

DMU 043

Lake County

Deer Management Unit

Area Description

Lake County Deer Management Unit is in the Northern Lower Peninsula Region (NLP). It has approximately 200,000 acres of public land which is about half of the total acreage in the county. State land comprises approximately 60,000 acres, or about 17% of the total land area, and is concentrated to the east of M-37 and north of US-10 East. State land is primarily forested, with a high component of oak, red pine, jack pine, white pine, and considerable aspen acreage. Approximately 300 acres of alfalfa and rye plantings are actively maintained on state forest land by DNR staff. The remainder of land is in private ownership. Little agriculture exists in Lake County; however, there are some row crops, concentrated in the eastern portion of the county. Historically, Lake County supported large areas of oak and oak/pine barrens communities.

The east border, and to a lesser extent the west border, of the county are characterized by irregular moraine topography with well drained sandy or sandy loam soils. Sandy, well drained outwash plains are interior, with pockets of poorly drained peat and muck. The latter soil types are where the Bear, Voss and Baldwin-Luther Swamps are found; all important winter deer yards. Major river corridors include the Pere Marquette, Little Manistee, and Pine which have steep, highly erodible banks. These river corridors provide routes of ingress and egress with regard to the large swamp complexes.

Management Guidance

The main goals that guide deer management in this DMU are: 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 populations. While mild winters allow for better survival of deer, severe winters can cause high deer mortality. In addition, does may abort

fetuses during severe winters, 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.

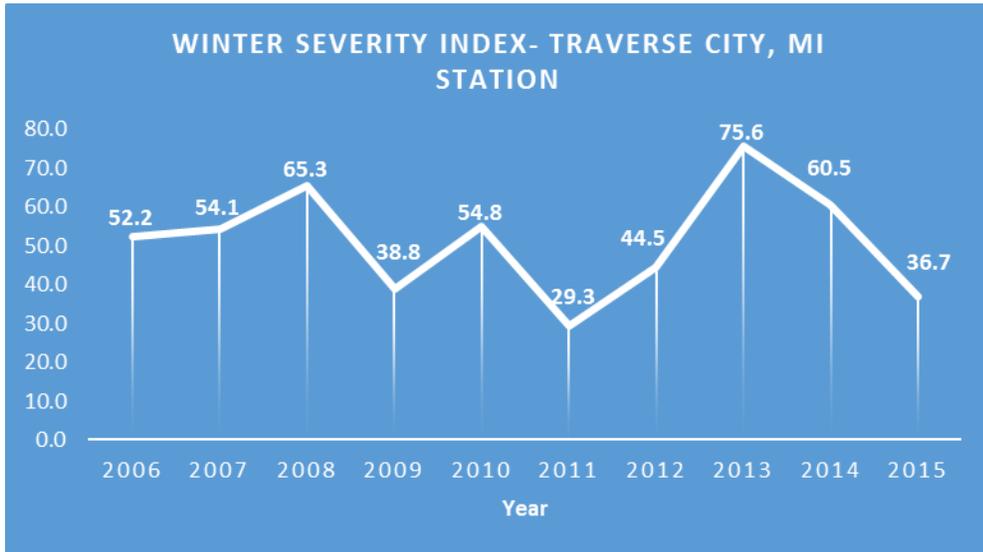


Figure 1: Traverse City Areas Winter Severity Index from 2006 to 2015

Winter severity over the last five years has been variable with most years below the 10-year-average for the Traverse City area. 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

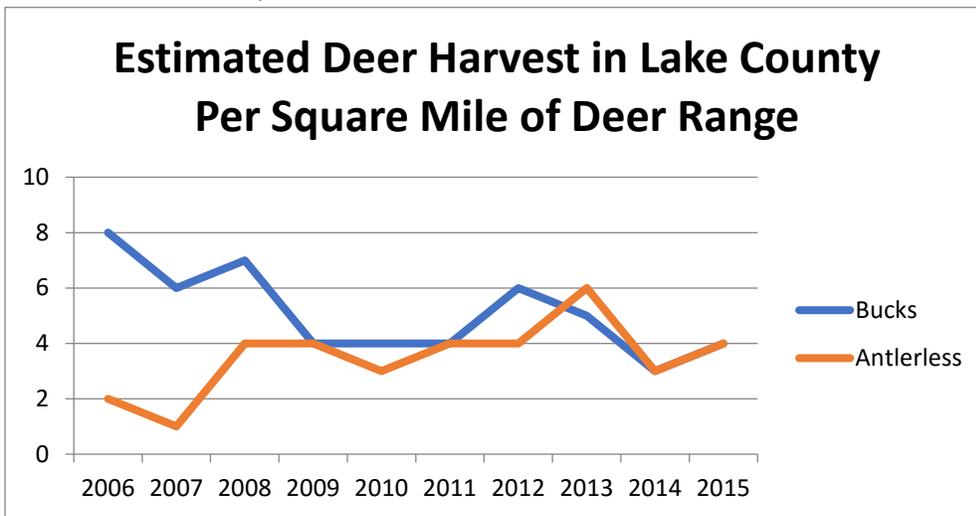


Figure 2: Deer harvest estimates per square mile. Note: for the years 2008-2015 this includes antlerless deer killed under crop damage management programs.

