concerning elk management. Department staff and partners will also use more formal training opportunities such as workshops and conferences as well as informal presentations at local civic groups or hunter banquets to exchange information. With the assistance of our Tribal partners, emphasizing the cultural significance of elk to native people, as well as Traditional Ecological Knowledge, will be incorporated into educational materials. The Department will review opportunities for education annually and will implement feasible options with the help of conservation partners.

Action 3.1.3 Ensure stakeholder engagement related to elk management decisions are considered and outcomes are communicated

Most partner and stakeholder input into elk management is informal and is not tallied or formally recognized. There is an annual survey of elk hunters, and everyone has the ability to communicate with the NRC. The Department will develop feasible and effective methods to record elk management input from a variety of stakeholders. A record of input received will be part of an annual report of elk management presented to the NRC and made available to the public. The annual report will also relate results of surveys, the hunts and identify potential management opportunities. The Department will review opportunities for input annually and will implement feasible options with the help of conservation partners.

Action 3.1.4 Measure economic and social factors related to elk

Social acceptance of wildlife is a key factor for successful wildlife management. The Department, working with other partners, will determine what data are available or should be collected to determine negative and positive effects that elk have on the local and regional economy. This information will inform management decisions concerning the number and distribution of elk. Measurement of positive economic effects may include number of visitors to the area to view elk and the number of hunters. Negative effects may include the number and severity of crop damage complaints. These numbers should not be compared against each other but rather used to look for long-term trends that may improve operational management.

Management direction (i.e. number and distribution of elk and bull-to-cow ratios) will be evaluated to see if different management practices are effective at reducing social conflict or increasing the positive social value of elk. Holding discussions with local retailers and tourism bureaus to gather ideas to support economic and social benefits for local

communities should be pursued to increase the relevancy of elk and elk management locally.

5. PLAN MONITORING AND REVIEW

Regular communication among the Department, the Tribes, stakeholder groups, and the general public will allow interested parties to monitor progress made toward implementation of this plan. It will also provide opportunities for the Department to receive input on specified management issues. The Department will prepare an elk status report each year that will be presented to the Tribes in the 1836 treaty-ceded area, the NRC and made available to the public on the Department's website. Progress toward addressing specific operational issues and success of the strategic goals identified in this plan will be assessed using an adaptive approach to management.

Elk abundance and distribution and the attitudes of Michigan's residents are likely to continue to change through time. To address ecological, social and regulatory shifts in a timely manner, the Department will review and update this plan at 10-year intervals. The plan revision process will include review of the best available scientific information and substantial involvement by the Tribes, affected stakeholder groups, and the general public.

6. FUNDING

Costs of elk management are associated with salaries, wages, contracts, travel, equipment, and information and education materials. Funding has come from the Game and Fish Protection Fund and its sub-funds which are largely derived through the sale of hunting and fishing licenses. Expenditures for elk management have been significant for the Department and our partners. Given persistent management needs, these costs are expected to increase.

Although sportspersons and other management partners have provided much of the funding for elk management, they currently represent only a small proportion of Michigan's residents. If the number of sportspersons continues to decline the contributions from these groups may fall short of the management needs in the future. Successful efforts to obtain funding from alternative sources could spread the financial support for elk management among a greater variety of stakeholder groups who are impacted by elk. Such an approach could help sustain the required levels of funding, and could provide the general public with a greater stake and interest in elk management. The Department, and everyone who has an interest in elk in Michigan, will continue to pursue alternative funding sources for wildlife management.

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APPENDIX I.

EMAT 2022 Report - Final

As of September 2, 2022

The Ask:

1. For the big impacts or issues we discussed, does the EMAT have any guiding direction for the next 10 years.
2. Review current strategies and actions to determine if there are any big things missing that the EMAT thinks should be included either as a strategy, action or within the action description.

Potential Outline of Report:

Impacts & Issues

Impact: Hunting (economic, recreational, and subsistence)

Elk hunts are an essential part of managing the Michigan elk herd, provide important income for habitat management as well as tourism revenue for the local economy, and allow for subsistence on traditional foods by tribal citizens. Hunting enables the DNR to manage numbers, and the spatial distribution of elk, ecologically and socially. The current elk license application period runs from May 1-June 1 of each year and chances for a license are deleted after 5 years without an application.

