

NorthCentral Pennsylvania DEER HARVEST ASSESSMENT

A Testimony for Deer Management Change and Accountability

By John Eveland
March 20, 2016

Introduction. The Pennsylvania Game Commission's (PGC's) estimated deer harvest for the 2013-14 hunting season was assessed on eight Department of Conservation and Natural Resources (DCNR) State Forest Districts. This NorthCentral Harvest Assessment Area (NCHAA) was chosen because it comprises the heart of Pennsylvania's traditional northcentral hunting region, and consists of all of the counties of McKean, Elk, Clearfield, Cameron, Potter, Tioga, Bradford, Sullivan, Lycoming, and Clinton; and portions of Centre, Mifflin, Juniata, Snyder, Union, and Columbia. Of the total 11,394.6 square miles of land area in NCHAA, 8,171.7 square miles (nearly 72%) are covered by forests (U.S. Forest Service, 2014). (See the following figure.)

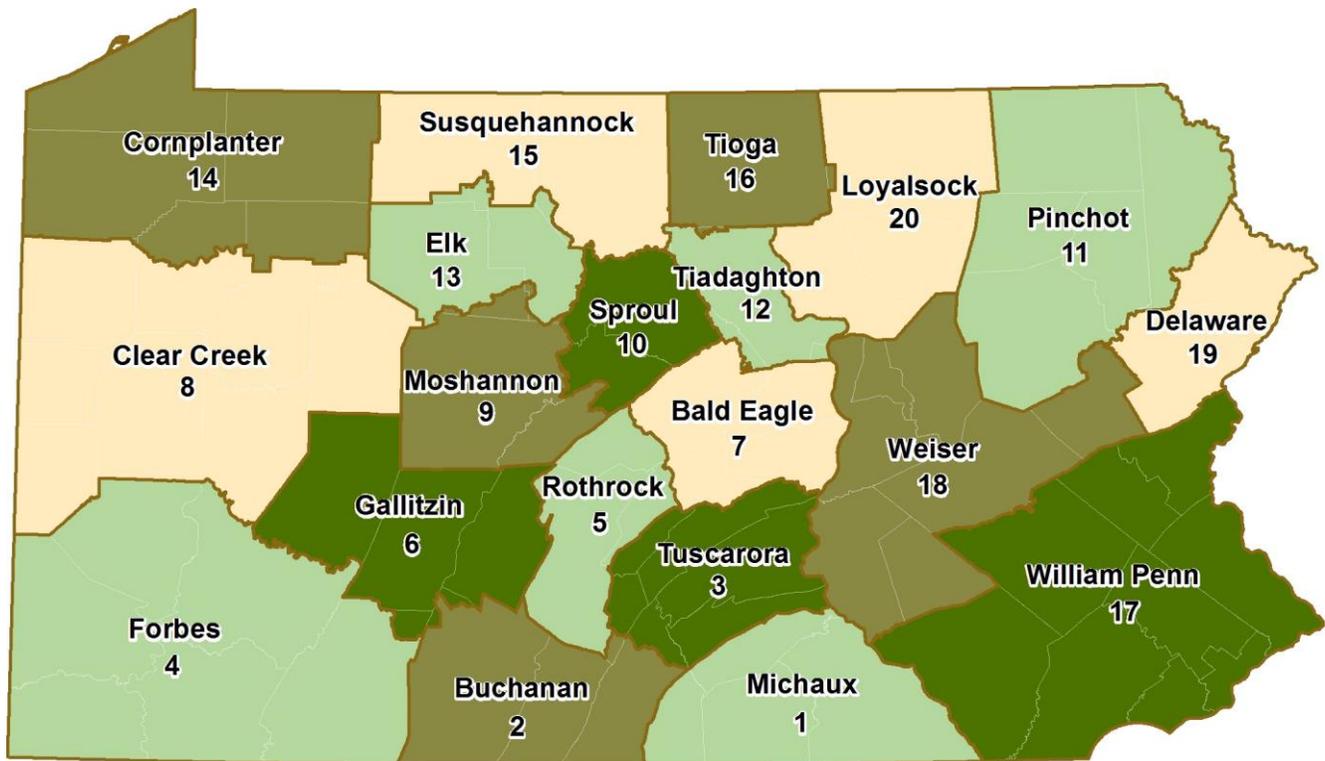
Background Information. In 2000, PGC began what was to be a five-year, statewide, herd-reduction program to harvest an additional 500,000 does and fawns over the five-year period – thus increasing the previous 16-year average annual harvest of 379,137 deer by an additional 100,000 does and fawns per year. Although the stated intention was to stabilize the size of the state herd beginning in 2005, independent scientific analysis, DMAP harvest results, and the continuing high numbers of annual antlerless license allocations indicated that herd numbers were not stabilized, but continued to decline – especially in northern-tier counties.

