

**SUMMARY OF AN INDEPENDENT, SCIENTIFIC ASSESSMENT
OF THE
PENNSYLVANIA GAME COMMISSION'S DEER MANAGEMENT PROGRAM**

An Abstract of the Previously Published *Deer Management Series*

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**At the request of:
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Executive Summary. Deer reduction was caused by a fringe environmental and forestry agenda under the presumed notion that the forest and biodiversity would flourish as deer were eliminated. However, there were no benefits that resulted, only great and continuing costs. The deer-reduction program is operating in direct violation of Title 34 state law. There is a resolution plan that will make things even better than before – benefiting sportsmen and the tradition of hunting, foresters and the health of the forest, environmentalists and biodiversity, the state's economy and the outdoor industry, and the recreational interests of the citizens of the Commonwealth.

Introduction. In the year 2000, the Pennsylvania Game Commission (PGC) began a campaign to drastically and permanently reduce the statewide deer herd – an assault on Pennsylvania's state mammal, the dominant herbivore within the state's forest ecosystem, and the keystone of sport hunting in the Commonwealth. The action might be comparable to eliminating elephants from the African savannah in order to promote shrubs and wildflowers, the caribou from the Alaskan tundra to lessen impacts to permafrost, or the bison from America's Great Plains to encourage the growth of prairie grasses.

As one who has conducted forest ecosystem, wildlife ecology, and environmental research throughout North America for large government and private projects, it is an industry standard that proposed large projects are preceded by conducting an intensive cost/benefit analysis – weighing the costs (the adverse impacts) against the benefits derived from the project in order to make wise management decisions as to whether further development of the project should continue, or end. Neither PGC nor DCNR conducted such a study. Instead, the three architects of the deer-reduction program arbitrarily took a "deer-reduction-at-any-cost" approach to what was to be labeled as the greatest conservation issue in the history of the Game Commission – without an in-depth, up-front, scientific cost/benefit analysis upon which to verify, and justify, the action.

From stacks of original documentation, the deer-reduction program has been independently and scientifically assessed by John Eveland, and written in 25 one-page articles entitled the Deer Management Series (DMS). From Eveland's investigation, the Deer Management Series reports on his discovery that deer reduction was a politically-motivated agenda, concocted by only three people that has cost the Commonwealth billions in lost dollars and that remains unjustified on every front--science, society, economy, legality, public relations, and even common sense. The complete DMS series assessment is available on the homepages of www.gousp.org, www.acslpa.org, and www.acsl-pa.org.

This document was prepared at the request of State Representative David M. Maloney, and is, herein, presented to Representative Maloney and the Pennsylvania Legislature as a summarization of Eveland's independent, scientific investigation of the Pennsylvania Game Commission's deer management program.

DESCRIPTION

What Caused the Deer Reduction Program. In 1998, the Pennsylvania Department of Conservation and Natural Resources (DCNR) entered into America's first Green Certification Agreement with the Forest Stewardship Council (FSC) – a German-based environmental organization. According to the

agreement, DCNR's purchase of the Green Certification "Award" was intended to generate a perception in retail and wholesale lumber markets throughout America, Europe, and Asia that timber and wood products harvested from State Forest Lands were superior in quality to timber from land owners who were not Green Certified, and, therefore, would increase revenue from the increased sale of DCNR timber.

Two people were initially involved – Bryon Shissler, a Pennsylvania wildlife biologist who served as FSC's regional representative and whose livelihood was based in part on culling (reducing) deer herds for municipalities and parks; and Dan Devlin, chief of DCNR's Bureau of Forestry. In addition to being used as a revenue generator for FSC and DCNR, the Green Certification Agreement offered a unique opportunity to cull deer on a statewide level, and consequently Bryon Shissler and Dan Devlin incorporated an arbitrary condition into the agreement – that receipt of the Green Certification Award depended on DCNR's ability to reduce Pennsylvania's deer herd. As stated in the first agreement in 1998, considering that DCNR lacked the authority to regulate deer harvests, FSC approval of the Green Certification Award was contingent on DCNR's ability to convince the Pennsylvania Game Commission (PGC) to reduce the statewide deer herd. PGC, through the agency's chief of wildlife management (Calvin DuBrock), quickly complied.

