

# Deer Management/Status Overview

## 081

### Deer Management Unit

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#### Area Description:

The Washtenaw Deer Management Unit (DMU), or DMU 081, lies in the Southern Lower Peninsula (SLP) region and covers Washtenaw County. The majority of public hunting opportunities in this DMU are available on Chelsea (650 acres), Goose Lake (200) and Sharonville (1,065 acres in DMU 081) State Game Areas and Pinckney (7,272 acres in DMU 081) and Waterloo (7,366 acres in DMU 081) State Recreation Areas. Topography varies from nearly level to steep with soils that are generally well-suited to agriculture (corn, wheat, other grains, soybeans, grass-legume, and hay). Approximately 40 percent of the DMU is in agriculture; the dominant land cover type.

The landscape supports a patchwork of cover types, with agriculture, forest, and grass/shrubland being most dominant. Urban development is concentrated in the City of Ann Arbor; however this DMU supports other largely developed areas and suburban and ex-urban communities; this is a populous county and development is ubiquitous throughout the DMU. There are three state highways, one interstate highway, and one U.S. highway that pass through DMU 081. This landscape configuration results in a strong interface between humans and the deer population. Although much of the private lands toward the south central parts of the DMU are in agriculture, private and public lands in the area support cover habitat for deer (e.g., woodlots, shrub/brush, and wetland). Deer throughout the Washtenaw DMU have ample access to food, water, and cover (Table 1, Figure 1) and can meet all life requisites in every portion of the DMU. However, in many cases, they may be meeting these requirements in areas closed to hunting.

Table 1. Habitat composition of DMU 081 as compared to only the public hunting lands in DMU 081.

Habitat	081	081 Public Lands
Forest (%)	26.8	62.5
Agriculture (%)	43.6	5.4
Grass/Shrubland (%)	10.8	6.9
Wetland (%)	7.0	19.5
Developed (%)	9.9	1.7
Water (%)	1.7	3.9
Bare/Rocky (%)	0.2	0.0

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:

In 2008, the pattern for harvesting more antlerless deer than antlered emerged in the Washtenaw DMU (Figure 2). Buck harvest has been declining over the last decade, as antlerless harvest has been increasing. This may be due to a change in deer population structure or changing behaviors in hunters, or a combination of both. The number of hunters in this DMU has decreased (Figure 3) and the hunter effort has increased (Figure 4).

