

DMU 067

Osceola County

Deer Management Unit

Area Description

Osceola County Deer Management Unit is in the Northern Lower Peninsula Region (NLP). It is largely privately owned; no federal land exists in the county and state land comprises approximately 18,000 acres, or 8% of the total land area. State land consists of one large block of state forest that is centrally located, and other smaller satellite parcels in the corner of the county. This largest block of state land is found on steep moraine ridges with well drained loamy sands. Topography ranges from these central steep ridges to flat stretches of broad moraines. Oak and aspen are dominant stand types on state land, and high quality aspen.

Agriculture is a major land use in Osceola County. Private land supports vast tracts of agriculture, largely on the flat moraine ridges, consisting of row crops and hay. Soils are well drained sand, loamy sand, and loam.

The Muskegon River cuts through Osceola County on its way south. Another major river in the county is the Hersey River, a tributary to the Muskegon River. Both are important travel corridors connecting deer yard areas and providing lowland thermal cover.

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.

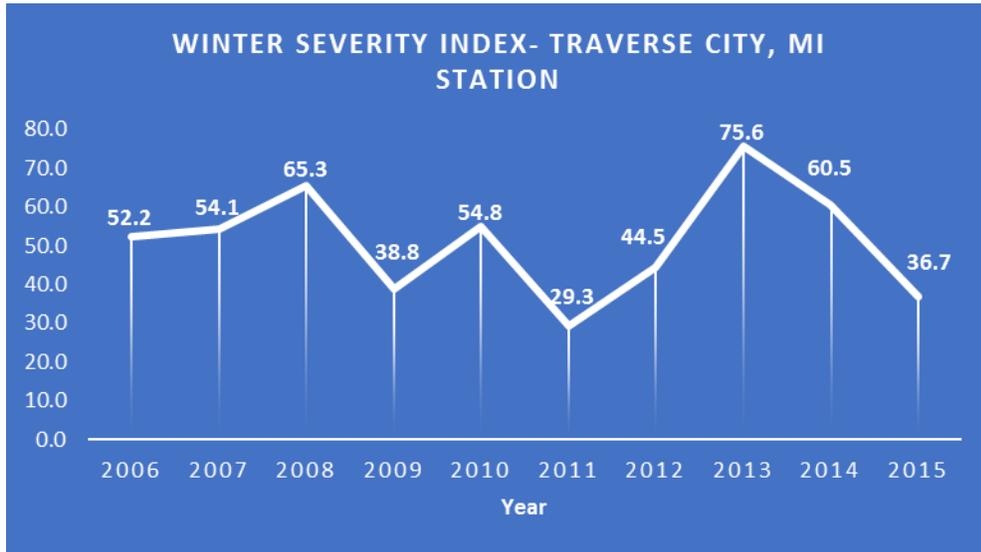


Figure 1: Traverse City Area Winter Severity Index from 2006 to 2015

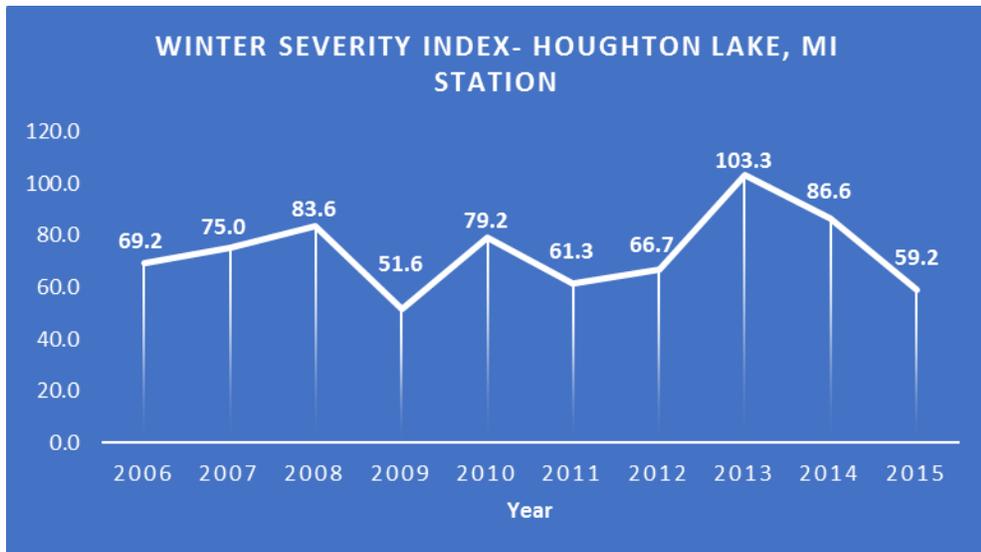


Figure 2: Houghton Lake Area Winter Severity Index from 2006 to 2015

With Osceola County somewhat between the Traverse City and Houghton Lake weather stations it is useful to look at the indexes for both locations. 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