A 2012 Joint House and Senate Budget and Finance Committee Report confirmed that there was a decline of 100,000-200,000 hunters because of PGC's herd-reduction program, and that the resulting negative economic impact had reached \$285-415 million per year. The cumulative economic impact to the outdoor industry and the Commonwealth over the past 15 years is estimated at about \$5 billion, as is demonstrated by the proliferation of bankruptcies in the tourism and outdoor recreation industry, lost family businesses, empty hunting camps, and fall woods that are virtually devoid of orange coats and gunshots during the two-week rifle deer season.

During the past 15 years, herd growth has also been impeded by the increasing number of coyotes. Considering these high impacts from hunting and coyotes, it is perplexing that PGC annually claims that hunters are still harvesting appreciably the same number of deer per year as were harvested during the heydays of deer hunting in Pennsylvania prior to the herd-reduction program.

Consideration. Consider the following circumstances regard the northcentral deer herd:

- that the board of commissioners had informed the author that PGC's target northcentral herd-reduction goal was initially only 5-6 deer per square mile (dpsm), but that the herd had been overshot during the five-year herd-reduction period to only 1-2 dpsm in some areas.
- that a member of the PGC's deer team had stated in private conversation that deer had been literally exterminated in some areas.
- that within recent weeks game commissioners and executive staff stated that their intention is to increase the northcentral herd in some areas from less than 10 dpsm up to 15 dpsm, and possibly eventually to 20 dpsm in some areas.



STATE FOREST DISTRICTS

The NorthCentral Harvest Assessment Area is comprised of the following State Forest Districts: Susquehannock, Elk, Moshannon, Sproul, Tioga, Tiadaghton, Bald Eagle, and Loyalsock.

It includes all of the following counties with associated State Game Lands:

- McKean (SGL 30,59,61,62,301).
- Elk (SGL 14, 25, 28, 34, 44, 293, 311).
- Clearfield (SGL 34, 60, 77, 78, 87, 90, 94, 98, 100, 120, 158, 174, 331).
- Cameron (SGL 14, 293).
- Potter (SGL 59, 64, 204).
- Tioga (SGL 37, 208, 268, 313, 335).
- Bradford (SGL 12, 36, 123, 142, 172, 219, 237, 239, 250, 289).
- Sullivan (SGL 12, 13, 66, 137).
- Lycoming (SGL 68, 75, 114, 126, 133, 134, 252, 298, 325).
- Clinton (SGL 89, 255, 295, 321).

The harvest assessment area also includes portions of:

- Centre (SGL 33, 60, 92, 100, 103, 321).
- Mifflin (SGL 107).
- Juniata (SGL 107).
- Snyder (SGL 188, 194, 212).
- Union (SGL 252, 317).
- Columbia (SGL 226).

Objective. The goal of this assessment is to determine if PGC's 2013-14 deer harvest estimate of 64,788 deer for the traditional northcentral region of Pennsylvania, and, therefore, for other annual harvest estimates, is scientifically plausible.

Method. The 2013-14 harvest was used in this assessment because it represents the most current U.S. Forest Service inventory data that is available with a complete listing of DMAP harvest results for state forests. Deer populations and corresponding deer densities that are required to sustain PGC's 2013-14 harvest estimate were calculated for three different circumstances:

- there is no predatory impact on fawns (albeit not a realistic circumstance).
- predation on fawns is occurring at the 22.5% level as was determined by a 2000-01 PGC/Penn State study that occurred during the earlier stages of coyote expansion throughout the state.
- predation is occurring at the 50% level which is currently consistent with other eastern-states studies outside of Pennsylvania.

