



# Hard to be a moose in a changing world

Moose, mooz, môswa, denié, arial or original, no matter what we call this animal, they are an important and iconic creature. The moose is important to many Manitobans, whether for its natural value, as a source of healthy food, cultural or traditional reasons or for non-consumptive uses such as wildlife viewing. Moose are intermixed in so many aspects of Manitoban's lives.

Moose are found across Manitoba from within the vast boreal forest to the fragmented forest in the southern prairie potholes. Moose are of great ecological importance and play an essential role in shaping their environments. They can change vegetation composition through browsing which in turn, affects other wildlife species and they are an important prey species for predators. They are interconnected with their environment, as the environment is connected to them in many ways.

But it is tough being a moose and in this changing world, it is simply getting harder. As climate changes, and warmer temperatures become the new normal, conditions will increasingly favor white-tailed deer and not moose. Moose populations are at an ecological tipping point in many parts of their southern, forested range. With climate and human changes, all people who care about moose will have to work together to ensure their survival.

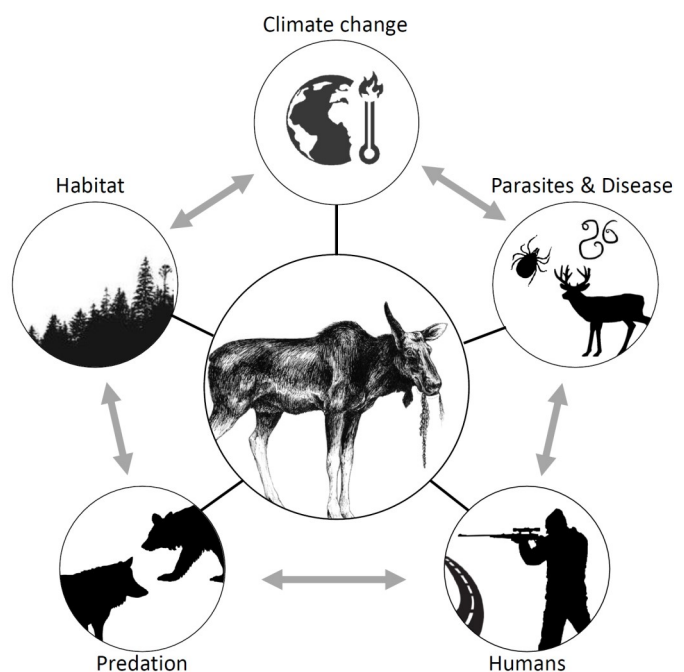


# Threats to Moose Populations

Good food and shelter have positive effects on moose survival and reproduction. Disease, increased predation and over-harvest have negative effects. These negative and positive effects can impact moose both directly or indirectly. These factors can also interact with each other, reducing or increasing their effects on moose.

## Parasites & Disease

There are various parasites and diseases that can weaken or kill moose. White-tailed deer carry some of these parasites, like the brainworm parasite and liver flukes. While these parasites are mainly harmless to white-tailed deer, they are very harmful to moose and can shorten their lifespan or kill moose. In some parts of Manitoba, such as the southeast (e.g., the Whiteshell area), the majority of deer carry the brainworm parasite. This means that viable populations of moose will likely not be seen in our lifetimes in the southeast. The brainworm parasite is spreading north with white-tailed deer range extension into the Nopiming region and also in the western region in areas like the Duck Mountains. Winter ticks, another deadly parasite for moose, can significantly reduce moose populations because of outbreaks in an area. There has been reduction of up to 40% of a moose population witnessed in bad tick years in some areas. While some of these parasites and diseases may have been around for some time, their negative impacts on moose populations are increasing due to other influences like climate change and human impacts.







## **Habitat**

Moose need food, shelter, water and space to live. Young forests and bodies of water provide food and mature trees provide shelter. The quality of the food available to moose is also important as it effects their overall health and their ability to raise strong, healthy calves. As moose habitat changes due to humans and climate change, moose have to change where and how they live. This is especially true for moose in the southern extent of their range where fire suppression has created habitat that is dominated by old growth forest. Moose require young forest for food. In the absence of large-scale natural fires, controlled burns and/or forestry operations may be required to provide the necessary habitat to support our stressed moose populations.

## **Predation**

Wolves and black bears are the main predators of moose. While wolves prey on moose year-round, black bears can target young calves in the spring. Predators usually focus on vulnerable and weak prey, which tend to be old, sick or young moose. However, if other natural or human influences have an increasing, negative effect on moose, a higher proportion of the moose population will be vulnerable to predators.



## **Climate change**

As climate changes, so do the habitat and needs of moose. Increasing temperatures and changes in precipitation patterns expose moose to heat stress, parasites, and disease. Moose have evolved to live in cold weather. Unlike white-tailed deer, they are long-legged, large bodied animals that thrive in cold temperatures and snow covered landscapes. They may decide to alter their activity patterns and space use to find relief from a warm winter, but this will come at a cost to their health, as they may not have access to the best foods. This is especially true for moose in the southern extent of their range. Warmer winters allow deer to expand their range north into areas that were previously dominated by moose populations, and deer bring parasites that are lethal to moose. In some regions like the southeast, deer have replaced moose over time. If climate change continues, this trend will likely continue.

## **Humans**

Humans affect moose in many ways, whether directly by hunting moose or indirectly by changing or removing their habitat. ATVs and similar equipment are now widely used to travel into remote areas where moose once found quiet refuge. Advancements in technology such as high powered rifles with scopes, make it easier to hunt moose. Human activity causes moose habitat loss through increased development, roads, trails and also with widespread fire suppression. By altering the landscape, human activity directly impacts moose, and also impacts how other influences affect moose. Human harvest of moose is one of the only factors that we can control. Protecting the cow moose may be one of the most important things that we can do.





# Changing landscape

Due in large part to human alterations and a warming climate, landscapes are not the same as they were in decades past. As human populations increase, so do their increasing demands for resources and their effects on the environment. There is significantly more development and access into previously remote areas used by moose. Demands for moose are increasing, while natural and human influences make it harder for moose to survive on some landscapes. The balance has shifted and some moose populations are struggling to survive.

While the world has changed around the moose, the moose have not changed at all. Moose reproduce at a much lower rate than white-tailed deer. Female moose often do not have a calf until they are two years old and older, whereas some female deer can have a fawn in their first year. Most cow moose have one calf and a proportion may have twins, while most white-tailed deer have twins.

The cumulative effects of all of these factors mean moose in Manitoba are facing an uphill battle. All things are connected and we need to find a balance that maintains the integrity of the ecosystem, and reduces negative factors against moose while providing opportunities for Manitobans to enjoy this iconic species.

The province of Manitoba is committed to work collaboratively with all who care about moose in a shared management approach. In this ever-changing landscape, we must work together to help maintain healthy moose populations for generations to come. For more information or to provide comments, please visit Engage MB at the following link:

[EngageMB.ca](https://engage.mb.ca)