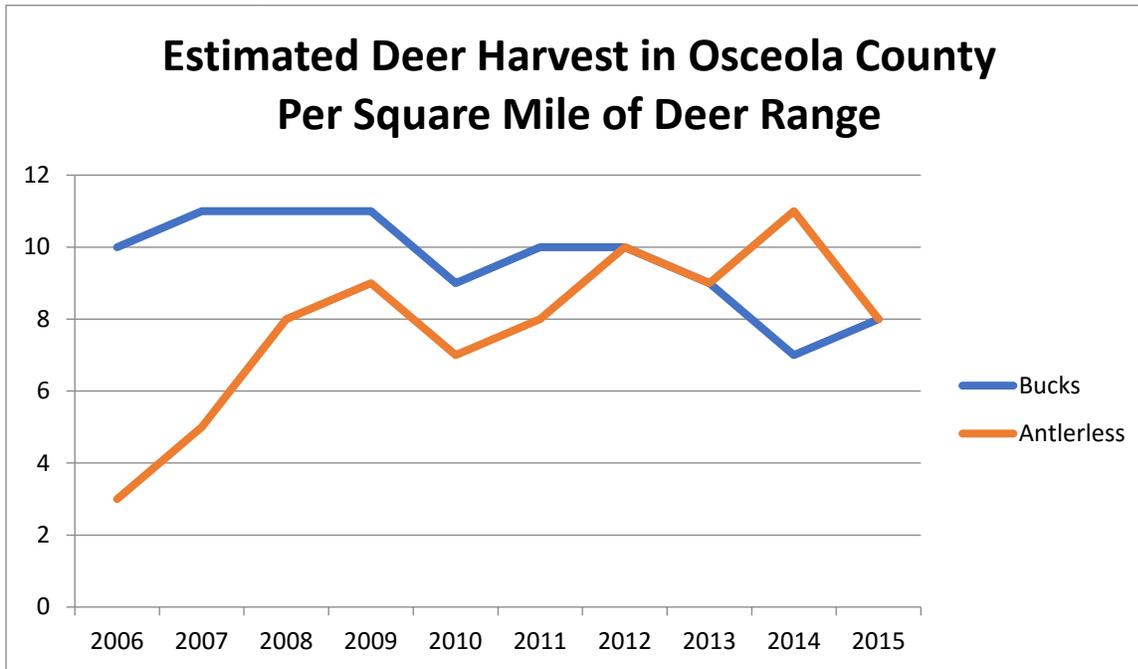


Figure 3: Deer harvest estimates per square mile. Note: for the years 2008-2015 this includes antlerless deer killed under crop damage management programs, see Other Harvest.

Buck harvest has oscillated between 7 and 11 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, the Antler Point Restriction (APR) which went into effect in this county in 2013. 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.

