

P E N N S Y L V A N I A G A M E C O M M I S S I O N



2017 ANNUAL REPORT

YOUR WILDLIFE

AGENCY



Nesting hen turkey - Jacob Dingel

Executive Director's Message

The Pennsylvania Game Commission is *your* state wildlife agency.

We live by our mission to manage Pennsylvania's wild birds, wild mammals, and their habitats for current and future generations. That entails managing 480 wild birds and mammals, including 20 endangered species, seven threatened species, and 109 species of greatest conservation need.

The agency also manages more than 1.5 million acres of state game lands spread across 300 tracts in 65 of the state's 67 counties. These lands were purchased largely through revenues derived from hunting and trapping licenses, along with help from many other conservation partners. These lands are managed primarily for hunters, trappers, and wildlife's wellbeing. No other state-owned land in the commonwealth is managed with such a sharp focus. As a result, our system of game lands showcases the cutting-edge approaches we use to safeguard and perpetuate wildlife.

The Pennsylvania Game Commission is blessed to have a hard-charging workforce of full-time and part-time employees and volunteers. Compared to other commonwealth agencies, the Game Commission is small. When including the number of citizens who volunteer their time to support the agency's mission, the headcount is impressive.

For example, the agency has 2,217 Hunter and Trapper Education instructors spread across the state who receive no compensation for their service. Countless others participate as deputy game wardens, in habitat improvement projects on state game lands, or in surveys to document changes in wildlife populations.

The challenges before us are immense. Chronic wasting disease threatens our hunting heritage, and the state's \$2 billion industry tied to hunting. Hunter numbers continue to decline. This trend is being seen in most states and is driven by complex cultural changes and aging populations of hunters. In Pennsylvania, the loss of hunting license dollars is a threat to wildlife conservation.

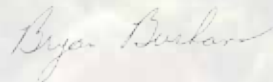
Other challenges, such as West Nile virus, threaten our state bird, the ruffed grouse. White-nose syndrome has eliminated 99 percent of some species of cave bats. And invasive plant species continue to damage quality wildlife habitats.

Although these threats continue to grow, Pennsylvanians should rest assured that our employees and volunteers are committed to reversing these trends. However, it won't be easy and it won't happen overnight.

The Pennsylvania Game Commission distinguishes its statutory responsibility to protect wildlife as its most critical role in conservation.

We roll up our sleeves every day and work diligently to meet wildlife's challenges head-on. After all, the future of hunting, trapping, and wildlife conservation is at stake.

Sincerely,



Bryan J. Burhans
Executive Director,
Pennsylvania Game Commission



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Highlights from this report can be viewed in this short video	 Annual Report 2017; 3:15



A .pdf of this document is available at www.pgc.pa.gov. Links to films viewable at www.youtube.com/pagamecommission are included where this symbol is located throughout the online report.

Putting wildlife first



Ruffed Grouse — Understanding a Killer



Research on West Nile virus in ruffed grouse continues. The number of hunter-harvested grouse sampled during 2016-17 increased slightly from 2015-16 and geographic distribution improved, with blood samples received from 38 counties, including at least four from each of the Game Commission's six regions. Preliminary laboratory results indicate an overall prevalence rate of 24 percent, varying from 7 to 33 percent by region. These results confirm that grouse are being exposed to the virus across Pennsylvania and that some portion of exposed grouse are surviving under natural conditions.

Follow-up research to explore West Nile virus landscape epidemiology in grouse habitats is under development. During the summer of 2017 mosquito trapping was piloted in June through September at State Game Lands 176 in Centre County. Personnel trapped 15,055 adult mosquitoes and 1,160 larvae. The primary carrier of West Nile virus in grouse habitats appears to be a species of mosquito by the name *Culex restuans*, which comprised 22 percent of the adult samples. A larger-scale study of patterns of *C. restuans* occurrence on the landscape will be conducted in cooperation with Penn State University. This study may reveal landscape barriers to the mosquito that can be exploited, with grouse habitat restoration and management to benefit grouse populations.

Engaging the Public to Monitor Species

Development of a mobile application for woodcock and grouse cooperators to report sightings has been well received. Hunters can report hours spent hunting, locations, and bird flushes in real-time from the field, or report later from the comfort of home. Hunters can also use the *Contact the Biologist* tab to report unusual sightings, sick birds, and other items of interest. Data received through the application improves agency efficiency because that data no longer needs to be hand-entered by staff members.

A similar online reporting system is in place for citizens to report sightings of sandhill cranes. Though not hunted in Pennsylvania, this species is lawful to harvest in other states. Observations from the public assist the Game Commission in monitoring the expansion of crane populations into new counties, the annual increase in fall populations, new breeding records, rare winter sightings, and the possible development of a new migratory flyway in eastern Pennsylvania.

Improving Woodcock Habitat — Supporting Many More Species

Young forest habitat — shrubby meadows and forest stands under 20 years of age — is a declining and threatened habitat type in the eastern United States. This habitat type was recently named as one of the Top 10 most-threatened wildlife habitats in the nation by the American Bird Conservancy. Young forest is extremely important to an entire suite of birds and mammals with declining populations, including woodcock. The key to managing young forests for woodcock is providing cover for breeding, feeding, roosting, and raising young, all in a very small site. Reproduction, recruitment, and survival determine year-to-year woodcock abundance, and high-quality habitat can improve all of these parameters. Game Commission monitoring indicates that sites receiving targeted young forest management support six to nine times the number of woodcock as unmanaged sites. High-quality young forest management also will enhance habitat for grouse, deer, bears, reptiles, amphibians, insects, turkeys, and a variety of declining songbirds.

Mosquito trapping - Lisa Williams



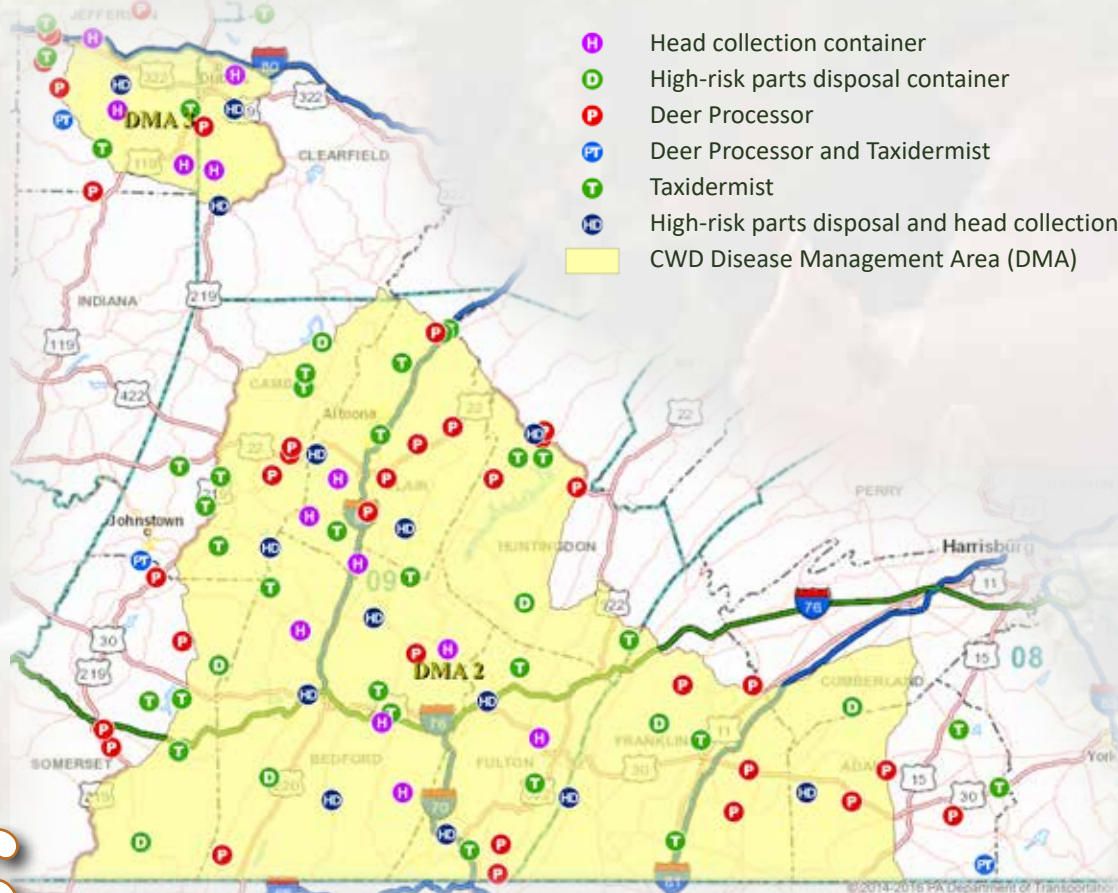
Managing the Spread and Prevalence of Chronic Wasting Disease

The Pennsylvania Game Commission collects samples from deer harvested across the state and tests them for chronic wasting disease (CWD), as part of the agency’s ongoing CWD surveillance. Within the state’s Disease Management Areas — where the disease has been detected in captive and free-ranging deer — intensified sampling occurs.