While the Green Certification Agreement was about "money" – for generating revenue for FSC and DCNR – a preconceived environmental notion assumed that if deer were permanently reduced, then the forest ecosystem and biodiversity (nongame birds and mammals, especially songbirds, native shrubs, and wildflowers) would flourish. Therefore, two presumed but unsubstantiated provisions were arbitrarily inserted into the 1998 agreement at the personal discretion of a fringe environmentalist and a forester: (1) the statewide deer herd would be dramatically reduced, and (2) PGC's decades-old method of deer management (referred to as maximum sustained yield (MSY)) would be eliminated and replaced by a new method called "ecosystem management" that was designed to promote biodiversity. For decades prior to herd reduction, the MSY method had resulted in Pennsylvania being acknowledged as one of the top two deer-hunting states in the nation – without harming the health of the forest ecosystem, seedling restocking for timber production, or wildlife populations. These actions, however, represented a direct violation of PGC's chartered mission as prescribed in Title 34 State Law, Section 322(c)(13). Therefore, at the signing of the first Green Certification Agreement in 1998 and implementation of the deer-reduction program in 2000, PGC had eliminated MSY and abandoned its Title 34 State Law mission "to serve the interest of sportsmen for recreational hunting" in favor of an ecosystem management method that served the interests of environmentalists and foresters. (See DMS Nos. 2 and 3.)

Permanently Reducing Pennsylvania's Deer Herd. From 2000 through 2004, PGC increased the annual harvest from an average of about 380,000 deer per year to 480,000 – eclipsing a half million harvested deer in two of those years. About 2.5 million deer were killed over the five-year period. This was accomplished by greatly increasing the annual allocations of antlerless permits, and, thus, targeting does and fawns at an increased average harvest rate of over 100,000 per year. Although PGC had told sportsmen that the reduction would be temporary and limited, from 2005 to the present there has been little relief toward permitting the herd to recover. Herd reduction has continued using high antlerless allocations, a concurrent buck/doe season, more seasons (increasing the opportunity to harvest doe), the Deer Management Assistance Program (DMAP), and even antler restrictions (which were designed to frustrate hunters who would not often see a legal buck to instead turn their attention on doe and fawns).

The author was informed by a Game Commissioner that whereas PGC had a targeted goal in northern-tier counties of only 5-6 deer per square mile, the goal had been overshot to only 1-2 existing deer per square mile – creating a virtually unhuntable condition. A member of the deer team commented that deer had been literally exterminated in some areas, and still regeneration did not change. (See DMS No. 10.)

Stacking the Deck. To replace Gary Alt as head of PGC's Deer Management Section, Calvin DuBrock hired three North Carolina State University students who had all received their college-degree deer management training at a small, five-square-mile agricultural demonstration area in Maryland called Chesapeake Farms. Whereas conventional wildlife biology degree programs at other universities view deer as a valuable natural resource and asset for the forest ecosystem and sport hunting, at Chesapeake Farms the three students were trained to reduce antlerless deer in order to reduce impacts to agriculture and forests. PGC hired the three Chesapeake Farms students to expand this deer-reduction mindset to a statewide level in Pennsylvania. They have achieved this goal. (See DMS No. 6.)

