

Deer Management Unit 349

Geographic Location:

DMU 349 lies along the lake Michigan shoreline and is largely comprised of western Mackinac county with small portions of southern Luce county and southeastern Schoolcraft county. The unit was once part of DMU 049 and was split out eight years ago due to differing levels of deer abundance and harvest rates between eastern and western portions of the old DMU. The DMU size has remained constant at 468 square miles since the split in 2009. State land encompasses 40% of the DMU while 60% of the DMU consists of private land.

Land use and habitat quality for deer

DMU 349 has several blocks of productive agricultural lands that generally support higher deer numbers with the largest one being centered in the DMU around the town of Engadine. There are several extensive portions of the unit that are in corporate forest ownership and another substantial ownership (~35,000 acres) in a private sportsman's club. Hunting camps are common and scattered throughout the entire DMU.

Typical winter weather, as related to deer

The DMU lies mostly in the moderate snowfall zone of the eastern U.P. along the border of the high snowfall zone. The eastern U.P. is obligate deer range and as such, deer migrate to deer wintering complexes for winter months. Much of the southern and western portions of this DMU contain such deer wintering complexes. Periodically snowfall levels are substantial enough to reach target depths that indicate severe conditions for wintering deer and during those winters over-winter mortality of deer can be substantial.

Management Guidance:

The primary factors guiding the consideration of antlerless licenses issuance in this DMU are forest regeneration and agricultural crop damage concerns. These factors increase in frequency as the deer population increases and in recent years the impact that severe winter weather has had on deer abundance has negated the need for antlerless harvest. When such concerns become widespread, antlerless harvest is considered and has been used in the past to manage increasing deer numbers and provide hunting recreation. Furthermore, the recent three consecutive severe winters (2012-2013, 2013-2014 and 2014-2015) had a substantial enough negative impact on deer abundance to warrant changing hunting regulations to not allow antlerless harvest during archery season in the UP. This change has been in effect for the last two hunting seasons.

Deer Harvest Analysis:

DMU 349 has the lowest buck kill per square mile of DMU's in the U.P. region at 0.2 bucks/sq. mile and has been consistently among the lowest since the DMU was split from former DMU 049 in 2009. Antlerless tags have not been available in this unit since the split in 2009 due to the impact of several

severe winters (2007-2008, 2008-2009, 2012-2013, 2013-2014, and 2014-2015) on deer abundance. Hence, the antlerless harvest in the unit has been very minimal due primarily to archery season hunters.