During the 2017-18 deer hunting seasons, the Game Commission offered free CWD testing for hunters harvesting deer within Disease Management Areas (DMAs). Free testing offered hunters a way to have their deer tested prior to consuming it, and it provides the Game Commission with additional samples to better pinpoint areas where the disease exists, so specific problem spots might be addressed.

Successful hunters within DMAs dropped off heads from more than 1,500 deer in head-collection containers. Game Commission staff collected more than 3,000 other samples within DMAs. In total, nearly 8,000 samples were collected statewide. Slightly more than 5,700 whitetails were tested for CWD in 2016; 25 tested positive, all were in or near DMA 2, the only area of the state where CWD has been detected in the wild.

2017-18 Disease Management Areas



By mid-January 2018, 51 deer from 2017 had tested positive for CWD; all have been within the DMAs. Forty-eight were within DMA 2, in southcentral Pennsylvania; and three were within DMA 3 in northcentral Pennsylvania. The majority of samples collected had yet to be analyzed at the time of this report.

The agency continues to assess test results to evaluate the best response to confront CWD where it exists. DMA boundaries regularly have been adjusted in relation to newly detected CWD-positive animals. During 2017, the Game Commission partnered with the U.S. Department of Agriculture’s APHIS’s Wildlife Services on a CWD surveillance effort where 30 deer were removed by sharpshooters, one of which tested positive for chronic wasting disease.

Attempting to control hot spots and remove animals with a greater likelihood of carrying the disease is the agency’s best chance at managing CWD on a larger scale, while minimizing the impact on the larger deer population or diminishing deer hunting opportunities.

CWD is not a new disease, and other states have decades of experience dealing with CWD in the wild. It first was detected in Pennsylvania in 2012 at a captive deer facility, and it was detected in free-ranging deer soon after. By January 2018, in Pennsylvania, CWD had been detected in 98 free-ranging deer.

CWD is spread from deer to deer through direct and indirect contact. The disease attacks the brains of infected deer, elk, and moose, and will eventually result in the death of the infected animal. There is no live test for CWD and no known cure. There also is no evidence CWD can be transmitted to humans, however, it is recommended the meat of infected deer — or deer thought to be sick — not be consumed.

For more information on CWD, the rules applying within DMAs, or what hunters can do to have harvested deer tested for CWD, visit the Game Commission’s website, www.pgc.pa.gov. Information can be found by clicking on the button titled “CWD Information” near the top of the homepage.



An obex and lymph node removed for CWD testing - Hal Korber

Monitoring Black Bear Reproduction



In 2002, a study of black bear reproduction was initiated in the Big Woods region of northcentral Pennsylvania to collect data at the wildlife management unit-level on important reproductive parameters such as litter size, time between litters, and age of first cub production. Prior to 2002, bear research had been limited to the Pocono region of Pennsylvania, which is much different than the rest of the bear range. This study, now into its 16th year, has become an important component of baseline population monitoring, watching for changes in reproduction that might occur due to habitat or land-use changes, or signify a population approaching its carrying capacity.

Female bears are radio-collared during the summer months and located weekly throughout the fall to determine time of denning. Once denned, they are visited by biologists during February and March to document and ear tag any new cubs. To date, biologists have visited 361 dens and tagged more than 480 cubs on this study. Last year, 36 adult female bears were monitored, including two 18-year-old bears originally radio-collared the first year of the study.

Research indicates the average age of first cub production is 3.7 years, average litter size is 2.7 cubs, and average sex ratio of cub litters is 45 percent female to 55 percent male. These values remain stable.

Investigating Elk Reproductive Rates

In Pennsylvania, the elk rut peaks somewhere around September 15-21. Following the rut, biologists can evaluate pregnancy in cow elk by testing individual blood samples. The timing of the elk hunting season provides a unique opportunity for a relatively large number of blood samples to be collected and tested in a short window. Each year during the hunting season, successful antlerless elk hunters are asked to collect a blood sample while field dressing. The samples are received at the elk check station and eventually tested for pregnancy. Over the past few years the portion of pregnant cow elk has been suspiciously low. This has motivated additional research to examine potential causes of low pregnancy with the ultimate objective of restoring typical pregnancy rates. The research is currently underway with initial results expected during the summer of 2018. The outcome of this research will help Game Commission biologists manage the commonwealth's elk population for long term sustainability.

Muskrat Monitoring

Muskrat populations have been declining throughout the northeastern United States and eastern Canadian provinces for several decades. During the mid-1980s Pennsylvania trappers harvested more than 350,000 muskrats annually; last year's harvest was just over 43,000.

During the 1980s the Game Commission monitored gender and age ratios of harvested muskrats to assess changes in population structure. The ratio of juveniles to adults in the harvest is widely used as a measure of reproductive performance and recruitment. This ratio is a function of both the birth rate and survival of juveniles and adults during the summer and fall. Throughout the last several trapping seasons, staff members have evaluated pelts from harvested muskrats to compare age and sex ratios today to those of muskrats harvested before population declines were widely recognized.

Game Commission biologists found that the harvested muskrat population was composed of about 9 percent adults and 91 percent juveniles (< 1 year old) and the ratio of juveniles per adult female was 24.9 to 1. When compared to data collected previously there was a decrease in the portion of adults in the harvest and an increase in the numbers of juveniles per adult females. These results suggest that recruitment appears to be occurring at normal rates. However, the fall harvest continues to be heavily skewed toward juveniles. The Pennsylvania Game Commission is currently conducting research to better understand factors affecting muskrat survival.



Muskrats - Jacob Dingel

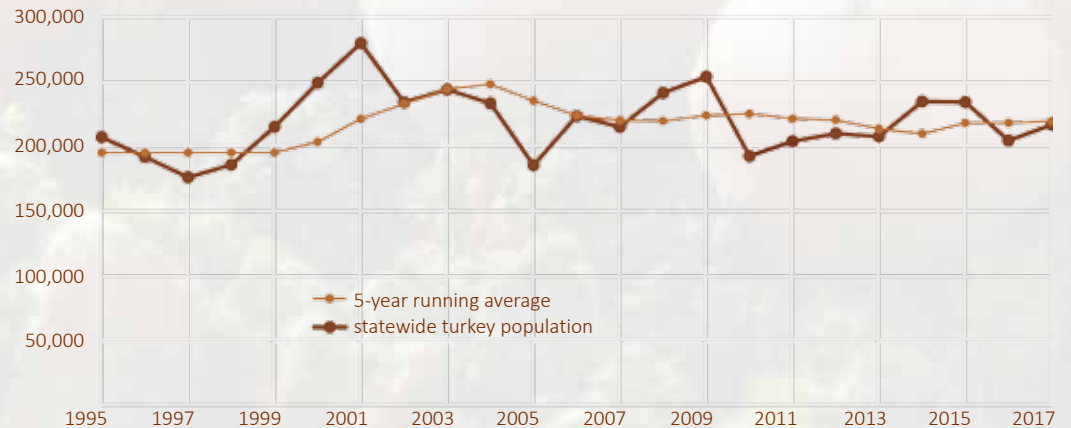


Wild Turkey Sighting Survey

The Game Commission's second public August Turkey Sighting Survey was conducted during 2017 to estimate the average number of wild turkey poults (young of the year) per hen (hens with poults and hens that did not raise a brood) both statewide and by wildlife management unit. This ratio provides another means of tracking total summer reproduction, in addition to the survey game wardens have conducted since 1953. The ratio can be compared to that of other northeastern states with similar citizen-science surveys to provide a regional view of wild turkey reproductive trends. These data help predict fall harvest potential. During 2017, Pennsylvania survey data could be reported both online at <https://pgcdatacollection.pa.gov/TurkeyBroodSurvey> and using a new mobile application. There were 19,617 usable turkey sightings in 2017, compared to 30,184 in 2016. Reproductive success varied tremendously by wildlife management unit, from 1.2 in 2A to 4.6 in 4A. The statewide average number of poults per hens was slightly lower this year at 2.3 than 2016's 2.4, and New York's 2.5. New York's results were the lowest since 2009. Biologists attribute the decline to the above-average rainfall in May and June, which likely had a negative impact on nest and poult success. Annual reproductive success fluctuates due to factors including spring weather, habitat, winter food abundance, predation, and fall harvest the previous year. Thus, poult survival has a large effect on population trends.