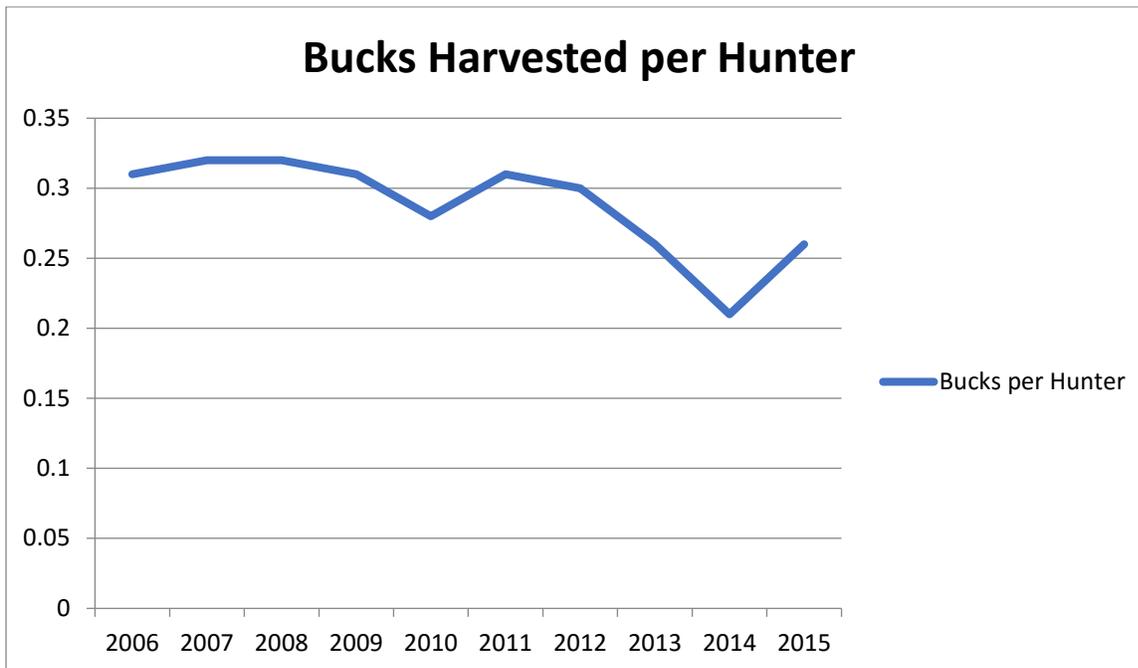


Figure 4: Bucks harvested per hunter in Osceola County, all seasons combined.

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. Osceola County saw a decrease in bucks harvested per hunter from 2011 through 2014 followed by a reversal in 2015.

Other Harvest

Deer 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. Osceola County has some agriculture but only a small 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.

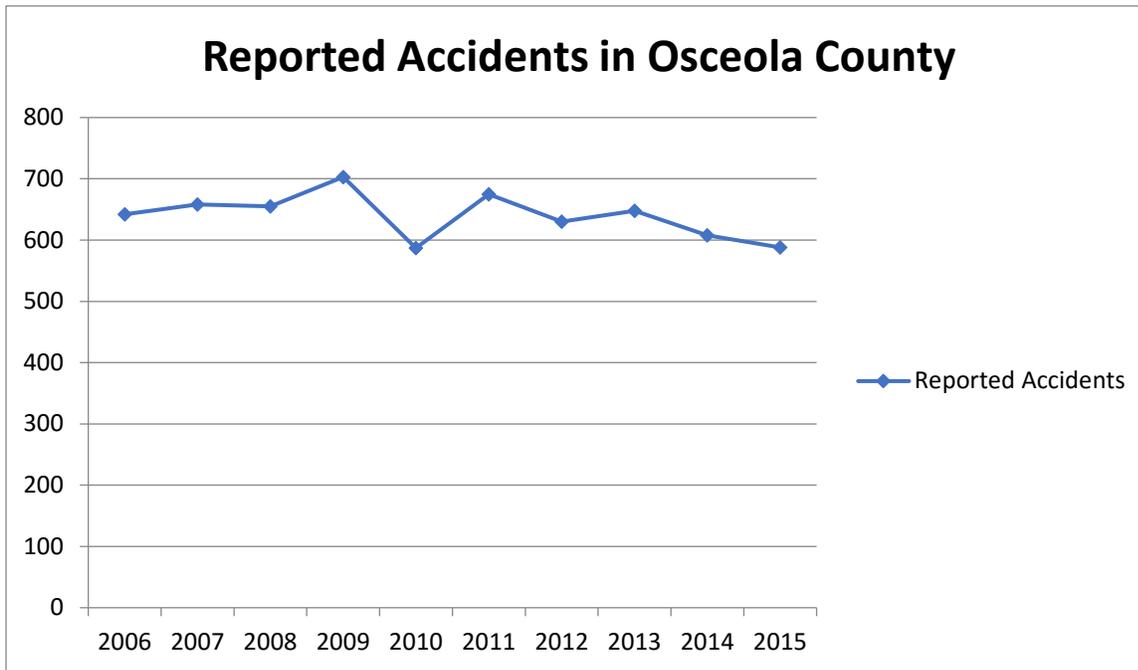


Figure 5: Number of deer vehicle collisions in Osceola County.

