

DMU 332

Huron, Sanilac and Tuscola Counties

Deer Management Unit

Area Description

The Greenleaf Deer Management Unit (DMU 332) lies in the Southeast Region of the Southern Lower Peninsula (SLP) and covers Huron, Tuscola and Sanilac counties. The vast majority of public hunting opportunities in this DMU are available at 12 state game/wildlife areas and 11 mini-state game areas totaling 57,754 acres. Portions of Sleeper State Park and Port Crescent State Park are also open to hunting. The largest among these SGA's include Verona SGA (7,449 acres) in Huron County, Minden City SGA (8,935 acres) in Sanilac County, and the Deford (9,975 acres), Tuscola (8,844) SGA's and Fish Point Wildlife Area (4,500 acres) in Tuscola County.

Topography varies from rolling hills in the central portion of the DMU to relatively flat lake plain generally within 15 miles of the Lake Huron shoreline. Soils are generally well-suited to row crop agriculture across most of the DMU. The landscape is highly fragmented due to the predominance of agriculture on privately-owned lands, which constitute >96% of the DMU. With the exception of State Game and Wildlife Areas and private lands along and south of the Cass River drainage, habitat providing cover for deer (e.g., woodlots, shrub/brush, and wetland) is relatively isolated and exists in small patches (Table 1, Figure 1).

Table 1: Habitat Composition of DMU 332 as a whole compared to public hunting lands in DMU 332

Habitat	332	332 Public Lands
Forest (%)	15.7	50.0
Agriculture (%)	70.5	13.8
Grass/Shrubland (%)	4.9	9.5
Wetland (%)	4.9	24.8
Developed (%)	3.7	1.1
Water (%)	0.1	0.5
Bare/Rocky (%)	0.2	0.3