The 2017 statewide turkey population was estimated at approximately 216,800, an increase from 204,700 in 2016. This is slightly less than the previous 3-year average of 224,600 birds, and similar to the previous 10-year average. With constant annual fluctuations in population size, the challenge is to match hunting opportunities with harvest potential. Pennsylvania's turkey population reached a peak abundance of about 280,000 birds during the early 2000s, following restoration efforts involving trap-and-transfer of birds, habitat improvement, and fall turkey hunting season restrictions. The population subsequently declined sharply to levels below 200,000 before rebounding since 2011.

Pennsylvania state wild turkey population and 5-year running average





Winter-trapped American black duck

Winter Black Duck Banding

Long prized by Atlantic Flyway waterfowl hunters, the American black duck was once the most abundant freshwater duck in eastern North America. While their population is currently relatively stable, black duck numbers are much lower than historical levels due to habitat loss, competition and hybridization with mallards, and possibly, overharvest. Efforts to understand the decline and determine actions needed to ensure sustainable future populations have been hampered by the difficulty in leg-banding adequate sample sizes of black ducks during the banding period, just prior to fall hunting season that is used to estimate annual survival, harvest rates, and seasonal movement patterns for most other waterfowl species.

Because black ducks are generally more accessible and easier to capture on their wintering grounds, in 2010, the Black Duck Joint Venture initiated a cooperative project between northeastern states and southern Canadian provinces to evaluate the feasibility of adding a post-season (winter) black duck banding program. The overall goal is to improve the ability to model black duck population dynamics, determine variation in seasonal survival, and identify limiting factors that can be mitigated through habitat and harvest management. To date (2010-2017), biologists have banded 1,907 black ducks in Pennsylvania during the post-season, exceeding the goal of 1,600 banded black ducks (200 each year). This compares to 20-30 black ducks typically banded in Pennsylvania during each preseason period. The success of winter banding is highly dependent on weather conditions. If temperatures are unseasonably warm, and open water is abundant, birds are generally harder to capture. Of the 1,907 banded, 203 were recovered through hunter harvest. A large proportion of these recoveries occurred in Pennsylvania. However, birds also were recovered in Quebec, New York, Ohio, Maryland, Ontario, Delaware, and Virginia. Biologists also have banded an additional 5,400 ducks, representing 11 different species, with mallards accounting for the majority.

These banding efforts have led to improved biological data, which are the basis for an international black duck harvest strategy. For the first time in 30 years, the black duck bag limit has been increased from one to two birds daily for the 2017-18 season. Continued efforts will be important to monitor the effect of this regulatory change.

Piping Plover Nest Success



Piping Plovers Return; 1:45

One of the rarest birds in the Great Lakes region, the piping plover is a beach-nesting bird slightly larger than a sparrow found on the shorelines of eastern and central North America in three geographically separated populations: Atlantic Coast, Great Lakes, and Northern Great Plains. The Great Lakes population remains the smallest with only 76 breeding pairs. The world piping plover population numbers about 8,000.

For the first time in 60 years, two pairs of federally endangered Great Lakes piping plovers nested in Pennsylvania. Four piping plover chicks fledged from these nests in the Gull Point Natural Area at Presque Isle State Park in Erie County; two of these chicks were hatched in captivity in Michigan after the eggs were rescued from a flooded nest. Successful piping plover nesting was accomplished only after years of planning, habitat restoration efforts, specific monitoring effort, and intensive nest-protection equipment deployed immediately after egg laying.

Three of the four chicks and one of the breeding males were subsequently spotted on Gulf Coast wintering grounds in Florida. Such a high re-sighting rate from one breeding location is extraordinary.

You can read more in this story by National Audubon highlighting nine success stories of 2017. <http://www.audubon.org/news/nine-audubons-biggest-conservation-wins-2017>



Piping plover nesting inside enclosure - Tracy Graziano

Managing wildlife habitat



State Game Lands - 1.5 Million Acres and Counting

The Game Commission has a staunch commitment to conserving Pennsylvania's open places. Its wild lands system, built from the revenue of generations of license-buying hunters and trappers, provides habitat for wildlife and hunting and trapping opportunities for license buyers. State game lands continue to be one of the commonwealth's most-valued assets.

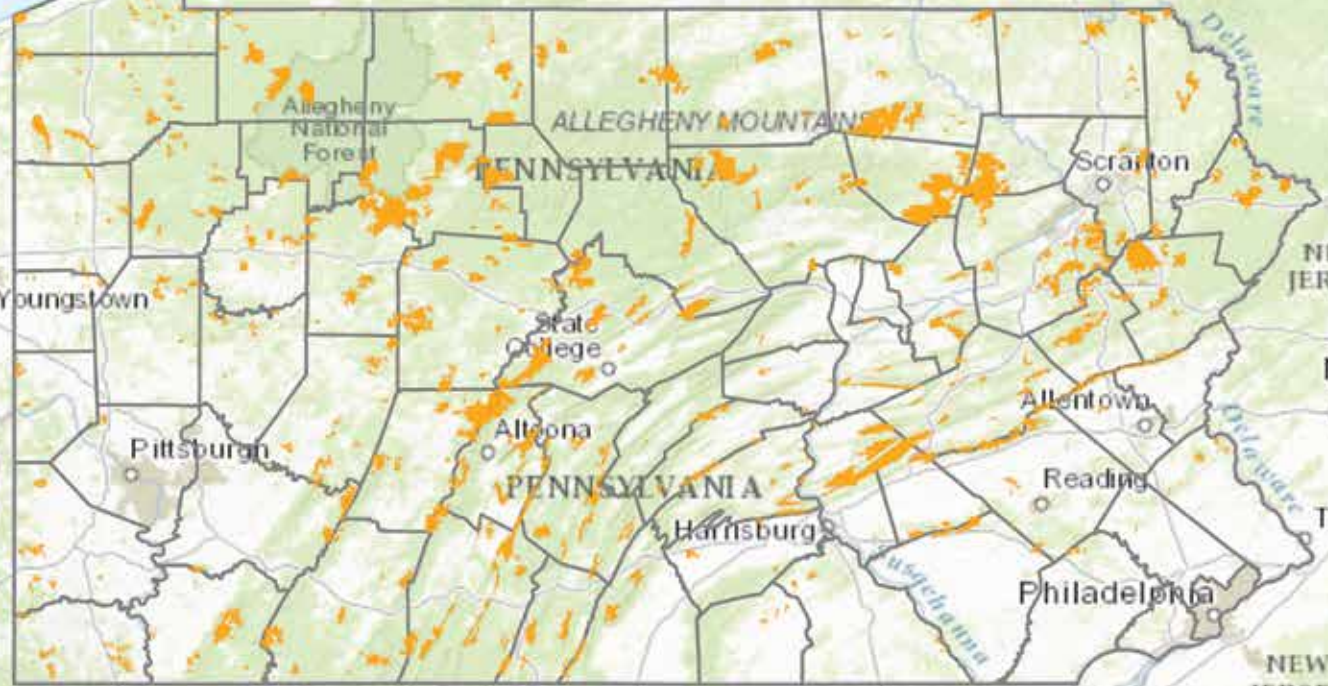
The Game Commission passed the 1.5 million-acre milestone during 2015. During the 2016-17 fiscal year, 1,953 acres were added to the game lands system including two interiors, seven indentures, and five acquisitions to improve access into existing game lands. Two of the properties acquired connected detached parcels to existing state game lands. Donations from four landowners contributed 226 acres and a 1,590-foot right-of-way across private hunting club ground was donated to allow new access to State Game Lands 57 in Wyoming County. Other counties impacted include Bedford, Butler, Cambria, Centre, Chester, Cumberland, Dauphin, Elk, Lackawanna, Lancaster, Lawrence, Luzerne, Monroe, Northampton, Perry, Snyder, Tioga, Washington, and Westmoreland.

While the agency continues to work with many conservation partners to acquire land, the following partners were instrumental in successfully adding acreage to the state game land system during fiscal year 2016-17; Central Pennsylvania Conservancy; Natural Lands Trust, Inc.; Northcentral Pennsylvania Conservancy, Inc.; The Conservation Fund; and the United States Fish and Wildlife Service. Pittman-Robertson Funds also have made a difference for state game lands. Since this federal funding began in 1937 as a federal excise tax of sporting arms and ammunition, it has helped finance the acquisition of more than 190,000 acres of state game lands.