Results. Based on PGC's 2013-14 harvest estimate, 64,788 deer were harvested in the NorthCentral Harvest Assessment Area (NCHAA). If there were no predation by coyotes, bears, or bobcats, then from a scientific perspective based on deer biology and herd dynamics it would require 260,716 deer to sustain a harvest of 64,788 deer (Table 1). The corresponding density of deer that would be required to satisfy PGC's estimated harvest of 64,788 deer is 32 deer per square mile (dpsm) on every square mile of forestland throughout this 16-county area, or 23 dpsm on every square mile of total land area within the NCHAA. However, the absence of predation on fawns is an unreasonable and practically impossible circumstance.

Therefore, if fawn predation were factored into the equation at 22.5% in accordance to a 2000-01 PGC/Penn State study, then the number of northcentral deer required to sustain a kill of 64,788 deer would increase to 319,377, with a corresponding density of 39 dpsm on all forested land, or 28 dpsm throughout this total northcentral land area.

Further, if fawn predation has reached the 50% level as is occurring throughout some other eastern states, there would need to be 391,074 deer in this northcentral area in order to sustain PGC's claimed harvest of 64,788 deer. The corresponding density would be 48 dpsm on all forestlands throughout this 16-county northcentral area, or 34 dpsm on all land area within NCHAA, including the backyards and streets of Bradford and Smethport, Saint Marys and Ridgway, Clearfield and Emporium, Coudersport, Wellsboro, Towanda, Lock Haven, Williamsport, and Lewisburg.

Discussion. Following the 2015-16 deer season, it was reported that representatives of the Allegheny National Forest were considering increasing deer numbers to a deer density of 15-20 dpsm. In the account, PGC's board of commissioners concurred that PGC was considering increasing the density of deer within some northcentral areas from less than 10 dpsm to 15 dpsm, and possibly eventually to 20 dpsm. Note that an average density of 10 dpsm would equate to a northcentral herd size of 81,717, and could only produce a maximum possible sustainable harvest of 20,307 deer per year (Table 2). If PGC were able to increase deer density to 15 dpsm, only 30,460 deer could be annually harvested from this northcentral area; and if PGC eventually increased the deer density to 20 dpsm, then a sustainable harvest could reach 40,614 deer per year throughout this 16-county northcentral area.

Permit me to state this in another way. In order for PGC to harvest 64,788 deer in this northcentral area, as the agency claims, there would need to be an average of 39-48 dpsm on every square mile of forested land area (see Table 1). Consider this fact while PGC reports to sportsmen and legislators that the agency is intending to increase densities from 10-15 dpsm, and eventually to 20 dpsm.

Table 1. An Independent, Scientific Assessment of PGC's Estimated 2013-14 Deer Harvest on Eight(8) State Forest Districts in Northcentral Pennsylvania

<u>Scenario</u>	<u>PGC Estimated NC Deer Harvest⁽¹⁾</u>	<u>Herd Size Required To Achieve PGC's Estimated Harvest⁽³⁾</u>	<u>Corresponding Avg. Deer Density (Deer Per Square Mile)</u>	
			<u>On All NC Forestland⁽⁴⁾</u>	<u>On Total NC Land Area⁽⁵⁾</u>
1. Predation IS NOT Considered	64,788 ⁽²⁾	260,716	32 dpsm	23 dpsm
2. Predation IS Considered				
a. According to 2000-01 PGC Study ⁽⁶⁾	64,788 ⁽²⁾	319,377	39 dpsm	28 dpsm
b. According to Eastern States Studies ⁽⁷⁾	64,788 ⁽²⁾	391,074	48 dpsm	34 dpsm

(1) Includes 2013-14 DMAP harvest on state forests.

(2) PGC's estimated harvest for this NorthCentral Harvest Assessment Area (64,788) represents 17.9% of the agency's total estimated Pennsylvania deer harvest (361,988) for 2013-14.

(3) Refer to *An Independent, Scientific Assessment of the Pennsylvania Game Commission's Estimated 2015 Deer Harvest* (John Eveland, March 17, 2016) for methodology.

(4) There is a total of 8,171.7 square miles of forestland (private and publicly owned to one acre in size) in this NorthCentral Harvest Assessment Area, representing 31% of the total forested area in Pennsylvania (U.S. Forest Service Inventory Analysis, 2014).

