

# DMU 016

## Cheboygan County

### Deer Management Unit

#### Area Description

Cheboygan County Deer Management Unit is in the Northern Lower Peninsula Region (NLP). It has roughly 303 square miles (193,587 acres) of public land which is approximately 40% of the total acreage in the Unit. The remainder of land is in private ownership. Topography varies from some rolling hills with the majority of the area relatively flat. Soil types consist mainly of well drained sandy types. The landscape is primarily forested public and private recreational lands with interspersed agricultural properties. Deer densities are relatively stable with higher concentrations of deer in the agricultural areas along the east side of the management unit. Deer densities vary across the county and respond to the severity of the winter.

#### 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 some examples. In an effort to find a middle-ground in which deer numbers provide ample hunting and wildlife viewing opportunities and mitigate unwanted impacts to populations, 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, the winter severity index, 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, etc.).

## Population Assessment Factors

### Winter Severity Index

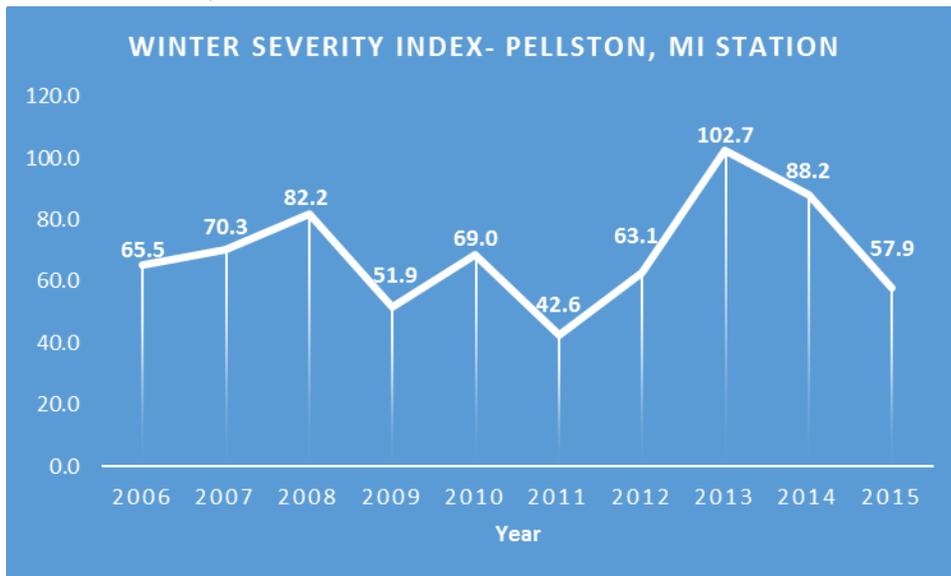


Figure 1: Graph of Pellston Area Winter Severity Index from 2006 to 2015

In northern Michigan, winter severity can have a direct impact on deer condition at the population level. Whereas mild winters allow for better survival of deer, severe winters can cause high deer mortality. In addition does may abort fetuses in order to survive which creates a lag effect into the following year. The current Winter Severity Index (WSI) system takes advantage of standard weather data available from the National Climatic Data Center. The DNR uses weekly data on air temperature, wind speed, and precipitation from weather stations throughout Michigan and the surrounding area in a series of mathematical equations to calculate a weekly index value from November through April. Normally, the WSI values from individual stations are averaged across the three regions of Michigan to give a regional perspective on winter severity. For the purpose of monitoring deer related trends in the Charlevoix County area, only the Pellston area WSI station data were used.

The DNR plots these values over time to provide insight into the pattern of winter severity over the course of the winter and to identify severe weather events. Extended periods of severe weather and very early or very late peaks in severity tend to have the greatest effect on deer. The above graph shows the cumulative WSI, or the overall severity of each completed winter season. In general, mild winters tend to favor an increase in deer population levels.

The winter of 2013 was the most severe winter in the past ten years and followed a four-year period of relatively mild winters. Deer numbers going in to the 2013 winter were increasing after the winter of 2008. As a result, the winter of 2013 had negative impacts on deer populations within the DMU. There was a reduction in deer harvest goals at that time as a result. Since that time, however, winter severity has been insignificant as a driver of deer populations.