There are 308 separate game lands, spread across 65 of the state's 67 counties. On those game lands, there are 3,871 miles of roads, 368 buildings, 29 public shooting ranges, about 38,000 bridges and culverts, and around 1,500 ponds and dams. Renovation, repair, and replacement of this infrastructure will continue to be a challenge for the Game Commission.

Local government received \$1,798,320.34 in payments from the Game Commission to counties, school districts, and townships in-lieu-of taxes on state game lands during fiscal year 2016-17.

More than **1.5 million acres** of state game lands foster hunting and trapping within the commonwealth



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swatchop, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



Hunter Access Program

The Hunter Access Program includes more than 2.2 million acres on more than 13,000 parcels of private lands. Surveys conducted in 2016 revealed support for the program from both landowners and hunters even though knowledge of the program was low among both stakeholders. In response, the agency implemented a campaign to increase awareness of the program among both non-participating landowners and hunters. With the help of grant funds obtained through the 2014 Farm Bill, the Game Commission continues to fund projects on participating properties to increase wildlife habitat.



HUNTER ACCESS PROGRAM
FOR PRIVATE LANDOWNERS



Environmental Planning

During 2017, approximately 1,167 environmental reviews were completed to evaluate projects with potential impacts on threatened or endangered bird or mammal species, species of special concern, and critical or unique habitats. The reviews included 257 for transportation, 219 for energy development, 630 for construction and land development, and 61 for mining projects. An additional 174 mining permit applications were reviewed for, and comments provided to, mine operators in attempt to avoid or minimize impacts to wildlife and wildlife habitats associated with potential mining operations. Reviews also provide input on site reclamation to enhance wildlife habitat.

Forests, Oils, Gas, and Minerals

Forests require regular attention to ensure the best habitat for the greatest variety of wildlife. During the 2016-17 fiscal year, 8,549 forested acres were harvested to improve habitat on state game lands, an increase of more than 2,000 from the previous year. Associated services in lieu of cash from timber sales included 11 miles of new haul roads, 84 miles of improved roads, 196 culverts placed, two new stream crossings, 12 new or improved parking lots, 11 new gates, and 121 acres of new herbaceous openings.

Herbicides were used to treat 4,749 acres, and non-commercial habitat improvement projects occurred on 1,169 additional acres, including regeneration treatments, crop-tree releases, and pre-commercial thinning.

The Oil, Gas, and Mineral Development section manages 125 agreements encompassing approximately 168,924 acres for development of oil, gas, coal, and minerals on state game lands. A total of 79 well pads for unconventional gas drilling operations have been developed on state game lands since 2010 with a surface impact of approximately 964 acres. Of those well pads, 47 were developed on areas where the Game Commission does not own the oil and gas rights, and 32 pads have been developed under Game Commission agreements.

Howard Nursery

More than 9,800 nesting structures and 1,072,200 seedlings — including 98,800 seedlings to 482 schools — were distributed from the agency's Howard Nursery to improve wildlife habitat statewide during fiscal year 2016.



Hal Korber

Controlled Burns

Controlled burning is being used more frequently to manage game lands and Hunter Access properties. It is a management tool useful in a variety of habitats from grasslands to oak forests. Last year, trained personnel used controlled burns on 14,468 acres — an increase of around 4,000 acres from 2016.

Controlled burns improve wildlife habitat and hunting opportunity by increasing soft-mast production in shrubs, such as blueberry, huckleberry, and blackberry; rejuvenating succulent browse plants preferred by deer and elk; promoting oak habitats and their vitally important acorns, and maintaining grasses and broad leaf plants sought by brooding turkeys and grouse.

Controlled burns are conducted under specific weather and “fuel” conditions to ensure fires of low to moderate intensity. Fuel refers to the dried leaves, grasses, and brush that are consumed in the fire. Burns often reduce the risk of unplanned wildfires. Controlled burns are conducted by highly trained crews to ensure safety, both for themselves and the public.

Ignition patterns are designed to provide wildlife with escape routes as the burn progresses. From fawns to turtles, even the slowest wildlife can reach safety. Before the smoke clears, animals often are seen returning to burned areas. Because peak controlled burning occurs in spring, people are often concerned about impacts to ground-nesting birds such as turkeys and grouse. While burns may disrupt a few nests, hens often re-nest and some nests in the burn area may not be harmed. Most importantly, burns occur on less than 10 percent of the landscape. Direct impacts are quite small and benefits of using controlled burns as a management tool far outweigh potential negatives.

Protecting our wildlife



Wildlife Protection

Pennsylvanians have a shared interest in ensuring our wildlife resources are protected, and that healthy populations are maintained within our state in perpetuity. Over many decades, that interest has built support for the Pennsylvania Game Commission and one of the hallmark services the agency provides — protection to wildlife through the enforcement of wildlife laws.

Prior to the Game Commission's creation in 1895, the established game laws, seasons, and bag limits were without wardens to enforce them. Those laws largely went ignored, and wildlife populations were depleted as a result.

Through the enforcement of game laws, and through sound, science-based management, Pennsylvania became a model other state wildlife agencies strive to follow. More than 120 years later, in these challenging times, the Pennsylvania Game Commission proudly remains efficient and effective, and what some would consider the standard by which similar agencies should be measured.

The battle to protect Pennsylvania's wildlife wages on. Wildlife crimes remain a problem. During the 2016-17 license year, state game wardens filed around 1,000 charges related to the unlawful taking of game or wildlife in the commonwealth, a decrease from last year's 1,400.

State Game Wardens



Game Wardens-Serving Beyond the Season; 10:06

For the first time in its 122-year history, the Pennsylvania Game Commission is calling its law-enforcement officers "state game wardens." The change took effect Jan. 1, 2018. Since the recodification of the state's Game and Wildlife Code in 1987, field officers were titled wildlife conservation officers. Prior to that, they were called district game protectors.

While wildlife law-enforcement is a core responsibility, fulfillment of an officer's full range of duties requires significant training and responsibility. Their duties extend into education, research, and a host of conservation programs including Hunter-Trapper Education. They also represent the agency at conservation and sportsmen's club meetings, respond to nuisance wildlife complaints, and deal with injured wildlife and suspected rabid-animal calls. Warden work also includes wildlife surveys, wildlife trap-and-transfer, field research, and providing programs to civic groups and public schools.

Game wardens are sworn peace officers with statewide law-enforcement authority. They are highly trained and equipped as well as any police officer. They are expected to know and follow standards for protecting civil rights, gathering evidence that will hold up in court, and prosecuting violations of many different laws. There is no "off" season. Being a game warden requires a very unique person willing and able to develop a diversity of skills.

Three hundred and forty part-time deputies assist 113 full-time game wardens. Of the agency's 136 districts, 26 are currently vacant. The average district encompasses roughly 325 square miles. Game wardens conducted 195,160 enforcement contacts during fiscal year 2016-17, a decrease of more than 17,000 from the past fiscal year. The agency initiated a total of 7,516 prosecutions within the Pennsylvania court system, a reduction from the 8,570 initiated during the past fiscal year. Of the 7,516 prosecutions, 6,775 were successful, 234 were unsuccessful, and 507 were withdrawn or dismissed, giving the agency a 96.7 percent prosecution rate. Game wardens gave out 12,000 warnings for a ratio of almost two warnings per citation.

A total of nine complaints resulting from five incidents were received and adjudicated during the 2017 calendar year, the agency's Professional Responsibility Coordinator reported. After investigations one was exonerated, seven were not sustained, and one resulted in no finding. Countless agency employees in the performance of their duties regularly are praised by the public.



Hal Korben

Top 10 wildlife crime violations

2016-17



The Top 10 wildlife crime violations during fiscal year 2016-17 were similar to those of the previous fiscal year with these exceptions. Falling from the Top 10 were hunting or trapping without the required license, road hunting, and safety zone violations. New to this year's Top 10 are possession of drugs or alcohol on state game lands, using a Game Commission range without a license or permit, and spotlighting violations.

