



# PENNSYLVANIA GAME COMMISSION ANNUAL REPORT 2013

Adult Bald Eagle

Immature Bald Eagle

## CONNECT WITH WILDLIFE

**COMMONWEALTH OF PENNSYLVANIA  
PENNSYLVANIA GAME COMMISSION  
HARRISBURG, PENNSYLVANIA  
January 13, 2014**

**SUBJECT:** Annual Report and Growing Greener II Update

**TO:** All Senate Game and Fisheries Committee Members  
All Senate Appropriations Committee Members  
All House Game and Fisheries Committee Members  
All House Appropriations Committee Members

**FROM:** Carl G. Roe  
Executive Director

Pursuant with Title 34, Section 328 (e), enacted by Act 166 of 1998, it is my pleasure to present to the Committee Members of the General Assembly the Pennsylvania Game Commission's 2013 Annual Report.

This report will detail the implementation and administration of various Commission programs, such as Marcellus Shale development on game lands, enforcement of the Game and Wildlife Code, the Commission's response to the discovery of Chronic Wasting Disease within the captive deer population and hunter retention and recruitment efforts throughout the state.

The Commission has strived to meet its mission while once again keeping spending down. To achieve that, the agency has left many positions go vacant, which has had a significant effect on the ability to provide needed services to the public. The agency continues to fund core programs, but that will be more difficult in the future as costs increase. Complicating matters is that the availability of increased federal funds through the Pittman-Robertson Program requires the Game Commission to fully-fund any federally-approved wildlife conservation projects up front and then be reimbursed for up to 75 percent of the eligible costs. Without being able to provide the upfront costs, the Game Commission will be unable to draw down all federal funds for eligible wildlife enhancement projects and programs.

## **Title 34: Section 328**

### **Accountability**

**(A) Relationship with Public:** The Commission shall implement policies and programs to improve its relationship with the general public and with its licensees in accordance with its strategic plan.

## **Public Accountability**

The Pennsylvania Game Commission's Strategic Plan states that the agency's mission is "to manage all wild birds, mammals and their habitats for current and future generations." This mission flows from Article 1, Section 27, of the Pennsylvania Constitution, which states: "The people have a right to clean air, pure water, and the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources the Commonwealth shall conserve and maintain them for the benefit of all people."

Also, Title 34 (Game and Wildlife Code), Section 103, grants the Pennsylvania Game Commission responsibility for all wild birds and mammals of the Commonwealth, and states that hunting and trapping "as methods of effecting necessary management of game, furbearer and wildlife populations."

Entrusted with this responsibility, the Game Commission strives to serve all Pennsylvanians, and to manage all wild birds and mammals, not just those listed as game species. In carrying out this mission, the agency recognizes that effective communication of knowledge and information is essential for a public conservation agency.

Over the years, the Game Commission has developed many programs to inform people about the value of wildlife and agency activities, and to seek public input prior to developing management plans. Increasing this knowledge and appreciation for wildlife can be accomplished only through effective education and communications efforts. By continuing to do this work, the agency will improve its relationship with the general public.

### **PUBLIC INPUT AND OUTREACH**

The Human Dimensions Specialist completed a third year in the Bureau of Information and Education. This individual is responsible for supervising the Conservation Education Specialists, in addition to the following research:

One mail survey was conducted and overseen by the Human Dimensions Specialist: A survey of license buying hunters in York and Adams Counties and Maryland about Chronic Wasting Disease in January and February 2013. Additionally, the HD specialist was responsible for coordinating a telephone survey of residents in York and Adams counties about CWD that was completed in October and November 2012. The results of both CWD surveys have been presented in front of various groups of stakeholders in Pennsylvania. The results of the Pennsylvania Game News survey that was started in FY 11-12 was completed in FY 12-13 and the results were presented to various PGC and other stakeholder groups like Harrisburg Hunters and Anglers and the POWA conference.

The HD Specialist also was frequently consulted by the Bureau of Wildlife Management to consult on the question wording, methodology and analysis of mail surveys conducted by biologists in that bureau, and taught a monthly class to BWM staff members about survey research using Dillman's Internet, Mail and Mixed-Mode Surveys: The Tailored Design Method and other texts. The HD specialist was also involved in the development of six focus groups of

lapsed hunters throughout Pennsylvania. These focus groups will be conducted by Responsive Management. After the completion of these focus groups the HD specialist will be responsible for writing another lapsed hunter questionnaire.

With four years of PALS data now available, the HD specialist and other I&E Bureau staff have met regularly to review the license buying habits of Pennsylvania hunters through various data requests to the Bureau of Administration.

The HD Specialist also upgraded the SPSS software to include a regression package and was thus able to conduct additional analyses on the FY2010-11 lapsed hunter survey using logistic regression and other multivariate analyses. Results from the analysis of this questionnaire will be used to inform the question development for the focus groups of lapsed hunters.

*Game News* continues to be the primary voice of the Game Commission, and the hunting stories, natural history content and, as always, Field Notes, remain popular with many readers, not just in Pennsylvania, but throughout the country and to our servicemen and women throughout the world. *Game News* also features articles about Game Commission research and management projects, law enforcement accounts by our WCOs, and agency news.

*Game News* "Crossings" columnist Ben Moyer captured first place in the "Column" category in the 2012 Outdoor Writers Association of America Excellence in Craft writing awards competition for his work in 2011 issues of *Game News*.

The agency is in its sixth year of posting entire *Game News* issues online through Nxtbook. The online version allows users to conduct searches, go directly to particular features and, by using a zoom feature, make the type larger and easier to read. Accessing *Game News* in digital formats is a top priority to accommodate our younger readers. *Game News* remains popular on newsstands throughout the state and is now offered in all Wal-Mart stores in Pennsylvania.

In addition to *Game News*, many other brochures and publications, including the Connect with Wildlife calendar, the annual Digest, the annual *Pennsylvania Big Game Records* book are produced by *Game News* staff.

The Game Commission continues to offer a wide variety of news releases and features about wildlife, hunting and trapping to the news media and public.

The Game Commission continuously updates and adds information to its website to expand and improve the content related to the wildlife resources and agency's management.

In the radio market, we have entered our fifth year of an agreement with RadioPA to provide daily, three-minute broadcasts consisting of one minute and 50 seconds worth of agency content, coupled with one minute and ten seconds of RadioPA-generated commercial content. This programming is then provided to nearly 45 radio stations that subscribe to RadioPA's service. The Bureau launched a "PGC Wild Cam" that provides the public worldwide with opportunities to watch live-streaming video of wildlife in varied settings that normally cannot be accessed. Two such locations were in the propagation area off Willow Point at the Middle Creek Wildlife

Management Area to observe snow geese and in a barn owl box located on a Perry County farm. More than 150 people at one time were viewing the barn owl live stream. In total, more than 300,000 people have viewed these images.

The Bureau hired a Communications Specialist to run all of the Social Media accounts. Twitter, Facebook and YouTube continue to reach hundreds of thousands of people.

### **HUNTER-TRAPPER EDUCATION AND RECRUITMENT/RETENTION**

The Hunter-Trapper Education Division was responsible for producing and distributing copies of the following printed training guides and materials that promote hunting and trapping:

- “Today’s Hunter and Trapper in Pennsylvania student guide” – 44,109
- “IHEA Hunter’s Handbook” – 41,600 copies
- “IHEA Hunter and Shooting Sports Education Journal” – 8,100 copies
- “Today’s Bowhunter student guide” – 500
- “Today’s Crossbow student guide” – 455
- “NBEF’s 3-in-1 Responsible Hunting Guide” – 500
- “Successful Furtaking student guide” – 139
- “Cable Restraint student manuals” – 1025

These materials are distributed as part of the various hunter education programs and instructor training workshops with numbers paralleling trends in class enrollments.

A total of 994 basic Hunter-Trapper Education courses were conducted statewide during this reporting period. The total is comprised of 862 traditional multi-day courses, and 132 two-hour independent study classes. This compares to 976 statewide courses during FY2011-12; 824 traditional and 151 independent study classes and marks a 2 percent increase in the number of courses.

HTE program policy requires all proposed HTE classes for the calendar year be scheduled by April 1. An internal review is then conducted and recommendations are made to improve course scheduling with particular emphasis on the months of September through November. The policy also requires that all classes are posted on the Internet and include online registration capabilities.

To gain a better measure of public demand for training, the agency continues to use web analytics to measure and track the public’s use of the Internet in searching for hunter education classes. By measuring the number of users, the course types in demand, the users’ ISP-generated hometowns, time of the year and more, we are able to quantify demand by time and locale. In response, we can schedule classes in those areas and at those times of the year matching the demand suggested by the analytics. By using these tools, coupled with strategic scheduling, we are beginning to see increased enrollments in HTE classes.

The Junior Pheasant Hunt program was coordinated by the Bureau of Wildlife Management. On October 6, 2012, 26 events were held with 961 hunters registered.

The Mentored Youth Hunting Program Permit continued for the 2012-2013 hunting season. 34,984 permits were sold, an increase of 4.2 percent over the previous 33,514 sold in 2011-2012.

The Game Commission continued coordination of the National Archery in the Schools Program (NASP). 42 new schools enrolled in NASP in 2012-2013, bringing the total number of schools in the state to 138. At least 32,000 students were reported by schools to have participated in the program in the 2012-2013 school year. The agency once again coordinated a state wide tournament in March at the Penn State Multi-Sports Complex and welcomed 817 archers whom

represented 30 different schools to compete. 154 of those students then traveled to Louisville, Kentucky in May to attend the National NASP tournament. PGC continues to offer \$1,500 to offset the cost of an equipment kit for each school to enroll in the NASP program and secured over \$24,000 in additional grant funding to help the schools further defray the cost. The agency hosted 22 Basic Archery Instructor trainings and certified 179 Basic Archery Instructors. The agency trained an additional 6 Basic Archery Instructor Trainers (BAITs) and continued contracting with 9 different BAITs to complete trainings as needed.

During the reporting year Successful Turkey Hunting classes were conducted. The curriculum is designed to provide the knowledge, skills and ability for students to be successful early in their turkey hunting careers. More classes are being scheduled for later in 2012. Current advanced training courses now include Successful Bowhunting, Successful Furtaking, Successful Turkey Hunting and Cable Restraint Certification. Curriculum development has begun for a new Successful Muzzleloading training program to be launched in 2013.

During the reporting year of July 1, 2012 to June 30, 2013, a total of 28 hunting-related shooting incidents occurred at a rate of 2.97 incidents/100,000 license buyers. There were no fatalities reported during this timeframe. The total number recorded during FY2012-13 remains below the current 10-year average of 40.7 incidents per year with a rate of 4.24 incidents/100,000 license buyers.

As an off-shoot of the partnership with Radio PA, the Game Commission and Top Flight Media, a subsidiary of Radio PA, entered into a second year of managing a joint website creation - SafeHuntingPA.Com. This year, the coordinated effort offered eight hunting safety messages for radio stations to use, as well as links to other Game Commission news releases and weekly offerings of the "Outdoors PA with the Pennsylvania Game Commission" segments.

### **WILDLIFE CONSERVATION OUTREACH AND EDUCATION**

The Bureau moved forward with posting a number of videos on the popular "YouTube" websites, and has continued to webcast all Quarterly meetings of the Board of Game Commissioners that are held in Harrisburg and the annual elk drawing. In 2011-12, the agency added the Board's Working Group Meetings to the line-up of live webcasts.

In addition, three Facebook pages were created that now have "Likes" of more than 18,000 people. A Twitter site exists and is followed by more than 1,949 people. These sites have educational and informational material posted on them every day and have a "reach" of more than one million people.

PGC personnel conduct programs for students throughout the state. All programs conducted in schools address the Environment and Ecology State Education Standards. Programs include adaptations, wildlife and their habitats, predator/prey relationships, ecosystems and their interactions, mammals and birds of PA, wildlife forensics, and endangered and threatened species. Conservation Education also worked with Howard Nursery on the Seedlings for School program. This program offers free seedlings to schools along with education resource materials. The PGC offered instructional courses relating to different aspects of wildlife and the outdoors through the Wildlife Conservationist Certificate Program. Just some other outreach programs

included: billboard advertising throughout Pennsylvania; Connect with Wildlife magnets, posters, bumper stickers; Bald Eagle Restoration 200 Nest Milestone patch; Working Together for Wildlife patches, Field Note patches; Elk Hunt patches; Mentored Youth patch with safe-t plug; Time Collectible Wild Turkey Heritage and Upland Game Bird Series patches; and waterfowl stamp and print.

### **WILDLIFE PROTECTION**

House Bill 1859 sponsored by Representative Edward Staback passed into law as Act 54. An intensive statewide training was conducted for all officers and several major poaching cases were prosecuted during this reporting period that included the first ever felony charges and jail sentences for poaching. Numerous cases are still being adjudicated in the court system; however, it appears both District Attorneys and Judges are very supportive of these increased penalties.

In addition, SB 1200, introduced by Chairman Richard Alloway, passed into law as Act 60 and was implemented January 1, 2011. To-date, 12,648 violation records were received from other member states and reviewed; 3,070 of those violations were serious enough to be applicable to Pennsylvania's standards and the violators were placed on license revocation in Pennsylvania due to the offense that occurred in another member state. This includes 2 Pennsylvania residents who shot hunters in other states who would not previously have been revoked in Pennsylvania. Pennsylvania has submitted 313 in CY2012 and 289 in CY2013 violators that met the criteria into the compact to be evaluated for revocation by other member states.

Anecdotal evidence, as well as actual intelligence gathered by the special operations division indicates that these two pieces of legislation are having a deterrent effort on commercial poachers and chronic offenders.

The Senior Executive Staff has provided on-going direction to the field force in focusing efforts on the violations with the most significant impact to the resource and our officers have responded to that direction and supervision. Total enforcement contacts including field checks, investigation of complaints, on scene violations in progress, targeted surveillance and enforcement operations are estimated at 200,000 enforcement contacts. As an additional effort in the prevention of violations to protect wildlife, significant emphasis was placed on increasing the HVI, or high visibility index of conservation officers in the field to provide increased deterrence and protect wildlife through task forces. In the fall of 2011, the Bureau of Wildlife Protection conducted a data analysis of our prosecution data base to determine peak night time poaching activity. Then a state wide task force was coordinated called Operation Talon that focused officers of the PGC, PFBC, DCNR and PSP, including PSP air support across the Commonwealth focusing of night time poaching activity for a two week period. A total of 565 officers participated in the operation and resulting in 430 enforcement contacts, 300 citations or arrests, and 107 warnings. Several other criminal violations detected were turned over to PSP for prosecution including 6 DUI's, several drug or drug paraphernalia charge. A similar state wide operation is again planned for the fall of 2013.

During the 12-13 season enforcement efforts were focused by officers on detection of trapping violations. Due to the increased value of fur in recent years, trapping again has become popular

among the sporting community. 429 violations were detected statewide, with 366 citations being issued along with 63 warnings.

The Bureau continues to request, monitor and assist regions with a number of enforcement details designed to combat violations that have the most negative impact on wildlife and habitat resources. Bureau staff has assisted region staff with identifying violations and situations where enforcement details will focus on these areas. Bureau staff assists regions with manpower when available and monitors the results of each detail. Each region is required to complete at least one detail per year. Some regions have elected to hold several details during various times of the year. Types of details have ranged from focusing efforts on night time poaching incidents, to waterfowl hunting, to SGL shooting range violations to ATV/snowmobile details. Enforcement details have not only had the benefit of detecting numerous violations but also have resulted in much public support for the agencies law enforcement program in areas where details have been held. Details from the 12-13 season reported 25 citations issued along with 49 warnings.

The top ten violations prosecuted this year also indicate that officers are focusing their efforts on violations with the most impact to the wildlife resource. They are as follows:

1. Unlawful taking or possession of Game or Wildlife –563 prosecutions.
2. Possession of a loaded firearm in a motorized vehicle - 428 prosecutions.
3. Operating vehicles on state game lands in areas closed to travel, primarily ATV violations – 392 prosecutions.
4. Hunt or take wildlife through the use of bait or enticement –331 prosecutions.
5. Kill/possess big game in closes season or excess of bag limits - 249 prosecutions
6. Big Game Tagging violations – 212 prosecutions
7. Hunt or take wildlife through use of a motor vehicle –175 prosecutions
8. Cast a light after 11pm –172 prosecutions
9. Cast a light while in possession of firearm or bow – 114 prosecutions
10. Littering - 112 prosecutions.

Statutory revisions were accomplished in several sections of the Game and Wildlife Code this fiscal year.. Senate Bill 623 amended section 2701 and section 2711 to permit a person 17 years of age or older to participate in a mentored hunting program for up to 3 licensing years. House Bill 1417 section 2702 (relating to aggravated assault),section 904 (relating to interference with officers), section 905.1 (relating to assaulting an officer), 925 (relating to jurisdiction an penalties), 927 (disposition of fines and penalties), 2141 (relating to killing game or wildlife to protect person), 2163 (relating to unlawful importation of game or wildlife), 2164 (relating to unlawful taking and possession of protected birds), 2165 (relating to possession or interference with active nests or eggs of birds), 2166 (relating to unlawful sale of protected birds and plumage), and 2501 (relating to hunting or furtaking prohibited while under the influence of alcohol or controlled substance): The final legislation amended section 2702 to add Waterways Conservation Officers, Deputy Waterways Conservation Officers, Wildlife Conservation Officers and Deputy Wildlife Conservation Officers to the list of enumerated officers, employees, etc. that increases the grading of certain offenses for these status victims. The final legislation also amended section 904 and section 905.1 to create mirror offenses and penalties in the Fish and Boat Code and Game and Wildlife Code for violations of sections 2702 and 2702.1.

The final legislation also amended section 925 to reduce the grading of offenses that magisterial district judges may accept guilty pleas on from all misdemeanors to ungraded misdemeanors. Lastly, the final legislation eliminated the last remaining Game Code references to misdemeanors of the third degree, a penalty grading eliminated in section 925 by Act 54 of 2010. House Bill 1237 amended section 2706 to reduce the period of time that members of the Pennsylvania Army National Guard or Air National Guard on active Federal service or members of the reserve component of the armed forces need deployed overseas within the previous 24 months to become eligible for the reduced fee license from 180 days to 60 days. House Bill 891 amended section 2908 to permit a nuisance wildlife control operator to use electronic means to check on the status of a trap.

The special investigations unit is now operating at full compliment. Additional surveillance cameras were purchased this fiscal year to enhance the units evidence gathering capabilities. Officers have expanded the use of internet and social media sites as investigative resources. Increased coordination with other state and federal wildlife investigation units has resulted in 4 inter-state investigations this reporting period. We have initiated the process to add three advanced overt investigation officers that will greatly enhance the units capabilities, but are contingent upon a complement increase.

The Enforcement Division continues to supply Deputies as much surplus equipment as possible to reduce their out-of-pocket costs. 22 new DWCO's were recruited and trained this reporting period.

In addition, the Commission mandates annual training in Legal Updates, Communication Skills, Firearms, Defense and Control Tactics, First Aid and CPR, and Hazardous Materials first Responder training. DWCO's receive additional training by attending a minimum of four of the six district training meetings required by policy. Additional structured training modules were developed this year by the Training Division, including furtaking enforcement training and vehicle stop training and over 30 structured training modules are available for use on the agency's intranet site. Wildlife Conservation Officers also voluntarily expand their skills by attending various in-service and out-service training initiatives on a routine basis. Regional training has also been provided in current issues such as deer management training.

After completing 50 weeks of training in the Ross Leffler School of Conservation, the 29<sup>th</sup> class of wildlife conservation officers joined the field force in March. 27 men and 3 women spent almost a year in intense training in both the classroom and in the field.

The investment in training pays direct dividends to the professionalism and technical competence of Game Commission Officers as measured by our enforcement statistics. Officers encountered a total of 19,716 violations during this fiscal year through high visibility patrol, selective enforcement operations, overt and covert investigations, surveillance operations and complaint response. The enforcement action taken by officers encountering those violations resulted in 12,958 warnings and 6,758 citations being issued; a rate of almost two to one. It should be noted that the officers issued more warnings than citations, indicating officer discretion in a balanced enforcement effort to focus efforts on the violations with the most impact to the wildlife resource. Of the violations cited, the conviction rate was 96% and attests not only to the discretion, but also the technical competence and professionalism of Game Commission

Officers. The ratio of appeals of initial convictions was only less than 1%, actually .41% to be exact. The final measurement indicator of the dividends of the training investment was the significantly low citizen complaint to enforcement contact ratio that has been consistently maintained since the inception of the complaint tracking system, with less than 1/1000% of enforcement contacts filing complaints against officers. Only 9 complaints were received against officers this year, zero of which was sustained.

Ensuring that our officers have the proper training and equipment to perform their duties is an on-going priority. As an agency we stress the importance of safety, which cannot be stressed enough since November 2010 when WCO David Grove was shot and killed in the line of duty by a convicted felon who was not to possess firearms. It has now been documented that during enforcement contacts and investigations, our officers have knowingly made contact with numerous individuals recognized by our officers as persons not to possess firearms due to felony convictions. The agency has taken a proactive approach to enhancing officer safety by procuring electronic control devices (TASERS) for Wildlife Conservation Officers, new and upgraded body armor was purchased, body cameras to document enforcement interactions, and implemented the computer aided dispatch and mobile data system. This system in particular greatly enhances officer safety by allowing officers to have immediate access to criminal histories and warrants of subjects in the field, tracks officer vehicle locations through GPS and allows all units to be observed on screen at dispatch centers to facilitate faster response times if assistance is needed, and provides an alert system duress button for officers on their person that transmits a signal to their vehicle that automatically calls for immediate assistance if activated. Other tools such as tactical bolt action rifles and suppressors have been procured to facilitate more efficient wildlife control efforts to support the prevention of CWD and other wildlife diseases.

The TIP Hot Line allows the public to contact the agency The Turn-In-A-Poacher (TIP) Hotline program was relocated to the Harrisburg Headquarters in November 2007. The program was placed online around March 2008, and continues to grow and develop each year from information provided by concerned citizens. Last fiscal year 822 calls and emails were relayed to the appropriate region; a 14% decrease from the prior fiscal year. The number of successful prosecutions increased along with the number of reward payments paid out to witnesses and informants for information that lead to the successful prosecutions of specific charges; 36 reward payments were paid out totaling \$12,750. The decrease may reflect the deterrent value of increased penalties, replacement costs, and the IWVC.

A total of 14 regulatory amendments were passed this fiscal year to modify and clarify the code. The Bureau has adopted the approach of reviewing each section of the regulation that is being amended in the course of normal commission regulatory action, to make additional clarifications or modifications in that section and related subsections to continue an ongoing process of clarifying and streamlining Title 58.

The Director and staff attend meetings and training sessions to update the field. They meet with the Regional Law Enforcement Supervisors quarterly to share relevant information as well as attend Regional meetings and District Deputy meetings yearly. All Bureau staff members spent time in the field working directly with WCO's in enforcement operations and communicated

directly with the officers both in management vision as well as hearing officer concerns and suggestions. Nine SOP's were either developed or revised and completed the staffing process through final adoption this year to update or create new direction for our officers in a variety of operations. The increase in providing clear direction through utilization of SOP's and memorandums, for topics that do not warrant the development of an SOP, has resulted in increased consistency in legal interpretation and enforcement throughout the Commonwealth. WCO's forward any unanswered questions from district training meetings to the Bureau of Wildlife Protection, the Bureau then responds to the questions in a timely manner, and distributes the answer to all regions for dissemination to all officers. The Bureau continues to ensure direction through memorandum rather than SOP when appropriate, which is readily available on the intranet in a specific section under Wildlife Protection for ease of access. This use of technology has not only provided ease of access for all officers, it also serves as an institutional memory file to ensure previous direction is recorded from a historical perspective.

### **HABITAT ENHANCEMENTS**

In fiscal year 2012, the Game Commission acquired 18,304 acres, bringing the agency's total State Game Land acreage to 1,480,390. The State Game Land System includes 306 separate state game lands in 65 of Pennsylvania's 67 counties. The 18,304 acres were acquired through a variety of means including lease/land exchanges, land exchanges, and partnerships with conservation partners. The single largest acquisition was 6,200 acres in Hamlin and Keating Townships, McKean County which was added to State Game Land No. 62. Funding for this large tract was made possible by a Restricted Use Oil and Gas Agreement with the Pennsylvania General Energy Company, LLC for an oil and gas lease on a portion of State Game Land No. 75 located in Lycoming County. This large tract of land compensates for the habitat and recreational losses from the proposed oil and gas recovery activities on State Game Land No. 75.

The Game Commission provided local government bodies much needed funding in support of local and county governments and programs where state game lands are located. Eligible recipients of local municipalities received \$1.20 per acre from the Game Fund for payment in-lieu-of taxes that amounted to \$1,774,695 divided into three equal payments and sent to the recipient counties, school districts and townships last fiscal year.

Maintaining identifiable boundary line is among priority tasks for State Game Land's Food and Cover crews. This year, 1,194 miles of boundary line were cleared, inspected, and marked. Shooting ranges are located on several tracts of game lands for use of holders of range permits or valid state hunting or furtaking licenses. Food & Cover Corps staff conducted 1,266 range visits with major safety upgrade projects completed on one range.

Comprehensive game lands planning is necessary to ensure sound, sustainable, and efficient habitat management. This includes updating infrastructure records, habitat cover, forest types, access roads, parking lots and all aspects of state game lands management. Plans were completed for 160,236 SGL acres in 40 separate plans. To date, 161 comprehensive management plans covering 504,000 acres have been completed.

The Forest Inventory and Analysis Program has continued with the first cycle of re-measuring the 875 permanent plots on state game lands. This program is critical for accurate assessment of the forested areas of the state game lands. These plots are being re-assessed on a 5-year cycle to determine changes in growth, health, and species composition of State Game Land's forest habitats and will provide valuable habitat planning information. The FIA Section has also developed a sampling system for monitoring habitat conditions before and after the use of prescribed fire and has provided critical input and analysis of the forest habitat health measures as they relate to the white-tailed deer management program.

One of the most significant habitat developments of the past several years was passage of the Prescribed Burning Practices Act. The Game Commission is working closely with the Bureau of Forestry, Bureau of State Parks, DMVA, The Nature Conservancy, and the U.S. Forest Service to train personnel and develop landscape scale prescribed fire plans. To date, major strides have been taken to utilize prescribed fire as an important habitat management tool.

As part of the USFWS Great Lakes Restoration Initiative, we coordinated with DCNR Bureau of State Parks, Audubon PA and the Western PA Conservancy to restore piping plover (federally endangered) nesting habitat on Gull Point in Presque Isle State Park and to reduce human disturbance through placement of restricted-access signs. A 10-year adaptive management plan was developed for removal of invasive plant species. Migrant piping plovers have been observed at Gull Point; two pairs of common tern (state endangered) nested unsuccessfully in 2012. We provided guidance documents to DCNR for management and monitoring of rare grassland birds pertinent to property where upland sandpiper and northern harrier nested recently and provided information about an area occupied by golden-winged warbler that could be managed more effectively for scrub barrens. With representatives of the PA Turnpike Commission and an energy company that funded the project, we evaluated a bat-friendly gate installed at an Indiana bat hibernaculum on turnpike property. Thanks to another energy developer, habitat management to benefit the Allegheny woodrat was completed on four management compartments in the Tiadaghton State Forest during the fiscal year.

A total of 140 PNDI environmental reviews and 169 mining permit application reviews were completed for various proposed mining or abandoned mine reclamation projects with a total acreage reviewed of over 95,000 acres. The purpose of these reviews is to provide preliminary comments to mine operators and DEP to avoid and minimize impacts to wildlife and wildlife habitat associated with potential future mining operations that are currently in the planning. Avoidance measures were recommended or required for 26 project reviews to avoid or minimize adverse impacts to various bat species, and Allegheny woodrat. Seven habitat surveys were required to assess the potential for adverse impacts to bats, Allegheny woodrat, eastern small-footed myotis, northern harrier, and upland sandpiper. The reviews also resulted in the requirement for one site to be trapped for Allegheny woodrat, and or mist netted for bats. Staff attended more than 30 field meetings to assess any potential adverse impacts to species of special concern, and offer comments to the operators and/or DEP to avoid and minimize adverse impacts to wildlife and wildlife habitat including wetlands. During these field meetings, the PGC completed habitat/species surveys for Allegheny woodrat and/or eastern small-footed myotis at 7 sites, and surveyed for potential bat hibernacula at two sites.

The agency's Public Access programs continue to provide hunting opportunity on private lands. This year, 15,399 Public Access cooperators allowed hunting access to 2,666,007 acres of private land, making it the largest program of its kind in the country. Through a Voluntary Hunter Access and Habitat Improvement Program (VPA-HIP) grant from the USDA, 121 new habitat projects were planned and implementation has begun on 6,445 acres on private lands, and 17,511 new acres were enrolled into the Hunter Access program as a result of this grant. In addition, the grant paid for PA Game News subscriptions to all Hunter Access Cooperators.

A Deferred Grassland Use program was implemented with grant funds in three WPRA's used as an incentive to re-enroll in CREP and also to defer mowing grasslands until after the nesting season for ground nesting birds. Two thousand eight hundred fifty-eight acres of private lands were enrolled through this program to protect wildlife nesting habitat.

The PGC Wind Energy Voluntary Cooperative Agreement continues to work with wind developers to avoid, minimize, and mitigate potential adverse impacts to wildlife from wind energy development. There are currently 35 Cooperators which have signed the original agreement. Based on input from Cooperator meetings it is anticipated that the majority of the Cooperators will sign on to the updated Agreement. These Cooperators are providing pre and post-construction surveys to better understand impacts to wildlife and to research methods to predict the extent of mortality at proposed facilities. Ironically, many developers whom have not signed the Cooperative Agreement are completing the same requirements as Cooperators but not receiving any of the benefits.

During the past fiscal year, the Oil/Gas and Mineral Development Section reviewed and coordinated with Regional field personnel and industry a total of 101 oil or gas well plats/permits, locations, and their affiliated access ways on state game lands. Of these, 46 were unconventional shale oil and gas well locations at which 20 were under PGC oil/gas development leases whereas 26 were on game lands' surfaces where the PGC does not own the subsurface gas rights. These reviews and coordination resulted in improvements to parking lots and roads as well as maintenance on related gamelands infrastructure such as culverts, bridges, gates, and enhanced erosion and sedimentation control structures at the expense of the natural resource recovery operator.

The Engineering Division has continued to work on infrastructure projects across the state. These projects include bridge installation, construction of new buildings, renovation of existing buildings, demolition of abandoned structures and road construction projects. Most of these projects are funded through Pittman-Robertson grants but other funding sources include Growing Greener, grants from federal agencies and the regular budget allocations in the Game Fund.

Twenty-eight new bridges were constructed on game lands in FY12-13. Two new buildings were constructed in FY12-13. A new superintendent's house was built at the Howard Nursery. The new ranch style house replaces an aging house on the property which had issues with the plumbing system, electrical system and basement flooding. A new egg storage building was constructed at the Loyalsock Game Farm. The old egg house was severely damaged from tropical Storm Lee flooding. Six building renovation projects were completed in FY12-13. A

total of five structures were demolished and removed from game lands. Two road projects were completed during FY12-13.

The Engineering Division has a large backlog of projects to complete in the next decade to keep the infrastructure of the agency intact. Infrastructure failures can have negative affects on all other agency programs and construction and repair projects funding must continue so that vital services and programs are not jeopardized.

## **Title 34: Section 328**

### **Accountability**

**(B) Program Accountability:** The Commission shall require program accountability of its various functions through program performance measurement in accordance with its strategic plan.

## **PROGRAM ACCOUNTABILITY**

In 2003, the Game Commission adopted its first comprehensive strategic plan to guide the agency through fiscal year 2008. The Commission has completed an update of the plan, and the new Strategic Plan, to cover the years of 2009 to 2014, was published and is available on the website. The following is an update where the agency stands in relation to achieving the goals and objectives in the plan at the end of fiscal year 2011-2012. During the life of the current plan, several objectives were not accomplished, or were partially accomplished, due to a lack of resources.

**Mission: To manage all wild birds and mammals and their habitats for current and future generations.**

### **GOALS AND STRATEGIC OBJECTIVES**

**GOAL 1: Conserve, protect and restore wildlife populations for their many public values.**

**Strategic Objective 1.1 Manage sustainable wildlife populations.**

As stated in Article 1, Section 27 of PA's Constitution, the Commonwealth has the responsibility to conserve and maintain its natural resources for the benefit of all the people, including generations yet to come. As the Commonwealth's wildlife management agency, the PA Game Commission (PGC) is responsible for sustainably managing all of PA's wild birds and wild mammals. Of the 480 species of wild birds and wild mammals in PA (PA), primary attention is necessarily limited to select game species and our most imperiled species due to funding sources and limitations.

The 2012-13 Game Take and Furtaker surveys were completed in the spring of 2013. These annual hunter and trapper surveys estimate small game and furbearer harvests, numbers of hunters and trappers and days of effort. We have been conducting these surveys for nearly three decades, so important long term trend information is available. As an example of the type of information available, in 2012-13 hunting seasons there were 94,761 rabbit hunters and 25,817 crow hunters. They hunted 493,894 and 172,359 days, respectively, and harvested 254,328 rabbits and 289,833 crows. In 1990, there were 436,961 rabbit hunters and 39,579 crow hunters, who hunted 2,901,567 and 223,525 days, respectively, and harvested 1,672,360 rabbits and 355,492 crows.

Since 1990, harvests, hunters, days hunted, and harvest per 100 hunter days have significantly decreased for rabbit, grouse, squirrel, snowshoe hare, and woodchuck. Though numbers of hunters and hunter days have remained stable for spring turkey season, harvest and harvest per 100 hunter days have significantly increased. Conversely, numbers of hunters and hunter days have declined significantly for fall turkey season, as harvests and harvest per 100 hunter days have remained stable. Numbers of crow hunters and hunter days have declined significantly, but harvests and harvest per 100 hunter days have remained stable. Pheasant harvests, hunters, and hunter days have decreased, but pheasant harvest per 100 hunter days has increased significantly.

Quail harvests, hunters, and hunter days have not changed significantly, though quail harvests per 100 hunter days has decreased.

Since 1990, results from the Furtaker Survey indicate number of hunters and trappers and harvests of raccoon, beaver, and weasel have remained stable. Hunters and trappers and harvests have significantly increased for red fox, coyote, and opossum. Though trappers of mink and skunk have increased, harvests of the two species have remained stable. Hunters and trappers of gray fox have significantly increased, though harvests have decreased. Numbers of muskrat trappers have remained stable, but harvests have decreased significantly. Additional information and complete reports for the Game Take and Furtaker surveys are available at [www.pgc.state.pa.us](http://www.pgc.state.pa.us).

Through the Game Take Survey, we also measure participation in youth hunts. In 2012 hunting seasons, 8,439 junior license holders participated in youth squirrel season, 3,891 in youth pheasant season, 9,841 in youth spring turkey season, and 1,800 in youth rabbit season. Youth hunt participants harvested 14,984 squirrels, 7,042 pheasants, 2,638 spring turkeys and 900 rabbits.

We conducted an inaugural Mentored Youth Hunter Survey to estimate hunting participation, effort, and harvest by Pennsylvania's nearly 35,000 mentored youth permit holders. Over 88% of mentored youth reported hunting in the 2012-13 license year. Squirrel and spring turkey hunting were popular among mentored youth, with 38.6% and 23.4% participating, respectively. Mentored youth hunted squirrels 56,859 days and harvested 27,808. They hunted spring turkey 22,047 days and harvested 1,244 gobblers.

We prepared and submitted in January the 2013-14 season and bag limit proposals and explanations for all required species based on species status, management plan objectives, and input from Game Commission (PGC) bureaus and regions.

Research on white-tailed deer survival and harvest rates in Wildlife Management Unit (WMU) 5C continued during 2012-2013. Approximately 90 deer were monitored with radio-collars this year and more than 150 deer marked with reward ear tags prior to the 2012-13 hunting season. From these deer, we had nearly 80 reported mortalities with hunting accounting for three-quarters of all mortalities. Following the 2012-13 hunting seasons, another 310 deer were captured. Forty-five were marked with radio-collars and 265 were marked with reward tags.

Field research activities also began as part of the Deer-Forest Study. This study is occurring on two study areas; Susquehannock State Forest in the north and Rothrock/Bald Eagle state forests in the south. More than 90 white-tailed deer were captured with a total of 38 deer receiving Global Positioning System (GPS) tracking collars. Following deer capture, more than 100 miles of transects were walked to collect pellet groups for deer population estimations. Population estimates will be based on DNA in combination with mark-recapture estimators. Work began on installing fences to protect a portion of study plots from deer browsing. Fenced areas will be used to monitor changes in deer impact over the course of the study. This research is a collaborative project with the PA Department of Conservation and Natural Resources (DCNRs) Bureau of Forestry, U.S. Geological Survey (USGS), and Penn State University (PSU).

In conjunction with the Deer-Forest Study, we met with biologists and researchers from New York and Virginia to discuss forest habitat measures and concurrent research projects in each state. This meeting was conducted under direction from Northeast wildlife directors to the Northeast Deer Technical Committee's subcommittee on forest habitat measures. PA continues to lead in our use of forest habitat measures within the context of deer management. Continued cooperation between states in development and evaluation of forest habitat measures and their use in deer management benefit PA's deer program.

During the 2012-13 firearms season, 33 PGC deer aging teams were deployed for 7 days to collect sex, age, and kill (SAK) data from a sample of harvested deer. PGC personnel examined more than 26,000 deer. Age data from more than 15,000 antlerless deer were used to assess the proportion of juveniles in the antlerless harvest. Proportion of juveniles in the antlerless harvest ranged from a low of 0.29 in WMU 2G to a high of 0.49 in WMU 5C. All WMUs exhibited stable trends from 2003 to the present.

