

**COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA GAME COMMISSION
HARRISBURG, PENNSYLVANIA
January 31, 2012**

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 2011 Annual Report.

The economy has made it a very challenging year for all. At the Game Commission, we have once again held 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 are increasing, without a commensurate increase in revenues. The General Assembly has not approved a license fee increase since 1998. At that time, it was anticipated that the 1998-approved license fee increase would need to be revisited in 2004. Without an increase in funding in 2004, the agency was forced to make many cuts in programs, some resulting in the elimination of services.

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. It is time to provide the support necessary for the wildlife resources of the Commonwealth.

As an appendix to this Annual Report, I also am pleased to provide, pursuant to Title 27, Section 4, Subsection 6116 (C) (6), enacted by Act 45 of 2005, the report required of the Game Commission regarding the agency's use of its portion of the \$625 million bond issue, which was approved by voters on May 17, 2005. The report provides an allocation plan detailing the projects to be funded during this round, including the amount of each project and the anticipated environmental benefit.

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

In July 2010, a Human Dimensions (HD) Specialist started in the Bureau of Information and Education. This individual is responsible for supervising the Outreach and Education Specialists, in addition to conducting relevant and timely studies, surveys and focus groups.

Two mail surveys were conducted and overseen by the HD Specialist: A survey of hunters to see how they obtain information about the Game Commission, and a survey of lapsed hunters in Pennsylvania. Additionally, the HD Specialist was responsible for a postcard mailing sent to hunters who had bought during the June to October 2009 time period, but had not yet purchased for the same time period in 2010.

Through the use of a point-of-sale license system, of which FY 2009 was the first full year of using this system, a database of hunters and trappers is continually being developed. This database can then serve to determine the retention rate of hunters and trappers, although some modifications to the questions currently asked of an individual

when purchasing a license may be needed to more accurately define a “new” versus a “lapsed” hunter, one who had bought a license before POS was in place.

The HD Specialist was also frequently consulted by the Bureau of Wildlife Management on the question wording, methodology and analysis of mail surveys conducted by that bureau. The HD Specialist was also involved in the completion of the Citizen Advisory Committee (CAC) process and attended CAC meetings in WMU 2G. After the completion of these CACs, the HD Specialist was responsible for initiating the process for a phone survey of the general population that will be conducted during FY 2011-12 by Responsive Management.

The Game Commission’s point-of-sale licensing system (PALS) is now in its third full year of automation. While there have been periodic problems with the system, PALS has provided the agency with a database of licensed hunters that proves to be invaluable. Now we know the demographics of the hunting population and can survey specific groups of hunters and use that knowledge to better manage our resources and offer maximum hunting and furtaking opportunities.

In time for the 2010 spring gobbler season a new module was added to the PALS system: Interactive Voice Recognition (IVR) harvest reporting. The IVR system makes it possible for hunters and furtakers to report their harvests over the telephone.

The IVR system mirrors the Internet based on-line harvest reporting system but provides a confirmation number as proof of reporting at the end of each report rather than a receipt page as the Internet system does. Hunters should have their license documents handy and call 1-855-PA HUNT1 (1-855-724-8681) to report harvests over the phone.

In the fall of 2010, the Game Commission surveyed by mail 7,000 licensed resident bear hunters to measure opinions about different aspects of bear management and to determine participation levels in the current bear seasons, and 2,687 surveys were ultimately returned. Seventy-one percent of respondents were satisfied with current management of bears, 19 percent were neutral and 11 percent were dissatisfied. Seventy-six percent of hunters who purchase a bear license hunt for bear almost every year.

There were 1,140 entries in the statewide human-bear conflict database during 2010. Wildlife Conservation Officers relocated 310 bears, and there were 34 bear damage claims totaling \$9,932 approved for payment. Twenty-seven bears were euthanized because of crop damage or repeated nuisance behavior.

A study investigating the movements, home range and habitat use of bears living in suburban environments was initiated in the spring of 2010. Radio collaring of bears in and around Scranton/Wilkes-Barre, State College and Johnstown resumed in April 2011 as part of the ongoing Urban Bear Study. Twenty one bears were collared this year, and 35 are now fitted with collars as the fiscal year concluded. Twenty seven additional bears had also been collared, mostly last summer, but have since died or slipped off their collar. Trapping will continue until all 50 collars are deployed.

A turkey hunter survey was mailed to 10,000 hunters (4,470 usable returns received) after the fall 2010 season to determine hunter attitudes, satisfaction and daily participation with the new season structure. Results indicated that, at least with this initial survey year, we did not substantially recruit new turkey hunters nor reactivate former fall turkey hunters. Satisfaction with and participation in the new season segment during the Thanksgiving holiday were both relatively high, but the net decrease in season length decreased overall participation. The majority of participants were satisfied with their 2010 fall turkey hunting experience. Similar to trends observed nationally, available time, higher turkey populations and places to hunt are more important factors influencing fall turkey hunting participation than season structure.

The annual Grouse and Woodcock Cooperator Survey tracks hunter effort and flush rates for 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 26 hours hunted, 33 grouse flushed, and 2.0 grouse bagged during the 2010-11 seasons. The statewide flushing rate of 1.30 flushes per hour was below both the 2009-10 rate (1.40) and the long-term (1965-2009) average 1.41. Compared with the previous year, both the Northwest and Southeast regions had increased flushing rates, while the flush rate in the Northcentral Region decreased slightly. Flush rate in the Northeast Region decreased 25 percent, while the Southwest and Southcentral rates declined by 7 and 17 percent, respectively.

The 2011 Woodcock Singing Ground Survey was conducted in cooperation with the USFWS between mid-April and early May. There was a small decrease (statistically non-significant) from 2010 in the number of singing males per route in Pennsylvania, while numbers for the Eastern Region remained the same as in 2010. Short-term (10-year) trends in woodcock populations are stable, but over the long term (1968-2011), populations have declined significantly due to decreased amounts of young forest habitat. Populations of ruffed grouse and other species that rely on this habitat type have also declined as a result of the loss of young forest habitat.

The Game Commission hosted the 2011 Woodcock Wingbee at Bald Eagle State Park in March. Participants, representing 11 state and federal agencies, classified 13,569 wings by age and sex to determine reproductive success during the 2010 breeding season. Preliminary results indicated an overall age ratio of 1.4 juveniles per adult female, which was higher than in 2009 but slightly below the long-term average. Attendees also toured and discussed the park’s woodcock and golden-winged warbler habitat management sites.

Game Commission staff prepared the final draft of the statewide beaver management plan and incorporated revisions and recommendations stemming from public comments. The beaver management plan is now complete and has been posted on the agency’s webpage. The plan provides a summary of beaver biology, habitat, past and present population management, damage management, recreational and economic values, and recommendations and research needs.

Game Commission staff also prepared the final draft bald eagle management plan and incorporated revisions and recommendations stemming from public comments. The bald eagle management plan is now complete and has been posted on the agency's website. The plan establishes management goals through 2019. The mission of this plan is to increase and maintain bald eagle populations in suitable habitat that contributes to sustaining its population throughout the Commonwealth for the foreseeable future, while providing recreational viewing opportunities for the citizens of Pennsylvania. The criteria to consider eagles recovered is a self-perpetuating nesting population of at least 150 pairs with a productivity rate of at least 1.2 eaglets per successful nest and 60 percent of known nests successful over a five-year period. This objective is expected to be reached by 2012, if the recent population trend continues. Achieving this objective will mark a dramatic success in the recovery of our nation's symbol, here in Pennsylvania. Protections and management of this species will continue under the authority of the national Bald and Golden Eagle Protection Act and other federal and state laws. The agency will continue to protect eagle nests from disturbance and also turn to more proactive, educational, and cooperative measures to advance the conservation of the species and protect it as much as the changing regulatory environment will allow. At this point, there are at least 190 active nesting pairs in the state.

Agency staff provided numerous wildlife-related presentations to the public during the year, and routinely updated the agency website to expand the availability of wildlife information.

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.

We're in our fourth 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 through out 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 and many brochures and other publications 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. The popular website is currently boasting 1,996,687 "absolute unique visitors" for the reporting year. This is the number of different people who visit the site.

The Bureau has 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 the radio market, the Game Commission entered the third year of an agreement with RadioPA to provide daily, 3-minute agency-content broadcasts branded as "Outdoors PA with the Pennsylvania Game Commission." This programming is then provided to nearly 45 radio stations that subscribe to RadioPA's service, and focuses on hunting and trapping season information, wildlife management projects, regulatory changes and interesting features on Pennsylvania wild birds and mammals.

The Game Commission 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 hunting license. Game Commission staff was on hand to provide materials/brochures and answer questions relating to wildlife conservation at those games.

Other outreach programs included: Connect with Wildlife magnets, posters, bumper stickers, orange hat with embroidered Game Commission logo and orange draw string bag, Working Together for Wildlife patches, Field Note patches, Elk Hunt patches, Mentored Youth patch with saf-t plug, Time Collectible Wild Turkey Heritage and Upland Game Bird Series, Waterfowl Management stamp and print, and Wildlife and Habitat buttons.

HUNTER-TRAPPER EDUCATION AND OUTREACH

The Hunter-Trapper Education 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 – 38,680 copies
"IHEA Hunter's Handbook" – 38,700 copies
"IHEA Hunter and Shooting Sports Education Journal" – 10,800 copies
"Today's Bowhunter" student guide - 1000
"Today's Crossbow" student guide - 20
"NBEF's 3-in-1 Responsible Hunting Guide" – 470
"Successful Furtaking" student guide – 270
Cable restraint student manuals - 295

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 908 basic Hunter-Trapper Education courses were conducted statewide during this reporting period. The total is comprised of 759 traditional multi-day courses, and 149 2-hour independent study classes. This compares to the total of 827 statewide courses during FY2009-10; 724 traditional and 103 independent study classes, and marks a nearly 10 percent increase in the number of courses.

During the calendar year 2010, a total of 35 hunting-related shooting incidents occurred, at a rate of 3.79 incidents per 100,000 license buyers. This marks a 2.9 percent increase over the previous year. The previous calendar year's 34 incidents was one of lowest on record. The total number of incidents recorded during 2010 remains below the current 10-year average of 51.1 incidents per year with a rate of 5.15 incidents per 100,000 license buyers.

A mandate to conduct a minimum of 60 more HTE classes during the months of October and November 2011 was issued by the agency's Executive Director during this reporting year. It is anticipated this addition will have a profound effect on the number of students enrolled and certified during the next reporting period.

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 joint website creation - SafeHuntingPA.Com – which featured six 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.

RECRUITMENT/RETENTION

The National Archery in the Schools Program (NASP[®]) was administered throughout the state by a volunteer under the direct guidance of NASP[®] since approximately 2005. It is preferred by NASP[®] to have the program coordinated at the state level by state wildlife agencies, and to fulfill this goal the Game Commission assumed “jurisdictional” ownership of the National Archery in the Schools Program in the summer of 2010. This coordination includes recruiting, training and certifying new physical education teachers in various school districts statewide, as well as other individual volunteers, to then conduct NASP[®] activities in their respective school districts while following established program guidelines.

Additionally, \$100,000 has been set aside to assist new schools in purchasing NASP[®] equipment kits to help get those schools started in the program. Each new school will be granted \$1,500 toward the purchase of a NASP[®] kit, which runs nearly \$3,100. The balance will then be funded by individual school districts, other grants, or from donations from local sportsmen's organizations and businesses.

On April 9, 2010, the Pennsylvania state NASP[®] tournament was held under the coordination of the Pennsylvania NASP coordinator. It is unknown how many schools participated, but approximately 300 students participated. The Game Commission hosted the 2011 PA State NASP[®] Tournament on March 11, 2011, at the Pennsylvania State

University Multi-Sport Facility. Seventeen schools and more than 400 students were registered for the event. However due to weather conditions that closed many schools for the day across the state, only 16 schools and slightly more than 300 students were able to participate.

Participation in the statewide tournament, along with certain qualifications, allowed students to participate in the 2011 National NASP[®] Tournament; three PA schools with 52 students participated in the National Tournament. Participation at the national level allows students to register for the World NASP[®] Tournament held in October of each year.

A cooperative agreement with the National Wild Turkey Federation was maintained to fund costs of conducting its Women in the Outdoors (WITO) events. Nine WITO events were held across the state, with 746 participants. To help women interested in participating in a WITO event near them, the agency launched a new Internet-based Event Manager program to find and register for these events. Using Event Manager is crucial, as it will allow for the WITO program to be evaluated as a hunter/trapper recruitment tool.

Toward the end of the 2010 Fiscal Year, work began in redesigning the Youth Field Day format into a Family Field Day concept. Additionally, to help individuals interested in participating in a Youth Field Day/Family Field Day find a event, the Event Manager program can also be used.

Significant progress was made in outlining the plan for how Family Field Day participants will be taken from Stage II (Trial Stage of the Hunting/Shooting Participation Classification System) to Stage IV (Continuation with Support). Strategies include a manual to be used by sportsmen's clubs and organizations that plan on hosting such an event. The manual will include the history of youth field days, current declining license trends, and what needs to change for Field Days to accomplish the goal of being a recruitment/retention tool for hunters and trappers. Also included will be planning documents and step-by-step directions on how to conduct hands-on outdoor-related stations, such as fishing, archery, canoeing, shotgunning, rifle and a wide variety of other activities. The utilization of video media is also planned in several capacities, as is the use of social media and marketing strategies. Of utmost importance is the built-in follow-up event to create continuing social support that is imperative to keeping new hunting/trapping participants actively involved, while improving their skills and establishing a hunting/trapping social support network.

WILDLIFE CONSERVATION EDUCATION

Conservation Education has been busy again this year. More than 2,300 educators participated in one- or two-day workshops sponsored by the Game Commission, and 82 workshops were offered throughout the state, including Project WILD, Advanced WILD, PA Songbird and PA Biodiversity workshops. During this fiscal year, a new wild advanced workshop was offered on waterfowl. During this workshop teachers were able

to learn about waterfowl and work with the waterfowl biologists to band ducks at Middle Creek Wildlife Management Area. Other advanced workshops offered this year included workshops on elk, bears, owls, endangered species, peregrine falcons, biodiversity and reading.

The Game Commission introduced Growing Up WILD, which is part of the national Project WILD program and is an environmental education curriculum supplement designed for early childhood educators. Workshops are being done throughout the state. To day, participants have included educators from early childhood centers, Head Start and environmental agencies and organizations.

The Game Commission continues to be an approved provider through ACT 48 for K-12 teachers. This year, the agency applied for and received approval to be an approved provider for early childhood credits hours, as well.

The Game Commission continues to be a member of the Environment and Ecology Advisory Council, and the K-12 Committee of the Association of Fish and Wildlife Agencies. The Game Commission now is a member of the Early Childhood Education Review Committee out of the Office of Child Development and Early Learning.

In addition to offering professional training for pre-K through 12th grade teachers, the Game Commission continued to offer the Seedlings for School program, which provides free seedlings to schools along with education resource materials. This year, 874 schools with 105,000 students participated in this program.

The Game Commission also is responsible for the wildlife section of the State Envirothon. Agency personnel staff all of the county events, as well as the state contest. This year, more than 15,000 high school students participated in the county events, and 300 students competed at the state level.

The Game Commission also awarded grants to 10 schools throughout the state through the WILD ACTION Grant program. Students and teachers at these schools work together to develop wildlife habitat on school grounds. From its inception in 1994, the WILD ACTION Grant program has provided grants to more than 225 schools and youth organizations to improve habitat for wildlife.

Game Commission personnel conducted programs for students, as they have for many years. This year, more than 100,000 youth participated in general conservation education classroom and youth programs, focusing on wildlife adaptations; wildlife and their habitats; predator/prey relationships; ecosystems and their interactions; mammals and birds of Pennsylvania; wildlife forensics; and endangered and threatened species. All programs are correlated to state education standards.

For the first time, the Game Commission presented education sessions at the Pennsylvania Science Teachers' Association conference in Hershey and at the Early

Childhood Summit held at Pennsylvania State University. More than 150 educators participated in these sessions on PA Biodiversity and Growing UP WILD.

The Game Commission, through the Harrisburg Area Community College, offered instructional courses relating to different aspects of wildlife and the outdoors through the Wildlife Conservationist Certificate Program. Other outreach programs include, billboard advertising throughout Pennsylvania and a variety of Connect with Wildlife products. Working on implementing I-phone applications that will further educate and inform the public about Game Commission sites and available activities.

WILDLIFE PROTECTION

The Bureau of Wildlife Protection continues to work toward its mission of protecting Pennsylvania's wildlife through law enforcement, seeking effective legislation and developing regulations.

House Bill 1859 passed into law as Act 54, and penalties for poaching were substantially increased. 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 passed into law as Act 60 (Interstate Wildlife Violator Compact) and was implemented January 1, 2011. To date, 2,716 violation records were received from other member states and reviewed; 505 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 offenses they committed in another member states. This includes two Pennsylvania residents who shot hunters in other states who would not previously have been on revocation in Pennsylvania. Pennsylvania submitted 150 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 effect on commercial poachers and chronic offenders.

Enhancements were made to the current deputy program to boost the number of applicants. We had 34 deputy applicants this fiscal year, which is a slight decrease from the previous fiscal year. However, 100 percent of those applicants passed their certification exam and were sworn in before the 2011 fall hunting seasons.

The investment in training of deputies and salaried officers pays direct dividends to the professionalism and technical competence of Game Commission officers as measured by our enforcement statistics. Officers encountered 18,435 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 12,246 warnings and 6,189 citations being issued. Of the violations cited, the conviction rate was 96 percent and attests not only to the discretion, but also the technical competence and professionalism of Game Commission officers. Only six complaints were received against officers this year, none of which were 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 as so unfortunately was made most evident in November 2010, when WCO David Grove was shot and killed in the line of duty by a convicted felon who had lost his right to possess a firearm.

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

1. Unlawful taking or possession of Game or Wildlife — 574 prosecutions.
2. Operating vehicles on State Game Lands in areas closed to travel, primarily ATV violations — 396 prosecutions.
3. Hunt or take wildlife through the use of bait or enticement — 340 prosecutions.
4. Possession of a loaded firearm in a stationary vehicle — 279 prosecutions.
5. Cast a light after 11 p.m. — 183 prosecutions
6. Safety Zone violations — 180 prosecutions.
7. Big game tagging violations — 178 prosecutions
8. Hunt or take wildlife through use of a motor vehicle — 177 prosecutions
9. Possession of a loaded firearm in a moving motor vehicle — 142 prosecutions
10. Unlawful use of lights while hunting — 108 prosecutions

The Turn-In-A-Poacher (TIP) Hotline program was placed online in March 2008, and continues to grow and develop each year from information provided by concerned citizens. Last fiscal year 636 calls and emails (a 38 percent increase from the prior fiscal year) were relayed to the appropriate region. The number of successful prosecutions increased, along with the number of reward payments. Twenty-four payments totaling \$6,000 were paid to people who provided information that lead to the successful prosecutions of specific charges.

A computer aided dispatch center (CAD) has been purchased and the pilot project went live in the fall of 2011. The full implementation of the CAD system will provide more detailed incident data.

This past year, following the lead of the Bureau of Wildlife Protection and the Executive Office, the agency embarked on a project to implement a Computer Aided Dispatch (CAD) system. The CAD system will provide automated dispatching capabilities for our network of regionally based dispatchers, promoting efficiency in the disposition of incidents and providing additional officer safety.

HABITAT ENHANCEMENTS

Providing hunting and furtaking opportunity are among State Game Lands mandates. During the year, 4,279 miles of roads were maintained for hunter and habitat management access; 10,560 parking lots were maintained; 78 bridges repaired; 83 culverts replaced; and 313 miles of trails maintained.

During the year, 2,012 acres were added to the State Game Lands system, bringing it to 1,450,754 acres. These are comprised of 305 tracts, with at least one tract in all but two counties (Philadelphia and Delaware counties).

Last year, to help users better understand the agency's habitat management work, 5,000 signs were posted on various State Game Lands highlighting food plots, prescribed fire treatments, deer fence enclosures and other management practices evident on the particular State Game Lands.

