

DMU 057

Missaukee County

Deer Management Unit

Area Description

Missaukee County Deer Management Unit is in the Northern Lower Peninsula Region (NLP). It has over 100,000 acres of state land, just over a third of the county, found to the north of M-55 and along the eastern border. Cover types on state land include northern hardwoods, oak, aspen, and lowland conifers. Approximately 26 acres of rye fields are actively maintained on state land. Generally state land is found along the outwash plains, but the county is a mosaic of these outwash plains, moraines, and small ice contact ridges, therefore topography varies throughout. Soils range from excessively well drained sands and loamy sands on moraine ridges to poorly drained peat and muck on the outwash plains.

The northeast corner of the county is the location of the Deadstream Swamp consisting of over 11,000 acres of primarily northern white cedar. This is the largest deer yard in the northern Lower Peninsula. The Muskegon River headwaters are associated with the Deadstream Swamp, and as the river winds its way to the south along the eastern border of the county, the riparian floodplain gives rise to conifer and deciduous swamps, shrub thickets, and cattail marshes. This is a major movement corridor for deer and other species.

There is no federal land in the county; the remainder of land is in private ownership. Agriculture is common in Missaukee County, and while it can be found throughout, it is mainly concentrated to the south of M-55. Livestock makes up a high percentage of farm revenue, and large dairy farms on the southern border of the county farm row crops for silage.

Management Guidance

Two main goals guide the deer management in this DMU: 1) impact management; and 2) hunting opportunities. Impact management refers to reduction of undesirable effects associated with deer over-abundance. Crop damage, deer-vehicle collisions, and poor forest regeneration due to over-browsing are examples. In an effort to find a middle-ground in which deer numbers provide ample hunting and wildlife viewing opportunities and mitigate unwanted impacts, we review data from several sources to adjust the harvest strategy as needed. These data include deer harvest data from check stations and an annual hunter survey, the winter severity index, deer-vehicle collision data from the Michigan State Police, and deer-related information collected by regional wildlife biologists (e.g., hunter observations, number of Crop Damage Permits, habitat assessments, etc.).

Population Assessment Factors

Winter Severity

In northern Michigan, winter severity has a direct impact on deer condition at the population level. Whereas mild winters allow for better survival of deer, severe winters can cause high deer mortality. In addition, does may abort fetuses to survive which creates a lag effect into the following year. Does with poor nutrition tend to have smaller litter sizes and give birth to fawns with reduced birth weight.

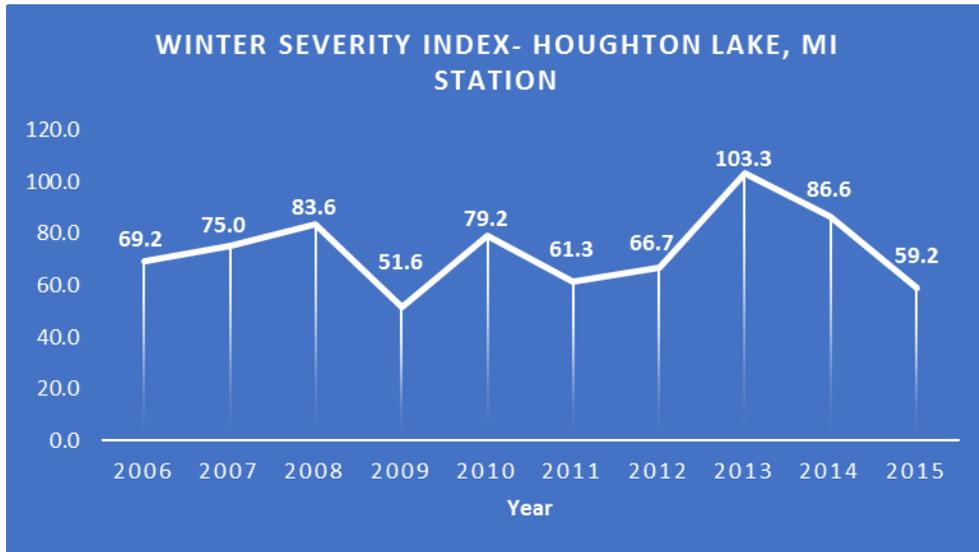


Figure 1: Houghton Lake Area Winter Severity Index from 2006 to 2015

Winter severity over the last five years has been variable with most years below the 10-year-average. The notable exceptions were the winters of 2013 and 2014 where winter weather was both more severe and lasted longer than normal.