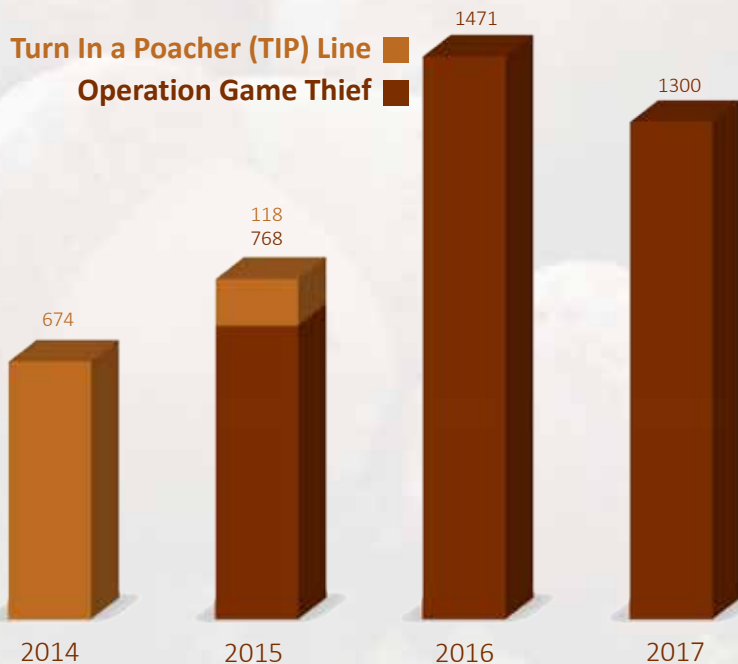
Operation Game Thief

In the fall of 2015, the Game Commission transitioned to receiving wildlife crime tips through Operation Game Thief. The system has increased the ease and efficiency to confidentially report tips about wildlife crimes. The hotline continues to resonate well with the public and maintains an average time of around 20 minutes from when a tip comes in and an officer is dispatched to the incident.

Report wildlife crimes by calling the Operation Game Thief toll-free hotline at 1-888-PGC-8001 or filling out an online form available from the Game Commission's home page at www.pgc.pa.gov or from the Operation Game Thief page at <http://bit.ly/PGCOGT>.



Tips reporting wildlife crimes



Tracking Team - Scott Frederick

Tracking Team

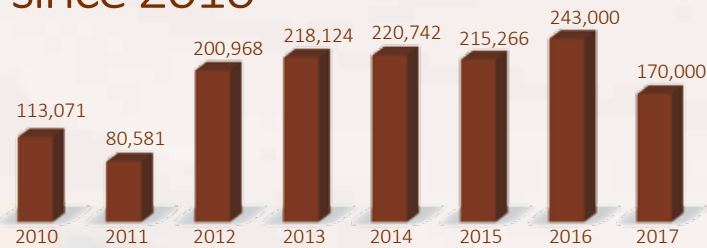
The Tracking Team provides statewide assistance to game wardens in daily investigations such as hunting-related shooting incidents and evidence recovery. During the past year, the team investigated several outdoor marijuana-grow sites discovered on state-owned property or property enrolled in the agency's Hunter Access program. The team also assisted with search and rescue missions. During one search, trackers found two missing hunters deep in rough, wooded terrain at 1:30 in the morning and guided them back to their family. In another incident, trackers helped to reunite a juvenile with his family after he went missing from home. Tracking team members also assisted in the arrest of two fugitives — one suspect was wanted for fleeing a municipal police officer, the other for several felonies and running from the Pennsylvania State Police.

The Tracking Team receives and conducts regular training throughout the year. Members of the team provided training in woodland tracking to game wardens across the state, providing participants with another tool for investigations. Senior team members hosted a Tactical Woodland Tracking class for new Tracking Team recruits, as well as Environmental Conservation Police Officers from New York and members of the Special Emergency Response Team from the Pennsylvania State Police. The team participated in a large-scale training with soldiers from Ft. Indiantown Gap, and received in return, instruction on administering medical care in woodland environments. Trackers, game wardens, and one of the agency's K-9 units participated in a training that simulated the escape of several inmates into a wooded area near the SCI Smithfield correctional facility.

Proven leaders in conservation, hunting & trapping.



1,461,752 pheasants released statewide since 2010



Pheasant Program

The pheasant program continued to provide a popular service to Pennsylvania hunters during fiscal year 2016-17. Through the first half of the year, the agency's four game farms produced 243,000 pheasants for the 2016 hunting season releases. According to the Game Take Survey, 74,953 hunters pursued pheasants for 366,614 hunter-days. This release was higher than normal because the agency released breeder birds, had purchased extra day-old chicks to evaluate transitioning the program to an entirely day-old chick purchase program, and had one of the highest chick survival years on record.

For junior hunters, the Game Commission provided enhanced hunting opportunities in 2016, by releasing 15,480 pheasants for junior pheasant hunts at designated, advertised sites. Another 1,228 birds were distributed to 29 club-hosted hunts for 604 junior hunters.

During the regular fall season, 212,775 birds were stocked in the pre-season and four in-season releases. An additional, 13,517 hens were released for the late small game season within wildlife management units open to harvest both male and female pheasants.

Major changes took place reinventing the pheasant program throughout the fiscal year with two of the four game farms closing as a cost saving measure. The agency also saved money purchasing day-old chicks for all of its 2017 production, rather than maintaining breeders and running hatchery operations. The propagation staff was challenged to provide a 2017 fall release of about 170,000 birds without reducing bird quality. Rearing procedures were modified and production dropped only 20 percent below the goal (since 2012) of 200,000 birds, even though production capacity was reduced by 50 percent.

Read more about the reinvention of the pheasant program in the Building a Better Business section of this report on page 25.

Wild Ringneck Hunting

For the first time in more than two decades, Pennsylvania saw wild pheasant hunting return to its farms and fields in 2017. Although numbering more than 2.5 million coming into the 1970s, wild ringneck populations faltered throughout the 1970s and '80s largely due to changes in agriculture practices; by the mid-1990s wild populations had essentially disappeared. While current landscape conditions cannot support the wild pheasant numbers of the past, Pennsylvania sportsmen have indicated strong support for efforts to restore self-sustaining and huntable populations of wild pheasants in suitable habitat. The agency's Pennsylvania Pheasant Management Plan: 2008-2017 was completed in partnership with Pheasants Forever. This plan called for an approach that first targeted habitat restoration, followed by translocation of wild birds from western states where pheasants still have a stronghold. After years of tireless work by both partners, habitat was restored within five Wild Pheasant Recovery Areas (WPRAs) and wild pheasants were released. While not all WPRAs have achieved success, the Central Susquehanna WPRAs located in Columbia, Northumberland, and Montour counties now supports good numbers of ring-necked roosters, and in November of 2017, 36 youth hunters headed afield to rekindle the wild pheasant hunting tradition. These youth were selected through a random drawing and were assigned a mentor for the hunt who also acted as a dog handler. The end of each hunt day brought many smiles, happy youth, tired dogs, and some of the first harvested wild birds placed in the game bag in years.

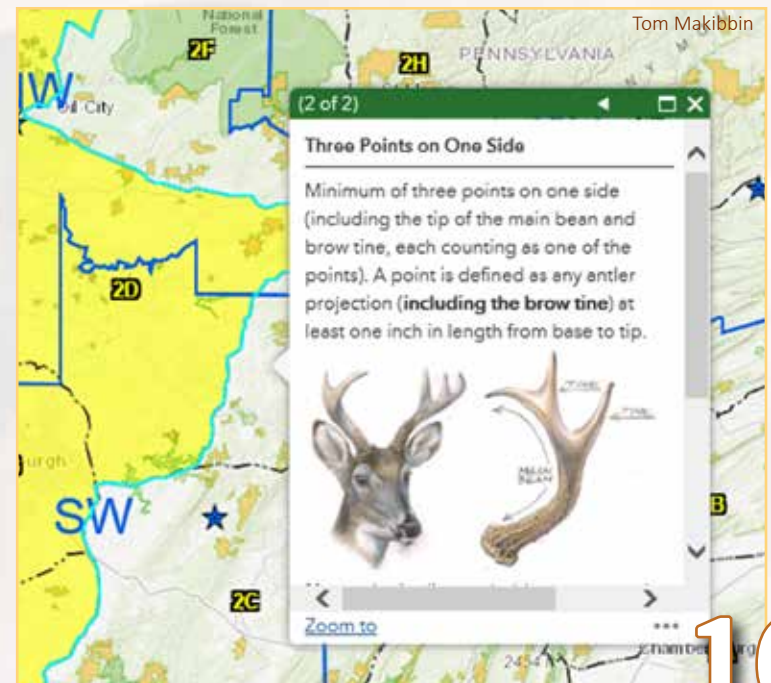
New Mapping Center

The agency has provided hunters with new tools to help plan their outings on state game lands in the recently updated mapping center.

The new mapping center application adds 18 new data layers including antler restrictions; Special Regulations areas; duck and goose zones; Deer Hunter Focus Areas; habitat layers such as timber harvests, winter thermal cover, herbaceous openings, oak forests, and young aspen; bear and elk check stations, hunter access points and more.