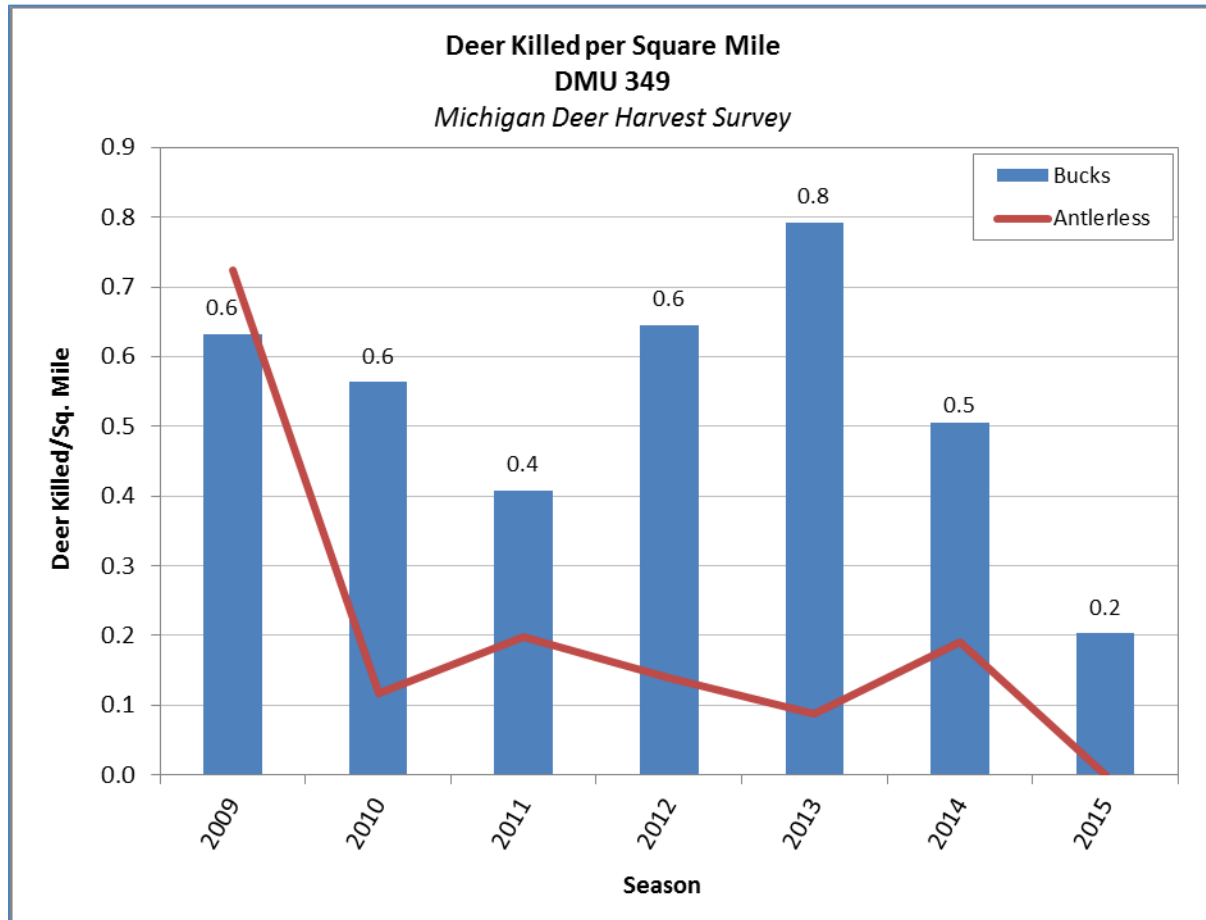


Figure 1. Deer killed per square mile in DMU 349.

Deer sightings and hunter success/satisfaction trends

DMU 349 is typically ranked in the top third of DMU's in the U.P. region for deer sighting rates (average of 3 deer per day since 2009) according to deer camp survey participants (firearm season data only). Buck harvest success averages just 16% since the unit was split from the former DMU 049 and is typically in the lowest third of DMU's in the entire region. Hunters appear to be exhibiting restraint with regard to harvesting bucks that they observe resulting in a lower buck harvest success. An average of 61 fawns per 100 does is observed in the unit which is relatively high for the region and relates to the higher quality habitat (a mixture of agriculture and forested land). Hunter satisfaction in the DMU is still fairly low with an average of 74% of participants rating the season as fair to poor.

	2009	2010	2011	2012	2013	2014	2015	2016
Camps	13	10	12	14	13	16	15	16
Hunters	61	49	42	60	51	72	69	67
% Killing a buck	13%	18%	17%	23%	12%	22%	10%	13%
Deer seen per day	1.5	3.5	4	3.7	3.3	2.9	1.9	2.8
Fawns seen per 100 does	75	56	59	65	59	41	49	82
Does seen per buck	3	4	5	3	4	4	4	3
More deer than last year	0%	20%	42%	31%	15%	14%	0%	38%
Same number of deer	15%	60%	33%	38%	31%	21%	20%	43%
Fewer deer than last year	85%	20%	25%	31%	54%	65%	80%	19%
Season good-to-excellent	15%	10%	25%	46%	31%	43%	0%	31%
Season fair-to-poor	8%	90%	67%	54%	69%	57%	100%	69%

Figure 2. Deer Camp Survey Data in DMU 349.

Research Results

A research project focusing on the role of predators, winter weather, and habitat on deer fawn survival is being conducted in the western 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, including in this DMU.

Agricultural Crop Damage

Historically this area has had occasional periods of higher crop damage complaints due to higher deer numbers but this has not been a problem since the unit was split from the previous DMU in 2009. Since the split, consecutive severe winters have kept deer numbers lower in the unit and there has not been a

need for agricultural crop damage permits other than the occasional request by orchard operators for deer browse during winter.

Forest Regeneration Concerns

There have been no requests for Deer Management Assistance Permits or crop damage permits in this unit for several years. DNR FRD staff do report browse damage by deer in and immediately adjacent to deer wintering complexes as well but not at levels that inhibit stand regeneration and not widespread across the unit.

Deer-Vehicle Collisions

Reported deer-vehicle accidents, adjusted for traffic volume, have declined in the U.P. during the past decade.