Sex, age, and kill data were used to estimate deer harvests from the 2012-13 hunting seasons. Based on hunter harvest reports and SAK data, hunters harvested 343,110 deer (133,860 antlered and 209,250 antlerless). The 2012-13 antlered harvest was an increase of 5% from the 2011-12 harvest. The 2012-13 antlerless harvest was similar to the 2011-12 harvest.

Antlered harvests were composed of 48% 1.5-year-old males and 52% 2.5-year-old and older males. Compared to years prior to implementation of antler restrictions during the 2002-03 hunting seasons, the age structure of the antlered harvest has increased, as has the number of 2.5-year-old and older bucks harvested. Antlerless harvest composition has changed little since 1997-98 hunting seasons.

Results of this year's deer harvest were incorporated into deer population trend assessments. Deer population trends were stable in 18 WMUs, increasing in 4 WMUs, and decreasing in 1 WMU from 2008 to 2013.

For 2013-14 antlerless deer allocations, options were prepared for the Board of Commissioners that would increase, decrease, or stabilize the deer population with either a 5-day antlered and 7-day concurrent firearms season or a 12-day concurrent firearm season. Staff biologists provided measures of deer health (i.e., proportion of juveniles in the antlerless harvest and population trend), forest habitat health (i.e., percent plots with adequate regeneration), deer impact, and deer-human conflict information from a survey of PA citizens for each WMU. The Board of Commissioners retained the 5-day antlered and 7-day concurrent firearms season in WMUs 2A, 2C, 2D, 2E, 2F, 2G, 3B, 3C, 4B, 4D, and 4E. Antlerless allocations were reduced in 13 WMUs. In 10 WMUs the approved combination of seasons and antlerless allocations are expected to allow deer populations to increase or continue to increase (WMUs 2A, 2C, 2D, 2G, 3A, 3C, 3D, 4C, 4E, and 5C).

The Deer Management Assistance Program (DMAP) continued to require a detailed management plan for public land owners and those under the minimum acreage thresholds. The Deer Management Assistance Program was developed to provide both public and private landowners a tool to better control deer numbers and impacts on their properties through hunting.

For 2012-13, the Commission approved 832 applications, which was higher than the 766 in 2011. Enrolled acres increased slightly from 1,448,521 in 2011 to 1,479,477 in 2012. Number of coupons requested and approved increased slightly to 28,170. Although all DMAP harvest permit holders are required to submit a report card regardless of harvest success, only 47% reported. The DMAP reported harvest was 3,852 antlerless deer.

About 80 elk were radio-tracked throughout the year to evaluate survival, distribution, and movements across the range in north central PA. Personnel captured and radio-tagged additional elk between January and June 2013 to improve the distribution of marked animals across elk subpopulations and to replace faulty transmitters.

An annual population survey was conducted in the winter of 2013 to determine a minimum count of the elk population. Elk marked with radio-collars were used to complete a Minimum Number Alive (MNA) count and to monitor elk movements, reproduction, survival and habitat use. A total of 833 elk were counted during the MNA count, which included 452 adult cows, 168 calves, 146 branched bulls, and 67 spikes.

Elk hunting seasons were held from September to November 2012 with a total of 65 elk licenses (19 antlered, 46 antlerless) issued. Successful hunters were required to have their elk checked within 24 hours of harvest. All elk were examined, a tooth and select tissues were collected, and a harvest report was completed. Hunters harvested a total of 52 elk (19 antlered and 33 antlerless). One antlered elk had a gross, green score of >400 Boone and Crockett points this year.

A number of elk-human conflicts were reported this year. To address these issues, staff from the Bureau of Wildlife Management and Northcentral Region met with landowners and elected officials, set up a corral trap to remove the animals causing the problem, and redrew hunt zone boundaries to focus subsequent hunting effort in problem areas. Although a number of bull elk were captured, no elk were captured in the corral trap and moved this year. Effectiveness of the new hunt zone boundaries and increased hunting licenses will be determined during the 2013 hunting season. Near the end of this fiscal year, the elk biologist vacancy was filled.

Escaped captive cervids continue to demonstrate the risk captive facilities pose to our wild deer and elk populations. Game Commission personnel regularly received reports of escaped white-tailed deer and other wildlife throughout the year.

Staff biologists attended the annual meetings of the Atlantic Flyway Council (AFC) to participate in discussions of migratory bird hunting season frameworks and development of management recommendations for consideration by the U. S. Fish and Wildlife Service (USFWS). Changes for the 2012-13 federal frameworks included three minor liberalizations from 2011-12: an increase in the scaup daily bag limit from two to four; an 8-day increase in regular Canada goose season length in the Southern James Bay Population (SJBP) Goose Hunting Zone; and a 5-day increase in regular Canada goose season length in the Atlantic Population (AP) Goose Hunting Zone. The annual Waterfowl Symposium was held 10 August at Middle Creek Wildlife Management Area to provide updates on PGC waterfowl programs, and to obtain input from the public and hunting organizations on waterfowl season proposals for 2012-13. Based on the input at this meeting and comments provided via the agency website,

waterfowl season selections for PA were developed, submitted to the USFWS, and announced to the public via a news release and a waterfowl regulations brochure. In our season selections, we incorporated the federal framework changes noted above, as well as a constituent request to move some days of Canada goose hunting in the Resident Population (RP) Goose Hunting Zone from late January to November-December.

Currently, Atlantic Flyway (AF) duck hunting frameworks (season length and overall bag limit) are based solely on the status of eastern mallards. Several shortcomings of this approach have become evident in recent years. We participated in two structured decision making (SDM) exercises with the AF Migratory Game Bird Technical Section; the first indicated that most AF states favor an approach that would work with the USFWS to base duck seasons in the flyway on the status of multiple species (not just eastern mallards). The second SDM exercise identified and prioritized fundamental and means objectives for multi-species management. This shift will likely require 5-7 years of technical and policy work, with seasons continuing to be based on mallards in the interim.

Migratory bird harvest estimates are obtained through the federal Harvest Information Program (HIP), which uses migratory game bird license purchasers as a sample frame. Bureau staff worked with other PGC bureaus and the USFWS to improve the timing and frequency of HIP data transmissions from the PGC to the USFWS. Accuracy and timeliness of HIP sample frames are becoming increasingly important as interest increases in using these estimates as a formal component of population models in the harvest management decision-making process.

HIP estimates of active duck and goose hunters in PA were 21,300 and 26,300, respectively; these numbers rank second and tied for first in the AF, but were below the 1999-2011 long-term averages (LTA) by 25% and 27%, respectively. The HIP estimate of total PA duck harvest for 2012-13 was 91,800, 40% below the long-term average (LTA). The top five duck species harvested were mallard (37,900), wood duck (22,100), bufflehead (6,600), black duck (5,500), and green-winged teal (4,100). Except for buffleheads, estimated harvests for most of the major species were significantly below the LTA at the state level. This is likely due in part to the decline in PA duck hunter numbers noted above, as well as variations in weather and migration timing that may have reduced availability of ducks during open seasons.

Overall, AF duck harvest was 12% above the LTA; harvests generally increased from 2011-12 in southern AF states. Of note for individual species, flyway lesser scaup harvest (153,100) was more than double the LTA and the highest recorded since the initiation of the HIP; wood duck harvest (446,000) was near the record high set in 2010. AF fall age ratios (an index of relative juvenile recruitment) were above the LTA for mallard, black duck and American green-winged teal, but below the LTA for wood ducks and lesser scaup.

The HIP estimate for Canada goose harvest in PA for 2012-13 was 104,000, which was 38% above 2011-12, but 41% below the LTA. PA ranked third among AF states for total Canada goose harvest. Overall AF Canada goose harvest was 695,700 and flyway age ratio of juveniles per adult was 0.46; both of these figures were similar to the LTA.

Harvest estimates for “light geese” (combined greater and lesser snow goose and Ross’s geese) in PA during 2012-13 were 11,200 during the regular season and 3,162 during the light goose

conservation season, which was again held following the close of other waterfowl seasons (January 28 – April 26 in the AP Goose Zone, January 19 – April 26 in the SJBP Goose Zone, and March 1 – April 26 in the RP Goose Zone) in an effort to increase harvest of this overabundant species. The conservation season allows for additional hunting methods of extended hours, electronic calls, and electronic decoys, which were used for 14%, 32%, and 22%, respectively, of the snow geese taken in the conservation season. The regular season harvest was 48% lower than 2011-12 and the conservation season harvest was down 8% from 2012. The magnitude and timing of PA's light goose harvest is highly variable from year to year because of weather fluctuations. However, estimates of average total light goose harvest (regular season plus conservation season) for the first 5 years with a conservation season are 77% higher than those for the 5 years prior to initiation of the conservation season. As harvest rates have increased in recent years, greater snow goose populations appear to have stabilized around 1 million birds, though this remains approximately twice the population goal of 500,000.

Representative samples of waterfowl are banded annually in PA as part of the cooperative AF banding program. Banding data is essential for determining the timing and distribution of the waterfowl harvest, overall harvest and survival rates, and migration patterns; and allows for evaluation of the effects of changes in hunting regulations. Fiscal year waterfowl banding efforts included pre-season duck banding, post-season (winter) black duck banding, and June resident Canada goose banding.

Pre-season (August and September 2012) duck bandings occurred at 12 sites statewide, with 4 of the 6 PGC regions participating. A total of 2,709 ducks were banded. Total bandings were 30% below the LTA (1989-2011). As usual, mallards made up the largest proportion of the total with 1,343 individuals banded. This was 50% below the LTA. Banding quotas were attained for juvenile male and female mallards, but not for adults (80% of quota banded). The 2012 mallard juvenile to adult age ratio of 1.78 was 15% below the LTA of 2.1. Wood duck bandings were down 20% from average with 830 banded in 2012. We surpassed the banding quotas for juvenile male and juvenile female wood ducks, but did not reach the quota for adults (84% of quota banded). The wood duck age ratio of 1.46 juveniles per adult was 19% below the average of 1.8. Only 14 American black ducks were banded, 76% below average. The number of black ducks banded pre-season in PA has been declining since the mid-1990s and the current level is well below quotas (2012 quota attainment varied from 0-28% by cohort). In addition to these 3 major species to which pre-season banding efforts are targeted, we also banded 314 blue-winged teal, 179 American green-winged teal, 14 northern shovelers, six mallard/black duck hybrids, four northern pintails, two gadwalls, two hooded mergansers, and one canvasback. There were 391 recaptures of ducks banded in previous years.

AF states are participating in a 5-year pilot project to address long-term declines in pre-season black duck bandings by conducting post-season (winter) banding efforts; winter 2013 marked the fourth year of this project. The PGC was again awarded a grant from the Black Duck Joint Venture Northeast States Black Duck Banding Project Fund in support of these efforts. We banded 363 black ducks statewide, which surpassed the previous statewide high for this project of 278 banded in 2012. An additional 862 incidentally captured ducks were also banded including 729 mallards, 45 mallard/black duck hybrids, 43 redheads, 25 American wigeons, 12 ring-necked ducks, four wood ducks, two northern pintails, one canvasback, and one northern

shoveler. Although preseason (summer) duck banding remains our best way to achieve needed sample sizes for mallards and wood ducks, we capture few black ducks during that period. The much higher black duck capture rates in the post-season effort are allowing us to increase our contribution to monitoring and management of this important species. The pilot black duck banding effort will continue through 2014, and partnering agencies are exploring the desirability and feasibility of continuing some level of winter banding after the pilot study is completed.

During June 2013, 3,003 resident Canada geese were banded at 40 locations in 21 counties. This total was essentially identical to 2012 and 7% higher than 2011, and exceeded the state quota (2,480) by 21%. The use of multiple goose banding crews has achieved aggregate banding quotas over the 2002-2013 period for all 6 physiographic strata into which the statewide quota is apportioned to obtain a good geographic distribution of the banded sample. Statewide gosling production in 2013 was near the 1991-2012 average.

We compiled data for local recaptures (i.e., recaptured in same 10-minute latitude-longitude block as originally banded) from migratory bird banding efforts for 2006-2012, imported into Bandit (band data management) software, and submitted to the USGS Bird Banding Laboratory (BBL). The BBL is working to expand their previously limited capacity to receive and maintain local recapture data, which can be of considerable value for management. Additional activities related to banding program management during the fiscal year included updating Bandit software, adding new subpermittees to the agency's banding permit and expanding the banding authorizations for existing subpermittees, completing various banding data edits and summaries, and responding to requests from BBL and other state and federal personnel related to migratory bird banding data.

The AF Midwinter Waterfowl Survey (MWS) provides information about waterfowl populations and distribution in this portion of their annual cycle. Although breeding ground surveys are the primary source of population status information used in setting most waterfowl hunting regulations, MWS results guide harvest management for some species, including tundra swans and Atlantic brant. Other applications of MWS data include evaluating progress towards species population goals set forth in the North American Waterfowl Management Plan, documenting long-term shifts in the spatial distribution of wintering waterfowl, and assessing the locations and status of key wintering habitats. We conducted the MWS in early January and provided data to the USFWS for inclusion in the AF database. A total of 58,474 waterfowl (12% above 2012, but 15% below the 2003-2012 average) were observed statewide, including 4,151 dabbling ducks (mostly mallards and black ducks); 5,949 diving ducks; 1,232 mergansers; 41,048 geese (all Canada geese); and 1,759 swans (97% tundra swans and 3% mute swans). Counts were well above average in northwestern PA but below average along the Susquehanna River and in southeastern PA. For the first time since 2001, no snow geese were observed during PA's MWS. Snow goose winter distribution and movements are highly responsive to weather-related impacts on accessibility of roosting and feeding sites, and therefore numbers observed in individual states can fluctuate dramatically without necessarily being a reflection of overall population status. Among the other 5 common wintering species, Canada geese, mallards, and black ducks all increased from 2012, but remained slightly below their respective 10-year averages; tundra swans increased from 2012 and were well above their 10-year average; while merganser numbers were slightly below both 2012 and the 2003-2012 average.

The PA portion of the 2013 cooperative AF Breeding Waterfowl Survey was completed April 15 – May 2, with numerous agency staff combining to field-check 228 1-km<sup>2</sup> plots statewide. The objective of this survey, which has been conducted since 1989, is to provide breeding waterfowl population estimates for the portion of the AF from Virginia to New Hampshire. Population estimates from this survey are a primary source of data for setting AF waterfowl hunting regulations.

The state-level number of mallard breeding pairs (69,399) was similar to 2012, but 24% below (not statistically significant) the average of 91,191 pairs. This is consistent with trends in other indices of statewide mallard abundance (e.g., the North American Breeding Bird Survey, Second PA Breeding Bird Atlas, and the number of pre-season-banded mallards). Similar declines have been observed for the northeastern U.S. survey area. Highest densities of breeding mallards in PA for 2013 were found in the Piedmont (0.91 pairs/km<sup>2</sup>) and Ridge and Valley (0.85 pairs/km<sup>2</sup>) physiographic strata. American black ducks were observed in 4 of the 6 strata during the survey with a statewide estimate of 2,137 pairs. While breeding black ducks have been observed at very low densities since the survey was initiated in 1989, there is evidence of declining statewide abundance and distribution over the past 15 years. There were 59,561 wood duck breeding pairs, which was near the average of 52,487 pairs. Long-term trends from this survey indicate stable to slightly increasing wood duck populations. Wood duck densities were highest in northwestern and northeastern PA with 1.13 and 0.98 pairs/km<sup>2</sup>, respectively. The estimates of total blue-winged teal (11,072) and total American green-winged teal (6,277) were above average. Teal abundance in this survey can vary dramatically from year to year due to weather related impacts on teal migration and the estimates are not believed to be indicative of actual breeding populations of teal in PA. Estimates of total hooded mergansers (10,732) and common mergansers (28,002) were well above average. Both this survey and the Breeding Bird Atlas results indicate that populations of both breeding merganser species have increased in recent decades.

The 2013 estimate for breeding pairs of Canada geese in PA was 96,383, which is similar to average (91,628). Pair densities were highest in the southwest (1.95 pairs/km<sup>2</sup>) and southeast (1.60 pairs/km<sup>2</sup>). The 2013 total population estimate of 279,212 was statistically similar to the recent 10-year average of 265,905 geese. As expected, the highest densities of total geese were observed in southeastern (5.50 geese/km<sup>2</sup>) and southwestern and northwestern (both 3.90 geese/km<sup>2</sup>) portions of PA. Statewide Canada goose spring breeding population estimates have been declining due to significant expansion of hunting seasons and other lethal and non-lethal programs implemented to control Canada goose numbers, but this population remains well above the goal of 150,000 spring birds in the Commonwealth set in the AF Resident Population management plan. We continue efforts to achieve the management plan goal through reduced goose densities in southeastern and southwestern PA, while maintaining stable populations in other portions of the Commonwealth.

USFWS projections for the Northeast U.S. survey area are for near average overall waterfowl production in 2013, with some small isolated areas of above-average production.

In support of wetland habitat management for the benefit of waterfowl populations, we provided technical assistance to Northwest Region staff regarding wetland plant management on state game lands (SGLs) in Erie County, and recommendations to Northeast Region staff for water level management at Shohola Lake (SGL 180, Pike County).

We recorded observations of sandhill cranes, coots, rails, and snipe reported by the state's birding network to track use of PA wintering, migration stopover, and breeding locations by these species. We are assessing the feasibility of participating in an existing multi-state (USFWS-coordinated) survey of cranes in fall staging areas beginning in 2013.

The USFWS HIP estimated that 18,000 mourning dove hunters took 203,200 doves in PA during the 2012-13 seasons. This was a 33% increase in the number of hunters and a 28% increase in doves bagged compared to 2011-12.

The Mourning Dove Call Count Survey (CCS) has been conducted annually since 1966 in the lower 48 states to assess dove population trends. The PA portion of the 2013 CCS was conducted in cooperation with the USFWS in late May. There were no statistically significant changes from 2012 to 2013 in the number of doves heard or seen per route at either the state or Eastern Management Unit (EMU) levels. Over the long term (since 1966), the number of doves *heard* per CCS route has been statistically stable for PA, and has declined at the management unit level. However, the number of doves *seen* per CCS route, and the number of doves recorded in the separate Breeding Bird Survey (BBS), have significantly increased over the past 47 years and are stable to increasing over the past 10 years for both PA and the EMU.

Managers are transitioning from an interim dove harvest strategy based on a composite population trend (incorporating the CCS, BBS, and absolute abundance from banding and harvest data) to a harvest strategy based solely on population estimates obtained from harvest divided by harvest rate. Although the CCS will no longer be used in the formal decision framework, an improved version of this survey might be helpful in providing an independent estimate of abundance, and continued state participation may be requested by USFWS.

The new dove harvest strategy requires demographic data obtained through a cooperative banding effort involving state and federal agencies, which has been in place since 2003. Banding quotas are specified for adult and juvenile doves in each of 3 Bird Conservation Regions (BCRs) in PA. In July and August 2012, we banded 1,014 doves (358 adults, 518 juveniles, and 138 unknown age) at 40 locations representing 17 of the 22 WMUs statewide; all BCR-level banding quotas were achieved. There were 21 recaptures of doves banded in previous years, all occurring at the same site as the original banding; 5 of these birds were  $\geq 3$  years old including a male at least 7 years of age at Middle Creek WMA. From July through September 2012, 24 PA-banded doves were encountered by the public and reported to the BBL. Twenty-one were harvested by hunters during the September segment of dove season (20 of these in PA and one in Virginia); 2 were killed by house cats; and one was found dead on a roadway.

USFWS HIP estimates indicate that PA continues to have the most woodcock hunters (6,900) of the 17 states in the Eastern Management Region (EMR). Woodcock harvest at the state level was 13,500 birds, down 5% from 2011. Participants in PA's woodcock cooperator survey averaged

14 hours hunted, 15 woodcock flushed, and 3 woodcock bagged during the 2012 hunting season. The overall statewide flush rate of 1.06 flushes per hour was 6% below 2011. We sent a representative to the 2013 Woodcock Wingbee in Indiana, where participants classified over 14,700 wings by age and sex to assess 2012 reproductive success of American woodcock in the Eastern and Central Management Regions. The 2012 recruitment index for the U.S. portion of the EMR (1.65 immatures per adult female) was 1.9% lower than the 2011 index and 0.8% greater than the LTA.

The 2013 Woodcock Singing Ground Survey was conducted in cooperation with the USFWS between mid-April and early May. This survey tracks overall population trends of woodcock across their breeding range. There were no statistically significant changes from 2012 for either PA or the EMR, and for the tenth consecutive year, the 10-year trend in the EMR was statistically stable. Over the long term (1968-2013), however, populations have declined significantly due to decreased amounts of young forest habitat. Populations of ruffed grouse and numerous other species that rely on this habitat type also have declined.

In light of these habitat and population trends, increasing the amount of young forest habitat on PA's landscape is a central objective in the statewide management plans for grouse and woodcock. Other PGC bureaus have the lead on much of the outreach and habitat management activity in support of this objective, in cooperation with partners such as the DCNR Bureau of Forestry, Ruffed Grouse Society, Woodcock Limited, and the Wildlife Management Institute. But bureau staff also participate in these efforts. During the year we visited 13 DCNR Forest Districts to provide technical assistance on early-successional habitat management, resulting in eight site management plans being written and implementation of projects in seven Districts - including a total of about 350 acres which, because they are specifically targeted to high-priority sites for grouse and woodcock, should have very high value to these species. These collaborative efforts are expected to continue to grow as more Forest Districts become aware of this opportunity and step forward with priority sites for management. We also provided technical assistance and information for use in management plans for several SGLs, initiated efforts to reinvigorate the Woodcock Demonstration Trail and associated habitats on PSU's Stone Valley Experimental Forest in Huntingdon County, provided comments in support of an aspen regeneration project on the Allegheny National Forest, and assisted numerous private landowners with young forest habitat development, including continued coordination of shrub plantings and other habitat work and related research efforts on the Upper Penns Valley Early Successional Habitat Initiative in Centre County.

To evaluate the effectiveness of our early-successional habitat management efforts, singing male woodcock surveys are conducted at Appalachian Mountains Young Forest Initiative Demonstration Areas, SGLs emphasizing woodcock management, and other high-priority habitat sites. These surveys, monitoring local-level population response to habitat work, supplement the landscape-level USFWS Woodcock Singing Ground Survey routes described above. Where possible, data is collected prior to habitat treatments to provide baseline information for assessing treatment effects in future years. PGC staff and volunteers conducted surveys on 67 routes within 39 habitat management areas in spring 2013. About 80% of the monitored sites exhibited population indices higher than the average statewide and EMR indices from the USFWS Singing Ground Surveys. Average singing male index among all 39 targeted woodcock

management areas was 6.6 singing males per route (compared to USFWS survey averages of 1.06 males/route for PA and 2.77 males/route for the EMR), demonstrating the dramatic benefits of habitat improvements to local-level woodcock populations. We will continue monitoring treatment sites to assess trends over time.

We are also monitoring response of ruffed grouse populations to targeted habitat management on select SGLs (41, 73, 107, 176, and 266) using drumming surveys conducted by Region personnel. Drumming grouse were detected at all 5 SGLs, though not on all individual surveys. The current monitoring design has been in place for <5 years, so data is not yet adequate to determine population trends.

Data from the summer 2012 grouse sighting survey conducted by 44 PGC foresters and surveyors was compiled and used in making a season forecast. Participants sighted about 41% fewer grouse and 28% fewer broods per observer day than in 2011, and both figures were about 25% below their most recent 10-year averages. Trends in summer survey numbers generally correlate well with fall flush rates, so our season forecast was for average to below average grouse hunting in 2012-13. This forecast proved accurate, as detailed below.

Game Take Survey estimates indicated that 67,544 hunters harvested 52,289 ruffed grouse in PA during the 2012-13 seasons. Compared to 2011-12, the number of hunters declined 15% but the harvest was nearly identical. Number of days afield per hunter increased 5%, and harvest per hunter day increased 12%.

The annual Grouse and Woodcock Cooperator Survey tracks effort and flush rates for avid hunters of these species and serves as a long-term index to the quality of grouse and woodcock hunting and the status of “hunnable” populations (i.e. those in good habitat) across the state. The grouse cooperator survey indicated that cooperators averaged 29 hours hunted, 33 grouse flushed, and 2.3 grouse bagged during the 2012-13 hunting season. The statewide flushing rate of 1.14 flushes per hour was 14% below the 2011-12 rate and 19% below the LTA (1.41, 1965-2011). Compared with the previous year, all 6 PGC regions exhibited decreased rates. 2012-2013 flush rates exceeded the LTA in the Northwest Region, were similar to the LTA in the Northcentral Region, and were lower than LTAs in the Northeast, Southwest, Southcentral, and Southeast regions.

We completed the seventh successful year of the 10-year (2006–2015) wild turkey management plan. In 2012, an annual spring gobbler harvest survey was implemented, and it was confirmed that WMU-level data is sufficient for reliable trend analyses). Partnerships (monetary and personnel) become more important each year to assist with accomplishing the plan, particularly via support from the PA Chapter of the National Wild Turkey Federation (PANWTF), the National Wild Turkey Federation (NWTF) and Pittman-Robertson (PR) funding.

Fall turkey-hunting season length continues to be our primary means of managing turkey populations; season lengths vary from a closed season to three weeks plus a 3-day Thanksgiving season, depending on WMU. Fall season length and structure in 2012 were unchanged from 2011: in all WMUs with a one week or longer season, the fall turkey season opened the fourth Saturday prior to Thanksgiving; WMUs with a 2-week fall season had a Saturday closing date

while WMUs with a 3-week season had a closing date of the Friday prior to the black bear season; all WMUs with a 2- or 3-week season were re-opened on Thanksgiving for an additional three days; in WMU 5A, the 3-day (Tuesday–Thursday) fall season was maintained for the third year; and in WMUs 5B, 5C, and 5D fall season closures were maintained to help increase turkey populations.

Final fall 2012 turkey harvest was 14,074 birds, 42% below the previous 10-year average. The low harvest likely reflects a combination of decreased hunter participation in fall turkey hunting; below average poult recruitment in summer 2012; and abundant mast crops in many WMUs which dispersed the already small flocks. Harvest density (0.31 turkeys harvested per square mile) was similar to 2011 (0.32), 24% below the previous 3-year average (0.40), the lowest level since prior to 1995, and the ninth consecutive year below 0.60 turkeys/mi<sup>2</sup>.

The number of fall turkey hunters (119,493) decreased 17% from 2011 (144,734) and was 23% below the previous 3-year average. The decline in fall turkey hunters may be a reflection of the decline in overall hunters because the proportion of all hunters who hunt fall turkey has remained relatively consistent (approximately 13%) in recent years. Correspondingly, the number of hunter days continues its long-term declining trend (400,325 in 2012, 443,254 in 2011 and 457,435 in 2010), and the 2012 total was 16% below the previous 3-year average (476,705). One reason for the addition of the 3-day Thanksgiving turkey hunting season in 2010 was to encourage more hunting participation. Although such an effect is not yet evident, it should be noted that when new hunting seasons are established it typically takes at least three years before full participation is achieved. Hunter success in 2012 (12%) increased from 10% in 2011 and 2010, and was slightly above the previous 3-year average of 11%. Hunter success has been as high as 21% (2001, a year with excellent recruitment), and as low as 4% (1979).

2012 was the second year in which all-day hunting was allowed during the second half of the spring gobbler season, providing increased hunting opportunity at a time when risks of hen mortality and disturbance are low. In the 2012 spring season, afternoon harvests comprised 5% of the total reported harvests for the entire season, and 20% of harvests during the all-day portion of the season; both of these figures were similar to 2011.

The half day youth hunt on the Saturday prior to the regular season accounted for 7% of the total statewide reported harvest in 2012, which is similar to the average since its inception in 2004, demonstrating the popularity and importance of this youth opportunity.

An annual mixed-mode (Internet and mail) spring turkey hunter survey, which provides final spring harvest estimates in lieu of collecting spring harvest and hunter effort data on the Game Take Survey, was initiated for the 2012 spring season. This new survey is expected to improve accuracy, precision, and timeliness of spring gobbler season data analyses.

The final 2012 spring harvest estimate from the new spring harvest survey was approximately 35,400 turkeys, 7% lower than the previous 3-year average and 11% below the previous 10-year average. The decreased harvest may partially reflect recent changes in survey methodology and analyses; we believe recent harvest estimates are more accurate than those obtained prior to 2010, but additional years of data are needed for verification. Harvest decreases since 2010 may

also have been related to below average poult recruitment two summers prior. Spring harvests typically reflect recruitment two years earlier, because 2-year old gobblers are most susceptible to spring harvest.

The number of spring turkey hunters in 2012 (216,511) was 7% below 2011 (234,031), 9% below 2010 (237,037), and 6% below the previous 3-year average of 230,553. Hunter success, for hunter's first harvest (15.5%), was similar to the previous 3-year average, slightly higher than 2011 (14.6%), and 15% above 2010 when success rate (13.5%) was the lowest since 2005. Spring hunter success has been above 12% since 1994, peaking in 2001 at 21%.

Turkey surveys include the annual statewide Wildlife Conservation Officer (WCO) turkey summer sighting survey, WMU 5A weekly turkey surveys, and the eastern oak mast survey coordinated by the Smithsonian Conservation Biology Institute. The 2012 summer sighting index from the statewide WCO survey was similar to 2011, but 17% below the previous 4-year average. Recent declines in productivity may be indicative of density-dependent effects on reproduction. In WMU 5A, the 2012 sighting index on the Michaux State Forest was 30% below the record high of 2011, but remained 34% above the average prior to fall season closure. Two new routes were initiated in the valleys on either side of South Mountain, with good numbers of wild turkeys observed in the Chambersburg Valley in the western portion of WMU 5A but none in the Gettysburg Valley in the eastern portion of the WMU.

The fourth year of a hen wild turkey harvest and survival rate study is underway. This research will improve our ability to set appropriate fall turkey seasons by providing estimates of harvest rates by age class and fall season length, and determining if 1-week changes in season length affect harvest rates. During fall 2012 and winter 2013, 390 female (including 50 hens also marked with satellite transmitters), 78 male, and 8 unknown-sex juvenile turkeys were leg-banded (sex of fall-trapped poults from late-hatched broods cannot always be reliably determined). Total turkeys marked for the study to date are 1,509 females (230 of these also received satellite transmitters), 317 males, and 37 unknown-sex juveniles. As of the end of June 2013, we were monitoring 38 transmittered hens. Similar to previous years, the highest mortality rates occurred during the spring nesting season (primarily from predation). For the 55 hens alive at the end of April 2013 when the first incubation was detected, 93% of adults and 60% of juveniles exhibited incubation behavior.

For the spring 2013 nesting season, median incubation dates were May 4 in Study Area 1 (WMUs 2C, 2E, 4A, 4B, and 4D) and May 2 in Study Area 2 (WMUs 2F, 2G, and 2H). The regular spring hunting season has opened at least a few days prior to peak incubation in three of the past four years. It is important that we continue to target the season opener for the Saturday closest to May 1 (rather than some earlier date) as an approximation for peak incubation to reduce the risks of negative impacts to the population from opening the season too early.

During the fall 2012 turkey seasons, 12 leg-banded hens were reported harvested: 3 in Study Area 1 which had the shorter season (all during the pre-Thanksgiving segment), and 9 in Study Area 2 which had the longer season (five during the pre-Thanksgiving segment and four during the 3-day Thanksgiving season). Implementation of the "crossover" design (switching season

lengths in the two study areas and then keeping in place for two fall seasons, beginning in 2013) will be crucial for obtaining adequate data to draw meaningful conclusions.

Results from the hen study and the 2006-09 gobbler harvest and survival rate study will be important components of a turkey population model that will be used to predict future populations and harvests based on the interrelationships of hunting seasons, productivity, and food availability and weather factors. In turn, the process for determining fall turkey hunting season recommendations will become more systematic and transparent and help us better address the competing objectives of optimizing hunting recreation and turkey abundance. In October 2012, staff attended a 3-day Wild Turkey SDM workshop at Cornell University. Other participants included staff from New York State Department of Environmental Conservation (DEC), PA and New York Cooperative Wildlife Research Units, and Michigan State University. Although there is an existing population model for the Northeast, a less complex model using PA-specific data, and possibly developed in collaboration with New York DEC, is believed to be preferable for PA. We will continue work with our partners on this effort.

We prepared and submitted an annual PA pheasant status report and a summary of the PA portion of a National Pheasant Conservation Plan to the Midwest Pheasant Study Group. More information on pheasant population restoration efforts is detailed under Goal 3.

Populations of northern bobwhite quail have declined by 75% to nearly 100% over the last 40 years across most of their historic range, including a 97% decline in PA. Although a Northern Bobwhite Quail Management Plan for PA is in place, implementation progress has been slow due to limited availability of personnel and funding. As initial steps, we initiated efforts at the end of the fiscal year to seek contracting an ornithologist to prepare a comprehensive review of available data from various bird surveys to clarify the current status and distribution of bobwhite quail in the Commonwealth, and working with university researchers to develop approaches (such as genetic or stable isotope analysis) that would allow us to differentiate between wild and pen-reared quail.

We hosted the 2012 annual meeting of the Northeast Upland Game Bird Technical Committee (NEUGBTC) in September. In addition to PGC staff, representatives were in attendance from 9 other state wildlife agencies in the NE US, four universities, and two conservation organizations. Participants worked to address charges from the Northeast Wildlife Administrators Association (NEWAA), and discussed various topics related to status and management of wild turkeys, grouse, woodcock, pheasants, and quail. Several research presentations related to these species were provided, including an update from our wild turkey biologist on the hen harvest and survival rate study.

Also as part of our participation on the NEUGBTC, we led a subcommittee which developed a review paper for NEWAA on anticipated impacts of climate change on upland game bird species. This document contained research, monitoring, and management priorities that should be implemented in anticipation of climate change effects on habitat quantity and quality.

Wildlife food conditions were assessed through two independent mast surveys. Results for the eastern oak mast survey, conducted on survey plots in three ecoregions, were variable with red

oak acorn crops being moderate to high on the Ridge and Valley and Pocono Plateau sites and low to moderate on the Allegheny Mountain site, while white oak acorn crops were moderate on the Ridge and Valley site, low to moderate on the Pocono Plateau, and low on the Allegheny Mountain site.

Employees of the PGC and DCNR Bureau of Forestry were asked to rate the abundance and productivity of 28 fruit and nut bearing plants during 2012. Two hundred fifty-two surveys were returned. Respondents had an average of 13.8 years working in the area they reported about, and 66% said they spent more than half of their work-time outdoors. Seventeen foods had productivity ratings that were lower than in 2011, 7 foods had productivity ratings that were similar, and four had ratings that were higher. The oak and black cherry crop increased while other late summer crops such as apples, walnuts, hickories, and beechnuts all decreased with respect to 2011. Mid-summer soft mast crops maintained a third-consecutive year of average production. Taking into account all available foods, overall food conditions were rated almost identically to the overall assessment reported in 2011; 55% of respondents rated overall food conditions as average, 29% considered them above average, and 4% thought they were excellent.

A study of black bear home range and habitat use in suburban landscapes of PA was initiated in May 2010 utilizing three study areas around the cities of Scranton/Wilkes-Barre, State College, and Johnstown. To date, 77 bears have been fitted with GPS-equipped radio-collars that transmit location data via GSM cellular communication. Thirty-three bears wore radio-collars during 2012, of which 32 were initially captured in prior years. We recovered 14 radio-collars from bears in 2012: two were pulled off by bears and dropped, six were removed from dead bears, and six were removed by researchers at winter dens because the study is scheduled to end in 2013. Unfortunately, 19 collars still remain on bears and could not be recovered because their location was unknown due to collar malfunction or the bear ran from its den without being handled.

To date, 37 radio-collared bears have died, with six occurring in 2012. Causes of mortality have included harvest (23), vehicle collisions (9), illegal shooting (1), agency euthanasia (2) and unknown (2). Harvest mortality was below-average in 2012 with only four of 28 radio-collared bears taken (14%). Since the beginning of the study, we have received 114,553 locations from radio-collars, of which 25,414 occurred in 2012. A progress report summarizing field activities was written and submitted to the USFWS to meet PR-funding requirements.

Data collected during the Urban Bear Study has been shared with two graduate students – a Doctoral candidate at the West Virginia University (WVU) and an Master's candidate at PSU. The WVU student will be combining data from New Jersey, PA, and West Virginia to examine survival, home range, habitat and corridor use, harvest vulnerability, movement (resident vs. transient), and sink-source ecology of bears in urban landscapes, whereas the PSU student will be quantifying bear hunting pressure on private lands within the home ranges of bears collared in PA. The WVU analysis should provide broad insight on urban bear ecology to better guide management initiatives, and the PSU analysis should provide specific insight on the question of using regulated hunting to manage urban bear abundance in PA.

We continued to monitor 33 black bears fitted with standard radio-collars on the Sproul State Forest in Clinton County as part of a long-term study of bear population demographics in the

north central bear range. These bears were all adult females of reproductive age. Using data collected since the beginning of the study, minimum cub-bearing age for adult females has been three years; mean litter size has been 2.6 cubs; and mean interval between litters has been 2.06 years. During June-September, we captured and ear-tagged 59 bears on this study area, which was the highest number of bears handled in any year since the beginning of the study.

Statewide bear populations are monitored using several sources of data, including: a statewide capture and tagging program; mandatory check stations during the hunting season; aging of teeth collected from road-killed, captured, or harvested bears; assessment of reproduction during visits to dens of hibernating bears fitted with radio-collars.

PGC employees tagged 728 bears during 2012, which was below the record 843 bears tagged in 2009 and the 792 tagged the previous year, but met the annual goal of 700 bears. Of the 54 counties with an assigned annual tagging quota, 28 fulfilled 75% or more of their quota. From these data, the statewide black bear population was estimated to be 16,255 bears with a 95% confidence interval of 13,868 to 19,179 bears, which was almost identical to the 2011 population estimate.

