

121

Deer Management Unit

Geographic Location:

Deer Management Unit (DMU) 121 is comprised of the Stonington, Nahma, and Garden Peninsulas in the south-central Upper Peninsula (UP), is bounded on the north by federal highway US-2, and encompasses 291 square miles of land. This DMU is a mixture of private and public (Michigan DNR and US Forest Service) land that normally experiences relatively mild winters and contains agricultural lands in the southern portion of the unit.

Land use and habitat quality for deer

Major land uses within DMU 121 are forest production, agriculture and outdoor recreation. Agricultural areas are prominent, especially in the southern portion of the Garden Peninsula. Summer range habitat quality for deer varies throughout the unit and is driven by local soil productivity and subsequent cover types and related food availability. Generally, habitat capabilities for deer are quite good due to agricultural and forested areas intermixed. In certain forested areas of silt loam and other productive soils below prolific deciduous stands, excellent habitat types are available for deer where preferred food sources (such as grasses, hardwood leaves and lily species) are widespread and available. The overall carrying capacity of DMU 121 is relatively high, but also somewhat limited by winter severity and the capabilities and management of winter range; many deer in this DMU are obligatory migrators and travel to the central and southern portions of the unit during winter months.

Typical winter weather, as related to deer

Climatic conditions in DMU 121 are among the mildest in the UP Region. The growing season in this DMU is generally longer and more productive due to the proximity of the unit to Lake Michigan. Winter migration of deer in the northern portion of DMU 121 is highly developed with a large portion of the deer moving into the central and southern portions of the unit. Even though DMU 121 falls within the low snowfall zone, excessive snow depths cause deer to become highly concentrated within Deer Wintering Complexes (DWC) and mortality can increase during severe winters.

Management Guidance:

This DMU contains state forest, federal forest, and private ownership with some industrial ownership throughout. Both deer densities and hunting success rates are historically above-average in DMU 121 as compared to the rest of the UP. Because of this, antlerless permits have been available for public and private land in DMU 121 during 6 of the last 11 years, with antlerless tags not offered during years following severe winters. There are few concerns regarding the impact of deer on forest regeneration, other than within concentration areas where cedar was harvested and failed to recruit afterward.

Deer Harvest Analysis:

The buck kill success rate for DMU 121 showed a steep decline during the 2013-2014 seasons, which corresponds with the increased severity of winters 2012/13-2014/15 (Figure 1). Average buck kill success for DMU 121 during the 2013-15 seasons was 23%, which was above the average for UP DMU's (19%). The buck kill success rate increased dramatically in most DMU's following the mild winter of 2015/16, but the buck kill success rate for DMU 121 showed no positive response to mild winter conditions by declining slightly to 22%, although this was still above-average for UP DMU's during the 2016 firearm season (19%).

