

007

Deer Management Unit

Geographic Location

Deer Management Unit (DMU) 007 is 1,788 miles² in size and is comprised of the northern portions of Baraga and Marquette Counties, and the northwest portion of Alger County. This unit has the most Lake Superior shoreline of any DMU which heavily influences the weather/winter severity and snow depths. Approximately 84% of this DMU is privately-owned land, with roughly 23% enrolled in the Commercial Forest Act, and about 16% held in public ownership (State or Federal).

Land use and habitat quality for deer

The habitat types in DMU 007 range from lowland conifer and wetlands to upland hardwoods, grassland openings and jack pine barrens, which provide relatively low to fair quality habitat for deer in much of this unit. Agricultural influence is very limited and primarily only a factor near traditional rural communities.

Typical winter weather, as related to deer

Winter weather is severe compared to other portions of the Upper Peninsula (U.P.). About 300 to over 350 inches of snowfall annually occurs in this DMU due to the influence of Lake Superior. Consequently, deer in this unit exhibit relatively poor reproductive potential compared to other DMU's in the U.P.

Management Guidance

Both deer densities and hunting success rates are below average in DMU 007 for the Western Upper Peninsula (WUP). Because of this antlerless permits have not been available for DMU 007 for many years if ever. There is very little agricultural activity in this area and consequently the level of deer crop damage is extremely low. Outside of the deer wintering complexes deer browse has not impacted tree regeneration.

Deer Harvest Analysis

DMU 007 consistently ranks as one of the lowest units for buck harvest per square mile in the U.P. Over the last ten years (2006-2015) DMU 007 has averaged 1.1 bucks harvested per square mile (Fig. 1). This harvest rate signifies a relatively low deer herd compared to the rest of the WUP. In the eight years prior to 2014 (mean 1.2/mi²) buck harvest has remained fairly consistent. The three harsh winters in 2012 - 2014 played a significant role in deer survival and lowered buck harvest rates in 2014 and 2015 (0.4 and 0.5) to the lowest recorded levels in the past 15 years.

Prior to 2014 antlerless harvest has remained fairly consistent with a mean of 0.2 antlerless harvested/mile² (Fig. 2). Also, a regulation change for the 2015 season made it illegal to take antlerless deer with archery equipment so antlerless harvest in DMU 007 as almost reach zero.

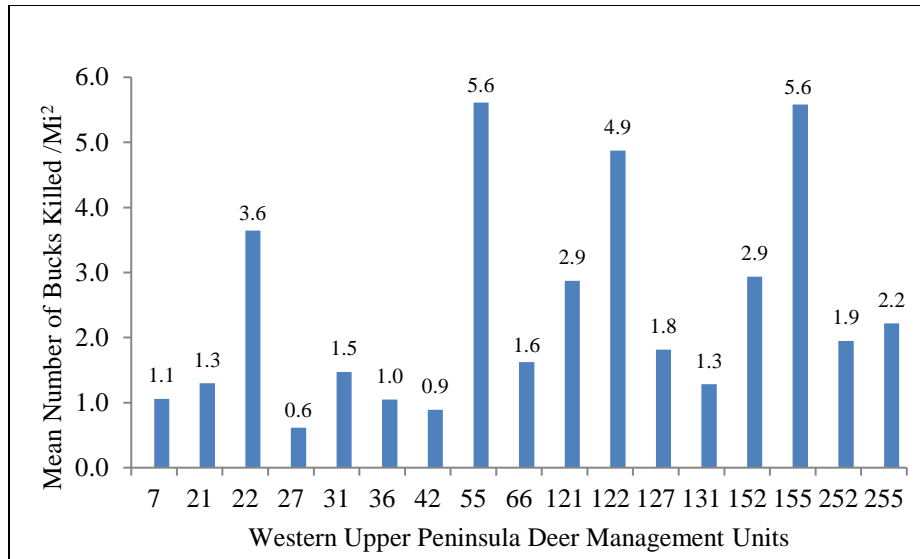


Figure 1. Mean number of bucks harvested/mile² in the Western Upper Peninsula by Deer management unit, mail survey data 2006-2015.