(5) There are 11,394.6 square miles of total land area in this NorthCentral Harvest Assessment Area representing 25% of Pennsylvania's total land area (Finley and Jones, 1993).

(6) From a 2000/01 PGC/PSU study, the impact of early fawn predation \leq 3 months of age is considered at 22.5% (Vreeland (PGC) et al 2004).

(7) According to recent studies in eastern states, about 50% of fawns were lost to predation during their first three months of life (Journal of Wildlife Management, May 2014).

Table 2. Number of Deer that can be Harvested in Northcentral Pennsylvania* at Density Levels of 10, 15, and 20 Deer Per Square Mile

<u>PGC's Targeted Deer Density for NC PA</u>	<u>Corresponding Herd Size on all Forested Land in NC PA</u>	<u>Resulting Maximum Sustainable Deer Harvest</u>
10 dpsm	81,717	20,307
15 dpsm	122,576	30,460
20 dpsm	163,434	40,614

*The NorthCentral Harvest Assessment Area is represented by eight State Forest Districts and includes 16 counties (see previous figure).

The following accounts epitomize the socioeconomic and ecological condition of Pennsylvania's "big woods" that has resulted from PGC's deer-management program:

- In the May 8, 2015 edition of Pennsylvania Outdoor News, Editor Jeff Mulhollem wrote in a commentary following a trip to New England: *"The New England small towns have hundreds and hundreds of small businesses. Reminded me of towns in our state's northcentral region decades ago when I was young. Pennsylvania small businesses that catered to hunters have disappeared with reduction of the deer herds..."*
- On September 1, 2013, Jack Krafft, owner of First Fork Lodge in Potter County, stated: *"Traditionally, the lodge has had the same 27 out-of-state hunters on the first week of rifle buck season. Combined, the 27 hunters saw only 10 deer during the week. Only 2 returned, representing a loss of \$60,000 for the lodge."* Jack said that he lost 55 of 57 out-of-state bow hunters because of the lack of deer. Additionally, Jack stated that 60 of the 145-150 businesses belonging to the Potter County Visitors Association were currently for sale because of herd reduction, and this number did not count the ones that had already closed or did not belong to the visitors association.
- New York resident Gary Pafk wrote in a December 3, 2014 email: *"I recently returned from my 1st PA deer hunt. I hunted opening day and 2 more days, 7 hours each day in the woods in Allegheny Forest near Bradford in multiple areas and did not see one deer. More surprising was the complete lack of wildlife. I am saddened and can not believe that the powers to be have allowed this to happen. Obviously, I will not return and be willing to travel to other states to enjoy the forests and wildlife."*
- Outdoor writer Jim Collins wrote: *"The first day of rifle buck season in 2013 I heard 4 shots all day. The first day of doe that Saturday, I heard 2 shots. If the legislators cared about us deer hunters, changes would have been made years ago. Want a hunting cabin in Bradford, Tioga or Potter counties? We have lots of them for sale."*

Is it likely that any of these men believe that there are 39-48 deer per square mile on every square mile of forested land throughout this 16-county area? Is it likely that sportsmen and outdoor business owners believe that there are 39-48 dpsm from Bradford to Coudersport, Galeton to Mansfield, Wellsboro to Renovo, Saint Marys to Clearfield, and Lock Haven to Mifflinburg?

Conclusion. Under the current low densities of deer that PGC confirms to exist throughout northcentral areas, from the calculations in Tables 1 and 2 it is not scientifically plausible that PGC's northcentral harvest estimate of 64,788 deer is accurate. It could represent an overestimated harvest error of 100-200%.

During the past 15-20 years, PGC has changed its traditional game management philosophy. As evidenced by the commission's deer management policy, PGC's goal is "to manipulate (reduce) deer in order to benefit the forest". This is in contrast to the mission of the agency as directed in Title 34 state law. In accordance to state law, it should be the policy of the commission "to manipulate the forest (through habitat enhancement) in order to benefit deer and other wildlife."

With this consideration, a new policy should be designed that brings change and accountability to deer management and the agency.

John Eveland • jfeveland@acsl-pa.org • 412.601.0077