Environmental Organizations Piled On. Coinciding with the onset of deer reduction, environmental organizations held seminars, distributed publications, fostered new DCNR programs, and organized sophisticated efforts to encourage and increase the rate of herd reduction. Perhaps no fringe-environmental, anti-deer initiative was greater than that initiated by Audubon. From 2001-04, Audubon Pennsylvania designed a 360-page ecosystem management master plan that included Cindy Dunn (Audubon's President) and Bryon Shissler as authors. PGC personnel were acknowledged for their assistance, including Vernon Ross, Calvin DuBrock, Chris Rosenberry, and Robert Boyd. Audubon's ecosystem management master plan called for deer reduction toward benefiting biodiversity (nongame birds and mammals, especially songbirds, native shrubs, and wildflowers). It recommended the increase of DMAP permits in order for DCNR to increase antlerless harvests on State Forest Lands, switching jurisdiction of deer management on State Forest Lands from the PGC to DCNR, and merging PGC into DCNR. (See DMS Nos. 5 and 8.)

Subsequently, Dan Devlin of DCNR followed Audubon's lead by sponsoring a similar ecosystem management forum for DCNR that resulted in a 49-page plan to reduce deer in favor of biodiversity and forest seedling regeneration. Bryon Shissler and Chris Rosenberry, leader of PGC's deer-management team, were among the authors. (See DMS Nos. 5 and 9.)

RESULTS: BENEFITS VERSUS COSTS

Assessing the Scientific Validity of Deer Reduction. In 2006, PGC announced after-the-fact goals of the herd reduction program. Three principal reasons given by the deer team were: (1) to improve deer health, (2) to improve forest health, and (3) to improve biodiversity. Whereas it had been a presumed and unsubstantiated notion that these goals would be met upon reducing the herd, this has not been the case. After a decade and a half of dramatic herd reduction, there has been little to no significant improvement for any of these goals (DMS No. 7).

Regarding deer health, nine years of after-the-fact studies by PGC indicated that deer had never been in poor health, but were instead in good health prior to and during the intensive deer-reduction period, and remain in good health in every one of the state's 22 Wildlife Management Units (DMS No. 12).

Regarding forest health, DCNR studies on over 47,000 plots, intensive studies by Penn State, and even forest assessments by PGC foresters indicate that there has been no improvement to forest health after 15 years of herd reduction. A decline in seedling red oak regeneration that PGC and DCNR had assumed was attributed to deer was instead found by Penn State to be the result of acid rain and increasingly acidic soils (DMS No. 13).

Regarding biodiversity, although PGC claimed that all other 464 species of birds and mammals in the state were adversely impacted by high numbers of deer, at close scientific inspection it was learned that only the snowshoe hare, ruffed grouse, and 18 species of songbirds (14 of which are common to the state) "might" be adversely affected by deer, although no improvements to the populations of these few species

have occurred since herd reduction (DMS No. 14). In fact, snowshoe hare and grouse populations have continued to decline along with populations of other game and nongame animals as a result of poor management practices by PGC and DCNR, declining habitat, and increasing predation by coyotes.

Economic Impact of Deer Reduction. Recently, the Joint House and Senate Legislative Budget and Finance Committee conducted a six-month study of the costs and benefits of DCNR's Green Certification Award Program and resulting reduction of the statewide deer herd. Considering that the primary reason for Green Certification was for money – to increase DCNR revenue from the domestic and international sale of timber cut from State Forestlands – only an average of about \$1.1 million per year was realized by DCNR as a result of Green Certification.

However, the costs of the program were found to be exorbitant at \$285-415 million lost in Commonwealth economic activity each year. As a result of herd reduction (that was initiated as a condition for achieving DCNR's Green Certification award), over \$4 billion has been lost in economic activity since starting the deer reduction program in 2000. It is growing at the rate of \$415 million each year that deer reduction continues – an egregious and unacceptable trade-off for DCNR's \$1.1 million annual gain from being Green Certified. (See DMS No. 15.)

As an example, in 2013 it was reported that of 145 businesses in Potter County that belonged to the Potter County Visitors Association, over 60 were for sale because of deer reduction. This did not account for the at-risk businesses that did not belong to PCVA, and those that had already gone out of business. Bankruptcies, lost jobs, and closed family businesses are not justification for Green Certification and herd reduction, nor are empty hunting camps and silent woods in the fall. This circumstance prompted a taxidermist to say that he can no longer make a living from his business. He stated that he has seen overzealous deer biologists collapse herds in other areas of the country, and said that they have now destroyed Pennsylvania's herd and his business.