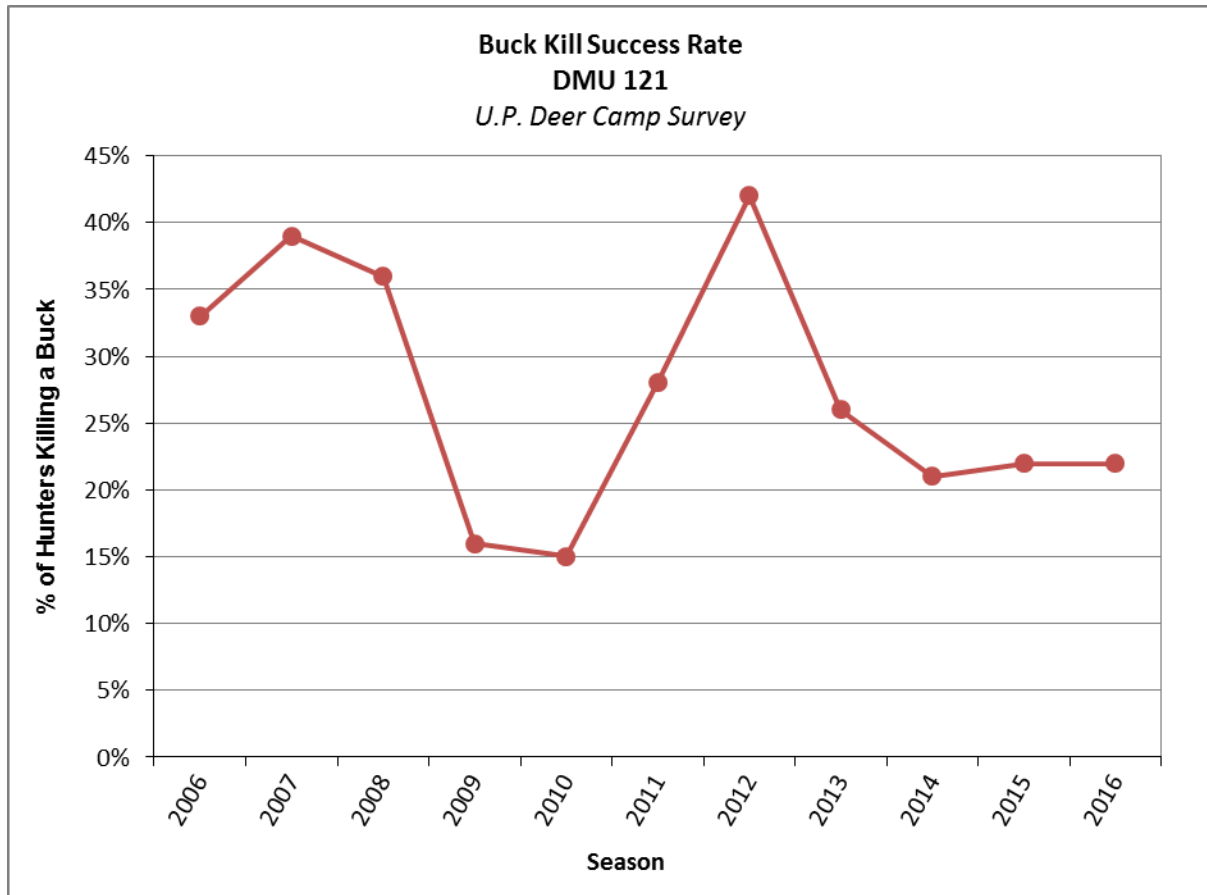


Figure 1. Buck kill success rate in DMU 121 within the Upper Peninsula Region.

The decrease in buck kill per square mile during 2014 also corresponds with the severe winters of 2012/13-2014/15. The buck kill per square mile in DMU 121 (Figure 2) during 2006-2015 was 2.9, which is above the average for the UP region (2.2) during the same time period.

