DMU 361
Fremont Deer Management Unit
Newaygo, Oceana, N. Muskegon Counties

Area Description

The Fremont Deer Management Unit (DMU 361) was established in 2013. It lies within the Southwest Region and covers Newaygo, Oceana and the northern half of Muskegon County. Approximately 80% of the DMU is private land and 20% public land. The vast majority of public hunting opportunities in this DMU are available on the Manistee National Forest, 177,618 acres, located in all counties of Unit 361, with a predominance in the north half of the DMU. State game area lands include the Muskegon State Game Area (10,206 acres) and Pentwater State Game Area (2,387 acres).

Approximately 84% of the public land in this DMU is forested. Topography varies from rolling sandy or loam hills to relatively flat areas with soils that are generally sandy, but with pockets of better quality loam soils suited to row crop agriculture. The landscape is highly fragmented in the southern and lakeshore portions of the DMU due to the predominance of agriculture on privately-owned lands, which constitute approximately 20% of the DMU. Forested habitat, both public and private, is predominant in north Muskegon County, northeast Oceana and the north half of Newaygo County. Interspersion of small scale agriculture is present throughout the DMU. Agricultural production in the northern portion of the DMU is often located adjacent to public land dominated by sandy soils with habitat that typically ranges from poor to adequate for deer. Orchard crops are common on the Lake Michigan shoreline areas of the DMU, while southern Newaygo is dominated by agriculture on loam or drained muck soils with mostly private land habitat providing cover for deer via small woodlots, riparian areas, shrub/brush, and wetland areas (Figure 1).

The Fremont DMU occupies the ecological tension zone (differences in climate, geology, soils, vegetation) that separates the northern Michigan ecosystem from the southern. This offers a significant challenge in managing deer in this DMU, in that deer habitat, reproduction and land ownership patterns vary widely from the most northern portion of the DMU to the southernmost. There is also wide variation in climatic conditions from the Lake Michigan shoreline, to the easterly extent of this DMU, 45 miles inland.