The antlered and antlerless harvests indicate opposite population trends (Figure 2). This most likely indicates a stable population until 2014 where both were reduced. Buck harvest has varied between 3 and 8 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.

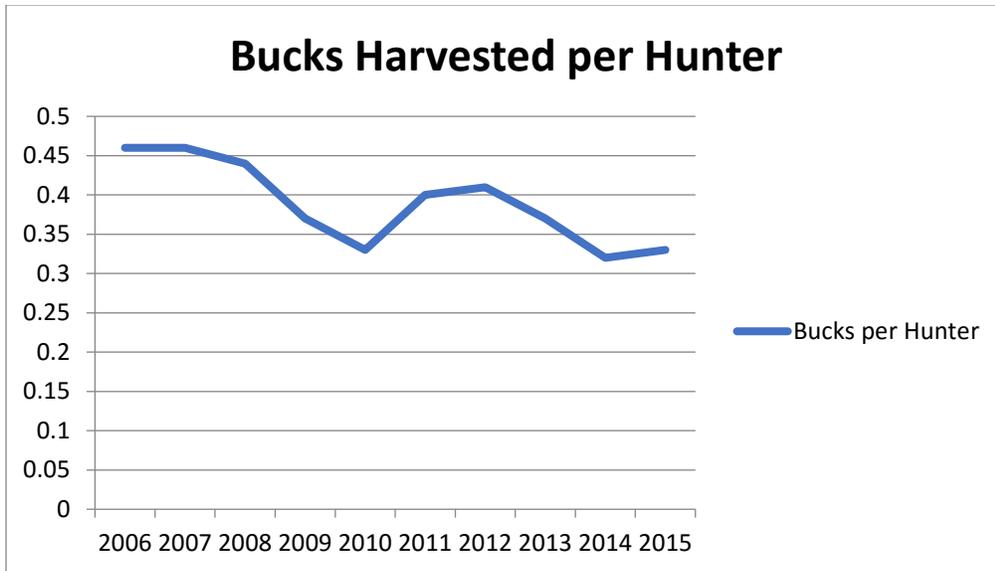


Figure 3: Bucks harvested per hunter in Lake County, all seasons combined.

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 each year (Figure 3). Lake County has seen a decreasing trajectory in the number of bucks taken per hunter.

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. CDPs are not issued during the regular hunting seasons. Therefore, agricultural producers who experience chronic deer damage will frequently request DMAPs to ensure they can harvest adequate numbers of antlerless deer in the fall. Lake County has minimal agriculture and 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 DVC are correlated with high deer populations, and vice versa. Research has shown that there are other factors that influence the rate of DVC. 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.

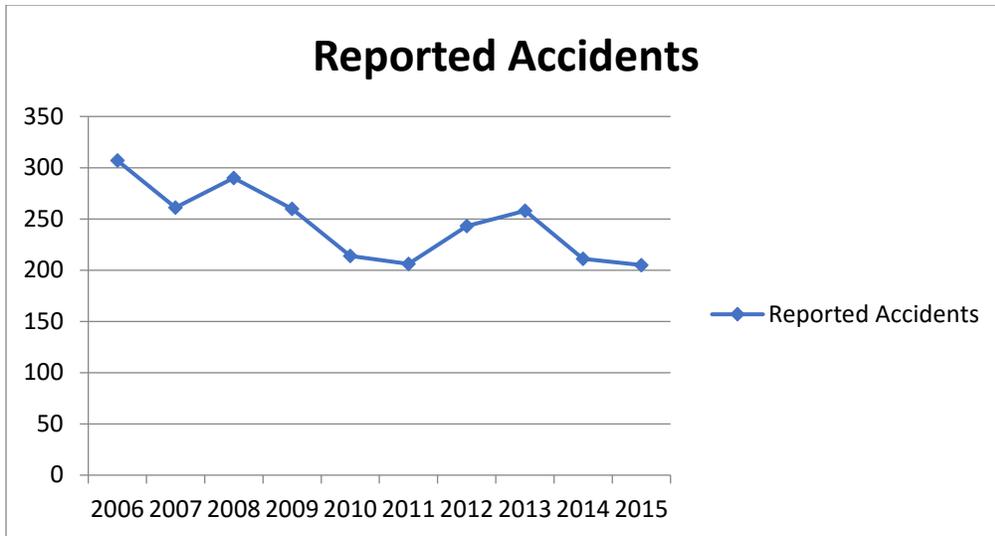


Figure 4: Number of deer vehicle collisions in Lake County.