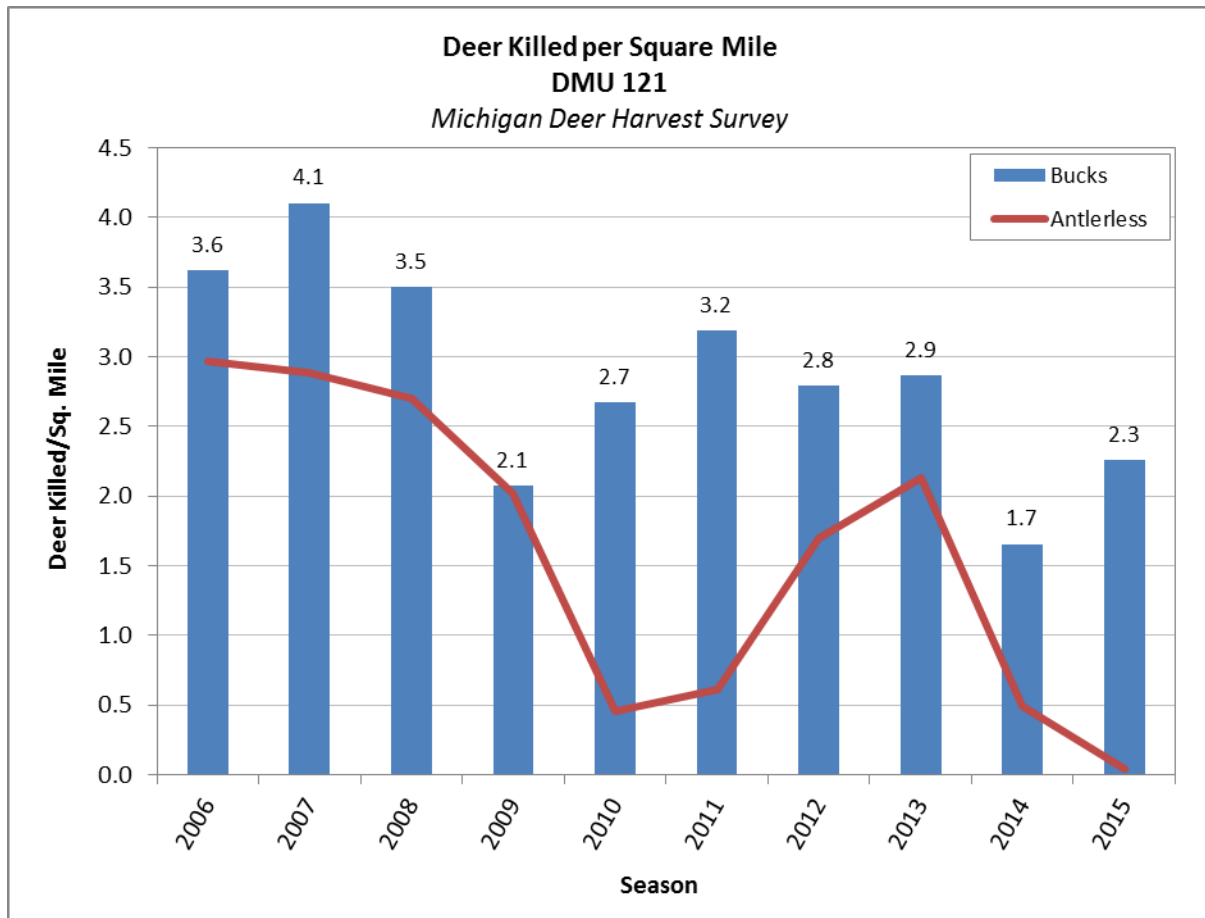


Figure 2. Deer killed per square mile in DMU 121 within the Upper Peninsula Region.

Due primarily to reduced impacts of winter severity and greater habitat capabilities, antlerless deer licenses are normally offered in DMU 121. For years when permits were offered during 2006-15, the antlerless permit quota for DMU 121 has averaged around 580 for public and 1,170 for private land. During years both options were available between 2006-2015, antlerless permits combined with archery harvest on a combination deer tag resulted in an average of 2.4 antlerless deer harvested per mile. During years only archery harvest on a combination deer tag was available, antlerless deer harvested per mile average 0.4, although these were also years following more severe winters. The option to harvest antlerless deer on a combination deer tag was removed prior to the 2015 season in response to deer population declines throughout the UP Region following the severe winters of 2012/13-2014/15. However, some southern DMU's, such as DMU 121, will likely be able to support harvest through antlerless permits at some point during the 2017-19 regulation cycle.

Deer sightings and hunter success/satisfaction trends

During the 2016 firearm season, 17 cooperating deer camps (67 hunters) reported their hunting experience in this unit. In 2016, 40% of camps believed there were more deer than in 2015, which is likely due to the relatively mild winter of 2015/16 and subsequent increased fawn production. Sightings

of deer increased from 1.7 to 3.0 per hunter day, and buck kill success stayed the same at 22%. Only 13% considered 2016 to be a good-to-excellent season, which was a largely unchanged from 2015 (12%). Long-term trends of these statistics are demonstrated in Table 1.