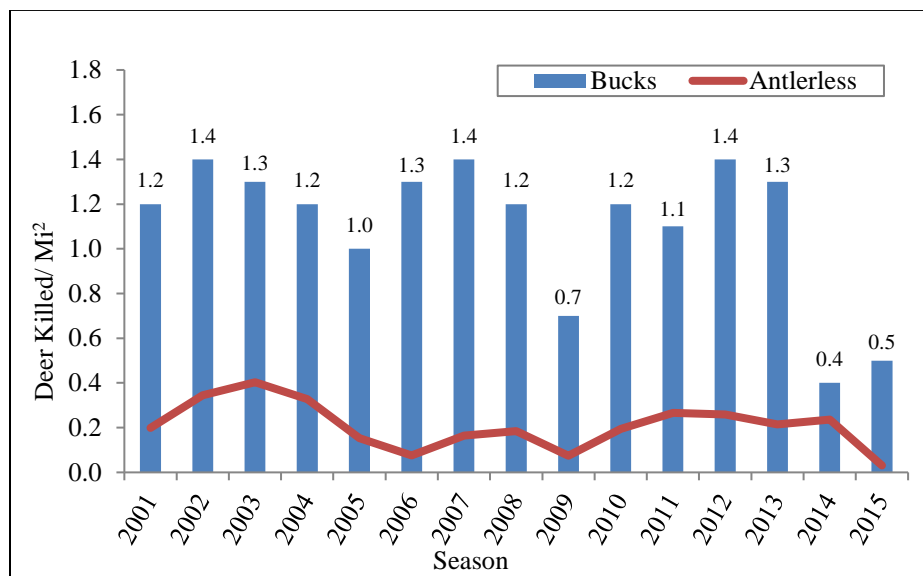


Figure 2. Deer harvested/mile² in Deer Management Unit 007 in all seasons combined from the mail survey harvest estimates, 2001-2015.

Deer sightings and hunter success/satisfaction trends

Participation in the U.P. Camp Survey has remained fairly stable in DMU 007 over the last 11 years (average 37 camps) (Table 1). The WUP is divided into 17 DMU's and DMU 007 on average (last 3 years) recorded the third lowest number of deer seen per day (1.4 deer seen per day) using camp survey data. Surprisingly however on average (last 11 years) this DMU has had a reported buck hunter success rate of 23%, which is only slightly off the 11 year average for the WUP (26%). Because this DMU is very large and relatively remote it has lower hunter density (3.7 hunters/mile²) than other DMU's in the WUP which likely contributes to the higher hunter success rate (Fig. 3).

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Camps	39	35	38	41	41	38	39	40	23	33	36
Hunters	172	154	164	193	178	164	164	177	101	152	133
% Killing a buck	23%	27%	32%	13%	26%	23%	36%	26%	12%	12%	22%
Deer Seen per day	1.4	1.6	2.0	1.2	1.6	2.4	2.3	1.6	0.9	1.3	2.0
Fawns seen per 100 does	34	48	45	50	69	52	52	36	41	65	67
Does seen per buck	4	4	3	4	4	4	3	3	9	4	3
More deer than last year	38%	26%	8%	0%	17%	44%	32%	3%	0%	6%	35%
Same number deer	46%	40%	30%	26%	29%	41%	42%	21%	4%	6%	33%
Fewer deer	16%	34%	62%	74%	54%	15%	26%	76%	96%	88%	32%
Season good-to-excellent	17%	21%	24%	7%	10%	34%	43%	15%	5%	6%	12%
Season fair-to-poor	83%	79%	76%	93%	90%	66%	57%	85%	95%	94%	88%

Table 1. Summary of Camp Survey results for Deer Management Unit 007, 2006-2016.