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 Osceola County, deer vehicle collisions range between 600-700 per year. The trend since the high in 2011 is a moderate decline.

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 unattainable, 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 stable population. With a stable to slightly increasing population, as a result of recent mild winters, antlerless license quotas will be increased slightly to on public land to help maintain a healthy population in the county. The county will be open for the early and late antlerless seasons.

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Legend

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

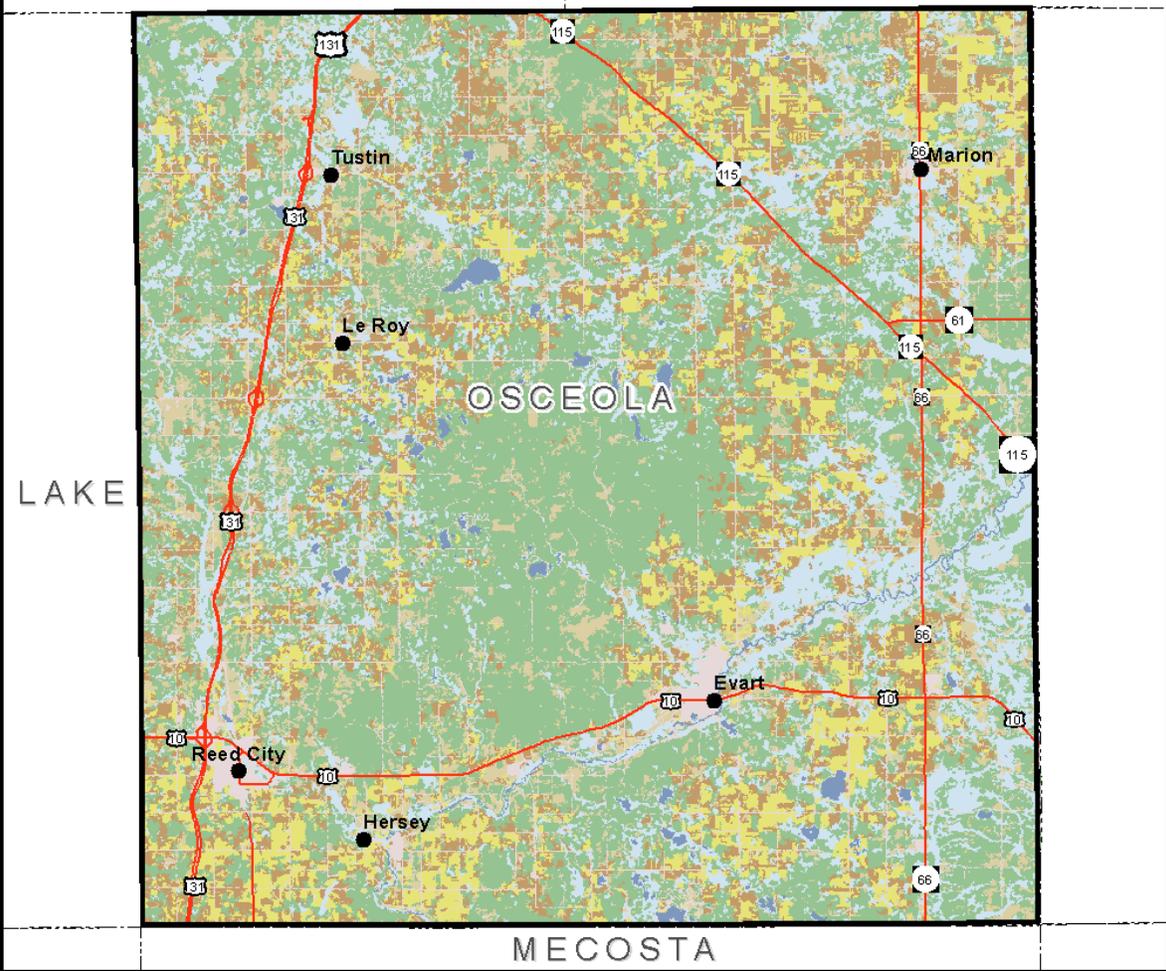


Figure 5: Cover type map for Osceola County.