DEER MANAGEMENT UNIT 121											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Camps	19	16	14	14	15	13	13	16	16	18	17
Hunters	78	72	66	68	65	50	43	58	62	68	67
% killing a buck	33%	39%	36%	16%	15%	28%	42%	26%	21%	22%	22%
Deer seen per day	2.1	2.3	3.8	1.9	2.3	3.4	3.6	2.1	3.1	1.7	3
Fawns seen per 100 does	31	34	24	31	40	45	29	23	30	39	47
Does seen per buck	3	2	2	2	5	3	3	2	4	4	3
More deer than last year	11%	19%	7%	0%	13%	38%	38%	13%	13%	0%	40%
Same number deer	63%	44%	43%	0%	40%	39%	31%	13%	25%	12%	47%
Fewer deer	26%	37%	50%	100%	47%	23%	31%	74%	62%	88%	13%
Season good-to-excellent	47%	31%	28%	0%	7%	38%	31%	13%	25%	12%	13%
Season fair-to-poor	53%	69%	72%	100%	93%	62%	69%	87%	75%	88%	87%

Table 1. Deer Camp Survey data in DMU 121 within the Upper Peninsula Region.

Due to the relatively short and mild winter of 2015/16, observed fawn recruitment was 47 fawns seen per 100 does during the 2016 season, which is well above the 2006-2015 average (33 fawns per 100 does) and a reliable indicator of good fawn production in 2016. This should result in a large cohort of deer in the 1.5 year old age class for the 2017 hunting season, depending on the impacts of winter weather and other factors.

As of February 27th, 2017 actual snow depths at the Fayette snow depth station were 4 inches, which is below the long-term average of 9 inches for the winters of 2006/07-2015/16 during that same time period. Accumulated snow totals at Fayette were 52 inches, which is 21 inches (or 29%) below the long-term average of 73 inches during the same time period. If the winter of 2016/17 continues with below-average snow depths and relatively mild temperatures, decreased adult deer mortality and increased fawn production and recruitment are expected.

Research results

A research project focusing on the role of predators, winter weather, and habitat on deer fawn survival is being conducted in the central U.P. by Mississippi State University in cooperation with the DNR. Results of this research conducted in the low and moderate snowfall zones to date suggest the following:

- high pregnancy rate among adult females despite uneven buck to doe ratios
- low fawn annual survival following harsh winters
- under mild to moderate winter severity, the most important factor influencing the growth (positive or negative) of a deer population is the proportion of fawns surviving their first year and becoming potential breeders

- under severe winter conditions substantial mortality of adult females can occur, replacing recruitment of fawns as the most important factor effecting the growth of a deer population, until the adult female segment of the population recovers.
- severe winter weather can have multi-year effects on deer recruitment and population trends.
- annually, winter severity and habitat conditions influence the amount of predation, which overall was the dominant source of mortality of adult females and fawns. This illustrates the importance of considering all potential limiting factors and their interactions.

These results support results of other surveys suggesting that consecutive harsh winters that have occurred since 2008 have resulted in low deer populations in the region, although in DMU's with relatively low snowfall like DMU 121, the impact of severe winters is less significant.

Agricultural crop damage

Agricultural lands are somewhat prominent in DMU 121, and crop damage can be an issue where these lands exist and will continue to be addressed. Eighty deer were harvested on crop damage permits in 2016, which is consistent with the 2006-15 average of 81. Thirty deer were harvested on DMAP's in 2016, which is below the 2006-15 average of 41.

Forest regeneration concerns

Deer Management Unit (DMU) 121 contains high quality winter habitat and browse can be an issue where deer are consistently concentrated from year to year. Alternate harvest regimes can be utilized to overcome this problem in deciduous stands, but cedar and hemlock regeneration and recruitment failures have been noted.

Deer-vehicle collisions

Figure 3 demonstrates a general decline in collisions since 2011, which coincides with three severe winters of 2012/13-2014/15; this is one of many indicators used to examine trends in deer numbers throughout the UP Region.