Deer Harvest Analysis

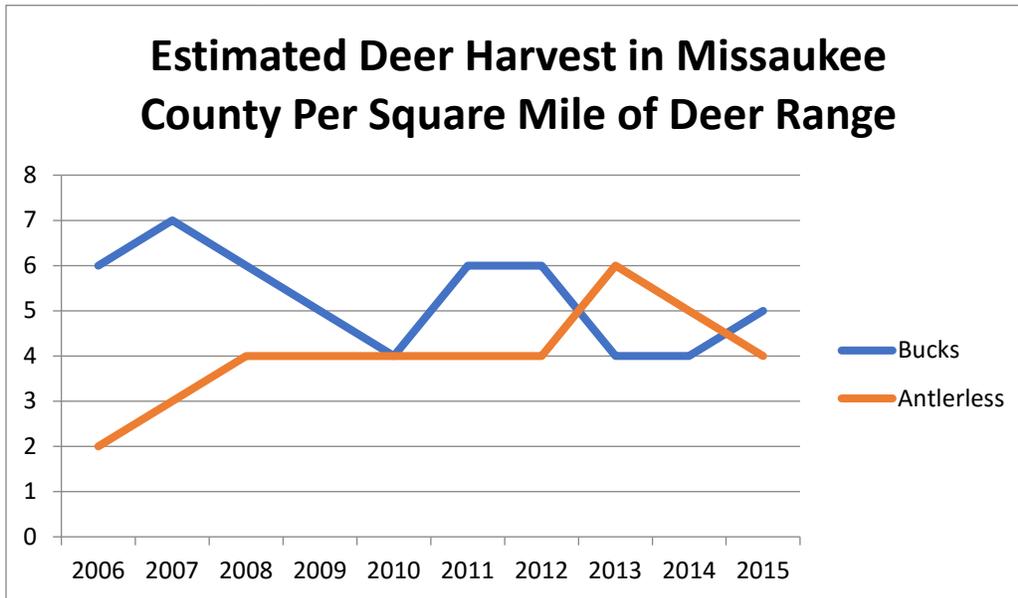


Figure 2: Deer harvest estimates per square mile. Note: for the years 2008-2015 this includes antlerless deer (between 0 and 0.4 per square mile each year) killed under crop damage management programs, see Other Harvest.

Buck harvest has oscillated between 3 and 6 bucks harvested per square mile of deer range over the last decade. The fluctuations observed are likely related to varying winter severities, hunter effort, fall food availability and, starting in 2013, the Antler Point Restriction (APR) which went into effect in this county. The antlerless harvest since 2012 continues to decrease even as antlerless license availability has remained the same. This most likely indicates population that is decreasing. While it can be difficult to pinpoint exactly what causes a population to increase, decrease, or stabilize, we can make predictions based on past trends and looking at several factors that can indicate changes in populations.

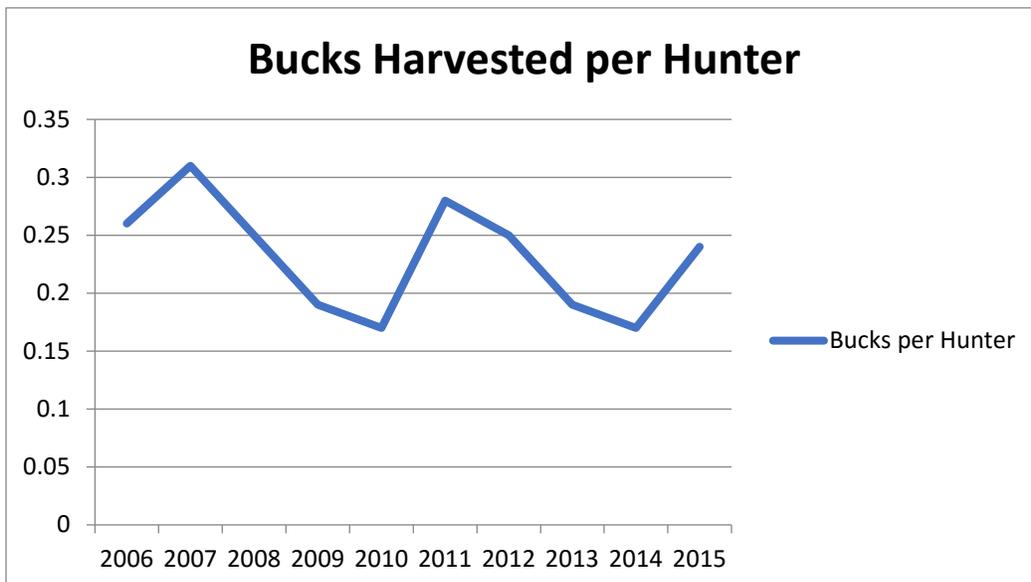


Figure 3: Bucks harvested per hunter in Missaukee County, all seasons combined

With the number of hunters changing year to year it can be helpful to look at the number of deer taken as it relates to hunters in a given year. Missaukee County has a decreasing trend in the number of bucks taken per hunter over the last ten years. Over the last five years the harvest has been stabilized.