Five demonstration areas were identified or established on State Game Lands for the Appalachian Mountains Woodcock Initiative. These areas are providing examples of best management practices for American woodcock, a species of greatest conservation need in our Wildlife Action Plan.

Act 138 of 2002 amended the Game Code sections relating to mandatory spending. The Game Code stipulates that a minimum of \$4.25 from each resident and nonresident license and a minimum of \$2 from each antlerless deer license issued for which the full fee has been paid is to be used for habitat improvement, development, maintenance, protection and restoration conducive to increasing natural propagation of game and wildlife on all lands under the control or operations of the Commission, including lands enrolled in the Commission's public access programs and other public lands open to hunting under agreement with the Commission. The monies collected for the above are deposited into a separate account. The number of resident and nonresident licenses sold during the 2010-11 fiscal year, as reported by the Game Commission, totaled 818,557. Antlerless deer licenses sold during the 2010-11 fiscal year, as reported by the Game Commission, totaled 798,568. This mandated that a minimum of \$5,076,003 be expended for the above-mentioned purposes. The actual amount expended and committed in the restricted account during the fiscal year for these purposes was \$6,700,000, an excess of \$1,623,997 over the requirement.

The Howard Nursery produced and distributed 2,060,525 tree and shrub seedlings for wildlife food and cover plantings, and 484,450 of the seedlings distributed were sold for \$105,095.52. For the Seedling for Schools program, 163,950 seedlings, in 1,010 orders to 783 schools were provided, along with teacher resource packets and student activity pages. The nursery wood shop produced 22,136 wood products which included: 4,417 bluebird boxes; 10,282 bluebird box kits; 373 wood duck boxes and kits; 97 bat houses; 137 custom signs; 84 boundary line signs; and 139 bulletin boards and 3,575 sign backboards for use on Game Lands and cooperative access properties. Wood products are available for purchase on the agency's website.

The primary responsibility of the Game Commission six region wildlife diversity biologists is the habitat-based Private Landowner Assistance Program (PLAP). During 2010-11 fiscal year, regional diversity biologists prepared 119 plans for 12,759 acres. Since program inception in 2004, more than 930 plans have been produced for more than 140,680 privately owned acres. Regional diversity biologists also contribute to comprehensive planning for the state's more than 1.4 million acres of State Game Lands.

Since the creation of the Game Commission's Wind Energy Voluntary Cooperative Agreement, 30 wind development companies have become cooperators thus agreeing to avoid, minimize and potentially mitigate any adverse impacts the development of wind energy on private lands may have on the state's wildlife resources.

With the stabilization of more balanced deer populations, positive impacts are being noted in forest habitats. The agency is actively removing deer enclosure fencing in areas where habitats have successfully regenerated. In the 2010 fiscal year, 1,143 acres of fencing were removed, while only 979 acres of fence were constructed.

The agency's Public Access programs continue to provide hunting opportunity on private lands. This year, 14,508 Public Access cooperators allowed hunting access to 2,707,323 acres of private land.

Considerable wildlife habitat was improved on private lands via Farm Bill Programs. This included 216 CREP plans which added 2,435 acres to the program, brings the PA CREP and CRP total since 2000 to 206,921 acres, making Pennsylvania a leader in the program. An additional 142 landowners offered to enroll 4,395 acres in conservation cover through the Wildlife Habitat Incentives Program (WHIP) and Environmental Quality Incentives Program (EQIP – Forestry).

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 2009-2010. 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 Pennsylvania'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 Pennsylvania Game Commission is responsible for sustainably managing all of Pennsylvania's wild birds and wild mammals. Of the 480 species of wild birds and wild mammals in Pennsylvania, primary attention is necessarily limited to select game species and our most imperiled species due to funding sources and limitations.

The 2010-11 Game Take and Furtaker surveys were completed in the spring of 2011. 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 3 decades so that important long term trend information is available. As an example of the type of information available, in 2010-11 hunting seasons there were 19,160 duck hunters and 71,618 woodchuck hunters. They hunted 102,579 and 747,656 days respectively, and harvested 71,766 ducks and 684,927 woodchucks. In 1990, there were 28,443 duck hunters and 123,204 woodchuck hunters, who hunted 141,441 and 1,228,548 days, respectively, and harvested 98,026 ducks and 1,299,647 woodchucks. For those interested in additional participation and harvest information, you can view a detailed annual report Game Commission's website (www.pgc.state.pa.us).

Through the Game Take Survey, we also measure participation in youth hunts. In 2010 hunting seasons, 10,343 junior hunting license buyers participated in youth hunts. Participation by youth hunt was 800 in the youth waterfowl season, 7,850 in the youth squirrel season, 5,048 in the youth pheasant season, 8,096 in the youth spring turkey

season and 4,371 in the youth rabbit season. Youth hunt participants harvested 554 ducks, 185 geese, 22,625 squirrels, 4,617 pheasants, 1,478 spring turkeys and 5,325 rabbits.

During the last year, white-tailed deer research activities focused on deer survival and harvest rates in Wildlife Management Units (WMUs) 2D, 2G, 3C, and 4B. In these four WMUs, we are investigating the effect of shortening the concurrent antlered and antlerless firearms season from 12 days to 7 days. From June 2010 to May 2011, we recorded 76 mortalities of radio-collared deer. Hunting accounted for 75% of mortalities. Other mortality factors included deer-vehicle collisions, poaching, natural causes, and capture-related deaths. An additional 701 deer in these four WMUs were captured and ear-tagged from January to April 2011. Some of these deer also were fitted with radio-collars. At the end of 2011 trapping season, over 180 radio-collared deer were being monitored on the four study areas. This research is being conducted in cooperation with the Pennsylvania Cooperative Fish and Wildlife Research Unit (PCFWRU) at Penn State.

We continued to work on revising components of the deer management program based on completed research and the Wildlife Management Institute (WMI) evaluation and review. Changes to the Pennsylvania Sex/Age/Kill (PA SAK) model occurred based on research findings from a cooperative study with the PCFWRU at Penn State University and the WMI report. We also replaced embryos per female with proportion of fawns in the antlerless harvest to assess deer population productivity.

During the 2010-11 season, 33 Game Commission deer aging teams were deployed for 7 days to collect sex, age, and kill (SAK) data from a sample of harvested deer. SAK data were used to estimate deer harvests from the 2010-11 hunting seasons. Based on hunter harvest reports and SAK data, hunters harvested 316,240 deer. The antlered harvest was 122,930, an increase of 13% from the 2009-10 harvest of 108,330. Antlered deer harvests increased by 20% or more in WMUs 2C, 2F, 2G, 3D, 4C, 4D and 5C. Also, hunters harvested 193,310 antlerless deer in 2010-11, which was a decrease of 4% from the 200,590 antlerless deer taken in 2009-10. The decrease in the antlerless harvest reflects the reduction in the number of antlerless deer licenses allocated for the 2010-11 seasons, as well as the shortened antlerless deer rifle hunting season in eight WMUs. Results of this year's deer harvest will be incorporated into deer population trend assessments following standard procedures and evaluation techniques.

We completed revisions of the Deer Management Assistance Program (DMAP) applications including detailed management plan requirements for public land owners and those under the minimum acreage thresholds. DMAP was developed to provide both public and private landowners a tool to better control deer numbers on their properties through hunting. For 2010-11, the Commission approved 870 applications, which was lower than the 920 in 2009. Enrolled acres changed little from 1,650,783 in 2009 to 1,658,732 in 2010. Number of coupons requested and approved decreased from 33,642 in 2009 to 27,588 in 2010. Hunters redeemed 23,736 DMAP coupons. While all DMAP harvest permit holders are required to submit a report card, only 54% reported. DMAP harvest was 4,423 antlerless deer.

A number of deer-related hunter surveys were completed during the fiscal year. We sent daily hunting diaries to nearly 2,400 hunters in WMUs 2D, 2G, 3C, AND 4B prior to the 2010 firearms season. These hunting diaries are being used to monitor hunter activities, success, and satisfaction in these 4 WMUs. In these 4 WMUs, the firearms season was changed from a 12-day antlered and antlerless concurrent season to a 5-day antlered only season followed by a 7-day antlered and antlerless concurrent season beginning in 2008. We also surveyed to assess hunter behaviors and attitudes regarding reporting their deer harvests.

Over 100 elk were radio tracked throughout the year to evaluate survival, distribution, and movements across the range in northcentral PA. Game Commission researchers captured and radio-instrumented additional elk between January and March 2011 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 2011 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 752 elk were counted during the MNA count, which included 418 adult cows, 153 calves, 128 branched bulls, and 53 spikes. In our continuing efforts to assess elk recruitment, 20 newborn calves were captured in the spring of 2010.

Elk hunting seasons were held from September to November 2010 with a total of 51 elk licenses (18 antlered, 33 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. Samples were collected from hunter-killed elk to allow surveillance for brucellosis, tuberculosis and CWD. No evidence of these diseases was detected. In total 51 hunters participated in the elk seasons, resulting in 41 harvested elk (18 antlered and 23 antlerless). Work continues on an updated elk management plan. Following section reviews and revisions, a draft will be circulated within the agency for review in FY 11.

Game Take Survey estimates indicated that 91,003 hunters took 66,385 ruffed grouse in Pennsylvania during the 2010-11 season. The estimated number of hunters and the estimated harvest both decreased by 13% from 2009-10.

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 recommendations for consideration by the U. S. Fish and Wildlife Service (USFWS). Changes for the 2010-11 waterfowl season frameworks included increasing the daily bag limit on pintails to 2 for the full 60 day duck season, and increasing the daily bag limit on snow geese to 25 in both the regular and conservation seasons. The annual Waterfowl Symposium was held August 6 at Haldeman Island to obtain input from the public and hunting organizations on waterfowl season proposals for 2010-11. Based on this input, waterfowl season selections for Pennsylvania 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 constituent requests to shift the dates of the duck season in the Northwest Zone to keep this season open during the rifle deer season, and to extend the season ending date of the snow goose conservation season.

Estimates of active duck and goose hunters in Pennsylvania from the federal Harvest Information Program (HIP) were 23,200 and 28,100, respectively; these numbers remain the highest in the Atlantic Flyway but were down 20% and 26%, respectively, from long-term averages. The HIP estimate of total Pennsylvania duck harvest for 2010-11 was 114,200, about 30% below the long term average (LTA). The top 5 duck species harvested were mallard (50,700), wood duck (31,800), black duck (7,400), green-winged teal (5,100), and common merganser (4,100). Harvests were below average for most species. The HIP harvest estimate for Canada goose harvest in Pennsylvania for 2010-11 was 155,700, 16% below average. Pennsylvania ranked second among Atlantic Flyway states for total Canada goose harvest. A snow goose conservation season was again held (February 21 – April 16, 2011, following the close of other waterfowl seasons) in an attempt to increase harvest of this overabundant species. There were 3,401 permits issued, but only 1,302 individuals returned the mandatory harvest survey. Of these, 900 individuals indicated they had hunted during the conservation season, with a total retrieved harvest of 5,197 geese (up 74% from the 2010 conservation season). The additional hunting methods of extended hours and electronic calls accounted for 8% and 36%, respectively, of the harvest.

Overall snow goose harvest in Pennsylvania (regular and conservation seasons combined) was 7,400, 42% below the combined regular and conservation seasons average harvest for the previous 2 years. The reduced harvest was due to extensive snow cover during the regular season period, and relatively low numbers of juvenile snow geese in the fall/winter population due to poor gosling recruitment on the Arctic breeding areas in 2010.

Representative samples of waterfowl are banded annually in Pennsylvania as part of the cooperative Atlantic Flyway 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 banding efforts included preseason duck banding, winter black duck banding, and June resident Canada goose banding.

Preseason (August and September 2010) duck bandings occurred at 15 sites statewide, in 4 of the 6 Game Commission regions. A total of 3,113 ducks were banded. Total bandings were 21% below the long-term (1989-2009) average (LTA). As usual, mallards made up the largest proportion of the total with 2,227 individuals banded; this was 19% below the long-term average, but all mallard banding quotas were attained. Mallard productivity of 5.51 juveniles per adult female was 31% above the LTA of 4.21. Wood duck bandings were down 27% from average with 776 banded in 2010. We surpassed the banding quotas for juvenile wood ducks, but did not reach the quota for adults (77% of quota banded). The wood duck age ratio of 3.50 juveniles per adult female was 22%

below the average of 4.44. Only 31 American black ducks were banded. This was 50% below average. The number of black ducks banded pre-season in Pennsylvania has been declining since the mid-1990s and the current level is well below flyway quotas (2010 quota attainment was 30% for adults and 32% for juveniles). In 2010, the Game Commission was again awarded a grant from the Black Duck Joint Venture Northeast States Black Duck Banding Project Fund to support efforts to increase black duck bandings. These funds were directed to the post-season black duck banding effort described below, rather than pre-season banding efforts in northeastern Pennsylvania as in previous years. In addition to the 3 major species to which pre-season banding efforts are targeted, we also banded 49 blue-winged teal, 17 American green-winged teal, 10 mallard/black duck hybrids, 2 northern pintails, and 2 hooded mergansers.

Atlantic Flyway 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 2011 marked the second year of this project. Banding occurred primarily in the Northwest and Southeast regions and we banded a total of 201 black ducks (25% more than in 2010), as well as 342 mallards, 37 mallard and black duck hybrids, 5 American wigeons, 2 ring-necked ducks, 2 northern pintails, 1 redhead, and 1 canvasback. Although pre-season (summer) duck banding remains our best way to achieve needed sample sizes for mallards and wood ducks, we capture relatively few (20-30) 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 in the Atlantic Flyway. Winter black duck banding will continue through 2014.

During June 2011, 2,797 resident Canada geese were banded at 43 locations in 21 counties. This total was similar to 2010 and exceeded the state quota (2,557) by 9%. The use of multiple goose banding crews has achieved aggregate banding quotas over the 2002-2011 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 was near the 1991-2010 average in 2011.

During FY 2010, there were 3,541 waterfowl band recoveries in Pennsylvania, representing 19 different species originating from 33 different states, provinces and territories. Of all recoveries, 76% were banded in Pennsylvania, 6% in Nunavut, 6% in Quebec, 4% in New York and 3% in Ontario. Among major species, 84% of 758 mallard recoveries, 32% of 41 American black duck recoveries, 86% of 243 wood duck recoveries, and 80% of 2,175 Canada goose recoveries were Pennsylvania banded, whereas 85% and 15% of 224 snow goose recoveries were from Nunavut and Quebec, respectively. Band recovery distribution and derivation tables and maps as well as recovery and survival rates of Pennsylvania banded waterfowl are continually monitored to ensure hunting seasons are consistent with population status.

Summaries of waterfowl band recovery distributions, derivations, band recovery rates, harvest rates, survival rates and harvest by counties for major waterfowl species were summarized into the Pennsylvania Waterfowl Data document and published in July 2010.

This information has been shared with agency staff, waterfowl groups, individuals and outdoor writers to disseminate to the public.

Additional activities related to banding program management included adding all current Game Commission banders onto the agency permit as sub-permittees in anticipation of upcoming changes to BBL banding permit procedures and classifications, and updating the Game Commission migratory bird banding database software to Bandit 3.0 as required by the BBL.

The Atlantic Flyway Midwinter Waterfowl Survey (MWS) provides information about waterfowl populations and distribution in this portion of their annual cycle. Although breeding ground surveys have become the primary source of population status information used in setting most waterfowl hunting regulations, MWS results still guide harvest management for some species, including tundra swans and Atlantic brant. MWS data is also important in assessing progress towards species population goals set forth in the North American Waterfowl Management Plan, and is useful for documenting long-term shifts in the spatial distribution of wintering waterfowl, assessing the locations and status of key wintering habitats, and various other applications. We conducted the annual MWS in early January and provided data to U.S. Fish and Wildlife Service (USFWS) for inclusion in the Atlantic Flyway database. Unfortunately some data was lost this year due to computer problems during our aerial surveys. In those portions of the survey successfully completed, a total of 47,325 waterfowl were recorded, including 3,645 dabbling ducks (mostly mallards and black ducks), 876 diving ducks, 229 mergansers, 41,856 geese (99% of which were Canada geese), and 337 swans (94% tundra swans and 6% mute swans). The overall total was 14% lower than the 2010 total, and 36% below the 2001-2010 average. The significance of data loss varied by species and location. Totals for mergansers and for Zone 2 (Susquehanna River) were reduced dramatically. Counts for Canada geese, mallards, and black ducks, and overall numbers for Zones 1 (northwestern Pennsylvania) and 3 (southeastern Pennsylvania) were moderately reduced. Snow goose and tundra swan totals were affected only minimally, if at all.

The Pennsylvania portion of the 2011 cooperative Atlantic Flyway Breeding Waterfowl Survey was completed between 15 April and 5 May. The objective of the survey, which has been conducted since 1989, is to provide breeding waterfowl population estimates for the portion of the Atlantic Flyway from Virginia to New Hampshire. Population estimates are utilized in the Atlantic Flyway Adaptive Harvest Management process to determine waterfowl hunting season frameworks.

The number of mallard breeding pairs (61,790) was 35% below the average of 94,530 pairs (statistically significant) and the lowest estimate recorded since initiation of this survey. There is also evidence of declining trends in other indices of statewide mallard abundance (e.g., the North American Breeding Bird Survey, 2nd Pennsylvania Breeding Bird Atlas, and the number of pre-season-banded mallards). A decline in mallard abundance was expected following liberalized hunting frameworks adopted in 1996 through Adaptive Harvest Management. Managers originally expected this trend to stabilize, but recent analyses suggest declines may continue if not addressed through

reductions in mallard harvest rates. Southwestern Pennsylvania had the highest density of breeding mallards (0.90 pairs/km²), followed by northeastern Pennsylvania (0.87 pairs/km²). American black ducks were observed on two survey plots in northeastern Pennsylvania resulting in a statewide estimate of 426 pairs. Black ducks have been observed at very low densities since this survey was initiated. There were 51,787 wood duck breeding pairs, which was statistically similar to the average of 51,668 pairs. Long-term trends from this survey indicate stable to slightly increasing wood duck populations. Wood duck densities were highest in northwestern, northeastern, and southwestern Pennsylvania with 0.94, 0.93, and 0.85 pairs/km², respectively. The estimates of total blue-winged teal (2,970) and American green-winged teal (3,869) were slightly below average in 2011. 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 Pennsylvania. Estimates of total hooded mergansers (4,646) and common mergansers (25,100) were above average in the 2011 survey. Both breeding merganser species show increasing trends since 1993. We expect that duck recruitment will be below average this year due to nest losses from the extremely wet spring weather.

The 2011 estimate for breeding pairs of Canada geese in Pennsylvania was 100,802, which is similar to average (91,543). Pairs were most abundant in the southeast (1.73 pairs/km²) and southwest (1.7 pairs/km²). The 2011 total population estimate of 245,601 was statistically similar to the recent 8-year average of 274,298 geese. As expected, the highest densities of total geese were observed in southeastern (5.0 geese/km²) and northwestern (3.99 geese/km²) portions of Pennsylvania. The commonwealth's resident Canada goose spring breeding population appears to have stabilized around 250,000 birds following the rapid growth observed during the 1990's. This is a result of significant expansion of hunting seasons and other lethal and non-lethal programs implemented to control Canada goose numbers. Although this population no longer appears to be increasing, it remains well above the Resident Population management plan goal of 150,000 birds in the spring population.

Bi-weekly ground counts of Canada geese at Pymatuning Wildlife Management Area and surrounding areas were conducted during the fall and winter periods, and concluded for the year in late February. Estimated populations for each period in 2010-11 were similar to the 1993-2010 long term averages. Surveys of the resident Canada goose population were also conducted at Presque Isle State Park; numbers increased from approximately 100 in April to over 300 in June due to an influx of molt migrating geese.

Two staff members participated in the annual USFWS Atlantic Flyway Waterfowl Wingbee in Laurel, Maryland. At the Wingbee, federal and state personnel examine some 20,000 duck wings and goose tails to determine the composition of the previous hunting season's harvest in terms of species, age, sex, geographical location, and temporal distribution. This data is used for a variety of waterfowl management applications. We also gained additional training on new techniques and criteria for determination of waterfowl species, age, and sex.