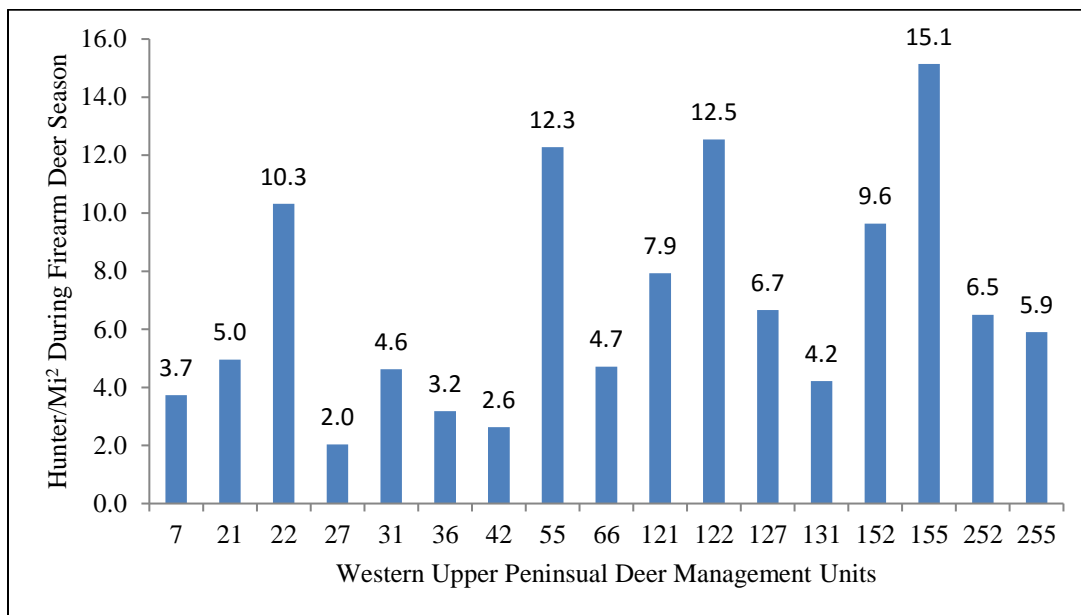


Figure 3. The mean number of hunters/mile² found during the firearm season in the Western Upper Peninsula, from mail survey data 2006-2015.

Research Results

In cooperation with Mississippi State University the DNR is conducting an ongoing research project focusing on the role of predators, winter weather, and habitat on deer fawn survival in the western U.P. 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

Agricultural activity is minimal due to the harsh winter conditions and generally sandy soil types found in this DMU. Deer Management Assistance Permits demand has remained very low and relatively consistent during the last 16 years with no discernable change (average 1.4 per year). Summer crop damage permit requests in this area are also very low averaging just over one permit per year over the last 16 years. Crop damage is not a major problem in this DMU, but it can be significant to the farms that experience deer problems.

Forest Regeneration Concerns

In general DNR Forest Resources Division personnel have not expressed concerns over tree regeneration difficulties in this DMU. However, in the area around Harlow Lake which is a deer wintering complex, combined with the illegal deer feeding has concentrated deer near the roadway which is effecting forest regeneration. In a cooperative effort with staff from Parks and Recreation, Forest Resources and Wildlife Division we plan to address the illegal feeding using educational signage.

Deer-Vehicle Collisions

Across the U.P. reported deer-vehicle accidents, have declined since 2000 when reported collisions were just under 9000 reports the highest in 34 years (Fig. 4). In 2015 there were still 46% more reported deer vehicle accidents than occurred in 1980.