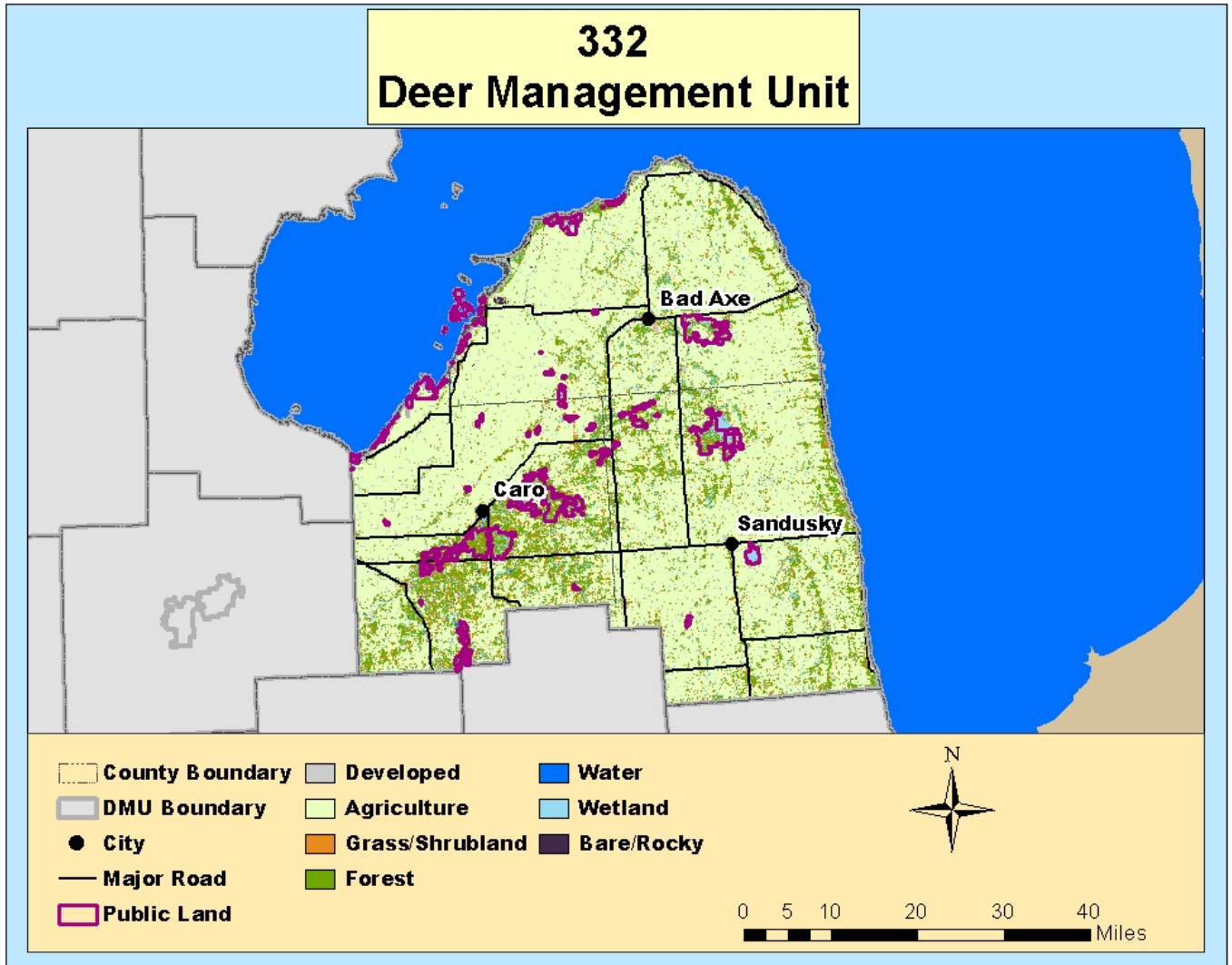


Figure 1: Habitat and land use distribution in Deer Management Unit 332

Management Guidance

Two main goals guide the deer management in this DMU: 1) impact management; and 2) recreational opportunities including hunting and viewing. Impact management refers to reduction of undesirable effects associated with deer over-abundance such as crop damage, deer-vehicle collisions, and poor forest regeneration due to over-browsing. 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, population models, habitat assessments, etc.).

Deer Harvest Analysis

The buck harvest in DMU 332 has been on a slight downward trend since 2006 while the antlerless harvest showed an increase from 2006 -2010. However, after 2010 antlerless harvest has been declining (Fig. 2). This decline in antlerless harvest since 2010 may be due to a slight reduction in deer population or changing behaviors in hunters, or a combination of both. The liberalization of antlerless permits since 2002 was intended to limit the productivity of the deer herd and may have contributed to the slight decline in antlerless harvest in this DMU. Alternatively, hunters may have chosen to self-regulate harvest of antlerless deer due to a perception of too few deer leading to a decline in antlerless harvest since 2010.

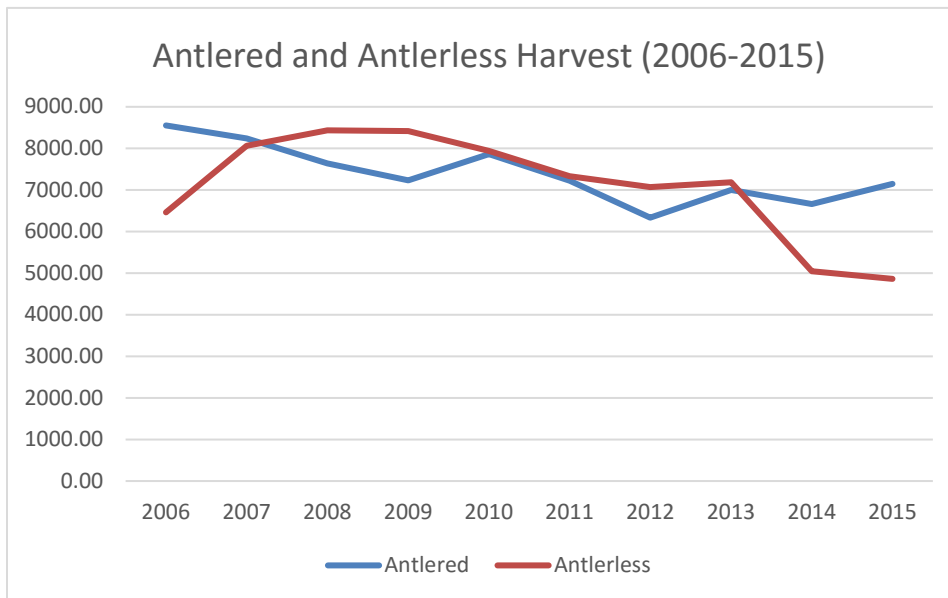


Figure 2: Annual antlered and antlerless harvest from 2006 - 2015 in DMU 332

Additionally, hunter perceptions, goals and large scale shifts in hunters' decisions to target older deer and pass on younger bucks can impact harvest numbers. Table 2 illustrates the increasing trend among deer hunters in DMU 332 to selectively target older bucks, particularly since 2009. Success and harvest rates are thereby influenced not by population decline, but by human decision-making processes. Other influences on overall deer harvest and numbers include environmental factors, such as poor weather immediately preceding fawning, increased predation and changing agricultural practices. Ultimately, determining a cause of any population adjustment is difficult when assessing a large geographic region.