We are continuing to use satellite telemetry to monitor male lesser scaup captured at Presque Isle Bay during the spring 2010 staging period. The objective of this project is to augment existing knowledge of migration patterns and habitat use of scaup passing through the Great Lakes region, and thereby improve the ability of waterfowl managers to monitor and conserve this declining duck species. As of June 2011, 8 of 10 scaup marked in this project have died. Causes of death for most of these birds are unknown, but one was harvested by a hunter in North Carolina during January 2011. For those birds tracked through complete annual cycles, breeding locations have been spread across eastern Canada (Manitoba, Ontario, Quebec, and Labrador), with subsequent wintering locations including eastern Michigan, Long Island (New York), and the Outer Banks of North Carolina, with a variety of spring and fall staging areas identified between these sites. Locations of the 10 marked birds have been updated weekly on the *Scaup Tracker* online mapping program since April, 2010, and will continue to be tracked for the 2 remaining birds until transmissions stop (<http://www.bsc-eoc.org/favicon.ico>).

The USFWS HIP estimated that 19,900 mourning dove hunters in Pennsylvania took 226,500 doves during the 2010-11 season. This was a 10% increase in the number of hunters and a 20% increase in doves bagged compared to 2009-10.

Mourning dove population trends are assessed annually by the Call Count Survey (CCS). The CCS was conducted in cooperation with the USFWS in late May. The two year trends showed non-significant decreases in the numbers of doves heard and seen per route at both state and Eastern Management Unit (EMU) levels. Over the long term (since 1966), the number of doves *heard* per CCS route has been statistically stable for Pennsylvania, 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, have significantly increased over the past 46 years and are stable to increasing over the past 10 years for both Pennsylvania and the EMU.

In 2011, the USFWS implemented a multistate research project to evaluate and improve the CCS. Wildlife management staff coordinated and completed fieldwork for the Pennsylvania portion of this project, which included a more intensive protocol (longer observation period, use of off-road points, measurement of distances and angles to doves observed) on 3 additional surveys between mid-April and early June, 2011, for 6 of our standard survey routes. Results were provided to the USFWS project coordinator for analysis.

Additional demographic data needed for effective dove harvest management is obtained through a cooperative banding effort involving state and federal agencies. Banding quotas are in place for adult and juvenile doves in each of 3 Bird Conservation Regions (BCRs) in Pennsylvania. During July and August 2010, a total of 939 doves (328 adults, 570 juveniles, and 41 unknown age) were banded at 29 locations representing 17 of the 22 WMUs statewide. Quotas were met for each age class in all 3 BCRs. During the fiscal year we also reviewed and provided comments on a bander training video being developed by USFWS for use by wildlife agencies nationwide.

USFWS HIP estimates indicate that Pennsylvania continues to have the most woodcock hunters (9,000) of the 17 states in the Eastern Management Region. Woodcock harvest at the state level was 12,800 birds, up 27% from 2009. Participants in Pennsylvania's woodcock cooperator survey recorded a statewide flushing rate of 1.0 flushes per hour, similar to the 2009 rate of 1.01 and well below the long-term average (1.45).

The 2011 woodcock Singing Ground Survey was conducted in cooperation with the USFWS between mid-April and early May. There was a small decrease (statistically non-significant) from 2010 in the number of singing males per route in Pennsylvania, while numbers for the Eastern Region remained the same as in 2010. Short-term (10-year) trends in woodcock populations are stable, but over the long term (1968-2011), 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 as a result of the loss of young forest.

In light of these habitat and population trends, increasing the amount of young forest habitat on Pennsylvania's landscape is a central objective in the statewide woodcock management plan. Much of the activity in support of this objective is being accomplished as part of the cooperative Appalachian Mountain Woodcock Initiative (AMWI), coordinated by the Wildlife Management Institute. During the fiscal year, new habitat demonstration areas were established on State Game Lands, State Forests, and State Parks. Extensive information on the AMWI, including a full-color document detailing best management practices for woodcock habitat, is available at the website www.timberdoodle.org. Additional efforts to increase woodcock habitat included providing site review and assistance with management plan development for woodcock management areas on the Susquehannock State Forest (2,000 acres) and private lands in Centre County (900 acres). Staff from various Game Commission bureaus and regions also collaborated to implement additional early-successional habitat projects to benefit various species.

Singing male woodcock surveys are conducted at many of these habitat demonstration areas and other Game Commission long-term monitoring sites. These surveys are intended to evaluate local-level response to habitat improvement, separate from the USFWS Woodcock Singing Ground Survey routes used to monitor overall woodcock population trends. Where possible, data is being collected prior to habitat treatments to provide baseline information for assessing treatment effects in future years. Game Commission staff and volunteers conducted surveys in 19 locations (approximately 50 routes) between 15 April and 5 May. Additional monitoring efforts to document population responses to habitat treatments continue to be implemented. With the number of such projects, and interest in incorporating other species (e.g. grouse, golden-winged warblers) increasing, there is a need to develop more formalized monitoring protocols to ensure that this data is being collected and used appropriately and efficiently. We expect to initiate discussions and development of such a framework in FY 11, with implementation in spring 2012 if possible.

The Game Commission hosted the 2011 Woodcock Wingbee at Bald Eagle State Park in March. Participants, representing 11 state and federal agencies, classified 13,569 wings by age and sex to determine reproductive success during the 2010 breeding season. Preliminary results indicated an overall age ratio of 1.4 juveniles per adult female, which was higher than in 2009 but slightly below the long-term average. Attendees also toured and discussed the park's woodcock and golden-winged warbler habitat management sites.

Data from the summer 2010 grouse sighting survey conducted by 39 Game Commission foresters and surveyors was compiled and used in making a season forecast. Numbers of broods and total grouse seen per observer day were up about 25% compared to 2009, and slightly above long-term averages. The early spring and relatively warm, dry summer were probably favorable for nest success and brood survival. There is a strong correlation between trends in summer survey numbers and fall flush rates, so our season forecast was for above average grouse hunting in the 2010-2011 season.

Game Take Survey estimates indicated that 91,003 hunters harvested 66,385 ruffed grouse in Pennsylvania during the 2010-11 season. The estimated number of hunters and the estimated harvest both decreased by 13% from 2009-10. Number of days afield per hunter decreased 21%, but harvest per hunter day increased 5%.

The annual Grouse and Woodcock Cooperator Survey tracks hunter effort and flush rates for 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 26 hours hunted, 33 grouse flushed, and 2.0 grouse bagged during the 2010-2011 hunting season. The statewide flushing rate of 1.30 flushes per hour was below both the 2009-10 rate (1.40) and the long-term (1965-2009) average (1.41). Compared with the previous year, both the northwest and southeast regions had increased flushing rates, while the flush rate in the northcentral region decreased slightly. Flush rate in the northeast region declined most dramatically, with a 25% decrease from last year's rate, while the southwest and southcentral rates declined by 7% and 17%, respectively.

Ten spring flushing surveys for grouse were conducted at the Barrens study area (SGL 176) between 20 March and 4 April. There were 0.22 flushes per mile in the treated area (decrease from 0.36 flushes per mile in 2010) and 0.15 flushes per mile in the control area (increase from 0.10 flushes per mile in 2010). By comparison, from 2004-08 (last 5 years before the hunting closure was lifted) spring flush rates averaged 0.37 per mile in the treated area and 0.15 per mile in the control area.

Grouse drumming surveys were conducted on select SGLs to monitor population response to habitat management. We tabulated results of drumming surveys at existing management areas on SGLs 41 and 266, and initiated a drumming survey on SGL 73 to obtain a pre-treatment index prior to upcoming habitat improvements.

We completed revisions to the draft Ruffed Grouse Management Plan based on internal comments. We presented the preliminary plan at the Board of Commissioners' June meeting and it was posted on the agency website for a 60-day public comment period.

As FY10 closed we completed the 5th successful year of the 10-year (2006 – 2015) wild turkey management plan. Three strategies have been completed (spring season fluorescent orange requirements were changed in 2008; in 2009 the two-bird spring bag limit was determined to have no effect on the turkey age structure; in 2010 the 4-year tri-state gobbler study was completed). Of the remaining 44 strategies, 32 strategies are in progress, 23 of which are ongoing and on schedule. Three are in progress and on schedule and 6 are in progress but behind schedule. Of the 12 strategies not in progress, 4 are future strategies, 2 were postponed until PALS licensing, 1 was postponed until completion of the gobbler study and 5 are postponed due to personnel time commitments and low priorities. Partnerships (monetary and personnel) have become an important aspect of accomplishing the plan on schedule, particularly via support from the Pennsylvania Chapter of the National Wild Turkey Federation (PANWTF), the National Wild Turkey Federation (NWTF) and Pittman-Robertson 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, depending on WMU. The Board of Commissioners approved significant changes to fall 2010 turkey hunting seasons. Fall seasons in WMUs 5C and 5D (previously 4 days in length) were closed to reverse current downward population trends. In WMU 5A, after 7 years of a closed fall season, the Board approved a conservative 3-day (Tuesday – Thursday) hunt because the population has stabilized at a level sufficient to support harvest. In an effort to separate part of the turkey and archery deer seasons and avoid a conflict with a change in the black bear season, the Board approved fall seasons in most other WMUs that opened later than in previous years and ended the Friday before Thanksgiving (the day prior to the new opening day of bear season). However, due to this reduction in season length and in an effort to reverse the trend of declining fall turkey hunting participation the Board also approved an additional 3-day season on Thanksgiving Day and the 2 days following for WMUs 1A, 1B, 2A, 2B, 2C, 2D, 2E, 2F, 2G, 3A, 3B, 3C, 3D, 4A, 4B, 4C, 4D and 4E.

The final fall 2010 harvest was 15,884, 24% lower than the 2009 harvest and 33% below the previous 3-year average. Harvest density (0.31 turkeys harvested per square mile) was 42% below the previous 3-year average (0.53 turkeys/mi²), the lowest level since prior to 1995, and the 7th consecutive year with an average below 0.60 turkeys/mi². Even though the number of fall turkey hunters increased slightly (4%) from 2009 (163,433 and 156,752, respectively), days hunted (457,435) decreased 14% from 2009 (529,427). Hunter success in 2010 (10%) was 27% below 2009 (13%), and 35% below the previous 3-year average of 15%. Hunter success has been as high as 21% (2001, a year with excellent recruitment), and as low as 4% (1979). Shorter seasons, below average recruitment and substantial mast crops (which tend to disperse flocks and make them more difficult to locate) accounted for the decreased harvest and hunter success. A turkey hunter survey was mailed to 10,000 hunters (4,470 usable returns received) after the fall

2010 season to determine hunter attitudes, satisfaction and daily participation with the new season structure. Results indicated that, at least with this initial survey year, we did not substantially recruit new turkey hunters nor reactivate former fall turkey hunters. Satisfaction with and participation in the new season segment during the Thanksgiving holiday were both relatively high, but the net decrease in season length decreased overall participation. The majority of participants were satisfied with their 2010 fall turkey hunting experience. Similar to trends observed nationally, available time, higher turkey populations and places to hunt are more important factors influencing fall turkey hunting participation than season structure.

The Board approved extending the spring season to May 31, to provide additional hunting recreation without impacting the resource because with most hens in the later stages of nest incubation, disturbance of hens in late May is minimal. In 2010 this extra day accounted for 4% of the total statewide harvest. The ½ day youth hunt on the Saturday prior to the regular season accounted for 8% of the total statewide harvest, demonstrating the importance of this youth opportunity.

The final 2010 spring harvest of 33,849 (31,908 initial harvests + 1,941 second harvests from hunters who purchase an additional license) was 24% below the 2009 harvest of 44,639 (42,478 initial + 2,161 second), and 18% below the previous 3-year average (41,149). In 2010 we sold 13,599 second licenses, a 55% increase from the previous average. The increase most likely is due to the computerized Point-Of-Sale Licensing System allowing sales from July 1 until the spring season opens. Previously, license sales were limited to January 1 – April 1. The final spring 2010 harvest density was 0.79 turkeys/mi², as compared to 0.93 for 2009 and 0.87 for the previous 3-year average. The below average recruitment in 2009 may have accounted for the decreased harvest. Juvenile males (jakes) comprised only 10% of the spring 2010 harvest, half the average and the lowest level recorded.

Similar to fall, the number of spring turkey hunters, 237,037, also increased, from 228,903 in 2009, and was 6% higher than the previous 3-year average of 223,074. Hunter success, however, was lower (14%) than the previous 3-year average (18%). Highest hunter success was in 2001 at 21%.

Turkey surveys include the annual statewide WCO turkey summer sighting survey, Michaux State Forest weekly turkey survey, and the eastern oak mast survey being coordinated by the Virginia Department of Game and Inland Fisheries. The 2010 summer sighting index from the statewide WCO survey was 10% below the previous 5-year average and the number of poults per hen was 2.16, down from 2.21 in 2009 and 2.56 in 2008. The below average recruitment in 2010 may be indicative of density dependence factors rather than weather related. In Michaux State Forest, 2010 recruitment was also below average, but overall populations were 3 times greater than prior to the fall season closure, supporting the reinstatement of a conservative fall season in WMU 5A for 2010. The eastern oak mast survey documented excellent acorn crops for the red oak group and above average acorn crops for the white oak group in 2010.

Results of the tri-state (New York, Ohio, Pennsylvania) gobbler harvest rate study, 2006-09, were accepted for publication into the *Journal of Wildlife Management*. We used leg band recovery models to estimate survival rates, and assess how harvest rates may be related to management strategies and landscape characteristics. We banded 3,266 male wild turkeys throughout the 3 states. The proportion of forest within 6.5 km of the capture location was negatively related to harvest rates, corresponding to differences in harvest rates of 2-5%. Spring harvest rates were lower for juveniles (17-27%) than adult males (30-41% and, in turn, annual survival was approximately twice as high for juveniles as for adults. Because of the higher adult male harvest rate, the proportion of adult males in the population was less than in the harvest and was approximately 0.40 in PA. The high harvest rates observed for adults may be offset by greater recruitment of juveniles into the adult age class the following year, such that these states can sustain high harvest rates yet maintain a relative high proportion of adult males in the harvest and population. This study was conducted in cooperation with the Pennsylvania Cooperative Fish and Wildlife Research Unit (PCFWRU), the NWTF, and the PANWTF.

The second year of a hen harvest and survival rate study is underway. Knowledge of fall harvest rates and annual survival rates will help us develop a more systematic and transparent process for determining fall turkey hunting season recommendations, which will allow for more explicit incorporation of uncertainty (spring weather, reproduction) into decision making and help us address the competing objectives of optimizing hunting recreation and turkey abundance. During fall 2010 and winter 2011, 425 female and 137 male turkeys were leg-banded, including 88 hens also marked with satellite transmitters. Total marked turkeys to date are 725 females (119 of these also received satellite transmitters) and 186 males. As of early June 2011, we were monitoring 33 transmitted hens. The highest mortality rates have occurred during the nesting season (primarily from predation).

Work is progressing with the regional population model that was developed for the eastern wild turkey to determine how it performs with Pennsylvania data. The intent is to have a robust model to predict wild turkey populations into the future. We have been running simulations using historic data to determine how changes to input variables affect the model outcome so that we can eventually create several models to show future harvest and population trends given different scenarios of hunting seasons, productivity and weather factors. Data from the gobbler study and ongoing hen study are important inputs into the model.

Staff biologists attended the annual 2010 meeting of the Northeast Upland Game Bird Technical Committee to participate in discussions of regional research and charges from the Northeast Wildlife Administrators. Four staff biologists attended the 10th National Wild Turkey Symposium and the wild turkey biologist presented results of the 2008 Pennsylvania turkey hunter survey, which will be published in the peer-reviewed *Proceedings* journal.

The Ring-necked Pheasant Management Plan for Pennsylvania 2008-2017, approved by the Game Commission in 2009, is being used to guide pheasant recovery efforts in

Pennsylvania. The Plan has a goal of establishing at least 4 Wild Pheasant Recovery Areas (WPRAs) with at least 10 hens/mi² in the spring through habitat improvement and the release and temporary protection of wild trapped and transferred ring-necked pheasants. WPRA activities and accomplishments during FY 2010 are presented under Goal 3 below.

Populations of northern bobwhite quail have declined by 75% to nearly 100% over the past 40 years across most of their historic range, including a 97% decline in Pennsylvania. During FY 2010 we completed a preliminary Northern Bobwhite Quail Management Plan that was presented to the Board of Commissioners at their June Meeting and then posted on the agency website for public comment. Achievement of the plan's goal of maintaining and restoring wild breeding populations on northern bobwhite quail in suitable habitats in Pennsylvania will likely require significant investments in research, monitoring, and farmland habitat improvements.

Pennsylvania's bear populations were monitored during 2009-10 using several sources of data. They included 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, and a statewide wildlife food survey.

A total of 749 bears from 52 counties were captured and ear-tagged during 2010 in advance of the fall hunting seasons. Based on the ratio of tagged-to-untagged bears observed in the harvest, the 2010 statewide bear population was estimated at 18,300 bears. The 2010 estimate was almost identical to the previous year's estimate.

In the fall of 2010, we surveyed by mail 7,000 licensed Pennsylvania bear hunters to measure opinions about different aspects of bear management in Pennsylvania and to determine participation levels in the current bear seasons. Approximately 4,900 postcards were sent several weeks later to survey recipients reminding them to return their survey, and 2,687 surveys were ultimately returned. Seventy-one percent of respondents were satisfied with current management of bears, 19% were neutral, and 11% were dissatisfied. Seventy-six percent of hunters who purchase a bear license hunt for bear almost every year.

Several changes to the bear hunting season were implemented in 2010; the archery season was opened statewide and lengthened by 3 days, opening-day of the general season was moved to Saturday, and the extended season was closed. A record 161,119 bear hunting licenses were sold during 2010 which resulted in the harvest of 3,090 bears: 269 during the first ever, 5-day statewide archery bear season and 2,821 in the statewide 3-day season. The 2010 harvest ranked fifth among Pennsylvania's annual bear harvests.

Seven bear check stations, 4 in the western part of the state, 2 in the northeast and 1 in Harrisburg participated in a black bear genetics study being conducted by a graduate student from East Stroudsburg University. Two hundred tongue samples were collected

from harvested bear at these participating stations, and will be used to describe genetic variation of black bears in the greater New Jersey-Pennsylvania region.

At the end of January, 3,291 teeth collected from bears during 2010 were shipped to a contracted lab for processing and aging. Results were returned in July and posted on the agency's webpage so successful hunters could learn the age of their bear. The average age of harvested bear was 2.2 years for males and 3.4 years for females.

Data were available to estimate bear abundance in 11 WMUs; 7 (2C, 2F, 2G, 3A, 3C, 3D, 4A, and 4B) have a slightly increasing trend in their bear populations, whereas 5 (2D, 2E, 4C, 4D, and 4E) have primarily stable bear populations. Cub production and survival was monitored by visiting the dens of 54 radio-collared bears during February and March. In all, 53 adults, 77 cubs, and 21 yearlings were handled and tagged in 11 counties. Average number of cubs/litter was 3.1, and included 2 litters with 1 cub each, 2 with two-cub litters, 13 with three-cub litters, and 8 with four-cub litters. Sex ratio of cubs was 38% female to 62% male.

There were 1,140 entries in the statewide human-bear conflict database during 2010. Conservation officers relocated 310 bears that had been trapped at sites with reported human-bear conflicts; 34 bear damage claims totaling \$9,932.05 were approved for payment, and 27 bears were euthanized because of crop damage or repeated nuisance behavior.

A research study investigating the movements, home range, and habitat use of bears living in suburban environments was initiated in the spring of 2010. Radio-collaring of bears in and around Scranton/Wilkes-Barre, State College, and Johnstown resumed in April as part of the ongoing Urban Bear Study. Twenty one bears were collared this year, and a total of 35 are now fitted with collars (17 in Scranton/Wilkes-Barre, 8 in State College, and 10 in Johnstown). Each collared bear is currently providing 5-6 locations daily, for a total of approximately 1,100 incoming locations weekly from all study bears. Twenty seven additional bears had also been collared, mostly last summer, but have since died or slipped their collar off. Trapping is anticipated to continue until all 50 collars are deployed.