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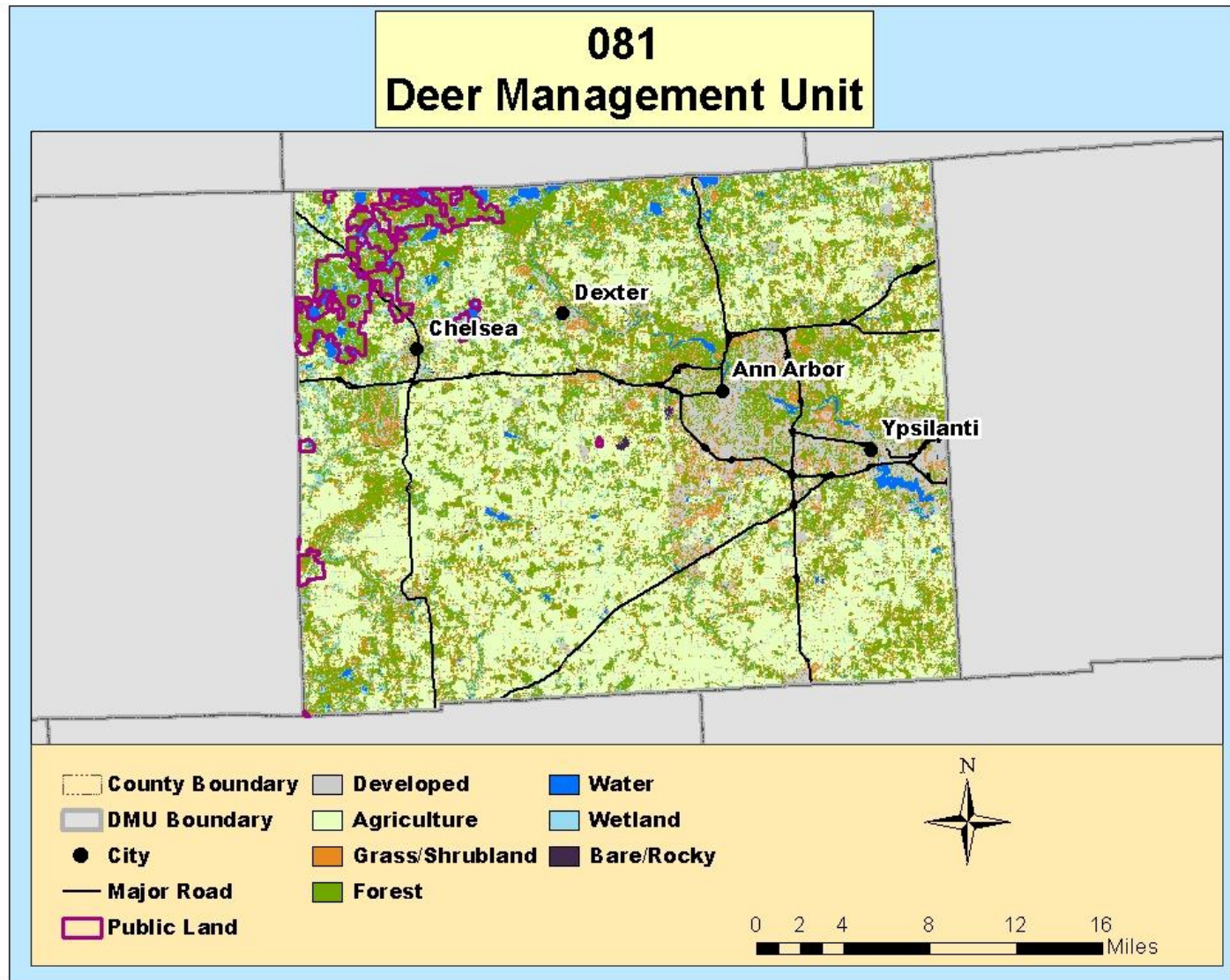


Figure 1. Habitat and land use distribution in Deer Management Unit 081.

## Southeast Management Region

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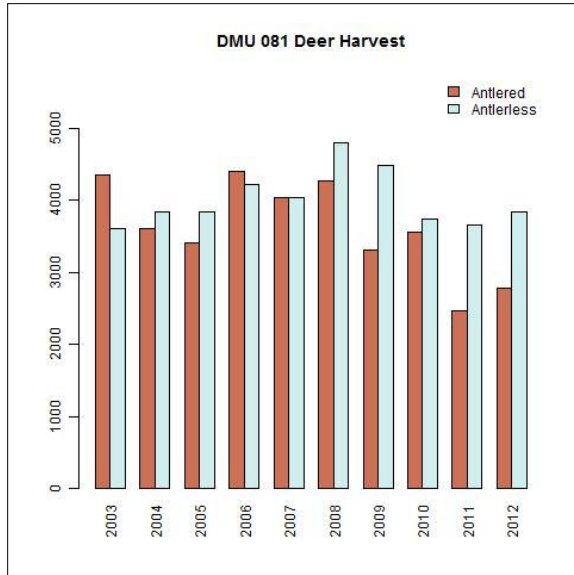


Figure 2. Annual harvest estimates for antlered and antlerless deer DMU 081, 2003-2012.

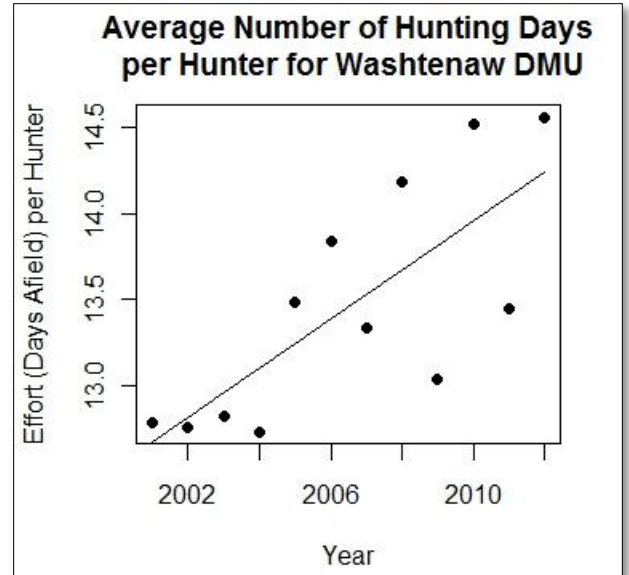


Figure 4. Average number of hunting days per hunter in DMU 081, 2003-2012.

