

DMU 047

Livingston County

Deer Management Unit

Area Description

The Livingston Deer Management Unit (DMU) lies in the Southern Lower Peninsula (SLP) region and covers only Livingston County. Most public hunting opportunities in this DMU are available on Gregory (4,000 acres) and Oak Grove (2,057 acres) State Game Areas. Topography varies from gently rolling to hilly with scattered small lakes. The landscape is highly fragmented with a combination of agriculture, forests and urban developments. The area consists of 35% Agriculture, 33% Forest, and 2.5% water. Aside from public lands which are predominantly forested, habitat providing cover for deer (e.g., woodlots, shrub/brush, and wetland) is isolated and exists in small patches (Table 1, Figure 1).

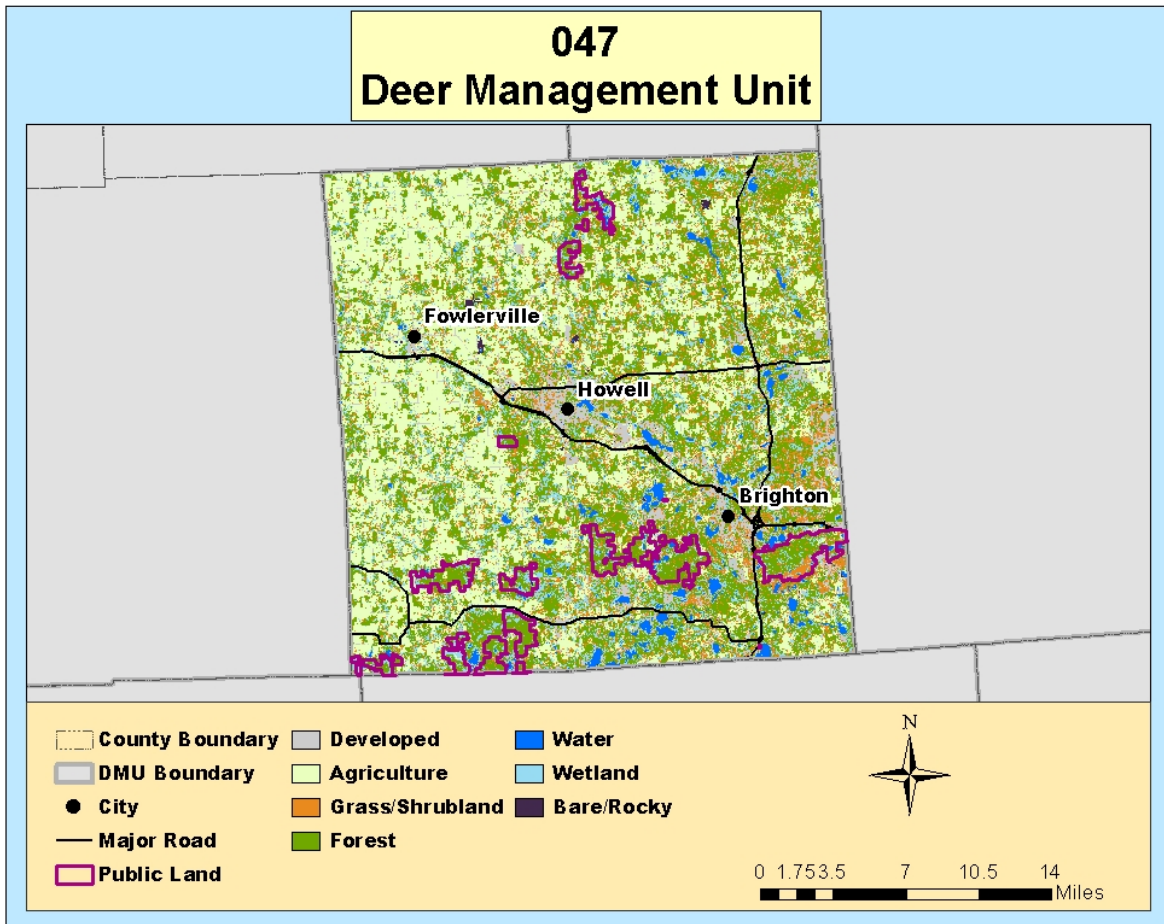


Figure 1. Habitat and land use distribution in Deer Management Unit 047.

