

DMU 046

Lenawee County

Deer Management Unit

Area Description

The Lenawee Deer Management Unit (DMU), or DMU 046, lies in the Southeastern Lower Peninsula (SLP) region and covers Lenawee County. The majority of public hunting opportunities in this DMU are available on Onsted State Game Area (700 acres) and Lake Hudson State Recreation Area (2,800 acres). The topography of the Lenawee DMU has been shaped by erosion and deposition during glaciation; and, ranges from nearly flat in the eastern and southeastern portions of the county to heavily rolling in the northwestern portion. The soils in the Lenawee DMU are well suited for agriculture. The soils in the southern and eastern portions of the DMU are rich and poorly drained (as evidenced by the ubiquitous ditches and tiles in the area); soils in the rest of the DMU are generally well drained. Approximately 70 percent of the land is in agriculture, with row crops (corn, soybeans, and wheat) being the main ag commodities. The landscape largely supports agriculture, the most dominant cover type in the DMU, followed by forest, then by developed areas (Table 1, Figure 1). The landscape is highly fragmented due to the predominance of agriculture on privately-owned lands. Aside from public lands which are predominantly forested and wetland/water, habitat providing cover for deer (e.g., woodlots, shrub/brush, and wetland) is isolated and exists in small patches (Table 1, Figure 1).

Habitat	046	046 Public Lands
Forest (%)	13.0	40.0
Agriculture (%)	70.5	13.0
Grass/Shrubland (%)	5.2	12.6
Wetland (%)	4.6	19.2
Developed (%)	5.3	3.1
Water (%)	1.3	11.5
Bare/Rocky (%)	0.1	0.6

Table 1. Habitat composition of DMU 046 as compared to only the public hunting lands in DMU 046.

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 survey, deer-vehicle collision data from the Michigan State Police, and deer-related information collected by regional wildlife biologists (e.g., number of Crop Damage Permits, spotlight surveys, habitat assessments, input from hunters and Conservation Officers, etc.).

Deer Harvest Analysis

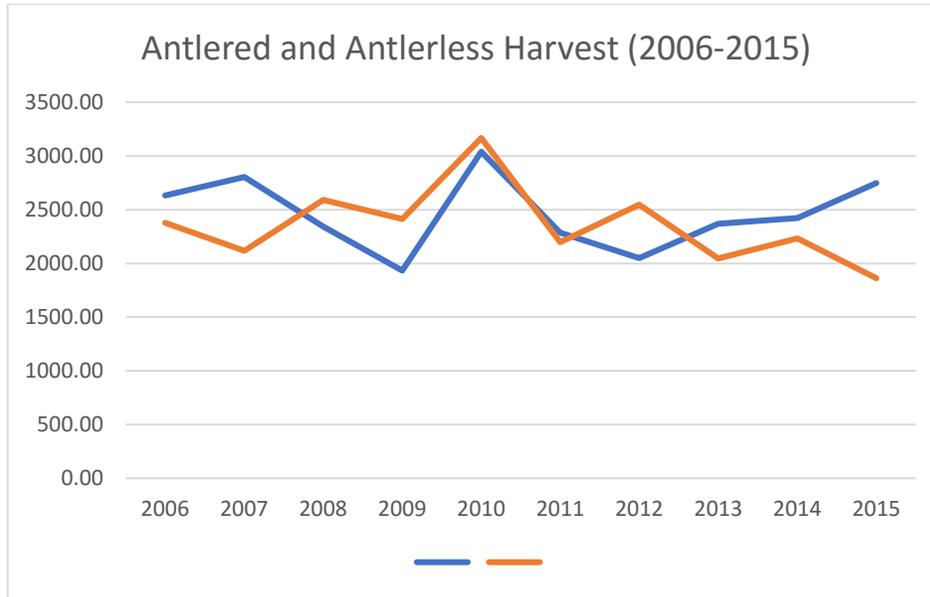


Figure 1: Graph of antlered and antlerless harvest in DMU 046 (Lenawee County)