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

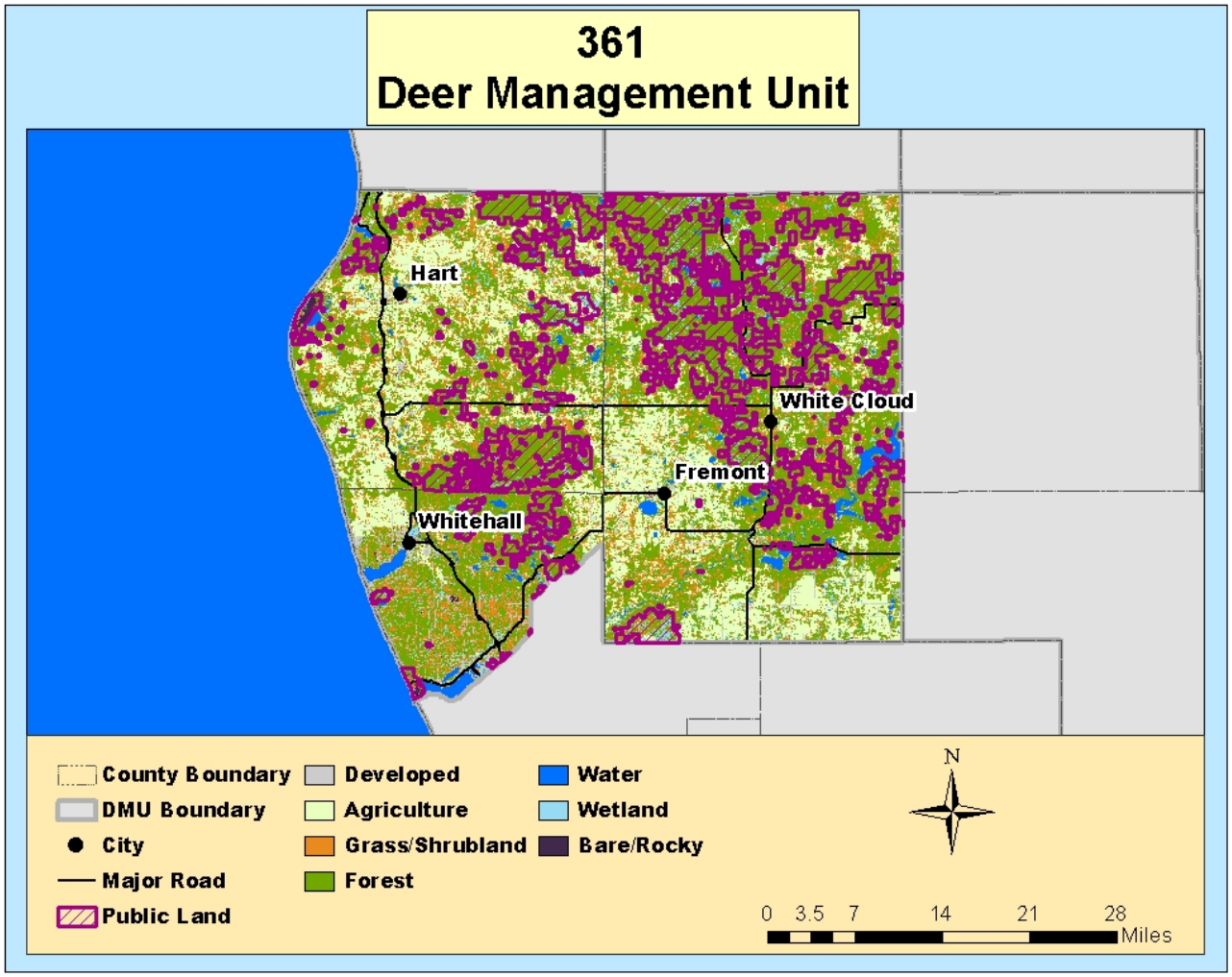

Figure 1: Habitat and land use distribution in Deer Management Unit 361

adjust the harvest strategy as needed. These data include deer harvest data from check stations and an annual hunter survey, hunter satisfaction surveys, the winter severity index, 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, spotlight surveys, habitat assessments, etc.).

Deer Harvest Analysis

Since 2008, declines of both antlerless and buck harvests have been observed (Figure 2). This may be due to a reduction in deer population, reductions in hunter numbers (Figure 3), 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. Other environmental factors, such as poor weather immediately preceding fawning, increased predation, and changing agricultural practices, can also impact deer numbers.