Habitat	047	047 Public Lands
Forest (%)	32.7	62.2
Agriculture (%)	34.8	3.5
Grass/Shrubland (%)	11.4	9.7
Wetland (%)	10.3	19.4
Developed (%)	8.1	1.7
Water (%)	2.5	3.3
Bare/Rocky (%)	0.2	0.1

Table 1. Land Use in DMU 047

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 overabundance. Crop damage, deer-vehicle collisions, and poor forest regeneration due to over-browsing. 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, population models, habitat assessments, etc.).

Population Assessment Factors

Deer Harvest Analysis

The harvest over the last decade has shown a slight decline (Fig. 2). This may be due to a reduction in deer population or changing behaviors in hunters, or a combination of both. The liberalization of antlerless permits was intended to limit the productivity of the deer herd and may have contributed to a population decline in this DMU. Hunter effort (fig. 3) has also shown a decline indicating either hunters are finding deer easier to harvest or there has been less effort into firearm deer hunting over time. This same trend is seen for the other seasons including archery. If there is less effort amongst the hunters, this could attribute to a lower harvest. 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 can result 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. Other influences on overall deer harvest include environmental factors, such as poor weather immediately preceding fawning, increased predation, changing agricultural practices, disease and weather during the hunting season. Similarly, hunters may self-regulate harvest of antlerless deer for a variety of factors, such as a perception of too few deer.