Game Commission staff continued efforts to monitor geographic distribution and numeric changes in important furbearer populations with the most intensive work focused on fisher, bobcat, and river otter. We continue to use a suite of independent methods to track these populations including reports of vehicle-caused mortalities, incidental captures, and various measures of reported sightings. The Game Take Survey, Furtaker Survey, and WCO furbearer questionnaire continue to be important instruments to monitor furbearer populations across the commonwealth.

Fisher populations continue to expand throughout the commonwealth. We estimated that 933 fisher were captured and released by Pennsylvania trappers during 2009-2010 seasons. The annual number of fisher observations and incidental captures reported to WCOs has also been increasing since fishers were reintroduced in 1996. WCOs received

99 reports of fishers that were captured and released by licensed trappers and 636 reports of fisher observations. The geographic distribution of these reports suggests that fisher populations are rapidly expanding from the reintroduction areas in northern regions and naturally expanding into regions of southwestern and southcentral Pennsylvania. Eighty-five percent of WCOs surveyed during 2010-2011 reported fisher populations existing within their districts.

We monitored Pennsylvania's first regulated fisher harvest season and compiled harvest reports. One hundred and thirty-six reports were received initially by online reporting and phone reporting. A survey designed to assess participation and trapping effort was sent to all permit holders who did not report a fisher harvest. We estimate that 152 fisher were harvested during the established season. We coordinated with staff at Indiana University of Pennsylvania to collect fisher carcasses and genetic samples from the 2010 season.

River otter populations have expanded throughout the commonwealth. Numbers of incidental otter captures, primarily by beaver trappers, have increased during recent years with greater than 25 incidental captures reported annually since 1996. The majority of these captures occur in the Northeast Region, but recent reports indicate continued population expansion throughout the Susquehanna River drainage. Based on results of the 1995 WCO furbearer questionnaire, otters occurred in 51% of WCO districts. In 2010, otters occupied 91% of WCO districts. The Game Commission requested Convention on International Trade in Endangered Species (CITES) export status for river otter during 2010.

We monitored bobcat populations during 2010 using a variety of indices and measures. The number of incidental bobcat captures, as estimated from the annual Furtaker Survey, has been steadily increasing since 1990. Greater than 500 incidental captures have been reported annually since 1995. The 3-year moving average of incidental captures has increased significantly during 1990-2010. The number of incidental bobcat captures during 2010 was comparable to the previous two years. Annual numbers of statewide vehicle-caused bobcat mortalities (i.e., roadkills) was also comparable to previous years. These indices suggest stabilization or slight declines in bobcat populations.

We monitored Pennsylvania's first 3-week open bobcat seasons and compiled harvest reports. A total of 1,133 reports were received via online and phone reporting. The majority of reports (64%) were received by trappers using the online system. We provided CITES tags to those who requested them. We currently estimate that 1,136 bobcat harvested during the established season.

The fisher management plan is being implemented to achieve five goals related to population monitoring, habitat assessment, population enhancement, and development and implementation of a harvest management program. A conservative 6-day fisher harvest season was approved for 4 WMUs during December 2011.

To monitor annual changes in furbearer pelt prices, we collected furbearer pelt price information from Pennsylvania Trappers Association's fur sales. Muskrat pelt prices

remained relatively high averaging \$6.92 per pelt, while pelt values of other furbearers were comparable to that of recent years. A small number of fisher pelts were sold with average value of \$41.60 per pelt.

We collected age and gender data from 8,924 Pennsylvania muskrat pelts to help identify whether reproduction and/or recruitment have changed over the past 20-30 years and whether these factors have contributed to the widespread muskrat decline. Muskrat reproduction and recruitment appear normal or slightly higher than levels recorded in the past. The muskrat population was composed of about 11% adults and 89% juveniles. The number of juveniles/adult was 8.3. When compared to data collected approximately 20-30 years ago, we observed a decrease in the proportion of adults (23% in 1980-83; 15% in 1984-91) and an increase in juveniles/adult (3.4 in 1980-1983; 5.6 in 1984-91). We also examined approximately 40 muskrat reproductive tracts collected from trapper-provided carcasses during late fall. Based on placental scar counts, we estimated the muskrat reproductive rate at 6 young per litter. Reproductive and recruitment rates have not decreased since the late 1980s and appear unrelated to the muskrat decline. Mortality factors other than reproduction and recruitment are evidently affecting muskrat populations. This information will help direct our future research efforts in identifying the causes of the muskrat decline in Pennsylvania.

We prepared the final draft of the beaver management plan and incorporated revisions and recommendations stemming from public comments. The beaver management plan is now complete and has been posted on the agency's webpage. The plan provides a summary of beaver biology, habitat, past and present population management, damage management, recreational and economic values, and recommendations and research needs.

Spring waterfowl survey plots were used to obtain beaver occupancy rates. Of 235 plots surveyed throughout Pennsylvania, 22% possessed active beaver sign, while 11% had old beaver sign. The rate of beaver occupancy will be monitored annually and compared among Wildlife Management Areas (WMUs). In WMUs with low beaver densities, complete colony counts within some Wildlife Conservation Officer districts may be possible. Both survey plot and complete-count data will be used in future population monitoring.

A wildlife food survey was distributed in September to field staff of the Game Commission and DCNR, with 260 people responding. Ninety-six percent of respondents rated overall food conditions as average or better during 2010. The most noticeable change from 2009 was an increase in white oak, black cherry, and apple crops, which are all generally considered to be late-summer or fall foods. Another key fall food, red oaks, also posted a second consecutive year of above average production.

During August 2010, The Game Commission distributed a standardized electronic feral swine survey to agency staff (Wildlife Conservation Officers, Land Managers, Wildlife Management Supervisors, and Foresters) as well as selected DCNR staff. Unlike previous survey efforts, the 2010 Feral Swine Survey only requested verified information on swine

observations, reproduction, and swine-related damages since the previous January (i.e., January 1, 2010). The 2010 survey also included questions relative to the occurrence of fenced swine “hunting” operations.

The Game Commission received 238 responses from agency and DCNR staff. Of these 40 reports indicated some level of swine activity (e.g., sightings, reports, harvests, vehicle kills, etc...). Swine activity was reported in 14 counties, with some evidence of reproduction occurring in 5 counties (Bedford, Bradford, Cambria, Northampton, and Erie). With the exception of Butler, Bradford, and Bedford counties, the majority of feral swine reports were isolated incidents that occurred within a single township or property. These isolated reports lacked further confirmation. The number of counties with feral swine reports increased during the past decade, but has stabilized in recent years. The increased number of counties with sightings has been a function of sporadic sightings of one or several swine rather than the result of expansion of established populations.

The staff wildlife veterinarian prepared and delivered an update on Chronic Wasting Disease (CWD) for the Board of Commissioners in October 2009. A coordination meeting was held with U.S. Department of Agriculture (USDA) Veterinary Service’s new Pennsylvania CWD Veterinary Medical Officer.

CWD samples (3,890) and two Bovine Tuberculosis-suspect lymph nodes were taken from hunter-killed deer as part of annual surveillance activities. Assistance was received from the Pennsylvania Department of Agriculture (PDA) and USDA at all region sampling locations. A total of 3,882 samples were found to be testable and all were negative for evidence of CWD. Bar coding CWD samples was successfully implemented in the annual hunter-killed deer sampling for the first time. CWD samples were collected from heads brought into the state in violation of the CWD Parts Ban; additional confiscated material was incinerated. CWD samples were also taken from escaped cervids when they could be recovered and numerous discussions were held over the course of the year with PDA to try to better address this risk factor.

CWD background and sampling strategy training was provided to the new deer health bio aides in the Southcentral Region who were charged with collecting CWD samples from road-killed deer in the region closest to the nearest positive case in West Virginia.

During the year employee training focusing on wildlife disease surveillance procedures, with emphasis on CWD surveillance, was completed for the entire agency’s full time field staff and many of their supervisors. In addition, specific directions were provided to regional personnel engaged in disease sampling throughout the year.

CWD activities associated with the movement of the disease closer to Pennsylvania occurred at three levels; planning and policy, mitigation of risk factors, and sampling. Appendix F (CWD Operational Plan) of SOP 40.4 was reviewed by an expanded CWD working group and significantly revised. After senior staff review the document was finalized and is incorporated into the overall revision of SOP 404. The Pennsylvania Interagency CWD Response Plan was reviewed by the Interagency CWD working group

and changes, including those that reflect changes in SOP 40.4, were incorporated and submitted for final review. The document is now complete and is signed by the participating agencies. Also in response to the presence of CWD just over 10 miles from Pennsylvania, a matrix of recommendations was provided for action by senior staff. The Bureau Director, the Wildlife Services Division Chief and the Wildlife Veterinarian attended the 2011 Interstate (WV, VA, MD, PA, and DE) CWD coordination meeting in WV. A draft revision to Title 58, 137.34 (Giving the Executive Director authority to make Emergency Orders in various CWD scenarios) was approved. Commission consideration and approval was provisionally obtained at the June Commission meeting, with final ratification expected at the October meeting. A presentation on CWD was given to the House Game and Fisheries Committee. Background information was gathered to prepare a hunter survey regarding knowledge and beliefs about CWD.

In an attempt to address an important CWD risk factor a draft SOP for the Game Commission response to escaped cervids was developed after discussions with PA Department of Agriculture. Cervid escapes have become more numerous recently and the inherent weaknesses in notification by cervid propagators and timely recovery of the animals have been highlighted. The supporting photographic depiction of Game Commission research tags and collars for field use in distinguishing farmed from wild tagged deer and elk was prepared and disseminated to the field and SOP 40.12 was subsequently implemented. Guidance was provided for the CWD testing of captive cervids that appear to have been intentionally released in Bradford, Bedford, and Franklin Counties. Direction was provided to officers and supervisors handling cases of cervid parts illegally imported from CWD positive states; resolution of CWD Parts Ban violations from CO, AB, NE, IL, and KS were managed in concert with the regions. Expert testimony on the history and importance of the Cervid Parts Ban was presented in the prosecution of a violation of this Executive Order.

Hunter-killed deer CWD sample extraction personnel and equipment needs were coordinated with Game Commission regions, PDA, and USDA. Subsequently three thousand, nine hundred and thirty-six CWD samples were taken by personnel from Game Commission, PDA, USDA VS, USDA WS and PDH over three days from heads collected by deer aging teams across the state. These samples were forwarded to UPENN New Bolton Center for testing where 3082 were found suitable for testing. CWD was not detected in these samples.

Information packets for elk taxidermists were prepared to facilitate return of heads for CWD and BTB testing, and disease sampling kits were provided to the NC region to be distributed to 2010 elk hunters. Elk taken in this years hunt were sampled for diseases (BTB, CWD, Brucellosis) as part of ongoing surveillance. All taxidermist samples were recovered with the help of region staff. A CWD suspect elk was necropsied and found to have generalized septicemia, one of the diseases that can look like or accompany CWD. A field necropsy was performed on another CWD suspect elk near St. Mary's and CWD was ruled out. BTB, Brucella nor CWD were detected in these samples.

An MOU with PennDOT facilitating road-killed deer collection and testing was developed and is now in place with activities to begin in spring of 2012. Blood samples from feral swine killed in the Northwest, Northeast and Southcentral Regions were processed and interpretation of the results provided to the field. Samples from 3 deer suspected of having illness associated with *Parelaphostrongylus tenuis* (brainworm) infection were sent to Southeastern Cooperative Wildlife Disease Study for further testing. Results were positive suggesting that this disease may be emerging in deer. Guidelines and materials for sample collection from incidentally encountered feral swine were sent to bear check station leaders and region Wildlife Management Supervisors (WMSs).

Raccoon fecal samples were submitted to the Laboratory of Parasitology at the University of Pennsylvania, School of Veterinary Medicine as part of a cooperative study to determine the prevalence of the zoonotic parasite *Baylisascaris procyonis* in Pennsylvania. Additional samples will be taken over the summer to document changes in prevalence in different age and sex components of the population. Results will be published in 2012.

During the year the wildlife veterinarian performed sixty-eight (68) necropsies on a variety of species to include: bats, bears, deer, bald eagles, song birds, grouse, groundhogs, red-tailed hawks, turkey vultures, peregrine falcons, bats, raccoons, elk, trumpeter swan, muskrat and turkey. Necropsy reports were interpreted for submitters from bureaus and regions.

Rabies prophylaxis protocol for field personnel was reviewed with PDH. Heartworm and tick prevention medication was distributed to agency working dogs.

Orders for immobilization drugs and equipment were provided to bureau species projects and regions as requested. Mandatory annual training was provided for those using Carfentanil and their supervisors. Additional training in the safe use of Carfentanil was provided to individuals in the field. Immobilization training was given to the deer trapping teams, and additional training was given in blood collection techniques utilizing deer from the Pennsylvania State University captive deer pens. Bear immobilization drug regimes and emergency procedures were evaluated in the field, resulting in several modifications. Barcode labels were provided to regions in anticipation of the launch of a web-based pharmaceutical accounting system. Work on this pharmaceutical accounting system was completed in collaboration with the Bureau of Automated Technology Services as the fiscal year ended.

Deer - Research continued in cooperation with the PCFWRU into the assumptions of the PA SAK model for tracking deer population trends.

Game Birds – Pennsylvania's resident Canada goose population is approximately 250,000 birds. Management actions have stabilized these numbers (which were previously increasing), but resident geese remain overabundant. During FY 2010, an updated Atlantic Flyway Resident Population Canada Goose management plan, which

includes specific recommendations to reduce Pennsylvania population to 150,000 total spring geese, was finalized. Ruffed grouse, American woodcock, ring-necked pheasant, and bobwhite quail populations have experienced significant long term declines, although shorter-term woodcock population trends are stable at the state and Management Region levels. Species management plans are in place for woodcock and pheasants, and preliminary management plans for ruffed grouse and bobwhite quail have been developed, reviewed by the Board of Commissioners, and released for public comment. Implementation of plans is expected to improve sustainability of these species' populations. Several habitat enhancement partnerships are being developed and many habitat projects are being implemented. The 5th year of the 10-year wild turkey management plan was successfully completed during FY 2010.

Game Mammals – Black bear and furbearer populations were successfully monitored using a variety of indices and measures. These populations are stable to increasing for most species with no major changes in distribution. Spring waterfowl survey plots used to monitor beaver occupancy and distribution.

Annual seasons and bag limits established for game and furbearer species that are consistent with management plan goals.

Elk - 51 elk licenses

Deer - 815,423 antlerless licenses

Game Birds - Wild turkey, ruffed grouse, ring-necked pheasant, and bobwhite quail season recommendations consistent with management plans were provided to Board of Commissioners by prescribed deadlines, and established seasons were published in *Hunting and Trapping Digest*. Seasons and bag limits for migratory game birds were submitted to USFWS by prescribed deadlines and published in the "2010-11 Guide to Migratory Game Bird Hunting."

Game Mammals - Seasons and bag limits recommendations for black bear and furbearers during the 2010-11 hunting and trapping seasons were provided in January 2011. They were approved in April 2010 by the Board of Commissioners and published in the *Pennsylvania Hunting and Trapping Digest*.

Game Mammals -We continued efforts to locate and eradicate feral swine in Pennsylvania. Biologists conducted a state-wide survey to assess changes in occurrence or distribution. The number of counties with feral swine reports increased during the past decade, but has stabilized in recent years.

No species were extirpated during the year.

Game Birds – Habitat loss is the main threat to populations of grouse, woodcock, pheasants, and quail. Implementation of management plans for these species will address this threat and reverse declines, if adequate resources are committed to the effort. While wild turkey populations are healthy in most WMUs, research is being conducted to determine harvest rates of gobblers and hens in order to improve procedures for setting turkey seasons commensurate with population status.

Wildlife Health: A proposal to determine levels of contaminants present in Lake Erie waterfowl is under review to determine if an existing Health Advisory is appropriate. Tularemia was diagnosed in a muskrat from Crawford County, but no human exposure occurred. A report and reminder of the dangerous nature of some wildlife diseases was sent to all field personnel. Rabies was diagnosed in a beaver from Delaware County and three human exposures occurred. This incident is not considered related to the rabid beaver in Chester County that occurred within the month, and also involved a human exposure. The strain of rabies involved in either case has not yet been determined. Guidelines for sample collection from incidentally encountered feral swine were sent to bear check station leaders. Collection vials were also distributed. Feral swine disease testing discovered two positive Pseudorabies titer; PDA and Game Commission are investigating possible origins for these animals. Samples from four feral swine harvested during bear and deer season were tested for diseases, as well as one in June. Disease testing information and general edits were provided for the *Status of Feral Swine in Pennsylvania: 2010 Report*, and the Feral Swine page in the Digest was revised. Revisions to the feral Swine EO, associated NR, and brochure were submitted. The Draft Bald Eagle Management Plan was reviewed and comments relative to disease threats were provided. Five Bald Eagles were necropsied and arrangements were completed to send all eagles remaining in region storage, and subsequent cases to SCWDS for examination and determination of lead levels in an effort to better understand this mortality factor.

Wildlife Diversity – Active studies in collaboration with White Nose Syndrome (WNS) research partners: immunological testing with Bucknell University; comparison of hibernation patterns of big brown and little brown bats with Bucknell University; effect of hibernation site temperature and humidity on survivorship with Bucknell University; pre-/post-exposure genetics with Penn State Beaver Campus; DNA analysis for population dynamics with the American Museum of Natural History NY, Western Michigan University and U.S. Army Corps of Engineers; use of ultra-violet light in diagnosis of WNS with University of Georgia, New Jersey Department of Fish, Game & Wildlife and USGS National Wildlife Health Center; rehabilitation of WNS-infected bats with Bucknell University, New Jersey Department of Fish, Game & Wildlife, University of Georgia and CITES; field testing of fungicide treatment with Bucknell University and Northern Kentucky University; WNS spore retention during summer and fall with University of Arizona; toxicology with USFWS; digestive tract microfauna analysis with Indiana University; examination of acoustic calls before and after WNS to determine summer population declines with East Stroudsburg University of Pennsylvania; acoustic monitoring of bat activity at Indiana bat hibernacula entrances with Bat Conservation

International. Studies completed during the fiscal year are oxygen consumption with Missouri State University and fungal testing with Cornell University.

Game Birds: Atlantic Flyway Breeding Waterfowl Survey: 346 survey plots, 240 to be field checked (all 240 surveyed in 2011). Midwinter Waterfowl Survey: 11 survey segments (all surveyed in 2011). Tundra Swan Productivity Survey: (298 swans aged; 19.8% juveniles and 1.69 young per family group). Pymatuning fall/winter goose population survey. Presque Isle spring / summer goose population survey. USFWS Mourning Dove Call Count Survey: 17 routes (all surveyed in 2011). Experimental Dove CCS survey: 6 routes completed with 3 surveys each (18 total survey days). USFWS Woodcock Singing Ground Survey: 34 routes designated for completion in 2011 (33 surveyed). Woodcock singing ground surveys at habitat demonstration areas: 19 sites completed, for a total of 50 survey routes completed. Grouse summer sighting survey on SGLs: 39 Game Commission foresters and surveyors completed surveys. Grouse/woodcock cooperator hunting survey: 530 distributed with 260 hunters responding. Barrens grouse management area (SGL 176) spring flushing survey: 10 surveys completed. SGL Grouse Drumming Surveys: 3 completed by region personnel. Wild turkey summer sighting survey: conducted by all Wildlife Conservation Officers statewide. Michaux State Forest wild turkey surveys, 6 surveys conducted weekly during summer months. Eastern oak mast survey: 3 surveys conducted, 1 each in Pocono Plateau, Ridge and Valley, and Allegheny Mountain physiographic regions. Pheasant crow count surveys on WPRAs: 102 surveys conducted. Pheasant detection study surveys on select WPRAs: 30 surveys conducted. Pheasant point count surveys on select WPRAs: 60 surveys conducted. Pheasant survival monitoring on WPRAs: 210 days on 3 study areas

Game Mammals: Game Take and Furtaker Surveys conducted annually to track harvests and participation for 29 game and furbearing animals. A WCO furbearer questionnaire to track changes in bobcat, fisher, and river otter was developed. Bear hunter survey completed to evaluate success rates and participation.