Official bear harvest figures from the 2012 season were finalized in January. Bears were harvested in a record 56 counties across 20 WMUs, with hunters harvesting 3,632 bears, which ranked as the third highest in PA history. The record bear harvest was set in 2011, when hunters took 4,350 bears. In 2005, hunters harvested 4,164 bears, which was the second highest in history.

The final bear harvest tallies by season were: 13 in the new, early seasons in WMUs 2B, 5B, 5C and 5D; 262 during the statewide, 5-day archery bear season; 2,685 during the 4-day bear season, which included a Saturday-opener; and 672 during the extended bear season held in various WMUs during all or portions of the first week of the deer season.

Hunters purchased 160,852 bear licenses during 2012, which was a slight decrease from the previous year, suggesting that recruitment of additional hunters to PA's bear seasons may be stabilizing despite expanding opportunity. The statewide harvest rate during the general bear season as determined from recovery of ear-tagged animals was 16.4%, and in WMUs open to extended hunting, harvest rates averaged 18.2%.

During the general season, 58% of the harvest occurred on opening day, which for the third consecutive year was Saturday. This was down from the previous year and slightly below the average percentage observed in recent years when the season opened on Monday. Twenty-three percent of the harvest occurred on the second day, 12% on the third day, and 7% on the fourth day.

In February, 3,652 teeth collected from bears during 2012 were shipped to a lab in Montana for aging. Results were received and posted in summer 2013 on the agency website so that hunters could obtain the age of their bear.

Hibernating black bears were visited at winter den sites during February and March for population monitoring. Sixty dens were visited resulting in 169 bears being tagged, which included 60 adults, 31 yearlings, and 78 cubs. Bears were tagged in 12 counties: Bedford (3), Bucks (1), Cambria (6), Centre (5), Clinton (96), Elk (7), Lackawanna (3), Luzerne (5), Mercer (1), Pike (13), Somerset (9), and Westmoreland (20). An additional 15 bears also were observed at these dens but not tagged because they were too small (7 cubs) or ran before being darted (8 yearlings), bringing the total number of bears handled or observed during winter den work to 184.

At the request of the Board of Commissioners, we prepared a summary of issues affecting September squirrel hunting seasons in neighboring jurisdictions. PA hunters currently enjoy approximately 105 days of opportunity to harvest gray and fox squirrels state-wide. Squirrel hunting in Pennsylvania typically begins with a youth season in early October (10/6/2012) and terminates in late February (2/23/2013) with season closures during big game seasons and Christmas. Surrounding states provide harvest opportunities as early as September 1, and as late as February 28. The numbers of available hunting days in these states range from 115 days in Delaware to 181 days in New York. While this led to discussions among Commissioners about possible changes to Pennsylvania squirrel seasons no proposed changes received consensus.

Commission Wildlife Management staff members met with members of the PA Cooperative Fish and Wildlife Research Unit (PCFWRU), Bureau of Wildlife Habitat Management (BWHM), and Northeast and Northwest Region at PSU to plan future snowshoe hare research projects. As a result of the meeting, we completed a research prospectus and advanced an agreement with the PCFWRU to assess snowshoe hare response to habitat manipulation in northern hardwood forests. This will be a 2 year Master's Degree project conducted in the Northeast and Northwest regions.

The 2012 total fisher harvest was 228 animals from WMUs 2C (45), 2D (41), 2E (50), 2F (55), 2G (22), and 4D (14). A total of 3,379 fisher harvest permits were sold prior to the trapping season resulting in 6.1 fishers harvested per 100 permits issued. This estimate is higher than any prior season.

We summarized bobcat harvest information from the 2012-2013 bobcat hunting and trapping seasons. The total 2012-13 state-wide bobcat harvest was 1,056 animals. The number of bobcat permits was 15,244 as compared to 13,134 during 2011-2012. Ninety percent of all bobcat reports were received via Interactive Voice Recognition and online reporting systems. We estimate that 685 bobcats were trapped, and 371 were taken by hunters. The proportion of the harvest attributed to hunters increased from 25% to 35% during this season. Most importantly, the number of bobcats harvested per 100 permit holders was almost identical to the last two seasons.

We complied with reporting requirements by the USFWS regarding bobcat and river otter Convention on International Trade in Endangered Species (CITES) export status and we ordered required year-specific tags for the upcoming season.

We also developed a 10-year bobcat management plan and circulated it for intra-agency review. The bobcat management plan provides a comprehensive and current summary of bobcat biology,

historic and current status in PA, economic significance, public interest, and regional population and harvest management approaches. The plan also provides supporting objectives and strategies to achieve five species-specific goals related to population monitoring, habitat assessment, harvest management, research, and public outreach.

The PCFWRU continues work to assess river otter density and distribution in northeast PA. Students from PSU, with assistance from Northeast Region staff and several trappers, collected 614 samples from latrine sites in WMU 3D, the Wayne and Lackawanna county portions of 3C, Luzerne and Carbon county portions of 4C, and a part of Luzerne County in 4E. DNA extraction from fecal samples is ongoing.

We developed a river otter management plan and circulated it for intra-agency review. The purpose of this plan is to provide an overview of the current state of knowledge pertaining to river otter biology, habitat, history, resource value, and population management and provide direction for future management. It represents our guide to managing otter populations in PA for the next 10 years. It also serves as an information and education resource for anyone seeking answers to questions concerning river otter life history and past, present, and future otter management in the Commonwealth.

We analyzed beaver colony survey data to determine occupancy rate for use in the beaver harvest and population monitoring annual project report.

We distributed an announcement seeking beaver carcasses from trappers, and beaver carcass tags and instructions to interested trappers, in preparation for age structure and reproductive data collection during the 2012-2013 beaver trapping season. We collected 85 beaver carcasses from cooperating trappers to determine basic reproductive parameters (litter size, age at first reproduction, reproductive rate) and adult age structure of beaver populations within each Wildlife Management Area or physiographic unit. We began to examine female reproductive tracts and skulls to estimate litter size and age at first reproduction. Litter size will be estimated from ovarian and placental scar counts. Tooth eruption and cementum annuli analysis will be used to estimate age and provide age structure information.

We produced and distributed temporary “No Beaver Trapping” signs for posting in a Cameron County watershed as part of the protected beaver colony program.

In an effort to annually monitor furbearer populations and damage complaints, we prepared and mailed the 2012-2013 WCO furbearer questionnaire and accompanying data summary sheets to Region staff. Statewide and regional population status maps were prepared for beavers, river otters, fishers, bobcats, and porcupines.

We spent time evaluating and incorporating the new WMUs 2G and 2H into our furbearer and bear management programs.

We conducted a Hunter Survey of Pheasant Management in PA that assessed hunter opinions towards pheasant management in PA, and reasons for hunting or not hunting pheasants. The sample frame included pheasant hunters from historic Game Take Surveys and a random sample

of current PA hunters. Preliminary results from this survey were distributed to BWM and Bureau of Information and Education (BIE) staff for comment, and final results were being compiled as the fiscal year drew to a close.

Wildlife health activities included monitoring of general disease surveillance, publishing results of eagle mortality investigations, especially as it relates to lead toxicosis, epizootic hemorrhagic disease (EHD) surveillance and response, continuing the investigation of mange in bears, publishing results from the zoonotic raccoon roundworm *Baylisascaris*, publishing the results from samples of Lake Erie waterfowl tested for environmental contaminants, upgrading the capabilities of the wildlife disease database, responding to the discovery of chronic wasting disease (CWD) in both a captive herd in Adams County and free-ranging deer in Bedford and Blair counties, and responding to white nose syndrome (WNS) in bats. In addition significant time was spent on training personnel and outreach.

A training exercise simulating two CWD cases was held early in the 2012 in the Southcentral Region to test readiness and evaluate our operating procedures put in place to implement the CWD Interagency Response Plan. This exercise was attended by representatives of all regions and affected bureaus. We know retrospectively that this exercise was helpful in defining direction and roles expected in the event that CWD was detected in PA, but little did we know that the disease would be found in PA in both captive and free-ranging deer in the same year.

The PA hunter-killed deer sample quota was revised to maximize CWD sampling closest to known positive out-of-state cases. A formal agreement with the PA Department of Transportation (PennDOT) to facilitate collection of CWD samples from road-killed deer in the 4 counties closest to Maryland's index case. In August interviews were held and in September a candidate was selected to fill a biologist position in the Southcentral Region who would focus on CWD sampling. Sampling of road-killed deer in cooperation with PennDOT could now commence in earnest. The documents provided to deer processors and taxidermists and the Parts Ban Executive Order were reviewed and revised. Agreements were finalized to migrate to a new CWD testing laboratory.

In October 2012 the Pennsylvania Department of Agriculture (PDA) confirmed the first case of CWD in Pennsylvania in a captive deer on a licensed deer farm in Adams County. On Oct. 11, the PDA announced that the positive sample was taken from a captive-born and raised white-tailed deer at 1491 New Chester Rd., New Oxford, and tested as part of Pennsylvania's intensive CWD monitoring efforts. The sample tissue was tested at the Pennsylvania Veterinary Laboratory in Harrisburg and verified at the National Veterinary Services Laboratory in Ames, Iowa. In addition to the Adams County location, the Department of Agriculture quarantined two farms directly associated with the positive deer at 6464 Jacks Hollow Rd., Williamsport, Lycoming County, and 61 Pickett Rd., Dover, York County. The quarantine was intended to prevent movement of animals on and off the premises.

With the blessing of PDA, the mandible and incisors from the CWD positive deer were retrieved from PVL where the exhumed deer has been taken for incineration. The incisors were sent to a laboratory for confirmation of the age since this could have a bearing on the epidemiological investigation.

The Interagency CWD Task Force convened to share information. Work began on the many tasks that were identified, and October 17 was set for a public meeting in York Springs, Adams County. Based on this information the Commission director and staff initiated work to define and designate a Disease Management Area (DMA) and finalize an Executive Order (EO) in response to this disease threat. The following restrictions were incorporated into the EO issued on October 17: no movement of high-risk parts from cervids outside of the DMA; no use or possession of any cervid urine-based attractants within the DMA; no rehabilitation of deer within the DMA; no feeding of cervids within the DMA; and no transport of live cervids from menageries into or out of DMA.

Materials available to the public on CWD and the situation also were reviewed and updated including the agency's CWD home page, the Disease Reference Library CWD account, the Parts Ban executive order, instructions to processors and taxidermists, the CWD informational brochure and news releases were prepared.

PDA, with the assistance of U.S. Department of Agriculture (USDA) Wildlife Services personnel, initiated depopulation and testing of the remaining deer at the New Oxford facility on October 18. Eight deer were taken and sampled; unfortunately one deer broke through the fenced facility and escaped during the operation. Of the eight deer sampled, one deer, by appearance a healthy adult buck, tested positive for CWD. The escaped deer, a female known as "Pink 23," was subsequently taken by a hunter in the area during the firearms season and tested; CWD was not detected in this animal.

Trace-backs and trace-forwards by PDA of deer associated with the New Oxford facility and/or their deer ultimately led to the quarantine of 32 Pennsylvania deer farms, as well as deer farms in nine other states. All tests for CWD at these facilities that were conducted yielded no additional positives.

Many opportunities were taken to inform and educate hunters and the public in the first several weeks following this positive CWD case. A letter was sent to all Adams and York County resident hunters informing them about the CWD situation, the DMA, deer checking procedures, and what was expected of them. A random telephone survey of Adams and York County adult residents was conducted to assess their awareness and concerns about CWD to determine the effectiveness of outreach efforts.

Initially, the response to the October detection of CWD in captive deer in Adams county and the quarantine of associated sites in York county involved working with the Commission's Southcentral Region to develop the infrastructure to establish and maintain a CWD check station for deer taken by hunters within the DMA and mitigate risks from the deer that escaped depopulation on the index farm, and also a potentially infected captive deer in Huntingdon county. In addition, it was necessary to rapidly develop the capacity to implement the intensive sample collection called for in the CWD Response Plan to determine if the disease had spilled over into the wild, free-ranging deer population in the DMA. This phase of the response dominated the period leading up to and through the deer rifle season. Contracts were initiated to sample road-killed deer in the two county areas, and we contracted with a deer processor and taxidermist to help at the CWD check station to minimize waiting times and contain high risk

parts. Much was learned about the capacity of an alkaline digester (generously loaned by the Maryland Department of Natural Resources) as a means of disposing of prion infected material. Field necropsies of sick deer in the DMA included one with severe lung lesions suggestive of bovine tuberculosis (BTB). The balance of the response to the initial CWD detection became a process of cataloguing and reporting results as they became available and reviewing activities for future changes.

Results from samples of all types taken in the DMA were received, and CWD was not detected in the 2,086 samples that had been collected. At the end of that process 1,932 letters were sent to hunters whose deer had been tested from the DMA. A situation report was presented to commissioners and the public at the January meeting.

Simultaneously, additional heads from around the state were collected by aging teams at deer processors, and then brought to the region processing points for sampling, again with assistance from the PDA, USDA, and the PA Department of Health (PDH). Ultimately, 2,945 samples were submitted in early 2013 from this statewide surveillance effort to the PA Veterinary Laboratory for testing.

Unfortunately, within the first one-third of the hunter-killed sample results CWD was confirmed in 3 hunter harvested deer; two from Blair County, and one from Bedford County. These deer were all taken about 25 to 30 miles north of the Maryland line and about 60 miles west of the CWD Disease Management Area in Adams and York Counties. This discovery necessitated review and planning to address existing and new risk factors in this new area of the state. Disease considerations were provided to Southcentral Region personnel involved with the initial response to detection of CWD outside the existing DMA. CWD was not detected in the balance of samples from the rest of the state.

In response to these new positive samples a second DMA was defined, website materials were updated, and a new Executive Order was issued. A public meeting was held on March 20, in the new DMA which was very well attended, and it proved to be an opportunity to answer many questions. Blair and Bedford counties were added to the agreement with PennDOT and road-killed deer sampling in the new DMA accelerated.

Subsequently, as part of the effort to determine the prevalence and distribution of CWD in and around the DMAs, samples were collected from road-killed deer, CWD clinical suspects and captive escapees from around the state, especially within the DMAs where targeted surveillance is emphasized and personnel are dedicated to the project. Information on PA's CWD response was provided in a variety of programs to sportsmen and women, as well as personnel from state, academic, federal and private entities. A comprehensive CWD program suitable for use by PGC field personnel called on to address the public was placed on the PGC website. Development of a risk based CWD sampling strategy continues with definition of risk and weighting of sample; emphasis has been on the location of positive cases, captive cervid propagators and escapees. The annual multi-state CWD coordination meeting for mid-Atlantic region states (West Virginia, Virginia, Maryland, PA, and Delaware) was attended in Winchester, Virginia (2012) and Frederick, Maryland (2013).

Disease testing of 41 hunter-killed elk found no evidence of CWD, BTB or brucellosis. In addition serum was collected from cows to measure progesterone, and uteri were inspected to look for the presence of a fetus. For the second year in a row a 3.5 year old cow was found to have a mummified calf. This time it was a 14 pound fetus mummified at approximately six months of gestation.

WNS in bats is an epidemic of unprecedented proportion in North American wildlife. Its rapid spread and virulence threaten the continued existence of the most common cave-dwelling bat species. Insect-eating bats are critical to the normal function of terrestrial and aquatic ecosystems. Many feed on insects that are pests of forests, agricultural and garden crops or pose risks to human health. Since its discovery in upstate New York in February 2006, WNS has spread to 32 U.S. states and five Canadian provinces, with mortality greater than 90% at many hibernation sites. This catastrophic loss of bats has the potential to destabilize ecosystems and increase reliance on chemical alternatives for insect and disease control. WNS was known to affect sites in 32 of the state's 67 counties at the end of the 2012-13 hibernation season. Nearly every hibernaculum in PA is believed to be contaminated. In addition to leading a federally supported response effort by Northeast and Mid-Atlantic states, we are actively involved in development of multiple sections of the WNS National Plan and its implementation.

For three years beginning in 2009, we led a multi-state WNS response project awarded \$940,000 in federal competitive grant funds. As lead state, PA played a key role organizing and participating in research efforts to monitor the severity and spread of WNS, and to identify methods of reducing its impact. Field and laboratory research projects, including two treatment studies, were completed during 2012. Unfortunately, neither study produced a treatment that could be safely and effectively deployed. A final report due in 2014 will include specific data from all participating states. PA's most significant contributions to the WNS response project included leadership of a team that developed a protocol using non-invasive ultra-violet (UV) light to accurately diagnose WNS in the field. The National Wildlife Health Center incorporated the UV protocol into procedures for collection of laboratory samples, eliminating the need to euthanize and submit whole bats. The PGC's ongoing summer bat count program, originated in 1989, was the only source of historical summer data predating the onset of WNS. Post-onset summer surveys document declines in maternity colonies that corroborate declines observed in hibernating bat populations during winter. Compared to pre-WNS counts, 2012 surveys at two summer colonies linked to a known WNS-infected hibernacula declined by 98.9 % and 96.5%. Results of the 2012 statewide Appalachian Bat Count found an overall decline of 83.4% for 129 summer colonies with historical data.

PGC and Bucknell University contributed to USGS research that proved dehydration and a resulting electrolyte imbalance caused neurological symptoms in bats, including tremors and collisions with stationary objects during flight. We originated and maintain a detailed map that tracks the spread of WNS in North America. This map is distributed regularly to federal and state agencies in the U.S. and Canada, and to WNS researchers in North America and Europe.

No effective treatment for WNS, either natural or pharmaceutical, has been identified to date. Key treatment studies presented at the May 2013 USFWS Northeast Region WNS webinar included: (1) one potential treatment that killed most test-subject bats quickly; (2) another

treatment that retarded growth of *Geomyces destructans* (*Gd*, the fungus that causes WNS) in Petri dish, but applications did not increase survival in bats and produced a thick film on their wings that could have greatly prolonged arousal periods with extensive grooming; (3) a third potential treatment study found multiple bacteria that seemed to have short-lived antifungal properties but were not effective long-term; however, one *Pseudomonas* seemed to have immediate and long-term effects in Petri dish. If a treatment was discovered, application would present many challenges, including potential harm to rare creatures in cave ecosystems, as well as native fungi and bacteria that support higher life forms in those ecosystems, and potentially harmful affects on groundwater. Large amounts of chemicals would be needed to treat thousands of sites across the continent and annual application might be necessary for treatment to be effective. Vaccines usually require sequential doses at specific times and bats are difficult to capture, let alone recapture. Given the absence of an effective treatment, and the difficulties of delivery should one be developed, a moratorium on recreational caving during the hibernation period would protect bats from additional, human-caused disturbance, thus increasing the potential for our remaining bats to survive arousals during hibernation caused by WNS.

Bucknell University physiology studies have found that (1) big brown bats have much better immune response to *Gd* than little brown bats; (2) when bats are exposed to multiple infection doses, all bats survive better at 39 degrees F than at 50 degrees; (3) body mass played a significant role across all infection doses; (4) increased or decreased amounts of *Gd* in the infection dose did not play a significant role in survival.

We also collaborated with researchers at PSU's Beaver Campus on genetic profiling that could provide information critical to the recovery of the little brown bat if geographic areas with distinct subpopulations with comparatively high survival rates can be identified. Researchers examined genetic markers from hibernating little brown bats from across the state. Maternally-inherited genetic differences between hibernacula in western PA and those in the rest of the state suggest that western hibernacula are partially genetically isolated from central and eastern hibernacula, and may call for separate management units for WNS recovery efforts.

As a result of the overwhelming WNS losses to the Commonwealth's cave-bat population, the PA Biological Survey's (PABS) Mammal Technical Committee (MTC) submitted proposals, under review by the PGC, that the little brown bat, tricolored bat and northern long-eared bat (state responsibility species) be added to the state list of endangered species. An open letter seeking suggestions for the conservation of these three species appeared in the PA Bulletin in October 2012. Following significant public input and a public workshop, the agency decided to not move forward to draft regulatory changes because more discussion, research and coordination was needed before the agency takes action. A Bat Conservation Workshop was held in April 2013 for respondents to the bulletin request. The 75 workshop participants included representatives of the forest, coal and wind industries, farming, conservation organizations, agency staff, and private individuals. Presentations by Bureau staff included a summary of comments received in response to the letter of intent; the ecology, importance and populations status of bats; WNS, other threats and responses to threats; management; and examples of industry partnerships. Breakout sessions discussed what actions should be taken (and by whom) to stabilize and improve the population status of the 3 bat species. Key points featured in a

summary of breakout sessions included the need to work cooperatively to address issues, to minimize impacts to bats, and to find solutions to WNS.

Nationally, the USFWS is reviewing petitions from the Center for Biological Diversity to list the northern long-eared and eastern small-footed bat as endangered or threatened. USFWS is also reviewing a status assessment for the little brown bat received from Boston University's Center for Ecology and Conservation Science and conducting a comprehensive threat and status assessment of the tri-colored bat based on USFWS prioritization of hibernating bats that may be affected by WNS.

An agreement was implemented between USFWS State College field office and PGC to establish and operate a White Nose Syndrome Fund (WNSF) to benefit bat species under threat from WNS that are listed, proposed or candidate under the Endangered Species Act. Contributions to the fund come from entities wishing to further conservation and recovery. In some cases, contributions may come from project proponents and permit applicants as compensation for activities likely to adversely affect federal-status bats or their habitat, this only after consultation to minimize take. The objective is to provide a dedicated source of funding to result in tangible benefits to WNS-impacted bats. Thanks to a contribution by CONSOL Energy, three projects involving WNS control methods and analysis of PA bat population trends in response to WNS have been funded: "Statewide statistical analysis to understand disease impacts and inform management of hibernating bat species" by Temple University, "Elucidating the biology of *Geomyces destructans* (*Gd*) that could lead to long term establishment in its non-native environment and evaluation of a fungal biological control agent from eastern hemlock against *Gd*" by Lock Haven University of PA, and "Mycoviruses in White Nose Syndrome" by PSU Plant Pathology and Environmental Biology.

Data depicting the prevalence and distribution of the zoonotic raccoon roundworm *Baylisascaris procyonis* in PA derived from analysis of samples gathered in 2010 and 2011 has been analyzed, and a manuscript is in preparation for both local and widespread distribution. A presentation on the subject was presented by the University of PA collaborator at the American Association of Veterinary Parasitologists' summer meeting.

Along with NW Region staff, we completed a 2-year study of contaminant levels in Lake Erie waterfowl. Tissue samples were collected from 41 harvested waterfowl (eight species) harvested at Presque Isle during the 2011 and 2012 hunting seasons. Contaminants such as PCBs, DDE, and mercury were found in all mergansers tested, as well as in some buffleheads. Because these contaminants may also be present in other PA water bodies, and contaminated waterfowl could migrate to other areas of the Commonwealth, we updated our waterfowl consumption advisory. The new guidelines, applicable statewide, are that mergansers should not be eaten, other diving ducks if properly prepared should be eaten only occasionally, and dabbling ducks and geese can be eaten safely if properly prepared.

Mortality investigation reports from 131 eagles found dead in PA were received from Southeastern Cooperative Wildlife Disease Study (SCWDS). The process of statistical analysis and mapping of the results of this eagle mortality investigation is now complete, and an initial notification was made to commissioners at the January meeting.

The first case of EHD of 2012 was confirmed from Beaver County in late summer. Additional samples from suspect EHD deer were submitted from the Northwest Region; the disease was confirmed in Mercer County, but the others from that region were attributed to causes other than EHD. Before the first frosts EHD was also confirmed in Beaver, Westmoreland and Allegheny counties. The report on EHD in 2012 has been submitted to SCWDS and USDA. A comprehensive EHD program suitable for use by PGC field personnel and the public was placed on the PGC website.

During bear season, blood samples were collected from 12 bears with symptoms of mange. These were processed at the PSU Animal Diagnostic Lab to continue developing a method for measuring prevalence and distribution of this disease. Data containing information about the distribution of mange also were organized from the statewide black bear capture and mortality databases and provided to a graduate student enrolled at Indiana University of PA (IUP) in a Master of Science program studying Geographic Information Systems (GIS) and cartography.

Three avian mortality events were investigated; one each in Armstrong, Crawford and Erie counties. Necropsies on 96 birds from the Armstrong County event showed the deaths were due to wind-associated trauma. The investigations of the Crawford County event involving four waterfowl and the Erie County event involving a birdfeeder were inconclusive. A paper entitled “The Epidemiology of *Salmonella enterica* spp. *enterica* serovar *Typhimurium* Strain Associated with a Songbird Outbreak” was published in the Journal of Applied and Environmental Microbiology. This paper, co-authored by the PGC wildlife veterinarian, reflects the disease outbreak in Pine Siskins and other passerines in PA and other eastern states in 2009.

Two new cases of Lymphoproliferative Disease in wild turkeys were confirmed in Blair and Westmoreland counties.

Additional progress was made in the development of a flexible and searchable database that links disease reports submitted with specimens to laboratory results. The importance of complete and accurate completion of the PGC Wildlife Disease Sample Submission Form has been stressed in communications with agency personnel and in wildlife disease surveillance training. Among its first uses were searches to compile and sort all eagle, EHD and CWD cases.

A disease risk analysis of the decision to relocate elk from Weedville was prepared. In addition, practical recommendations for handling these animals were obtained from Western states.

Because of their critical role in the statewide black bear population research collared female bears are extremely valuable as are those that are part of the Urban Bear Study. Visits to their dens for collar maintenance and tagging of offspring are at a time when these physiologically challenged bears are also of necessity subjected to anesthesia. To insure the best possible outcome of these events, and to continue to refine our anesthetic protocols, physical examinations and anesthetic management are provided. In this process adult female bears were examined and monitored under anesthesia, and initial health examinations were provided to yearlings and cubs.

## **Strategic Objective 1.2 Develop and enforce laws and regulations to protect wildlife populations and habitat.**

House Bill 1859 sponsored by Representative Edward Staback passed into law as Act 54. An intensive statewide training was conducted for all officers and several major poaching cases were prosecuted during this reporting period that included the first ever felony charges and jail sentences for poaching. Numerous cases are still being adjudicated in the court system; however, it appears both District Attorneys and Judges are very supportive of these increased penalties.

In addition, SB 1200, introduced by Chairman Richard Alloway, passed into law as Act 60 and was implemented January 1, 2011. To-date, 12,648 violation records were received from other member states and reviewed; 3,070 of those violations were serious enough to be applicable to Pennsylvania's standards and the violators were placed on license revocation in Pennsylvania due to the offense that occurred in another member state. This includes 2 Pennsylvania residents who shot hunters in other states who would not previously have been revoked in Pennsylvania. Pennsylvania has submitted 313 in CY2012 and 289 in CY2013 violators that met the criteria into the compact to be evaluated for revocation by other member states.

Anecdotal evidence, as well as actual intelligence gathered by the special operations division indicates that these two pieces of legislation are having a deterrent effort on commercial poachers and chronic offenders.

The Senior Executive Staff has provided on-going direction to the field force in focusing efforts on the violations with the most significant impact to the resource and our officers have responded to that direction and supervision. Total enforcement contacts including field checks, investigation of complaints, on scene violations in progress, targeted surveillance and enforcement operations are estimated at 200,000 enforcement contacts. As an additional effort in the prevention of violations to protect wildlife, significant emphasis was placed on increasing the HVI, or high visibility index of conservation officers in the field to provide increased deterrence and protect wildlife through task forces. In the fall of 2011, the Bureau of Wildlife Protection conducted a data analysis of our prosecution data base to determine peak night time poaching activity. Then a state wide task force was coordinated called Operation Talon that focused officers of the PGC, PFBC, DCNR and PSP, including PSP air support across the Commonwealth focusing of night time poaching activity for a two week period. A total of 565 officers participated in the operation and resulting in 430 enforcement contacts, 300 citations or arrests, and 107 warnings. Several other criminal violations detected were turned over to PSP for prosecution including 6 DUI's, several drug or drug paraphernalia charge. A similar state wide operation is again planned for the fall of 2013.

During the 12-13 season enforcement efforts were focused by officers on detection of trapping violations. Due to the increased value of fur in recent years, trapping again has become popular among the sporting community. 429 violations were detected statewide, with 366 citations being issued along with 63 warnings.

The Bureau continues to request, monitor and assist regions with a number of enforcement details designed to combat violations that have the most negative impact on wildlife and habitat

resources. Bureau staff has assisted region staff with identifying violations and situations where enforcement details will focus on these areas. Bureau staff assists regions with manpower when available and monitors the results of each detail. Each region is required to complete at least one detail per year. Some regions have elected to hold several details during various times of the year. Types of details have ranged from focusing efforts on night time poaching incidents, to waterfowl hunting, to SGL shooting range violations to ATV/snowmobile details. Enforcement details have not only had the benefit of detecting numerous violations but also have resulted in much public support for the agencies law enforcement program in areas where details have been held. Details from the 12-13 season reported 25 citations issued along with 49 warnings.

The top ten violations prosecuted this year also indicate that officers are focusing their efforts on violations with the most impact to the wildlife resource. They are as follows:

1. Unlawful taking or possession of Game or Wildlife –563 prosecutions.
2. Possession of a loaded firearm in a motorized vehicle - 428 prosecutions.
3. Operating vehicles on state game lands in areas closed to travel, primarily ATV violations – 392 prosecutions.
4. Hunt or take wildlife through the use of bait or enticement –331 prosecutions.
5. Kill/possess big game in closes season or excess of bag limits - 249 prosecutions
6. Big Game Tagging violations – 212 prosecutions
7. Hunt or take wildlife through use of a motor vehicle –175 prosecutions
8. Cast a light after 11pm –172 prosecutions
9. Cast a light while in possession of firearm or bow – 114 prosecutions
10. Littering - 112 prosecutions.

Statutory revisions were accomplished in several sections of the Game and Wildlife Code this fiscal year.. Senate Bill 623 amended section 2701 and section 2711 to permit a person 17 years of age or older to participate in a mentored hunting program for up to 3 licensing years. House Bill 1417 section 2702 (relating to aggravated assault),section 904 (relating to interference with officers), section 905.1 (relating to assaulting an officer), 925 (relating to jurisdiction an penalties), 927 (disposition of fines and penalties), 2141 (relating to killing game or wildlife to protect person), 2163 (relating to unlawful importation of game or wildlife), 2164 (relating to unlawful taking and possession of protected birds), 2165 (relating to possession or interference with active nests or eggs of birds), 2166 (relating to unlawful sale of protected birds and plumage), and 2501 (relating to hunting or furtaking prohibited while under the influence of alcohol or controlled substance): The final legislation amended section 2702 to add Waterways Conservation Officers, Deputy Waterways Conservation Officers, Wildlife Conservation Officers and Deputy Wildlife Conservation Officers to the list of enumerated officers, employees, etc. that increases the grading of certain offenses for these status victims. The final legislation also amended section 904 and section 905.1 to create mirror offenses and penalties in the Fish and Boat Code and Game and Wildlife Code for violations of sections 2702 and 2702.1. The final legislation also amended section 925 to reduce the grading of offenses that magisterial district judges may accept guilty pleas on from all misdemeanors to ungraded misdemeanors. Lastly, the final legislation eliminated the last remaining Game Code references to misdemeanors of the third degree, a penalty grading eliminated in section 925 by Act 54 of 2010. House Bill 1237 amended section 2706 to reduce the period of time that members of the

Pennsylvania Army National Guard or Air National Guard on active Federal service or members of the reserve component of the armed forces need deployed overseas within the previous 24 months to become eligible for the reduced fee license from 180 days to 60 days. House Bill 891 amended section 2908 to permit a nuisance wildlife control operator to use electronic means to check on the status of a trap.

The special investigations unit is now operating at full compliment. Additional surveillance cameras were purchased this fiscal year to enhance the units evidence gathering capabilities. Officers have expanded the use of internet and social media sites as investigative resources. Increased coordination with other state and federal wildlife investigation units has resulted in 4 inter-state investigations this reporting period. We have initiated the process to add three advanced overt investigation officers that will greatly enhance the units capabilities, but are contingent upon a complement increase.

The Enforcement Division continues to supply Deputies as much surplus equipment as possible to reduce their out-of-pocket costs. 22 new DWCO's were recruited and trained this reporting period.

In addition, the Commission mandates annual training in Legal Updates, Communication Skills, Firearms, Defense and Control Tactics, First Aid and CPR, and Hazardous Materials first Responder training. DWCO's receive additional training by attending a minimum of four of the six district training meetings required by policy. Additional structured training modules were developed this year by the Training Division, including furtaking enforcement training and vehicle stop training and over 30 structured training modules are available for use on the agency's intranet site. Wildlife Conservation Officers also voluntarily expand their skills by attending various in-service and out-service training initiatives on a routine basis. Regional training has also been provided in current issues such as deer management training.

After completing 50 weeks of training in the Ross Leffler School of Conservation, the 29<sup>th</sup> class of wildlife conservation officers joined the field force in March. 27 men and 3 women spent almost a year in intense training in both the classroom and in the field.

The investment in training pays direct dividends to the professionalism and technical competence of Game Commission Officers as measured by our enforcement statistics. Officers encountered a total of 19,716 violations during this fiscal year through high visibility patrol, selective enforcement operations, overt and covert investigations, surveillance operations and complaint response. The enforcement action taken by officers encountering those violations resulted in 12,958 warnings and 6,758 citations being issued; a rate of almost two to one. It should be noted that the officers issued more warnings than citations, indicating officer discretion in a balanced enforcement effort to focus efforts on the violations with the most impact to the wildlife resource. Of the violations cited, the conviction rate was 96% and attests not only to the discretion, but also the technical competence and professionalism of Game Commission Officers. The ratio of appeals of initial convictions was only less than 1%, actually .41% to be exact. The final measurement indicator of the dividends of the training investment was the significantly low citizen complaint to enforcement contact ratio that has been consistently

maintained since the inception of the complaint tracking system, with less than 1/1000% of enforcement contacts filing complaints against officers. Only 9 complaints were received against officers this year, zero of which was sustained.

Ensuring that our officers have the proper training and equipment to perform their duties is an on-going priority. As an agency we stress the importance of safety, which cannot be stressed enough since November 2010 when WCO David Grove was shot and killed in the line of duty by a convicted felon who was not to possess firearms. It has now been documented that during enforcement contacts and investigations, our officers have knowingly made contact with numerous individuals recognized by our officers as persons not to possess firearms due to felony convictions. The agency has taken a proactive approach to enhancing officer safety by procuring electronic control devices (TASERS) for Wildlife Conservation Officers, new and upgraded body armor was purchased, body cameras to document enforcement interactions, and implemented the computer aided dispatch and mobile data system. This system in particular greatly enhances officer safety by allowing officers to have immediate access to criminal histories and warrants of subjects in the field, tracks officer vehicle locations through GPS and allows all units to be observed on screen at dispatch centers to facilitate faster response times if assistance is needed, and provides an alert system duress button for officers on their person that transmits a signal to their vehicle that automatically calls for immediate assistance if activated. Other tools such as tactical bolt action rifles and suppressors have been procured to facilitate more efficient wildlife control efforts to support the prevention of CWD and other wildlife diseases.

The TIP Hot Line allows the public to contact the agency The Turn-In-A-Poacher (TIP) Hotline program was relocated to the Harrisburg Headquarters in November 2007. The program was placed online around March 2008, and continues to grow and develop each year from information provided by concerned citizens. Last fiscal year 822 calls and emails were relayed to the appropriate region; a 14% decrease from the prior fiscal year. The number of successful prosecutions increased along with the number of reward payments paid out to witnesses and informants for information that lead to the successful prosecutions of specific charges; 36 reward payments were paid out totaling \$12,750. The decrease may reflect the deterrent value of increased penalties, replacement costs, and the IWVC.

A total of 14 regulatory amendments were passed this fiscal year to modify and clarify the code. The Bureau has adopted the approach of reviewing each section of the regulation that is being amended in the course of normal commission regulatory action, to make additional clarifications or modifications in that section and related subsections to continue an ongoing process of clarifying and streamlining Title 58.

The Director and staff attend meetings and training sessions to update the field. They meet with the Regional Law Enforcement Supervisors quarterly to share relevant information as well as attend Regional meetings and District Deputy meetings yearly. All Bureau staff members spent time in the field working directly with WCO's in enforcement operations and communicated directly with the officers both in management vision as well as hearing officer concerns and suggestions. Nine SOP's were either developed or revised and completed the staffing process through final adoption this year to update or create new direction for our officers in a variety of

operations. The increase in providing clear direction through utilization of SOP's and memorandums, for topics that do not warrant the development of an SOP, has resulted in increased consistency in legal interpretation and enforcement throughout the Commonwealth. WCO's forward any unanswered questions from district training meetings to the Bureau of Wildlife Protection, the Bureau then responds to the questions in a timely manner, and distributes the answer to all regions for dissemination to all officers. The Bureau continues to ensure direction through memorandum rather than SOP when appropriate, which is readily available on the intranet in a specific section under Wildlife Protection for ease of access. This use of technology has not only provided ease of access for all officers, it also serves as an institutional memory file to ensure previous direction is recorded from a historical perspective.

All PGC dispatchers are CLEAN and JNET certified the most substantial change this year is that with the full implementation of the CAD system, all WCO's are trained and certified in JNET applications so they can utilize the system from their mobile computers in the patrol vehicle.

One grant was applied for to purchase new body armor for WCO's as the 5 year warranty was expiring on the previous issued models. The bureau had hoped to receive the maximum of a 50 percent cost share from the grant, but only received \$11,000 from the grant which represented less than 10 % of total project cost.

The special investigations unit completed 16 cases this fiscal year to final prosecution, involving multiple defendants in the majority of the cases. Four of these cases were conducted in conjunction with another state wildlife indicating the mobile and widespread illegal commercialization of wildlife on a global and expanding black market. Several additional cases were also worked this year that are still active cases as the nature of these covert investigations often involves multi-year investigations before brought to conclusion and prosecution.