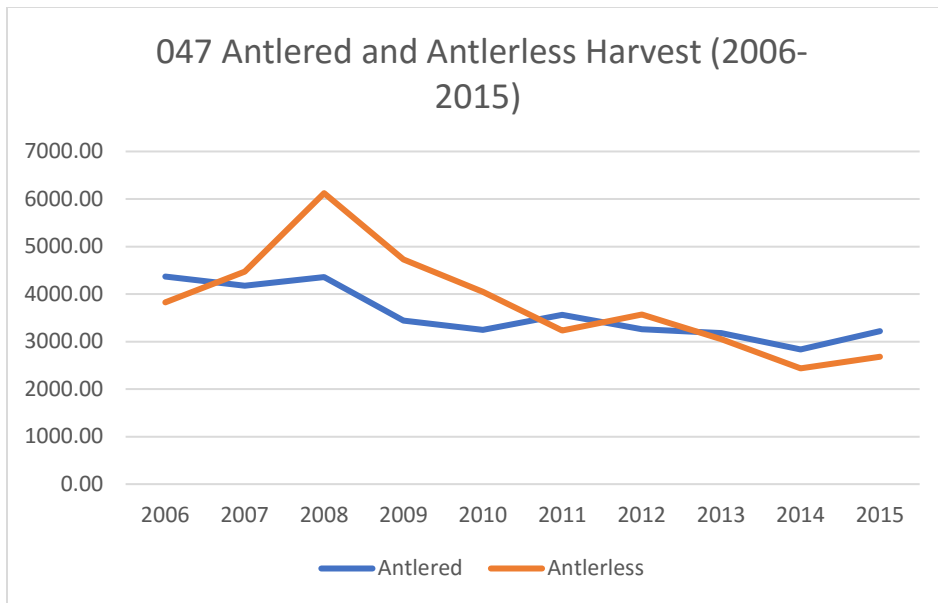


Figure 2: Harvest DMU 047

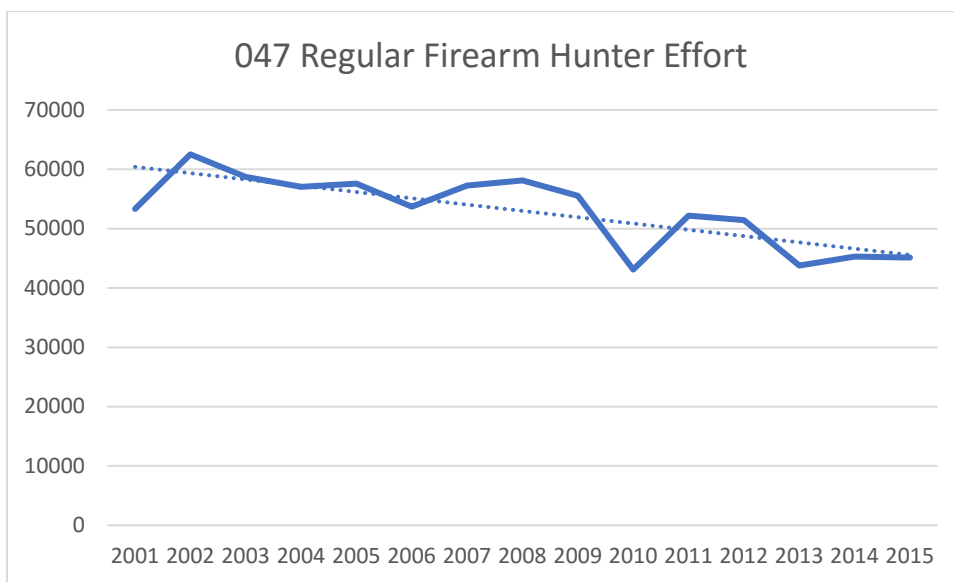


Figure 3. Hunter effort Livingston County regular firearm season

Deer Vehicle Collisions

Deer-vehicle collisions (DVC) are commonly used as an index to the deer population trend. High rates of DVC's are correlated with high deer populations and vice versa. Research has shown that there are other factors that influence the rate of DVCs. Habitat proximity 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.

DVC's have been tracked for many years to look at trends in Livingston County. The peak in DVC's took place in 2006, followed by a steady decline to 2012 and rising in the last couple of years. Although changes may have occurred in law enforcement response and recording of DVC's over time we assume

they have remained consistent enough to provide an accurate estimate of DVC rates relative to vehicle miles driven. The trend in DVCs indicate the DMU deer density has experienced a slight decrease over the long term possibly indicating a slightly decreasing deer population (Figure 4).

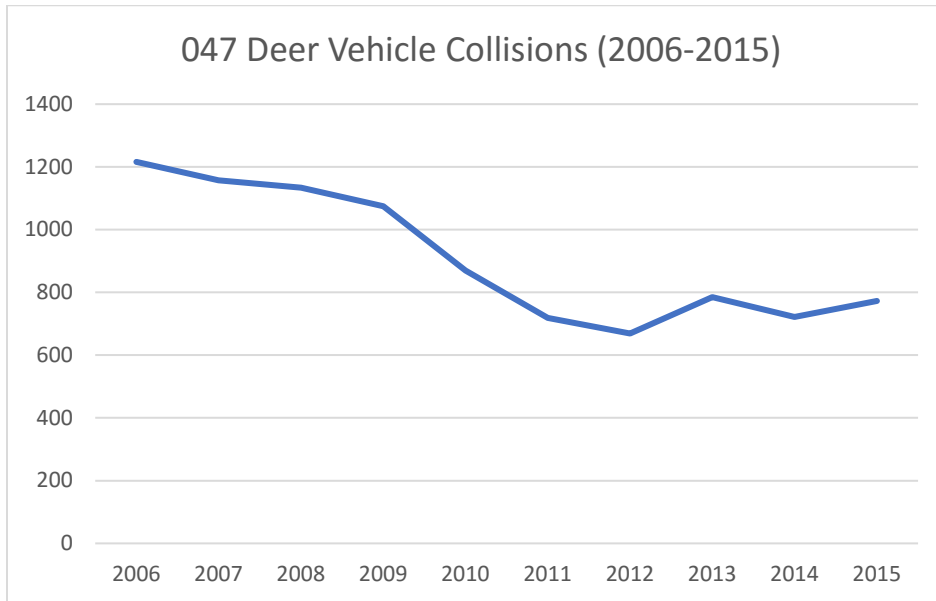


Figure 4. Deer vehicle collisions Livingston County

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). Though large farmers occasionally request DMAPs to allow more hunting of antlerless deer on their properties, in general the request for these permits is low.

