

# DMU 024

## Emmet County

### Deer Management Unit

#### Area Description

Emmet County Deer Management Unit is in the Northern Lower Peninsula Region (NLP). It has roughly 126 square miles (80,371 acres) of public land which is approximately 26% of the total acreage in the county. The remainder of land is in private ownership. Topography varies from rolling hills to areas that are relatively flat. Soil types consist mainly of well drained sandy types. The landscape is primarily rolling hardwoods interspersed with private inholdings and agriculture in the south. Deer densities are higher in the agricultural and private land areas in the south and along the Lake Michigan coastline. Deer numbers vary greatly in the upland hardwoods depending on food sources, mainly hard mast.

#### 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 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

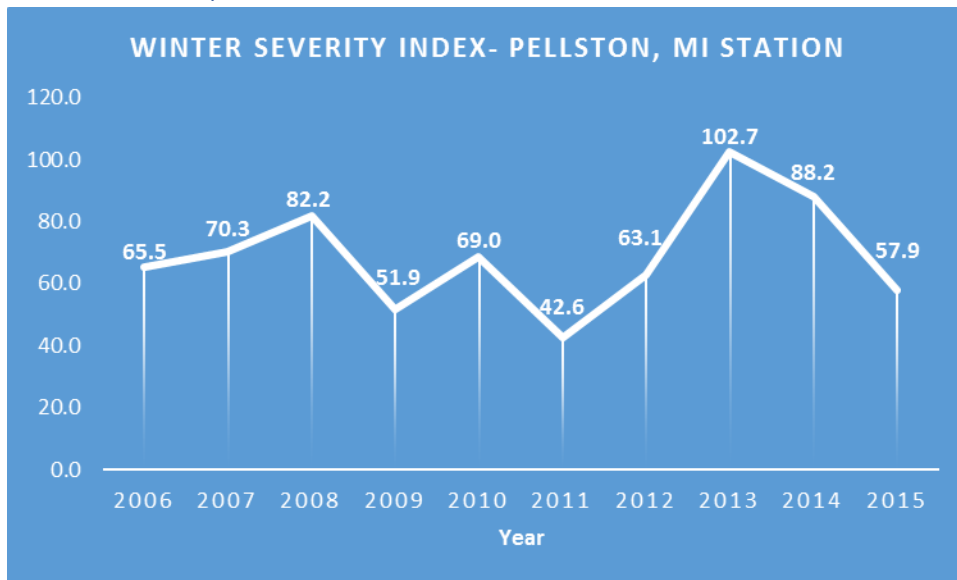


Figure 1: Graph of Pellston Area Winter Severity Index from 2006 to 2015

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

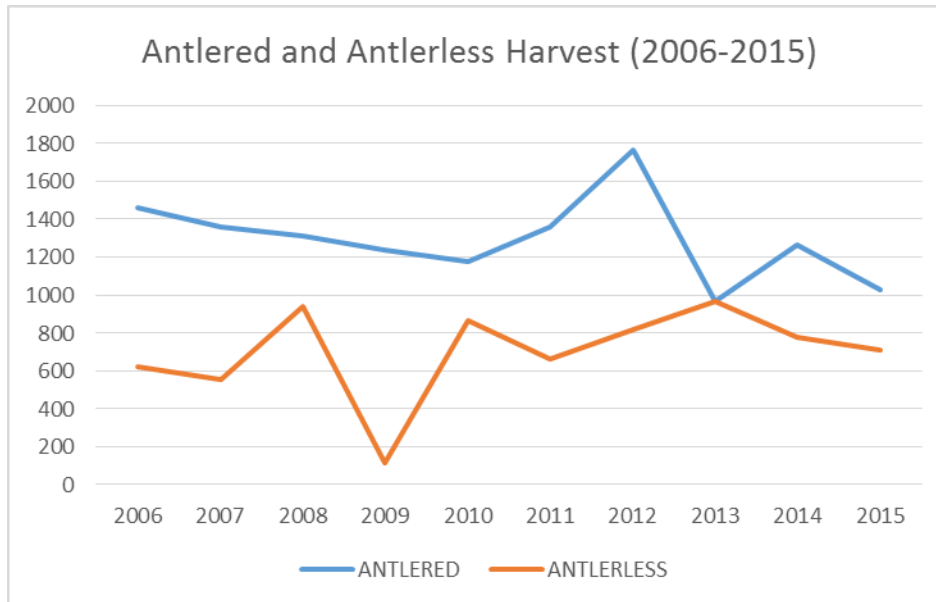


Figure 2: Graph of antlered and antlerless deer harvest levels in DMU 24 from 2006 to 2015