## Deer Hunter Harvest Analysis

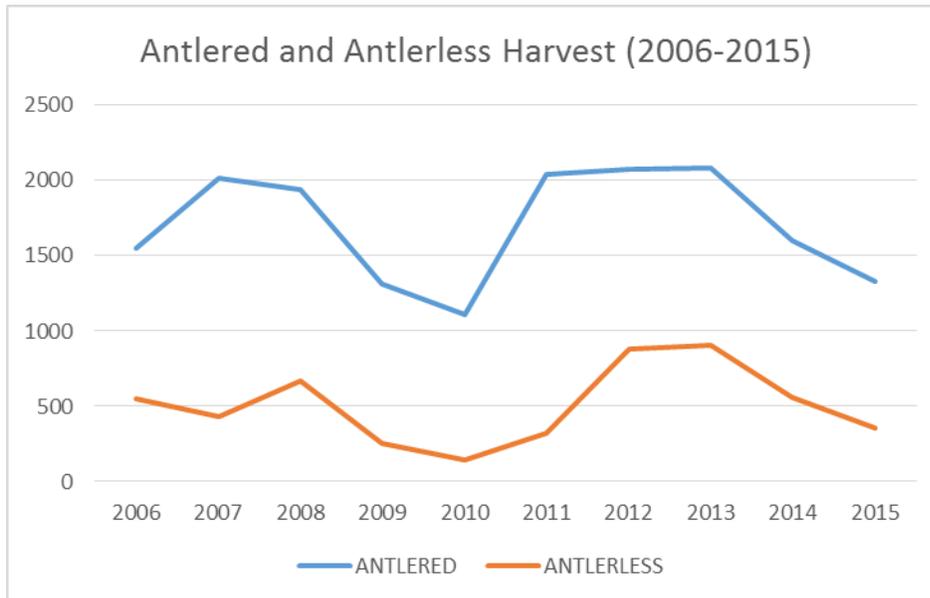


Figure 2: Graph of antlered and antlerless deer harvest levels in DMU 69 from 2006 to 2015

Deer harvest trends tend to follow trends in winter severity in DMU 016. This is reflected in antlered and antlerless deer harvest trends over the past ten years. Antlered harvest reflects harvest of deer with antlers three inches and over, while antlerless harvest includes fawn bucks as well as fawn and mature does. Antlered harvest within the DMU has oscillated between a low of around 1,100 in 2010 to a high of nearly 2,100 in fall of 2013. Antlerless harvest follows a similar trend. Antlerless harvest is lower than antlered harvest due to restricted harvest quotas.

## Antlerless License Quotas

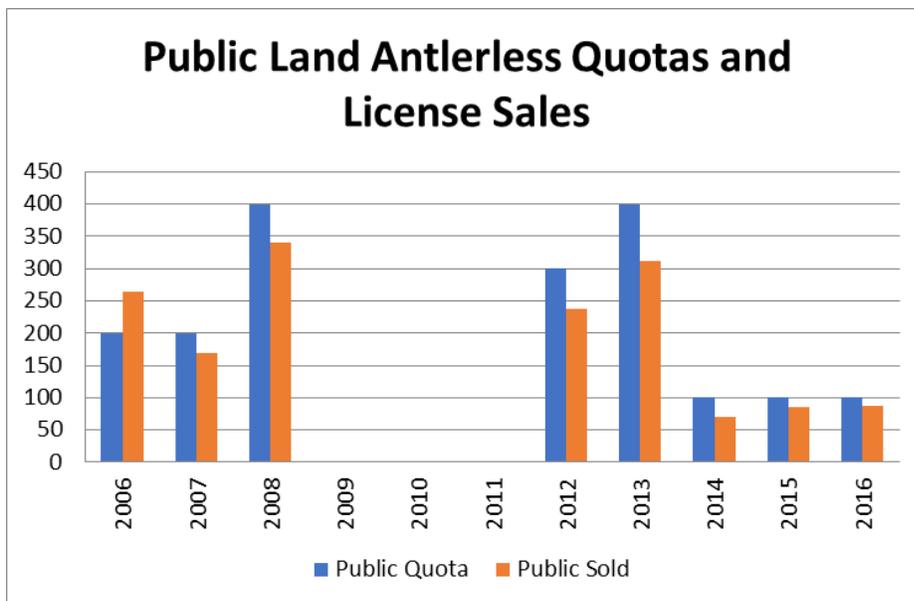


Figure 3: Graph of public land antlerless deer license quotas and number of licenses sold in DMU 16 from 2006 to 2016.