The newest methods investigators are using to initiate new investigations is the use of monitoring social media sites and internet forums such as e-bay, Craig's list, etc. for illegal commercialization of wildlife or general evidence of poaching activity. General poaching activity is generally turned over to uniformed field officers for further investigation, while illegal sale of wildlife cases are investigated by the covert special investigations unit. The case load far exceeds existing capacity and the proliferation of computer evidence of wildlife related crime is exponentially increasing every year. Pennsylvania, like many other states is in the process of requesting a complement increase to add one additional position to the covert unit, and three new positions that will serve as full time uniformed investigators computer crimes and coordinate interstate and multi jurisdictional investigations.

The overt investigation unit has not been established due to a shortage of complement positions. Overt investigations are either assigned to district wildlife conservation officers who have limited man-hours to dedicate to these type of investigations or managed by Bureau of Wildlife Protection management staff, neither is an ideal situation and we are forced to prioritize which cases will receive investigative effort. An overt investigation unit with singular function investigators that are not encumbered by district or management duties to focus all of their effort on investigation is a critical need.

New body armor and Electronic Control Devices were issued to all WCO's. Body Cameras were procured this fiscal for deployment next fiscal year. Wildlife control rifles were procured that officers may sign out of a regional office in order to deal with escaped captive wildlife that may pose a threat to the public such as large injurious species of predators, or to control cervids either escaped or wild to prevent CWD and other wildlife disease issues. New chemical immobilization equipment was also procured and issued this fiscal with top of the line rifles to deliver immobilization drugs in darts for free ranging animals. Initial equipment issue for a new officer is approaching a total cost of \$10,000 excluding the cost of a patrol vehicle, ATV's, watercraft, Bear Traps, and other vehicle based type of equipment.

A total of 822 Tips were received, a 14 % decrease from the previous year. TIPS made via telephone and those that were made in electronic version through our web site were relatively even.

This fiscal year the special permit enforcement division issued 1,940 special permits, 11,133 shooting range permits and completed 13 amendments to existing permits. Marcellus Shale drilling activity and wind energy development are causing significant increase in workload in this division that is only staffed by one division chief and one clerical support position to manage the function.

This is a fluctuating number; several ongoing agreements exist with various tower sites throughout the state primarily with PSP and the FBI, but also with some local county radio dispatch centers. Additional agreements exist with commercial vendors in some case as part of right away agreements or tower use agreements for them to provide in kind service such as site or generator maintenance in return for tower space for their equipment in addition to or in lieu of rental fees.

Compliance has improved from previous years and the vast majority of contract requirements have been complied with. The limited number of service delivery failures has generally been caused by the sites being inaccessible for maintenance crews to perform necessary repairs.

Act 54 increased penalties for virtually all Game and Wildlife Code violations by increasing the low end of the sliding penalties for summary violations, but more importantly added misdemeanor and felony offenses for poaching Big Game out of season and over the limit. There were 249 prosecutions for illegally killing or possessing big game in closed season or over the limit under section 2321, a section in which all penalties were increased. However most notably, the implementation of the enhanced penalties is best identified by the 88 misdemeanor convictions and 2 felony convictions achieved this fiscal year. Judges imposed jail time for offenders in some of these cases, including the longest sentence ever applied to a game and wildlife code violation in Pennsylvania, 105 days to 18 months for a felony offender.

### **Strategic Objective 1.3 Assess public values and uses of wildlife.**

A final report on the 2011 PA waterfowl hunter survey was prepared, posted on the PGC website, and provided to the chair of the Human Dimensions Committee of the AF Migratory Game Bird Technical Section for use in regional and national discussions of the human

dimensions of waterfowl management. Summaries of the results were also presented at the Waterfowl Symposium and a Board of Commissioners meeting.

A fall turkey hunter attitudes survey is being conducted each year during the course of the hen turkey harvest and survival rate study to determine hunter attitudes, satisfaction and daily participation under different season structures. The 2012 survey was mailed to 10,000 randomly selected general hunting license holders in early January, 2013. Response rate was approximately 56%, compared to 50% in 2011 and 46% in 2010. Results indicated that the Thanksgiving holiday season segment continues to provide an additional recreational opportunity benefiting the satisfaction of existing turkey hunters, but does not appear to be recruiting new participants; non-turkey hunters may simply be too busy to take advantage of this opportunity. The percentage of hunters rating the overall 2012 season “good” or “very good” was 45%, compared to 46% in 2011 and 57% in 2010. About half of those who hunted turkeys in fall 2012 participated in the Thanksgiving holiday season segment, and satisfaction with this segment continues to be relatively high. The reduced satisfaction level in 2011 and 2012, despite the fact that 2011 and 2012 season structures appear to be preferred by hunters to those used in 2010, indicates that factors other than season structure are important in satisfaction. Harvesting a turkey may be an important component of satisfaction, as success rates were higher in 2010 than in the past 2 years. Also, lack of time to hunt appears to be a more significant barrier to participation in fall turkey hunting than season structure.

We conducted a survey of hunter attitudes regarding pheasant management during the second half of the FY. The sample frame included approximately 3,000 respondents to recent Game Take Surveys who indicated they hunt pheasants, plus 5,000 randomly selected license buyers. The response rate was 62% and compilation and analysis of data was underway as the fiscal year concluded.

Wildlife Diversity – Increased number of inquiries via GM Comments, social media, email and phone calls requesting information on or identification of endangered, threatened, priority and other non-game species; increasingly enthusiastic response to calls for participation in citizen-science surveys distributed through web postings and news releases; Appalachian Bat Count participants concerned about missing or reduced summer colonies, increased number of requests from members of the public for assistance finding rehabilitators for grounded bats; increased awareness of the declining Allegheny woodrat population and interest in implementation of habitat enhancement among wildlife consulting companies. Provision of artificial roosts for bats, when appropriate, through Appalachian Bat Count.

Game Birds – Presented and applied results of 2011 Waterfowl Hunter Survey. Completed Fall Turkey Hunter Survey and Hunter Survey on Pheasant Management to aid in management recommendations for these species.

Human Dimensions Specialist completed a third year in the Bureau of Information and Education. This individual is responsible for supervising the Outreach and Education Specialists, in addition to the research outlined in the following operational objectives:

- One mail survey was conducted and overseen by the Human Dimensions Specialist: A survey of license buying hunters in York and Adams Counties and Maryland about Chronic Wasting Disease in January and February 2013. Additionally, the HD specialist was responsible for coordinating a telephone survey of residents in York and Adams counties about CWD that was completed in October and November 2012. The results of both CWD surveys have been presented in front of various groups of stakeholders in Pennsylvania. The results of the Pennsylvania Game News survey that was started in FY 11-12 was completed in FY 12-13 and the results were presented to various PGC and other stakeholder groups like Harrisburg Hunters and Anglers and the POWA conference.
- The Human Dimensions Specialist was also frequently consulted by the Bureau of Wildlife Management to consult on the question wording, methodology and analysis of mail surveys conducted by biologists in that bureau and continued to facilitate a group of BWM staff members about survey research using Dillman's *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method* and other texts. The HD specialist was also involved in the development of six focus groups of lapsed hunters throughout Pennsylvania. These focus groups were conducted in October 2012 by Responsive Management.

With four years of PALS data now available, the HD specialist and other I&E bureau staff have met regularly to review the license buying habits of Pennsylvania hunters through various data requests to the Bureau of Administration.

The Human Dimensions Specialist receives several peer-reviewed journals and is also a peer reviewer for the *Human Dimensions of Wildlife* journal. Attendance at three conferences (Pathways to Success: Integrating Human Dimensions into Fisheries and Wildlife Management, the International Symposium on Society and Resource Management, and the Pennsylvania Data User conference) during this time period also provided valuable exposure to research occurring in other states and internationally that is directly relevant to the understanding of Pennsylvania hunter recruitment and retention and wildlife management efforts. In addition to attendance at these conferences, the HD specialist was also asked to serve as a member of the Human Dimensions Working Group for the North American Waterfowl Management Plan.

**Strategic Objective 1.4 Improve the population trends of endangered, threatened and wildlife species of greatest conservation need.**

PA's bald eagles (state threatened) have experienced a spectacular recovery since reintroduction efforts began 30 years ago. At the end of the 2012 season, the number of nesting bald eagle pairs was 237. Preliminary (late June) numbers for 2013 included 254 nests. Eagles have expanded in all directions, spreading into new counties and filling in vacant territory along the state's river and stream corridors, tracing this prime habitat into ribbons across the state. The outline of the main stem and North Branch of the Susquehanna River is particularly visible as a string of nests. While the lower section of the Susquehanna and the state's northwestern corner may be approaching saturation, vast stretches of rivers and streams in the southwestern corner and south-central counties have yet to be colonized. This population expansion has resulted in all recovery goals being reached in the summer of 2013, and as a result, a proposal being advanced through regulation to change the eagle status from 'threatened' to 'protected.' Eagle viewing areas were

identified in 2012 to help promote the public's appreciation for our nation's symbol and understanding of the needs of wildlife in general. Where to go to view bald eagle, field identification tips, fast facts and much more are available at [www.pgc.state.pa.us](http://www.pgc.state.pa.us) by clicking the photo icon for Bald Eagle Watching in PA. In many parts of the state it is still a thrill, but no longer a surprise, to see a wild bald eagle.

Peregrine falcons (state endangered) also capture the public's attention, frequently because their population is largely urban, nesting on highway bridges, buildings and other manmade structures. In 2012, of 32 occupied nesting sites, 28 were manmade structures and 4 were natural cliffs. Sixty-two fledglings were produced in 2012 of which 42 were banded for long-range population monitoring. As of 30 June 2013, there were 41 nests with documented activity. Of these over 10 failed, which is unfortunate but is not out of the ordinary. Preliminary numbers for 2013 included 56 nestlings banded at 20 sites and 69 young fledged from 26 sites. At some sites, volunteers stood vigil, ready to rescue juvenile peregrines as they fledged from buildings and bridges if they landed in a street or a river. To ensure protection and conservation, weekly updates on statewide peregrine falcon activity were distributed to all PGC regions and PennDOT districts. Coordination with PennDOT, the PA Turnpike Commission, and engineering and construction firms ensured minimal disturbance to peregrines due to maintenance and construction projects. Training for bridge foremen and construction engineers included falcon natural history and biology, the PGC's recovery program, restrictions for peregrine protection, and personal safety of workers near nest sites. The attention peregrines attract was evidenced by hundreds of inquiries from members of the public, large audiences at public bandings and educational presentations, and over 25 interviews provided to reporters resulting in newspaper, radio and television coverage. In June 2013, after years in development, and incorporation of recent public comment, the PGC Board of Commissioners unanimously approved the Peregrine Falcon Management Plan, which establishes recovery objectives and management activities to promote the return of this majestic bird to its rightful place in PA. The plan is available at [pgc.state.pa.us](http://pgc.state.pa.us).

As recently as 1986, only 1 osprey (state threatened) nest could be found in PA. Thanks to a successful reintroduction effort, the osprey now holds promise as the state's next threatened species success story. The growing number of nests combined with limited funding made annual surveys by staff next to impossible. However, an osprey survey form available on the agency website makes it possible for members of the public to submit data online. As of late June 2013, a minimum of 65 osprey nests had been confirmed in 17 counties. Of those nests, 17 were first identified by members of the public. This survey effort is an important "snapshot" of the distribution of nesting ospreys statewide that will help us to better understand their status and management potential.

Dedicated volunteers are critical to monitoring of bald eagles, peregrine falcons, osprey and colonial waterbirds. Members of the public identified 29 new bald eagle territories during the first half of 2013. Public participation included more than 75 bald eagle volunteers, and 200 peregrine falcon volunteers. Fourteen members of the public contributed to the 2013 online osprey survey. One hundred volunteers contributed to the 2-year comprehensive colonial waterbird survey in 2012 and 2013. Great egret, black-crowned night-heron and yellow-crowned night-heron are state endangered species. The great blue heron, although widespread and

common, is a species of maintenance concern. These four colonial wading bird species are particularly vulnerable because their nests are clustered in rookeries, putting large portions of their nesting populations at risk from natural and human disturbances. Most rookeries are single-species, but two sites that support great egrets have other species nesting in close proximity. During the 2012 and 2013 breeding seasons about 100 volunteers, PGC staff and staff of other agencies conducted a comprehensive waterbird survey. Most great blue heron colonies were surveyed in 2012; some were scheduled for 2013. In 2012, surveyors tallied over 1,100 great blue heron nests in 38 counties and 13 new colonies were found. Endangered waterbird colonies are surveyed annually. In 2013, the only known yellow-crowned night-heron rookery, in a residential neighborhood in Harrisburg, had 12 nests. Great egrets nested on Wade Island, in the Susquehanna River, along with black-crowned night-herons and double-crested cormorants, and in a park in York County. Black-crowned night-herons nested at very few sites in addition to Wade Island, all in southeastern counties.

At Presque Isle State Park's Gull Point, in Erie County, a USFWS Great Lakes Restoration Initiative grant enabled project partners PGC, DCNR, Western PA Conservancy and Audubon PA to restore more than 30 acres of critical shoreline habitat for the federally endangered piping plover. The effort could also benefit the state endangered common tern. Gull Point hosted piping plover until the late 1950s; common terns from the 1920s to 1940s. Two nesting pairs of common tern were found in the habitat treatment area in June 2012, but the eggs from both nests disappeared by mid-July. This was the state's first nesting of common tern since 1995. Volunteer monitors also observed two color-banded migrant piping plovers at Presque Isle in 2012, an adult in July and a juvenile in August. Both were banded in Michigan. Another Michigan piping plover was observed in May 2013. We hope that continued habitat restoration at the Gull Point Natural Area will ultimately lead these imperiled species down the road to recovery in PA.

In September 2012, the BOC gave final approval to a regulatory change that amended the list of state endangered and threatened species to reflect the current status of the upland sandpiper, northern harrier and long-eared owl populations, species whose low numbers indicate the need for specialized management. The upland sandpiper, a grassland nesting bird long-classified as threatened, was moved to the endangered species list because it has declined precipitously over the last two decades. The northern harrier, now a state threatened species, has also experienced a marked decline in PA and is listed as either endangered or threatened in most neighboring states. Long-eared owls are extremely rare breeders in PA. Despite a concerted survey effort over much of the last decade, only seven nesting locations have been confirmed in recent years, prompting its listing as threatened.

The golden-winged warbler is a species of high-level concern in the PA Wildlife Action Plan (WAP) and is under consideration for listing under the federal Endangered Species Act, with declines of 6.8% per year from 1966 to 2011 according to USGS Breeding Bird Survey data. Golden-winged warblers were detected in 61% fewer blocks in the *Second Atlas of Breeding Birds in PA* compared to the first atlas. We participate in a Golden-winged Warbler Conservation Monitoring project led by the Cornell Laboratory of Ornithology. PA has unique opportunities for managing golden-winged warblers because of our relatively large proportion of the population in the Appalachians and the potential for managing this species on public lands. One objective of the PGC's golden-winged warbler project is to determine areas with the best

potential for management wherever the agency has some influence. Other species associated with similar habitat include ruffed grouse, eastern whip-poor-will (state maintenance concern), American woodcock (state maintenance concern) and Appalachian cottontail (state high-level concern). The golden-winged warbler team has expanded its survey to a variety of wooded wetlands that warblers are likely to occupy in addition to sampling habitat typically used, such as timbered areas, reverting farms and scrub barrens. In 2012, we conducted 165 point counts that detected 28 golden-winged warblers, 29 blue-winged warblers and nine hybrids between the two species. Golden-winged warblers were found in Sproul State Forest and on the Scotia Barrens of SGL 176 in the north-central counties. In northeastern counties, they are found on two game lands and a state forest in Pike County, and a game land in Luzerne County. All of these public-land sites have potential for management. Preliminary results for 2013 surveys on public lands alone include 14 golden-winged warblers found on game lands in Centre and Pike counties and the Delaware State Forest. Habitat management is being implemented on public lands with the assistance of a federal State Wildlife Grant to IUP. To date, over 2,200 acres across 11 game lands and one Nature Conservancy property have been prepared for conversion to young-forest habitat. The USDA has provided funds for improvements on 3,485 privately owned acres in PA through its Working Lands for Wildlife program. With the acreage of young-forest habitat created on public lands, combined with outreach and funding to promote the creation of young forests on private lands, the PGC and its partners are improving the outlook for golden-winged warblers and other young-forest species.

Two PA endangered species are among the most rare and most difficult to find nesting in the state: the yellow-bellied flycatcher and the blackpoll warbler. Both are boreal forest birds associated with conifer forests and wooded wetlands. At this point, their known populations are confined to remote spruce forests on public lands in Wyoming County. In 2012, six yellow-bellied flycatcher territories and 1 blackpoll warbler territory were found, all in a swamp on SGL 57. As of 30 June 2013, 8 flycatcher territories and one blackpoll territory had been found in the same swamp and in a second swamp on the same game land. One blackpoll warbler territory was found in a third swamp on SGL 57. In June 2013, a third state endangered species, the American bittern, was confirmed nesting on SGL 57 with parent birds observed feeding two young. Small populations of Swainson's thrush (state vulnerable), another forest mountain bird, were found in Ricketts Glen State Park, Luzerne County in 2012 and 2013, and in Loyalsock State Forest, Sullivan County in 2012. Three northern goshawk (state vulnerable) territories were found, two in Sullivan County and one in Luzerne County.

PGC regional wildlife diversity biologists (RWDBs) began a Barn Owl Conservation Initiative in spring 2005 with the goal of securing the future of this species of maintenance concern in the Commonwealth. Comparisons between the first and second PA breeding bird atlases suggest that barn owls declined by at least 50% since the mid-1980s. Without data from the initiative, reporting rates during the second atlas would have been far lower. RWDBs visit sites where barn owl are known or expected to occur, enlist the participation of landowners, determine presence or absence of the owls, confirm breeding activity, and band nestlings to provide information on longevity, dispersal and causes of mortality. Barn owl boxes are installed where needed to provide nesting sites safe from predators and hazardous ledges. Although barn owls have decreased in number, they do have high reproductive potential. In 2012, an 8-month-old female barn owl was discovered at her natal site incubating eggs in the same nest box where she had

been banded the previous year. While barn owls are reproductively mature at one year of age, no published material indicated they could reproduce at eight months. Why this nestling did not disperse from her natal site, the fate of her mother, and the sire of the eggs she was incubating are unknown. DNA samples taken from her banded nestlings may answer the latter question. Also in 2012, we learned that actively nesting pairs can successfully raise clutches very close to one another. Two female barn owls each raised 6 owlets that successfully fledged from nest boxes located 20 yards apart. One box was installed inside a barn; the other was in the silo attached to the barn. This suggests that barn owls may not be as territorial as once assumed and can tolerate one another when an adequate supply of prey is available. New highs for 2012 included a single-year high of 75 confirmed active nests, 22 new nest sites, and 285 barn owl nestlings banded at 57 sites. Also of note, Montgomery County had its first active barn owl nest in 20 years, Bucks County had its first active nest in 10 years and Bedford County, on the western edge of the barn owl's current PA range, had its first nest in six years. From band recovery records, we know that 52 banded barn owls have been recovered through December of 2012, the average recovery distance was 74 miles for 48 birds recaptured at least three months after banding, and that the average lifespan of recovered birds was at least 14 months. For the species, the average lifespan is two to three years. Barn Owl Conservation Initiative banding records are kept on a calendar year basis and 2012 was a good year.

In fall 2012, we participated in discussions with USFWS, the Federal Highway Administration and PennDOT regarding preparation for an alignment project of Route 219 in Somerset County that could affect the Indiana bat and eastern small-footed bat. Discussion included surveys of known hibernacula that would be affected, a search for mine openings, and qualification criteria for surveyors.

Also in fall 2012, because of a request from the federal Office of Surface Mining (OSM), we participated in a meeting with USFWS to review and finalize changes to the OSM protocol for evaluation of mine portals for closure. Because WNS reduces the probability of capturing Indiana bats, especially during spring emergence, the revised protocol will require live-trapping and/or acoustic surveys during fall only, not during spring or fall as in the previous protocol.

Since 2000, USFWS Section 6 (endangered species) funds have supported PGC research into the ecology of federally endangered Indiana bats. These efforts have evaluated summer foraging habits and habitat, studied fall pre-hibernation behavior, and linked winter hibernacula to summer sites through telemetry. During fall 2012, we live-trapped the entrances of two Indiana bat hibernacula, a limestone mine at Canoe Creek, Blair County, and an abandoned coalmine in Luzerne County, at least once per week in an effort to determine whether WNS has affected the range of dates when most Indiana bats enter hibernation. In the past, both mines were dependable sources of Indiana bat captures during spring and fall. Nine individual Indiana bats, one female and eight males, were captured in Blair County. One of the males was a recaptured bat banded there in October 2007, meaning it had withstood WNS, confirmed at the limestone mine in spring 2010. All un-banded Indiana bats captured in 2012 were banded for a long-term study. Only one Indiana bat was captured at the Luzerne County coalmine, a male that had been banded in September 2010. Too few Indiana bats were captured to detect a change in the dates when they enter hibernation.

During hibernacula surveys in February and March 2013, Indiana bats were found at two known sites and one new site. Twenty-three Indiana bats were among 155 bats found at the Canoe Creek limestone mine. An incomplete railroad tunnel excavation on PA Turnpike Commission property in Somerset County harbored 95 Indiana bats, along with 21 little brown bats and 10 tri-colored bats. Thanks to funds provided by an energy company, a bat-friendly gate was installed at the tunnel entrance in 2012. A single Indiana bat was found in an inactive section of a Somerset County limestone mine. We met with USFWS, DEP and representatives of the company that owns that mine to discuss plans for future mining operations. These include connection of the active section of the mine to the abandoned section; this would improve ventilation in the active section while also improving air flow for hibernating bats and increasing mine access for bats. The company will gate the mine entrances and make improvements to retain cold air, preferred by Indiana bats.

We assisted the West Virginia Department of Natural Resources survey of Hellhole Cave, which harbors Indiana bats and Virginia big-eared bats (federally endangered). During that survey, two bats banded in PA were found: a male banded in April 2007 at the Somerset County railroad tunnel and a male banded in October 2007 at the Canoe Creek limestone mine.

In spring 2013, the Blair and Luzerne county hibernacula were again live-trapped weekly in an effort to determine whether timing of Indiana bat emergence had changed. A male Indiana bat banded in October 2012 was recaptured at Canoe Creek. Captures and counts of all bat species were recorded during these fall live-trapping, hibernacula surveys and spring live-trapping. Captures per hour and all-species total captures were dramatically lower than similar-date surveys conducted before the advent of WNS. In June 2013, we mist-netted in Indiana bat maternity areas previously identified through telemetry that tracked female bats from hibernacula. At a maternity area in Berks County, identified in 2006 by tracking a bat from the Luzerne County coalmine, 154 bats were counted exiting one of two bat boxes installed at the site. Mist-nets deployed near the occupied box on three nights captured a total of five Indiana bats, including one pregnant female and one lactating female, confirming reproduction. Little brown bats and tri-colored bats were also captured. Trees shading the second bat box were removed to increase box temperatures to make it more attractive as a maternity roost. At an Adams County Indiana bat maternity area identified in 2008 by tracking female bats from the Canoe Creek mine no Indiana bats were captured, but captures did include 13 red bats (state maintenance concern), a migratory species, in addition to big brown, little brown and tri-colored bats.

Greene and Washington counties, in the state's southwestern corner, are home to several Indiana bat maternity sites. Since 2008, under an agreement with an energy company, a wildlife consulting firm has conducted summer mist-netting and telemetry studies to monitor the welfare of Indiana bats in Greene County. In 2012, the consulting firm netted and tracked 7 juvenile Indiana bats, documenting 12 roost trees and delineating foraging areas. Thanks to this and previous telemetry studies, we now know of 10 Indiana bat roosts and several foraging areas on an adjacent SGL. In August 2012, a separate team from the same firm, conducting an unrelated survey, captured and tracked a juvenile female Indiana bat, discovering a new maternity area in Washington County. The new area is 14 miles south of Washington County roosts identified in 2010 by staff and less than 4 miles northwest of the Greene County maternity site.

Consultants conducting surveys on behalf of developers identified 13 Indiana bat summer roosts in Greene (12) and Washington (1) counties, 35 eastern small-footed bat (state threatened) summer roosts in Luzerne (34) and Carbon (1) counties and two silver-haired bat (state high-level concern) summer roosts both in Tioga County. During mist-netting and live-trapping surveys statewide, consultants captured and released 8 Indiana bats, 20 small-footed bats, three silver-haired bats, 78 hoary bats (state maintenance concern), 565 red bats (state maintenance concern), 425 northern long-eared bats (state responsibility species), 578 tricolored bats, 264 little brown bats and 1,420 big brown bats. Over 500 of the tri-colored bat captures occurred during live-trapping at hibernacula entrances surveyed for the Route 219 alignment project in Somerset County described above. The full effect of WNS has not yet been felt in the state's southwestern counties. Contractors submit survey reports to the agency, which maintains a database used to monitor population trends of cave and migratory bat species by comparing time and net (or trap) surface area to the number of bats captured.

We verified species identification of two Seminole bat fatalities at wind farms. Seminole bats are native to the southeastern U.S. but documented occurrences in PA are increasing; they are not listed in the current WAP.

Monitoring of northern flying squirrel (state endangered) sites, particularly in northern tier counties, has continued for nearly a decade. Long-term monitoring and research has allowed us to document some key findings. Coexistence and competition for resources between northern and southern flying squirrels in close proximity appears to increase parasite transmission, increase competition for food and nesting resources, and even cause some level of hybridization. Studies have shown that the diversity of conifer species is an important factor in producing mycorrhizal fungi. Red spruce is shown to have the most types of this food source and to expand the time period it is produced, promoting the northern species. In 2011, nearly 2,500 red spruce seedlings, raised at the PGC Howard Nursery, were planted in active northern flying squirrel areas by agency staff. Collaborators at PSU Altoona and Wilkes University, funded by a DCNR Wild Resource Conservation Program grant, planted 2,000 seedlings purchased from a supplier in West Virginia. With our collaborators, we are now measuring growth and survivability of those seedlings using methods similar to West Virginia's so results can be compared.

We recently assisted BWHM Environmental Review staff and a consultant regarding potential impact to northern flying squirrels from a proposed utility right-of-way. Discussion of potential mitigation included planting of red spruce on the project area to increase habitat quality. A survey of 580 flying squirrel nest boxes, used by both species, was completed in 2012 with good numbers of new or active nests recorded. The response to new boxes in areas with existing boxes appeared to be greater, so every other box was cleaned out to monitor response. New locations for northern flying squirrel resulted from a landowner report whose cat brought home a dead squirrel and from a wildlife consulting firm that captured two northern flying squirrels while mist-netting for bats.

The Allegheny woodrat (state threatened) is a small rodent about the size of a gray squirrel. It inhabits talus slopes, boulder fields, caves and cliffs in hardwood forests along the Appalachian Mountains. In recent decades, the woodrat has experienced a steep population decline attributed

to loss of mast crops, forest fragmentation, increased predation and a parasite spread by raccoons. Knowledge gained through a series of 3 projects funded by federal State Wildlife Grants (SWG) has been incorporated into an adaptive management plan shared with 90 resource managers from various state agencies through training workshops. PGC began implementing habitat management for woodrats in 2010. Now, thanks to a DCNR Wild Resource Conservation Fund (WRCF) grant and assistance from IUP, PGC Region staff are implementing management on additional game lands in southcentral and southwestern counties. Habitat enhancements also have been completed in the Tiadaghton State Forest by a wildlife consulting firm working on behalf of an energy company. In 2012, staff surveyed 26 Allegheny woodrat sites in 11 metapopulation areas. Of those 26 sites, 18 had active sign, five were inactive and three were potential sites with no woodrat sign. No metapopulation areas were reclassified from active to inactive as a result of 2012 surveys. That's good news considering eight metapopulation areas were reclassified from active to inactive between 2007 and 2010. In 2011, one inactive metapopulation areas became active, but much more work is needed to reverse the Allegheny woodrat populations decline. Two new conservation-partner projects funded by SWG got underway early in 2013, a genetic catalog of the state's woodrat metapopulations being developed by IUP and a captive breeding program at Delaware Valley College, Bucks County.

An eastern spotted skunk (state high-level concern) was captured and released in Fayette County by a wildlife consultant in fall 2012. It was the first documentation of this species in PA since the early 1950s. The consultant, who captured the skunk while live-trapping for Allegheny woodrats as part of a monitoring project, provided photographic evidence. We confirmed the presence of that single spotted skunk by deploying trail cameras in the capture area. The location where it was found is outside of the range where they were known to exist half a century ago, but the habitat type was similar. About half the size of their striped cousins, individual spotted skunks can be easily distinguished by their unique pattern of white dots and stripes.

The primary responsibility of the PGC's 6 RWDBs is the habitat-based Private Landowner Assistance Program (PLAP). RWDBs prepared 101 PLAP plans for 14,174 acres. Since program inception in 2004, over 1,190 plans have been produced for more than 177,000 privately-owned acres. Some PLAP projects receive implementation funding from Farm Bill programs administered by the USDA. These biologists also facilitated habitat improvements on additional privately owned properties enrolled in the USDA Voluntary Public Access and Habitat Incentive Program that encourages owners to make land available for access by the public for wildlife-dependent recreation, including hunting and fishing. Biologists serving regions with potential habitat for golden-winged warblers facilitated improvements on properties participating in a Natural Resources Conservation Service (NRCS) Working Lands for Wildlife initiative. RWDBs also contribute to comprehensive planning for the state's more than 1.4 million acres of SGLs and review the potential impacts to wildlife of proposed Marcellus shale well pads and pipelines.

### **Strategic Objective 1.5 Restore extirpated wildlife species where landscape attributes and public values are favorable.**

Fisher, river otter, bald eagle, peregrine falcon and osprey recovery activities and status are covered elsewhere (under Strategic Objective 1.1) in this report.

**Strategic Objective 1.6 Manage nuisance wildlife impacts professionally, effectively, and economically.**

Information was compiled for the USFWS on take of Canada goose adults and nests under agricultural depredation permits in PA during 2011 and 2012.

We provided technical assistance to a landowner in Blair County to identify options for addressing damage to an emerging winter wheat crop by a flock of >100 turkeys.

We provided technical assistance to a landowner to resolve his beaver problems and manage beaver populations through regulated trapping.

We received and responded to an increased number of requests for guidance about bats in buildings. This resulted from increased public awareness that bats are beneficial and that WNS has caused catastrophic losses of some bat species. Many callers requesting guidance on exclusion of bats expressed interest in providing alternative roosts; some were recruited for the Appalachian Bat Count. Some requested assistance finding rehabilitators for downed adult bats or pups. Periods of unseasonably cold, wet weather resulted in poor insect forage, causing an unusually high number of big brown bats, which normally have twins, to reject one pup to improve chances of survival of the remaining pup. This resulted in an increased number of inquiries concerning downed or dead bat pups. Additionally, we provided information by phone and reference material by email to an Allentown Health Bureau official.

In conjunction with the Northeast Wildlife Damage Management Research and Outreach Cooperative, we assisted in developing and sponsoring a survey of public attitudes toward and expectations regarding management of wildlife problems in the Northeast United States. The purpose of this survey was to obtain quantitative information on nuisance wildlife issues in each state in the Northeast to inform development of sustainable nuisance wildlife strategies to address public concerns. As the year came to a close a project got underway to develop a strategic communications strategy to better provide access to the public, homeowners, agency personnel and nuisance wildlife control operators to available nuisance wildlife information.

Report on a survey of *Public Attitudes Toward and Expectations Regarding Management of Wildlife Problems in the Northeast United States* elevated public understanding of nuisance wildlife issues and how these programs are funded.

Educational efforts and media coverage about White Nose Syndrome have increased public awareness that bats are beneficial and that bat populations are suffering catastrophic mortality.

**GOAL 2: Improve the public's appreciation of wildlife, and their awareness and understanding of wildlife resource management.**

**Strategic Objective 2.1 Determine the public's awareness, attitudes, values and knowledge of wildlife and support for wildlife resource management.**

With the staffing of the Human Dimensions position a number of surveys were conducted during the period of the report. They include:

Game News Survey of licensed PA resident hunters

Wildlife Diversity Forum follow-up survey of attendees

Human Dimensions staff created and presented "State Level Decisions: Using Human Dimensions to Inform Waterfowl Management" for the NABCI Waterfowl Conservation Human Dimensions Working Group.

Youth Field Days participant survey for outreach.

Developed and reviewed questions about hunting and wildlife viewing for SCORP survey on Pennsylvania Recreation

Face book and twitter accounts were established to monitor the public's attitude and knowledge of wildlife issues. I/E staff consolidated quarterly summary reports of GM, Comments.

Educational program offerings are expanded and increased and Conservation Education expanded programming to early childhood audiences and children librarians. An education display was developed and used at the PA Science Teacher's Association conference.

**Strategic Objective 2.2: Enhance the public's knowledge and understanding of the role of hunting and trapping in wildlife management.**

Staff made improvements to agency's website content related to the importance of hunting and trapping in wildlife management; examples follow: continued promoting current initiatives using direct link buttons and Quick Clicks on homepage of website; Started using 'ads' in scrolling photos on homepage of website to promote current initiatives: license sales, HTE classes, 100-year Elk Celebration, iCalendar, Junior Pheasant Hunts; updated website content on many pages, not limited to: Deer, Turkey, Grouse and Woodcock; created new website content on Chronic Wasting Disease; and created a very scaled down mobile website focused primarily on deer hunting.

Agency-produced products emphasizing the importance of hunting and trapping in wildlife management: completed 2 DVDs with Hunter-Trapper Education division and assisted with Successful Turkey Hunting video needs; updated 2012 elk orientation video; commissioned and

assisted in building iOS and Android state game lands apps, which went live July 2012 sales (7/12-6/13): iOS - \$11,682; Android - \$6,151.20; updated state game lands app in mid-June, 2013 with sale of new licenses; facilitated approval of state game lands app access GIS information; produced backdrop for NASP 2013 tournament photo opportunities; and gathered, catalogued and backed up stock footage/images not limited to: women's pheasant hunt, historical muzzleloaders, successful hunters and CWD check station.

Game News continues to be the primary voice of the Game Commission with hunting stories, natural history content, news Field Notes, remain popular with many readers, not just in Pennsylvania, but throughout the country and to our servicemen and women throughout the world. Game News remains popular on newsstands throughout the state and is now offered in all Wal-Mart stores in Pennsylvania.

In the last fiscal year in Game News more emphasis was placed on featuring staff-written articles about Game Commission research and management projects and law enforcement accounts by WCOs. There have been several accomplishments over the past fiscal year. They include:

- “Another View” columnist Linda Steiner won a Pennsylvania Outdoor Writers Association (POWA) Specialty Award sponsored by the Allegheny Chapter of the Ruffed Grouse Society for her column “Young Trees”
- Two of artist Gerry Putt's 2012 *Game News* covers won POWA awards at the organization's spring conference in 2013—“Catching the Wind—German Shorthaired Pointer” and “Winter Berry Bandits”

The sixth year of posting entire *Game News* issues online through Nxtbook allows users to conduct searches, go directly to particular features, and using a zoom feature can make the type larger and easier to read.

Other informational items produced by *Game News* staff in addition to *Game News* and many other brochures and publications include; Connect with Wildlife calendar, Wildlife Notes, The Annual Digest, and The Annual *Pennsylvania Big Game Records Book*.

Agency-produced products emphasizing the importance of hunting and trapping in wildlife management include: regularly created and sent out news releases on approaching hunting seasons, license requirements and other matters that emphasize the importance of hunting and trapping in wildlife management; oversaw the distribution by regional staff of more than 55 news releases on topics of local interest; selected and planned content for Game News, and edited each edition to ensure content was correct and easy to read; coordinated guests and recorded segments for the Outdoors PA radio program, focusing much of the content to emphasize the importance of hunting and trapping in wildlife management; wrote columns on behalf of the Game Commission for publication in newsletters such as On Target and hunting-related magazines including Ohio Valley Outdoors; addressed issues of local importance by writing letters to the editors of newspapers that had covered hunting- and trapping-related topics; and promoted the new Mapping Center, a searchable and easy-to-view online database for public access hunting sites, including state game lands and Hunter Access properties.

Improvements to agency's website content related to the importance of hunting and trapping in wildlife management by overseeing the production of and approved content for Migratory Game Bird brochure and overseeing the production and design of updated Wildlife Notes, with the old content removed from the website as fresh material was created.