Antlerless and antlered harvest in DMU 046 have remained level, over the last decade, with antlerless harvest having a slight, but not significant, increase between 2003 and 2012 (Figure 1). This may be due to a stabilization of the deer population or changing behaviors in hunters. However, this trend in harvest is likely due to a combination of these factors. Hunter numbers have declined in the Lenawee DMU; however, it does not seem to correlate with the level harvest trend. The liberalization of antlerless permits was intended to limit the productivity of the deer herd; however, it has not seemed to produce a significant change in the population trend for DMU 046 in the last decade. There was a peak in harvest and hunter numbers in 2010, and a reduction followed since that year; however, the overall trend from 2006-2015 is relatively level. Other environmental factors, such as poor weather immediately preceding fawning, increased predation, and changing agricultural practices, can also impact deer numbers. Ultimately, determining a cause of any population adjustment is difficult when assessing a large geographic region. Hunter perceptions and goals can also impact harvest numbers. A large scale shift in hunters' decisions to target older deer and pass on younger bucks results in reduced harvest numbers and increased hunter effort, as there are fewer deer in older age classes. Success and harvest rates are thereby suppressed not by population decline, but by human decision-making processes. Similarly, hunters may self-regulate harvest of antlerless deer for a variety of factors, such as a perception of too few deer. Hunter perceptions and goals could be playing a role in the deer harvest trends in the Lenawee DMU. The 2012 EHD die-offs were not as prevalent in Lenawee County, as the cold weather was closer at hand when the disease had reached the Lenawee borders. However, there are likely still some perceptions among hunters regarding the viability of the deer population in areas

affected by the disease. Although harvest in DMU 046 has remained level over the past decade, there has been a slight increase in number of days afield per hunter. Social factors (i.e. hunter perceptions and goals) may have some influence over both harvest and effort. Since 2004, there has been a significant increase in the percent of 3.5 year old bucks harvested; however, harvest of 1.5 and 2.5 year old bucks have essentially stayed the same. Hunters may be making more of an effort to harvest older bucks. Of course, there are certainly many potential reasons for an increase in hunter effort, while the harvest and population trends remain stable.

Population Assessment Factors

Deer-Vehicle Collisions

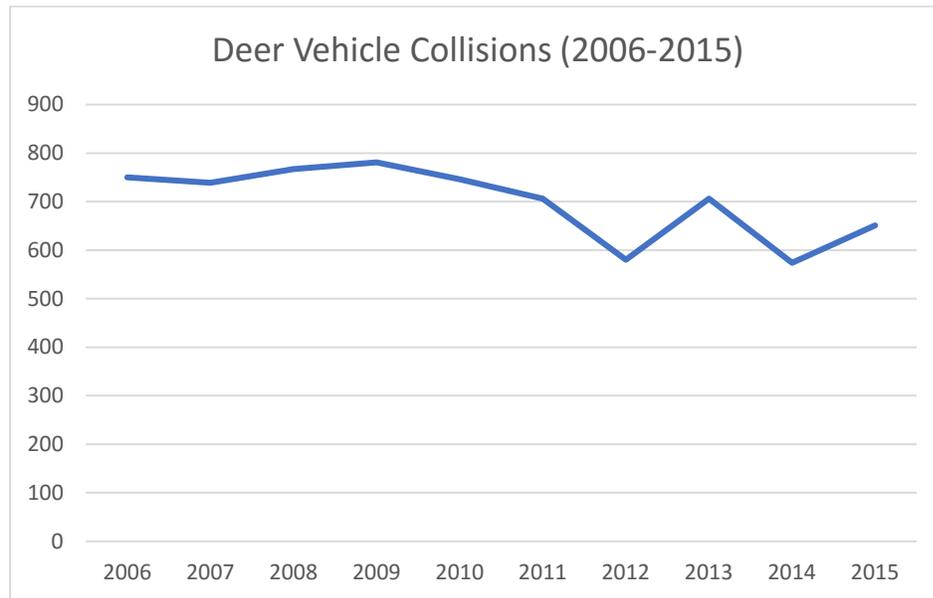


Figure 2: Graph of deer vehicle collisions in DMU 046 (Lenawee County)

Deer-vehicle collisions (DVC) are commonly used as an index to the deer population trend, 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 deer population and DVCs. However, DVC data can provide useful information if contextualized as one part of a deer population assessment. DVCs indexed by vehicle miles travelled have decreased from 2006-2015 in the Lenawee DMU (Fig. 2). This data is 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 an accurate estimate of DVC rates relative to vehicle miles driven.

Deer Management Assistance and Crop Damage Permits

Deer Management Assistance Permits (DMAPs) allow for the harvest of antlerless deer by private landowners or their designees during legal deer hunting seasons. Landowners may request and be

granted DMAPs by MDNR to address deer damage concerns when sufficient antlerless permits are not available in a DMU to address the landowner's needs. DMAP requests are tracked by MDNR and may trend with deer populations (i.e., an increase in deer density may result in additional DMAP requests). In the Lenawee DMU, there has been little change in requests for DMAPs in the last decade. Crop Damage Permits are also requested by landowners, but allow for the harvest of antlerless deer outside of legal hunting seasons to address agricultural damage. Requests for Crop Damage Permits may also trend with deer density. In the Lenawee DMU, crop damage permit requests have remained low; but have increased slightly over the last decade.