Other Harvest

Management Assistance Permits (DMAP) and Crop Damage Permits (CDP) are utilized to address deer overabundance issues in specific locations at specific times of the year. DMAPs may be applied for by any private landowner with deer damage, safety issues and other concerns such as forest regeneration. Because CDPs are not typically issued during the regular hunting seasons, agricultural producers who experience chronic deer damage will frequently request DMAPs to ensure they can harvest adequate numbers of antlerless deer in the fall. Missaukee County has some agriculture but only a minimal number of deer taken through either of these programs.

Deer-Vehicle Collisions

Deer-vehicle collisions (DVC) are commonly used as a deer population trend index, the idea being that high rates of DVCs are correlated with high deer populations, and vice versa. Research has shown that there are other factors that influence the rate of DVCs. Habitat proximate to the roadway and highway characteristics can blur the relationship between the deer population and DVCs. However, DVC data can provide useful information if used as one part of a deer population assessment.

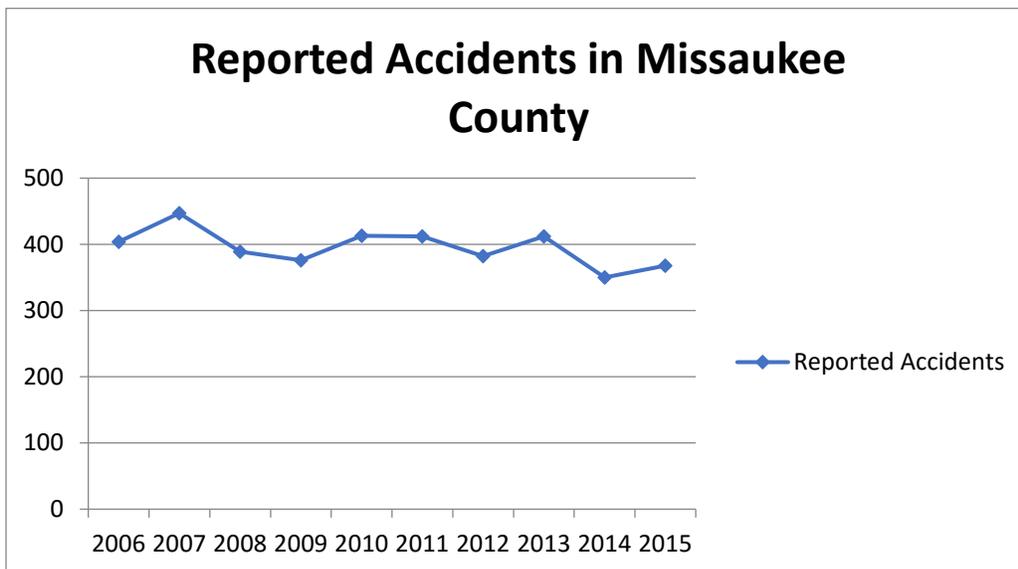


Figure 4: Number of deer vehicle collisions in Missaukee County.

These data are provided by the Michigan State Police. Although changes may have occurred in law enforcement response and recording of DVCs over time, we assume they have remained consistent enough to provide a reliable estimate of DVC rates. In Missaukee County, deer vehicle collisions range between 350-450 per year with a stable to decreasing trend.

Antler Measurements

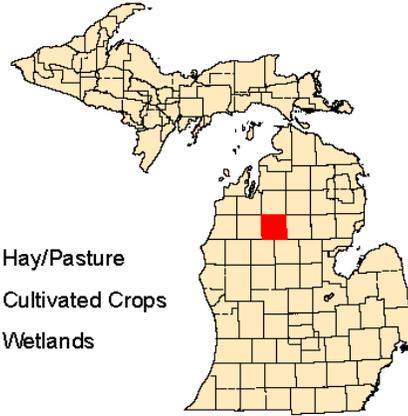
In previous years, average antler measurement for one-and-a-half-year-old bucks was used to evaluate overall nutrition of the deer herd. This information is not being included this review because antler

point restriction were implemented in 2013. This change significantly reduced the number of yearling bucks in the harvest and sample sizes are longer adequate to provide confidence in these data.