Wildlife Diversity: 16 ongoing surveys for birds and mammals are summarized under the endangered/threatened species measures. 91 (of 97) Breeding Bird Surveys were completed in 2010.

A number of significant wildlife mortality events were reported and/or investigated.

Wildlife Diversity – During winter 2010-2011, counts conducted at 11 bat hibernacula with substantial historical data found rates of decline greater than 90% for three cave bat species (little brown, northern long-eared and tricolored) as the result of WNS. During spring 2011, numbers of bats emerging from 8 little brown bat summer maternity colonies linked to a WNS-infected hibernacula found an overall decline of 94% compared to 2009 counts.

Wildlife Health: Exposure to the virus causing Pseudorabies was detected in two hunter-harvested feral swine, one near a captive shooting facility. Should the virus itself come to

Pennsylvania with a feral swine the consequences for federal prevention programs and the economic status of the Pennsylvania pork industry would be severe. More eagles (Bald and Golden) were found dead in various locations around the state. Many had toxic levels of lead. The dimensions and origin of this disease in Pennsylvania eagles are still under investigation. The discovery of Tularemia as the cause of death in a Crawford co muskrat was significant because of the extremely dangerous nature of the organism to other wildlife, domestic animals, and humans. Two rabid beavers associated with 3 human exposures in two locations caused considerable consternation and concern for human populations. The strain of rabies that infected these beavers is not yet known.

During the last year, the Bureau of Wildlife Habitat Management worked collaboratively with the Bureau of Wildlife Management to further refine the white-tailed deer management program as it relates to assessing the wildlife habitat component. The collaboration effort used recommendations from the LFBC report and evaluated several methodologies of seedling & sapling growth and deer browse influences, as well as variable effects from soils, invasive species, natural light densities, random forest inventory survey plots, existing and future available information, and overall data compatibility and trends analysis. The results of this effort further quantified habitat changes within a given WMU as the same relates to deer impacts and set forth future planning and monitoring efforts.

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

Statutory revisions were accomplished in three amendments of the Game and Wildlife Code this fiscal year, which amended nineteen separate statutory sections in the Code, 102, 905, 925, 929, 932, 2167, 2306, 2307, 2310, 2312, 2314, 2321, 2329, 2711, 901, 904, 2901, 2904 and 2925. This legislation substantially increased penalties associated with excess kill and closed season takings, further defined the investigative authorities of a Wildlife Conservation Officer, authorized the Commission to establish regulations exempting certain limited youth hunting activities that are prohibited, reduce the age for a falconry permit from 16 to 12, increase the falconry permit fee and redefined the Commission's authority concerning falconry by eliminating Federal fish and wildlife law consistency standards. A fourth statutory change was made by creating a general statute consisting of 5 sections, which authorized the Game Commission and the Pennsylvania Fish and Boat Commission to enroll in the Interstate Wildlife Violator Compact. The Game Commission continues to work with the general assembly to streamline the Game and Wildlife Code by providing recommended language and statutory construction in numerous legislative initiatives.

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, 2076 violation records were received from other member states and reviewed; 315 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 two Pennsylvania residents who shot hunters in other states who would not previously have been revoked in Pennsylvania. Pennsylvania has submitted 150 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 effect on commercial poachers and chronic offenders.

A total of 24 sections and 1 subchapter of the regulations were revised and became effective this fiscal year through 23 amendments in an effort to eliminate regulatory contradictions and inconsistencies, or initiate new programs of the Commission. Revisions include establishing and defining the manner that the Commission will respond to certain types of record requests, define the geographic location of wild pheasant recovery areas, prohibit small game hunting and dog training activities during specified time-frame within any wild pheasant recovery area, requirement to post minimum amount of fluorescent orange in addition to wearing required amount of protective material within a blind during any deer, elk or bear firearm season, requirement class of sponsor for a new falconer to be general or master class, expand list of eligible species of eagles for master class falconers, reinstate antlerless coupons on private lands that would otherwise be denied, limit overnight placement of portable hunting blinds and stands on State Game Lands, made State Game Land regulations equally applicable to State Game Farms, remove conflicting language purporting to continue prohibitions on the usage of gun-mounted lights by hunters and furtakers, expand non-toxic shot to both fall and spring turkey seasons, and prohibit all devices that are not a lawful trap, firearm, bow or crossbow from being utilized during licensed trapping activities.

Other actions approved limited authorization of baiting deer on approved properties in WMUs 5C and 5D which are enrolled in the "Red Tag" program, require DMAP landowner applicants to provide an approved management plan along with their application, advanced DMAP application deadline, authorized electronic decoys for use under snow goose conservation hunt permit, require users of State Game Land shooting ranges to possess either a valid Pennsylvania license or a range permit, updated seasons and bag limits for 2011-2012, expanded shotgun/muzzleloader single projectile exception to bear hunters, deleted defunct baiting provisions, update 2011-2012 hunting hours table, remove limitations prohibiting hunting of woodchuck, opossum, skunk and weasel during legal hunting hours of spring gobbler season, restructuring various fluorescent orange requirements, delete redundant and inconsistent language concerning mistake kills, clarify trap or snare limitation, provide additional definitions to furtaking related terms, authorize and set conditions attendant to the use of artificial cubbies in trapping activities,

and grant Director authority to establish application deadlines for bear licenses at such periods as he determines.

The Commission has recognized the need for a comprehensive overhaul of Title 58 Pa. Code that stems from the plethora of regulations promulgated since the last Game and Wildlife Recodification in 1987. The Bureau of Wildlife Protection has met with the Executive Office and began the preliminary planning process to initiate a project to reform the patchwork of regulations promulgated over the last two decades into a more comprehensible model. A draft framework has been established but the effort is hindered by a lack of a clerical position dedicated to the assistant counsel, negatively impacting efficient operations, as well as the high volume of revised priorities that were necessary this fiscal year in relation to legal staff needing to assist with case prosecutions and other unforeseen priority projects. However, the Bureau has begun incorporating all new regulatory efforts into the planned general framework of the rewrite and is making headway in updating entire sections of the regulations through this process.

The WP Bureau worked to reduce various uniform items from a winter and summer issue to year-round apparel. We have successfully converted to an all-season boot, dress trousers, a new black ball cap, and most recently a winter coat/jacket. The Bureau also provided improved identification cards to officers this past fiscal year that now include the officer's signature and identification features.

Enhancements were made to the current Deputy program in an attempt to boost the number of applicants each year. The Enforcement Division continues to supply Deputies as much surplus equipment as possible to reduce their out-of-pocket costs. We had 34 Deputy Applicants this fiscal year, which is a slight decrease from the previous fiscal year. 100% of those applicants passed their Certification Exam and will be sworn in before the 2011 fall hunting seasons.

In addition to enhancing the existing Deputy Program, the Deputy application process was also streamlined and is being monitored to increase efficiency. A few changes include distributing Deputy Informational Packets from the Training School and following up with a survey which is meant to help us understand how well the current system is working, and to locate areas that may need improvement.

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, 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.

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 18,435 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 12,246 warnings and 6,189 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 .97% 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 6 complaints were received against officers this year, none of which were 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 last November 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 57 individuals recognized by our officers as persons not to possess firearms due to felony convictions.

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, target surveillance and enforcement operations are estimated at 184,000 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. 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.

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 – 574 prosecutions.
2. Operating vehicles on State Game Lands in areas closed to travel, primarily ATV violations – 396 prosecutions.
3. Hunt or take wildlife through the use of bait or enticement – 340 prosecutions.
4. Possession of a loaded firearm in a stationary vehicle – 279 prosecutions.
5. Cast a light after 11pm – 183 prosecutions
6. Safety zone violations – 180 prosecutions.
7. Big Game Tagging violations – 178 prosecutions
8. Hunt or take wildlife through use of a motor vehicle – 177 prosecutions
9. Possession of a loaded firearm in a moving motor vehicle – 142 prosecutions
10. Unlawful use of lights while hunting – 108 prosecutions

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 636 calls and emails were relayed to the appropriate region; a 38% increase 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; 24 reward payments were paid out totaling \$6,000.

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. Ten 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, 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.

Four bills that amended 19 sections of the statute and created a general statute shared between Game Commission and Fish Commission relating to the Interstate Wildlife Violator Compact.

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. Seventy-three cases were made during this reporting period, multiple charges and multiple defendants were involved with many of these cases.

This fiscal year staff worked to reduce various uniform items from a winter and summer issue to year-round apparel. We have successfully converted to an all-season boot, dress trousers, a new black ball cap, and most recently a winter coat/jacket. The Bureau also provided improved identification cards to officers this past fiscal year that now include the officer's signature and identification features.

This year the Agency approved shooting range regulations directed at providing much needed target shooting safeguards and control measures to all range users. The regulations adopted will provide a steady funding stream to assist the Commission in offsetting ongoing shooting range maintenance costs, while further preventing potential lead contamination in soils and waters within the confines of varied State Game Lands areas, thus protecting local habitat and wildlife resources. To further regulate the protection of wildlife habitat the Bureau worked closely with commercial developers and issued 17 Special Use Permits through its right-of way section in order to assure the protection and conservation of varied wildlife resources while simultaneously providing third party critical public utility needs.

Strategic Objective 1.3 Assess public values and uses of wildlife.

In July 2010, a Human Dimensions Specialist started 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 beginning in July 2010:

Two mail surveys were conducted and overseen by the Human Dimensions Specialist: A survey of hunters to see how they obtain information about the Game Commission and a survey of lapsed hunters in Pennsylvania. Additionally, the HD specialist was responsible for a postcard mailing sent to hunters who had bought during the June-October 2009 time period but had not yet purchased for the same time in 2010. More details and results from these surveys are presented in Strategic Objective 3.1.

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. The HD specialist was also involved in the completion of the Citizen Advisory Committee (CAC) process and attended CAC meetings in WMU 2G. After the completion of these CAC's the HD specialist was responsible for initiating the process for a phone survey of the general population that will be conducted during FY 2011-12 by Responsive Management.

The Human Dimensions Specialist receives several peer-reviewed journals and is also a peer reviewer for the *Human Dimensions of Wildlife* journal. Attendance at several conferences (Human Dimensions of Wildlife Conference, American Association of Public Opinion Research, 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.

The Game Commission, in coordination with The Pennsylvania Natural Heritage Partnership have finalized a State Game Lands planning tool initiative which is designed to further protect, minimize and manage all known threatened and endangered species residing with any of the 1.4 million acres of State Game Lands. In addition to the site specific identification and management of each species occurrence within the State Game Lands, and within one-half mile radius of the State Game Lands boundary, it includes beyond just the State Game Lands and periphery area, a concerted effort to identify the actually critical habitat supporting all federally threatened or endangered species within the entire Commonwealth will be discerned by way of this initiative. The funding is being derived from Pittman-Robertson proceeds. The overall result from this project's implementation will provide the Commission with the ability to improve its protection and management emphasis on a site by site specific determination for all known a state and federally listed plants and animals and will further expedite environmental permit reviews for varied industrial development projects and state and federal mandates for protection of these wildlife species. Plans for a internet based program to access this data will be developed and managed by the Bureau of Wildlife Habitat Management in coordination with all PNHP partners. Environmental Planning and Habitat Protection Division Staff attended nine meetings concerning the further refinement of the Environmental Review tool and Conservation Planning.

Since the creation of the Game Commission's Wind Energy Voluntary Cooperative Agreement, 30 wind development companies have become cooperators thus agreeing to avoid, minimize and potentially mitigate any adverse impacts the development of wind energy on private lands may have on the state's wildlife resources. Game Commission staff attended 20 meetings with wind developers, 2 joint agency wind meetings including meetings of the PA Wind & Wildlife Collaborative, and 22 other wind energy related meetings. Two wind energy development projects were reviewed for potential impacts to special concern species, natural resources and State Game Lands.

Wildlife Diversity – Increased number of GM Comments requests for information on or identification of endangered, threatened, priority and other non-game species; enthusiastic response to calls for participation in citizen-science surveys distributed through web postings and news releases; public reports received via Report-A-Bat, many concerned about missing summer bat colonies; increased awareness of the declining Allegheny woodrat population among wildlife consulting companies and the caving community.

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

Pennsylvania passed a major conservation milestone in 2011 – more than 200 bald eagle nests known in the commonwealth. The total number of nesting bald eagle pairs reached 212. Fifty of the state’s 67 counties hosted eagle nests, with the largest numbers in Crawford (19), Pike (19) and Lancaster (18). Although it may seem surprising that eagles have chosen to nest in Philadelphia and Allegheny counties in recent years, the cities of Philadelphia and Pittsburgh are located on major river systems with good fisheries. While new nest sites chosen by eagles provide excitement, some eagle pairs have truly impressive histories: a pair that has nested in Tioga County’s Pine Creek gorge since 1987 has successfully fledged more than 40 eaglets. A larger eagle nesting population increases the number of mishaps involving nests and eaglets, including nest collapses caused by wind or wet spring snow and grounded eaglets vulnerable to terrestrial predators. Regional staff, annual cooperators and regular volunteers monitor most bald eagle nests. To encourage and assist Pennsylvanians interesting in viewing bald eagles in the wild, a series of “Eagle Watching in Pennsylvania” guides was developed for the agency website: www.pgc.state.pa.us. It is increasingly common for the agency to learn of new nests from the public. Residents aware of bald eagle nests are asked to report them through: pgccomments@state.pa.us, using “Eagle Nest Information” in the subject field.

In 1986, there was one peregrine falcon nest in Pennsylvania – it was the first nest in 30 years. In 2011 there were 31 active peregrine nests of which 23 were successful, with 52 nestlings banded at 17 sites. Of the 31, five were cliff sites, three of which produced a total of seven young; two cliff nests failed. Nestlings are banded when they have reached full size but are not yet capable of flight. Banding is our most important research tool for assessing the lifespan of peregrines, their movements and population health. Sightings of banded falcons show that the average breeding lifespan is about 10 years. Falcons originating in our state breed successfully from Pennsylvania to New Hampshire, Ontario, and Michigan. More than 100 volunteers and about 30 cooperators participate in peregrine falcon nesting monitoring and regional staff complete or assist many activities. Peregrines have enormous public appeal and outreach takes many forms. Online nest-cams are installed at several locations, the public is invited to attend bandings when possible, and a teachers’ workshop each spring brings awareness of peregrine falcon biology and conservation to their students.

Only one osprey nest was known in Pennsylvania in 1986. During 2010, volunteers and cooperators reported 115 osprey nests, located in 21 counties, in response to a new webpage and survey form on the agency website. Four counties accounted for 66 percent of the nest total. Osprey nests appear to be more strongly associated with manmade bodies of water and manmade structures than are eagles.

The state capital is important to great egrets, black-crowned night-herons, and yellow-crowned night-herons. These three species of colonial-nesting waterbirds are protected as endangered species in Pennsylvania. Yellow-crowned night-herons actually nest in a Harrisburg residential neighborhood, while the rookery on Wade Island, in the Susquehanna River, harbors both great egrets and black-crowned night-herons, along with a growing population of double-crowned cormorants. Four other black-crowned colonies are known, all in southeastern counties. In 2011, the annual survey of the Wade Island rookery was delayed by unusually high and dynamic water levels that covered the island. When the nest count was conducted in late June, surveyors found two trees that were downed after herons and egrets had nested in them, 15 dead egrets, eight dead black-crowned night-herons and two dead cormorants. Because of the exceptional river conditions and delayed survey date, it is difficult to compare 2011 results to previous surveys. Future surveys will reveal long-term effects. On the upside, across the state in Mercer County, the annual nest count at the Barrows great blue heron colony, increased from 237 in 2010 to 298 in 2011. Great blue herons are a maintenance concern species in Pennsylvania's Wildlife Action Plan.

To encourage piping plover recolonization of historic nesting habitat at Gull Point, Presque Isle State Park, the Game Commission, DCNR, Western Pennsylvania Conservancy, and Audubon Pennsylvania were awarded U.S. Fish and Wildlife Service (USFWS) Great Lakes Restoration Initiative funds in 2010. Federal approval of the proposed habitat recovery plan was delayed, pushing the start date back several months but extending the grant period to include two field seasons. In April 2011, volunteer monitors observed a piping plover visiting Gull Point. Partial banding information indicates it may have been a female that nested at two different Michigan beaches the past two years, sustaining hope that this extirpated species will return to the state's Lake Erie shoreline one day.

Grassland habitat restoration continues on SGL 330 with SWG funds. Monitoring of that site is being completed in collaboration with Duane Diefenbach at the PSU Coop Unit. Two technicians with the Coop Unit have been visiting 60 grasslands on former surface mines across western Pennsylvania this summer to quantify the abundance of grassland sparrows. This should enable us to document vegetation changes over the past decade, estimate changes in abundance at sites visited in 2001, and obtain a new estimate of total abundance of grassland birds across an eight-county area of available surface mine habitat. Eight other technicians are searching and monitoring for nests, banding adults and nestlings, and performing band resighting and population surveys of grassland sparrows on 8 50-ac study plots. Over the past 3 years the PSU team, guided by graduate student Jason Hill, has banded over 1300 birds. A paper from previous research, "Nest Success of Grassland Sparrows on Reclaimed Surface Mines" has been accepted to the *Journal of Wildlife Management*.

The Game Commission is an active member of a golden-winged warbler working group formed to organize and prioritize conservation activities for this species, which is experiencing a steep population decline in the state and region. Multi-state management includes a monitoring program coordinated by the New York's famous Cornell

Laboratory for Ornithology and funded by a National Fish and Wildlife Foundation grant. Best Management Practices (BMPs) were developed through a collaboration of the Commission, American Bird Conservancy and Indiana University of Pennsylvania. In addition to participation in monitoring and the BMPs project, which focuses on forest habitats, the Commission has its own potential for managing for this warbler on State Game Lands and properties of conservation partners. Golden-winged warbler management can be coordinated with American woodcock and ruffed grouse management. Surveys on State Game Land habitats other than forested ones found the targeted warbler in swamps, wetlands and scrub barren in northeastern Pennsylvania. Golden-winged warblers in these alternative habitats may serve as reservoir populations with potential to offset areas where timbering or other disturbance alter forested habitat. In 2011, new locations for this species were found on two Pike County State Game Lands and on state forests in Carbon and Sullivan counties.

In late summer 2010, a banded female yellow-bellied flycatcher, a state endangered species, fledged four young from a nest in a Sullivan County state forest. It was her second attempt in 2010; her first nest was destroyed. Nesting success in 5 territories was confirmed in 2010 by presence of dependent young. In June 2011, both yellow-bellied flycatcher and blackpoll warbler, another state endangered species, were found on territories on a Wyoming County State Game Land.

Since 2005, regional wildlife diversity biologists have conducted a conservation initiative for the barn owl, a maintenance concern species once common in agricultural fields, grasslands and other open areas. Beneficial to farmers, a family of barn owls can consume up to 3,000 rodents during a breeding season. These owls are closely associated with humans because they frequently use barns, silos and manmade nest boxes since large, dead, hollow trees are in increasingly short supply. During calendar year 2010, forty-three of 62 confirmed nest sites were in nest boxes, often boxes installed inside barns. Three adult barn owls and 254 nestlings were banded at 52 sites, with the majority of banded nests having a clutch of three to six. Twelve new active nesting sites were identified in 2010. Banding provides information on longevity, causes of mortality, and dispersal. Through December 2010 (bird banding records are compiled and analyzed on a calendar-year basis), 32 banded barn owls had been recovered; 29 had been banded in Pennsylvania, 3 in other states. All were banded as nestlings and all but two were recovered dead. Half of dead banded owls were recovered during winter. Dispersal distances from natal sites ranged from one to 325 miles, with an average of 58 miles. For owls with known dates of death, average lifespan was 14 months. The two owls that were recovered alive and released again were aged 13 and 35 months. The oldest owl recovered during the study was nearly six years old. The barn owl's average life span is two to three years.