Year	Age Category				
	1.5	2.5	3.5	4.5	5.5+
2004	81.9%	12.6%	5.2%	0.3%	
2005	75.7%	19.6%	4.1%	0.6%	
2006	77.6%	15.7%	5.9%	0.5%	0.2%
2007	69.8%	21.0%	8.3%	0.7%	0.3%
2008	71.6%	19.8%	7.8%	0.5%	0.3%
2009	64.7%	24.3%	10.4%	0.4%	0.1%
2010	64.5%	22.9%	10.8%	1.6%	0.3%
2011	65.0%	23.1%	9.9%	1.8%	0.1%
2012	59.7%	24.0%	13.0%	2.9%	0.3%
2013	57.8%	24.0%	14.8%	2.9%	0.5%
2014	55.0%	23.8%	16.3%	3.8%	1.1%
2015	56.4%	21.3%	17.0%	4.0%	.8%
2016	50.6%	23.7%	25.7%*		
Avg.	69.9%	20.2%	8.6%	1.1%	0.2%

Table 2: Age structure of antlered deer harvest in DMU 332 from 2004 – 2016

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 shown an increasing trend since 2001, but have declined since 2009 in the Greenleaf DMU (Fig. 3). 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 trend in DVCs since 2001 indicates that the Greenleaf DMU deer density has experienced a slight increase over the long term with recent declines over the last 4 years indicating (based on DVC's alone) a relatively stable deer population.

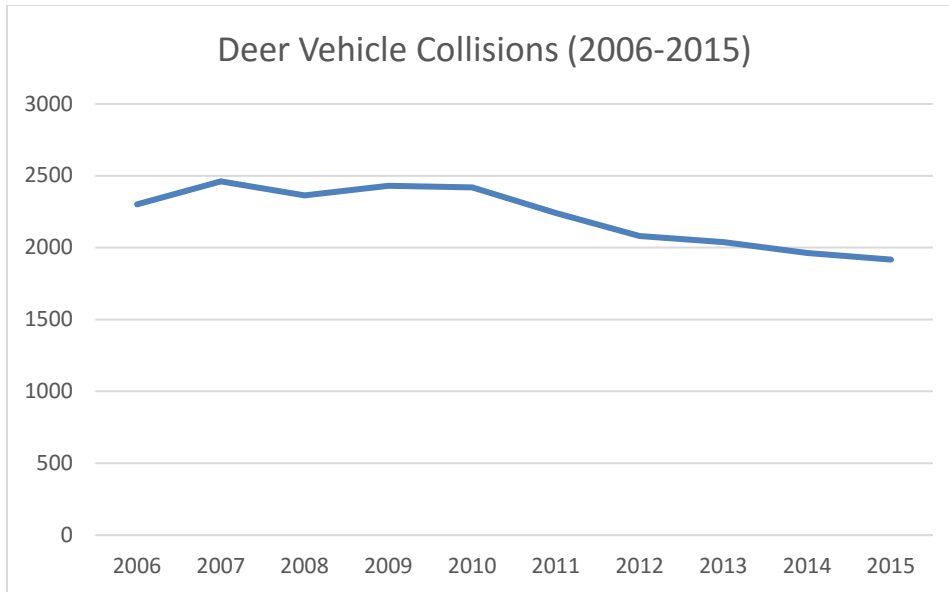


Figure 3: Deer-vehicle collision in Greenleaf DMU from 2006 - 2015. Data supplied by the Michigan State Police

Weather

The winter of 2014-2015 was very cold but snow depths were not a problem for deer like they were in 2013-2014. Winter 2015-2016 was relatively mild and had no real influence on deer numbers or health, same for winter 2016-2017.

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 hunter's 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. However, given the severe winter of 2013-2014 it is very likely some deer entered spring in poor condition which may be reflected in reduced antler growth in 1.5 year old bucks and fewer multiple births in does. 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 Greenleaf DMU average yearling beam diameters since 2001 have declined, but the decline was not statistically significant (Fig. 4). However, the decline in average antler beam diameter has been statistically significant for the SLP as a whole.