Recommendation

The EMAT recommends:

- That the DNR extend the current period for elk license applications and allow hunters to automatically keep their chances for an elk license, even with any number of years without an application.
- That the maps provided to hunters be updated on an annual basis with new information.
- That hunters are given clear objectives and timelines for events and training. Hunter trainings should include increased educational opportunities with both online and in-person options and include traditional knowledge and perspective (TEK).
- Support for an education and outreach position.

Rationale: As hunter numbers decrease, measures must be taken to ensure the retention of current hunters. Extending the application period and removing the 5-year inactivity period limit would assist in meeting this goal. Regular updates to maps provided to hunters will ease navigation for those unfamiliar with the area and faster location of elk herds. Expanded

opportunities for training will help make hunting more accessible to a wider range of people. The inclusion of TEK and tribal perspectives is essential for training to cover all parts of Michigan's history and cultures.

Impact: Disease

CWD

Chronic Wasting Disease (CWD) is a fatal prion disease that has been present in the state of Michigan since 2015. This disease can affect all cervid species, and though it has not yet been identified in elk within Michigan, it may be only a matter of time until it infects the herd. It is not recommended that deer testing positive for CWD be consumed, which could affect that desire for hunters to harvest elk within Michigan and the ability to harvest animals for subsistence by tribal hunters.

Recommendation

The EMAT recommends:

- That the DNR creates a section in the Elk Management Plan that addresses CWD in elk. Though a current CWD plan exists, it is recommended that it be updated and that a section specific to the elk herd is added. This plan should address current and potential future risks, including those elk leaving the current range and their potential to carry CWD and other diseases back to the herd.
- That testing for CWD be offered to hunters who wish to test their harvested animals.

Rationale: Without an updated plan in place to manage CWD if it does enter the elk herd, the Michigan DNR is not properly prepared to manage this disease. It is the responsibility of the state to be ready for such circumstances, as they are highly likely to occur. Providing testing to hunters will enable monitoring of the herd through harvested animals.

Tuberculosis

The EMAT recommends that the DNR *reinstates the mandatory TB testing for all elk harvested. We also recommend increased public education on TB in elk and deer. Hunters need to be educated on why their skull caps cannot be kept and or moved around the state to reduce TB transmission.*

Rationale: The elk herd is managed to avoid disease; therefore, all elk need to be tested to remain consistent with that management plan.

Impact: Crop Damage

The EMAT recommends that the DNR continues with the seasonal staff to assist with crop damage unless there is a substantial increase in crop damage. In addition, communicate with MDARD on all cattle/bison operations that are having issues with elk and crops to reduce disease transmission.

Rationale: Elk continue to cause damage, on farms, in northern Michigan. The idea of depredation permits or farmers compensation for damages is not feasible. Current methods for mitigating elk damage have been working.

Impact: Viewing & Education

Elk are unique to the Pigeon River region of Michigan, which creates a draw for viewing by the public. This important tourism brings income to the region and has created a local identity. As many elk viewers age, it is becoming more difficult for them to access the current viewing areas. Viewing opportunities and interest have also created opportunities for education and outreach regarding the importance of elk within the ecosystem.

Resolution

The EMAT recommends:

- That the DNR update the elk brochures that are available to the public to provide the most accurate and up to date information. Traditional Ecological Knowledge (TEK) and the history and perspective of local tribes should be added to these materials.
- To address concerns over accessibility of elk viewing sites, the EMAT recommends that the DNR provide accessible and rugged trails and areas for elk viewing opportunities. "Accessible trails" and viewing locations should be in compliance with the Americans with Disabilities Act (ADA).

Rationale: Providing these amenities and continued support for elk viewing opportunities and up-to-date educational materials will ensure ongoing tourism into the Pigeon River Country. This tourism supports many businesses in the region and helps to guarantee continued support of the elk herd by residents. Including tribal histories and perspectives in outreach and educational materials will ensure a more complete and inclusive background of the region.