Deer harvest for antlered deer in DMU 024 over the past ten years show a decreasing trend. The introduction of antler point restrictions in 2013 impacted these trends. Antlered harvest prior to 2013 reflects harvest of deer with antlers three inches and over, while antlered harvest from 2013 and later is limited to deer with three or more points on a side. Antlerless deer harvest with the exception of the 2008 and 2009 seasons were steady. Antlerless harvest includes fawn bucks as well as fawn and mature does. Antlerless harvest follows a similar trend. Antlerless and antlered harvests were nearly equal in 2013 with the introduction of the antler point restriction.

## Antlerless License Quotas

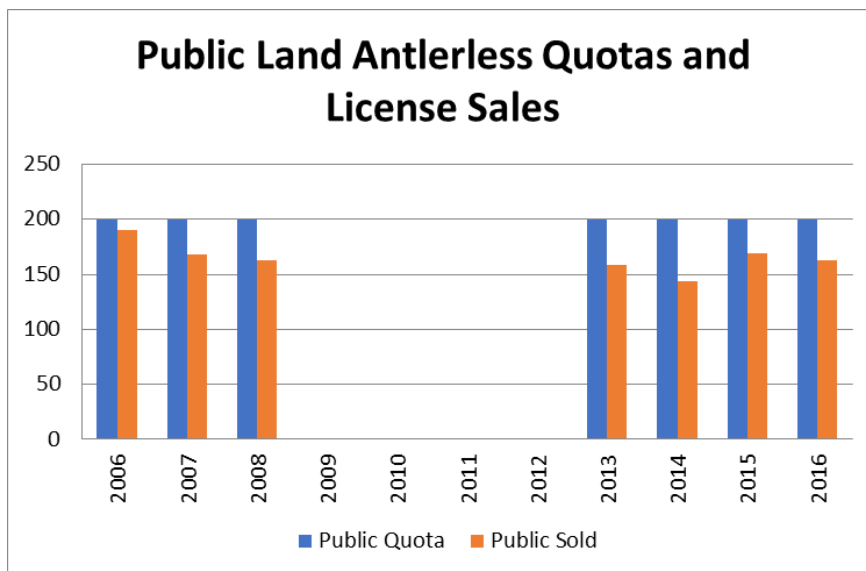


Figure 3: Graph of public land antlerless deer license quotas and number of licenses sold in DMU 24 from 2006 to 2016.

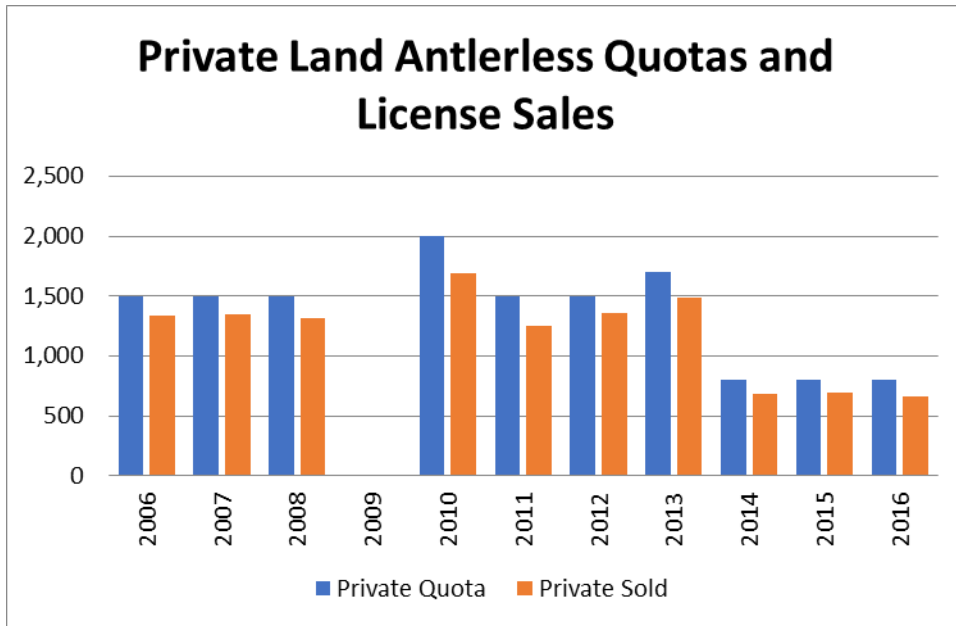


Figure 4. Graph of private land antlerless deer license quotas and number of licenses sold in DMU 24 from 2006 to 2016.