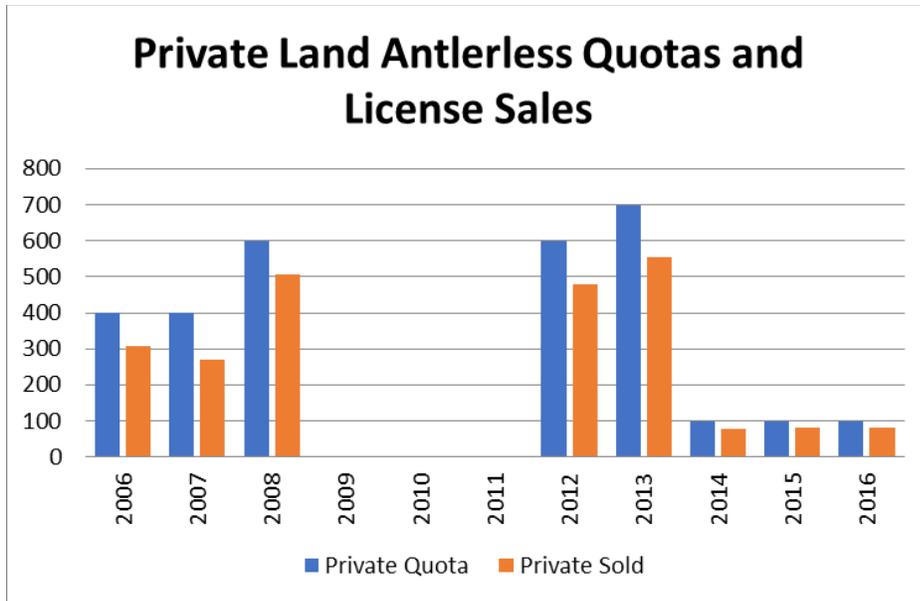


Figure 4. Graph of private land antlerless deer license quotas and number of licenses sold in DMU 16 from 2006 to 2016.

The availability of antlerless deer licenses within this DMU have been restricted by license quotas for both public and private land licenses since 2014. Quotas were reduced in 2014 to mitigate the impacts of the previous harsh winter on deer populations. Since that time, both private and public land quotas remained at a low level (100 licenses available). This has led to a decrease in antlerless deer hunting harvest in the DMU for the last three years. The public land antlerless license applications typically exceed the license quota. Private land antlerless license sales and therefore demand from hunters nears the available license quotas every year. Therefore demand from hunters for participating in antlerless harvest on both public and private land is higher than quotas.

### Deer Management Assistance and Crop Damage (Out of Season) Permits

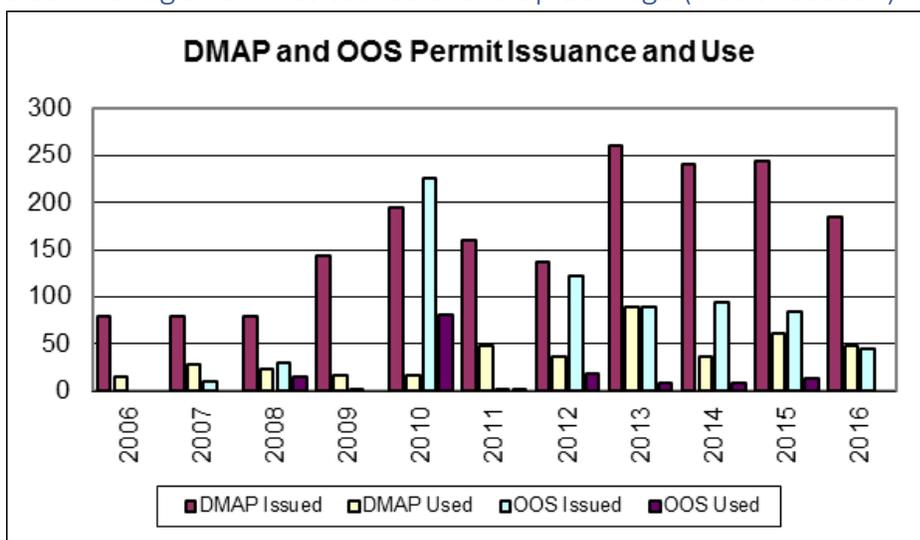


Figure 5. Graph of Deer Management Assistance and Out of Season permits issued in DMU 69 from 2006 to 2016.