Elk Habitat Discussion and Recommendations

The 2012 plan defined three categories of elk habitat and described the characteristics of each. These categories included *Unacceptable*, *Acceptable* and *Ideal*. It was recommended at that

time that the DNR “pursue an elk herd and range that models the "ideal" characteristics or "acceptable" characteristics when necessary.”

Although interest in elk range expansion has been expressed by members of the public and some members of the 2022 EMAT, given the habitat priorities which were defined in the 2012 Elk Management Plan together with the additional wildlife diseases risks which have emerged since that time, no recommendation in support of such an initiative has been advanced by the 2022 EMAT.

The characteristics of the three categories of Michigan elk range were defined in the 2012 Elk Management Plan as follows:

Unacceptable Habitat

- Urban areas outside elk range
- Highly fragmented land ownership tracts
- Unaddressed high traffic areas
- High disease areas
- Limited suitable habitat
- Areas where the elk population cannot be managed by available elk management practices
- Areas where social, economic, and ecological issues cannot be mitigated

Acceptable Habitat

- Habitat is suitable to limit damage to agriculture, crops, forest regeneration, and other private property considerations
- Ability to balance negative impacts of the elk population on other wildlife species and their habitats
- Attracts the majority of elk on state land to enhance public viewing, education and hunting opportunities
- Elk/vehicle interaction manageable
- Adequately funded to accomplish needed herd and habitat health management
- Conditions exist to maintain a healthy elk herd that does not transmit disease
- Low level of negative ecological, social or economic conflict or impacts
- Tools are available to mitigate negative impacts

Ideal

- Primarily publicly managed land with privately-held land consisting of large blocks and having complete cooperation of landowners
- Access and opportunity for legal harvest is available throughout the range
- The preponderance of the range is optimal elk habitat
- Low level of high volume or high-speed roads
- Provides beneficial economic return to the local economy and state
- Low level of negative ecological, social or economic conflict or impacts, and those that occur can be mitigated
- Funding is available to meet management objectives
- Quantitative measurement tools are available and used for tracking and monitoring management objectives, social conflicts, and ecological impacts
- Conditions exist to maintain a healthy, disease-free elk herd
- An effective educational program is present to maintain long-term understanding and support for the elk resource
- Abundant elk-related recreational opportunities are present

Additional habitat-related discussion conducted by the 2022 EMAT included support for the 2012 plan population range of 500-900 animals. It was further suggested that on-going consideration should be given to the implications of climate change on elk habitat, and if elk habitat in the core (Ideal) management zone has declined additional sources of funding should be pursued. It was recommended that if a portion of the revenue being generated by the sale of Carbon Credits in the Pigeon River Country State Forest (PRCSF) were available for range and habitat enhancement this would seem reasonable and appropriate.

Recommendations on the plan

Goal 1. Manage for a Sustainable Elk Population in Balance with the Habitat

Strategy 1.1 Focus habitat management efforts within the elk management area where the benefits are greatest and will have the greatest impact

The EMAT recommends the following changes to the plan based on the above recommendations and rationales:

- *That all habitat within the elk management area be consistent to provide the best habitat amongst all species, i.e white-tailed deer, and other species. To manage for just elk on state land seems biased and other species must be considered. Since obtaining an elk tag is very difficult other taxpayers (hunters) should be considered when managing a state resource, i.e., tribally significant species.*
- *Long-term climate change must be reviewed and considerations for habitat management needs to be recognized and adjusted accordingly to coincide with potential habitat changes.*

- *In recent years native openings or cuttings have declined. These areas are imperative to successful elk and wildlife management. As a group we recommend additional native openings.*
- *Extensive habitat management occurs on private land; therefore, we recommend the continuation of building a private land networking group that will promote hunting access on private property.*

Strategy 1.2 Monitor elk numbers, distribution and habitat

The EMAT recommends the following changes to the plan based on the above recommendations and rationales:

- *Increase engagement with federal agencies and tribal councils to promote and implement monitoring.*
- *Current monitoring and distribution of elk is working sufficient, however if there are opportunities to utilize funds to conduct new collar research which could aid in refining elk distribution and movements, we would like to explore the possibilities. Encourage research on new and improved collar equipment that could possibly enhance tracking ability.*
- *Looking at the possibility of more “real-time” elk distribution data, which could possibly show fluctuation of spatial movements and with this knowledge potentially help steer management strategies.*