The availability of antlerless deer licenses within this DMU has been held stable at 200 available licenses for public land, while private land antlerless licenses were reduced following the winters of 2008 (from 1,500 in 2008 to zero in 2009) and 2013 (from 1,700 in 2012 to 800 in 2013). Antlerless license applications for both public and private land typically exceed the license quota. Therefore demand from hunters for participating in antlerless harvest is not met.

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

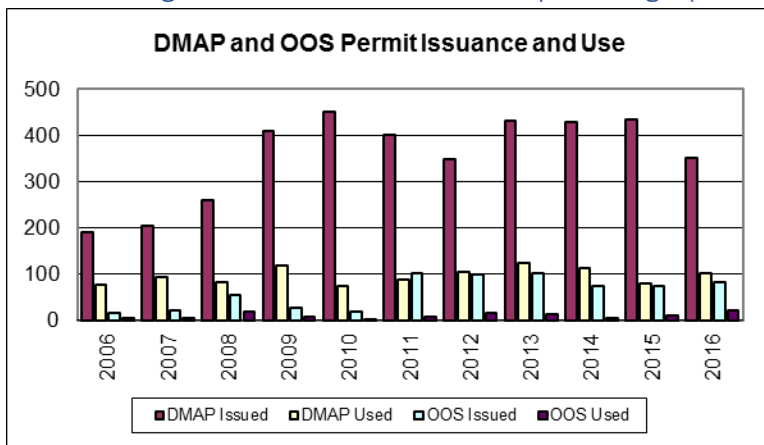


Figure 5. Graph of Deer Management Assistance and Out of Season permits issued in DMU 24 from 2006 to 2016.

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 024, 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

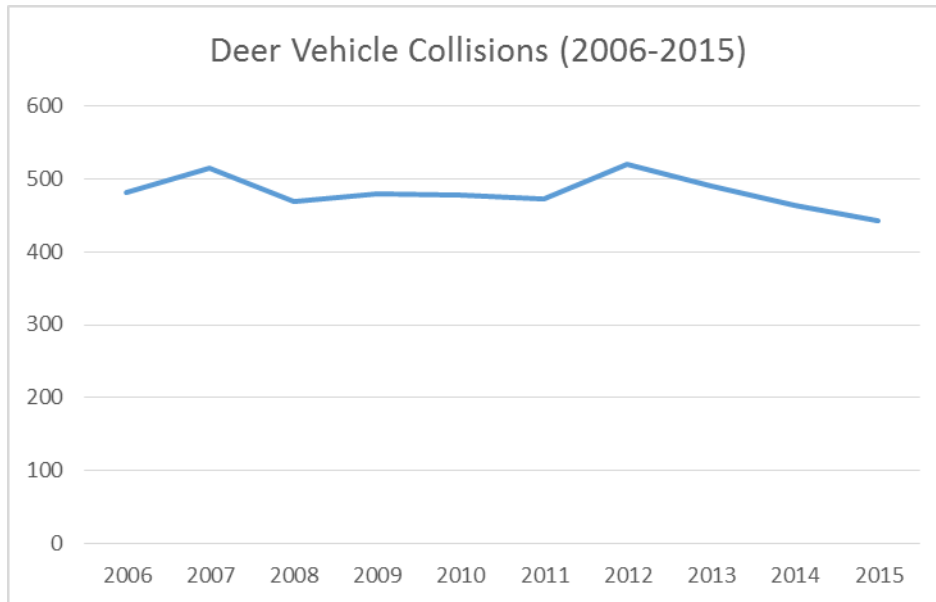


Figure 6. Graph of deer vehicle collisions from DMU 024, 2006 to 2015.