Deer Management Assistance and Crop Damage Permits (DMAP and OOSP respectively) are issued to private landowners with crop damage issues due to deer. In DMU 016, the number of DMAPs and OOSPs issued has supplemented private land antlerless hunter harvest to address deer impacts on agriculture. The number of permits issued exceeds the number of permits used every year.

### Deer Vehicle Collisions

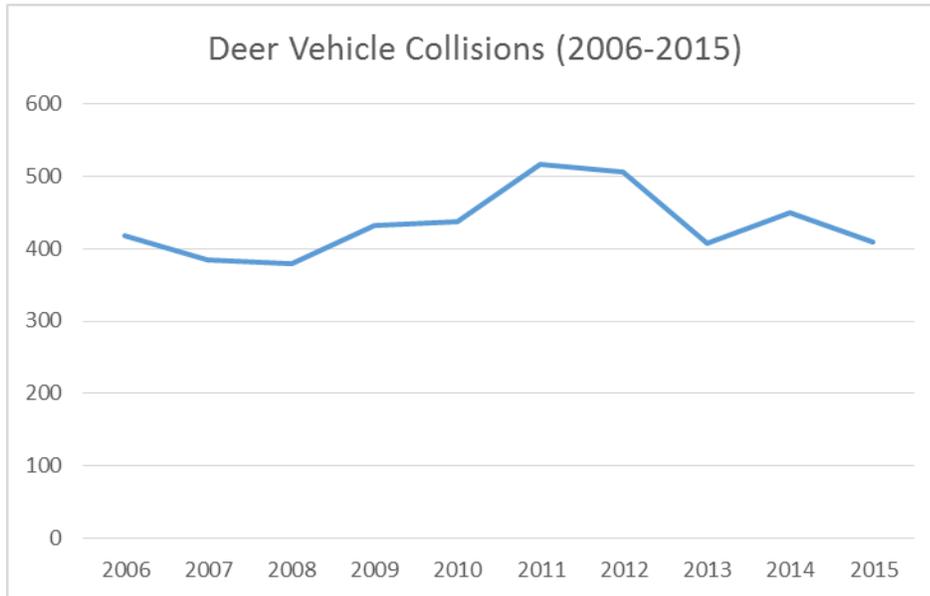


Figure 6. Graph of deer vehicle collisions from DMU 016, 2006 to 2015.

Deer-vehicle collisions (DVC) are one index of the deer population trends, 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.

Michigan State Police provide these data. 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.

There has not been a significant change in the number of deer vehicle collisions in this DMU over the last ten years.

