

# DMU 029

## Gratiot County DMU

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#### Area Description

The Gratiot County Deer Management Unit (DMU 029) is in the Southern Lower Peninsula Region (SLP). Between the Maple River and Gratiot-Saginaw State Game Areas, it has over 17,000 acres of public hunting land. The state ownership lies in southern and eastern parts of the County and makes up almost 5% of the total acreage of the DMU. Topography is relatively flat across the entire DMU with nearly 80% of the land being in farms.

Soils in the area consist mainly of sandy loam to loam with some muck soils present as well. The rich, fertile soils have resulted in the county being dominated by agriculture. The large, forested areas tend to coincide with poorly drained soils along the Maple and Pine River watersheds.

The landscape is highly fragmented due to the predominance of agriculture on privately-owned lands. 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.

#### 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, 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

The overall harvest for this DMU has slightly declined since 2008 (Figure 1). Harvest of antlerless deer has declined while buck harvest has remained relatively steady with a slight drop in recent years. This is likely, in part, due to a slight reduction in deer population. This trend is consistent with many other areas across the State and across the Midwest. However, the overall deer population in DMU 029 has remained relatively stable over the last decade (Figure 2) compared to surrounding areas that experienced a large-scale die-off related to Epizootic Hemorrhagic Disease (EHD) in 2012.

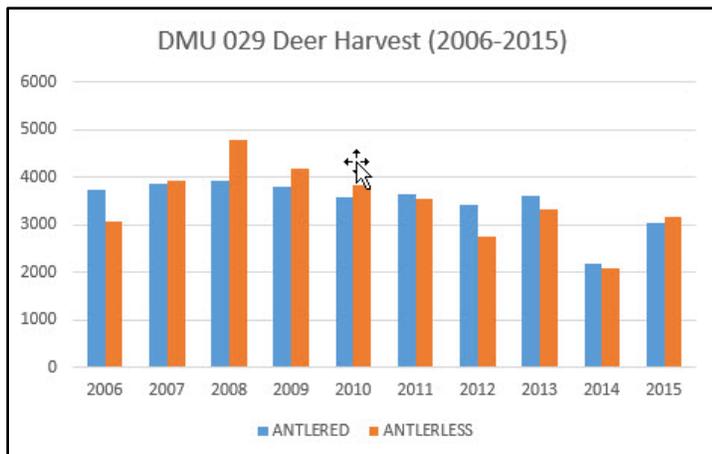


Figure 1: DMU 029 deer harvest from 2006-2015.

Year	Age Category		
	1.5	2.5	3.5+
2001	83.4%	13.3%	3.3%
2002	80.5%	14.8%	4.7%
2003	84.4%	10.8%	4.9%
2004	82.5%	10.8%	6.6%
2005	79.0%	17.2%	3.7%
2006	84.6%	13.7%	1.8%
2007	75.5%	15.3%	9.2%
2008	70.9%	17.9%	11.1%
2009	69.2%	20.3%	10.4%
2010	64.8%	18.2%	17.0%
2011	68.9%	20.7%	10.4%
2012	60.2%	18.8%	21.0%
2013	54.4%	24.2%	21.5%
2014	45.9%	29.6%	10.6%
2015	47.1%	32.8%	20.1%

Another set of factors that may have contributed to a decline in harvest numbers are hunter perceptions and goals. A large-scale shift in hunters’ decisions to target older deer and pass on younger bucks results in reduced harvest numbers as there are fewer deer in older age classes. Since 2001, harvest of 1.5-year-old bucks has gone from 83.4% of the buck harvest to 47.1% in 2015. Conversely, harvest of 3.5-year-old and older bucks has gone from 3.3% to 20.1% in the same period (Table 1). Success and harvest rates are thereby suppressed not only by population decline, but also 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.

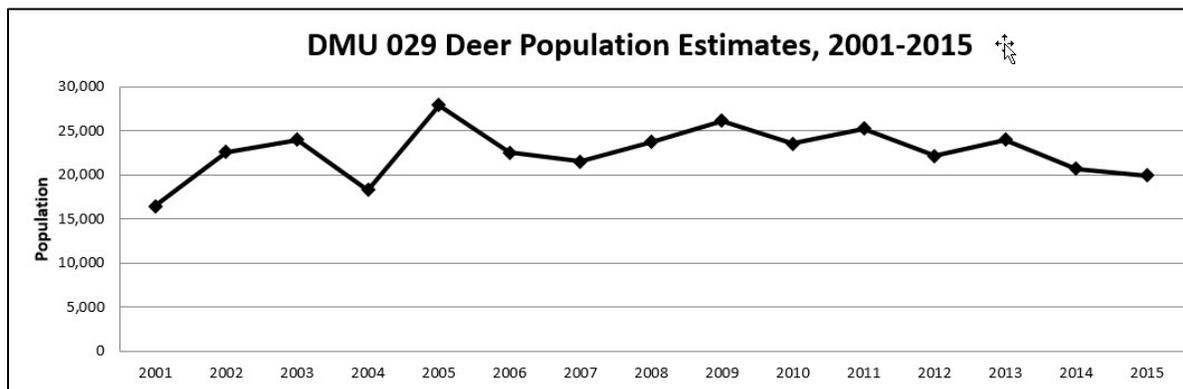
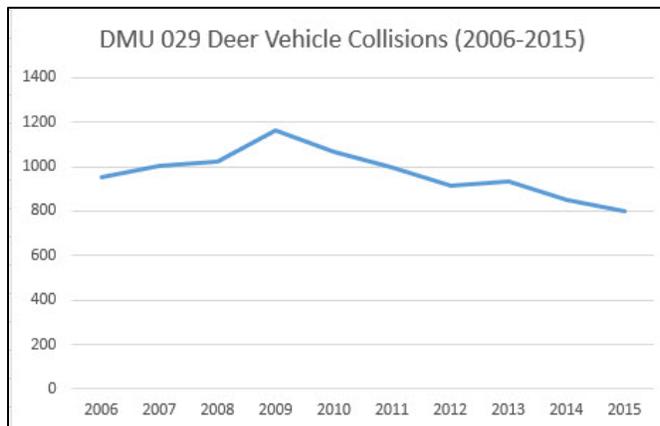