Out of Season Kill Permits, or 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, but in general requests for these permits remains relatively low in this county. Requests for Out of Season Kill Permits, usually increase when commodity prices are high as farmers seem less tolerant of deer damage when crop prices soar. In general requests for permits in this county is low.

Deer Condition Data

Yearling main antler beam diameter, measured just above the burr is useful for determining deer body condition. This measurement is 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 Livingston DMU, there has been a gradual decline in average antler beam diameter which corresponds with a similar decline for the entire SLP (Fig. 5).

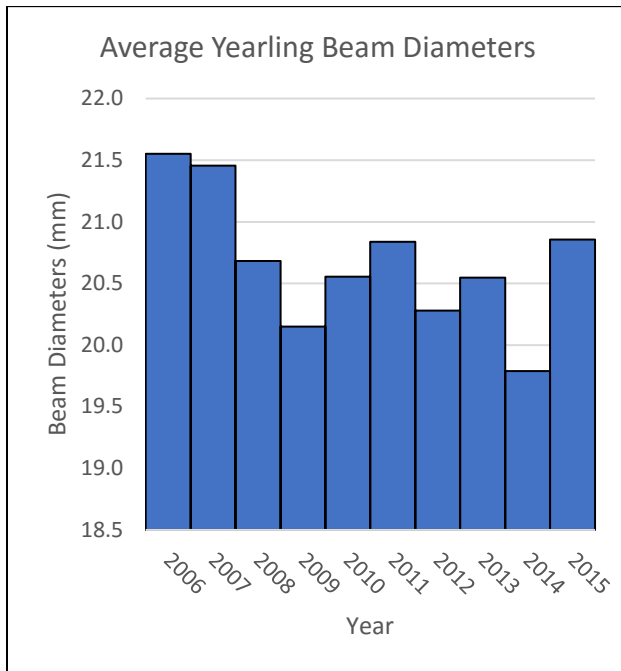


Figure 5. Average beam diameters Livingston County

Most likely, the slight reduction in deer condition can be attributable to a variety of causes including changes in land use over the long term and short term (1-2 year) environmental influences. The entire state is also showing a similar pattern so there may be additional factors causing this statewide decline. Keep in mind the amount of decline is in millimeters which the average person would not notice. Changes in land use are likely to have a longer-term impact on deer condition than environmental causes. Row crop agriculture production fluctuates with commodity prices. Higher prices give farmers incentive to put previously untilled acreage into production at the expense of quality deer habitat. The conversion of acreage from acceptable deer cover to agriculture further fragments habitat, homogenizing the landscape and reducing the richness of a “patchwork” of habitat types in which deer thrive.

Hunters who are concerned about deer condition in their areas, can assist the MDNR in management by voluntarily bringing all their deer into DNR Check stations for data collection

Deer Management Recommendations:

Deer density in the Livingston DMU remains high, especially relative to other regions of the state. In fact, density is likely high enough to continually require the issuance of DMAPs and Deer Damage Permits throughout much of the unit, as harvest through the general hunting seasons is inadequate to relieve damage complaints.

Hunting opportunities are limited to where hunters can get access to hunting land. There are some public land opportunities available on state land (both wildlife areas and state parks/recreation areas), but most the deer population remains on private land. Deer management and population management in this DMU is ultimately lie in the hands of the local property owners.

Based on this information, we recommend that the Private Land Quota be reduced to 10,000. Since licenses are undersubscribed in this area, this will still allow hunters the opportunity to hunt. We recommend and that the Public Land Quota remain 2000. We also recommend that this DMU be open for the early and late antlerless seasons.