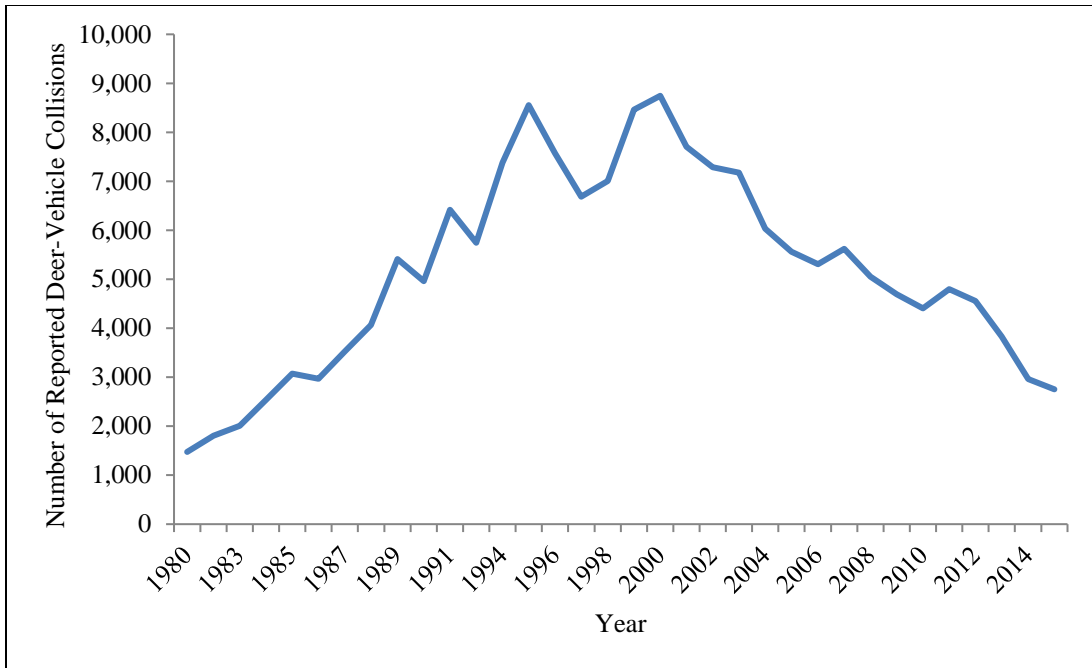


Figure 4. Reported deer-vehicle accidents, adjusted for traffic volume in the Upper Peninsula of Michigan, 1980-2015.

Deer Condition Data

Each fall biological data is collect from harvested deer across the U.P. at deer registration stations. The diameter of antler beams measured 1 inch above the pedicel on harvested bucks give us an index of physical condition. Antler beam diameters on yearling (1.5 year old bucks) have had some variation over the U.P. during the past 15 years (Fig. 5.). However, we did see a noticeable decrease in beam diameter for yearlings harvested during the 2013 season. Likely this was a result of the harsh winter condition the fawns experienced during the 2012-13 winter.

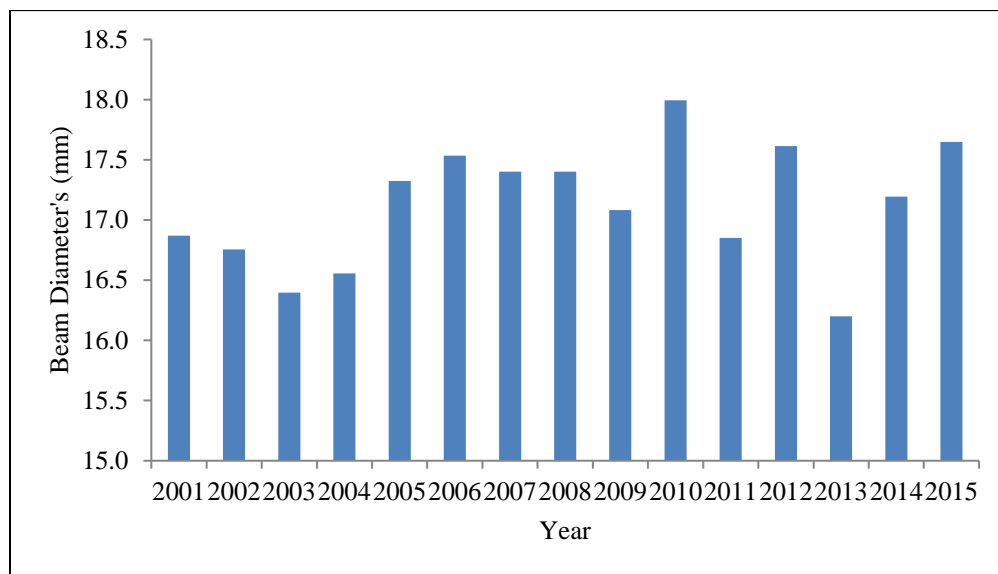


Figure 5. Mean yearling beam diameters (average of left and right) collected from hunter harvest deer for the Upper Peninsula, 2001-2015.

Deer Management Recommendations

This unit is in a high snowfall zone and deer in this unit experience harsh winter conditions compared to other portions of the U.P. About 300 to well over 350 inches of snowfall annually occurs in this DMU due to the influence of Lake Superior. Consequently, deer in this unit exhibit relatively poor reproductive potential compared to other DMU's in the U.P. While there is not a snow monitoring station in every DMU the snow seen in this DMU 007 falls between the Baraga and Shingleton measuring stations depending on the distance from Lake Superior (Fig. 6).

Current reported local herd indicators, (camp survey, car deer accidents, DMAP, crop damage, and population projections) indicate that deer herd densities remain relatively low. Recently we experienced three difficult winters (2012-13, 2013-14, and 2014-15) in row which caused poor fawn production/recruitment and above average winter mortality. The harshest weather for wildlife was in the winter of 2014, which had the combination of higher than normal snowfall combined with record breaking cold temperatures. The deer in this DMU are still recovering from these winters and because of the high energy expenditure of navigating the landscape during periods of deep snow and poor the nutritional value of available food in this DMU during the winter it will make it very difficult for the population rebound quickly.