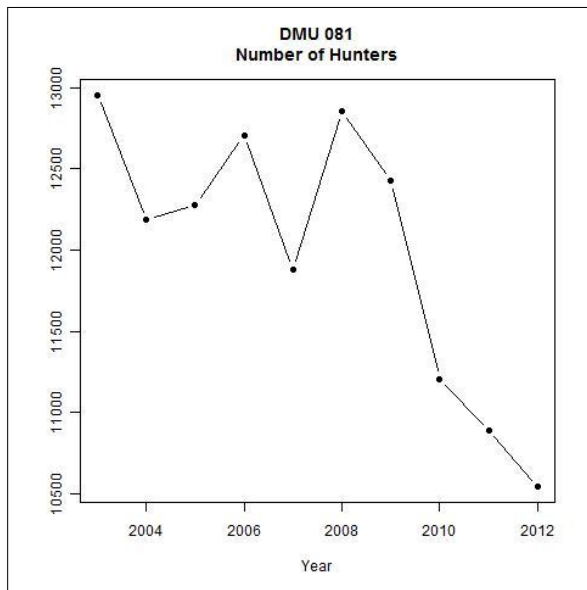


Figure 3. Average number of hunters in DMU 081, 2003-2012.

The liberalization of antlerless permits was intended to limit the productivity of the deer herd and may have contributed to an overall slight population decline (indicated in population models) in this DMU. 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. The percent harvest of 1.5 year old bucks has significantly decreased in DMU 081, and percent harvest of 2.5 and 3.5 year old bucks have significantly increased in the DMU (Table 2). Success and harvest rates are thereby suppressed not by population decline, but by human decision-making processes. Similarly, hunters may have management goals for the harvest of antlerless deer for a variety of factors, such as a perception of too many deer, or severity of deer crop and property damage. The Washtenaw DMU has had

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increasing complaints of negative deer interactions in the last several years.

Table 2. Age structure of antlered deer harvest in DMU 081, 2004-2013.

Year	Age Category				
	1.5	2.5	3.5	4.5	5.5+
2004	66.4%	14.6%	13.8%	4.0%	1.2%
2005	60.1%	20.6%	13.5%	4.0%	1.8%
2006	63.9%	19.2%	12.5%	3.9%	0.4%
2007	66.9%	15.7%	14.6%	2.0%	0.8%
2008	63.3%	20.3%	14.8%	1.3%	0.4%
2009	66.8%	14.7%	14.7%	3.3%	0.5%
2010	67.6%	18.5%	10.4%	2.3%	1.2%
2011	57.7%	19.4%	20.9%	2.0%	
2012	57.8%	20.6%	16.1%	3.9%	1.7%
2013	48.6%	23.2%	24.3%	4.0%	
<b>Total</b>	<b>62.3%</b>	<b>18.5%</b>	<b>15.3%</b>	<b>3.1%</b>	<b>0.8%</b>

### Additional Population Assessment Factors:

#### 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 indexed by vehicle miles travelled have declined significantly from 2001-2010 in the Washtenaw DMU. 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 decline in DVCs is an additional indicator that the Washtenaw DMU deer density has decreased over the past decade (Figure 5); this decreasing trend corroborates the trend seen in our population models.

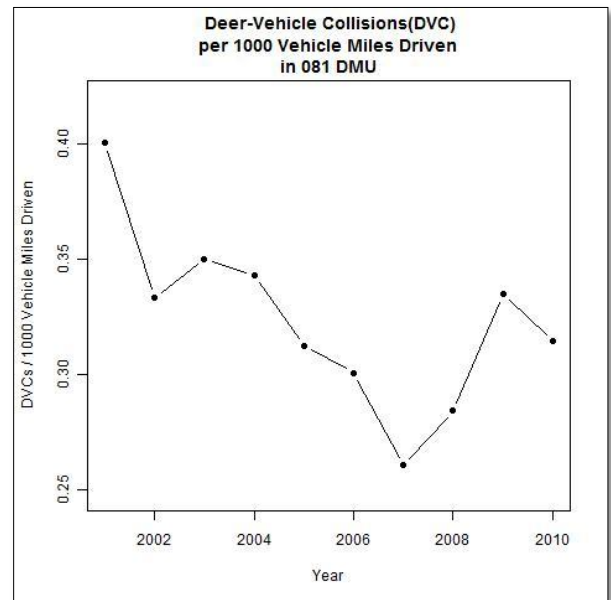


Figure 5. Deer-vehicle collisions in DMU 081, 2001-2010.