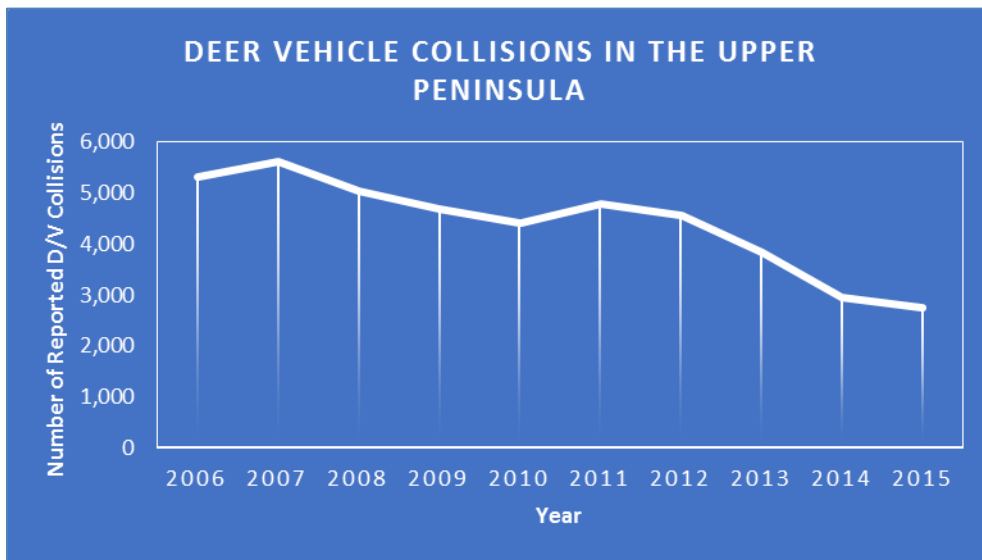


Figure 3. Deer/Vehicle Collisions in the Upper Peninsula Region.

Deer Condition Data

A sample of hunter harvested deer is examined at deer check stations in the fall. The diameter of antler beams, measured at one inch above the pedicel, is measured on 1.5 year old bucks as an index of physical condition. Antler beam diameters have varied little in the U.P. region during the past decade and therefore their use as a statistic in assessing deer populations in the U.P. is of minimal value.

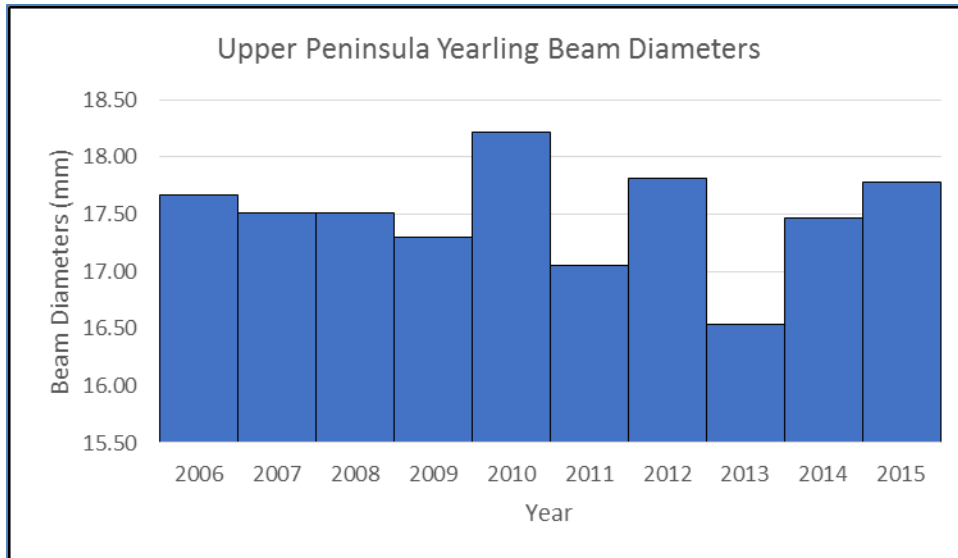


Figure 4. Upper Peninsula Yearling Beam Diameters.