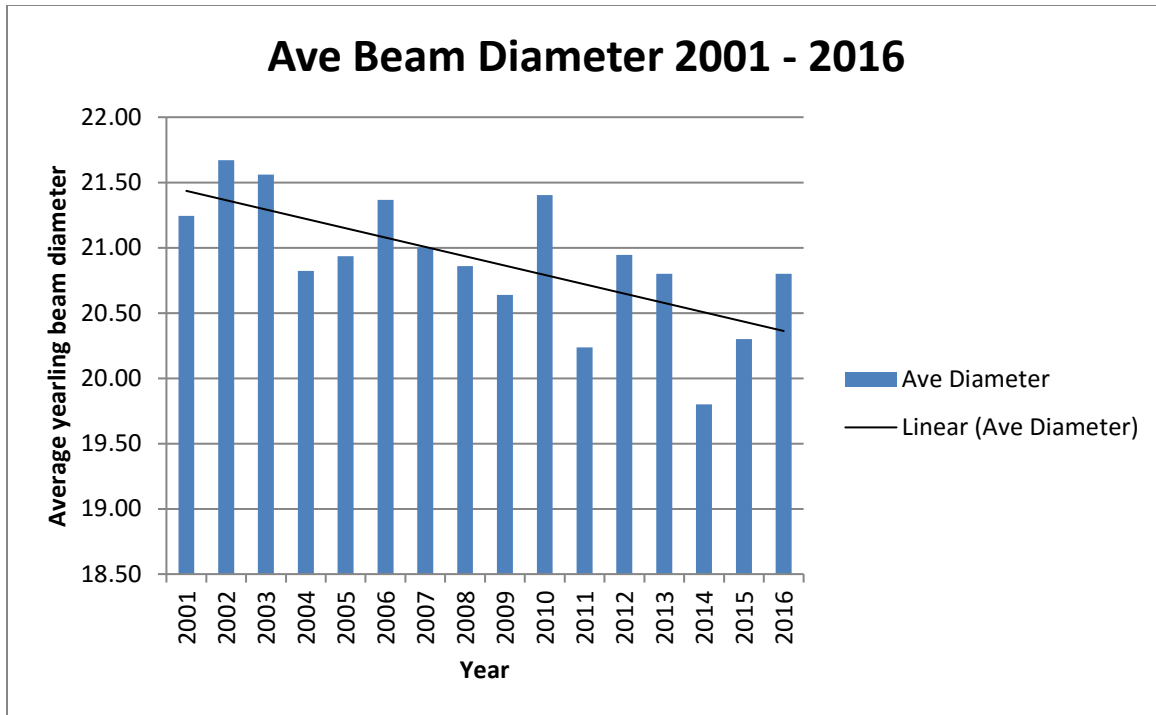


Figure 4: Average yearling beam diameters from 2001 - 2016 for Greenleaf DMU

In most years, any 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. Changes in land use are likely to have a longer term impact on deer condition than environmental causes. Row crop agriculture has expanded in this DMU due to high commodity prices which gives 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 habitat types in which deer thrive.

Deer Management Recommendations

The deer population in the Greenleaf DMU is stable to slightly increasing and deer density remains high relative to other regions of the state (Fig. 5). Out of season kill (OSK) permits have increased the last three years indicating that pockets of over abundant deer remain throughout the DMU. Hunting opportunities remain robust due to the continued high deer density. The goal for the Greenleaf DMU is to stabilize deer numbers, thus, we recommend that 35,000 private land antlerless deer permits and 5,200 public land antlerless permits be made available to help achieve that goal. The reduction in antlerless permits from 42,000 to 35,000 is intended to align available antlerless licenses with demand. The DMU will be open to early and late season antlerless firearm deer hunting.

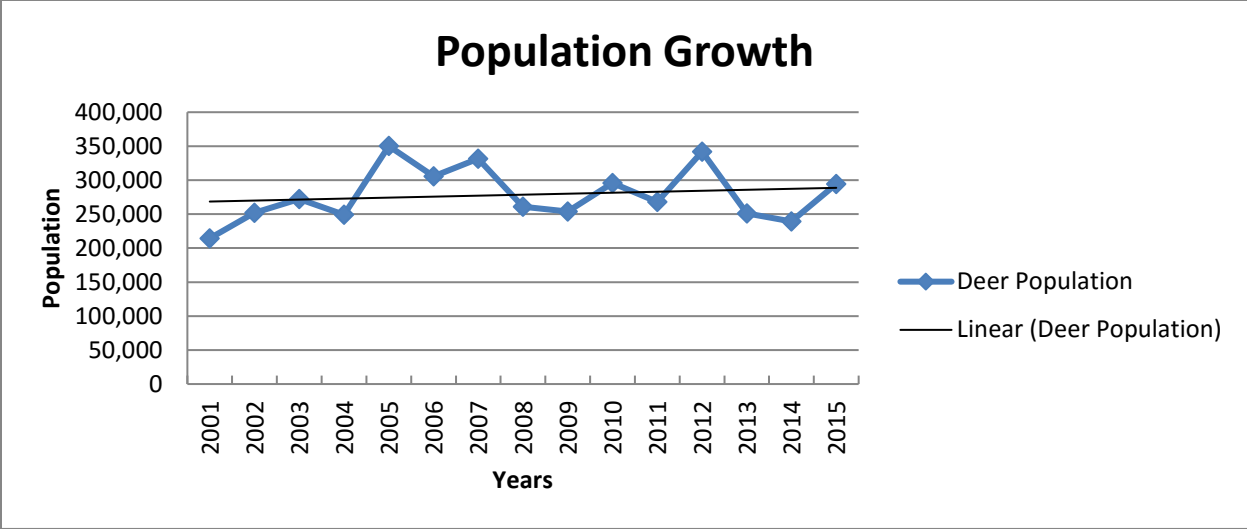


Figure 5: Total deer population in Greenleaf DMU from 2001-2015