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

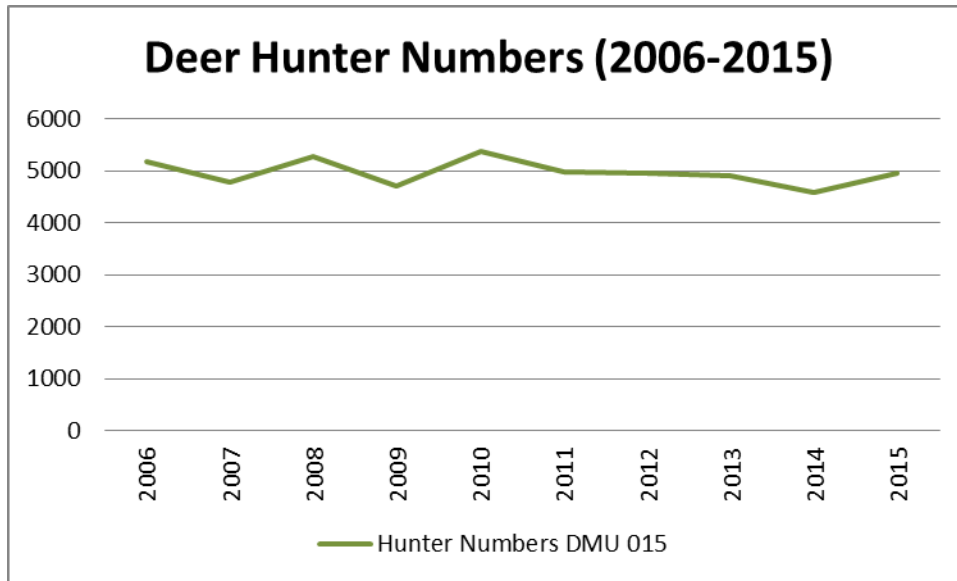


Figure 7: Graph of hunter numbers within DMU 024 from 2006 to 2015.

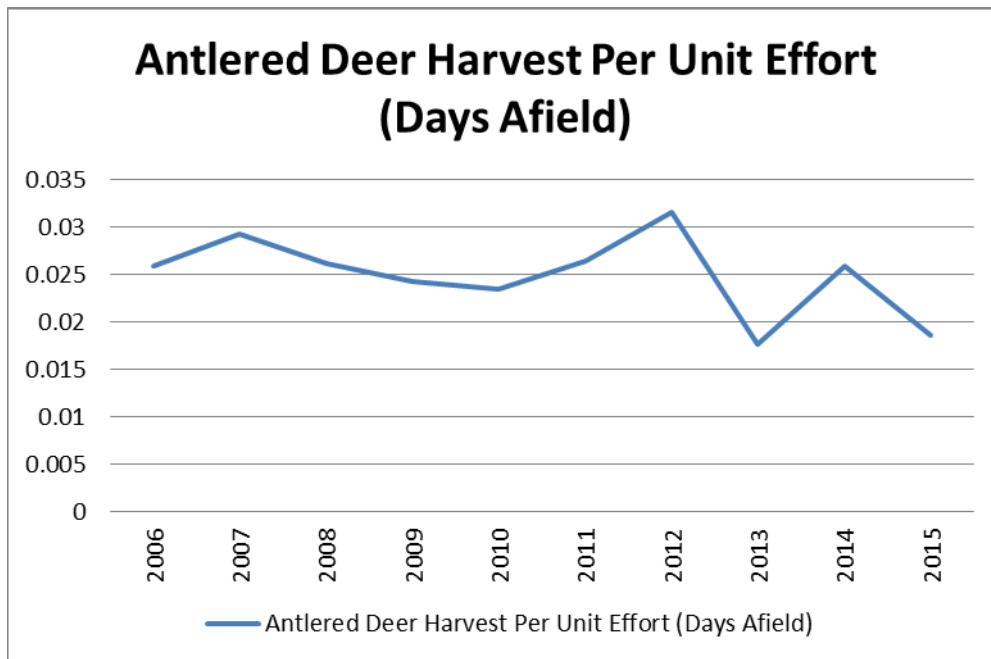


Figure 8: Graph of antlered deer harvest per unit effort (days afield) within DMU 024 from 2006 to 2015.