#### 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). Requests for DMAPs in the Washtenaw DMU are infrequent.

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 DMU 081, requests for Crop Damage Permits have significantly increased over the last decade. This correlates with the increased number of antlerless deer harvested during the hunting seasons. There may be a widespread management intention for huntable lands in DMU 081.

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### 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 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 the Washtenaw DMU, the decline in average antler beam diameter has been statistically significant, as has the decline for the entire SLP. The estimated annual decrease in this DMU is 0.186 mm, resulting in an estimated 1.67 mm decline from 2003-12 (Figure 6). This is greater than the estimated reduction in average yearling antler beam diameter in the entire SLP of 1.02 mm for the same period.

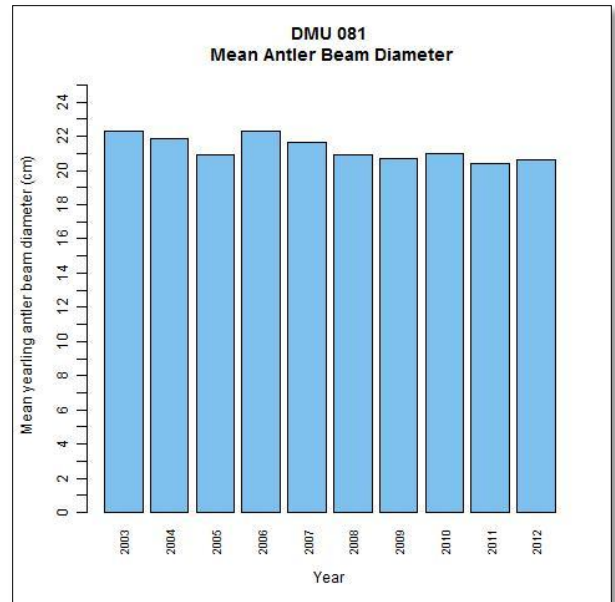


Figure 6. Average main antler beam diameter of yearling bucks for the DMU 081, 2003-2012.

It does appear that deer herd condition declined in the Washtenaw DMU from 2003-12. 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. Increasing development across the DMU often can help increase survival of deer using non-huntable lands as refuge, but it may come at a price of natural vegetation resources. Also, 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

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further fragments habitat, homogenizing the landscape and reducing the richness of a “patchwork” of habitat types in which deer thrive.

### **Deer Management Recommendations:**

This county, especially on the west side of the county, experienced whitetail die-offs as a result of the EHD outbreak in 2012. In addition, the record-setting snow and low temperatures of the 2013-2014 winter have undoubtedly caused winter stress, rare for the SLP deer herd. The estimated deer population remains over goal; however, has been slightly declining since during the last decade. Vehicle-deer accidents continue to decline in the county, as well. Deer damage complaints and permits issued for the area have increased, and the population is still over goal. Trends for this DMU indicate that buck harvest has decreased and antlerless harvest has increased since 2003; and there may be a widespread management intention for huntable lands in DMU 081. Therefore, it is recommended that antlerless licenses are made available for public and private land and for a late antlerless season. This will provide opportunities for increased antlerless harvest and recreation. Continuing the late antlerless season may help to address some crop damage, car/deer crashes and nuisance issues in the area, as well. The Ann Arbor area is experiencing increased frustration with urban deer; this will be something to keep in mind.

There is very limited public land (4%) in this the Washtenaw DMU, so most the hunting opportunity is on private land. The maximum number of antlerless licenses purchased for DMU 081 is 9,665. We feel that the quota should remain at 15,000 to continue to bring the population closer to goal.

Based on this information, I recommend that the Public Land Quota remain at 1,500 and that the Private Land Quota be set to 15,000. Also, we recommend that this DMU is open for Early and Late Antlerless Firearm seasons.