### **Strategic Objective 2.3 Expand the availability of wildlife resource information to the public**

Agency-produced products emphasizing the Commonwealth's wildlife resources and agency's management mission

- Produced SGL 314 logging film (available on PGC's YouTube channel)
- Produced film celebrating 30 years since bald eagle reintroduction
- Gathered and researched historical materials for eagle and elk film projects
- Provided Van Wagner with equipment, graphics, photos, video, documents, display and posters necessary for development of 100-yr elk celebration interactive musical presentation
- Created and distributed banners for 100-year elk celebration
- Produced the 2013 Connect with Wildlife Calendar
- Designed and prepared legislative report covers
- Created signage for Loyalsock Game Farm tour
- Created and delivered billboard files to Lamar
- Completed layout and design of Northeast Black Bear Technical Committee booklet
- Had PGC Bear video converted to DVD
- Coordinated Hawk Mountain film project with Commonwealth Media Services
- Worked with Bosch on bald eagle nest live feed attempt, lots of money in new equipment on loan from them
- Produced short film on barn owls (available on PGC's YouTube channel)
- Set up and maintained remote cameras not limited to bear wallow, wildlife log and provided images in various formats for digital media
- Set up and maintained remote cameras at 'eagle trap' at Tuscarora and collected and displayed images in Photobucket
- LiveStreamed, broadcast and recorded events not limited to: barn owl nest cam, snow goose migration at Middle Creek, CWD press conferences, attempts on fox den and eagle nest were unsuccessful.
- Produced and distributed videos of agency wildlife veterinarian's EHD and CWD PowerPoint presentations
- Gathered, catalogued and backed up stock footage/images not limited to: SGL 314 habitat work, successional photos at SGL 252, eagles (mid-winter survey, nest, flight, juveniles), elk (darting, collaring, antler removal, enclosure trap/transfer site, calf & capture), Presque Isle, Siegel Marsh, Pymatuning, barn owls, young forest habitat, waterbirds/waterfowl, purple martins, hummingbirds,

coyotes, songbirds, squirrels, woodrats at DeVal, woodcock on nest and CWD check station

- Participated in project to incorporate PGC into State Museum
- Produced displays for 2013 shows, ordered and distributed displays to Regions
- Updated *Elk in PA 2012* and *Don't Feed the Deer* brochures
- Provide a minor update to the *Middle Creek* brochure
- Created signs announcing Disease Management Area and Executive Order restrictions
- Created CWD Check Station receipt tag 2012

Agency products emphasizing Commonwealth's wildlife resources and agency's management. Staff members worked with media to help the public better understand important wildlife-resource issues like chronic wasting disease, the success of the bald eagle and proposed legislation with the potential to affect the listing process for endangered and threatened species; Worked to update the Wildlife Notes made available to teach students and others who are interested about Pennsylvania's native wildlife species. Work completed this year included scheduling and setting deadlines for new, full-color artwork, redesigning the Wildlife Note format and beginning to replace old content posted on the website with updated and redesigned content; edited and oversaw production of 2014 Connect with Wildlife calendar and compiled an educational brochure made available to those visiting the Pennsylvania's elk range, as well as Game Commission facilities, during the 100<sup>th</sup> anniversary of elk restoration in Pennsylvania.

Improvements to agency website content related to wildlife resources and the agency's management mission. A few items include; updated website content on birding as well as White-Nose Syndrome map updates, Deer, Time Limited Collectible, PA Bats, Middle Creek Migration, Wind Energy, Turkey, Grouse, Woodcock, WCO Careers, PGC Careers, Region Office, CWD, Osprey Nest Survey, BWM annual reports, Pymatuning, Teacher Workshops pages; created new web pages for the Eagle Trap photobucket, CWD, iCalendar; and continued to edit/review PA eBird content.

We established a program to monitor the number of hits on agency website and other media

- Participated in coordinated media effort enlisting website, news releases, email and social media outlets to reach audiences on many platforms with the same message
- Maintained agency Facebook page. Fans numbered 3,241 in July 2012 and 11,398 in June 2013. Highlights included: Follow the Wallow, Behind the Scenes & Wildlife Log albums, Caption Contest, Migration Updates and Fill-in-the-blank posts, live posts from Wade Island and POWA.
- Provided technical expertise and support to PA TWS Facebook administrator
- Promoted social media accounts on front cover of 2012-13 and 2013-14 Digests along with a QRcode to the Facebook page
- Maintained agency Twitter account. Followers numbered 707 in July 2012 and 1,949 in June 2013. Highlights included #PAFieldNote, #HuntPA, #WildlifeNews, #TuesdayNewDay, #BWP, #AmazingAntlers.

- PGC\_NCRO (LMO Shannon) Twitter followers numbered 22 in July 2012 and 114 in June 2013
- Uploaded PGC produced videos to YouTube not limited to: waterfowl banding, barn owls, EHD and CWD
- Made 2012-13 Digest available to public as an ebook via Nxtbook
- Continued publishing digital Game News magazine with Nxtbook, HTE students began receive free annual subscriptions. Game News subscribers, PGC employees, PA National Guard and PA educators continued to receive free access to digital editions.

People reached via seminars, workshops and presentations and informed about Commonwealth resources. Staff delivered educational programs to a minimum of seven outside organizations; and YouTube channel has 226 subscribers and 170,304 views; most popular videos: Trapping Deer with Clover Traps, PGCpromo and Deer Aging.

We provided wildlife resource related information to numerous and varied publics during the year in the form of presentations, Outdoor PA radio spots, interviews with radio, television, newspaper and magazine reporters/writers, social media, articles in Game News and the hunting and trapping Digest, and we routinely update the agency website to expand the availability of wildlife information for public use. All required wildlife notes were revised. The following are but examples of the efforts made by BWM staff to provide information to better inform the public.

We continued efforts throughout the year to improve deer and elk management outreach efforts to the public and PGC employees. For example, we; 1) responded to 294 public inquiries and questions including “Ask the deer biologists” questions via email and the website postings, 2) responded to 41 media inquiries and inaccurate publications, 3) responded to 1 legislative inquiry, 4) recorded 2 radio programs for Outdoors PA, 5) presented 27 public programs, 6) posted nine brochures/handouts/documents on website, 7) wrote 11 articles for *PA Game News* including the ongoing series on white-tailed deer, 8) wrote one article for the Elk Visitor Center newsletter, 9) authored or coauthored two peer-reviewed articles that were published in scientific journals, 10) presented a day-long deer management seminar at the PA Institute of Conservation Education Bucktails Field School, 11) created a Community Deer Management DVD, and 12) provided 27 posts for PGC social media. We provided maps of elk calf locations for display at the Elk Country Visitor Center.

Information on hunting seasons for waterfowl and other migratory game birds was provided to the public via a regulations brochure and news releases. We also provided a duck banding demonstration to 100 attendees at the 2012 Ducks Unlimited Pymatuning Waterfowl Expo; presented programs on separate occasions regarding waterfowl banding, wetland ecology and management, waterfowl migration and harvest, and results of the PA waterfowl hunter survey to 45 members of sportsmen’s organizations and the general public; gave interviews for two newspapers, *Wildfowl* magazine, and the AF “Duck Reporters” blog on *Field & Stream*’s website regarding waterfowl status and hunting seasons; provided four newspaper and two television interviews in conjunction with goose banding activities; updated website information

and PowerPoint presentations on the PA waterfowl hunter survey and snow goose management; and responded to numerous requests for information on band reporting and other aspects of waterfowl hunting and management.

In late September, the annual “From the Coverts” newsletter was mailed to over 550 Grouse and Woodcock Hunter Cooperators, along with survey materials for the 2012-2013 seasons. The newsletter included: results of the 2011-12 hunting season as well as the 2012-13 season forecast; information on long-term grouse and woodcock population trends; current PGC research and management efforts; and news items on Ruffed Grouse Society and Woodcock Limited habitat projects. The newsletter was also made available on the PGC website. We prepared a news release previewing the 2012-13 grouse season; assisted the Wildlife Management Institute with preparation on an article on the Muddy Creek Watershed Early-Successional Habitat Improvement Project (Centre County) for inclusion on Wildlife Management Institute’s Young Forest website; and assisted in developing agency website materials providing seedling recommendations for habitat improvement projects targeting grouse and woodcock.

We also assisted with other updates of material on the agency’s website for grouse and woodcock and provided postings on dove banding and dove hunting for PGC social media outlets. We provided a grouse and woodcock season forecast for a Ruffed Grouse Society newsletter, an interview for a biologist profile in *PA Outdoor News*, 1 newspaper interview on grouse seasons, and two newspaper interviews on dove banding and management. We provided information requested by a Kentucky resident planning a grouse hunting trip to PA and responded to approximately 35 additional information requests from the public on ecology, management, and hunting of grouse and webless migratory game birds (especially woodcock and mourning doves).

An article on turkey management was featured in the *Wildlife Annual* in the 2013-14 hunting regulations digest. We assisted with preparation of 3 news releases on turkey seasons and completion of several updates to the wild turkey page on the PGC website, and provided photos and video of hen turkey study activities for the agency’s social media outlets and a freelance producer’s YouTube channel. We gave five public presentations regarding turkey management to about 120 attendees at seminars, and provided an update on agency activities at the annual wildlife and forestry conference of Woodland Owners of the Southern Alleghenies (45 attendees). We recorded two Outdoors PA radio programs on the fall turkey season. We supplied a spring wild turkey hunting forecast and population statistics to the NWTF for a magazine article, and provided 13 interviews to outdoor writers regarding turkey biology and hunting for newspaper and magazine articles. We also collected wild turkey eggs for educational programs from a hunter who harvested a bearded hen that had eggs developing in her reproductive tract, provided two landowners with extensive information on turkeys in conjunction with recovering transmittered hens on their properties, and responded to approximately 70 public requests for information on ecology and management of wild turkeys.

Outreach efforts related to wild pheasant recovery areas (WPRAs) included presentations in numerous venues such as Pheasants Forever chapter meetings and banquets, sportsman’s club and civic group events, and meetings of watershed association groups; approximately 300

individuals attended these presentations. We also met with the national editor of *Pheasants Forever* magazine to provide input for an article on wild pheasant recovery efforts in PA and assisted National Bobwhite Conservation Initiative staff with preparation of an article on PA's northern bobwhite quail management plan (for inclusion in the *State of the Bobwhite* report); provided a newspaper interview on WPRAs to a reporter from the Wilkes-Barre *Times-Leader*; placed "wanted posters" throughout WPRAs to remind the public to report broods and other wild pheasant sightings; and worked with the BIE to use PGC social media for dissemination of photographs of WPRAs work activities and solicitation of information (pheasant brood reports) from the public.

Staff provided educational programs and demonstrations on various game bird monitoring and management topics to college students at California University of PA (120 students), Susquehanna University, PSU main campus (three presentations - 125 students) and PSU Mont Alto campus (17 students), and provided job-shadowing experience to a Snyder County high school student.

We participated in 10 interviews with outdoor writers about the 2012 bear hunting season, the ongoing Urban Bear Study, or the tagging of bears for population monitoring, bear relocation, and human-bear conflicts. We also reviewed several news releases about bear hunting prospects and how to avoid conflicts with bears in residential areas, and an editorial about bears in residential areas submitted to the Harrisburg Patriot-News. Additionally, staff provided nine interviews concerning: bobcat harvest opportunities, coyotes, snowshoe hares, river otters, trapping and wildlife conservation, fox squirrels

We responded to public inquiries through direct phone calls or emails including: bear hibernation, sightings of bears, the process by which age is determined for bears, bear age data, the importance of bear check stations during the hunting season, why the harvest of cubs is permitted, ongoing bear research projects, the status of bear populations, furbearer track identification, mink identification, odd pelt coloration in gray squirrels, a distressed opossum, coyotes, wolves, cottontails, wild turkey predation, groundhogs, deer parturition and weaning dates, gray fox identification, mink, weasel damage identification, wolverine range, rabies, cougars, coyotes, fisher, bobcats, furbearer recipes, historic distribution, foxes, bears, skunks, muskrats, pine martens, badgers, beavers, and river otters.

We summarized bear harvest by townships for Clarion, Venango, and Forest counties and forwarded to the PGC legislative liaison as requested by a legislator. We reviewed and provided comments on a news release about the upcoming black bear and deer hunting seasons. We posted age data from harvested bears on the agency's webpage for hunters to access. All successful hunters also received a certificate recognizing their harvest while at a check station this year. Blueprints and purchase information for bear traps were provided to a researcher at Unity College in Maine who had inquired about PA's bear capture program. Literature describing the injuries typically associated with a black bear attack was assembled and black bear managers in other North American jurisdictions were contacted for similar information.

A presentation about black bear ecology and management was presented to a group of 20 school-aged children at a school-sponsored summer learning camp in Clinton County. We also provided

two public presentations about ecology and management of bears in PA to a combined audience of approximately 100 people.

Presentations on ecology and management of black bears were given at a forest landowners' association meeting and a sportsmen/agricultural recognition banquet with approximately 200 people attending. We provided a 45 minute presentation on black bear ecology and management at a Luzerne County Sportsmen's Forum organized by Senator Mullery. Approximately 45 people were in attendance.

A video discussing bear season prospects was recorded at the Harrisburg office for future posting on the agency website.

Several field trips to observe and tag cubs at winter bear dens were provided for groups of volunteers, legislators, and cooperators; three of these trips also included a presentation given the evening before on ecology and management of black bears, with approximately 100 people attending. Two similar presentations also were conducted at a sportsmen function in Beaver County in early February with approximately 600 people attending. Staff attended the Eastern Black Bear Workshop, which is a workshop for black bear managers and researchers from across eastern North America that meets every other year. Two presentations highlighting PA's bear program were given at the workshop, 1 on the use of extended hunting seasons in human-bear conflict areas, and 1 on monitoring population trends using a statewide marking program.

A summary of residents' and hunters' opinions about bear populations in WMU 4B was prepared for the BOC wildlife management working group based on surveys conducted in 2009 and 2010, respectively.

We prepared data on black bear population trend and harvest in WMU 2G to be included in a presentation at the Northeast Fish and Wildlife Conference during a session on deer predation.

We provided 2011 and 2012 furbearer harvest data for northeastern U.S. jurisdictions to the manager of the National Fur Harvest Database. We provided a one hour lecture to 35 students on furbearer management at a furbearer resources workshop in Romney, West Virginia. In cooperation with the BWP, we prepared responses to a set of questions expressing our agency viewpoint on incidental catch and due diligence in the fur trapping industry, for a student preparing to debate this topic. We provided a furbearer management program to the Northwest Region food and cover crew (30 staff) at their annual conference. We attended the PA Trappers Association meetings during May and June and addressed furbearer research and trapping questions.

We provided a presentation on fisher management to the Dauphin County woodland owners association; 55 people attended. We created and submitted a fisher range expansion illustration for distribution among agency social media sites.

We provided beaver and opossum population status information to USDA Wildlife Services for inclusion in a categorical exclusion document. We reviewed river otter and fox squirrel articles for Game News.

Wildlife Diversity Division staff participated in many forms of public outreach, developing and updating material for the agency website, writing three articles for the Game News and PA Hunting and Trapping Digest, and contributing to 12 agency news releases. We delivered at least 15 presentations to a total statewide audience over 750, appeared in or contributed to six television productions and provided information for 13 television news segments, recorded 11 radio spots and provided nine on-air radio interviews, provided information for at least 20 newspaper articles, and answered at least 150 species-specific inquiries from members of the public. Peregrine falcons were the top topic for both media and public requests. At least 15 articles were posted on the PA eBird website and four Raven Reporter columns appeared in the PA Society for Ornithology newsletter. Opportunities for the public to participate in bird population surveys were promoted through agency web pages and news releases, eBird, the PA Society for Ornithology newsletter and PA Birds ListServe. The much-anticipated publication of the *Second Atlas of Breeding Birds in PA* was announced and promoted through email distribution lists, over 20 bird-related newsletters, presentations to numerous ornithology groups, a feature article in the Game News, and a segment on PA Books on the PA Cable News network. Public participation in the Appalachian Bat Count was promoted through agency web pages and a news release. Television productions about WNS and resulting bat population declines included a 30-minute documentary by WQED Pittsburgh that won a Mid-Atlantic Emmy for science and environmental programming and an hour-long program on the Smithsonian Channel. RWDBs conducted 5 habitat management workshops with a total of 118 participants and presented more than 55 public programs with a total audience of over 2,300 statewide. Examples of audiences include woodland owner, conservation and watershed associations; sportsmen's and bird clubs; university and high school students and homeschoolers groups.

A presentation was made to 15 visitors at the Elk Visitors Center on the dangers of feeding elk. A program on CWD, EHD and Emerging Wildlife Diseases was presented to 48 attendees at the annual meeting of the Central States Association of Food Control Officials. Sixteen high school age youth were given intensive live and classroom instruction in diseases and morphologic evolution of deer as part of the annual *Bucktails* program of the PA Institute of Conservation Education.

The news release regarding the PGC CWD Parts Ban was reviewed and revised in advance of out-of-state big game seasons. Four phone interviews were given to outdoor writers to encourage education about the existence of and reasons for the Ban. A new Wildlife Disease Account showcasing what is known about the emerging Lymphoproliferative Disease in turkeys was placed in the Wildlife Disease Reference Library. A program featuring EHD and diseases of feral swine was presented to 42 attendees of the PA Vector Control Association. Five telephone interviews and 1 in person, were given regarding the CWD response. A program explaining CWD and the response to date was presented to PGC Harrisburg staff who in turn will act as conduits of factual information to the public. A similar program was presented to the public in the DMA, and to DMA district officers, their deputies and supervisors. In cooperation with the BATS, a poster depicting the PGC web-based Pharmaceutical Management System was prepared to be displayed at the annual professional meeting of The Wildlife Society, but was not delivered due to cancellation of travel plans when CWD was detected. This poster was later presented at the Northeast Fish and Wildlife Conference in Saratoga Springs, New York.

A draft text regarding safe consumption of harvested wildlife was provided for review and subsequently added to the website.

Chronic Wasting Disease related materials found on the web site, including the brochure, the CWD disease account in the Wildlife Disease Reference Library, and the main CWD web page, are updated with new finding of CWD. A program on CWD was provided at the Jaffa Sport Show in Altoona. Additional telephone interviews on the subject of CWD were given to reporters. Revisions were provided for the CWD and feral swine portions of the Hunting and Trapping Digest, and coverage of CWD and EHD for the Wildlife Annual. An appeal to hunters and trappers to report BTB like lesions to the wildlife health section was again produced for the Digest.

A talk on CWD was given to an estimated 500 people in Spring Cove as part of the establishment of the new DMA and fulfillment of the Communication Plan in the CWD Response Plans.

A response was provided to a letter from a veterinarian with concerns about a human health threat from consumption of bear meat. A program on CWD was presented at a legislator's hunting fair in Limestoneville. A talk on CWD was given to 18 veterinary practitioners at the annual meeting held for them by the PSU Animal Diagnostic Laboratory staff. A talk covering EHD and CWD was also delivered to 48 wildlife rehabilitators at their annual continuing education conference.

Wildlife disease information was provided in response to requests from bureaus (55), regions (74), GM Comments (72), other state and federal agencies (14), and directly to citizens (178). National and international news and information regarding wildlife diseases was forwarded to interested parties and stakeholders (240).

A presentation was given to the Animal Health and Diagnostic Commission regarding disease issues of mutual concern including feral swine, rabies, and CWD. Fact sheets developed by the Department of Health on rabies in cats, and terrestrial rabies in general were reviewed and suggestions for improvement were made. Public meetings for as few as 10 and as many as 550 were held through the year providing wildlife disease information and perspective for different ages and socio-economic groups.

Pheasant Propagation staff hosted open houses at each of our four game farms. Approximately 250 individuals participated in the tours, which demonstrated all aspects of pheasant propagation, from program goals and values to operational details. Assisted BIE with news releases related to open houses, pheasant allocations, junior pheasant hunts, open houses, and chick and egg programs. Outdoor PA radio spots and website updates are completed annually pertaining to the same topics.

**Strategic Objective 2.4 Promote wildlife conservation education throughout Pennsylvania**

PGC personnel conduct programs for students throughout the state. All programs conducted in schools address the Environment and Ecology State Education Standards. Programs include adaptations, wildlife and their habitats, predator/prey relationships, ecosystems and their interactions, mammals and birds of PA, wildlife forensics, and endangered and threatened species. Conservation Education also worked with Howard Nursery on the Seedlings for School program. This program offers free seedlings to schools along with education resource materials.

Conservation Education is also responsible for the wildlife section of the State Envirothon. PGC personnel updated resources and objectives for the Envirothon and PGC personnel staffed all of the county events and the state contest. This year PGC personnel also helped develop and conduct the wildlife test and station for the National Envirothon held in Pennsylvania this year. This year, over 15,000 high school students participated in the county events with 300 students competing at the state level.

Conservation Education continues to work with the Department of Education and AFWA to ensure that all training programs correlate to appropriate Standards. The Commission continues to serve on the Early Childhood Education Review Committee out of the Office of Child Development and Early Learning. This past year the committee developed an Environment and Ecology Materials Review instrument and has started to evaluate early childhood materials to develop a list of quality E and E materials for Early Childhood. In addition, the Commission was also invited to be on the Standards Writing Committee for the Environment and Ecology Standards for pre-K-2<sup>nd</sup> grade. These standards are now in final form.

This year a special facilitator training in Growing UP WILD was offered for 20 Trainers from the Early Childhood section of the Department of Education.

The Conservation Education Division continues to serve on the Environmental Education Advisory Committee. Below please find a listing of ongoing programs that correlate to Department of Education and AFWA standards.

<i>Existing, continuous programs that address state education standards and AFWA standards.</i>	
Teacher Workshop	Target Audience
Project WILD	K-12 teachers; pre-service Teachers; non-formal educators
<i>Science and Civics</i>	High School teachers
<i>Advanced WILD Workshops</i>	K-12 teachers; non-formal educators
<i>PA Songbirds</i>	K-12 teachers; non-formal educators; pre-service teachers

<i>Growing UP WILD</i>	Prek-2 <sup>nd</sup> grade teachers; Pre-service Teachers
PA Biodiversity	Middle- High School Teachers; nonformal educators
<i>Flying WILD</i>	K-12 teachers; pre- service and non-formal educators

Conservation Education expanded programs, services and resources:

- Offered new workshops, WILD about Furbearers
- Increased facilitators in both Growing UP WILD and Project WILD
- Increased opportunities for training in Growing UP WILD
- partnered with additional organizations (see below)
- participated in conferences
- updated Growing Up WILD, Songbird and Project WILD facilitator training materials
- developed conservation education binder materials for Cadets in current training school class
- Participated in development of pre-k- 2<sup>nd</sup> grade Environment and Ecology Standards
- Developed materials and exhibits for education to use in exhibits at conferences
- Worked with national Project WILD in initiating the re-writing of Project WILD

Conservation Education continued partnerships with state parks, museums, nature centers and environmental education centers and other organizations in offering programs and exhibits.

<b>Number of partnerships established in developing and delivering programs: new partners are indicated with a *</b>
Conducted workshops in partnership with the following organizations/agencies
Bradford County Conservation District
ZooAmerica
DEP
Whittaker Center
Messiah College
Bloomsburg College
Dept. of Education office of Environment and Ecology
Wildwood Lake Sanctuary, Dauphin Co. Parks and Recreation
DCNR, Bureau of State Parks
*DCNR, Bureau of Forestry
York College
Slippery Rock University
Philadelphia Zoo
John Heinz Wildlife Refuge- US Fish and Wildlife Service
Lock Haven University
Penn State University

PPL
Mansfield University
Audubon PA Harrisburg
*West Chester University
Shavers Creek Nature Center
Audubon of Western Pennsylvania
East Stroudsburg University
PA Fish and Boat Commission
Cabrini College
Monroe County EE Center
Carbon County EE Center
*Tuscarora Nature Center
*Hanover YWCA
*Williamsport and surrounding area Children Librarians
*Lancaster and surrounding area Children Librarians
*York County Children Librarians
Erie Zoo
Office of Early Childhood Education
Keystone Elk County Alliance
*Northwest Regional Key- Early Childhood
*Southwest Regional Key-Early Childhood
*Hildebrandt Learning Centers in Lancaster
*Nixon County Park-York County
*Chestnut Hill College
*Westminster College
*Grove City College
Black Rock Retreat
*Lycoming College
*Lehigh University
*United Cerebral Palsey out of Philadelphia

More than 3,000 educators participated in 1- or 2-day workshops sponsored by the Commission. One hundred and 33 one workshops were offered throughout the state for K-12 teachers, early childhood educators and non-formal educators. These workshops included Project WILD, Advanced WILD, PA Songbird, PA Biodiversity, Growing UP WILD and Flying WILD workshops. Growing UP WILD experienced tremendous growth this year as childhood educators from throughout the state discovered its potential in teaching young children about wildlife and the environment.

Four facilitator trainings were offered this past fiscal year, two for Growing UP WILD and one for Project WILD. The fourth training was a new type of advanced training for current facilitators entitled “In the Field”. During this training, facilitators were updated on a variety of topics from standards to workshop procedures and then experienced a field investigation of the globally rare Serpentine Barrens at Nottingham Park of Chester County Park System. The following is a list of the workshops offered this past fiscal year.

During this fiscal year, two new workshops were added: WILD about Furbearers and WILD about Deer. Other advanced workshops offered this year included workshops on elk, bear, wetlands, endangered species, eagles and peregrine falcons. Participants had an exciting time at the elk workshop, participating in the capture, tag and release of two elk calves and examining management practices through a guided exploration of game lands. Canoeing down the Susquehanna River to view the Great Egrets and Black-crowned night herons on Wade Island provided an incredible experience for educators participating in the Endangered and Threatened Species workshop.

Numbers of Programs:			
Workshops			
Program	Participants	Number of workshops	Number Participants
Project WILD	K-12 Teachers; pre-service teachers, non-formal educators and preservice teachers	31	886
Advanced WILD and Specialized WILD Workshops ( <i>elk, waterfowl, endangered species, peregrine falcon, Wetlands; Eagles, Furbearers; Science and Civics; Deer</i> )	K-12, non-formal educators	11	173
Growing UP WILD	Pre-K- 2 <sup>nd</sup> grade teachers and pre-service teachers	84	2008
PA Biodiversity	K-12 educators, non-formal educators preservice teachers	2	35
PA Songbirds (that report to PGC)Workshops* (still waiting for more reports to come in)	K-12 educators, non-formal educators ; pre-service teachers	2	22
Flying WILD	K-12 Educators, non-formal educators; pre-service teachers	3	64
	<i>Total workshops and participants</i>	133	3188
* <i>Teacher workshops typically 6+ hours each; elk is 2-day Growing UP WILD 3-6 hours;</i>			

<i>Endangered Species 2 days</i>			
Facilitator Trainings: Growing UP WILD Project WILD Advanced Training Facilitators	Early Childhood PDE Trainers; DCNR Educators; nature center educators	4	93
	Total workshops for educators and to train facilitators	137	3281

Conservation Education employed a variety of methods to provide services, programs and resources to constituents as follows:

- Basic Workshops- *Project WILD, PA Songbirds, Growing up WILD, Biodiversity, Flying WILD*
- Advanced Workshops- *Elk, Endangered Species, Peregrine falcons, Waterfowl, Furbearers, Science and Civics; Field Investigations*
- Facilitator Trainings- *Songbirds, Growing Up WILD, Project WILD*
- Conferences: Displays/Presentations
  - *PA Science Teachers Association*
  - *ACI Conference*
  - *DCNR Bureau of State Parks Annual Training for Education Staff*
  - *NAEYC York County Chapter*
- Webinars- *Conservation Education webinars and materials development with AFWA as part of the K-12 education committee*
- Web pages- *provided Seedlings for School materials and workshop announcements*
- Printed Educational Materials- Updated a variety of materials including
  - Seedlings for Schools
  - Elk Workshop materials
  - Deer Education materials for Deer workshop
  - Growing UP WILD Fac. Training Materials
  - Project WILD Fac. Training Materials
  - PA Songbird Facilitator Training
  - eBird brochure
  - Education Brochure

**Strategic Objective 2.5 Promote the “Connect with Wildlife” program**

The “Pennsylvania Wildlife Moments” provides a comprehensive marketing plan on wildlife natural history information, wildlife concerns, safety messages and agency activities to TV stations and Radio stations throughout the state. The PGC developed a Marketing campaign to promote “Safe Hunting in PA” for Radio PA. Reviewed the program “Interactive Print” for the PA Hunter’s Digest.

The PGC outreach programs include, billboard advertising throughout Pennsylvania, Connect with Wildlife magnets, posters, bumper stickers, orange hat with embroidered PGC logo and

wildlife supporter, orange draw string bag, Triple Trophy patch, Bald Eagle Restoration 200 Nest Milestone patch, Working Together for Wildlife patches, Field Note patches, Elk Hunt patches, 100 Year Elk Restoration patch, Mentored Youth patch with saf-t plug, Time Collectible Wild Turkey Heritage and Upland Game Bird Series, PA Big Game Record book, Waterfowl Management stamp and print, Wildlife and Habitat buttons, PGC Multi Pocket badge holder, Second Atlas of Breeding Birds in PA book, Youth field days and the various special youth hunting season opportunities. The PGC established social media links on the website, which includes Facebook, Twitter, and U-Tube. PGC worked with Penn Dot on providing Tourist Oriented Directional signs (TODS), within state highway right of way, to guide travelers to our facilities and updated all state game lands for Penn Dot maps. Reviewed and prepared merchandise inventory revenue coding reports for the new Microsoft Retail Management System.

The PGC has developed a partnership with the Pittsburgh Pirates baseball team and the Harrisburg Stampede indoor football team, in providing discount game nights to hunters with a current 2012/2013 hunting license. The PGC staffs informational booths that provide PGC materials/brochures and answer questions relating to Wildlife Conservation at the Pittsburgh Pirates games. The PGC partnered with the Harrisburg Senators and offered an Outdoors Night with special activities and discounted tickets for PA Hunters. The PGC also staffed informational booths and provided educational brochures/materials to the patrons. The PGC provided items to promote the PGC for the movie “Promised Land” produced by Mark Damon and was released in December, 2012. Spoke at the American Legion Conference and promoted the “Hunt with a Veteran” program and established and coordinated the program with the VFW and American Legion. The Hunt with a Veteran program provided the veteran the opportunity to discover or rediscover the joys of hunting in PA. Several hunters were recognized at the Commissioner’s meeting and received awards for their participation in the “Hunt with a Veteran” program. Partnered with Kutztown University to provide streaming of the tape “PA Whitetails: Living with Change” for the students to view. Provided artwork for the Ned Smith dedication ceremony. Secured and provided vendors for the 2013 NASP Tournament held at State College. Worked on promoting the sale of Game News at Airports, Barnes & Noble and Wal-Mart.

Staff developed a Goose Band to celebrate the 50 Years of Hunting Geese at Pymatuning WMA. To celebrate the 100 Years of Elk Restoration in PA, the PGC created a six inch patch to commemorate the event along with a replica of an elk ear tag, straws that provide the sound of an elk bugling, and billboard advertising at several locations in PA.

Staff incorporated the, “Connect with Wildlife”, message into several outreach products: bookmarks, bumper stickers, posters, billboards and magnets. The “Wildlife Moments” are presented through TV and Radio stations throughout Pennsylvania. The “Wildlife Moments” provide information to the general public relating to wildlife and the PGC’s role in managing wildlife and its habitat for current and future generations.

The agency uses many sources of informational materials to promote the “Connect with Wildlife” message. The following items are distributed to the general public: bookmarks, bumper stickers, posters, magnets, wildlife/habitat buttons, promotional merchandise, prints, and educational brochures/pamphlets.

## **Strategic Objective 2.6 Increase the public's understanding of wildlife and their habitat needs.**

A number of wildlife habitat articles written and published. News releases were used to explain the benefits of prescribed fire and advise the public of controlled burns planned in their areas. Many included a section on habitat needs and reclamation successes in the elk-restoration brochure. Through media exchange forums frequently explained wildlife habitat needs to media, particularly for stories about suburban wildlife. The Press Secretary reported Game Commission land purchases to the media, explaining how various types of habitat would benefit wildlife

Outreach to build support for habitat improvements to benefit early-successional species such as ruffed grouse and American woodcock is an important part of implementing management plans for those species. Staff provided presentations with this focus to 30 attendees at a Middle Creek Wildlife Management Area lecture series event and to 50 attendees at a "woodcock watch" hosted by a private landowner and the Columbia County Conservation District. BWM and BWHM collaborated to develop "Habitat Management for PA Ruffed Grouse", a best management practices publication for use by public and private land managers undertaking grouse habitat improvement activities. We also coordinated with Northeast Region staff and the Dallas Chapter of the Ruffed Grouse Society to arrange a tour of early-successional habitat management on SGL 127 (Monroe County) for multiple partner organizations, and responded to several requests for information and field consultations on management techniques in habitats being managed for grouse and woodcock.

As opportunities arose, pheasant staff answered questions from landowners and other WPRAs cooperators about Conservation Reserve Enhancement Program (CREP) re-enrollment, and referred them to appropriate local USDA or Pheasants Forever staff for further assistance. Staff also attended a Schuylkill County landowner CREP meeting and presented habitat and WPRAs information in cooperation with USDA staff.

Wildlife Diversity Division biologists provided four guest lectures for a total of 133 university students about WNS (2), zoology, and the PA Wildlife Action Plan, spoke to 80 elementary school students about peregrine falcon conservation, and led a bird walk for 27 children (and 10 parents) during Take Your Child to Work Day at PGC Harrisburg headquarters. RWDBs provided three presentations for a total of approximately 85 university students about management for species of greatest conservation need and careers in wildlife biology, spoke to 30 high school students about wildlife biology careers and 22 homeschoolers about PA wildlife and habitats, and administered a wildlife test to 145 students during a county Envirothon.

## **GOAL 3: Promote and perpetuate our hunting and trapping heritage.**

### **Strategic Objective 3.1: Increase hunter and trapper recruitment.**

A Strategic Plan for the Recruitment, Retention and Reactivation of Hunters and Trappers in Pennsylvania for 2012-2017 was developed, reviewed and is available upon request. Moving forward, it will be used as a guiding document. It is dynamic in nature and as more research and evaluation is completed pertaining to hunters and trappers in Pennsylvania, the plan will be modified accordingly.

The Hunter Education & Outreach Division was responsible for producing and distributing the following printed training guides and materials that promote hunting and trapping:

*Today's Hunter and Trapper in Pennsylvania* student guide – 44,109 copies

*IHEA Hunter's Handbook* – 41,600 copies

*IHEA Hunter and Shooting Sports Education Journal* – 8,100 copies

*Today's Bowhunter* student guide – 464 copies

*Today's Crossbow* student guide – 455 copies

*NBEF's 3-in-1 Responsible Hunting Guide* – 455 copies

*Successful Furtaking* student manuals – 139 copies

**Cable Restraint** student manuals – 1025 copies

*Successful Turkey Hunting* student manuals – 181 copies

These materials are distributed as part of the various hunter education programs and instructor training workshops.

A total of 994 basic Hunter-Trapper Education course were conducted statewide during this reporting period. The total is comprised of 862 traditional multi-day courses, and 132 two-hour independent study classes. This compares to the total of 976 statewide courses during FY2011-12; 824 traditional and 151 independent study classes and marks a 2% increase in the number of courses.

HE program policy requires all proposed HTE classes for the calendar year be scheduled by April 1<sup>st</sup>. An internal review is then conducted and recommendations are made to improve course scheduling with particular emphasis on the months of September through November. Policy also requires that all classes are posted on the Internet and include online registration capabilities.

To gain a better measure of public demand for training, the agency continues to use web analytics to measure and track the public's use of the Internet in searching for hunter education classes. By measuring the number of users, the course types in demand, the users' ISP-generated hometowns, time of the year and more; we are able to quantify demand by time and locale. In response, we can schedule classes in those areas and at those times of the year matching the demand suggested by the analytics. By using these tools coupled with strategic scheduling, we are beginning to see increased enrollments in HTE classes.

The Bureau of Information and Education assumed coordination of the Junior Pheasant Hunt for 2012. On October 6, 2012, 26 events were held and 961 hunters registered for the events. Email marketing was used to promote the events and a huge response was recorded of junior hunters looking for events. This response was recorded and used to calculate a demand for events across

the Commonwealth which will be used to strategically grow the program in the 2013-2014 Fiscal Year.

The Mentored Youth Hunting Program Permit continued for the 2012-2013 hunting season. 34,984 permits were sold, an increase of 4.2% over the previous 33,514 sold in 2011-2012.

The topic of hunter recruitment and retention is one that the Pennsylvania Game Commission is well aware. In the early 2000's, the National Shooting Sports Foundation established a book defining some Best Management Practices for Hunter and Trapper Recruitment and Retention. With this information as a guide, our agency has invested many resources into understanding the dynamics that affect recruitment and retention with the ultimate goal of recruiting new hunters, retaining current hunters and reactivating hunters that have lapsed.

The first part in this process is establishing the known variables at work in our state. We have actively begun working with lapsed hunters by conducting surveys to identify barriers or reasons why they stopped hunting and also why they have not returned to the sport. In the new fiscal year, we are working to identify solutions to these reasons and hope to move progressively forward in putting some of these solutions into place in the upcoming years. Ideally, the solutions identified will also prevent current hunters from lapsing and therefore increase our hunter retention rate.

We have also been working to evaluate the current programs that are in place in our state that offer any sort of introduction to hunting, shooting and trapping. By understanding what programs the agency is currently offering, we can then begin to evaluate and see if with some alterations, we could improve recruitment rates. For this portion of program evaluations, we implemented the Event Manager Registration system and continue to update and improve the system. In the 2012-2013 fiscal year, we established some benchmarks for each program that will enable us to understand current recruitment rates. Most of the best practices pertain to improving programs to increase recruitment and retention rates. As we better understand our own programs, we can then work to incorporate these best practices as we modify our programs.