The agency has responded to customer requests to turn on pop-ups and expand the layer list so options are easier to locate. A link to driving directions has been added to most data points such as parking areas, region offices, license sales locations, and shooting ranges.

Hunters will want to check out the new "Near-me" tool that allows users to discover features within 50 miles of any location and the new "Share" tool that allows users to share their current map with friends and family through e-mail or social media.





Eric Carns and his No. 1 nontypical archery harvest taken in 2016.

Big Game Scoring Program Northcentral Pennsylvania Bucks; 1:18

Pennsylvania is faring well for trophy bucks. Over the past seven years, about 780 deer entries — 165 last year alone — have been added to Pennsylvania’s Big Game Records listings.

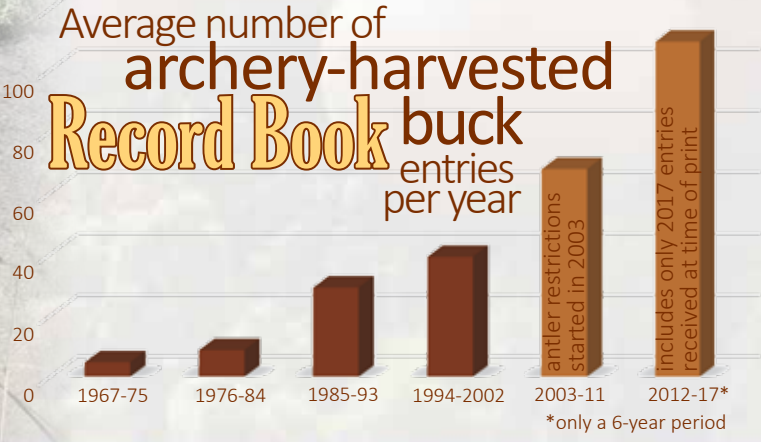
Once again in 2016-17, Bradford County remained the top producer of record-book bucks, but record-book racks are coming in from all over the state, including the “Big Woods” northern tier of Pennsylvania. The most notable entries in the 2017 Pennsylvania Big Game Records book include a new No. 1 in the nontypical-archery category for a buck taken in Clearfield County in 2016 that scored 228-6/8 inches. This buck had an amazing 26 points, 25-inch main beams, and a lot of mass. In addition to being the new No. 1 in this category, it’s also the third-largest buck listed in the state records.

Also in the 2017 record book are a new No. 4 in the nontypical-archery category for a buck harvested in Allegheny County in 2016 that scored 201-1/8, and a new No. 8 in the same category for a buck taken in Chester County in 2016 that scored 193-6/8.

More recently, three trophy bucks were measured in Harrisburg, including a new No. 1 in the typical-archery category scoring 185-4/8 inches, and two big archery nontypicals, one taken in Perry County scoring 204-7/8, and the other harvested in Clarion County scoring 198-1/8.

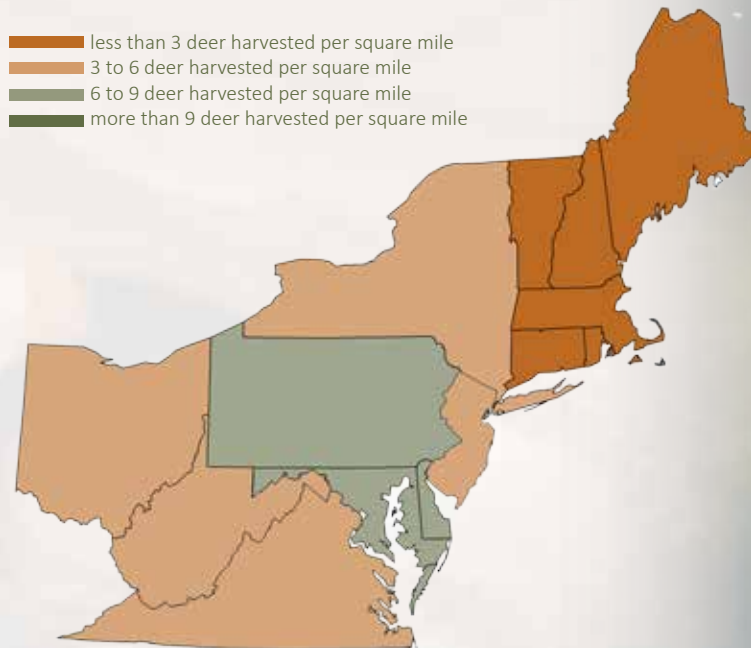
As the state records show, Pennsylvania is home to some truly outstanding white-tailed deer. Most of us, of course, do not go hunting for the purpose of taking a record-book trophy. Scoring and keeping track of big-game animals is important, though, because record-book animals bring to attention the excellence of habitat and wildlife-management practices that help produce healthy wildlife populations.

Look at the Pennsylvania Big Game Records book and you’ll see that trophy bucks can turn up just about anywhere in Penn’s Woods. And now antler restrictions ensure they have even more of a fighting chance to grow larger.



Deer Harvest Density

Deer harvest densities in Pennsylvania and nearby states remain similar to last year with the exception of New Jersey, which fell from 6 to 9 deer harvested per square mile to 3 to 6 deer per square mile.



White-tailed deer- Hal Korber

Premiere White-tailed Deer Hunting

During the 2016-17 deer seasons, hunters took an estimated 333,254 deer, an increase from the 2015-16 harvest of 315,813. Hunter success was relatively stable in 2016-17: about 16 percent of all licensed deer hunters took a buck and about 24 percent of the antlerless licenses issued were used to take an antlerless deer. These success rates are similar to those in recent years.

During the 2016-17 seasons, 40 percent of the state's overall buck harvest — 59,550 — was harvested with archery equipment. Hunters using crossbows took 58 percent of the archery bucks harvested. This demonstrates the increased popularity of crossbows. As recently as 1999 through 2002, only 19 to 20 percent of the archery buck harvest was taken with crossbows.



Abundant Black Bear Hunting

Pennsylvania boasts some of the best black bear hunting in the country. The Game Commission has steadily expanded bear hunting opportunity in response to growing bear numbers. Once limited to a 3-day season that occurred Monday-Wednesday the week of Thanksgiving, bear hunters today have a 4-day statewide season that opens on Saturday, a 6-day archery season that occurs within the archery deer season, and an extended firearms season that runs into the first week of firearms deer season in 13 of the 23 wildlife management units.

The preliminary 2017 bear harvest was 3,431 bears, which is the eighth-highest harvest on record. This compares to 3,529 bears taken by hunters in 2016. Although rainy weather affected hunter success on the opening day of the 2017 statewide season, record harvests occurred in the archery and extended seasons, with the net result being a harvest large enough to hold the statewide population at 20,000 bears.

Awe-inspiring Elk Hunting

Pennsylvania elk hunters continue to take some of the country's largest bulls. More than 30,000 hunters applied for a Pennsylvania elk license in 2017 and 118 were drawn; 104 hunters harvested elk (25 antlered, 79 antlerless) during the 6-day regular season. In addition to the regular permit drawing, two special conservation licenses were awarded through a raffle and an auction conducted by the Keystone Elk Country Alliance and the Rocky Mountain Elk Foundation, respectively. Both hunters successfully harvested mature bulls. Combined proceeds from these tags generated more than \$270,000, which will be used for elk

management, habitat enhancement, and research.

Expanding Fisher Populations

The fisher, a mid-sized member of the weasel family, has become well established in Pennsylvania's forests. The commonwealth's fisher population is the result of a large-scale reintroduction program within Pennsylvania as well as natural expansion from reintroduced populations in West Virginia. The Pennsylvania Game Commission uses a variety of methods to track the growth and geographic expansion of fisher populations.

Considerable expansion of fisher distribution was observed during this past year, particularly within southeastern counties. Currently, 87 percent of game wardens report fisher populations within their districts. The number of fishers caught and released by trappers, before or after the established fisher trapping season, has been increasing steadily since 1999. Last year, estimates indicated that trappers caught and released more than 3,700 fishers. As fisher populations expanded, the trapping season length and the number of wildlife management units open to fisher trapping has increased. Last year, Pennsylvania trappers harvested 422 fishers from 13 wildlife management units.