Trends in hunter numbers in conjunction with harvest level trends may indicate whether hunting is impacting deer populations. Hunter numbers in DMU 015 have remained stable over the last ten years. However, the number of antlered deer harvested per unit of effort has seen a slight decreasing trend for the same time period. Hunter numbers and effort trends 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 024 do not suggest that the population is exceeding demand for hunting recreation. Harvest levels remain high within the unit, especially antlerless harvest. Conversations with hunters and landowners help support this. Antlered and antlerless harvest have come close to a 1:1 ratio for the last few years. There is a desire to maintain the antlerless harvest levels to achieve this ratio, especially on private lands where impacts from deer are present. DMAPs and OOS permits, used to augment antlerless quotas in pockets of higher deer densities, will continue to be issued. However, the desire is to have recreational hunting as the primary tool for controlling populations in these areas. An increase in private and public land antlerless permit availability will assist in addressing this.

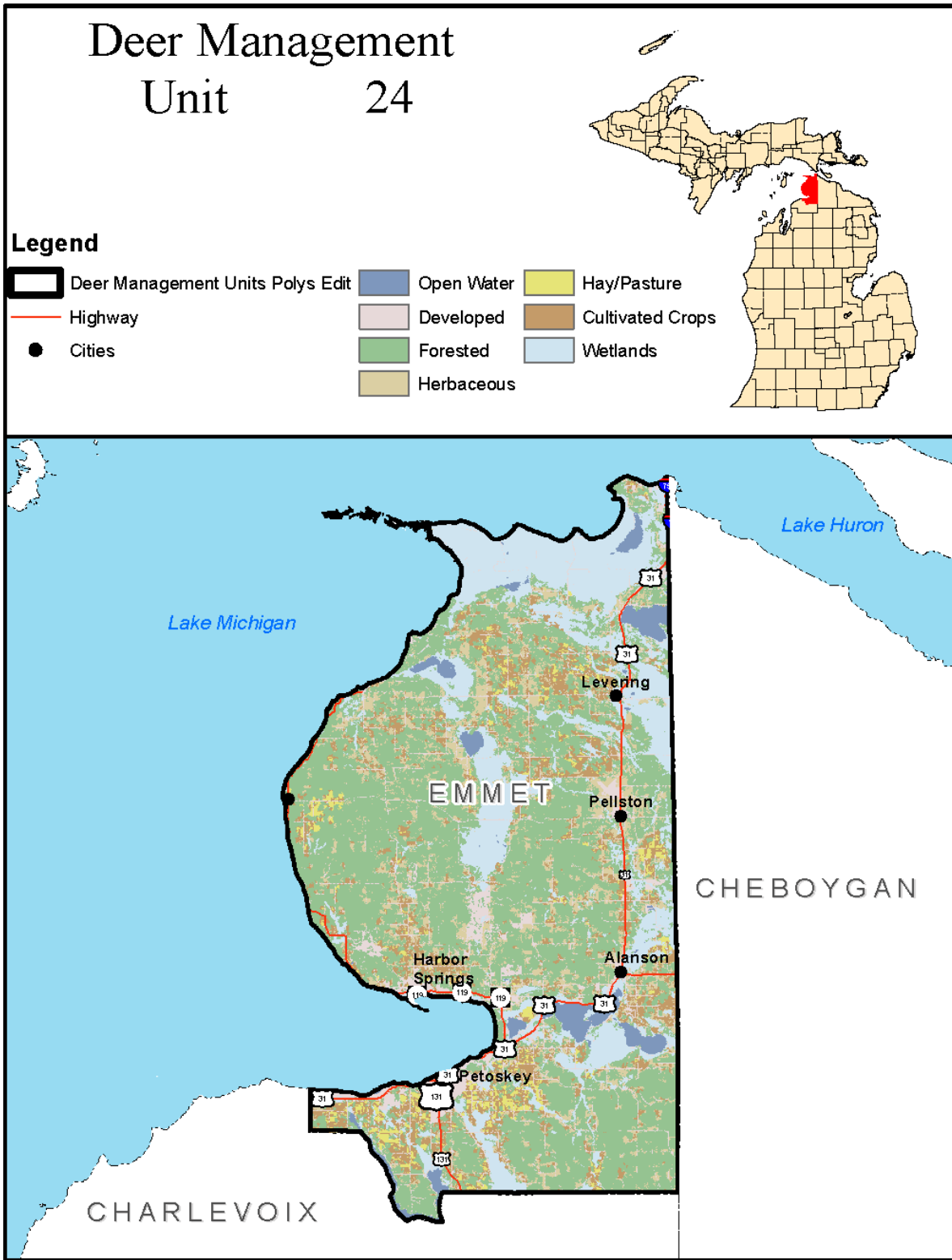


Figure 9: Map of DMU 024 depicting cover types within the unit.