The Legislative Budget and Finance Committee study concluded that Green Certification was based on politics, not on science. It was determined that upwards of 200,000 sportsmen stopped buying hunting licenses, a number that does not begin to indicate the actual number of sportsmen who continue to purchase a license but fail to spend many, if any, days afield due to herd reduction. Youth hunters are in decline in Pennsylvania, even though big game hunting is increasing nationally at the rate of 6% per year – placing the future of sport hunting in Pennsylvania at risk.

Therefore, based on the lack of any appreciable scientific justification and benefits for forests and wildlife, and the large and growing impacts to recreational hunting, society, and the state's economy, the deer reduction program represents the biggest conservation mistake in the over-one-hundred-year history of the Game Commission (DMS No. 16).

A Perfect Storm. Whether by coincidence or by intention, PGC has been achieving excessive levels of herd reduction using two principal tools. The first, overharvesting of does and fawns by hunters, continues to be accomplished in five ways: (1) by greatly over-allocating the number of antlerless permits, (2) by replacing the previous scientifically-determined 2-3 day antlerless-only season that followed the regular two-week buck-only season with a two-week concurrent buck and doe season, (3) by issuing excessive numbers of DMAP tags, especially for DCNR on State Forest Lands, (4) by adding multiple hunting seasons and, thus, increasing opportunities to harvest does and fawns, and (5) by using antler restrictions to frustrate hunters who, according to DCNR's deer management plan, would not often see a legal buck and so would turn their attention toward shooting more doe. It should be noted that attempts by PGC's Board of Commissioners to reduce the hunting pressure on antlerless deer by making the first week of the rifle deer season buck only and the second week concurrent, has done little to resolve the

crisis in that there still remains seven days of concurrent buck and doe hunting. Regardless, it has been customary for the PGC deer team to counteract this Commissioner action by simply increasing the annual number of antlerless allocations for WMUs in which the Board of Commissioners orders a "split" season.

Secondly, predation by coyotes represents a relentless assault on fawns that virtually precludes the possibility of herd growth even if antlerless allocations were greatly curtailed and even eliminated in some areas. A PGC and Penn State study in 2001 indicated that about 25% of fawns were killed by predators. Since then the coyote population in Pennsylvania has increased dramatically, with over 40,000 being harvested in 2012. Expert coyote biologists in the South (Georgia and South Carolina) suggest that the annual number of harvested coyotes represents only about 10% of the coyote population.

Studies in other northeastern states have found that 50% of fawns are now being killed by coyotes. In the southern states of Alabama, South Carolina, and Georgia, 75% of fawns are being killed, creating what biologists refer to as a deer management black hole – a predator pit – in which it has become virtually impossible for the herd to increase with or without antlerless hunting. A 10-year independent study in Tioga County, PA indicated that depending on the survey technique, 50% to as many as 75% of fawns were lost to predation. There are indications that coyotes are able to recognize does that are near the time of birthing, follow the pregnant does, and claim the fawns as they are birthed. There are also reports of coyotes killing adult bucks and does. Still, PGC has insisted that coyote predation in Pennsylvania represents no threat to normal herd growth, and only at the insistence of Commissioners has the agency agreed to conduct a multi-year predator study. To many, this study appears to be a "stall tactic" in order to prevent addressing the relentless assault by coyotes and to continue using predation as a tool to reduce deer and prevent herd growth. (See DMS No. 4.)

Falsified Harvest Claims. From 2010 to the present, the author has scientifically analyzed PGC's annual harvest claims to determine the size of the statewide deer population that would be required in order to sustain PGC's claimed high harvests. Even though PGC intentionally reduced the deer herd across the state and admitted to having collapsed the herd in some areas to as few as 1-2 deer per square mile, PGC continues to claim that annual harvests approximate the average number of deer (380,000) that were harvested by hunters for decades in the heydays of Pennsylvania deer hunting prior to herd reduction. Woods that once rang with the sounds of gunshots now stand virtually silent during opening day because of the lack of deer. Nevertheless, in 2010 PGC claimed to have harvested 316,240 deer, 336,200 in 2011, 343,110 in 2012, and 352,920 in 2013.