Deer Management Recommendation

Since a direct count of the deer population is not possible, there are a number of indicators used to determine long term deer population trends in each DMU. The list of indicators described above are used together, as no single indicator provides enough information on its own. Though there isn't complete agreement in these indices, most indicators demonstrate stable population. With a stable populaiton antlerless license quotas will remain as they have been and there will be no early or late antlerless seasons in Missaukee County.

Deer Management Unit 57



Legend

Deer Management Units Polys Edit	Open Water	Hay/Pasture
Highway	Developed	Cultivated Crops
Cities	Forested	Wetlands
	Herbaceous	

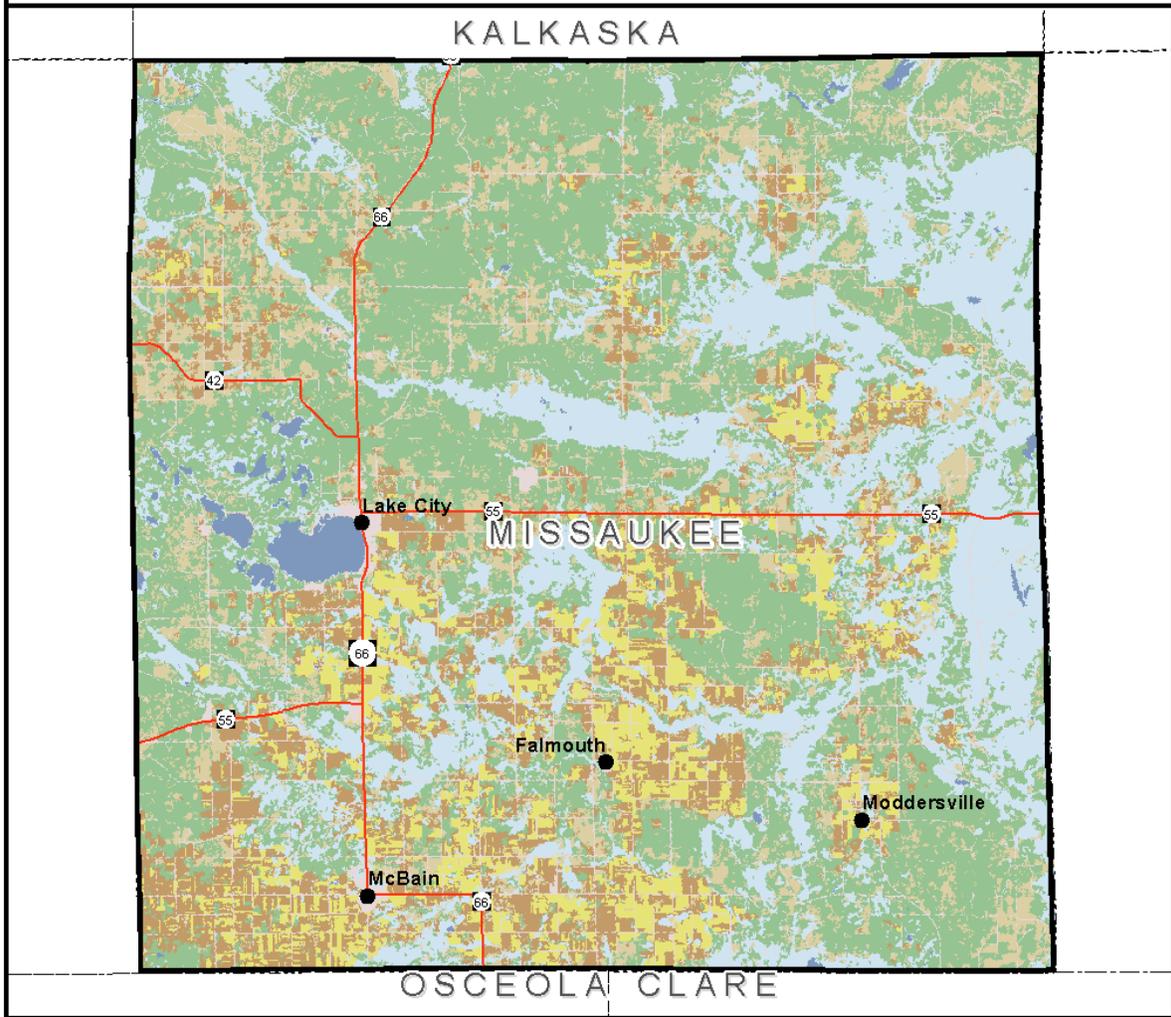


Figure 5: Cover type map for Missaukee County.