Recruitment and retention BMPs which have been adopted in our current outreach programming are as follows:

***Program Planning***

- (Programs) Are relevant to the mission of the sponsoring agency or organization
- Plan for program evaluation in the initial stages of planning

***Professional Development***

- Train instructors in education theory and models of good instructional practices
- Recruit instructors with experience and knowledge in appropriate subject areas

***Program Evaluation***

- Helps identify program outputs, such as number of participants and participant feedback
- Allows program staff to take advantage of professional development opportunities relating to evaluation

***Expanding reach with diverse audiences***

- Lessen or remove barriers that constrain access

- Ensure the materials are instructionally sound

***Expanding reach with persons with disabilities***

- Include persons with disabilities and individuals who work with them in the design and implementation of the program
- Provide appropriate ration of instructors to students

***Research***

- Allow staff to recognize and explore the value of and need for research that is relevant to their program
- Provide opportunities for staff to become aware of and familiar with collections, reviews and summaries of research relevant to their programs
- Encourage staff to incorporate research findings into the design, development, implementation and evaluation of their programs
- Allow staff to take advantage of professional development opportunities that enhance their research skills and strengthen their capacity to become meaningfully involved in the research process

***Integrate Organization-wide programs***

- Communicate that hunting and shooting R&R is a serious issue that needs to be addressed
- Develop a comprehensive, integrated plan that identifies specific goals, objectives, strategies and resources needed to be successful

***Marketing and Promotion***

- Establish liaisons with state and local conservation organizations
- Identify specific target audiences

***Maximize opportunities***

- Track new participants over time to assess participation
- Allocate opportunities to new hunters

***Shooting Sports in Schools***

- Consider implementing programs with an established track record

Sportsmen’s clubs and other conservation organizations host Women in the Outdoors, Becoming Outdoor Women and Women on Target events each year. Wildlife Conservation Officers and other representatives of the agency often attend these events and assist as needed. The following data was recorded for the 2012-2013 fiscal year:

National Archery in the Schools Program

The Game Commission continued coordination of the National Archery in the Schools Program (NASP). Forty-two new schools enrolled in NASP in 2012-2013, bringing the total number of schools in the state to 138. At least 32,000 students were reported by schools to have participated in the program in the 2012-2013 school year. The agency once again coordinated a state wide tournament in March at the Penn State Multi-Sports Complex and welcomed 817 archers whom represented 30 different schools to compete. 154 of those students then traveled to Louisville, Kentucky in May to attend the National NASP tournament. PGC continues to offer \$1,500 to offset the cost of an equipment kit for each school to enroll in the NASP program and secured over \$24,000 in additional grant funding to help the schools further defray the cost. The agency hosted 22 Basic Archery Instructor trainings and certified 179 Basic Archery Instructors. The

agency trained an additional 6 Basic Archery Instructor Trainers (BAITs) and continued contracting with 9 different BAITs to complete trainings as needed.

Youth Field Days

Sportsmen’s clubs and other conservation organizations host youth field days each year. Wildlife Conservation Officers and other representatives of the agency often attend these events and assist as needed. The following data was recorded for the 2012-2013 fiscal year:

*2012-13 Youth Field Day Summary*

<b>Region</b>	<b>Number of Programs</b>	<b>Number of Participants</b>
Northwest	10	1,835
North Central	6	601
Northeast	7	324
Southwest	42	4,298
South Central	10	1,824
Southeast	12	1,448
<b>Total for State</b>	<b>87</b>	<b>10,330</b>

Youth Hunter Education Challenge

The Hunter Education and Outreach Division coordinated the hunter responsibility and wildlife identification portion of the Youth Hunter Education Challenge event held on June 15, 2013 at Scotia Range in State College, Pa. 205 competitors participated in the event this year.

The gender/age breakdown of resident hunting license buyers during the 2012-13 license year appears below. This information was obtained from the agency’s point-of-sale licensing system.

*Gender/Age Breakdown of 2012-13 Resident Hunters*

	<b>Resident Base Licenses Sold-2011</b>	<b>% of Total</b>	<b>Resident Base Licenses Sold-2012</b>	<b>% of Total</b>	<b>% Change</b>
<b>Gender (all ages)</b>					
Male	782,094	92.3%	786,049	91.7%	-0.6%
Female	65,246	7.7%	70,870	8.3%	+0.6%
<b>Total</b>	<b>847,340</b>		<b>856,919</b>		+1.1%
<b>Under 16</b>					
Male	69,104	82.6%	69,436	81.2%	-1.4%
Female	14,558	17.4%	16,053	18.8%	+1.4%
<b>Total</b>	<b>83,662</b>		<b>85,489</b>		+2.1%
<b>MYHP permits</b>					
Male	27,179	81.1%	27,572	79.3%	-1.8%
Female	6,335	18.9%	7,204	20.7%	+1.8%
<b>Total</b>	<b>33,514</b>		<b>34,776</b>		+3.6%

Other demographic information about hunting license buyers is not available at the present time in Pennsylvania. As an alternative, demographic information which identifies minorities is collected by the Hunter Education and Outreach Division for all hunter education students.

Racial/ethnicity information for the basic Hunter-Trapper Education course is summarized as follows:

*Racial Summary of PA Hunter-Trapper Education Students*

<b>FY2011-12</b>		<b>FY2012-13</b>		<b>CHANGE</b>
<b>RACE</b>	<b>PERCENT</b>	<b>RACE</b>	<b>PERCENT</b>	<b>% of Total</b>
White	96.6%	White	95.71%	-0.89%
Black	0.8%	Black	0.91%	+0.11%
Asian	0.4%	Asian	0.59%	+0.19%
Hispanic	0.9%	Hispanic	1.18%	+0.28%
Native American	0.2%	Native American	0.23%	+0.03%
Other	1.0%	Other	1.38%	+0.38%

The measure of new hunters and trappers remains a challenge at the present time. New names appear in the PALS database each year. Some are indeed brand new to hunting and trapping. Others are returning from a lapse in participation. With each successive year of sales in this system, we should near the actual number of new hunters and trappers. Below is a summary of new names appearing in the PALS database for license year 2012-13. These names have not appeared at anytime in the past.

During the reporting year, the following Hunter-Trapper Education classes were conducted either during the school day or after school on nights or weekends within school facilities:

*HTE in Schools Summary FY2012-13*

<b>REGION</b>	<b>IN-SCHOOL</b>	<b>AFTER SCHOOL</b>	<b>TOTAL</b>
NW	8	3	11
SW	2	5	7
NC	3	0	3
SC	2	2	4
NE	3	4	7
SE	1	2	3
<b>TOTALS</b>	<b>19</b>	<b>16</b>	<b>35</b>

**Strategic Objective 3.2 Promote the safe, responsible and ethical behavior of hunters and trappers.**

In order to improved public perception of hunting and trapping, staff used news releases, radio, and media interviews to achieve widespread recognition of Pennsylvania’s first year on record without a hunting-related fatality, and the trend of continually safer hunting. Additionally, the pages of *Pennsylvania Game News* were filled with articles that show the benefits of hunting and

trapping, and otherwise portray hunting and trapping favorably and in a positive light. The benefits of hunting and trapping were promoted through the Outdoors PA radio program.

During the reporting year of July 1, 2012 to June 30, 2013, a total of 28 hunting-related shooting incidents occurred at a rate of 2.97 incidents/100,000 license buyers. There were no fatalities reported during this timeframe. The total number recorded during FY2012-13 remains below the current 10-year average of 40.7 incidents per year with a rate of 4.24 incidents/100,000 license buyers.

Below is a summary of hunter education student training efforts for this reporting period with a comparison to the previous year:

FY2011-12				FY2012-13				
Curriculum	# Classes	# Students Enrolled	# Students Certified	Curriculum	# Classes	# Students Enrolled	# Students Certified	Percent Change
HTE	824	36,854	32,978	HTE	862	39,530	35,018	+4/+7/+6
HTE IS	151	2,169	1,692	HTE IS	132	2,704	2,071	-13/+20/+18
<b>HTE TOTAL</b>	<b>976</b>	<b>39,023</b>	<b>34,670</b>		<b>994</b>	<b>42,234</b>	<b>37,089</b>	<b>+2/+8/+6</b>
Bow Ed	24	369	331	Bow Ed	23	325	290	-4/-12/-12
Cable	21	530	488	Cable	27	867	829	+22/+39/+41
Furtaker	8	92	82	Furtaker	8	104	96	0/+11/+15
Remedial	4	76	76	Remedial	4	70	70	0/-8/-8
Turkey	7	160	146	Turkey	8	161	150	+12/+1/+3

During the reporting period, the following improvements were made to the agency's hunter education programs:

- Ongoing refinements to the online class registration and reporting system, named *Event Manager*. The system is now formatted to be accessible by mobile devices such as smartphones.
- Release of the basic *Successful Furtaking* curriculum revision that allows students the opportunity to obtain a *Cable Restraint Certification* without having to attend the entire course. This streamlined curriculum will eliminate the need for two separate courses and simplify class scheduling logistics. This modification will occur through the reorganization and consolidation of lesson plans significant to *Cable Restraint Certification*.
- Continued use of web analytics to identify hunter education training interest by geographic location which is used to guide creating schedules for basic Hunter-Trapper Education classes.

- Extended use of Zoomerang online surveys to gather feedback from customers about student satisfaction with their training experience and the public’s preferences about when and where classes are scheduled.
- Ongoing replacement of broken and obsolete A/V equipment with new, modern digital projectors, players and computers.
- Ongoing transition of basic Hunter-Trapper Education instructor teams using skill-based learning stations.
- Refinement of the two online Hunter-Trapper Education courses - one for the current HTE Independent Study format and the other for the reformatted six-hour HTE class.

Current advanced training courses now include *Successful Bowhunting*, *Successful Furtaking*, *Successful Turkey Hunting* and Cable Restraint Certification. Curriculum development has begun for a new *Successful Muzzleloading* training program to be launched in 2014.

A formal peer review of the agency’s hunter education programs was conducted by the International Hunter Education Association in March 2008. This process examines all aspects of state hunter education programs and provides a comprehensive list of recommendations for improvement. The agency requests the review in advance of each 5-year planning cycle for Federal Assistance Program grants and the agency’s hunter education plan. A scheduled peer review was to occur in early 2013 but was not conducted.

In October 2009, a Jurisdictional Minimum Hunter Education Standards Evaluation Report was completed by the Hunter-Trapper Education Division and submitted to the IHEA to measure the compliance of the agency’s Hunter-Trapper Education program with national standards for basic hunter training.

**Strategic Objective 3.3 Increase the retention rate of hunters and trappers.**

The Pennsylvania Automated Licensing System is now in effect for four years. The agency is beginning to analyze data for trends related to hunter recruitment, retention and reactivation together with license-buying habits. Through the use of the Event Manager system we were able to identify participants in some of our outreach programs and then compare their information to our license database to finally begin to identify purchase behaviors. In the 2012-2013 license year, we were able to identify the following rates of license purchases from outreach event participants.

Outreach Program	Number of Participants	Number of Licenses purchased	Percent of Participants that Purchased Licenses
Junior Pheasant Hunt Program	783	681	86.97%
Youth Field Day Program	663	238	35.89%
National Archery in the Schools Program	893	263	29.45%

\*Above are representative survey samples; they are not actual total numbers of program participants.

A major new initiative is in the development stage. Go Hunt PA will be released next year as a major recruitment and retention program. No new outreach programs have been developed for this fiscal year. However, all current outreach programs are under review and continue to be improved.

**Strategic Objective 3.4 Provide sustained opportunities for hunters and trappers to take wildlife.**

Season and bag limits were established to insure the long term benefit of the wildlife species and in return insures hunting opportunity in the future. The habitat section also provides information on habitat issues that assist in insuring game populations for the future.

Seasons were expanded in WMUs for both bobcats and fishers. A separate bobcat season continued for hunters with dogs.

This year adult mentor hunters had the opportunity to transfer a fall turkey tag to a mentored youth.

The number of elk tags increased this year to provide greater chance at an elk tag and manage the population. Elk hunt zones were redesigned to provide hunter opportunity where there is an increased elk population. The purpose is to provide better hunting opportunity and reduce the elk-human conflict issues.

The Junior Pheasant Hunt program was coordinated by the Bureau of Information and Education. The program has expanded considerably and is only limited by the number of clubs and hunters who would be willing to sponsor a mentored hunt.

The Mentored Youth Hunting Program Permit continued for the 2012-2013 hunting season. 33,391 permits were sold, an increase 4.9% over the previous year.

This year the legislature passed an adult mentored hunt program. This gave the Commission the authority to establish the regulations to establish the parameters of an adult mentored program.

**Strategic Objective 3.5: Promote and expand hunting and trapping access on public and private lands.**

The agency's Public Access programs continue to provide hunting opportunity on private lands. This year, 15,399 Public Access cooperators allowed hunting access to 2,666,007 acres of private land, making it the largest program of its kind in the country. Through a Voluntary Hunter Access and Habitat Improvement Program (VPA-HIP) grant from the USDA, 121 new habitat projects were planned and implementation has begun on 6,445 acres on private lands, and 17,511 new acres were enrolled into the Hunter Access program as a result of this grant. In addition, the grant paid for PA Game News subscriptions to all Hunter Access Cooperators. Specific articles benefiting those cooperators were included in 6 of 12 monthly issues this year. A Deferred Grassland Use program was implemented with grant funds in three WPRA's used as

an incentive to re-enroll in CREP and also to defer mowing grasslands until after the nesting season for ground nesting birds. Two thousand eight hundred fifty-eight acres of private lands were enrolled through this program to protect wildlife nesting habitat.

Hunting access was also provided on our 1.4 million acre state game lands System via 4,200 miles of roads open for hunter access. These access corridors also facilitate habitat management that improves hunting opportunity. In addition to providing access to existing game lands, the Commission remains diligent in its land acquisition goals in an effort to expand upon hunting and trapping opportunities. During this year the Agency acquired 11,332 acres to add to those acres already part of the state game lands System. The bulk of these acquisitions occurred through third party escrow funding commitments for replacement of temporary losses to wildlife habitat and recreational values impacted by oil/gas and mineral leasing projects approved by the Commission.

### **Strategic Objective 3.6 – Improve hunter and trapper understanding of their role in wildlife management**

All of the agency's formal hunter and trapper training programs contain content addressing the role of hunting and trapping in wildlife management. This includes both basic and advance curriculums. During this reporting year, lessons containing this information were taught to 37,089 basic Hunter-Trapper Education students and 1,435 advanced hunter education program students.

In addition to hunter education, the agency produced and distributed the following articles as part of the monthly *Game News* magazine:

- *Conservation News (selected monthly columns)*
- *History of the Whitetail (selected monthly columns)*
- *Connecting Wild Lands*
- *One Hundred Years Later*
- *Pennsylvania Otters – A Success Story*
- *Prescribed Fire Brings Improved Habitat on Hunter Access Property*
- *Pymatuning and Conneaut*
- *Suburban Deer*
- *Tipping the Scale*
- *75 Years of Success in Pennsylvania*

This publication has a monthly paid circulation of approximately 41,759 copies. Including complimentary copies, total circulation is 78,000 per month. This includes copies to schools, libraries, land owners enrolled in the agency's public access program, etc.

In addition to these sources, the agency's website contains the following information, which addresses this operational objective:

- Management plans for various game species

- Wildlife Conservation History
- An entire deer management section which includes, but is not limited to the following:
  1. 2009-18 White-Tailed Deer Management Plan
  2. 2013 Antlerless Allocations and Supporting Information
  3. An Evaluation of Deer Management Options
  4. Forest Habitats and Deer Deterrent Fencing
  5. A Place to Call Home - Deer Habitat Relationships
  6. Common Resource of the Commonwealth - Managing Deer for Everyone
  7. Seeing the Whole Picture - Estimating Deer Harvests
  8. Why Bigger is Better - Wildlife Management Units
  9. Pennsylvania CWD Response Plan

The agency's website logged 2,454,273 "unique visitors" for the reporting year. The Hunter Education Class Calendar page logged 87,168 "absolute unique new visitors for the reporting year. This is the web analytic measure of the number of people who visit the site.

**Strategic Objective 3.7 Provide enhanced pheasant hunting opportunity through a put-and-take operation and a reintroduction program.**

Propagated pheasants remain popular with sportsmen and provide many hours of hunting recreation as well as junior hunting opportunities. The Commission's four Game Farms (GFs) were able to double production in 2012, returning to levels accomplished prior to budget cuts in 2005.

Pheasant hunting pressure and pheasant hunting habitat data were compiled with assistance from region land management staff to complete 2012 pheasant allocations. Also, Standard Operating Procedure 40.2 – Ring-necked Pheasant Stocking - was updated. Important changes in stocking procedures for this year included requirement of a minimum of 50 acres of suitable habitat to receive pheasants (up from 15 acres previously), and four in-season releases. There have been only two in-season releases per year since 2005.

Staff released 200,968 birds (89,405 hens and 111,563 cocks) for hunting in the 2012 hunting seasons. Shipments started in early October for the junior pheasant hunt, which consisted of 15,595 birds released at designated advertised sites throughout the Commonwealth. Also 21 clubs received 1,931 birds to hold hosted junior hunts for 835 registered participants. For the remainder of the pheasant season 183,442 birds were stocked in October, November and December during one pre-season, four fall season and one winter release. 389,694 pheasant hunting days in 2012 (Game Take Survey)

Also 20,070 pheasants (18,914 hens and 1,156 cocks) were placed in winter holding pens as breeders to meet our goal of 200,000 birds for 2013. Egg collection for the spring of 2013 for all farms totaled 677,373 eggs, with 348,942 eggs set and 259,177 chicks hatched and placed in brooder houses. Six hundred eggs and 4,348 surplus hen chicks were sold. We donated 6,435 day old pheasant chicks to sportsmen's organizations to raise and release on lands open to public

hunting. Also 16,569 hens and 1,028 males were released in May after egg collection was completed.

The 2012-13 Game Take survey indicated that 3,891 resident junior hunters harvested 7,042 pheasants during the 2012 Junior pheasant hunt. During all pheasant seasons, 87,341 hunters harvested 198,704 pheasants.

All GFs serviced birds in brooding, holding pens, winter holding and breeder fields. For these operations, pens are prepared for birds by placing feeders, waterers and nest boxes, planting corn and sorghum and making necessary repairs to fences, netting and gates. Brooder houses are cleaned, checked and prepared for the arrival of day-old pheasant chicks. At the end of each season brooder houses and brooding equipment are cleaned and necessary maintenance completed. All fields are cleaned up, crop areas plowed and pen netting dropped for the winter.

During the winter months maintenance is conducted on vehicles, tractors, farm machinery, feeders and fountains, and work is completed to repair and construct nest boxes, shipping crates, gates and brooding equipment.

Throughout the year the game farms maintain traps to recapture occasional escaped pheasants and control predators, mow and maintain lawns, and do disease testing on the pheasants to insure a disease-free bird.

The Southwest GF installed flooring and a new egg cooling unit in their hatchery, and replaced wire, netting and gates in their brooder yards. The Northcentral GF replaced netting, gates and side wire on several holding fields, and installed gravel drains under their waters in brooder yards. The Loyalsock GF purchased diesel generators to use for electrical backup in their brooder houses, built a new egg storage building and rebuilt holding fields and a runway connecting these fields. The Western GF purchased generators for electrical backup for their brooder houses and built new holding fields.

The Ring-necked Pheasant Management Plan is being used to guide pheasant recovery efforts. Wild Pheasant Recovery Areas (WPRAs) have been designated in areas of suitable habitat within the commonwealth, with the goal of establishing populations of at least 10 hens/mi<sup>2</sup> in the spring through habitat improvement and the release and temporary protection of wild trapped and transferred ring-necked pheasants. A total of five WPRAs have been established to date: Pike Run (Washington County), Central Susquehanna (Montour, Northumberland, and Columbia counties), Somerset (Somerset County), Hegins-Gratz (Schuylkill and Dauphin counties), and Franklin (Franklin County). All WPRAs have regulations in place prohibiting the release of pen-raised pheasants, dog training and most small game hunting from early February through 31 July, and the hunting and harvesting of pheasants at any time.

Hen population densities on each area are determined through a combination of crowing male surveys conducted in spring, and winter flushing surveys to obtain sex ratios prior to the nesting season. To help ensure the accuracy of these techniques, we are also conducting two studies to evaluate crowing count accuracy. A detectability study measuring the frequency with which roosters crow and the distance crowing can be heard, so that crowing male densities can be

accurately calculated from roadside route data; and a crowing reliability study using random point crowing surveys to increase sample sizes/improve precision of density estimates, evaluate representativeness of roadside route data, and allow for mapping of pheasant densities across WPRAs. We have also experimented with trail cameras at bait sites as an alternative method to flushing surveys for estimating pheasant sex ratios; however, success of this technique has been low because pheasant use of bait sites has been limited due to relatively mild weather.

Collection of detailed habitat patch analysis data, using digital aerial imagery and field surveys of some 2,750 randomly selected points to determine types and quality of available habitat, was conducted in each WPRAs in 2011 and 2012. The pheasant habitat model provides targets for five parameters: nesting cover ( $\geq 5\%$  of a study area), winter cover ( $\geq 5\%$ ), brood cover ( $\geq 20\%$ ), developed land ( $\leq 10\%$ ), and mature forest cover ( $\leq 20\%$ ). Habitat patch analysis results provided estimated proportions of habitat types for entire WPRAs, allowing us to determine how well each WPRAs meets these targets overall. In 2013 we shifted emphasis to detailed measurements of vegetation height and composition around the random points used to evaluate reliability of roadside crowing routes. This will improve our ability to relate localized pheasant densities to localized habitat conditions, and improve future predictions and cost estimates of habitats needed to meet the 10 hens/mi<sup>2</sup> goal.

The first WPRAs established, Pike Run, did not meet the population or habitat criteria for success after the 6-year evaluation period and has been re-opened to cocks-only pheasant hunting and the stocking of game farm birds.

The Central Susquehanna WPRAs contains four Study Areas: Washingtonville West, Washingtonville South, PPL-Montour (previously, these three Study Areas were classified as a single Turbotville-PPL Study Area), and Greenwood Valley. Wild pheasants were released from 2007-2009. Spring 2012 hen densities were 47 hens/mi<sup>2</sup> in Washingtonville West, 3 hens/mi<sup>2</sup> in Washingtonville South, 6 hens/mi<sup>2</sup> in PPL-Montour, and 6 hens/mi<sup>2</sup> in Greenwood Valley. In 2011, the then-Turbotville-PPL Study Area met all five habitat targets; in 2012, habitat was analyzed for the three Study Areas into which Turbotville-PPL was subdivided, but those results are not yet available. Greenwood Valley meets four of the five habitat targets. To monitor possible range expansion of birds from Central Susquehanna, we added two crowing count routes in Union County (outside the WPRAs boundary) in 2012; however, very few crowing males were observed on these routes, indicating dispersal and/or survival of wild birds beyond the WPRAs boundaries is negligible. This WPRAs was scheduled to receive a final evaluation of success or failure in 2012, but we were unable to determine with statistical reliability whether the overall hen density was above or below 10 hens/mi<sup>2</sup>; therefore, the evaluation period was extended. Results from random point crowing surveys should improve the statistical reliability of density estimates.

In the Somerset WPRAs, wild pheasants were released 2009-11. Spring 2012 hen densities were 29 hens/mi<sup>2</sup> in the area of the North Berlin crowing route and 2 hens/mi<sup>2</sup> in the area of the South Berlin crowing route. The overall WPRAs met three of the five habitat targets in 2011. Pheasants and habitat will be monitored for one additional year and a final evaluation of success or failure is scheduled for 2014.

The Hegins-Gratz Valley WPRAs received wild pheasants in 2011. Estimated spring 2012 hen densities were 21 hens/mi<sup>2</sup> in the Gratz Valley Study Area and 7 hens/mi<sup>2</sup> in the Hegins Valley Study Area. Each study area met three of the five habitat targets during the 2011 growing season.

The Hegins-Gratz WPRAs were due for two additional years of releases (300 birds/year) and the Franklin WPRAs were scheduled for their first wild pheasant releases in winter 2012, but we were unable to obtain wild pheasants for transfer in 2012 and 2013. In 2012, the South Dakota Department of Game, Fish, and Parks informed us that due to declining pheasant populations in their state, they would not be providing us with wild pheasants for transfer to PA WPRAs, and we were unable to locate a suitable backup source. In 2013, we inquired with additional states (Washington, Montana, and Kansas) who informed us they would not be able to assist. We received permission to resume trapping efforts in South Dakota, but attempts by Pheasants Forever (PF) and Habitat Forever staff were unsuccessful, primarily due to lack of snow cover. We informed project partners and media contacts of these results and will continue to work with PF to attempt to identify sources for wild birds in future years. If and when additional wild birds can be obtained, we intend to complete either two or three additional years of releases in Hegins-Gratz Valley, three years of releases in Franklin County, and monitor populations and habitat during the transfer/release period and for an additional three years after trap and transfer is completed.

Radiotelemetry is used to track survival of translocated and (in some cases) resident hens on WPRAs. Radiomarked roosters are also used for crowing detectability research. At the beginning of the fiscal year we were tracking eight hens and six roosters trapped in winter 2012. Between July 2012 and March 2013 there were four confirmed mortalities of these birds (three hens and one rooster) due to predation and hay mowing, and contact was lost with most of the remaining birds as the battery life for their transmitters ended. Between January and March 2013, we captured and radiocollared 19 hens and nine roosters. From March to July, there were three confirmed mortalities (one hen from unknown causes, one rooster from avian predation and one rooster hit by a vehicle), and fate of 15 birds (10 hens and five roosters) was unknown due to missing signals or transmitters in mortality mode but unrecovered (some of these birds may still be alive with the mortality switch on the transmitter malfunctioning). As the fiscal year ended we were tracking eight hens (all of which either appear, or have been confirmed, to have successfully hatched a brood) and two roosters. Although not a major focus of the research, we identified specific locations of nesting hens as time and personnel availability permitted, to improve our understanding of nest habitat selection and nest success within the WPRAs.

Pheasant brood reports received through late August 2012, included 22 in the Hegins Valley Study Area, 11 in the Turbotville Study Area, nine in the Gratz Valley Study Area, two in the Somerset Study Area, and one in the Greenwood Valley Study Area. These are not standardized surveys so although they document that reproduction is occurring, they do not necessarily reflect differences in actual levels of reproduction between study areas.

Pheasant Propagation - All GFs have increased production to meet the 200,000 pheasant stocking goal. Aging holding pens are being restored at all farms and updates are being done to several buildings.

Game Birds – Populations have been established on four WPRAs through wild pheasant releases. One of these (Pike Run WPRAs) reached the end of the 6-year evaluation period without meeting thresholds for success and has been terminated; evaluation continues for the other three. A 5<sup>th</sup> WPRAs has been established, but it and one of the current WPRAs have not received wild pheasants in 2012 and 2013 as scheduled, because of lack of trapping success in South Dakota and lack of alternative Midwestern sources.

#### **GOAL 4: Manage and protect a network of public and private lands and waters to provide habitat for wildlife.**

##### **Strategic Objective 4.1 Provide planning and technical habitat management guidance to landowners.**

RWDBs completed 101 new PLAP plans encompassing 14,174 acres statewide. The biologists visited PLAP properties to view implementation funded by landowners and supported by Farm Bill programs. They regularly work with PLAP participants and USDA NRCS staff to facilitate the funding process for implementation of PLAP plans. RWDBs also worked with the USDA Voluntary Public Access and Habitat Incentive Program and the Working Lands for Wildlife - Golden-winged Warbler Initiative.

RWDBs assist landowners applying for USDA Farm Bill support available for wildlife habitat improvement through various NRCS programs. IUP facilitates ongoing implementation of breeding habitat management for golden-winged warbler supported by federal SWG funds and Allegheny woodrat habitat enhancements supported by a PA Wild Resource Conservation Fund grant.

##### **Strategic Objective 4.2 Increase state game lands acreage with an emphasis on access, indentures, in-holdings and critical or unique habitats.**

In fiscal year 2012, the Game Commission acquired 18,304 acres, bringing the agency's total State Game Land acreage to 1,480,390. The State Game Land System includes 306 separate state game lands in 65 of Pennsylvania's 67 counties. The 18,304 acres were acquired through a variety of means including lease/land exchanges, land exchanges, and partnerships with conservation partners. The single largest acquisition was 6,200 acres in Hamlin and Keating Townships, McKean County which was added to State Game Land No. 62. Funding for this large tract was made possible by a Restricted Use Oil and Gas Agreement with the Pennsylvania General Energy Company, LLC for an oil and gas lease on a portion of State Game Land No. 75 located in Lycoming County. This large tract of land compensates for the habitat and recreational losses from the proposed oil and gas recovery activities on State Game Land No. 75.

The Game Commission acquired a number of other large tracts including 3,031 acres in the City of St. Marys, Elk County and Shippen Township in Cameron County adjoining SGL 293; 3,564 acres in Greenwood and Penn Townships, Clearfield County adjoining State Game Land No. 87

which involved a land exchange with 524 acres of SGL 295 in Miles Township, Centre County; and 1,210 acres in Benner Township, Centre County which created a new State Game Land, numbered 333. This acquisition, commonly referred to as the Rockview property, was acquired from the Commonwealth of Pennsylvania, Department of General Services and was paid for in part with funds set aside from a previously approved land exchange with Pennsylvania State University at SGL 176 in Centre County a number of years ago. Through a continued partnership with The Conservation Fund the Game Commission was able to acquire 809 acres in Blair and Bedford Counties. Wildlands Conservancy also partnered with the Game Commission to add a number of tracts to existing state game lands in the Southeastern sector of the State. The largest tract was 353 acres in Eldred Township, Monroe County commonly known as the Alpine Motorsports property and adjoins SGL 168. Wildlands Conservancy was working on behalf of the Palmerton Natural Resources Trustee Council comprised of seven agencies including the United States Department of Interior, United States Fish and Wildlife Service, National Oceanic and Atmospheric Administration, Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission, Pennsylvania Department of Environmental Protection and the Pennsylvania Department of Conservation and Natural Resources. The Trustee Council received a financial settlement to resolve claims from natural resource damages in connection with the Palmerton Zinc Pile Superfund Site in Northampton and Monroe Counties. Wildlands Conservancy also transferred seven other tracts ranging in size from one to nine acres, totaling 32.43 acres. The tracts are located in Bushkill, Moore and Lehigh Townships, Northampton County and Lynn Township, Lehigh County and either adjoins or are close to State Game Land No. 168 and State Game Land No. 217.

Acquiring interiors, indentures and access into existing state game lands is always a high priority for the Game Commission. During FY12 the Commission acquired two interiors, five indentures and seven new access routes into existing SGL opening hundreds of acres to public hunting and trapping opportunities. The Commission also approved the acquisition of 344 acres of subsurface rights located under existing SGL to include coal and mineral rights. Acquiring these rights, while not adding to the total number of surface acres does provide increased protection of the surface from future mineral extraction.

The Game Commission provided local government bodies much needed funding in support of local and county governments and programs where state game lands are located. Eligible recipients of local municipalities received \$1.20 per acre from the Game Fund for payment in-lieu-of taxes that amounted to \$1,774,695 divided into three equal payments and sent to the recipient counties, school districts and townships last fiscal year.

The Survey Section continues to address the large backlog of survey related work. Our goal is to have one two-person survey crew geographically located in each of the six Game Commission Regions; however, due to a reduction in the Commission's number of permanent complement in recent years, we have not been able to reach that goal. As a contingency plan to meet the ever increasing workload and protect existing state game lands from lost boundary and deeded acreage disputes, the Commission instituted a program of third party sub-contracts to address immediate localized survey needs in FY10. In FY12 the Survey Section continued this practice and oversaw 16 separate survey contracts completing 102 lineal feet of boundaries marked and 973 acres surveyed with a total cost of \$151,859. These surveys were mapped and surveyed on

the State Plane Coordinate Grid system allowing the Commission to place these in our GIS system accurately.

Our surveyors working out of the Harrisburg office performed 26 payment-in-lieu of tax updates, addressed 74 state game lands boundary issues, 30 mapping issues, answered 59 map requests to the general public and produced 123 agenda type maps used towards the acquisition of new state game lands. The Survey Section has completed 138 parcel boundary updates and 54 parcel corner updates within the Game Commission's GIS system.

The field surveyors have worked on over 60 different surveys accounting for 1,223 new corners being established or old, lost corners being reestablished. The field surveyors have surveyed over 870,000 lineal feet of new and old lines being re-established and have accounted for 11,828 acres of new and existing state game lands being surveyed to establish boundaries on new tracts of lands being added to our existing state game lands total acreage.

A total of \$11,261,521 was deposited into escrow accounts from Commission approved oil/gas and mineral lease agreements. These monies provide funding for additional land acquisitions to offset temporary impacts to wildlife, habitat and recreational use of the game lands.

The state game lands Banking Agreement, adopted as a partnership with PennDOT and the Federal Highway Administration, provides advance mitigation (lands) to offset permanent acreage losses to state game lands resulting from bridge replacement or minor road improvement projects. Two new State Game Land Banks were approved in FY 12-13, one in Lancaster County (PennDOT District 8-0) and the second in Somerset County (PennDOT District 9-0). Two state game lands Bank had previously been established in Tioga and Northumberland counties, and collectively the four state game lands Banks total 90 acres. These state game lands Banks are used to expedite the mitigation process to find replacement lands when small acreage impacts to state game lands occur as a result of highway construction projects. These small acreage impacts are offset through a debit from existing state game land banks instead of being addressed on a case-by-case basis. A total of four projects totaling 0.52 acres were debited from these land banks during FY 12-13. The Commission and PennDOT are working toward establishing State Game Land Banks in other PennDOT Districts.

Maintaining identifiable boundary line is among priority tasks for State Game Land's Food and Cover crews. This year, 1,194 miles of boundary line were cleared, inspected, and marked.

### **Strategic Objective 4.3 Complete all comprehensive state game lands plans.**

Comprehensive game lands planning is necessary to ensure sound, sustainable, and efficient habitat management. This includes updating infrastructure records, habitat cover, forest types, access roads, parking lots and all aspects of state game lands management. Plans were completed for 160,236 SGL acres in 40 separate plans. To date, 161 comprehensive management plans covering 504,000 acres have been completed.

The Forest Inventory and Analysis Program has continued with the first cycle of re-measuring the 875 permanent plots on state game lands. This program is critical for accurate assessment of

the forested areas of the state game lands. These plots are being re-assessed on a 5-year cycle to determine changes in growth, health, and species composition of State Game Land's forest habitats and will provide valuable habitat planning information. The FIA Section has also developed a sampling system for monitoring habitat conditions before and after the use of prescribed fire and has provided critical input and analysis of the forest habitat health measures as they relate to the white-tailed deer management program.

The PGC's Oil, Gas and Mineral Section routinely provided oil, gas, and mineral information or historical resource recovery information to regional staff for Comprehensive game lands planning.

The Oil, Gas and Mineral section expended approximately 85 hours to update subsurface ownership information for 291 tracts within 32 game lands in the Commissions GIS system.

#### **Strategic Objective 4.4 Promote wildlife habitat planning and management on non- Game Commission public lands.**

An instructional meeting on habitat management for the Allegheny woodrat held for Tuscarora State Forest managers and data from existing sites evaluated using amount of sign, degree of fragmentation and rock characteristics to prioritize sites for management. Information on forest raptors provided to DCNR Bureau of Forestry biologist. Provided the 52 Elemental Occurrence reports to Pennsylvania Natural Diversity Inventory for species of greatest conservation need (SGCN): 12 for bald eagle, one for upland sandpiper, one for yellow-bellied flycatcher; three for Indiana bat, 11 for eastern small-footed bat, and 24 for silver-haired bat. Diversity staff worked with Bureau of Wildlife Habitat Management (BWHM) Environmental Review to minimize adverse impacts on SGCN.

Coordination on non-PGC public lands provides additional hunting and habitat management opportunity. There are 37,319 acres of Army Corps of Engineers land managed by PGC through cooperative agreements.

An additional 41,965 acres of State Forest, State Park, PA Fish and Boat Commission, and other government land habitats are cooperatively managed by Game Commission crews across the state.

The Game Commission provided technical assistance and habitat management expertise to DCNR for implementation of American woodcock habitat improvements on 900 acres in Susquehannock, Lackawanna, Cornplanter, Gallitzin, Michaux, Buchannan, Forbes Tuscarora, Tiadaghton and Tioga State Forests.

One of the most significant habitat developments of the past several years was passage of the Prescribed Burning Practices Act. The Game Commission is working closely with the Bureau of Forestry, Bureau of State Parks, DMVA, The Nature Conservancy, and the U.S. Forest Service to train personnel and develop landscape scale prescribed fire plans. To date, major strides have been taken to utilize prescribed fire as an important habitat management tool.

As part of the USFWS Great Lakes Restoration Initiative, we coordinated with DCNR Bureau of State Parks, Audubon PA and the Western PA Conservancy to restore piping plover (federally endangered) nesting habitat on Gull Point in Presque Isle State Park and to reduce human disturbance through placement of restricted-access signs. A 10-year adaptive management plan was developed for removal of invasive plant species. Migrant piping plovers have been observed at Gull Point; two pairs of common tern (state endangered) nested unsuccessfully in 2012. We provided guidance documents to DCNR for management and monitoring of rare grassland birds pertinent to property where upland sandpiper and northern harrier nested recently and provided information about an area occupied by golden-winged warbler that could be managed more effectively for scrub barrens. With representatives of the PA Turnpike Commission and an energy company that funded the project, we evaluated a bat-friendly gate installed at an Indiana bat hibernaculum on turnpike property; minor deficiencies noted and corrected. Thanks to another energy developer, habitat management to benefit the Allegheny woodrat was completed on four management compartments in the Tiadaghton State Forest during the fiscal year.

#### **Strategic Objective 4.5 Avoid, minimize and mitigate adverse impacts on wildlife habitats.**

During FY12 the Game Commission issued 36 new Right-of-Way (ROW) licenses (11 pipeline, five electric line, ten fiber optic, one pig launcher/road use, one communication tower site, and eight road-use ROWs) and 11 Special Use Permits (ten seismic-survey, and one road-use right-of-way) with provisions protecting Commission interests. A total of 981 acres (704 acres being temporary) of ROW impact was mitigated through comprehensive re-vegetation plans and payment of \$4,578,817 for habitat damages in addition to monies received for damage to marketable timber. In addition to the new ROW licenses and Special Use Permits issued this fiscal year, 36 ROW amendments and/or assignments of licenses were executed by the Game Commission.

The regional breakdown of new ROWs and SUPs for the year was 13-Northwest, 14-Southwest, 14-Northcentral, 1-Southcentral, 5-Northeast and none were issued in the Southeast. There were 11.8 miles of new pipeline ROW, 5.5 miles electric lines, 20.6 miles fiber optic line and 681.5 miles of seismic survey lines.