Deer Condition Data

Yearling main antler beam diameter, measured just above the burr, is useful for determining deer body condition. These measurements are recorded by MDNR as hunters voluntarily present harvested deer at check stations throughout the state. When aggregated by DMU, the average antler beam diameter for yearling bucks over multiple years is calculated. An upward trend indicates improving herd condition, whereas a downward trend points to declining herd condition. Generally, herd condition is a function of environmental and landscape factors. An abundance of highly nutritional food resources and good cover is beneficial for herd condition. Depletion of these resources through overpopulation leads to a decline in herd condition, observed as low yearling main beam diameters. In southern Michigan, winter severity is not likely to impact deer condition on a population level. Environmental factors may impact deer condition indirectly, though. A late frost or an especially rainy spring can negatively influence crop production which is a major source of nutrition in this DMU. Likewise, changes in land use practices can affect cover and food resources. In the Lenawee DMU, the decline in average antler beam diameter has been statistically significant, as has the decline for the entire SLP. Increased deer density resulting in heightened intra-species competition and resource depletion can cause this phenomenon. However, as most of our deer population indices point to a decline in deer numbers, this seems unlikely to be the cause. Also, environmental influences (e.g., extreme weather events) tend to be short in duration and impacts are limited to short time frames (i.e., 1-2 years). We would not expect to see environmental effects drive down deer condition for this time span, although climate change may be shifting this perspective. Most likely, the reduction in deer condition is mainly attributable to land use changes. High commodity prices have led to less acreage enrolled in the Conservation Reserve Program, expansion of row crop agriculture, and decline in deer cover. Although agriculture can provide highly nutritional food resources to deer, it is seasonally available and comes at a cost of naturally occurring food sources and cover. The conversion of acreage from acceptable deer cover to agriculture and removal of brushy field rows further fragments habitat, homogenizing the landscape and reducing the richness of a "patchwork" of habitat types in which deer thrive.

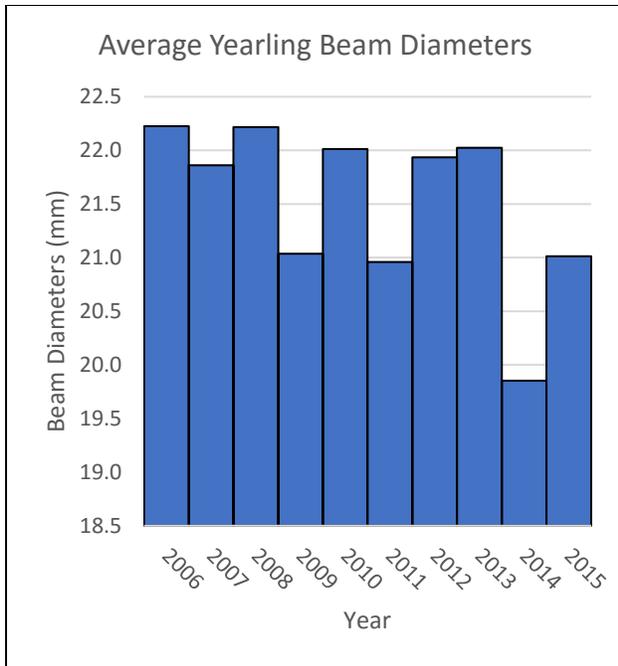


Figure 3: Graph showing the average beam diameters of yearling bucks brought into the check station from DMU 046 (Lenawee County)

Impact of Severe Winter Conditions

Winter conditions in DMU 046 are rarely severe, and have little to no impact on heard population. Hard winters in DMU 046 can have an effect on deer condition come spring time but it does not cause a spike or impact on the DMU population.

Deer Management Recommendations

The estimated deer population has declined to just above goal. Trends for this county indicate that buck harvest and antlerless harvest have been level to slightly decreasing since 2006. Vehicle-deer accidents continue to decline in the county. Deer damage complaints and permits issued for the area have been fairly level. Continuing the late antlerless season may help to address some crop damage, car/deer crashes and nuisance issues in the area. There is very limited public land (1%) in this county so most the hunting opportunity is on private land. I feel that a reduction in the quota will reflect the data which indicates this is a population that has approached (and perhaps reached) goal, and there is a strong sentiment to stop further population size reduction. Based on the above information, we recommend that the Public Land Quota remain at 400 and that the Private Land Antlerless Quota be set to 7,500. We also recommend that this DMU is open for Early and Late Antlerless Firearm seasons.

DMU 46 Wildlife Biologist
 Zach Cooley Private Lands
 Kristin Bissel Public Lands

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