In order to have harvested 352,920 deer in 2013 and to have harvested such high numbers for years on a sustainable basis as is claimed by the PGC, if coyote predation were not considered it would have required 1.4 million deer in the state – representing a density of 54 deer per square mile (dpsm) on every square mile of forested land in the state, or 32 dpsm on every square mile of land area in Pennsylvania. However, coyote predation is a real and present danger to fawn survival and herd growth. At a nominal 25% level of predation, a population of 1.7 million deer would be required to sustain a harvest of 352,920 deer. While a 2001 PGC study indicated that this 25% level of predation may have existed at that time, today studies indicate that fawn predation likely ranges from 50-75%. Therefore, at the more realistic figure of 50% coyote predation, 2.2 million deer would be required in order to sustain an annual hunter harvest of 352,920 deer – representing a density of 81dpsm on every square mile of forest land, or 48 dpsm on every square mile of land area in the state, including the city streets of Pittsburgh, Philadelphia, and all other developed and residential land areas in the state. This density of deer does not, of course, exist in Pennsylvania – not even close – indicating that PGC's high annual harvest estimates are either based on incompetence or deception. (See DMS No. 17.)

Violation of State Law. Title 34: The Game and Wildlife Code, Section 322(c)(13) directs that the State Law mission of PGC is "to serve the interest of sportsmen for recreational hunting." Instead, PGC abandoned the agency's mission at the personal discretion of a few fringe environmentalists and state employees in order to serve the interests of foresters and environmentalists at the expense of sportsmen and recreational hunting. In the first paragraph of the first page of PGC's 10-year, 150-page deer management plan, PGC's deer team stated that the goal of PGC's deer management program is to reduce impacts that are caused by deer. This is not, however, the mission of PGC as directed by state law, but is, instead, the mission that the deer team had learned at Chesapeake Farms. (See DMS No. 19.)

RESOLUTION

Resolution Plan. In 2010, PGC Commissioners requested that the author design a new deer management plan in the event that the eight commissioners could muster a majority of votes toward ending the deer-reduction program. They could not, and the program continued (DMS No. 20).

Therefore, in 2013 five deer management bills were designed that included the fundamental elements of Eveland's 2010 Deer Management Plan. Although intense efforts by sportsmen had indicated that a majority of votes were available for passing the five bills and resolving the deer management crisis, PGC Commissioners were successful in preventing the bills from being introduced for passage. As a result, in November of 2014 the legislative session ended, and so, too, did the hope of passage of the five bills during the session. (See DMS No. 21.)

Currently, a new and permanent Deer Management Resolution Plan has been prepared by the author toward correcting PGC's deer reduction program – a state-of-the-art design that is in the best interest of sportsmen as well as serving the interests of DCNR and private foresters, environmentalists, the general citizenry, and the PGC, itself. The plan would halt the loss of sportsmen from the ranks of hunters, increase the recruitment of youth hunters, and stop the hemorrhaging of \$415 million of state economic activity each year that PGC's deer reduction program continues – while improving the health of the forest ecosystem, wildlife habitat, and biodiversity. It represents a win-win scenario for all factions, and a permanent solution to the biggest conservation mistake in the over-one-hundred-year history of the Pennsylvania Game Commission. (See DMS No. 22.)

Conclusion. The author has been asked why in 2000 the Game Commission would arbitrarily change its nationally renowned deer management policy 180 degrees – collapsing the deer herd, irreparably harming sportsmen and the tradition of hunting, and causing billions-of-dollars in statewide impacts to the Commonwealth's economy. How could such a radical idea with such great statewide implications be initiated without first weighing and balancing the actual costs against the benefits of deer reduction?