White Nose Syndrome (WNS) is a disease associated with a fungus that grows on the exposed skin (face, wings and tail) of bats as they hibernate in mines and caves. It causes them to awaken during hibernation, exhaust their fat reserves and emerge in search of insects during winter when that food source is not available. The result is high death rates among our primary predators of night-flying insects, including agricultural and forest

pests, potentially destabilizing ecosystems and increasing reliance on chemical alternatives.

An epidemic of unprecedented proportion in North American wildlife, the rapid spread and extreme virulence of WNS threatens the continued existence of even the most common species of cave-dwelling bats. In five years since its discovery in upstate New York in February 2006, WNS had been confirmed in 16 states and four Canadian provinces and two additional states had suspected sites by the end of the 2010-2011 hibernation season. In Pennsylvania, WNS had been confirmed in 15 counties. Visual evidence of WNS was found at hibernacula in seven additional counties, but specimens could not be obtained for laboratory confirmation.

Pennsylvania's first suspected WNS site was discovered in December 2008 and confirmed in January 2009. The state had 35 confirmed WNS sites by the end of winter 2010-2011. Of the 35, eleven sites have substantial interior count data from before WNS and at least one full year of data after its arrival. Rates of decline for three bat species – little brown, northern long-eared and tricolored – were greater than 90 percent in those 11 sites. Big brown bats decreased by 40 percent. Small-footed bats, a state threatened species, decreased by 20 percent. Historically, the Indiana bat, the state's only federally endangered mammal, occurred in very low numbers at only a few sites that have been surveyed post-WNS, so sample size in Pennsylvania alone was too small to accurately reflect a decline. The average decline for Indiana bats calculated using 40 sites across Vermont, New York, Pennsylvania, West Virginia and Virginia was 72 percent.

WNS has made it increasingly important to monitor summer bat colonies to track population trends. Fortunately, the Game Commission has recorded data on maternity colonies for nearly 20 years prior to WNS, providing a crucial basis for comparison. Most summer colonies are comprised of little brown bats, the species most likely to use manmade structures. Historically, big brown bat colonies were less common and smaller in size. During the summer of 2010, volunteers made up 44 of 66 Appalachian Bat Count crews that monitored 114 sites. The volunteers contributed over 250 hours and more than 4,700 miles to the effort. The data received indicated a 40 to 60 percent decline compared to the average of counts during eight years prior to WNS. The Appalachian Bat Count continued in 2011 and will for the foreseeable future. In a related study, for three consecutive years Diversity Division staff has conducted evening exit counts at eight summer maternity colonies linked to a WNS hibernacula. In spring and early summer 2011, declines greater than 90 percent were common at those eight sites.

Immediately upon the arrival of WNS in Pennsylvania, the Commission established collaborative partnerships with top researchers, implemented multiple research projects, and began to assist state and federal agencies in strategic decision making and planning. We hosted two annual meetings with national attendance and have written successful grant proposals for federal funding for both a multi-state response to WNS and in-state capacity building. Advice from Diversity Division staff is routinely sought by other states and we are actively involved in development of multiple sections of the WNS National Plan and its implementation. Diversity Division participates in many cooperative research

projects. Examples include development of a protocol for the use of ultraviolet light in diagnosis of WNS, acoustic monitoring of bat emergence activity at entrances of Indiana bat hibernacula, and hibernation arousal and spore retention studies.

Since 2000, USFWS Section 6 (endangered species) funds have supported Game Commission research into the ecology of Pennsylvania's Indiana bats. These efforts have evaluated summer foraging habits and habitat, studied fall pre-hibernation behavior, and linked winter hibernacula to summer sites. A Luzerne County coal mine, thought to be in its third year of WNS infection, was selected as the potential source of subjects for a spring 2011 migration telemetry study to observe changes in migration behavior and find summer maternity sites. Six Indiana bats were live-trapped while entering the mine during fall 2010. Unfortunately, none were captured exiting the mine in spring 2011.

Contractors conducting surveys on behalf of developers identified seven Indiana bat summer roosts in Greene County and 3 northern long-eared bat summer roosts in Centre County through radio telemetry. During mist-netting and live-trapping surveys at 1,102 sites statewide, contractors captured and released six Indiana bats (federally endangered), six small-footed bats (state threatened), 24 silver-haired bats (state high-level concern), 39 hoary bats (state maintenance concern), 439 red bats (state maintenance concern), 1,235 northern long-eared bats (state responsibility species), 33 tricolored bats, 2,048 little brown bats and 1,453 big brown bats. 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.

The northern flying squirrel is a state endangered species. The management plan for a Luzerne County State Game Land that harbors an active northern flying squirrel population will now permanently protect core habitat and improve surrounding habitat through timber management. Approximately 1,500 native red spruces were planted on the State Game Land; once established they should improve food availability and improve gene flow. Another 500 spruces were planted in a Warren County state park that borders State Game Lands to provide additional food sources for our westernmost population of northern flying squirrels. Checks of flying squirrel nest boxes, mostly installed on State Game Lands, state forests and state parks in the northern half of the state, found nests and other sign in Monroe, Wayne, Sullivan and Potter counties, but no northern flying squirrels. Two southern flying squirrels, but none of the northern species, were captured during box checks in Warren, Clarion, Jefferson, Forest and Venango counties.

Talus on the ridges of south-central Pennsylvania provided the most encouraging results during surveys for the reclusive and largely solitary Allegheny woodrat, a state threatened species. In fall 2010, live-trapping on a state forest in Huntingdon County resulted in the capture of two adult females, one adult male and four juveniles of various ages. Also in Huntingdon County, a new active woodrat site was found in a state park and recent sign was found on a State Game Land. Fresh sign was found over a wide area of state forest on the border of Franklin and Perry counties. Surveys in Mifflin County's Lewistown Narrows produced mixed results. Unfortunately, no sign was found at two

previously active sites on Blair County State Game Lands. In other parts of the state, State Game Lands in Fayette, Dauphin and Lebanon counties and a state forest in Lycoming County yielded mixed results. Following data analysis, two metapopulation areas were reclassified from active to inactive. In an attempt to help reverse the Allegheny woodrats' continuing decline, nine habitat inventories were conducted on State Game Lands in the Commission's southeast, south-central and southwest regions and south-central state forests on the Tuscarora and Blue mountains. Following protocols for natural resources managers presented during fall 2009 Allegheny woodrat conservation and adaptive-management workshops, nine management compartments were identified and management practices have been implemented at two compartments in the southeast. Other efforts to benefit woodrats included minimizing the disturbance caused by parking lot construction at an Audubon Pennsylvania ridge-top observation station and preparations for mitigation to improve woodrat food production on Lycoming County state forest land by a Marcellus shale developer.

The primary responsibility of the Game Commission six regional wildlife diversity biologists is the habitat-based Private Landowner Assistance Program (PLAP). During 2010-2011 fiscal year, regional diversity biologists prepared 119 plans for 12,759 acres. Since program inception in 2004, more than 930 plans have been produced for a total over 140,680 privately owned acres. Regional diversity biologists also contribute to comprehensive planning for the state's over 1.4 million acres of State Game Lands. Additional duties include hosting annual habitat management workshops for landowners, providing public presentations about species of conservation concern, serving as ambassadors through participation in conservation organizations, and assisting research efforts by Bureau of Wildlife Management biologists.

Diversity Division biologists participate in many forms of outreach in both public and professional settings. New in 2011, the "Eagle Watching in Pennsylvania" series on the agency website includes nest-viewing etiquette and eagle identification tips, fast facts, natural history information, and the agency's 2010-2019 eagle management plan, along with "Where to Go" in each of the Game Commission's six regions. Information on the state's Important Mammal Areas is now available online, as are annual project reports. Timely articles are available on the Pennsylvania eBird website, along with opportunities for the public to participate in bird population surveys through online reporting. Live presentations are provided for state parks, organizations, schools, colleges and universities, as well as conservation special events. Interviews are provided for newspaper, radio and television. Our biologists frequently present information on Pennsylvania's research and management of species of concern at professional conference and symposia and author or co-author papers in professional publications.

No bird or mammal species were added to or removed from state's list of endangered and threatened species. However, the Ornithology Technical Committee of the Pennsylvania Biological Survey has proposed that the upland sandpiper be changed from threatened to endangered status, and they propose threatened status for the northern harrier. In May 2011, the Mammal Technical Committee proposed state endangered status for little

brown, northern long-eared and tricolored bats because of the staggering mortality resulting from WNS.

Diversity Division biologists were called upon to verify species identification of a state endangered blackpoll warbler and four Seminole bat fatalities at wind farms. The Seminole bat is not listed as a species of greatest conservation need in Pennsylvania's Wildlife Action Plan because it was considered a southern species that rarely strayed into Pennsylvania; its range may be expanding northward due to climate change. Marcellus gas shale extraction has potential to negatively impact the West Virginia water shrew (state endangered), northern water shrew (WAP maintenance concern), northern flying squirrel (state endangered) and Allegheny woodrat (state threatened).

The Pennsylvania Natural Heritage Partnership and Department of Conservation and Natural Resources, Pennsylvania Fish & Boat Commission, and Western Pennsylvania Conservancy continue to develop the Heritage Geographic Information System that includes the Environmental Review tool for threatened & endangered species and the Conservation Planning tool. Staff has attended five meetings concerning the further refinement of the Environmental Review tool and Conservation Planning. A considerable amount of time has been spent reviewing Conservation Planning Specifications and data that will be used within the system. Efforts have resulted in an approved review efficiency benefiting wildlife conservation while simultaneously supporting industrial development projects throughout Pennsylvania. In order to further the progress of this critical need, and on behalf of the entire Commonwealth's wildlife resources, the Game Commission has appropriated grant funding towards the development of similar type project initiative. The project proposal design will result in the identification of all plant and animal species of special concern and their related habitats throughout all State Game Lands, as well as Public Access cooperator lands. Additionally, a site specific management plan will be created for each indentified species on State Game Lands through the direct coordination of each jurisdictional agency which has oversight of that particular species. This coordinated effort will ultimately result in achieving all future State Game Lands habitat planning and management goals, as well as provide a much needed data base for all future Commonwealth environmental permit reviews from industry related projects.

Since the creation of the Game Commission Wind Energy Voluntary Cooperative Agreement, 29 wind development companies have become cooperators thus agreeing to avoid, minimize, and potentially mitigate any adverse impacts the development of wind energy on private lands may have on the state's wildlife resources. Game Commission staff attended 33 meetings with wind developers, 21 joint agency wind meetings including meetings of the PA Wind & Wildlife Collaborative, and five other wind energy-related meetings. There were 38 wind energy development projects reviewed for potential impacts to special concern species, natural resources and State Game Lands. The voluntary cooperative program remains an effective tool in conserving and managing wildlife and threatened and endangered species. Information gathered this year from the voluntary monitoring aspect of the program has already resulted in several refined best management practices for construction of wind energy facilities and has significantly

added to the overall knowledge and understanding of local and regional migratory bird routes and bat populations.

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

Game Birds - Ring-necked pheasants have shown positive responses (established self sustaining populations) on multiple study areas, but population densities are below objective.

Game Mammals - Fisher populations have continued to expand geographically and numerically throughout the state.

Wildlife Diversity – Long-term recoveries of 3 introduced raptors continue to be documented (bald eagle, peregrine falcon, and osprey). These species are approaching population levels in which their status could be upgraded to secure, as determined by management plan objectives.

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

Wildlife Diversity – Media coverage about White Nose Syndrome has increased the portion of the public that realizes bats are beneficial and that their populations are at risk, increasing interest in alternative roosts (bat boxes) for summer colonies excluded from buildings.

Game Birds - There were no nuisance wild turkey complaints in the metropolitan Pittsburgh study area that warranted transfer. This appears to indicate landowners are satisfied with prior year relocations of turkeys from their properties to public lands.

Game Birds - Staff biologists participated in revision of Atlantic Flyway Resident Population Canada goose management plan, which was finalized in FY 2010 with specific recommendations to reduce Pennsylvania population to 150,000 total spring population. Wild turkey biologist assisted Allegheny County Wildlife Conservation Officer with a nuisance wild turkey complaint in suburban Allegheny County and alleviated situation by explaining to landowner the negative aspects of feeding wildlife.

Game Mammals - 1,140 incidents were logged in the Statewide Nuisance Bear Database (entered by region staff). 34 damage claims were processed seeking reimbursement for poultry, livestock, or bee hive losses caused by bears, and \$9,932.05 was paid to claimants (program administered by Bureau Wildlife Protection). 354 bears were captured in nuisance situations, of which 310 were relocated. 25 bears were killed due to damage or nuisance activity, which included bears killed by property owners and reported to the Game Commission.

WHM Bureau assisted WM Bureau in the final development of the nuisance beaver plan which involved reintroduction criteria and the inherent ability to improve existing habitat goals by planning for the beaver's inherent ability to create wetlands and early successional forest habitat in area where such habitat will best support other wildlife species management initiatives.

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.

Surveys were initiated to improve understanding of participation in and attitudes regarding fall turkey hunting and waterfowl hunting. A fall turkey hunting survey provided to a sample of general license buyers addressed reasons why license buyers did or did not fall turkey hunt, aspects that prevent them from participating, and possible changes that would encourage their future participation. A waterfowl hunter attitudes survey was mailed to a sample of migratory game bird license purchasers who indicated they recently hunted waterfowl to determine factors affecting participation and satisfaction with waterfowl hunting, and to determine preferences for season timing within allowable federal frameworks.

This past year the Bureau of Wildlife Habitat Management presented 8 separate informational briefs and public hearings to local and state legislatures on the Agencies ability to meet complex habitat management, educational, and recreational goals in direct support of the Spring Creek Canyon Cooperative Management area in Centre County. The Spring Creek Cooperative Management area is a joint partnership with The Department of Corrections, Pennsylvania State University, Benner Township Municipality, and The Pennsylvania Fish & Boat Commission. The efforts of the Commission resulted in numerous news media events, newspaper articles, and public hearings and information forums improving upon the public awareness of wildlife habitat management programs within the agency. The efforts on behalf of the Commission were in direct support of legislation enacting the transfer and management control of over 1800 acres to the Commission by the Department of General Services. Additionally the Bureau presented 7 separate public information briefs on the Commission's oil/gas and mineral recovery and leasing program and how the same relates to the Marcellus Shale development on State Game Lands. Briefings included both state and local officials, industry representatives, and varied sportsmen's groups, as well as other state agencies. In support of the briefings, the Bureau developed and presented numerous Power Point presentations, a 90 minute DVD, and other public news media releases to accompany the effort, resulting in improved public awareness of the Commission's oil/gas and mineral program and overall wildlife habitat management protocols and regulations governing the same.

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

During the reporting year of July 1, 2010 to June 30, 2011 there were a total of 25 HRSIs recorded; an all-time record low for a 12-month reporting period! This number compares to 44 incidents during the last reporting period for FY2009-10. The primary difference is the result of a significant reduction in the number of incidents occurring during both the turkey and deer hunting seasons. These numbers reflect a continued downward trend in hunting-related shooting incidents. Hunting continues to be a safe activity thanks to hunter education and training.

A computer aided dispatch center (CAD) has been purchased and the pilot project will go live in the fall of 2011. The upgrade to our communications centers with the latest technologies will increase our ability to accomplish this specific objective in the future. Some basic assumptions can be made from the annual violation statistics; however, the number of complaints received about hunter behavior from the public is probably a better measure of broader behavioral activity since not all reported violations or complaints are successfully intercepted or investigated. The full implementation of the CAD system will provide more detailed incident data.

Pennsylvania's Hunter-Trapper Education program is designed to meet national standards for basic hunter training. It utilizes state-of-art training media, electronics and teaching tools. New for this reporting period is the integration of HETools® Flash Player animations in the curriculum's PowerPoint presentation. This improvement enhances students understanding of firearm actions and internal operations. In addition a skill-based training curriculum is now in place statewide. Volunteer instructors are encouraged to utilize this proven training method to better prepare first-time hunters before they go afield. Volunteer instructors who utilize these interactive lesson plans and training equipment are recognized with a new Instructor Merit Award, which includes a uniform brassard and framed certificate. This new incentive is designed to increase the use of skill-based training in basic HTE classes.

The HTE curriculum is also available using an independent study format. Students can study online using Today's Hunter & Trapper in Pennsylvania©, the standard student manual. It is available at www.hunter-ed.com/pa. After completing their independent study, students attend a 2-hour class, where they are tested and certified. About 5% of Pennsylvania's basic HTE students elect to receive their training and certification in this manner. This format is used by all ages, but is most popular with students ages 21-30. We believe we are reaching a greater number of students with this alternative delivery opportunity.

The agency's Successful Bowhunting curriculum has returned to using an online version of Today's Bowhunter© as part of the comprehensive training program. After completing about 8 hours of independent study, students attend a one-day, 8-hour interactive class. They must pass a standardized exam before receiving certification. A

total of 21 states and provinces require this certification before being allowed to bowhunt in those jurisdictions.

The hunter education program has migrated to a new online student registration and records management system, the Event Manager. This system is hosted by a vendor from Dallas, TX and significantly improves our customers' registration experience over the previous system.

The agency is now utilizing web analytic data to quantify public demand for hunter education classes. The data allows us to identify those counties in greatest need for more hunter education class opportunities. This will improve customer service by allowing us to schedule more classes in areas of greatest need.

Another customer-service improvement is the use online customer surveys. After a hunter education class, all students are emailed an invitation to complete a short survey designed to give the agency feedback about their hunter education experience. Thousands of students have responded to date with this valuable feedback. A second survey is linked to our online hunter education class calendar page. It invites potential customers to tell us what classes are of interest to them, together with where and when they would like them to be scheduled. This is providing additional information as to where and when classes should be scheduled.

By definition, a hunting-related shooting incident is any occurrence when death or bodily injury results from the discharge of a sporting arm while engaged in the act of hunting. During this reporting year, 25 hunting-related shooting incidents were recorded. Of this total, 3 were fatal and 22 non-fatal. A total of 5 were self-inflicted and 20 were inflicted by another hunter. The leading causes of these incidents were: Failure to positively identify target – 28%; Victim in line of fire – 16%; Unintentional discharge – 16%; Firearm in dangerous position – 12%; and Ricochet – 12%.

A total of 25 hunters were either injured or killed as the result of a hunting related shooting incident during this reporting period. The number of injuries is consistent with the record-setting trend of low incident number and rates and marks the current all-time low for a 12 month reporting period.

At the present time a total of six training curriculums are in place. A basic Hunter-Trapper Education curriculum is being taught to all first-time hunters and trappers as required by statutory mandate. A Remedial Hunter Education curriculum is taught to those persons who have lost their hunting licenses as a result of a previous Game Law violation as required by statute. As required by agency regulation, a Cable Restraint Certification program is taught to those individuals desiring to trap foxes and coyotes using cable restraint devices. A Successful Furtaking curriculum is an advanced program designed to improve the chances for success by all trappers. This program also satisfies the legal requirement for any first-time buyer of a Furtaker license. A voluntary Successful Bowhunting course is available to students who want to improve their chances for success when hunting with a bow. A new Successful Turkey Hunting course was

launched this year. It is designed to improve success rates for all turkey hunters, both novice and experienced.

Strategic Objective 2.3 Expand the availability of wildlife resource information to the 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.

The I/E Bureau has 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 the radio market, we have entered our third year of an agreement with RadioPA to provide daily, three-minute broadcasts consisting of one minute and fifty 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. As part of that partnership with RadioPA, we also entered into an agreement to provide six radio Public Service Announcements focused on hunter safety and incorporate other agency messages on a website domain (SafeHuntingPA.com) that RadioPA created and obtained sponsorship for.

We provided numerous wildlife resource related presentations to the public during the year and routinely updated the agency website to expand the availability of wildlife information for public use. The following are but examples of the efforts made by Wildlife Management staff to provide information to better inform the public.

Several courses for the "Wildlife Conservationist Certificate" program at Harrisburg Area Community College were developed and taught by Wildlife Management staff including Wildlife Conservation, History and Management in PA; Mammal Identification, Endangered and Threatened Species, and Introduction to Bird Watching and Identification, including Threatened and Endangered Species.

Nominations and volunteers for the 2011 deer management Citizen Advisory Committees (CACs) were solicited. CACs were conducted in WMUs 2D, 2F, 2G, and 3C.