## Deer Hunter Numbers and Analysis

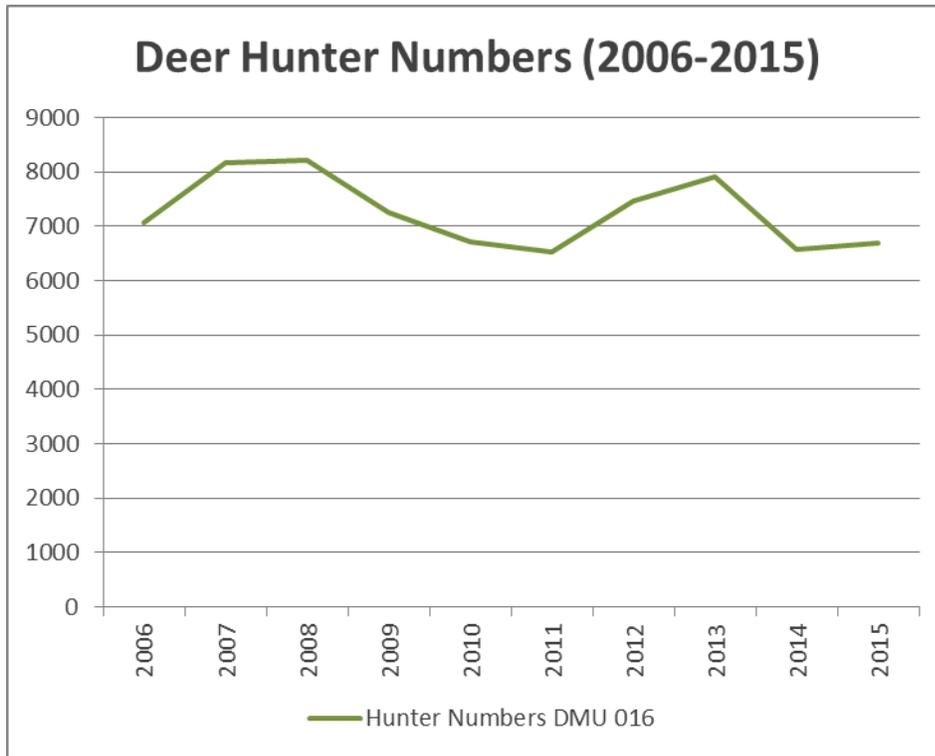


Figure 7: Graph of hunter numbers within DMU 16 from 2006 to 2015.

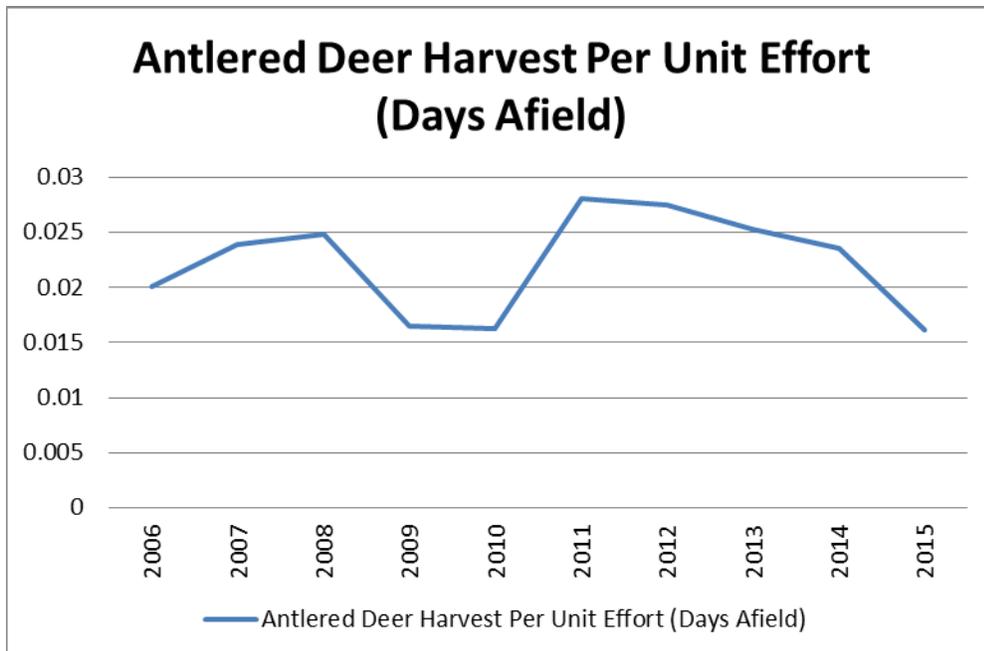


Figure 8: Graph of antlered deer harvest per unit effort (days afield) within DMU 16 from 2006 to 2015.

Trends in hunter numbers in conjunction with harvest level trends may indicate whether hunting is impacting deer populations. Hunter numbers in DMU 016 have remained between a low of 6,500 in

2011 to a high of 8,200 in 2008. There is no clear trend in hunter numbers within the unit. Antlered harvest per hunter effort may indicate changes in population if trends are apparent. Over the past ten years there is no clear trend, and harvest per unit effort has decreased since 2011. Hunter numbers and harvest per effort in this DMU do not show a significant change and therefore other indicators may be more effective in assessing deer population trends.