Figure 2: DMU 029 deer population estimates, 2001-2015.

### Deer – Vehicle Collisions

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 in DMU 029 have shown a steady decline since the mid-2000's (Figure 3). 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 an accurate estimate of DVC rates relative to vehicle miles driven. The displayed trends in DVCs have somewhat mimicked the trends of deer harvest in DMU 029 over the past decade.

Figure 3: Deer Vehicle Collisions for DMU 029.

### Deer Management Assistance and Crop Damage Permits

Deer Management Assistance Permits (DMAPs) or "Block permits" 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 DMU 029, very few DMAPs have been issued in recent years due to the fact most hunters could purchase enough antlerless licenses over the counter to meet their needs.

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. Crop damage complaints in DMU 029 have dropped considerably since 2009, somewhat similar to harvest numbers and deer population estimates. While requests for Crop Damage Permits may trend with deer density, there are several factors that may impact a particular farmer's interest in asking for damage permits. Some of these factors may include (but are not limited to) personal tolerance level of damage, seasonal growing conditions, crop type, commodity prices, and past experience with crop damage. These permits are used as a means to alleviate site specific damage complaints by changing deer behavior and movement patterns and are not used to control deer numbers in a given area. In fact, the number of deer taken with Crop Damage Permits amounts to less than 0.01% compared to the deer harvested during the open hunting seasons for DMU 029.

## Deer Condition Data

Yearling main antler beam diameter, measured just above the burr, and number of points are 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 and number of points 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 or loss of habitat leads to a decline in herd condition, observed as low yearling main beam diameters and antler points. 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 DMU 029, the average antler beam diameter has remained relatively steady for the past decade. (Figure 4).

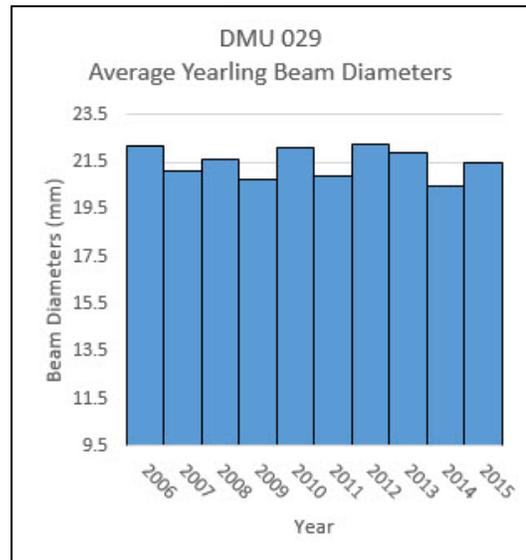


Figure 4: Average yearling buck beam diameter measurement (mm) for DMU 029.

## Deer Management Recommendations

Deer populations in DMU 029 have remained relatively steady throughout much of the last decade. Data suggests that there may be a slight decline over the last few years, but numbers are still at, or slightly above, recommended levels. Deer densities remain high enough in some parts of the DMU that the issuance of DMAPs and Deer Damage permits are still required, as harvest through the general hunting seasons is inadequate to relieve damage complaints.

So, the challenge we face now is one of deer distribution. Deer numbers remain high in areas with high quality habitat, but have stabilized to a more sustainable level throughout the rest of the DMU. Proper allotment of antlerless licenses throughout the entire DMU is important in order to maintain a sustainable population size in much of the DMU, but also allow areas with high deer populations an opportunity to reduce their population to a suitable level. In areas of the DMU that have experienced a reduction in deer numbers it is still important to maintain a substantial annual harvest of antlerless deer to avoid another spike in deer populations and the problems associated with high deer densities.

To maintain a stable population, we recommend keeping antlerless license quotas at the current level. The total recommended quota of 10,300 includes 1,300 antlerless licenses for public land and 9,000 for private land in DMU 029. We also recommend reinstating the early antlerless season in DMU 029. While this will have relatively little impact on the deer population across the DMU, it will allow those private landowners with elevated deer numbers the opportunity reduce deer densities locally.