We continued efforts throughout the year to improve deer and elk management outreach efforts to the public and Game Commission employees. For example, we; 1) responded to 193 "Ask the deer biologists" questions via email and the website postings, 2) responded to 26 other public inquiries, 3) responded to 20 reporter inquiries, 4) recorded 18 radio programs for Outdoors PA, 5) presented 16 public programs, 6) completed a DVD on deer aging methods, 7) completed 4 brochures that addressed the challenges of balancing competing demands in deer management, deer-forest relationships, deer harvest estimates, and WMU size, 8) wrote and posted an issue of the *Deer Chronicle* on the agency website, 9) completed the 2010 'Elk in Pennsylvania' brochure for the elk

viewing areas, 10) updated deer web pages and added “Life and Times of the Whitetail” to the website, 11) wrote a monthly *Pennsylvania Game News* series on ‘Myths and legends of the whitetail’ reorganized the deer webpages on the website, and 12) presented a day-long deer management seminar at the Pennsylvania Institute of Conservation Education Bucktails Field School.

In cooperation with the Northcentral Region, we hosted the Eastern Elk Management Workshop in May 2011; attendees included elk managers from 9 states and other private organizations.

Information on waterfowl ecology and management was provided in response to numerous inquiries from the public. We also provided a duck banding demonstration at the 2010 Pymatuning Waterfowl Expo, participated in filming of 2 television segments (a video production of the scaup research project on *D3* hunting show, and a feature on duck banding for WNEP’s *Pennsylvania Outdoor Life* program), recorded Outdoors PA radio interviews on a variety of waterfowl topics, and published a Pennsylvania Waterfowl Data document summarizing waterfowl band recovery data, harvest and survival rates, and geographic patterns of harvest for major waterfowl species. This information has been shared with agency staff, waterfowl groups, outdoor writers, and individuals to disseminate to the public.

In early October 2010, the annual grouse/woodcock newsletter was mailed to over 500 cooperating hunters along with the 2010-11 hunting survey materials. The newsletter included results of the 2009-10 hunting season as well as the 2010-11 season forecast, information on long-term grouse and woodcock population trends, current Game Commission research and management efforts, and news items on Ruffed Grouse Society and Woodcock Limited habitat projects. The newsletter was also made available on the Game Commission website. We attended the annual meeting of Woodcock Limited of Pennsylvania and presented an update on woodcock, focusing on implementation status of the strategies in Pennsylvania’s woodcock management plan, and presented a program on grouse nutrition at the Wildlife Leadership Academy “PA Drummers” youth field school in June 2011. We provided 2 newspaper interviews on mourning dove ecology, management, and hunting opportunities, and responded to several e-mail requests for information and season forecasts for grouse and woodcock. We recorded an Outdoors PA interview on the draft ruffed grouse management plan. We provided preliminary hunting season forecasts for upland game birds to *Gun Dog* and *Upland Almanac* magazines and developed articles on grouse and woodcock harvest management (for the 2011-12 *Pennsylvania Hunting Annual*) and on viewing opportunities provided by the woodcock’s mating ritual (for the PA eBird website, and several e-mail and telephone requests for information on grouse population status and hunting opportunities, and provided information in response to a technical request regarding early successional habitat management recommendations at Marcellus Shale activity sites.

We responded to over 100 requests from other agencies and the public on wild turkey life history, hunting strategies, genetics, population management and habitat management, including 20 emails/phone calls from hunters concerned with turkey hunting season

changes. We also assisted 8 outdoor writers with turkey hunting season forecasts and reviewed a Penn State Extension turkey habitat management field guide for natural gas exploration and development activities.

Outreach efforts related to WPRAs included presentations in numerous venues including WPRAs-focused public meetings, Pheasants Forever chapter banquets, meetings of PA Federation of Sportsman's Clubs and other sportsmen's organizations, landowner and watershed association workshops, U.S. Department of Agriculture Conservation Reserve Enhancement Program re-enrollment meetings, Game Bird Breeder's Association meeting, and email lists. We also recorded multiple radio and newspaper interviews and a television segment focused on WPRAs and prepared a *Game News* article on WPRAs and the pheasant management plan. Project fliers, "wanted" posters, and brood survey forms were distributed within all WPRAs. We continued development in cooperation with I&E of a WPRAs page for the agency website. We also provided a newspaper interview on northern bobwhite ecology and management. Game Bird Section staff drafted species accounts for 10-9 waterfowl (mallard, American black duck, wood duck, American green-winged teal, blue-winged teal, common merganser, hooded merganser, Canada goose, trumpeter swan, and mute swan) and 5 upland game birds (mourning dove, ruffed grouse, wild turkey, ring-necked pheasant, and northern bobwhite quail) for the 2nd Pennsylvania Breeding Bird Atlas. We assisted I & E staff with preparation of the migratory game bird hunting regulations brochure and numerous news releases on game bird hunting seasons and research projects, and with maintaining and updating game bird information on the Game Commission website.

We responded to numerous public questions regarding gray foxes, river otter, muskrat, mink, fisher, mountain lions, coyotes, porcupines, and squirrels as well as animal photo and scat identification. We provided interviews to outdoor writers for bear, bobcat, and fisher management programs. We recorded radio segments on bears, fisher, bobcat, beaver, and predator prey relationships.

We developed 4 maps depicting bear harvest by county and WMU during the 2009 and 2010 hunting seasons, respectively, were posted on the agency website.

We provided 3 educational bear den tours for PCN, legislators, and other media representatives. A total of 6 news releases were reviewed and edited, covering: how to avoid bear conflicts in the Spring post-hibernation; how to avoid bear conflicts in the Fall; availability of bear check stations during the hunting season; preseason bear harvest forecast; preliminary bear harvest figures; and official bear harvest results. Eight informational segments about black bears were recorded for radio broadcast.

Thirty inquires about black bears submitted through the agency's website (i.e., GM Comments) or telephoned to the Harrisburg office were answered. Fourteen interviews with media representatives were provided discussing aspects of black bear research and management. Twenty requests from other wildlife agencies for data or technical advice about black bears in Pennsylvania were filled.

We provided lectures at a workshop for educators titled “Wild About Bears” and 5 public presentations about black bear ecology and management. We provided presentations on bobcat, fisher, and beaver to the Board of Commissioners at their quarterly meetings.

We summarized annual data on bear mortality (harvest and non-season), fall food conditions, human-bear-conflicts, and bear management and regulation changes; and presented results at a meeting of the Mid Appalachian Bear Study Group, which was attended by other state bear researchers and managers.

We presented a furbearer management overview to the Pennsylvania Trappers Association at their spring board meeting and their annual convention

We provided northeast state and provincial coyote harvest and management information for a USDA Animal and Plant Health Inspection Service (APHIS) wildlife biologist. Diversity Division staff provided interviews, still photography and videotaping opportunities, and information for television, radio, magazine and newspaper coverage of peregrine falcon bandings, the annual Christmas Bird Count, wildlife watching opportunities along the Susquehanna River, White Nose Syndrome in bats, and volunteer involvement in the Appalachian Bat Count, among other topics. Division staff provided a dozen or more presentations on endangered and threatened bird and mammal topics for state parks, outdoor festivals, and meetings of Audubon chapters and conservation organizations. Articles on birds were posted to the Pennsylvania eBird web portal on a regular basis and a column was produced for the Pennsylvania Society for Ornithology newsletter. Opportunities to participate in bird surveys and conservation efforts were posted to Pennsylvania Birds Listserve. Both division and regional diversity biologists assisted the Bureau of Information and Education by recording agency radio spots on species of greatest conservation need, providing information for news releases, and contributing to development of new material for the website. Regional Wildlife Diversity Biologists conducted 6 habitat management workshops with a total of 235 participants and presented more than 40 public programs with a total audience of nearly 1,400.

Education about wildlife diseases is another important facet of this objective. Every year programs are provided to widely diverse audiences from the public to agency personnel, and this year to legislators. This year’s programs for non-agency audiences included: a program on Ruffed Grouse anatomy, necropsy, and diseases was presented to participants in the 2010 and 2011 Pennsylvania Institute for Conservation Education’s Wildlife Leadership Adventure’s *Pennsylvania Drummers* camp, a program on deer evolution, anatomy, necropsy, and diseases was presented to participants in the Pennsylvania Institute for Conservation Education’s Wildlife Leadership Adventures *Bucktails* camp, guidelines for understanding the dangers of human exposure to wildlife diseases were provided for BIE to provide to a Harrisburg reporter, 2 newspaper interviews were given on the subject of the Pennsylvania response to the discovery of CWD in Maryland, a talk describing the perils of supplemental feeding to elk was presented to 35 citizens at the Elk Visitors Center in Benezette, 3 radio spots were produced for Outdoors PA on the subjects of the CWD Parts Ban, CWD risk factors, and CWD Surveillance sampling, an article detailing CWD risk factors was submitted to Game News to be potentially read by

70,000 subscribers, with the Game Mammals Section Supervisor a Feral Swine presentation was prepared for presentation by the Bureau Director to the Governor's Advisory Council, a presentation on diseases of wild birds, biosecurity in banding operations, and the safe and humane handling of trapped birds was given to 18 participants in the Banding Workshop hosted by the Game Bird section, a talk on wildlife disease careers and important wildlife diseases was given to 18 members of the PSU Pre-vet and Wildlife clubs, 2 weeks of instruction and exposure to wildlife veterinary medicine was provided for a third year veterinary extern from UPENN veterinary school, an interview was provided detailing the scope of veterinary attention to hibernating bears placed under anesthesia and their cubs during spring den visits, a talk entitled "Chronic Wasting Disease- A Primer" was presented to 160 attendees at the Columbia/Montour Conservation District Annual banquet, a presentation was given on wildlife veterinary medicine to 31 pre-veterinary students from across the eastern US, a talk on CWD and assorted other diseases was given to 42 members and guests of the Duncannon Sportsman's Club, a talk on CWD was given to 15 representatives of the south western counties of the Pennsylvania Federation of Sportsman's Clubs, a presentation on Game Commission activities relevant to the agricultural community was given to 31 members and guests of the Animal Health and Diagnostic Commission, and a presentation on CWD was given to 9 members of the House Game and Fisheries Committee.

The WHM Bureau was instrumental in promoting and facilitating many agency-produced media products, including, but not limited to, news releases, audio, video, brochures, Game News articles, power-point programs, public awareness signs, State Game Lands dedication ceremonies, and large visual displays. These efforts all helped to further emphasize the Commonwealth's wildlife resources and agency's management goals for wildlife protection and, habitat management, as well as featuring numerous wildlife habitat management program highlights which occurred throughout the year. Of particular ingenuity was the Bureau's success in reducing delinquent ROW License fees to certain radio stations who had claimed a financial hardship by allowing for an in lieu of payment by way of radio advertizing. This compromise not only saved the radio stations operating viability, but also provided the Game Commission an opportunity to reach thousands of radio listeners with advertizing messages regarding nesting box and seedling product sales and hunter/trapper programs. There were 1204 one-minute radio ads aired, worth \$40,423 over the course of the year on topics such as: "*Bird House & Wildlife Nesting Box Sales*", "*Howard Nursery Seedling Sales*", "*Hunter Safety*", "*Hunter-Trapper Education Instructor Recruitment*", and "*Sale of Hunting Licenses*"

Strategic Objective 2.4 Promote wildlife conservation education throughout Pennsylvania.

Conservation Education has been busy again this year. Over 2300 educators participated in 1 or 2-day workshops sponsored by the Commission. Eighty-two workshops were offered throughout the state and included Project WILD, Advanced WILD, PA Songbird and PA Biodiversity workshops. During this fiscal year, a new wild advanced workshop was offered on waterfowl. During this workshop teachers were able to learn about waterfowl and work with the waterfowl biologists to band ducks at Middle

Creek Wildlife Management Area. Other advanced workshops offered this year included workshops on elk, bears, owls, endangered species, peregrine falcons, biodiversity, and reading.

This year the Commission introduced Growing Up WILD into Pennsylvania schools. Growing Up WILD, part of the national Project WILD program, is an environmental education curriculum supplement designed for early childhood educators. Workshops are being done throughout the state. Participants to date have included educators from early childhood centers, Head Start, and environmental agencies and organizations.

The Commission continues to be an approved provider through ACT 48 for K-12 teachers. This year the Commission applied for and received approval to be an approved provider for early childhood credits hours, as well.

The Commission continues to be a member of the Environment and Ecology Advisory Council and the K-12 committee of the Association of Fish and Wildlife Agencies. The Commission is now a member of the Early Childhood Education Review Committee out of the Office of Child Development and Early Learning.

In addition to offering professional training for preK-12 teachers, 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. This year 874 schools with 105,000 students participated in this program.

Conservation Education is also responsible for the wildlife section of the State Envirothon. Game Commission personnel staff all of the county events, as well as the state contest. This year, over 15,000 high school students participated in the county events with 300 students competing at the state level.

The Commission also awarded grants to 10 schools throughout the state through the WILD ACTION Grant program. Students and teachers at these schools work together to develop habitat for wildlife on school grounds. From its inception in 1994, the WILD ACTION Grant program has provided grants to over 225 schools and youth organizations to improve habitat for wildlife.

Game Commission personnel conducted programs for students. Over 100,000 youth participated in general conservation education classroom and youth programs. 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. All programs are correlated to state education standards.

For the first time, the Commission presented education sessions at the Pennsylvania Science Teachers Association conference in Hershey and at the Early Childhood Summit held at Pennsylvania State University. Over 150 educators participated in these sessions on PA Biodiversity and Growing UP WILD

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 Game Commission through the Harrisburg Area Community College offers instructional courses relating to different aspects of wildlife and the outdoors through the Wildlife Conservationist Certificate Program. Other outreach programs include, billboard advertising throughout Pennsylvania, Connect with Wildlife magnets, posters, bumper stickers, orange hat with embroidered Game Commission logo and wildlife supporter, orange draw string bag, Working Together for Wildlife patches, Field Note patches, Elk Hunt patches, 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, Youth field days and the various special youth hunting season opportunities. Social Media is working on implementing I-phone applications that will further educate and inform the public of Game Commission sites and available activities. Met with Penn Dot officials to discuss and prevent the State Game Lands from being removed from the PA Tourism and Transportation map.

The Game Commission 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 2010/2011 hunting license. The Game Commission staffs informational booths that provide Game Commission materials/brochures and answer questions relating to Wildlife Conservation at the Pittsburgh Pirates games. The PA Game News will be marketed throughout Pennsylvania in all Wal-Mart stores.

The Game Commission along with the Harrisburg Area Community College is offering a Wildlife Conservationist Certificate Program at the Game Commission headquarters. The program will present the following courses: Wildlife Conservation, Management & History, Bird Watching & Identification, Mammal Identification, Wildlife Habitat/Plant Identification, Wildlife/Outdoor Photography, Introduction to Basic Target Archery, Hunter-Trapper Education, Hiking/Orienteering (Maps & Compass), Backyard Habitat Management, Field Trip-Middle Creek, and Wildlife Damage Management. The certificate program is ideal for individuals interested in learning about the many aspects of wildlife conservation. The Game Commission hosted an informational session to introduce the certificate program which included several guest speakers. There are fifty-five students enrolled in the program. There has been four Core course and four Elective course sessions presented and the Game Commission has received positive feedback on the program.

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 Game

Commission's role in managing wildlife and its habitat for current and future generations. The Wildlife Conservationist Certificate Program will enrich individuals knowledge in the areas of wildlife, habitat, waterfowl, wildlife damage management, plant identification, target archery, photography, conservation management/history, mammal identification, and hiking/orienteering

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 courses.

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

Tours of Bald Eagle State Park woodcock management areas were conducted with Woodcock Limited of PA's membership, and Woodcock Wingbee participants.

Workshops for private landowners included a Marcellus shale well pad reclamation site, grassland habitat for bird and forest wildlife habitat.

Public comments received in relation to grouse management plan included detailed observations of Game Commission management activities occurring on at least 7 State Game Lands and support for ongoing management activities at those sites. Two comments included recognition that small game habitat has improved since deer management activities have restored a balance to the deer numbers in the area.

The Wildlife Action Plan Coordinator participated in a 2-county Envirothon; regional diversity biologists participated in an EcoCamp, a wildlife leadership academy and provided at least 4 presentations in classroom settings. Wildlife Certification program classes were given on bird identification (2 sessions) to 22 students – all passed.

The Agency's wildlife habitat demonstration area at the agency's Harrisburg headquarters was completed and showcases wildlife habitat management demonstration areas. The area features food plot designs, tree and shrub plantings, a small wetland, brush piles, nesting structures, and practices to create and enhance wildlife food, water and cover in backyard settings. A tour guide map and 16 numbered stations along the walking trail are under final construction and will soon provide for an interactive demonstration area where users can read and learn about the multiple habitat management techniques that the Agency commonly employs throughout the state. The most recent addition to the demonstration area was the construction of an observation deck completed as part of an Eagle Scout project. The observation oversees the aquatic and terrestrial wetland ecosystem and provides for general public and handicap accessibility viewing opportunity.

In partnership with the Wildlife for Everyone Endowment Foundation and Waste Management the "Seedling for Schools" program distributed a total of 163,950 free

seedlings in 1,010 orders to 783 schools in the Commonwealth. The agency donates the seedlings along with teacher resource packets and student activity pages, and funding thru the foundation covers shipping and handling costs for this increasingly popular program.

Last year there were 5000 signs distributed throughout the Commonwealth to be placed on State Game Lands systems which highlighted varied wildlife habitat techniques recently implemented on local State Game Lands. These signs were placed at key locations on State Game Lands easily accessible to the general public and displayed valuable information and identification of the State Game Lands food plots, prescribed fire treatments, deer fence exclosures, forest management areas, and the creation of wildlife opening areas.

Five demonstration areas were identified or established on State Game Lands for the Appalachian Mountains Woodcock Initiative. These areas are providing on the ground examples of best management practices for American woodcock, a species of greatest conservation need in our Wildlife Action Plan.

Each year, the Agency participates in workshops for various landowner and conservation groups, and school students. This year, over 120 participants were informed on wildlife habitat management practices and agency habitat programs.

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

Strategic Objective 3.1 Increase hunter and trapper recruitment.

In the spring of 2011, a survey of Pennsylvania lapsed hunters was conducted to determine the reasons these hunters decided not to hunt in the 2010-11 season in Pennsylvania. They were also asked what may encourage them to start hunting in Pennsylvania again. Personal free time, lack of game, cost of basic and additional licenses, and nowhere to hunt were all cited factors that influenced them to stop hunting in Pennsylvania. However, these factors varied greatly with different age groups and no one factor was cited by half or more of the responding lapsed hunters. Encouragingly, 83% of lapsed resident hunters said they still identified themselves as Pennsylvania hunters, which could be critical for future retention and reactivation efforts.

In late 2010, another survey was conducted of current 2010-11 license buyers and they were asked how they received their information about hunting/trapping regulations, seasons, and bag limits. Eighty-five percent of these licensed hunters had personal computers in their home, with nearly all of those PC owners having internet access (97%). Sixty-eight percent of these license buyers had already visited the Game Commission website and 81% of those respondents had used the site to look up hunting regulations and bag limits. The hunting digest remained the most commonly used reference to learn about hunting in Pennsylvania (88%), followed by the Game Commission website (40%), friends and family(39%), their local newspaper (19%), and Pennsylvania Game News (14%).

The Hunter-Trapper Education 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 – 38,680 copies

IHEA Hunter's Handbook – 38,700 copies

IHEA Hunter and Shooting Sports Education Journal – 10,800 copies

Today's Bowhunter student guide - 1000

Today's Crossbow student guide - 20

NBEF's 3-in-1 *Responsible Hunting Guide* – 470

Successful Furtaking student guide – 270

Cable Restraint student manuals - 295

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 908 basic Hunter-Trapper Education course were conducted statewide during this reporting period. The total is comprised of 759 traditional multi-day courses, and 149 two-hour independent study classes. This compares to the total of 827 statewide courses during FY2009-10; 724 traditional and 103 independent study classes and marks a **9.8% increase** in the number of courses.