In reality, whereas achieving the Green Certification Award for DCNR represented a convenient political reason to reduce the herd, this unprecedented action was simply taken on the notion of three men (an environmentalist, a DCNR forester, and a PGC manager) that the forest and nongame wildlife would flourish as deer were eliminated. However, after-the-fact scientific assessments have discovered that no appreciable problems had existed prior to the program – not for deer, the forest, or nongame populations of birds and mammals – nor have any appreciable benefits resulted 15 years after collapsing the herd.

PGC and its allies were able to succeed in reducing deer by understanding that those decision-makers with oversight responsibility lacked the biological expertise to evaluate the scientific efficacy of the program, and, therefore, had to rely on the integrity and honor of the agency that it was adhering to its chartered mission. It is now vital that the State Legislature remedies this circumstance and resolves PGC's mistake.

APPENDIX

About the Author. John Eveland is by education and profession a forester, wildlife biologist, and ecologist. Of the three big game mammals in Pennsylvania (white-tailed deer, black bear, and elk), he conducted original statewide research, wrote the original state management plans, and was directly involved in the successful recovery of two of these species -- black bears and elk. From his Penn State bear research (which was sponsored by PGC and the U.S. Fish and Wildlife Service), his management recommendations and first population estimate of only 1,600 bears in the Commonwealth were instrumental in reducing hunting pressure on bears by closing Pennsylvania's bear season in multiple years during the 1970s and in changing from a one-week to a three-day season. He created the system of bear check-stations, initiated the issuance of bear licenses, and was instrumental in their recovery to a current population of over 20,000 bears. As a scientist on the Penn State faculty, he conducted the first ecological research and population assessment of Pennsylvania's elk herd under the sponsorship of PGC and DER (now DCNR), discovered the brainworm disease in the elk herd, wrote the state's first elk management plan that has been instrumental in the recovery of the herd to about 1,000 elk, recommended the elk-hunting lottery system, and designed the original plan for PA Wilds and the Elk Country Visitor Center.

Eveland left the Penn State faculty to accept a position with Westinghouse Electric Corporation in Pittsburgh. There, John conducted environmental field studies and selected the sites for some of America's largest energy development projects, such as fossil fuel, nuclear, geothermal, and solar power generating stations; coal and uranium mines; energy transport systems; and the long-term impacts (to air, water, soils, and biological systems) of fossil fuel emissions.

His scientific experience includes studies for the U.S. Forest Service and the U.S. Fish and Wildlife Service, and for university, state and federal agencies, and private industries throughout North America. He has conducted scientific research on wildlife, forest ecology, natural ecosystems, endangered species, and energy/environment relationships within over 30 states and provinces of Canada, and hence is uniquely qualified as an ecologist with broad state, national, and North American expertise.

Regarding white-tailed deer (Pennsylvania's third big game mammal), Eveland was requested by the Majority Leader of the Senate, the Office of the Governor, and the Pennsylvania State Legislature's Game and Fisheries Committee to conduct a comprehensive assessment of the Pennsylvania Game Commission's deer management program. At the request of members of the Board of Game Commissioners, he prepared a new deer-management plan for Pennsylvania that was designed to resolve this long-standing conservation crisis in the best interests of all involved parties – serving sportsmen, foresters and environmentalists, the outdoor industry and state economy, and the outdoor recreational interests of Pennsylvania's citizens.

On a Personal Note. The term "environmentalist" as used in this document is not intended to disparage those who care deeply about the quality of our natural environment. There are few people who have a stronger environmental ethic than the author of this document. However, using environmentalism as a justification for extreme actions by those who promote a radical agenda at any cost is not acceptable. No increased number of Indian cucumber roots or trilliums on the forest floor can begin to justify the harm to sportsmen and the future of recreational hunting, to family businesses throughout the outdoor industry, and to the state's economy that has resulted from the Game Commission's deer-reduction program.