Revenue and damage payments accruing from the new ROWs and paid into the Game Fund was \$692,093 with expected future additional annual revenue for these being \$220,652 per year so long as the licenses are active.

Ten ROW requests were either denied due to unacceptable potential adverse impacts to the wildlife resources, the SGL or as a result of viable alternatives being available to the applicant.

Through participation in the Environmental Review Committee (ERC), Habitat Protection Section staff reviewed and commented on potential wildlife habitat impacts associated with 12 projects proposed by the U.S. Fish and Wildlife Service and the NRCS. The Wetland Reserve Program projects that were reviewed and recommended for approval by the PGC will result in the net creation, restoration and/or enhancement of over 55 acres of wetlands, and will result in the protection through conservation easement of over 1,100 additional acres of surrounding upland, riparian and wetland habitats.

Through participation in the Interagency Review Team (IRT), staff reviewed and commented on two final umbrella mitigation banking instruments and eight amendments which added mitigation sites under the respective banking instruments. These mitigation banks and instruments are being established to comply with the ACOE's compensatory mitigation rule. Staff attended seven IRT meetings and one site visit at which the various mitigation banks and instruments were presented and comments on each discussed.

Staff reviewed and commented on 212 PennDOT projects (roads, bridges, airports, rail, etc.). Average review time was five days, with 58 of the 212 projects having potential impacts to species or resources under the PGC's jurisdiction. Species surveys were requested for two projects and avoidance measures were required or recommended on 56 projects to avoid adverse impacts to species of special concern and their habitat. Five NEPA documents for PennDOT projects were also reviewed. Four field views and 27 meetings were attended related to PennDOT projects. PGC staff reviewed and approved seven Section 4(f) checklists related to PennDOT projects with potential impacts to state game lands as well as reviewed and provided comments on PennDOT's final draft umbrella instrument for wetland mitigation.

A total of 274 Pennsylvania Natural Diversity Inventory (PNDI) reviews were completed for oil and gas projects throughout the state, 194 (71%) of which were related to shale development. Regional Wildlife Diversity Biologists (RWDB) assisted with or completed 93 of these 274 reviews. The reviews involved over 1,096 oil/gas wells (703 shale wells, 64%), over 1,366 miles of oil/gas pipeline or waterline (1,302 for shale, 95%), and 12 seismic surveys totaling over 1,315 square miles of survey area. Completed reviews resulted in 267 avoidance or conservation measures being recommended or required for 149 reviews to avoid or minimize adverse impacts to various wildlife species and their habitats. Over 58 square miles of avoidance or restricted areas were recommended for the seismic projects that were reviewed in order to avoid or minimize adverse impacts to various wildlife species and their habitats. There were a total of 14 habitat or species surveys requested to assess the potential for adverse impacts to bat hibernacula, Allegheny woodrats, eastern small-footed bat, upland sandpipers, northern goshawks and northern flying squirrels. A total of seven habitat or species survey reports were received and reviewed to further assess the potential for adverse impacts to great blue herons, bats, northern flying squirrels, northern goshawks and upland sandpipers. An additional 14 species or habitat surveys were completed by the PGC to assess the potential for adverse impacts to various wildlife species and their habitats. Data obtained through these surveys, or through coordination with companies completing unrelated surveys resulted new or updated information being provided by oil and gas review staff to PGC Wildlife Diversity staff for 22 Allegheny woodrat sites, 1 northern harrier nest site, 1 northern goshawk nest site and three great blue heron rookeries. As a result of coordination with the PGC during these reviews, only two projects required some form of compensatory mitigation. Enhancements to a total of 46 acres of existing Allegheny woodrat habitat were implemented at two sites this fiscal year as a result of compensatory mitigation requirements established during previous oil and gas PNDI reviews. The PGC also completed a total of six field views at these and other compensatory mitigation sites that have been completed as a result of previous reviews.

As a result of our oil and gas PNDI reviews, over 1,354 miles of potential pipelines and waterlines, and 1,315 square miles of potential seismic surveys were digitized and added to our GIS database for future review consistency and consideration of cumulative impacts. Oil and gas environmental review staff also reviewed 60,664 acres within and adjacent to three state game lands being considered for potential PGC oil and gas leasing or where private oil and gas development on the gamelands is anticipated. The reviews identified 16,506 acres for avoidance or restricted, and resulted in the provision of additional narrative comments to the Oil, Gas and Mineral Development Section concerning recommended avoidance or conservation measures to minimize impacts to various wildlife species and their habitats.

A total of 686 Pennsylvania Natural Diversity Inventory reviews were completed for construction and development projects throughout the state. Average review time was 18 work days. These reviews indentified a total of 223 potential impacts to species of special concern. The 686 reviews included 27 PGC projects, 84 DCNR projects, 36 USDA/NRCS projects, eight military projects, two DEP projects, and four USACOE projects. Surveys were requested for 19 projects to assess how to best avoid adverse impacts to American and least bitterns, northern harrier, bald eagles, Allegheny woodrat, eastern small-footed bats, osprey, northern flying squirrels, great blue heron, northern long-eared bats, and/or their habitats. Avoidance measures were required or recommended on 224 projects. Four field surveys were completed by Environmental Review staff: one to determine the potential impacts to various bird species and from the installation of a cell tower, two to determine potential impacts to a nesting bald eagles resulting from proposed residential subdivisions, and one to determine presence of northern harriers within a proposed project area.

Staff also reviewed and commented on a total of seven National Environmental Policy Act project proposals, attended six field views, and participated in 14 meetings and conference calls involving construction and development projects.

One project construction and development project resulted in impacts that could not be avoided or minimized, therefore resulting in the need for the issuance of a USFWS Bald Eagle Permit authorizing the removal of one inactive bald eagle nest. As mitigation for these activities, a monetary donation was required to a federally and state permitted wildlife rehabilitator authorized to care and release of eagles.

A total of 140 PNDI environmental reviews and 169 mining permit application reviews were completed for various proposed mining or abandoned mine reclamation projects with a total acreage reviewed of over 95,000 acres. The purpose of these reviews is to provide preliminary comments to mine operators and DEP to avoid and minimize impacts to wildlife and wildlife habitat associated with potential future mining operations that are currently in the planning. Avoidance measures were recommended or required for 26 project reviews to avoid or minimize adverse impacts to various bat species, and Allegheny Woodrat. Seven habitat surveys were required to assess the potential for adverse impacts to bats, Allegheny woodrat, eastern small-footed myotis, northern harrier, and upland sandpiper. The reviews also resulted in the requirement for one site to be trapped for Allegheny woodrat, and or mist netted for bats. Staff attended more than 30 field meetings to assess any potential adverse impacts to species of special concern, and offer comments to the operators and/or DEP to avoid and minimize adverse

impacts to wildlife and wildlife habitat including wetlands. During these field meetings, the PGC completed habitat/species surveys for Allegheny woodrat and/or eastern small-footed myotis at 7 sites, and surveyed for potential bat hibernacula at two sites.

A total 30 projects on 21 state game lands were evaluated for potential oil, gas, coal, and/or mineral leasing opportunities to generate revenue to the Commission and improve wildlife habitat. The evaluations including potential surface and non-surface oil and gas development, reclamation of abandoned mine features such as high walls and mine spoils, additional lands, and potential revenues that could benefit wildlife and improve wildlife habitat while avoiding impacts to critical and unique habitats, threatened and endangered species, and species of special concern on state game lands.

Over 40 meetings were conducted throughout the year with regional Game Commission staff and operators to minimize surface impacts and improve wildlife habitat from natural resource recovery operations (oil, gas, coal, and minerals) for both privately held natural resources and Game Commission leased natural resources.

Staff updated the existing upland sandpiper guidance document to reflect its downgrade in status from threatened to endangered, as well as created environmental review guidance documents, in collaboration with WM staff, for threatened northern harriers, threatened long-eared owls, endangered yellow-bellied flycatchers, and endangered blackpoll warblers.

A total of seven PNDI reviews for wind energy projects located on private lands were completed for wildlife/habitat impacts. Average review time was 18 days and six of the seven proposed projects had potential impacts to one or more of the following species northern flying squirrel, Allegheny woodrat, Indiana bats, eastern small-footed bats, northern long-eared bats, northern harriers, upland sandpipers, black-crowned night-heron, blackpoll warblers, and yellow-bellied flycatchers. Avoidance measures were requested on five of the projects and three of the projects had potential impacts to state game lands.

Staff attended 23 field views and 49 meetings involving wind energy development on private lands in regards to potential and actual impacts to wildlife resources. Recommendations were provided to help avoid and minimize impacts to wildlife resources and unique wildlife habitat. Staff reviewed and commented on two wind energy Avian and Bat Protection Plans written to minimize and avoid impacts to bats and birds from turbine operation. Staff provided data and technical assistance for Habitat Conservation Plans to support the pursuit of an Incidental Take Permit for two different wind facilities. Staff continued to work with wind companies to mitigate endangered bird and bat species mortality that has been documented at operational wind facilities.

The PGC was awarded a USFWS Habitat Conservation Planning Assistance Grant in the fall of 2012 to develop a habitat conservation plan in collaboration with DCNR to address impacts to Indiana bats on state game lands, State Forests, and State Parks from PGC and DCNR forestry management practices. The goal of this process is to develop a habitat conservation plan, which is part of the process to apply for an Indiana bat incidental take permit. The habitat conservation plan will streamline the environmental review process for forestry management

practices on state game lands, as well as on State Forests and State Parks, that have potential impacts to Indiana bats. Staff have participated in over 20 Steering Committee, Stakeholder, and other coordination meetings, and have spent a considerable amount of time reviewing each of the various components of the plan as they are developed. The contracted consultant is to have a draft habitat conservation plan completed by December 31, 2013.

WM staff provided at least 148 Elemental Occurrence reports to PA Natural Diversity Inventory for species of greatest conservation need - 38 bald eagle, 5 peregrine falcon, 4 barn owl, 2 great blue heron rookeries, 1 northern harrier, 1 short-eared owl, 1 long-eared owl, 1 American bittern, 1 Swainson's thrush, 15 Indiana bat, 63 eastern small-footed bat, 13 silver-haired bat, 3 northern flying squirrel. We updated previously submitted records for 1 peregrine falcon site and 1 northern goshawk site, and updated statewide records for upland sandpiper, northern harrier and long-eared owl.

Weekly reports of peregrine falcon activity statewide were distributed to all PGC regions & PennDOT districts. We developed mitigation measures and site-specific guidance for work near peregrine falcon nests in collaboration with PennDOT, the PA Turnpike Commission and PPL. We developed best management practices documents and protocols for habitat suitability and presence/absence evaluations for use by developers who encounter upland sandpiper, northern harrier and long-eared owl PNDI hits. We met with USFWS, Department of Environmental Protection and company representatives to coordinate continued operations at a recently identified Indiana bat limestone mine hibernaculum with protections and improvements for bats.

#### **Strategic Objective 4.6 Provide and maintain adequate infrastructure to support wildlife habitat management and hunting.**

During the past fiscal year, the Oil/Gas and Mineral Development Section reviewed and coordinated with Regional field personnel and industry a total of 101 oil or gas well plats/permits, locations, and their affiliated access ways on state game lands. Of these, 46 were unconventional shale oil and gas well locations at which 20 were under PGC oil/gas development leases whereas 26 were on game lands' surfaces where the PGC does not own the subsurface gas rights. These reviews and coordination resulted in improvements to parking lots and roads as well as maintenance on related gamelands infrastructure such as culverts, bridges, gates, and enhanced erosion and sedimentation control structures at the expense of the natural resource recovery operator.

Habitat Protection Section staff completed a wetland investigation at a proposed bridge replacement site on State Game Land No. 80, and provided documentation confirming the absence of wetlands within the project area to the Engineering Division to complete their Water Obstruction and Encroachment Permit application with the Department of Environmental Protection.

Commercial and Non-Commercial forestry treatments provided a road network sufficient to carry heavy equipment and comply with the Clean Streams Act and other environmental protection regulations was designed and supervised by our regional forestry staff. Logging contractors completed 41 contracts during the year, improved 71 miles of haul roads,

constructed 24 miles of new roads (which became wildlife food strips after seeding), and placed 135 culverts. The value of these on-site infrastructure improvements exceeded \$1,121,775 and was cost borne by the timber operator and thus deducted from the totals of the timber bids. Additionally there were \$332,091 worth of improvements completed through timber sale contracts, including landing and skid road seeding with wildlife mixes, parking lot construction, gate installation, bridge installation, and deer exclosure fencing.

Providing hunting and furtaking opportunity are among state game lands mandates. Keeping roads open and parking lots available requires considerable maintenance annually. Last year 4,056 miles of roads were maintained for hunter and habitat management access. In addition, 10,162 parking lot maintenance visits were conducted, 88 bridges were repaired, and 133 culverts replaced. Trails are also important for hunter access to game lands and 278 miles of trails were maintained by FCC crews.

Shooting ranges are provided on state game lands for hunters to gain proficiency in their hunting arms. Food and Cover Corps staff, also conduct habitat management projects, conducted 1,296 range visits with major safety upgrade projects completed on one range.

The Engineering Division has continued to work on infrastructure projects across the state. These projects include bridge installation, construction of new buildings, renovation of existing buildings, demolition of abandoned structures and road construction projects. Most of these projects are funded through Pittman-Robertson grants but other funding sources include Growing Greener, grants from federal agencies and the regular budget allocations in the Game Fund.

Twenty-eight new bridges were constructed on game lands in FY12-13. Two new buildings were constructed in FY12-13. A new superintendent's house was built at the Howard Nursery. The new ranch style house replaces an aging house on the property which had issues with the plumbing system, electrical system and basement flooding. A new egg storage building was constructed at the Loyalsock Game Farm. The old egg house was severely damaged from tropical Storm Lee flooding. Six building renovation projects were completed in FY12-13. A total of five structures were demolished and removed from game lands. Two road projects were completed during FY12-13.

The Engineering Division has a large backlog of projects to complete in the next decade to keep the infrastructure of the agency intact. Infrastructure failures can have negative affects on all other agency programs and construction and repair projects funding must continue so that vital services and programs are not jeopardized.

#### **Strategic Objective 4.7 Enhance wildlife habitat on state game lands through the recovery of natural resources.**

The Board of Commissioners approved a total of thirteen oil, gas, coal, and mineral recovery lease actions during FY 12-13 totaling 17,426 acres. A total of 16,462 acres involved nine oil and gas development agreements and 963.9 acres for four coal mining agreements. Eight of the oil and gas agreements/amendments are for non-surface use which protects approximately 4,563 acres of game lands from surface disturbance activities relating to oil and gas development. The

ninth oil and gas agreement restricts surface use by limiting the number of well pads to 16 and surface disturbance acreage is restricted to no more than 300 acres and provides for approximately 6,200 acres of land to be directly conveyed to the Commission. Three coal mining agreements were completed to reclaim abandoned mine lands and/or mine spoils and improve wildlife habitat within the project areas and provide for approximately 2,413 acres of land to be directly conveyed to the Commission. The fourth coal mining agreement was an amendment to extend the life of the agreement for underground coal mining and does not involve additional surface impacts to state game lands.

The oil and gas agreements or amendments include nine unconventional shale-related oil and gas agreements (SGL 35 [774 acres]-Non-Surface Use, SGL 36 [77 acres]-Non-Surface Use, SGL 36 Amendment [1,091.9 acres]- Non-Surface Use, SGL 75 [11,899 acres]-Restricted Surface Use, SGL 117 [62.6 acres]- Non-Surface Use, SGL 150 [586 acres]-Non-Surface Use, SGL 175 [736.2 acres]-Non-Surface Use, SGL 223 Amendment [33.983 acres]-Non-Surface Use, SGL 232 [1,201.33 acres]-Non-Surface Use).

The three surface coal mining agreements or amendments include SGL 79 and 276 [5 project areas, 839.1 acres], SGL 174 [120 acres], and SGL 320 [4.8 acres], The underground coal mining agreement amendment for additional time to mine is for a portion of State Game Land No. 79 and has no additional surface impacts

Total revenues deposited into the Game Fund from oil, gas, coal, and mineral recovery operations in FY 12-13 were \$19,781,618, which includes oil/gas royalties (\$5,986,813), coal royalties (\$1,747,546), rental and lease bonus payments (\$11,653,291), sand gravel and stone operations (\$190,763), and surface damages (\$203,205). All these noted revenues were deposited into the Game Fund keeping our Agency well within allowable budget expenditures. Yet despite the increased revenue stream the Commission continues to be subjected to budgetary spending constraints regardless of the habitat and wildlife programs adversely affected. This inability for the Commission to directly manage its own revenue streams for the good of all wildlife and sportsman has resulted in lost habitat enhancements work, inferior vehicles, shortages in personnel and substantial workload backlogs.

The Oil, Gas and Mineral Development Section manages 64 different companies operating a total of 110 lease agreements on 67 state game lands. Approximately 94,639 acres are currently under Commission-owned oil, gas, coal, and mineral recovery leases.

Oil, gas, coal and mineral ownership continues to be researched and updated in response to unconventional shale oil and gas drilling activity. Oil, gas, coal, and mineral ownership research was conducted on a total of 291 parcels (over 54,900 acres), distributed among 32 different State Game Land complexes and results were input into the Commission's GIS database. A total of fifteen oil, gas, coal, and mineral lease boundaries and one cooperative surface use agreement boundaries were added GIS database. All oil/gas permit and drilling information on game lands and throughout Pennsylvania from the Department of Environmental Protection, including the associated well attribute data, were also added to and periodically updated in the GIS database.

The Oil, Gas and Mineral Development Section continues to research adverse claims in conjunction with legal staff of oil, gas, coal, and mineral rights which have potential to impact state game lands surface acreage. Defending against these claims has caused an increased burden in staff time and resources in order to adequately protect the inherent game lands recreational values and future surface uses.

Staff completed 30 field reviews of 19 existing oil, gas, coal, or mineral development leases on state game lands to ensure compliance with the lease conditions, and 11 additional field reviews were conducted to review potential future oil, gas, coal, and/or mineral recovery activity. Seven inspections were also conducted at oil/gas and mineral operations on gamelands where the mineral rights are not under Commission ownership. The Section completed 17 seismic reviews in conjunction with the Right of Way (ROW) Section to evaluate the Commission's oil and gas ownership rights and oil and gas leasing of state game lands proposed to be impacted.

The Commission continues to implement surface and ground water quality monitoring through various governmental agencies including the Fish and Boat Commission, Susquehanna River Basin Commission, and Department of Environmental Protection. Game Commission staff strives to monitor surface water quality on state game lands in areas where resource recovery operations are occurring or planned to occur. These partnership efforts have resulted in baseline stream sampling and implementation of water quality monitoring in areas of Marcellus Shale oil and gas development on SGL's. During FY 12-13, WHM staff developed, or coordinated with oil and gas companies on four surface water monitoring plans which cover four areas of oil and gas development on state game lands.

Additionally the Oil, Gas and Mineral Development Section reviewed and coordinated with Regional field personnel, industry, and governmental agencies on a total of four well plugging notices of conventional oil and gas wells on two state game lands, closure of two orphaned wells on two state game lands, and on eight pre-drilling water survey requests on portions of eight state game lands.

Staff reviewed requests from the Department of Environmental Protection's Bureau of Abandoned Mine Reclamation to backfill and reclaim to approximate original contour abandoned mine sites on State Game Land Nos. 229 and 100.

Maintaining optimum habitat diversity on game lands is an important goal of our Forest Habitat Management Program. Fifty (50) forest habitat management projects containing 6,041 acres were offered for bid to commercial timber harvest operators during the past fiscal year. These projects contained approximately 17.3 million board feet for which bidders offered \$7,256,338.

There were 2,946 acres treated with selective herbicides to remove ferns, striped maple, spicebush, low quality beech brush, and other non-native and invasive plant species that impede establishment of more beneficial tree species.

Additional forest non-commercial habitat improvement projects including regeneration treatments, crop tree releases, and pre-commercial thinnings resulted in 2,046 additional acres of

improved habitat. Also, the forestry staff provided support to the mineral recovery and right-of-way operations on 386 acres of state game lands.

#### **Strategic Objective 4.8 Identify and manage key habitats identified in the Wildlife Action Plan.**

All comprehensive management plans submitted this year (160,236 SGL acres in 40 separate plans) listed key habitats per the Wildlife Action Plan and developed implementation strategies for management. Specific habitat types that were targeted included native grasslands, barrens, wetlands, oak forests, riparian areas, and shrublands. Improving these habitats will benefit species of greatest conservation need as well as game animals. Activities completed through our food and cover crews included 282 acres of native grass established, 457 acres of herbaceous habitat improvements, 2,000 acres treated with prescribed fire (includes grassland, forested, and shrubland habitat types), 4,114 acres planted in grains and legumes, 229,783 tree and shrub seedlings planted, 10,666 acres mowed, 2,443 acres of forest habitat improvements by FCC crews.

In addition 7,126 acres of early successional habitat were restored on state game lands via contracted work. This included 1,323 acres of forest restoration, 475 acres of herbaceous openings maintenance, 3,187 acres of prescribed fire burn unit preparation, and 2,141 in shrublands restoration.

One of the strategies utilized in managing key habitats is prescribed fire. The PGC has been ramping up prescribed fire capacity since passage of the Prescribed burning Practices Act in July 2009. This year, the Game Commission has taken the following steps to facilitate use of prescribed fire in habitat management: hired a Wildland Fire Logistics and Training Coordinator; maintained active voting membership on the Prescribed Fire Council; maintained cooperative agreements with The Nature Conservancy and Department of Military and Veterans Affairs; and facilitated a new cooperative agreement with DCNR. There were 16 burn plans submitted and reviewed resulting in 2,000 acres of prescribed fire treatment on game lands.

Habitat Protection Section staff assessed pre and post-burn water quality on three streams draining a prescribed fire treatment area and two control streams located on or adjacent to State Game Land No. 326. The assessment resulted in the collection and laboratory analysis of 20 samples, and failed to show any adverse impacts to water quality as a result of the prescribed fire treatment within those watersheds.

Habitat Protection Section staff reviewed draft plans, provided comments for further improvements, and approved revised plans for remedial work on State Game Land No. 34 to ensure the successful establishment of nearly 14 acres of wetlands on the game lands prior to the end of the initial monitoring period. This wetland complex was constructed on the gamelands in 2007 under a Cooperative Agreement with a private developer, and although this remedial work was necessary in a few select areas to improve hydrology and soil nutrients, the vast majority of this wetland complex is functioning as designed and is already providing significant wetland habitat for waterfowl and other avian species, is being used heavily by elk and other mammals, and is improving water quality in the receiving, acid deposition-impaired watershed.

An Indiana bat State Lands Habitat Conservation Plan (HCP) is in development for SGLs and DCNR State Forests and State Parks. We were awarded \$600,000 in USFWS Section 6 funds to accomplish the task. An HCP for Duke Energy is in development for a wind site where an Indiana bat fatality occurred in 2011. Prior to hibernation season, a contractor will construct a bat-friendly gate at a railroad tunnel hibernaculum on a Luzerne County SGL in lieu of continuing the previous mitigation plan for eastern small-footed bat and northern long-eared bat. The same contractor will construct gates on a cluster of sandstone caves on a Lycoming County SGL to reduce visitation stress to eastern small-footed and northern long-eared bats already affected by WNS and to improve public safety. Allegheny woodrat habitat enhancements are planned on additional areas in Southcentral Region, Golden-winged warbler population and location information and other bird survey data for a Pike County SGL were provided to the Northeast Region to inform revision of the SGL management plan. This SGL is an Audubon Important Bird Area important to a wide variety of birds.

**GOAL 5: Enhance the public's understanding of the PA Game Commission's mission and its responsibilities.**

**Strategic Objective 5.1 Determine the public's knowledge and understanding of the Pennsylvania Game Commission, its legal mandates, responsibilities and funding.**

Three wind energy presentations reached over 100 members of the general public, academia, or non-profit organizations. This presentation related the agency mission and responsibilities conducted through the PGC Wind Energy Voluntary Cooperative Agreement. Staff completed and published on the PGC website the 3<sup>rd</sup> Wind Energy Voluntary Cooperation Agreement Summary Report. The report analyses data collected over the five year period between 2007 and 2011.

Staff prepared and presented six oil, gas, coal, and mineral recovery presentations to PGC staff and Board of Commissioners with emphasis on the unconventional shale development on state game lands. Staff also prepared and presented five presentations to sportsman groups and clubs. Over one hundred phone call, letter, and e-mail inquiries on natural resource recovery operations on state game lands were submitted by the public or news media and/or through right to know requests were addressed by the Environmental Planning and Habitat Protection Division.

**Strategic Objective 5.2 Use a stakeholder process to gather public input in developing programs and plans.**

Deer and elk section personnel completed a deer management update meeting for stakeholder groups. We invited more than 30 stakeholder groups and representatives from 14 groups attended. Presentations covered the historical context of deer management, current goals and objectives, current status of deer and deer hunting, and a web page demonstration. The meeting ended with an extended questions and answer period.

A final report on the 2011 PA waterfowl hunter survey was prepared, posted on the PGC website, and provided to the chair of the Human Dimensions Committee of the AF Migratory Game Bird Technical Section for use in regional and national discussions of the human dimensions of waterfowl management. Summaries of the results were also presented at the 2012 Waterfowl Symposium and a Board of Commissioners meeting.

The annual waterfowl symposium was held in August at Middle Creek Wildlife Management Area to distribute waterfowl status, research, and regulation information to the hunting public, and receive season recommendations from organized groups and individuals. Approximately 15 stakeholders attended. Formal comments were received from 1 organization and 1 individual at the symposium, as well as from 1 organization and 8 individuals via the “Waterfowl Comments” e-mail inbox. Most constituent requests were incorporated in our 2012-13 season selections submitted to / approved by the USFWS and announced to the public via a news release and waterfowl regulations brochure. This included a request to shift some days of Canada goose hunting in the RP Zone from late January to November-December; this change also provides increased overlap of goose and duck seasons, which appears from the waterfowl hunter survey to be an important contributing factor to hunter satisfaction.

In August 2012, we held our annual meeting with the conservation organization Woodcock Limited of PA. This meeting provides an opportunity to review progress on implementation of PA’s woodcock management plan and discuss opportunities for collaboration to benefit woodcock.

We updated progress to date on the 47 strategies in the turkey management plan, and held the annual management plan review meeting with the PA Chapter of the NWTf on 18 June, 2013.

A fall turkey hunter attitudes survey is conducted each year during the course of the hen turkey harvest and survival rate study to determine hunter attitudes, satisfaction and daily participation under different season structures. The 2012 survey was mailed to 10,000 randomly selected general hunting license holders in early January, 2013. Response rate was approximately 56%, compared to 50% in 2011 and 46% in 2010. Results indicated that the Thanksgiving holiday season segment continues to provide an additional recreational opportunity benefiting the satisfaction of existing turkey hunters, but does not appear to be recruiting new participants; non-turkey hunters may simply be too busy to take advantage of this opportunity. The percentage of hunters rating the overall 2012 season “good” or “very good” was 45%, compared to 46% in 2011 and 57% in 2010. About half of those who hunted turkeys in fall 2012 participated in the Thanksgiving holiday season segment, and satisfaction with this segment continues to be relatively high. The reduced satisfaction level in 2011 and 2012, despite the fact that 2011 and 2012 season structures appear to be preferred by hunters to those used in 2010, indicates that factors other than season structure are important in satisfaction. Harvesting a turkey may be an important component of satisfaction, as success rates were higher in 2010 than in the past 2 years. Also, lack of time to hunt appears to be a more significant barrier to participation in fall turkey hunting than season structure.

We held the annual pheasant working group meeting with Pheasants Forever and other partners (50 total attendees) on 19 March, 2013 at PPL Montour Preserve. At this meeting, we presented

information and received public input on all aspects of the pheasant management plan (WPRAs, large-scale habitat trends and programs, propagation activities, pheasant hunter survey, educational efforts, etc.).

We conducted a survey of hunter attitudes regarding pheasant management during the second half of the fiscal year. The sample frame included approximately 3,000 respondents to recent Game Take Surveys who indicated they hunt pheasants, plus 5,000 randomly selected license buyers. The response rate was 62% and compilation and analysis of data was underway as the fiscal year concluded.

Additional opportunities for stakeholder comment on game bird management programs were provided through interaction with attendees at numerous informational presentations to a variety of audiences such as civic and sporting groups, schools, and landowners.

Regarding the State Wildlife Action Plan (SWAP) revision due to USFWS September 30, 2015, in collaboration with PA Fish and Boat Commission (PFBC), staff conducted the first Advisory Committee meeting to garner input from select conservation organizations and agencies for plan revision. A nominal process was used for feedback on SWAP vision, its purpose, guiding principals and goals statements, and the issues to be addressed to conserve the state's wildlife diversity. Also, during a PABS OTC meeting, we provided an overview of the SWAP revision process and sought assistance for the review and revision of the state's list of bird species of greatest conservation need. Information from the June 2012 Wildlife Diversity Forum was compiled evaluated and integrated into SWAP revision process. We will continue to gather input from various partners in coming months and years as we update the WAP jointly with PFBC by 30 September 2015. This conservation blueprint for the state's wildlife defines specific actions to address threats proactively before species decline to a point requiring costly federal protection under the Endangered Species Act.

Game Birds – Presented waterfowl harvest and population information at the annual waterfowl symposium at Middle Creek WMA in August 2012, and received input from the public and waterfowler organizations on waterfowl season proposals for the 2012-13 season. Met with conservation organization Woodcock Limited of PA to review progress on implementation of PA woodcock management plan and discuss opportunities for collaboration to benefit woodcock. Met with conservation organization National Wild Turkey Federation – PA Chapter to review progress on turkey management plan and discuss opportunities for collaboration to benefit turkeys. Conducted an attitudes survey of 10,000 license holders in relation to fall turkey hunting. Held a pheasant management meeting with stakeholders. Conducted an attitudes survey of 8,000 hunters regarding pheasant management.

Wildlife Diversity – A SWAP Advisory Committee was formed and first meeting held to garner input from select conservation organizations and agencies for plan revision; assistance of PABS OTC sought to review and revise the state list of bird species of greatest conservation need. Relative to proposed state listing of 3 bat species due to WNS losses, a Bat Conservation Workshop was held for respondents to the request for comments that appeared in the PA Bulletin.

Game Birds - Incorporated stakeholder requests to move some Canada goose hunting days in the Resident Population Zone from late January to November / December; this also increased overlap between duck and goose seasons which the waterfowl hunter survey indicated was important to hunter satisfaction.

Wildlife Diversity – SWAP Advisory Committee input is collected through a nominal process for feedback on SWAP vision, purpose, guiding principals and goals, and issues to be addressed to conserve PA’s wildlife diversity. Following informational presentations at the Bat Conservation Workshop, breakout sessions discussed what cooperative actions that should be taken to stabilize and improve the population status of those 3 species.

The Bureau of Wildlife Habitat Management expended \$35,011 under the MOU with PennDOT in FY 12-13 for stakeholder coordination on transportation projects through out the Commonwealth. An additional \$47,718 was expended under the MOU with DEP (Bureau of Mining and Reclamation) relative to coal mining projects and stakeholder coordination meetings.

The state game lands Banking Agreement, adopted as a partnership with PennDOT and the Federal Highway Administration, provides advance mitigation (lands) to offset permanent acreage losses to state game lands resulting from bridge replacement or minor road improvement projects. Four SGL banks exist, one in each of the following counties: Northumberland, Tioga, Lancaster, and Somerset. These four banks collectively total 90.8 acres, and as of June 30, 2013 a total of 8.4 acres had been debited from these SGL Banks. The ability to debit from existing SGL Banks has streamlined the mitigation process in that projects with less than five acres of impacts to state game lands can be debited these impacts from existing land banks, instead of having to address each project on a case-by-case basis with replacement lands.

The PGC Wind Energy Voluntary Cooperative Agreement continues to work with wind developers to avoid, minimize, and mitigate potential adverse impacts to wildlife from wind energy development. There are currently 35 Cooperators which have signed the original agreement. Based on input from Cooperator meetings it is anticipated that the majority of the Cooperators will sign on to the updated Agreement. These Cooperators are providing pre and post-construction surveys to better understand impacts to wildlife and to research methods to predict the extent of mortality at proposed facilities. Ironically, many developers whom have not signed the Cooperative Agreement are completing the same requirements as Cooperators but not receiving any of the benefits.

**Strategic Objective 5.3 Promote a league of partnerships to achieve mutual goals for wildlife and habitat.**

Staff participated in Atlantic Flyway Technical Section and Council meetings, as well as Atlantic Coast Joint Venture Technical Committee and Management Board meetings, to discuss and develop recommendations on migratory game bird hunting seasons, nongame migratory bird conservation initiatives, and habitat conservation programs.

At the request of USFWS, we compiled a summary of 2011-12 PGC costs for participation in the experimental evaluation of the Mourning Dove Call Count Survey. Our per-route costs (which were considered most representative for purposes of illustration because we provided the most routes/data of any participating state) will be provided to other states and regional technical committees to inform discussions on the future direction of dove monitoring efforts.

For resident game birds, the Northeast Upland Game Bird Technical Committee (NEUGBTC) is an important vehicle for cooperative regional efforts. PA hosted the 2012 NEUGBTC meeting and several staff members attended. Also as part of our NEUGBTC participation, we led a subcommittee which developed a review paper on anticipated impacts of climate change on upland game bird species.

Cooperative habitat management efforts are a major focus of the species management plans for grouse and woodcock. We continued collaboration with various stakeholders involved in early successional habitat initiatives, including Wildlife Management Institute's Appalachian Mountains Young Forest Initiative, Appalachian Mountains Golden-Winged Warbler Initiative, Woodcock Limited, PSU's Center for Watershed Stewardship, Penns Valley Conservation Association, PA Young Forest Council, and Ruffed Grouse Society as well as 1 DCNR State Park and 13 Forest District offices. Staff attended the first annual statewide Ruffed Grouse Society meeting in State College, presenting an update on grouse status and management in PA to 20 RGS representatives and staff; and the annual banquet and meeting of the conservation group Woodcock Limited in March, presenting an update on implementation status of the PA Woodcock Management Plan.

BWM and BWHM staff provided feather samples from woodcock known to have been hatched in PA to a researcher at Stephen F. Austin State University (Texas) compiling a stable isotope research collection, and shared grouse and woodcock survey protocols and data sheets with a PSU researcher wishing to incorporate monitoring for these species into her current research on pipelines and wildlife use.

The WMU 5A Wild Turkey Task Force, formed in 1997, is comprised of staff from PGC, DCNR Bureau of Forestry, NWTF, PANWTF and local NWTF Chapters. The task force meets once annually to review progress on the existing turkey management recommendations for WMU 5A. Implementation of these recommendations has resulted in an increased turkey population in WMU 5A, allowing for a re-opening of the fall turkey season in 2010 under a conservative 3-day format following 7 years of a closed fall season.

The PGC is a national leader in wild turkey research. We provided technical assistance, information, and training to the New York Department of Environmental Conservation, Ohio Department of Natural Resources, and Cornell University regarding methodology and results of turkey harvest and survival rate studies and human dimensions of turkey management.

We attended the National Wild Turkey Technical Committee and provided a PowerPoint presentation update on the hen wild turkey harvest and survival rate study.

We attended the National Bobwhite Technical Committee meeting in Abilene, Texas, 7-10 August 2012.

We provided population status information, season setting procedures, and harvest data for various game bird species to staff at Cherry Valley National Wildlife Refuge (Monroe County) for their use in completing required documentation in the federal-level process for opening the refuge to public hunting.

We completed programming changes in preparation for annual updates and revisions to the Northeast Fur Resources Technical Committee's (NEFRTC) fur harvest and management database which will be accomplished by furbearer biologists from 19 jurisdictions in northeastern states and provinces. Completed agenda and planning for the upcoming meeting in Delaware.

Organized a meeting between a PhD student at West Virginia University who is currently analyzing our data collected from the Urban Bear Study (as part of a cooperative region study involving PA, New Jersey, and West Virginia), and a professor at PCFWRU, who is planning to have an M.S. student work additionally with the data. The purpose of the meeting was to avoid duplicate analyses of the same data while facilitating multiple products. The WVU student is focusing on landscape and corridor movement analyses, whereas the PSU student plans to develop a landowner survey for the areas used by suburban bears to measure hunter access – an important component in estimating harvest vulnerability.

We shared information on the potential impact of climate change on furbearer species to the PA MTC chairs for their use at an upcoming PABS meeting. The information included climate change impact prioritization and actions needed to plan for future impacts on furbearers.

Bird and mammal monitoring and recovery is accomplished through the cooperation of at least 85 organizations (notably Audubon PA and the PSO) contributing their expertise and personnel including hundreds of volunteers, resulting in thousands of volunteer hours per year. The PABS serves an official advisory role to the PGC through its Ornithological and Mammal technical committees and Steering Committee. Involvement of the PA Natural Heritage Partnership facilitates intra-state data management benefits. Examples of new partnerships include an Indiana bat habitat conservation plan for state lands in collaboration with DCNR BOF and Bureau of State Parks and the Appalachian Landscape Conservation Cooperative.

Regionally, monitoring and research by the bird, mammal, and grants and planning sections are coordinated for greater efficiency and effectiveness through regional (interstate) and national committees such as the Northeast Fish and Wildlife Diversity Technical Committee, the Atlantic Coast Joint Venture, the Appalachian Mountain Joint Venture, the North American Bird Conservation Initiative, and the Federal Aide Coordinators, Indiana Bat recovery team and others. This coordination assures improved (10%) match rates for work on federal endangered species (Indiana bat and piping plover) and positions us for other funding opportunities. PGC biologists are actively involved in northeast regional projects focused on finding common ground among states' WAPs. We serve on steering committees for the Northeast Synthesis Project (synthesis of completed Regional Conservation Need projects), the Northeast Lexicon of

Conservation Terminology, and as technical review leader for the Northeast Habitat Classification Guides project.