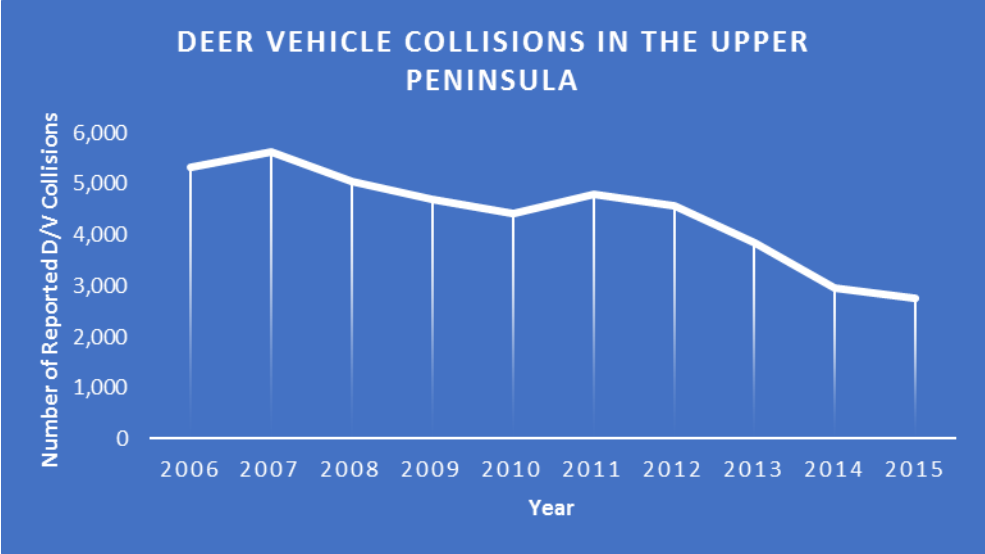


Figure 3. Deer vehicle collisions in the Upper Peninsula Region.

Deer Condition Data

Upper Peninsula yearling beam diameters are fairly consistent in the absence of severe winters, likely due to overall productivity and cation exchange capacity of UP soils. However, yearling beam diameters have varied greatly in recent years, with 2013 being the lowest on record, as demonstrated in Figure 4. Average beam diameters for 2015 were 17.78 mm, which are above-average and likely a response to a less-severe winter, early spring break-up, and good growing season.

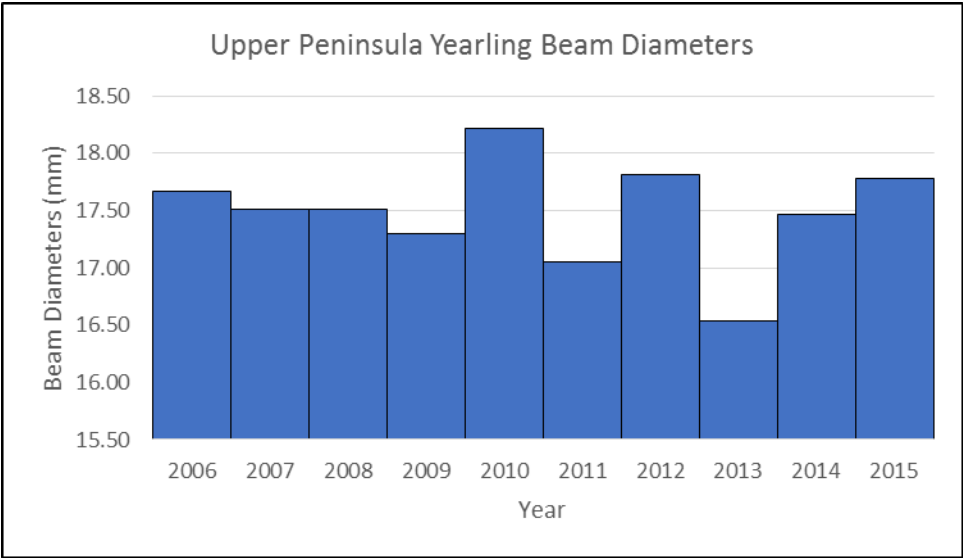


Figure 4. Yearling beam diameters in the Upper Peninsula Region.

Deer Management Recommendations

Due to the reduced impact of severe winter conditions and a relatively long and productive growing season, DMU 121 can sustainably support antlerless harvest, as it has historically. The deer population in DMU 121 was reduced in recent years due to 3 consecutive severe winters. However, the deer population appears to be rebounding after a mild winter, as various indicators suggest an increasing deer population that is currently providing above-average recreational viewing and harvest opportunities compared to the rest of the UP Region. For example, the number of fawns (47) per 100 does is the highest it's been since 2003 and the buck kill per square mile (2.3) is among the highest of UP DMU's. As a result, we recommend the unit be open to issuance of antlerless licenses on public and private land for the 2017-19 regulation cycle.