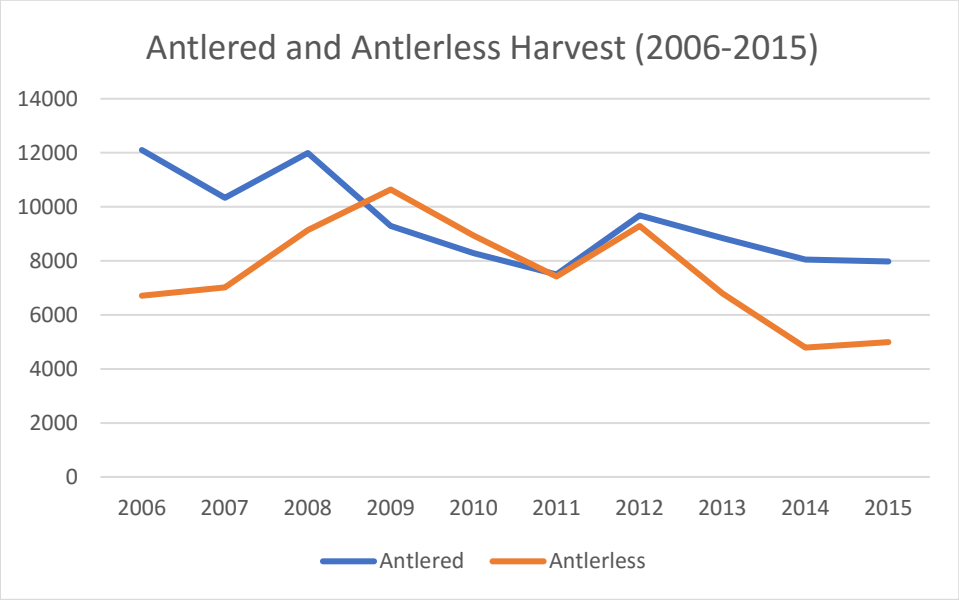

Figure 2: Fremont DMU's antlered and antlerless deer harvest from 2006 to 2015

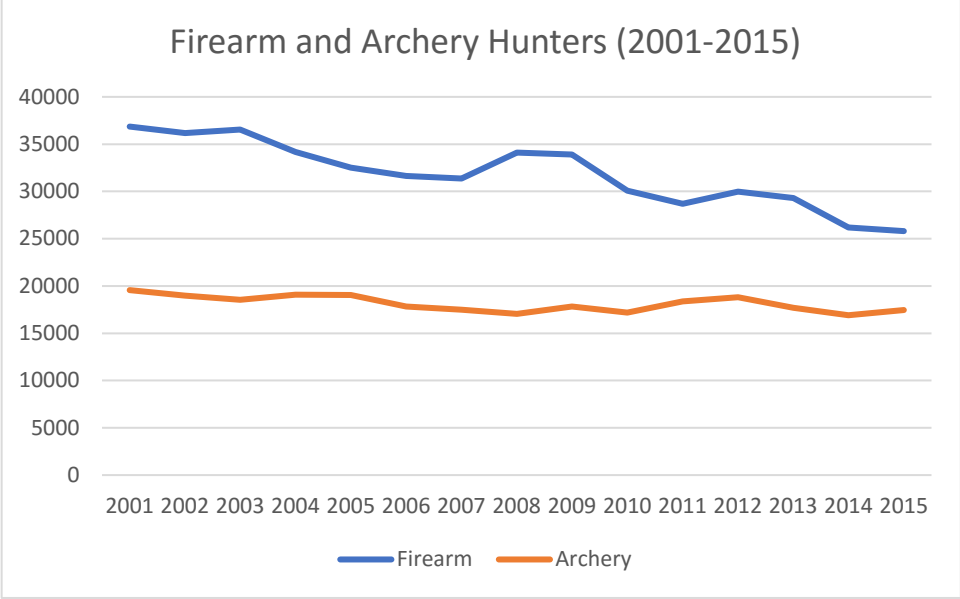

Figure 3: Fremont DMU's number firearm and archery hunters 2001 to 2015

Winter severity is an important factor influencing deer population levels in the northern portion of the Fremont DMU. Relatively mild winters allow for increased deer survival, particularly for fawns which are typically the most vulnerable. Recent winters have been mild and probably are not negatively affecting deer numbers in this DMU.

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 satisfaction, as measured in our hunter surveys, within all three counties making up the DMU shows an increase of hunter satisfaction in 2015, compared to the average of the previous four years.

Additional Population Assessment Factors

Deer Vehicle Collisions

Deer-vehicle collisions (DVC) are commonly used as an index to the deer population trend. 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 2009-2011 (27% decrease) in the Fremont DMU with the largest drop indicated from 2009 and 2010 (Figure 4). It appears DVC have been stable since 2011, with a slight increase in the past two years. 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.