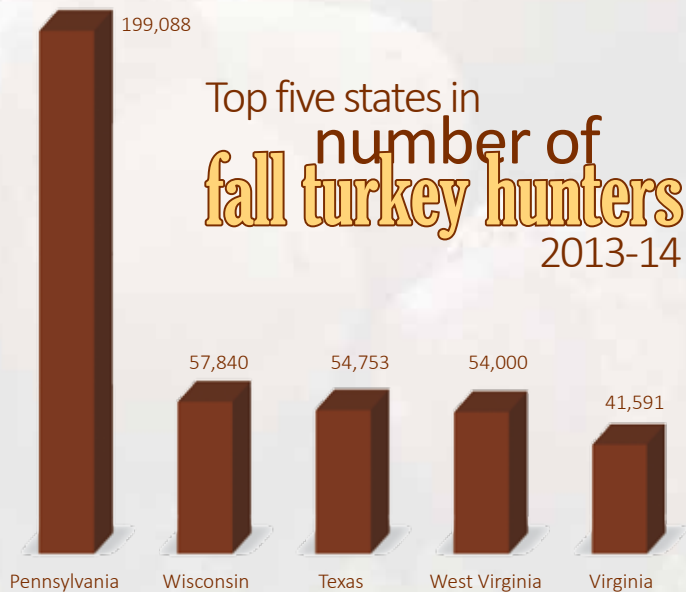
David Cairns with his 2017 Pennsylvania bull elk harvest. — Elk County Outfitters

Fantastic Turkey Hunting



12 Tutorials on Spring Turkey Hunting

Pennsylvania boasts some of the best turkey hunting in the country. The 2016 fall harvest of 10,844 included 137 from mentored youth. Even though the fall harvest was down from 15,018 in 2015, and 35 percent below the previous 3-year average, Pennsylvania maintains the highest 10-year average fall harvest among northeastern states, followed by New York and Virginia. Fall harvests fluctuate from year to year depending on summer turkey reproduction, food availability, weather, and hunter pressure. However, the spring 2017 harvest of 38,101 bearded birds (2,794 during the youth season, 622 from mentored youth during the regular season, 29,636 from adults and licensed youth during the regular season, and 5,049 second harvests), is an increase from 2016 (35,966), and similar to the previous 10-year average. Pennsylvania has, by far, the largest number of turkey hunters of any state. This high level of hunting pressure necessitates a conservative approach to season setting. Therefore, the spring season opener is timed to occur when approximately 50 percent of hens begin incubating their nests, so disturbance of hens and accidental hen harvest are kept to a minimum during this bearded-bird-only season. Because hens are legal during the fall season the agency regulates harvest tightly by changing the fall season length annually. Still, the mentored youth and adult opportunities in both spring and fall, a 3-day Thanksgiving season, a two-bird spring season limit, and all-day hunting during the second half of the spring season all provide an abundance of recreational opportunities without jeopardizing the turkey population.



Striving for long-term financial stability



Reinventing the Pheasant Program

As part of the agency's strategic plan, it strives to operate using sound, proven business practices that ensure long-term financial stability and sustain performance improvement and commitment to excellence.

Fiscal year 2016-17 was a year of major change for the pheasant program.

Pheasant hunting continues to be a popular activity for Pennsylvania hunters and is almost totally dependent on the Game Commission's production and release of pheasants each fall. The Game Commission sees value in providing this service for hunter retention, reactivation, and recruitment. The program is providing an upland game bird hunting opportunity at a time when wild pheasant and quail populations have disappeared, and grouse populations are down.

After failing to secure a hunting license increase during 2016, major changes to the pheasant program were necessary to reduce its costs. Two of the agency's four game farms closed on Jan. 27, 2017. The Loyalsock Game Farm in Lycoming County, and Southwest Game Farm in Armstrong County, remain in operation. Personnel at the two closed farms were furloughed, and material and equipment were transferred to the remaining farms.

As another cost-saving measure, the agency purchased day-old chicks for all of its 2017 production rather than maintaining breeders and running hatchery operations. Propagation staff were challenged to provide a 2017 fall release of about 170,000 birds without reducing bird quality. Rearing procedures were modified and production dropped only 20 percent below the goal (since 2012) of 200,000 birds, despite the fact that production capacity was reduced by 50 percent.

Elimination of breeder and hatchery operations allowed propagation staff to make important contributions to other agency programs. This reduced propagation costs and allowed staff members to work on activities and programs that qualify for up to 75 percent reimbursement through federal grants. Propagators were trained in chainsaw safety and prescribed fire operations. They marked game land borders, checked duck and bluebird boxes, built steel gates, painted bear traps, removed deer fences, and built nesting structures. They also trapped doves, aged deer, and assisted during the National Archery in the Schools Program state tournament in State College.

Costs have been cut by \$1 million and the agency anticipates reductions approaching another \$1 million in fiscal year 2017-18 as full-year benefits emerge from closing the two farms halfway through the year. The cost to produce a bird has been reduced to less than \$12, very competitive with costs to purchase birds from private producers. And the excellent quality of bird Pennsylvania hunters have come to expect has been maintained through the program transition.

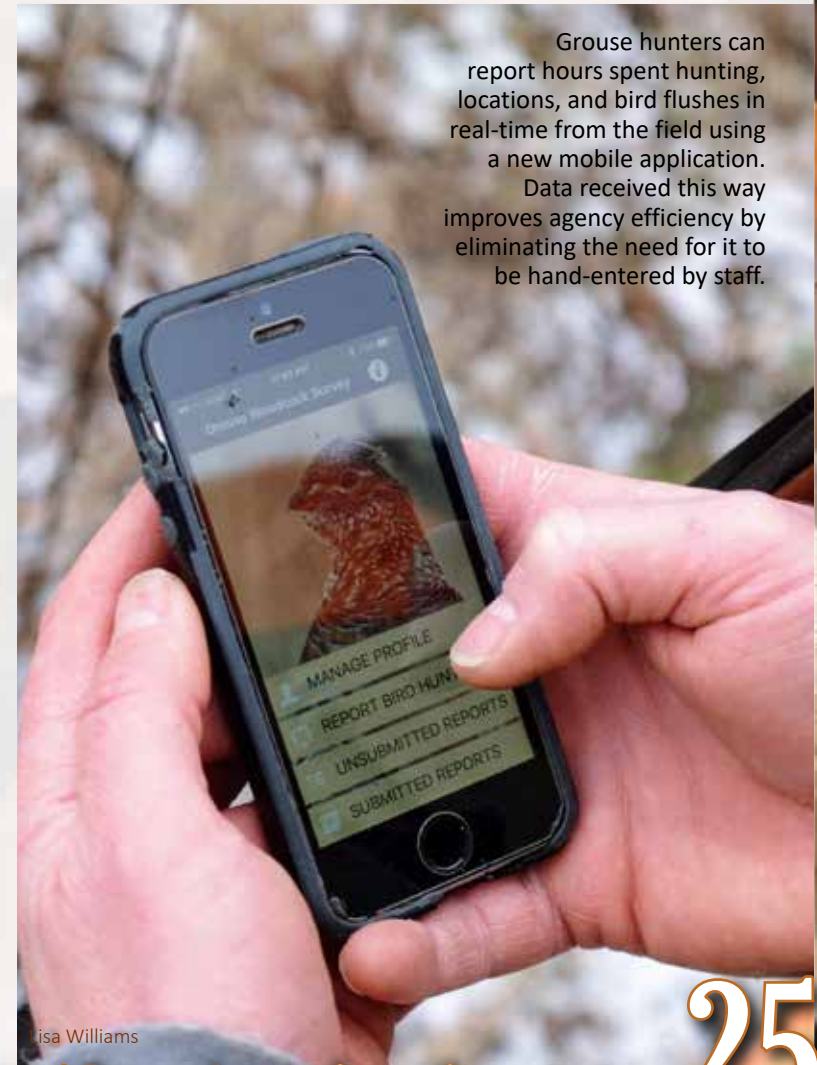
A Pheasant Stamp for Adults and Grant Revenue

Another component of the pheasant propagation reinvention program involved the creation of a \$25 (plus issuing fees) pheasant hunting permit to help offset program costs. Junior hunters were exempt from permit purchase. More than 42,000 permits were sold generating more than \$1.1 million.

Permit revenue is allowing the agency to make needed investments in infrastructure to increase production and provide a 2018 fall release of about 220,000 birds. The day-old chick purchase is anticipated to increase to 255,000 chicks, up from 200,000 in 2017.

Online Goose Blind Drawing Applications

A more efficient and customer-friendly application process for the goose-blind drawings opened this year. Applications for the annual goose-blind hunts at both the Pymatuning and Middle Creek wildlife management areas were accepted online. The easy-to-use application allows hunters to enroll in multiple drawings (youth, veterans with disabilities, or regular), choose special accommodations, and set preferred hunt dates. After the drawing, the site allows hunters to check whether or not they were drawn for a blind. The streamlined process allows hunters access to the information they need while reducing demands on agency staff.