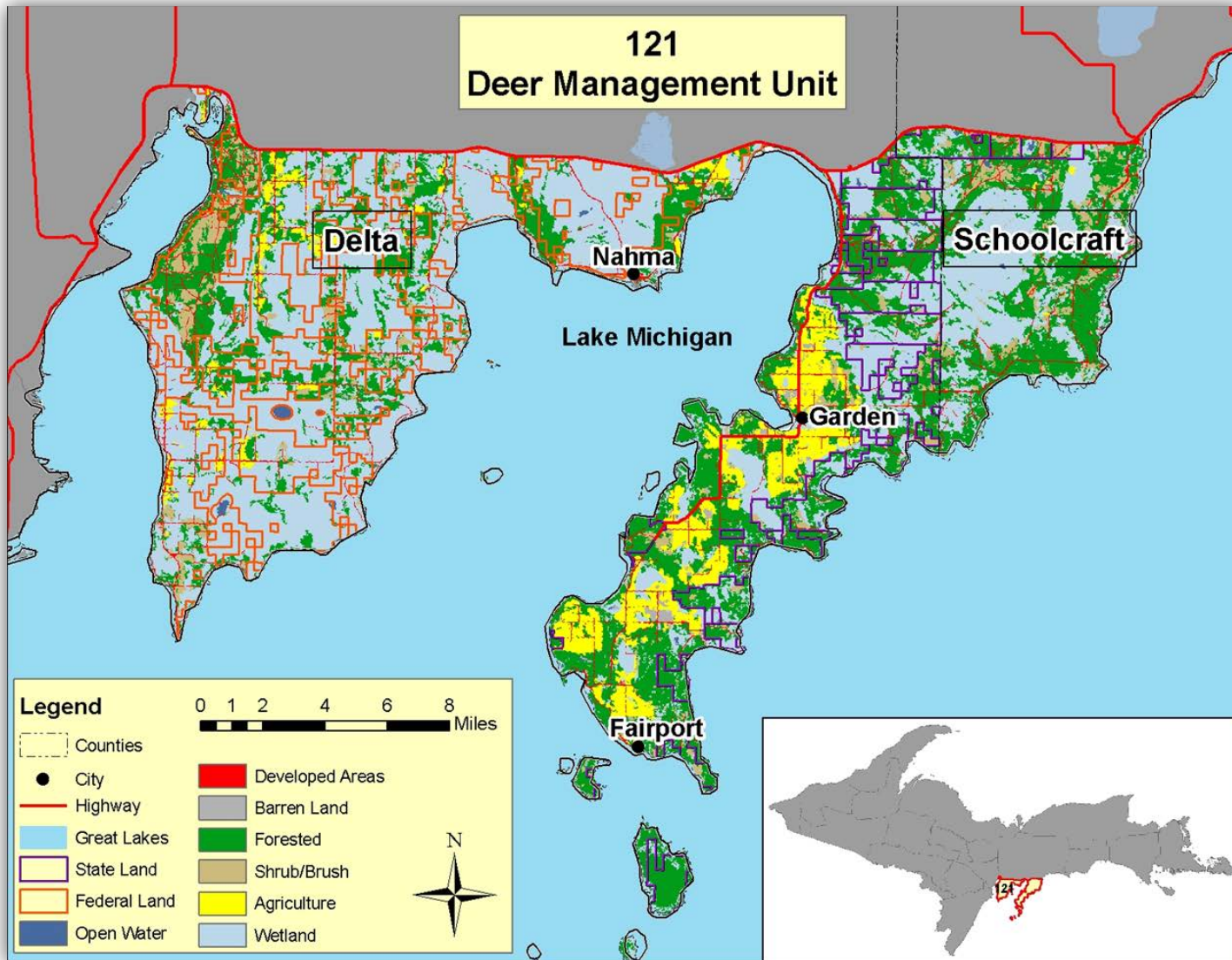


Figure 5. Cover type map of DMU 121 in the Upper Peninsula Region.