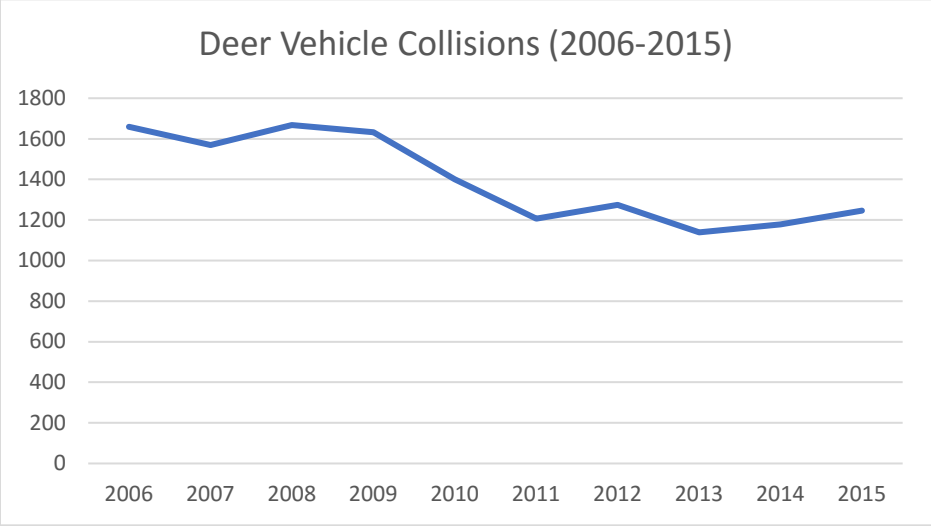

Figure 4. Fremont DMU's Deer Vehicle Collisions (2006-2015)

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. 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. DMAP and Crop Damage Permit requests are tracked by MDNR and may trend with deer populations. For example, an increase in deer density may result in additional permit requests. The opposite is also true seeing that a decrease in the population may lead to fewer requests. In the Fremont DMU, crop damage requests have been steady over the past few years. DMAP requests have remained somewhat variable but have declined slightly the past two years. Despite a reduction in the deer population overall in the DMU, agricultural areas are still experiencing significant crop damage.

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. It is possible that deer in the northern portion of the DMU could be influenced by winter severity: either as direct mortality of deer or less robust or fewer fawns being born. 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 Fremont DMU, the average antler beam diameter has been slowly increasing since 2006 (Figure 5).

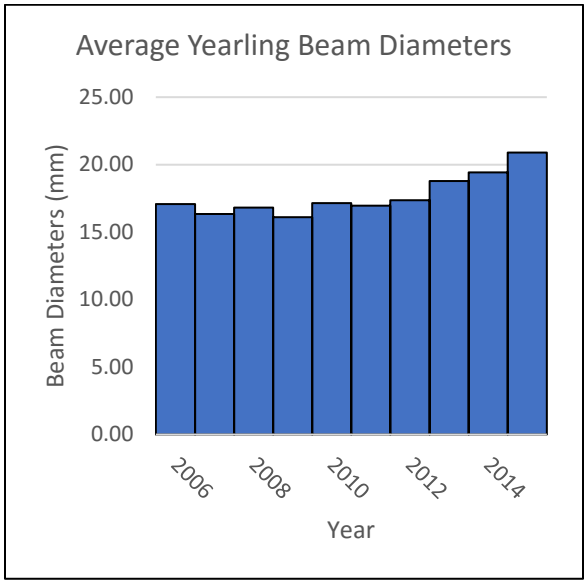

Figure 5. Fremont DMU's average yearling beam diameters 2006-2015

Deer Management Recommendations

In the last 10 years the deer population has been in slow decline with what appears to be a stabilizing trend in the most recent two years (2014-15). This is consistent with our goal of having a deer herd in balance with the habitat to support it, while also addressing needs of hunters, farmers and other landowners. The deer density in the majority of the DMU appears to be at a reasonable level to satisfy the majority of deer hunters and famers. Areas of crop damage continue to be a concern even with the general decline of the population. These areas will continue to require issuance of DMAPs and Deer Damage Permits. In some localized areas, i.e. North Muskegon and portions of North Newaygo County, especially public lands, a somewhat higher deer density would be desirable.

In 2013, 9,000 antlerless permits were issued in DMU 361. 400 of those were for public land use only. For 2014-2016 the quota was reduced to 8,000 private land antlerless permits and 100 public land permits for a total of 8,100 antlerless permits in the DMU. This quota of 8,100 has allowed nearly all those who apply (over 90%) to obtain one private land antlerless permit, and at the same time minimize harvest of does on lightly populated public land. It appears the deer population may be stabilizing. The increased efficiency and number of crossbow users on public land, however, and the ability to use a combo license for a doe, may be slowing recovery of deer populations on public lands. It is recommended to continue with the same 8,000 private land antlerless permits and 100 public land permits for the next three years. We also recommend reinstating the early antlerless season in DMU 361. 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.