Grouse hunters can report hours spent hunting, locations, and bird flushes in real-time from the field using a new mobile application. Data received this way improves agency efficiency by eliminating the need for it to be hand-entered by staff.

Lisa Williams



Strategic Goals

The Pennsylvania Game Commission exists to manage the commonwealth's wild birds, wild mammals, and their habitats for current and future generations, a mission it has followed faithfully since 1895. Although its focus has remained static since the agency was created, the suite of challenges and opportunities facing the agency are fluid and dynamic. The agency is focused on the work ahead—adapting to challenges it faces using innovation to accomplish the task of protecting and promoting wildlife in Pennsylvania in the most efficient manner possible.

1. *Manage, propagate, and protect all of Pennsylvania's wild birds and mammals and put wildlife first in decision-making*
2. *Manage wildlife habitats*
3. *Serve the commonwealth as the leader in wildlife conservation*
4. *Support Pennsylvania's hunting and trapping heritages*
5. *Operate using sound, proven business practices to ensure long-term financial stability, to sustain performance improvement and commitment to excellence*

Mission

To manage wild birds, wild mammals, and their habitats for current and future generations

Vision

To be the leader among wildlife agencies, and champion of all wildlife resources and Pennsylvania's hunting and trapping heritage

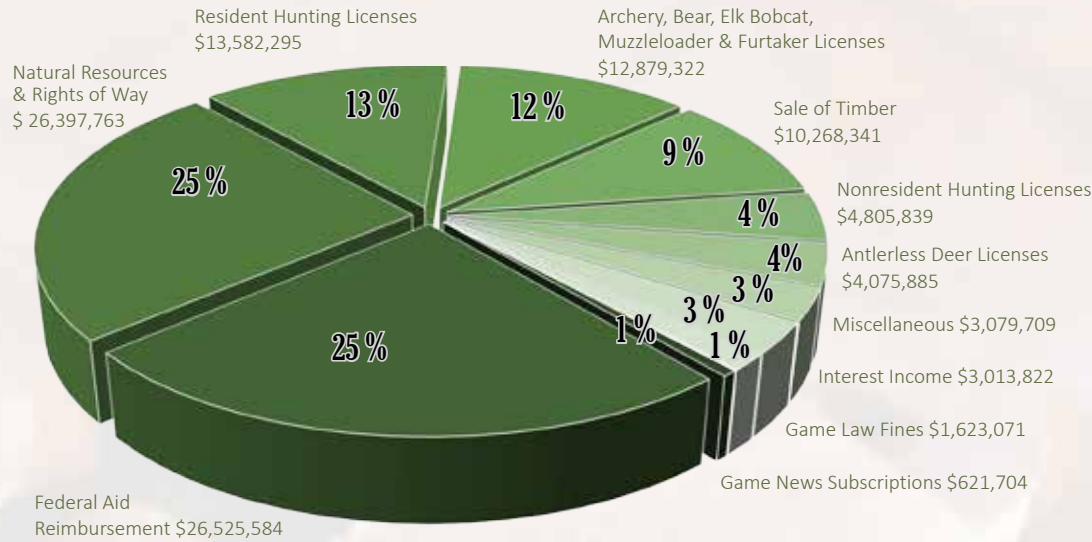
Executive Staff

Bryan J. Burhans, *Executive Director*
Richard Palmer, *Deputy Executive Director*
Thomas P. Grohol, *Deputy Executive Director*

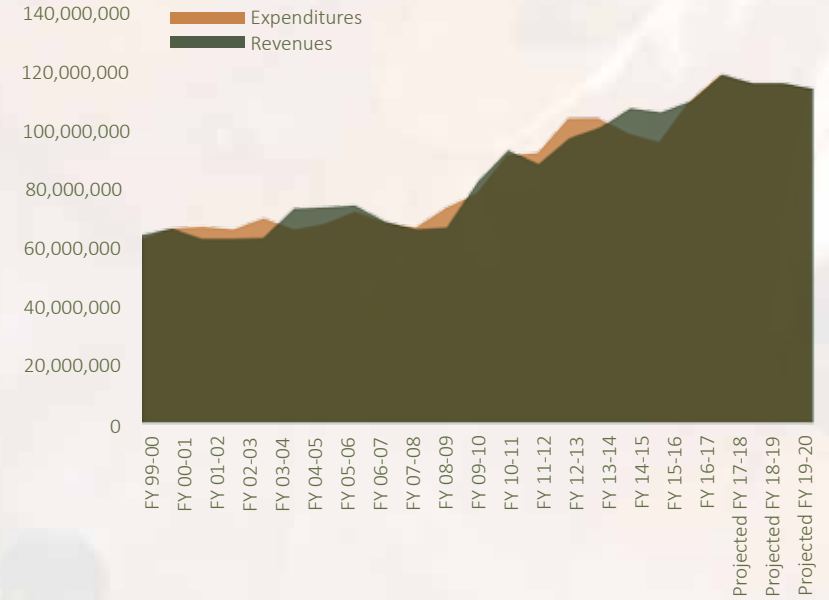
Board of Game Commissioners

Brian H. Hoover, *President, Glenolden*
Timothy S. Layton, *Vice President, Windber*
James R. Daley, *Secretary, Cranberry Township*
Charles E. Fox, *Troy*
Michael F. Mitrick, *York*
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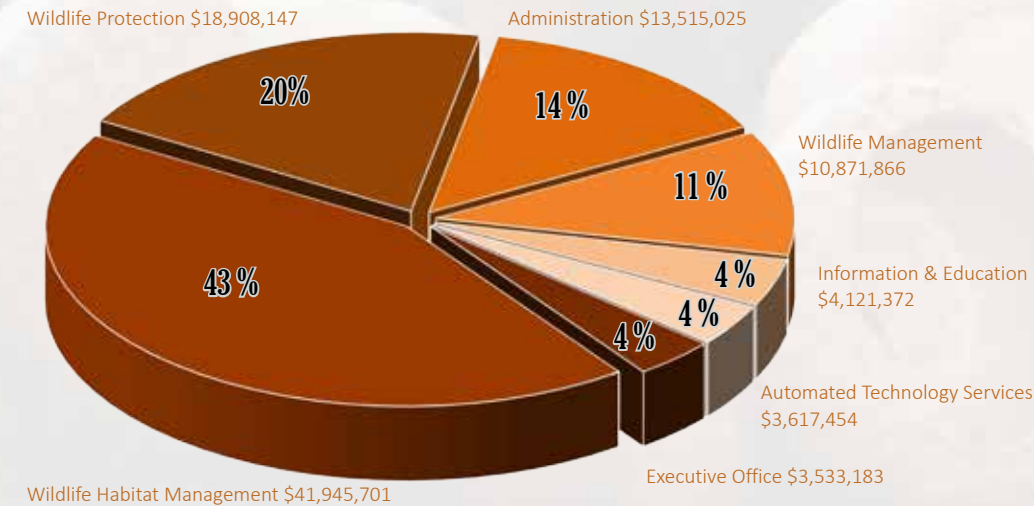
Game Fund Revenues—\$106,873,335 Fiscal year ended June 30, 2017



Revenues and Expenditures



Game Fund Expenditures—\$96,512,748 Fiscal year ended June 30, 2017



Revenues for the fiscal year ending June 30, 2017 were \$106,873,335. This represents a decrease of \$1,432,877 (1.3%) over the prior year's revenues of \$108,306,212. Expenditures for the fiscal year ending June 30, 2017 were \$96,512,748. This represents a decrease of \$4,066,593 (4.2%) from the prior year's expenditures of \$100,579,341. Of the total expenditures for the current year, \$3,533,183, or 4% were under the category of Executive Office expenditures. Of which approximately 48% of these expenditures were attributable to interagency billings for services and insurances. The Game Fund's Restricted Fund Balance was \$56,051,477 for the fiscal year ending June 30, 2017. This represents an increase of \$10,360,587 (22.7%) from the June 30, 2016 balance of \$45,690,890. The increase was mainly attributable to revenues coming in higher than anticipated, which exceeded expenditures during this period.

PARTNERS MAKE IT POSSIBLE:

The agency is committed to being connected with its constituents and engages with its partners in actively conserving Pennsylvania's wildlife resources. While they are too numerous to name and only a few are mentioned in this report, we thank all the volunteers and organizations who help, for their persistent support and generosity in protecting and promoting the state's wildlife. Partners make it possible.



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