These data are provided by the Michigan State Police. Although changes may have occurred in law enforcement response and recording of DVC over time, we assume they have remained consistent enough to provide a reliable estimate of DVC rates. In Lake County, deer vehicle collisions range between 200-325 per year with yearly variations of up to 50.

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 population that has largely stabilized. With what appears to be a stabilized population, antlerless license quotas will remain as they have been. There will be no early or late antlerless seasons in Lake County.

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Legend

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

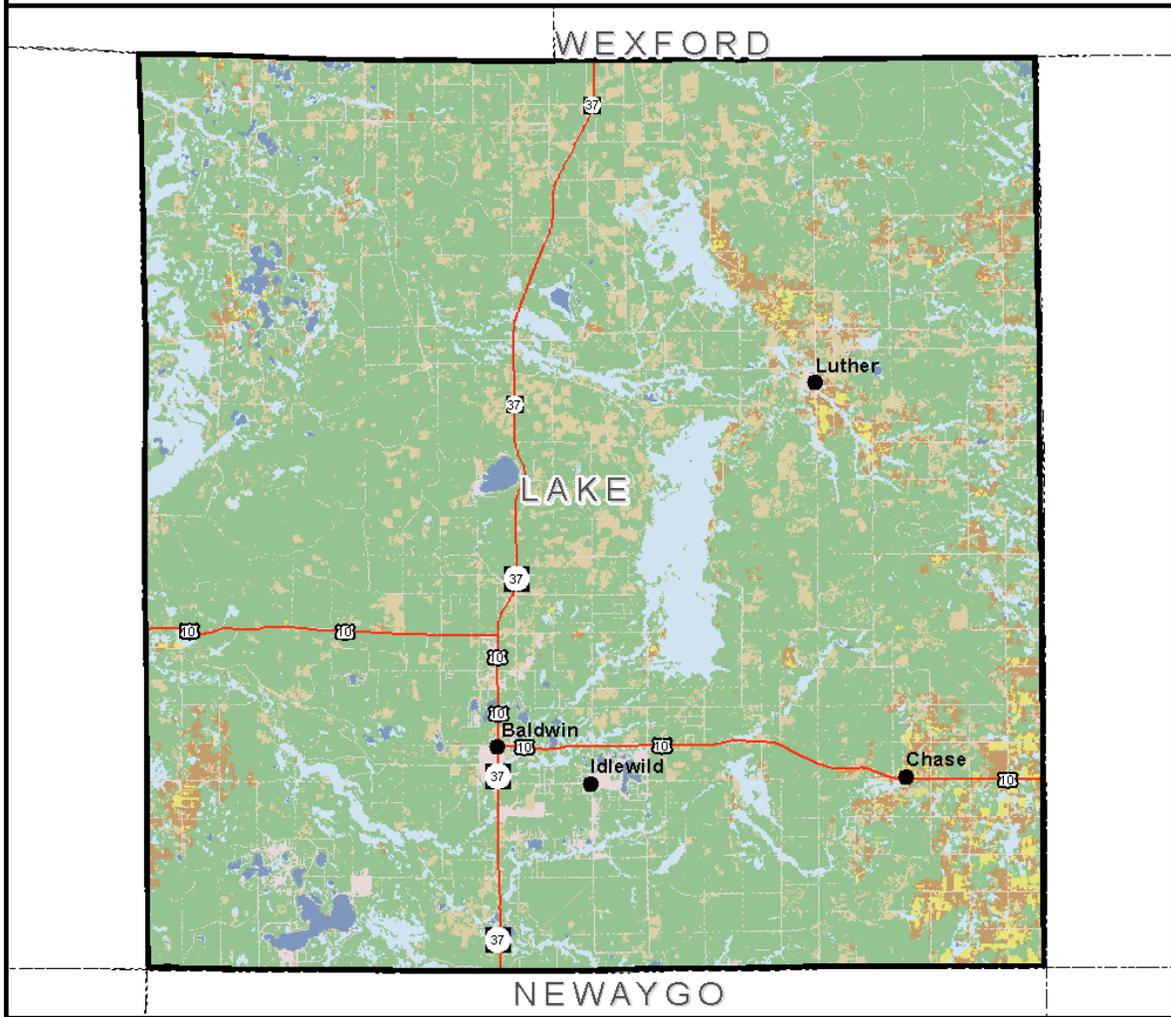


Figure 5: Cover type map for Lake County.