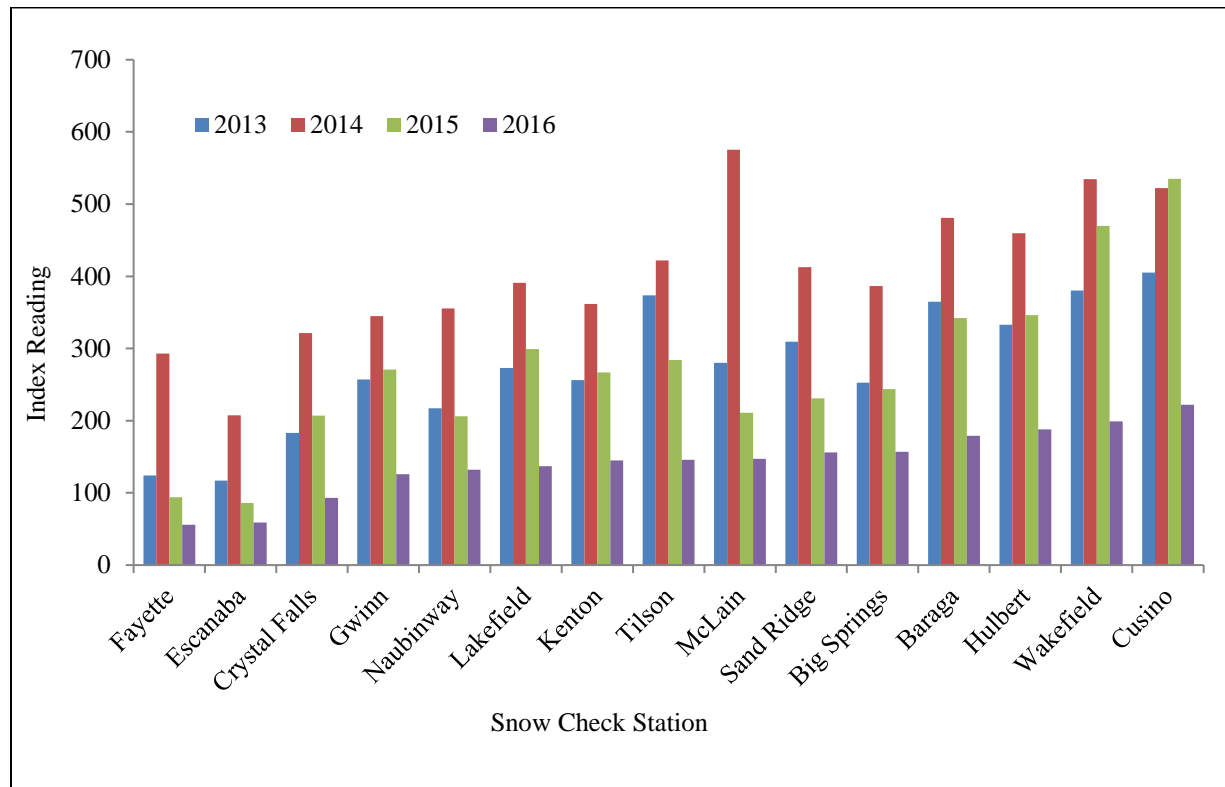


Figure 6. Total accumulated snow index collected at monitoring stations across the Upper Peninsula, 2013-2016 (2012-13, 2013-14, 2014-15 and 2015-16).

Recommendation for DMU 007

Wildlife staff has recommended a prohibition on antlerless harvest for the upcoming three years (one regulation cycle) across the U.P. We also recommend keeping DMU 007 closed to general antlerless permits (private, public, or late season) for the 2017-2019 seasons. Local deer density issues associated

with agricultural operations is minimal in this unit. We can effectively deal with localized deer problems by utilizing crop damage or DMAP permits at this time.

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Legend

Counties	Developed Areas
City	Barren Land
Highway	Forested
State Land	Shrub/Brush
Federal Land	Agriculture
Open Water	Wetland

0 2 4 8 12 16 Miles