## Deer Management Recommendations

The indices of deer population in DMU 016 do not suggest that the population is exceeding demand for hunting recreation. Conversations with hunters and farmers help support this. Decreased antlerless deer quotas put in place in 2014 were an effort to maintain or increase the population after the severe winter of 2013. DMAPs and OOS permits augmented antlerless quotas in pockets of higher deer densities. With the past three mild winters (including 2016), an increase in antlerless permit availability within the DMU is anticipated in order to meet demand and provide ample hunting opportunities.

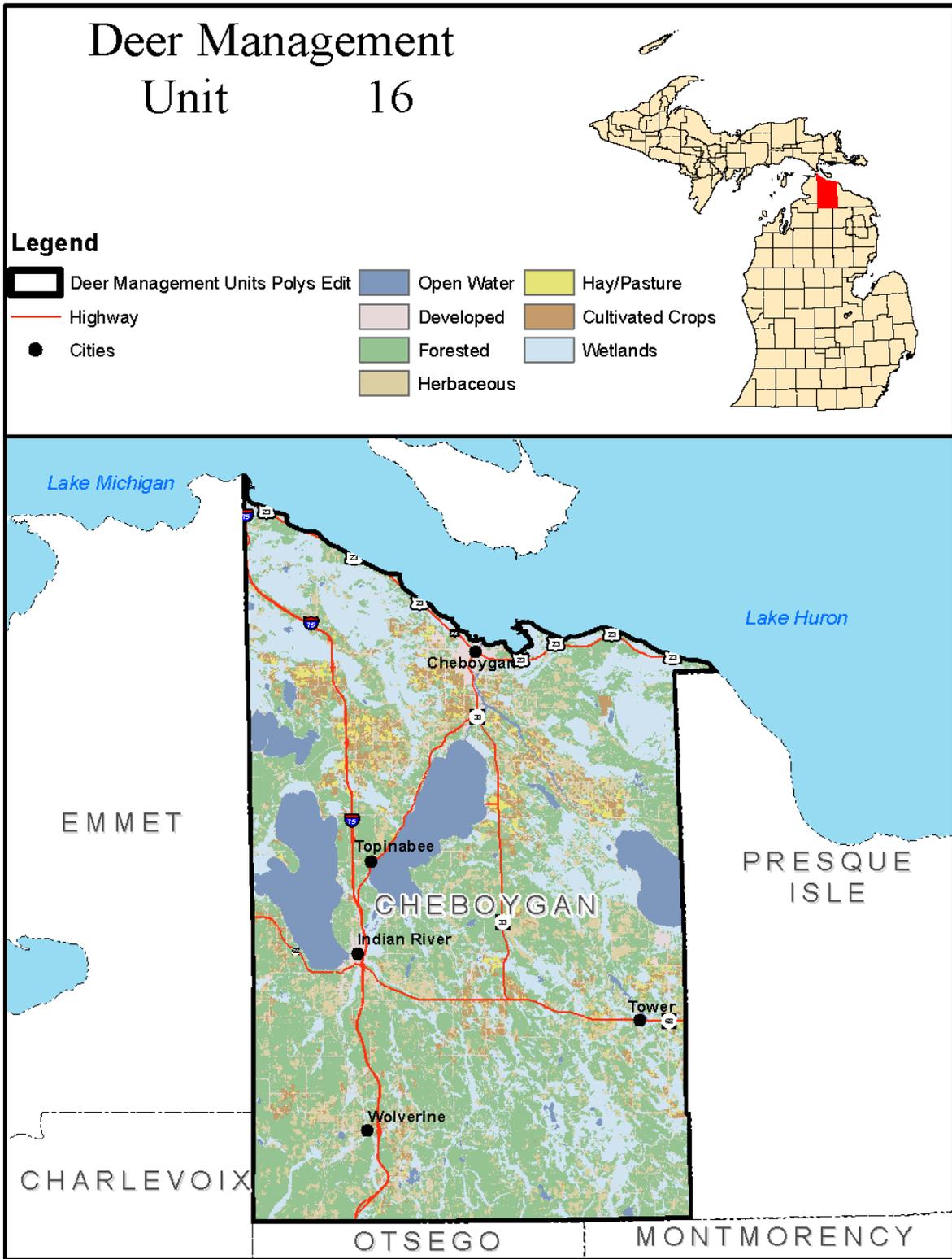


Figure 9: Map of DMU 016 depicting cover types within the unit.