Strategy 1.3 Monitor elk herd health

The EMAT recommends the following changes to the plan based on the above recommendations and rationales:

- *To continue to monitor all elk harvested for CWD and reinstate that all elk also be tested for TB. All diseases either current or emerging need to be considered in all management decisions to ensure a healthy and stable herd. If something becomes a greater issue with the health of the herd, we recommend the current management plan be evaluated and modified, as necessary.*

Goal 2. Use Hunting as the Primary Method to Control Elk Numbers, Herd Composition and Distribution

Strategy 2.1. Facilitate positive interactions among hunters, the Department, private landowners, recreational users, and hunting guides

Hunting is currently used as the primary tool to control elk herd numbers, composition, and distribution by the Michigan DNR. The EMAT continues to support an ideal population range of 500-900 animals. The population of hunters within Michigan continues to decrease and is aging over time. There is a need to recruit more and younger hunters if hunting is going to be the continued focus of elk management. Tribes continue to engage in subsistence hunting and support the DNR through their scientific studies and data.

Recommendation:

The EMAT recommends:

- ∞ Efforts to increase public knowledge and information available on elk hunting, including hunter assistance.
 - ∞ Consideration of TEK and inclusion of tribal history and perspective in educational resources.
- ∞ Mandatory licensing of elk guides.
 - ∞ Allowance for tribes to license their own guides.
- ∞ Consequences and accountability for guides in negative situations regarding elk.
- ∞ Continued efforts to support aging hunters.
 - ∞ Assistance with mobility and accessibility.
 - Ensuring that there are handicap accessible hunting locations or assistance in accessing these locations.
- ∞ Continued support of farmers struggling with depredation from elk

Rationale:

If hunting is to remain the main form of management for the elk herd, a large amount of effort needs to be made by the DNR to create changes to retain current hunters and attract new hunters. Proper licensing and consequences for guides negatively affecting elk will ensure the relationship between the DNR, guides, and the public remains positive. Increasing overall public knowledge about the importance of hunting in keeping the elk herd managed at a healthy population, including TEK, will continue public support for this practice.

Goal 3. Enhance Public Understanding of Elk Management in Michigan

Strategy 3.1 Coordinate with partners to develop and implement an elk communication strategy to ensure consistent and accurate information is available to the public concerning elk management.

The 2022 EMAT recommends that consideration be given to the following:

Action 3.1.1 Maintain or increase viewing opportunities on public land

- ∞ It is recommended that this effort be integrated with the programmatic efforts being conducted by the Pigeon River Country Discovery Center located at the PRC Headquarters.
- ∞ Efforts to enhance public viewing opportunities, especially walk-in type activities, should be continued. Viewing opportunities which provide for ADA access should be investigated.

- ∄ Updated printed maps and possibly digital interactive maps should be investigated.

Action 3.1.2 Support educational opportunities for staff and partners related to elk

and elk management

- ∄ Establish clear goals and timelines for events and training
- ∄ Increase educational opportunities and requirements for hunters
- ∄ Continuation of in-person Elk Hunter Orientation meetings
- ∄ Include tribal knowledge/perspective (TEK)
- ∄ Continue and expand public education and outreach efforts regarding Michigan's elk herd. This may include messaging initiatives through the Michigan Wildlife Council, DNR Information and Outreach, public media outlets as well as funded positions

Action 3.1.3 Ensure stakeholder engagement related to elk management decisions

are considered and outcomes are communicated

- ∄ Consider increasing the frequency of EMAT meetings and plan updates
- ∄ Ensure full involvement of tribal partners (possibly similar to Bear Plan development)
- ∄ Increased engagement with local communities and elected officials
- ∄ Enhance public and stakeholder engagement through the use of technology and virtual meetings

Action 3.1.4 Measure economic and social factors related to elk

- ∄ Pursue partnership opportunities and other initiatives to measure and increase the economic and social benefits derived from having elk in Michigan
- ∄ Identify the best available technology and emerging sources or possible information in an effort to advance this goal.