Deer Management Recommendations

We recommend that DMU 349 be closed to antlerless license issuance for the next three year cycle. Although deer sighting rates are high, buck harvest rates for the unit are the lowest in the U.P. region and despite hunters being selective with the bucks they harvest, a high percentage of hunters in the unit indicate dissatisfaction. The unit typically has a high fawn to doe ratio and good quality habitat and can support a limited antlerless harvest in years when deer abundance is higher. Currently there is neither crop damage nor widespread forest regeneration issues in the DMU that warrant antlerless licenses. Lastly, the previous consecutive severe winters of 2012-2013, 2013-2014, and 2014-2015 have had, and will have, a drastic impact on deer abundance, fawn to doe ratios, buck harvest success, and deer sighting rates in the unit for several years into the future. In addition, the change in hunting regulation to not allow antlerless harvest during archery season in the UP will continue for the next regulation cycle. Lastly, sportsmen's groups in the area do not support antlerless harvest in this unit.

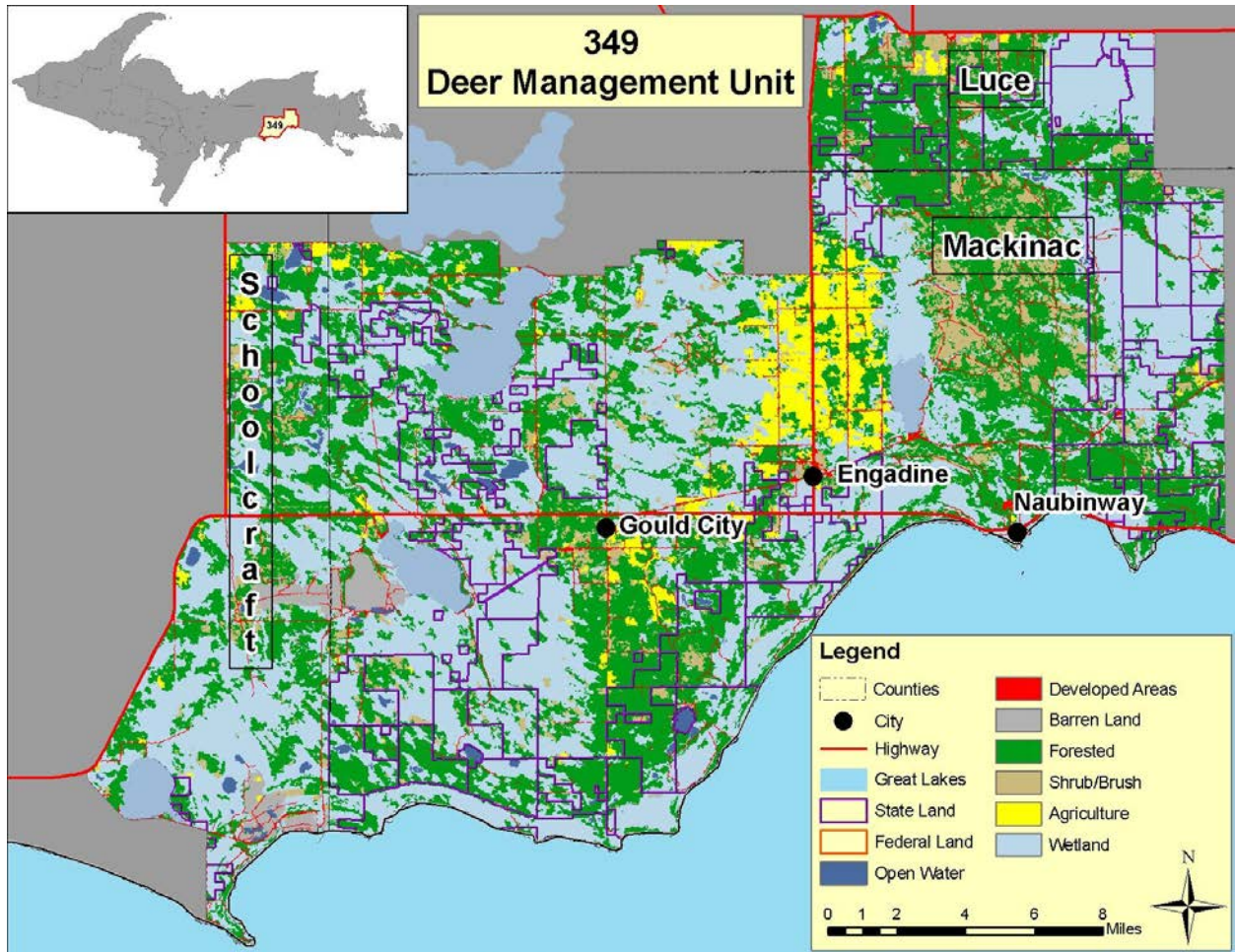


Figure 5. Deer Management Unit 349.