Wildlife Diversity Division biologists participated in at least 60 meetings and 50 conference calls with partner organizations and agencies to achieve mutual goals for wildlife and habitat during the past fiscal year. RWDBs met with private landowners to learn their particular interests and evaluate habitat on their properties, and with NRCS personnel regarding USDA Farm Bill programs that can help to implement habitat management plans. Region biologists also participate in meetings of county conservation districts, watershed and stewardship associations, woodland owners groups, conservancies, and local special-interest working groups.

A presentation was made to the Animal Health and Diagnostic Commission regarding the status of wildlife disease matters including the impact of new fees for CWD testing, and the PGC position on the return of an elk that wandered into a CWD positive state.

Peer review was provided to the National Wildlife Health Center for their recent accumulated data sets and their presentation for wildlife health professionals.

Investigations at PSU of Department of Veterinary and Biomedical Sciences who are determining the prevalence of enteric pathogens in wild raccoon populations and that with University of PA School of Veterinary Medicine who examined portions of the same samples collected by PGC to determine the prevalence and distribution of the zoonotic raccoon roundworm were completed. Resulting manuscripts have been submitted for publication. The interaction with the PCWRU where CWD data is being modeled to be able to predict its spread in PA is also ongoing.

A presentation on wildlife disease surveillance in PA was made to 14 private practitioners at the Animal Diagnostic Lab's annual meeting. Additionally, a phone interview was completed with the Cornell Fish and Wildlife Cooperative Research Unit's Human Dimensions group during which state wildlife disease surveillance and response capacity were discussed.

Coordination between our agency and PDA has become frequent as we progress through the CWD response. In addition, there have been meetings with the labs of the PADLS system, and the lab staff responsible for our CWD testing. The PADLS directions for hunters from outside the DMA who wish to have their deer tested for CWD were reviewed and revised.

Additional wildlife health contacts were made at the technical meeting of the Northeast Association of Fish and Wildlife Agencies. Plans were made for data sharing on prominent wildlife health issues. Data regarding biological amplification of rodenticides in small mammals and their raptor predators was subsequently shared between New York and PA.

CWD data and management strategies were shared with representatives from Delaware, Maryland, West Virginia, Virginia and USDA at the annual meetings for that purpose.

The Wildlife Services Division Chief serves as an Advisor to the PA Game Breeders Association. Bimonthly Board meetings are attended, and we moderate the evening banquet

presentation and donate a print at the Game Breeders and Hunting Preserves Conference, held each February in cooperation with PSU Extension.

BWHM staff initiated the formation of and chair the PA Young Forest Council composed of representatives of NGO's, Agencies and private industry to promote the creation and restoration of habitat for young forest dependent wildlife.

BWHM staff participate in the PA Prescribed Fire Council which promotes the appropriate use of prescribed fire in Pennsylvania to restore and maintain fire adapted habitats and improve public safety. Staff hosted field reviews of the Scotia Barrens Prescribed Fire program for council members, the public, Penn State's Conservation Leadership School, and a local chapter of the Society of American Foresters.

A partnership has formed with RGS, WMI, DCNR, and USFWS to implement a native plant restoration project at Swatara State Park. This project successfully planted 3,000 alder and aspen seedlings during Phase I activities. Phase II included invasive vegetation mowed by PGC food and cover crew. Additionally, PGC crew utilized US Fish and Wildlife tree shears to remove overstory. Herbicide application was contracted and funded by RGS drummer funds.

**GOAL 6: Develop sustainable funding sources that support the agency's mission and identity.**

**Strategic Objective 6.1 Partner with the Wildlife for Everyone Foundation, other Foundations and non-governmental organizations to financially support wildlife conservation programs and projects.**

The Wildlife for Everyone Foundation acquired designated wetlands for species of special concern. They also set up a program to assist in the reimbursement of expenses for interns that are completing required course work that provides needed support in the agency. The WFEF has started a capital campaign to construct a wildlife education center.

We maintain a strong partnership with the NWTF and the PANWTF. We regularly attend annual and quarterly PANWTF Board meetings to provide information (PGC quarterly turkey technical committee reports), answer questions, and receive input. The BWM turkey biologist continues to serve on the NWTF Turkey Technical Committee. We provided advance input for and participated in a planning meeting with NWTF and PANWTF representatives to help determine state-level objectives for the NWTF's new long-term national initiative "Save the Habitat, Save the Hunt". Overall goals for this effort are to conserve and enhance 4 million acres of turkey habitat and recruit 1.5 million new hunters nationwide. We reviewed 83 wild turkey habitat improvement proposals for the PANWTF, and provided a summary of proposals to the PANWTF Habitat Committee for their annual funding meeting. The Committee approved \$130,209 in PANWTF habitat superfund dollars for 76 proposals covering 1,306 acres of public and private lands in PA, including \$87,761 for 51 PGC proposals. Following project selection, we assisted PANWTF with the implementation details for some of the projects. We also work

closely with the NWTF regional biologist who provides technical assistance in all aspects of wild turkey management. The ongoing hen harvest and survival rate study continues to receive important financial support from the NWTF, PANWTF and USFWS.

Game Birds - Cooperative woodcock monitoring efforts with Appalachian Mountain Young Forest Initiative were expanded in spring 2013. We are also working with PSU Center for Watershed Stewardship and Penns Valley Conservation Association on a multi-parcel private lands plan for riparian ESH habitat improvement in a Centre County watershed, and providing technical assistance to DCNR Bureaus of Forestry and State Parks on managing these lands for early successional species. We continue to provide financial support (in cooperation with other agencies) for the NWTF regional biologist and the Northern Bobwhite Conservation Initiative coordinator. \$153,180 (woodcock: \$121,680 for Upper Penns Valley ESH Initiative partnership - direct funding, manpower, and equipment donations from multiple NGOs, government grant and cost-share programs, and the PSU Center for Watershed Stewardship; and \$1,500 for interpretive signage at Woodcock Demonstration Trail on PSU Experimental Forest; pheasant: \$30,000 for WPRA implementation from Pheasants Forever chapters)

### **Strategic Objective 6.2 Increase the use of grants, mitigation and reimbursements.**

We continue to apply for and receive grant funding from the USFWS Black Duck Joint Venture (BDJV) Northeastern States Banding Fund to support post-season banding efforts targeting black ducks; we received \$4,420 in BDJV funds for FY 2012. In fulfillment of the grant requirements, we prepared a summary report on 2013 post-season black duck banding accomplishments and submitted it to AF Migratory Game Bird Technical Section Banding Committee and BDJV staff. We also developed and submitted a proposal requesting a similar level of BDJV funding in 2014 to continue this work.

BWM, BWHM and regional personnel collaborated in developing and evaluating habitat proposals for submission to PANWTF (for turkey-related work) and the Ruffed Grouse Society "PA Drummer" program (for grouse and woodcock projects).

A federal PR program research grant is covering 75% of the total project costs for the wild turkey hen harvest and survival rate study, for a total of \$1,239,825 over the life of the project (\$270,187 in FY 2012). Grant assistance is also being provided by the NWTF and PANWTF (\$18,070 and \$2,157, respectively, in FY 2012). We prepared and submitted quarterly project reports to NWTF and an annual report to the USFWS in compliance with the requirements for the respective grants.

BWM and BWHM worked together to develop a proposal for improved reporting of PANWTF habitat improvement funding for receiving Pittman-Robertson funding match. The proposed process should enable the agency to capture 100% of available PANWTF funding match, compared to an estimated 20% during the past 5 years.

Through partnerships the Game Commission was able to increase the size of two existing state game lands and add 453 acres to the state game lands system. During FY 12 the Commission acquired a 100-acre indenture into State Game Land No. 51, located in Connellsville Township,

Fayette County. The property lies within an Important Mammal Area and supports the existence of both state and federally listed species. Because Indiana bats are known to have utilized the property, the Commission was eligible to pay for the total purchase price of \$127,000 of the property with monies collected by the United States Fish and Wildlife Service through their Indiana Bat Conservation Fund (IBCF). Contributions to the IBCF come from project proponents and permit applicants as compensation for activities that are likely to adversely affect Indiana bats or their habitat. Another 353 acres in Eldred Township, Monroe County commonly known as the Alpine Motorsports property and adjoins State Game Land No. 168 was acquired through a partnership comprised of state and federal agencies. The property was acquired in large part through the Palmerton Natural Resources Trustee Council comprised of seven agencies including the United States Department of Interior, United States Fish and Wildlife Service, National Oceanic and Atmospheric Administration, Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission, Pennsylvania Department of Environmental Protection and the Pennsylvania Department of Conservation and Natural Resources. The Trustee Council received a financial settlement to resolve claims from natural resource damages in connection with the Palmerton Zinc Pile Superfund Site in Northampton and Monroe Counties. The Trustee Council provided \$2.3 million towards the purchase price with the Game Commission paying the balance.

Grant funding from the USFWS has assisted us with implementation of banding efforts targeting black ducks (\$5,526). In fulfillment of the grant requirements, we prepared a summary report on 2012 post-season black duck banding accomplishments and submitted it to AF Migratory Game Bird Technical Section Banding Committee and USFWS-BDJV staff. We also developed and submitted a proposal requesting a similar level of BDJV funding in 2013 to continue this work.

BWM staff assisted BWHM and regional personnel in developing and evaluating habitat proposals for submission to PANWTF (for turkey-related work) and the Ruffed Grouse Society "PA Drummer" program (for grouse and woodcock projects).

A federal P-R program research grant is covering 75% of the total project costs for the wild turkey hen harvest and survival rate study, for a total of \$1,239,825 over the life of the project through FY 2013. Grant assistance is also being provided by the NWTF and PANWTF (\$56,060 and \$35,000, respectively, for the last 4 years of the study). We prepared and submitted quarterly project reports to NWTF and an annual report to the USFWS in compliance with the requirements for the respective grants.

Grant funding is integral to habitat management programs. Last year, 24 grants were funded for over \$22.5 million.

We were operational with active grants in the following areas:

- USFWS
  - Eight Pittman-Robertson Program funded grants including operations and maintenance, habitat improvements, infrastructure improvements, big-game research, wildlife health programs, hunter/trapper education and outreach and technical outreach including critical habitat and species protection. \$19,600,000.00

- Four Section 6 T&E Species Grants dealing with Indiana Bat, including an HCP grant for Indiana Bat and Forestry operations in the State by PGC and DCNR. \$424,000.00
- Nine State Wildlife Grants \$750,000

Furthering grant funding opportunities, the Bureau of Wildlife Habitat Management worked collaboratively with BWM, and DCNR to write and submit a grant proposal for a USFWS Habitat Conservation Planning Assistance Grant (*Habitat Conservation Plan for Indiana Bats associated with Forest Management Activities on Pennsylvania Game Commission (PGC) state game lands and Pennsylvania Department of Conservation and Natural Resources (DCNR) State Forests and State Parks*). The proposal was awarded a grant during the Fall of 2012 in the amount of \$600,000 to develop a habitat conservation plan to address impacts to Indiana Bats on state game lands, State Forests, and State Parks from PGC and DCNR forestry management practices. The contracted consultants are to have a draft Habitat Conservation Plan and draft NEPA outline completed by December 31, 2013.

During the reporting year, two previous Federal Assistance Program grants (PA-W-76-E and PA-W-80-E) were combined into one grant (PA-W-76-E-12). A new grant proposal was developed and submitted to the U.S. Fish and Wildlife Service by the Hunter Education and Outreach Division. This proposal was awarded a grant in the amount of \$1,218,000.

For this fiscal year the Pennsylvania National Archery in School Program (NASP) benefitted greatly from non-governmental organizations as indicated in the chart below. The funding was used to enroll schools in NASP program or update equipment for older schools (circa 2002).

<b>Granting Organization</b>	<b>Amount funded</b>	<b>Use</b>
Easton Foundation	\$14,246	Partially fund equipment kits for 15 different schools to enroll in NASP
Morrell Targets	\$2,220	Used to supply targets for NASP schools
Fishing Creek Sportsmen's Association	\$1,561	Sponsored Benton Area High School to enroll in NASP
Department of Education	\$3,219	Grant used to purchase equipment for Harrisburg Christian School to enroll in NASP
Rocky Mountain Elk Foundation Grant (2010)	\$2,000	Four schools were enrolled using funding from a grant allocated to the agency in 2010
<b>Total</b>	<b>\$23,246</b>	

Game Birds – Based on our proposal presented to and approved by the AFC Migratory Game Bird Technical Section Banding Committee, we received \$4,420 in grant funding from the BDJV

to support post-season black duck banding efforts. The wild turkey hen harvest and survival rate study is being supported by a federal P-R program research grant covering 75% of the total project costs, or \$1,239,825 (\$270,187 in FY 2012).

Wildlife Diversity - Federal (ESA) capacity-building funds totaling \$26,760 were allocated in support of additional effort to monitor and combat WNS.

### **Strategic Objective 6.3 Seek legislative action to provide alternative funding sources.**

A bill was introduced to provide an increase in license fees but it never moved through the legislature. Alternative funding sources could be an excise tax on arms and ammunition such as Pitman Robertson. Additionally a portion of the \$220 million generated by hunting activity could be provided. With the budget climate as it is, there is no anticipation of alternative funding related to taxes in the near future. There is a false assumption by the legislature that Marcellus Gas Revenues will be enough for the PGC in the future.

### **Strategic Objective 6.4 Create a *Friends of Wildlife* donation program.**

The donation program for the last year was redirected and all donations were earmarked for the Dave Grove Scholarship Fund in Penn State University.

The Conservationist Certificate Program was developed and courses were provide to interested parties that resulted in many graduates of the program. These new volunteers will be a great asset in her future.

## **GOAL 7: Promote a diverse, professional and efficient organization.**

### **Strategic Objective 7.1 Ensure that agency employment and volunteer recruitment information is widely distributed to the public.**

Volunteers and landowners who assist with the wild turkey hen harvest and survival rate study receive certificates of appreciation from the field personnel they assist. An annual information/status update was developed and distributed to all woodcock singing ground survey volunteer participants. Also, annual meetings are held with Woodcock Limited, Ruffed Grouse Society, National Wild Turkey Federation/NWTF PA Chapter, Pheasants Forever.

To improve recruitment of Wildlife Conservation Officers, Staff completed video for the Cadet Civil Service Exam

Employment postings were placed on agency (social media sites) website. Staff posted information several times on volunteering as a DWCO and Posted job openings for press secretary, media specialist and WCO exam.

A number of news releases issued to solicit volunteer services for specific agency projects and programs. News releases were aimed at recruiting volunteer instructors for hunter-education courses, and encouraging participation in wildlife surveys like the Appalachian Bat Survey and the Dove Hunter Survey

We continue to use the volunteer instructor recruitment tools outlined below. They share a common theme/slogan, *Pass It On*. The tools include the following:

**Recruitment DVD** – This six-minute video emphasizes the role and importance of volunteer instructors and how to apply. It is being played at sportsmen’s clubs, county fairs, sport shows, and other public venues

**Banner Displays** – Fourteen attractive, full-color displays are now in use at shows and fairs statewide. They include the capability to loop the above video

**Recruitment Brochure** – This is a full-color, tri-fold design highlighting the duties, expectations and rewards of being a hunter education instructor. It also includes application information

**Internet Content** – The above recruitment DVD together with a modified brochure also appears on the agency’s website under the navigation title, “Becoming an Instructor.” The site is linked to an online application request form

The above set of recruitment tools was recognized by the Association for Conservation Information, Inc. as one of their 2011 national award winners for it’s excellence in content and design. The group is comprised of state and federal natural resource agencies from across North America

### **Strategic Objective 7.2: Promote and increase professional development opportunities for employees.**

Staff participated in numerous working meetings of technical and professional committees of which they are members, including the Atlantic Flyway Council and Migratory Game Bird Technical Section, Atlantic Coast Joint Venture Game Bird Technical Committee, Eastern Management Unit Dove Technical Committee, Northeast Upland Game Bird Technical Committee, National Wild Turkey Technical Committee, Midwest Pheasant Study Group, and National Bobwhite Technical Committee. Section biologists also participated in various training opportunities including online aviation safety training and a Water Ditching and Survival Training practicum; 3 webinars on marsh bird monitoring, outreach for young forest habitat, and livestock grazing as a forest understory management technique; wildlife disease training including a 2-day workshop provided by SCWDS staff and PGC veterinarian, and wildlife disease surveillance (SOP 40.4) training; basic GIS and CPR training; Northwest Region land management conference; the annual meeting of the PA chapter of The Wildlife Society; and 1 weeklong agency training session on leadership and supervisory skills.

Staff also served on a variety on technical and steering committees for the Appalachian Mountain Joint Venture, Northeast Wildlife Diversity and the PABS. They delivered professional presentations during the Atlantic Coast Joint Venture and AF joint meeting, annual USFWS WNS conference and the annual meeting of the Northeast Bat Working Group. These and other professional and research conferences, including Wildlife and Sport Fish Restoration and the Association of Fish and Wildlife Agencies, provided opportunities to participate in

educational seminars in their areas of expertise. Web seminars provide an increasing number of opportunities to interact with peers and expand knowledge contributing to the PGC's management of species of greatest conservation need. Individually or as a group, RWDBs participated in training for golden-winged warbler habitat management, forest management, wetland management, use of prescribed fire for habitat management, incident command, wildlife disease surveillance, use of pharmaceuticals, and use of global information and positioning systems.

We attended the Northeast Black Bear Technical Committee meeting and prepared PA's report for presentation at the NEFRTC meeting.

We attended and participated in the 69<sup>th</sup> Annual Northeast Fish and Wildlife Conference in Saratoga Springs, New York.

To keep current on the latest statistical and survey methods, our wildlife biometrician attended a multi-level modeling short course provided by the PCFWRU; completed a Structured Decision Making course at NCTC; and 5 days of Levels 1–3 Microsoft Access database management training. The wildlife biometrician was appointed adjunct faculty at PSU.

Pharmaceuticals were provided to all regions and projects. Beta testing of revisions to the Pharmaceutical Management System took place and the new version was implemented. Outdated pharmaceuticals were collected from regions and projects. Replacement 2012 and 2013 drugs orders are filled and distributed as they are received. Immobilization training was provided to carfentanil users from the Northcentral region and the BWM, and their supervisors. Chemical immobilization training specific to the deer trapping teams was also provided. Ongoing evaluation of immobilization regimes took place with the annual black bear project den visits and hands-on animal monitoring instruction was provided to field personnel in the process of these visits. During those visits physical examinations and anesthesia monitoring was provided to 22 adults and neonatal examinations were provided for 89 cubs. Four adults were provided additional support, either by the bear project or the wildlife veterinarian, as a result of monitoring while under anesthesia.

The Wildlife Health program application for PR funding was submitted and approved. New instructions to regions regarding necropsy submissions were provided in light of recently increased laboratory fees.

The wildlife veterinarian received CPR/First Aid training. The wildlife veterinarian attended technical wildlife health continuing education at the NEAFWA meeting.

Animal welfare consultation was provided to BWP special permit office personnel during a menagerie permit inspection and subsequent reinspection.

Techniques for corralling, handling, and transporting wild elk prior to relocation were explored with wildlife veterinarians in 2 Western states.

The Bureau of Wildlife habitat management is well represented on technical and professional committees and organizations including the Association of Fish and Wildlife Agencies Onshore Oil/Gas Shale Subcommittee, Energy & Wildlife Policy Committee, (Agriculture Committee, Biofuels Working Group, Forestry Working Group, CRP Working Group, Farm Bill Subcommittee, Invasive Species Sub-committee, Upland Gamebird Working Group, and PA State Technical Committee), The Pennsylvania Forestry Association, Governor's Invasive Species Council, Mid-Atlantic Invasive Plant Advisory Council, Pesticide Advisory Board, Mile-a-Minute Working Group, Mid-Atlantic Invasive Plant Council, Pennsylvania Association for Sustainable Agriculture, Pennsylvania Farm Bureau, U.S. Sportsmen's Alliance, Theodore Roosevelt Conservation Partnership, Boone and Crocket Club, National Muzzle Loading Rifle Association, Pope and Young Club, National Rifle Association, The Wildlife Society, PA Trapper's Association, Northeastern Bat Working Group, Environmental Quality Board, Great Lakes Wind Collaborative, Environmental Review Committee, Interagency Review Team, National Wind Coordinating Collaborative, Best Management Practices Committee, and Woodcock Limited

Habitat Protection Section staff participated in the plenary session on energy and its impacts on wildlife at the 2013 Annual Winter Meeting of the VA Chapter of The Wildlife Society and gave presentations on the PGC's PNDI environmental review process to the PGC's Wildlife Habitat Management Committee and the Oil/Gas Voluntary Cooperative Agreement Steering Committee. Staff also gave wind energy related presentations at the Great Lakes Wind Commission to approximately 45 people and at the PA Chapter – The Wildlife Society to approximately 60 people. Staff also attended or viewed the Appalachian Regional Reforestation Initiative Mine Land Reforestation Workshop; the 2013 Joint Annual Conference of the PA Chapter of The Wildlife Society and the PA Biological Survey; BCI Bat Conservation and Management Workshop; Northeast Association of Fish and Wildlife Agencies Conference; Microsoft Access Level 2 Training; and webinars on Evaluating the Scientific Support of Conservation Best Management Practices for Shale Gas Extraction in the Appalachian Basin, DEP's Permit Review Process and Permit Decision Guarantee Program for Chapter 102 and 105 Authorizations, DEP's revised PNDI Policy, National Wind Coordinating Committee Webinars – Part 1 and 2, and USFWS Wind Guidelines Webinar – Part 1.

Over ten oil and gas presentations were given at conferences reaching 100+ people and Commission staff. Staff participated in eight newspaper interviews/articles. Staff attended the following conferences, meetings, workshops, and trainings:

- Current Issues in Shale Gas Development
  - Stray Gas Migration Webinar
  - Shale Gas Development on state game lands
  - Pennsylvania Groundwater Symposium
  - American Association of Petroleum Geologist Conference
  - Department of Conservation and Natural Resources Annual Interagency Oil and Gas Meeting.

Game Bird Section biologists were involved with technical committee meetings related to their area of expertise at regional and national levels.

Game Mammals - Participated in the northeast black bear technical committee and the northeast furbearer resources technical committee.

Survey and Statistical Support - Peer-reviewer on a bat roost manuscript for USGS, Virginia Cooperative Fish and Wildlife Research Unit, and on bat-related manuscript for *American Midland Naturalist*.

- Technical committees, workshops, symposia and conference attended
  - One employee completed Conservation Learning MAT class-Leader as Communicator
  - Maintained and utilized STAR12 membership with National Training Seminars
  - Travelled to Murrysville for remote camera equipment and training
  - Attended Dreamweaver training
  - Received basic PGC webpage content editing training
  - Attended ACI conferences at NCTC and in Utah
  - Three employees received PhotoShop CS6 training

**Strategic Objective 7.3: Increase employee knowledge and understanding of the PA Game Commission.**

Staff provided deer management training program to all PGC employees during meetings in the regions and Harrisburg. Recorded for distribution the Mandatory Employee Deer Training presentation for viewing by PGC employees and deputies.

On private lands, a cooperative agreement with Pheasants Forever is providing four positions cooperatively funded with NRCS to make landowner contacts and enroll acres in the Upper Susquehanna CREP, in areas where NRCS has considerable conservation program backlogs.

**Strategic Objective 7.4: Analyze workloads to determine organizational structure and requirements.**

The Bureau of Information and Education conducted an analysis of the outreach program and with additional federal funding reorganized the division to move future programs forward.

In order to provide more complete and quicker response the Bureau of Wildlife Habitat Management conducted a workload analysis of permit request dealing with the PNDI. The redistribution of work to regions and bureaus increased efficiency considerably and eliminated backlog.

The Bureau of Wildlife Management completed a long time effort of rewriting the job specification for Wildlife Biologists. It is currently in Office of Administration for final approval.

As part of the migration from the mainframe to a sequel server environment, all programs were analyzed and improved during the transition part this year. Future transition and improved programs will occur thorough next year.

**Strategic Objective 7.5: Promote recognition for employees and volunteers.**

Employees of the Loyalsock GF and Northcentral GF were provided with PGC Recognition Awards during the January 2013 Commission Meeting after demonstrating year-long determination and perseverance in rebuilding their farms after the unprecedented flood of 2011, and allowing the Pheasant Propagation Program to meet its goal of doubling production for the fall of 2012.

Employees receiving merit awards

- Received First Place ACI Award for Bird Migration Poster
- Received Second Place ACI Award for PGC Promo Video
- Created a webpage to celebrate Onyx’s retirement
- Updated David Grove Memorial Run registration information for 2013

Uniform method for recognizing and rewarding valued work and service

- Use Pennsylvania Game News to recognize volunteers and employees for their service and accomplishments
- Issued news releases and directly contacted media to give public recognition to employees who received prestigious awards

Agency policy establishes guidelines, standards and qualifications for awarding volunteer hunter education instructors and others. S.O.P. 30.5 – *Education and Outreach Awards and Recognition* provides for the following:

- Outstanding Hunter Education Instructor Award
  - Regional Instructor of the Year
  - State Instructor of the Year
- Hunter Education Service Award
- Conservation Ethics Award
- Senior Wildlife Conservation Award
- Junior Wildlife Conservation Award
- Certificate of Appreciation
- Certificate of Participation

Each year the agency strives to recognize volunteer hunter education instructors and others for their contribution to Pennsylvania’s rich hunting heritage. Below is a summary of the awards established by agency policy and the number of recipients during this reporting period

AWARD CATEGORY	# VOLUNTEERS RECOGNIZED
Outstanding Hunter Education Instructor	111

Regional Instructor of the Year	6
State Instructor of the Year	2
Hunter Education Service	382
Conservation Ethics	10
Senior Wildlife Conservation	25
Junior Wildlife Conservation	Unknown
Certificate of Appreciation	2
Certificate of Participation	Unknown

**Strategic Objective 7.6 Modernize the administrative infrastructure.**

Our Spatial Integration Management System (SIMS) project is nearing fruition. While the project schedule has slipped, our contractor has almost finished coding the various modules of the SIMS application. We plan to have the modules available for testing and verification by our Wildlife Habitat Management staff this fall.

Hardened laptop computers loaded with our Computer Aided Dispatch (CAD) software have been deployed to our Wildlife Conservation Office (WCO) force. The system has been in production for several months and has been well received. In the fall of 2013 we plan to deploy the CAD system to our Land Management Group Supervisors.

This year we conducted our first disaster recovery (DR) test using the DR center we have established in our Northwest Regional Office (NWRO). The test was more successful than we had anticipated. We were able to reroute our data traffic from Harrisburg to the NWRO in just a few minutes and our dispatchers across the state were able to get to the Commonwealth Network and had access to our CAD system, email and the public Internet. Each year we plan to expand the scope of this test, eventually to include all the functionality we utilize on a daily basis.

In conjunction with our disaster recovery initiative we completed a project to virtualize our headquarters and regional office servers. Virtualization allows us to make the most efficient use of our server-based computing power. Additionally, it provides us with a much more reliable and efficient means by which to recover a server in the event of a disaster.

In June 2013 we added the PGC Mapping Center to the Game Commission’s web portal. The PGC Mapping Center is a vast improvement over the old state game lands Maps application which featured static maps. The PGC Mapping Center allows Outdoor enthusiasts to search, discover and print maps of the state game lands. It has features including aerial photographs, topographic base maps, Wildlife Management Units and the ability to bookmark your favorite hunting spots. For users to learn more about the PGC Mapping Center a series of How To videos was created and posted to the web portal.

The Forestry Division has continued to increase efficiency by developing and implementing automated data collection software for tallying of timber and for use in “Silvah” data collection for forest stand analysis.

**Strategic Objective 7.7 Analyze processes to insure continued improvement of**

## **programs.**

We are continuing with our project to migrate our application programs running on our mainframe computer to a server-based computing platform. The rewritten applications use web technology to display data in a web browser and we implemented a “dashboard” landing webpage where employees can access the applications they use and receive notifications that an action is required by a specific application. While this is a huge undertaking we are managing to stay on schedule with a completion date of December 31, 2014.

GIS technology is essential to improve efficiency and maximize habitat programs. Currently, 882,724.5 acres of State Game Land's information is updated in GIS format. The GIS team has created a Fire geodatabase to assist in fire monitoring and planning. The Habitat Division also created several IT tools to modernize field data collection and provide a project tracking database. In addition to the standard GIS task performed in the past the GIS team has started to employ ArcGIS Online. This technology greatly enhances their ability to produce maps for both internal and external use. These products range from the public custom map kiosks to electronic tour apps the public can download and use to navigate the tour using smart phones and GPS. It will also allow for future information such as CWD maps and reintroduction success stories as well as informing the public to species decline due to habitat loss.

Game Management Division staff held 4 planning meetings to discuss monitoring work for the WPRA and northern bobwhite quail programs.

Game Bird staff held a Section meeting on 13 July to review administrative items and update activities, accomplishments, and work plans.

We provided orientation to new Northeast Region field biologist on procedures and locations for duck banding.

We held training session for new dove banders in July 2012 at the Southeast Region Office (12 participants); and June 2013 at the Southwest Game Farm (6 participants) and PGC Harrisburg headquarters (6 participants).

We distributed to Region turkey trapping crews a PowerPoint presentation covering gender determination of summer-trapped poults. As a training tool for new trappers and review material for experienced personnel, this presentation enhanced data accuracy and helped ensure use of appropriate band sizes for birds captured and marked as part of the hen turkey study.

Each year all regional and project personnel are given training in Standard Operating Procedure (SOP) 40.4 - wildlife disease surveillance. New American Veterinary Medical Association guidelines for euthanasia were distributed to Harrisburg personnel and were also part of SOP 40.4 training. There were continued efforts to assure proper submission of documentation with samples by Region personnel.

The annual training for those personnel that use pharmaceuticals (SOP 40.9) was completed for those who use carfentanil, new deer trapping teams, the new bioaide for the bear project, and those who did not attend the initial instruction in the regions for one reason or another.

An exercise simulating 2 CWD cases was held for employees expected to participate in a response to the detection of CWD. Training specific to CWD was provided to Southwest and Southcentral WCOs and their deputies that are part of DMA operations, and the number of employees who can take samples has doubled in those regions. Necropsy training was provided for the Southcentral Region biologist responsible for CWD sampling of road-killed deer. Four weekly CWD reports were produced for all PGC employees.

Lesson plans for wildlife disease surveillance, field necropsy and chemical immobilization were revised and instruction in wildlife disease surveillance (16 hrs), field necropsy (8 hrs) and chemical immobilization (24 hrs) was subsequently provided for the cadet class at the Ross Leffler School of Conservation.

In collaboration with diagnosticians from SCWDS wildlife disease training was provided over a day and a half to BWM personnel where a wide variety of diseases and related topics were presented. Field necropsy refresher training was subsequently provided to region WMSs as an extension of the workshop and to build on sample collection capacity in the state.

SOPs relating to wildlife disease surveillance, pharmaceutical use, enforcement of the CWD Parts Ban, and submission of rabies specimens were reviewed, and in some cases revised.

SOP 40.2 – Ring-necked Pheasant Stocking - was updated. Important changes in stocking procedures included requirement of a minimum of 50 acres of suitable habitat to receive pheasants (up from 15 acres previously), and 4 in-season releases. There have been only 2 in-season releases per year since 2005.

GF Superintendents attend planning meetings 3 times a year. In addition, we hosted 3 specialists from PSU, who are experts in game bird health, nutrition and hatchery operations, at the Loyalsock and Northcentral GFs. It was the first visit for these specialists to PGC GFs, and they reviewed and made many excellent recommendations to improve our hatchery and brooder house operations. Follow up meetings are planned for next spring at the western GFs.

## **Title 34: Section 328**

### **Accountability**

**(C) Financial Accountability:** The Commission shall improve the financial accountability of its various functions through performance measurement in accordance with its strategic plan.

## Financial Accountability

For fiscal year 2012-13, once again, the PA Game Commission continued the implementation of a “zero-base” budget approach for the Bureaus, Regional Offices and the Executive Office. Zero-base budgeting requires all expenses to be justified in accomplishing the goal and mission of the agency. This method is controlling spending and expenses because the budget is built from zero rather than building the budget on top of what was spent during the previous year. The Game fund balance as of June 30, 2013, was \$47,445,926 which is a decrease of \$3,734,628 from June 30, 2012.

The actual expenses and commitments for FY 2012-13 spending increased by \$828,309, while the actual revenue deposited in the Game Fund for the same period decreased by \$4,880,012 from the previous year. The decrease was due in part by revenues collected in advance, during FY 2011-12 under the Volunteer Public Access and Habitat Improvement Program (VPA-HIP). Also, funds for the oil, gas, and mineral ground rentals were deposited into the escrow account rather than the Game Fund. The wildlife promotional publications and materials decreased \$90,970 primarily due to the discontinuation of the Upland Game Bird and Wild Turkey Heritage series that generated revenue from the sale of knives, turkey calls, patches and prints. During the year, interest on securities and deposits decreased by \$205,084 due to less favorable market conditions than the previous fiscal year.

The increase in spending over the previous fiscal year was primarily due to the following reasons; salary and benefit increases of \$662,761, purchases of motorized vehicles increased by \$1.3M due to 101 vehicles purchased to replace vehicles that had exceeded their useful life or were too costly to maintain, telephone and radio communication expenses increased \$613,766 attributed to purchases made to equip some of the newly purchased vehicles with law enforcement equipment (such as radios, sirens, emergency lights, etc.) as well as for backup generators and propane tanks that were purchased for use at the radio towers. Legal and specialized services increased \$1.3M largely due to costs related to the upkeep of game lands which are continuing to expand as more opportunities arise for land acquisition.

Continuing into the current fiscal year, 2013-14, once again, the Game Commission has been notified by the U.S. Department of Fish and Wildlife Services that additional federal money from excise tax could become available as a result of increased sales of hunting equipment and ammunition. In order to utilize these additional federal funds available, we continue to be required to provide a 25% state match towards all expenses. As such, it is necessary to request a higher spending authority from the Game Fund.

In the face of fiscal challenging times, the agency is committed to finding solutions to ensure the agency’s mission is accomplished. Cost-saving measures continue to be reviewed and implemented where possible throughout our headquarters and region offices. In addition to the cost savings measures already in place, the executive committee continues to review all personnel actions prior to approval to ensure availability of funds. All vacant positions are being analyzed in detail and approval to fill those vacancies is being granted only for mission-critical positions.

The monthly financial reports continue to be prepared and distributed to Executive staff, Region and Bureau Directors and the Board of Game Commissioners' Executive Committee. The monthly reports reflect: revenues collected to date as compared to the estimated revenues projections; a monthly financial status report for the Executive Office, each Bureau and Region Office; and a Personnel Projection report that provides expenditure information to date and the projection through the end of the fiscal year. Quarterly, the Budget Team meets with each Bureau and Region Office to review the fiscal details of programs and make necessary budgetary adjustments. These monthly reports have proven to be a more effective way to monitor program activity and ensure fiscal accountability.

### **ESCROW ACCOUNT**

The Pennsylvania Game Commission requires mitigation for surface uses related to natural resource recovery. This typically takes the form of more land being transferred to the Game Commission. In addition, the agency often agrees to complicated real estate exchanges with entities. In both of these cases, there typically are many steps in terms of permitting, subdivision, title work on the property to be acquired by the Game Commission for mitigation, and other similar issues involved in land development and acquisition. The agency requires some form of security for this mitigation or exchange. Often this security is in the form of escrow accounts, a common real estate settlement tool. Persons wishing to exchange with the Game Commission will put aside money in an account which can be drawn upon under certain circumstances. Often, the Board of Game Commissioners needs to approve the purchase of a certain property through a public meeting or title work. Sometimes federal approval of an exchange is necessary. In all cases, the escrow accounts are held by a third party, chosen by the person contracting with the Game Commission, to guarantee the transfer of land to the Game Commission. Once all necessary steps for the transfer have taken place, the escrow agent will release funds to consummate the intended transfer.

Although there are restrictions, the Game Commission may look at properties for acquisition anywhere in the Commonwealth, as long as it meets certain criteria. If the Game Commission finds suitable land meeting the criteria, the agency must first receive approval from the U.S. Fish and Wildlife Services before moving forward. The land must be suitable for wildlife management and hunting access, as was the case on the original lands. The land currently may be in a forested, wooded or agricultural condition.

## **Title 34: Section 328**

### **Accountability**

**(D) Law Enforcement Accountability:** The Commission shall maintain a system to respond to citizen complaints against wildlife conservation officers and deputy wildlife conservation officers. The Commission shall release information relating to the number and nature of complaints received on at least an annual basis. The Commission may release further information related to the nature of complaints, provided that the release of such information is not prohibited or restricted by any contract, regulation, order of court or statute to the contrary.

### **Complaint Tracking System & Internal Affairs:**

Title 34 requires a system that will track citizen complaints against Wildlife Conservation Officers and Deputy Wildlife Conservation Officers. However, in the interest of providing the best service possible, the Game Commission established an Internal Affairs policy to respond to citizen complaints against any Game Commission employee or volunteer.

Due to the timing of this report it is not uncommon for a few complaints to be filed late in the calendar year. In such cases the investigation and final determination are not yet known when this report is written. For this reason the report will list both the completed year-end numbers from the previous year as well as the numbers generated preliminarily in the reporting year.

The Professional Responsibility Coordinator responded to six formal complaints during fiscal year 2012-13. A “formal complaint” infers an allegation made via a formal *Complaint Verification Form* of misconduct or unprofessional behavior by an employee or volunteer. All formal complaints are fully investigated.

The majority of complaints were of unprofessional officer demeanor, one alleged the improper use of force. After full investigation, none of the complaints were founded.