HE program policy requires all proposed HTE classes for the calendar year be scheduled by April 1st. An internal review is then conducted and recommendations are made to improve course scheduling with particular emphasis on the months of September and October. 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; it is hoped a useable measure can be gained. Once demand is quantified, classes can be scheduled to meet this demand.

Looking forward a mandate to conduct a minimum of 60 more HTE classes during the months of October and November 2011 was issued by the agency's Executive Director during this reporting year. It is anticipated this addition will have a profound effect on the number of students enrolled and certified during the next reporting period.

Youth hunting opportunities continue to be expanded. A cottontail rabbit junior hunter season, coinciding with the ring-necked pheasant junior hunter season, was established to run the Saturday before Columbus Day, and then the Monday of Columbus Day through the following Saturday. Additionally, the Board of Game Commissioners approved a regulatory change to the Mentored Youth Hunting Program which was signed by Gov. Tom Corbett into law on June 24, 2011; this new regulation authorizes adult mentors to transfer one antlerless deer license to any eligible mentored youth.

When considering the planning and implementation of hunting and trapping recruitment and retention activities, the National Shooting Sports Foundation's 2008 *Best Practices Workbook for Hunting and Shooting Recruitment and Retention*¹ workbook was heavily used as a guide.

In order to develop and implement a comprehensive 5-year hunter/trapper recruitment and retention plan to address the needs of Pennsylvania's declining hunting and trapping participation base, a group planning process was initiated in March 2011. Individuals taking part in the initial development of this plan were made up of Bureau of Information and Education Staff, and Region Information and Education Supervisors and facilitated by an individual nationally recognized in the field of wildlife conservation and specifically hunter recruitment and retention along with Bureau of Information and Education staff. Although the plan has been developed it is currently undergoing revisions.

The National Archery in the Schools Program (NASP®) was previously administered throughout the state by a volunteer under the direct guidance of NASP® since approximately 2005. It is preferred by NASP® to have the program coordinated at the state-level by state wildlife agencies, and to fulfill this desire the Game Commission assumed "jurisdictional" ownership of the National Archery in the Schools Program in the summer of 2010. This coordination includes recruiting, training, and certifying new physical education teachers in various school districts statewide, as well as other individual volunteers, to then conduct NASP® activities in their respective school districts while following established program guidelines.

Additionally, \$100,000 has been set aside to assist new schools in purchasing NASP® equipment kits to help get new schools started in the program. Each new school will be granted \$1,500 to put towards the purchase of a NASP® kit, which runs approximately \$3,071. The balance will then be funded by individual school districts, various other available grants, or donations from sportsmen's organizations or businesses. A NASP® kit includes 10 right-hand bows, 2 left-hand bows, 20 dozen arrows, an arrow curtain, five international-style targets, a bow rack, and a repair kit. For this grant period, 23 NASP® kits were paid for using monies from this grant for new schools entering the program.

Furthermore, with the agency now coordinating the program, physical education teachers and other individuals will not be charged for participation in Basic Archery Instructor (BAI) training. Previously, individuals paid \$35 for their BAI manual and also were assessed mileage fees to be paid to the instructor conducting the training.

14 Basic Archery Instructor (BAI) trainings were held, specifically between the time period of August 5, 2010 through June 30, 2011. With these trainings, 101 new BAIs were certified; these individuals are PE teachers, school administrators, and volunteers

¹ National Shooting Sports Foundation; *Best Management Practices Workbook for Hunting and Shooting Recruitment and Retention* (2008).

who will be working with the NASP® program in their respective schools. These trainings, along with grants awarded to each new school entering the NASP® program, made possible for thirty-one new schools to enter the program throughout Pennsylvania; this brings the current total of active NASP® schools in the commonwealth to approximately 52. Additionally, Basic Archer Instructor Trainer (BAIT) training was held which certified seven individuals to conduct BAI trainings throughout the state. On April 9, 2010, the Pennsylvania state NASP® tournament was held under the coordination of the previous Pennsylvania NASP coordinator. It is unknown how many schools participated, and it is believed there were approximately 300 students participating.

The Pennsylvania Game Commission hosted the 2011 PA State NASP® Tournament on March 11, 2011, at the Pennsylvania State University Multi-Sport Facility. Seventeen schools and over 400 students were registered for the event, however due to weather conditions which closed many schools for the day across the state, only 16 schools and slightly over 300 students participated. Participation in the state-wide tournament, along with certain qualifications, allows students to participate in the 2011 National NASP® Tournament; three PA schools, with a total of 52 students, participated in the National Tournament. Participation at the National level allows students to register for the World NASP® Tournament held in October of each year.

A cooperative agreement with the National Wild Turkey Federation was maintained to fund costs of conducting their *Women in the Outdoors* events. Nine WITO events were held across the state with 746 participants. In order to help women interested in participating in a WITO event local to them, the agency launched a new internet-based Event Manager program to coordinate registration for these events; this is to be the primary way women will find a Pennsylvania WITO event and register for them. Utilizing Event Manager is crucial as WITO participant information can be run through the agency’s automated license system and evaluation on the WITO program as a hunter/trapper recruitment tool can be analyzed.

Certain demographic information about hunting license buyers is not available at the present time in Pennsylvania. As an alternative, demographic information which identifies gender and minorities is collected by the Hunter-Trapper Education Division for all hunter education students. Information for the basic Hunter-Trapper Education course is summarized as follows:

| FY2009-10 | | FY2010-11 | | CHANGE |
|------------------|----------------|------------------|----------------|-------------------|
| RACE | PERCENT | RACE | PERCENT | % of Total |
| White | 96.3% | White | 96.6% | +0.3% |
| Black | 0.7% | Black | 0.8% | +0.1% |
| Asian | 0.3% | Asian | 0.4% | +0.1% |
| Hispanic | 1.1% | Hispanic | 0.9% | +0.4% |
| Native American | 0.2% | Native American | 0.2% | 0 |
| Other | 1.3% | Other | 1.0% | -0.3% |
| | | | | |

| | | | | |
|---------------|-------|---------------|-------|-------|
| GENDER | | GENDER | | |
| Male | 78.4% | Male | 75.2% | -3.2% |
| Female | 21.6% | Female | 24.8% | +3.2% |

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 FY2010-11

| REGION | IN-SCHOOL | AFTER SCHOOL | TOTAL |
|---------------|------------------|---------------------|--------------|
| NW | 15 | 5 | 20 |
| SW | 2 | 2 | 4 |
| NC | 3 | 1 | 4 |
| SC | 1 | 1 | 2 |
| NE | 3 | 4 | 7 |
| SE | 4 | 3 | 7 |
| TOTALS | 28 | 16 | 44 |

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

During the calendar year of 2010, a total of 35 hunting-related shooting incidents occurred at a rate of 3.79 incidents/100,000 license buyers. This marks a 2.9% increase over the previous year. The previous calendar year's number of 34 total incidents was one of lowest on record. The total number of incidents recorded during 2010 remains below the current 10-year average of 51.1 incidents per year with a rate of 5.15 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:

| FY2009-10 | | | | FY2010-11 | | | | |
|----------------------|----------------------|------------------------------------|-------------------------------------|-------------------|----------------------|------------------------------------|-------------------------------------|---------------------------|
| Curriculum | # Classes | # Students Enrolled | # Students Certified | Curriculum | # Classes | # Students Enrolled | # Students Certified | Percent Change |
| HTE | 724 | 29,675 | 28,640 | HTE | 759 | 32,683 | 31,554 | +5/+10/+9 |
| HTE IS | 103 | 2,418 | 1,573 | HTE IS | 149 | 2,329 | 1,838 | +45/-4/+17 |
| HTE TOTAL | 827 | 32,093 | 30,213 | | 908 | 35,012 | 33,392 | +10/+9/+11 |
| Bow Ed | 24 | 489 | 441 | Bow Ed | 22 | 301 | 277 | -8/-38/-37 |
| Cable | 27 | 624 | 603 | Cable | 21 | 579 | 558 | -22/-7/-7 |
| Furtaker | 5 | 108 | 105 | Furtaker | 9 | 211 | 206 | +80/+95/+96 |
| Remedial | 6 | 103 | 102 | Remedial | 5 | 53 | 53 | -17/-49/-48 |

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

Ongoing refinements to our new online class registration and reporting system, named the Event Manager. It has more features, more capabilities and a greater level of reliability than any other currently available online registration and management system designed for hunter education use.

Added HETools © animations to the basic Hunter-Trapper Education curriculum's classroom PowerPoint, which better demonstrate the interior mechanical functions of modern firearms and ammunition.

Use of web analytics to quantify demand for hunter education training by geographic locale then modify class schedules to begin to match this quantified need.

Created and launched new Zoomerang online surveys to gather feedback from customers. New surveys include (1) a customer satisfaction survey – an evaluation tool completed by students and (2) a course preference survey – completed by potential students that cannot find a class that meets their needs. This marketing-style survey provides information to help us schedule future classes to better meet customer needs.

Ongoing replacement of broken and obsolete A/V equipment with new, modern digital projectors, players and computers.

Acquisition of new and attractive equipment trailers to house and transport training equipment used in advanced program curriculums.

Ongoing transition of basic Hunter-Trapper Education instructor teams using skill-based learning stations.

Creation of new Instructor Merit Award to recognize those instructors who regularly use skill-based learning stations as part of the Hunter-Trapper Education curriculum.

Ongoing updates and refinements to the basic HTE student guide and online study course, "Today's Hunter and Trapper" in Pennsylvania.

During the reporting year one new advanced training program was launched statewide, Successful Turkey Hunting. The curriculum is designed to provide the knowledge, skills and ability for students to be successful early in their turkey hunting careers. Classes for

the public are expected to be scheduled during the fall of 2011. Current advanced training courses now include Successful Bowhunting, Successful Furtaking, Successful Turkey Hunting and Cable Restraint Certification.

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. The next scheduled peer review should occur in early 2013.

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.

Through the use of a point-of-sale license system, of which FY 2009 was the first full year of utilizing this approach, a database of hunters and trappers is continually being developed. This database can then serve to determine the retention rate of hunters and trappers, although some modifications to the questions currently asked of an individual when purchasing a license may be needed to more accurately define a "new" versus a "lapsed" hunter who had previously bought a license before the POS was in place.

In July 2010, the agency hired a Human Dimensions Specialist. A study regarding lapsed hunters in Pennsylvania was conducted in the spring of 2011. For the sake of this study, a lapsed hunter is defined as an individual who bought a license through the automated licensing system in 2009-10, but did not for the 2010-11 season. Five thousand resident and non-resident lapsed hunters were sampled, with the first questionnaire sent in April 2011, followed by a reminder postcard two weeks later, and a second copy of the questionnaire was mailed in May 2011. The response rate was 42.1% and 1,968 surveys were used in the analysis.

Resident hunters consisted of 84% of the lapsed hunters, while nonresident hunters from 38 states made up the remainder. The average age of resident lapsed hunters was 43.6 years, and 47.3 years was the average age of non-resident lapsed hunters. The number one factor that influenced the surveyed lapsed hunters was "not enough game", with 31.3% of the respondents citing that reason as influencing their decision not to purchase a license. Other leading factors included "amount of personal free time", "cost of additional licenses", "cost of basic license", "work obligations", and "not enough places to hunt". This study also found the top three factors that would encourage lapsed hunters to starting hunting again in Pennsylvania to be the opportunity to hunt on Sunday, having more personal time to hunt, and having higher game populations.

In the fall of 2010 postcards were sent to 2009-2010 license buyers who had not purchased a license so far that year. Two different messages were created for this

postcard mailing and a control group was also identified. Two test groups of 2,000 hunters were identified and the control group also contained two thousand hunters. Each of the test groups received each postcard but in a different order, spaced roughly six weeks apart. If a hunter purchased a license after the first mailing, they were removed from the list and did not receive the second postcard for their test group. There was not a significant difference between the number of licenses sold in the test groups and the control group. In fact, by the end of the calendar year 2010, the control group sold more licenses than one of the test groups. It seemed that, perhaps, the postcards encouraged these hunters to buy their licenses sooner, but overall the cost and effort of these mailings did not seem worth the investment and will not be conducted in future years.

Beginning towards the end of FY 2010, work began in redesigning the current Youth Field Day format into a Family Field Day concept. Additionally, to help facilitate individuals interested in participating in a Youth Field Day/Family Field Day find such an event local to them, the agency launched a new internet-based Event Manager program to coordinate registration for these events; the goal is for this program to become a clearinghouse across the state to advertise Field Days, and for individuals to utilize to find such events and register for them. It is probable for registration to begin in this capacity for events conducted in 2011.

Significant progress was made in outlining the plan for how Family Field Day participants will be taken from Stage II (Trial Stage of the Hunting/Shooting Participation Classification System) to Stage IV (Continuation with Support). Strategies include a manual to be utilized by sportsman's clubs and organizations that plan on hosting such an event – the manual will include the history of youth field days, current declining license trends, and what needs to change for Field Days to accomplish the goal of being a recruitment/retention tool for hunters and trappers. Also included will be planning documents and step-by-step directions on how to conduct hands-on outdoor-related stations such as fishing, archery, canoeing, shot gunning, riflery, and a wide-variety of other activities. The utilization of video media is also planned in several capacities, as is the use of Social Media and Marketing Strategies. Of utmost importance is the built-in follow-up event to create continuing social support that is imperative to keeping new hunting/trapping participants actively involved while improving their skills and establishing a hunting/trapping social support network.

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

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, 14,508 Public Access cooperators allowed hunting access to 2,707,323 acres of private land.

The agency's Howard Nursery in Centre County produced and distributed 2,060,525 tree and shrub seedlings for wildlife food and cover plantings, and 484,450 of the seedlings distributed were sold for \$105,095.52.

The wood shop produced and shipped a total of 22,136 wood products which included: 4,417 bluebird boxes; 10,282 bluebird box kits; 373 wood duck boxes and kits; 97 bat houses; 137 custom signs; 84 boundary line signs; and 139 bulletin boards and 3,575 sign backboards for use on State Game Lands and cooperative access properties. Wood products are available for purchase by the public on the agency's website.

Hunting access was also provided on our 1.4 million acre State Game Lands System via 4,279 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 State Game Lands, the Commission remains diligent in its land acquisition goals in an effort to expand upon hunting and trapping opportunities. This year alone, the Agency acquired 2012 acres of State Game Lands to add to those acres already part of the State Game Lands system.

Strategic Objective 3.6 Improve hunter and trapper understanding of their role in wildlife management.

Currently, no baseline data has been collected, nor have any surveys or other methods been conducted to measure this objective.

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 the reporting period, the new Successful Turkey Hunting program, which was launched during this reporting period, includes significant content devoted to this subject. This content is delivered as part of the independent study component to this training program.

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

- Myth's & Legends of the Whitetail (selected monthly columns)
- Life & Times of the Whitetail (selected monthly columns)
- Wild Pheasants Welcomed Back
- Early Bear Management
- Fire for Wildlife
- The Greatest Conservation Story in American History
- PA's Deer Population
- Game Commission Annual Report
- Game & Furbearer Harvests
- Antler Restrictions
- CWD – Will It Come? What are the Risks?

- Wills Mountain Scrub Oak Barrens Restoration

Game News has a monthly paid circulation of approximately 46,000 copies. Another 7,000 issues are distributed to public libraries and schools statewide.

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
- About Pennsylvania Deer Management Brochure Series
- An entire deer management section which includes the following:
 1. 2009-18 White-Tailed Deer Management Plan
 2. Citizens Advisory Committees
 3. 2011-12 Annual Deer Population Assessments and Allocations
 4. An Evaluation of Deer Management Options
 5. Forest Habitats and Deer Deterrent Fencing
 6. A Place to Call Home - Deer Habitat Relationships
 7. Common Resource of the Commonwealth - Managing Deer for Everyone
 8. Seeing the Whole Picture - Estimating Deer Harvests
 9. Why Bigger is Better - Wildlife Management Units

The popular website is currently boasting 1,996,687 "absolute unique visitors" for the reporting year. This is the number of different people who visit the site.

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

The Game Commission's four game farms continue to operate with a reduced production quota of 100,000 due to fiscal cutbacks. Propagated birds remain popular with sportsmen and provide many hours of hunting recreation.

Commission staff released 112,350 birds for hunting in FY 2010-2011. Shipments for the youth pheasant hunt consisted of 15,220 birds, which were released at designated advertised sites throughout the commonwealth in early October. Also 24 clubs received 1,676 birds to hold mentored youth hunts for 768 registered participants. For the regular fall season 88,198 birds (54,558 males and 33,640 hens) were stocked in October and November during a preseason and two in season releases. An additional 8,842 were released prior to the start of the late small game season before the Christmas holiday season. The Game Take survey indicated that 5,048 resident junior hunters harvested 4,617 pheasants during the 2010 youth hunt. During all pheasant seasons, 71,579 hunters harvested 103,366 pheasants.

In addition to pheasants released for hunting 2,550 eggs and 3,910 surplus hen chicks

were sold. The Game Commission donated 4,455 day old pheasant chicks to sportsmen's organizations to raise and release on lands opened to public hunting. Also 14,349 hens and 1,058 males were released in May after egg collection was completed.

During the Fiscal Year all Game Farms continued to service birds in brooding, holding pens, winter holding, breeder fields and in brooder operations. For these operations, pens are prepared for birds by placing feeders, waterers, 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 done. 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, brooding equipment, feeders and fountains, and work on completing repair and construction of nest boxes, shipping crates, gates, brooding equipment, etc. All farms had major projects removing old covered pens, constructing new covered holding fields or replacing netting. The Southwest Game Farm constructed a new corn crib; conducted road grading; made repairs/improvements to the incubator building and brooder houses; and participated in the Dove Banding Program, by trapping and banding 75 doves. The Northcentral Game Farm made improvements to incubator building; refurbished the break and rest room; replaced roof on SB-751 and placed vinyl siding on CD-26. The Loyalsock Game Farm reseeded #17 and #18 holding fields and rebuilt the winter holding fields. The Western Game Farm repaired 37 covered holding pens after a storm in June; constructed new roadways; made improvements to heating in HB-2; replaced the roof on SB-166; replaced 3 overhead doors, added two propane furnaces, had spray foam insulation put on SB-296; and constructed four large brooder houses to replace the two aging large brooder houses.

The Ring-necked Pheasant Management Plan is being used to guide pheasant recovery efforts. Wild Pheasant Recovery Areas (WPRAs) are being designated in areas of suitable habitat within the commonwealth, with the goal of establishing populations with at least 10 hens/mi² in the spring through habitat improvement and the release and temporary protection of wild trapped and transferred ring-necked pheasants. Hen population densities on each area are determined through a combination of crowing male surveys, and flushing surveys to obtain sex ratios prior to the nesting season. In 2011 we conducted flushing surveys (late winter) and crowing male surveys (spring) on those WPRAs with established populations. We collected additional data at 2 WPRAs (Central Susquehanna and Somerset) to determine the detectability of pheasants crowing at variable distances and times, and to test if our roadside surveys result in biased estimate of density. This research on reliability and detection probability will continue in 2012, and be used to calculate correction factors, if needed, for our pheasant density estimates. Other components of WPRAs monitoring include use of radiotelemetry to track survival of translocated and (in some cases) resident hens, and collection of extensive data on the types and quality of available habitat. Detailed habitat patch analysis (HPA) will be completed using digital aerial imagery and field surveys on each WPRAs in 2011 and

2012. In addition to clarifying reasons for success or failure of individual WPRAs, HPA results will be used to predict potential pheasant densities across the state and improve the existing pheasant habitat model.

Four WPRAs were established in prior fiscal years: Pike Run WPRAs, Central Susquehanna WPRAs, Somerset WPRAs, and Hegins-Gratz Valley WPRAs. In FY 2010, we assisted Pheasants Forever and Habitat Forever with completion of an application for a fifth WPRAs in Franklin County, which was given final approval by the Board of Commissioners at their April 2011 meeting. For all WPRAs, regulations are in place prohibiting the release of pen-raised pheasants, dog training from early February through 31 July, and the hunting and harvesting of pheasants.

In the Pike Run WPRAs, a total of 591 wild ring-necked pheasants translocated from South Dakota were released in 2005, 2006, 2007, and 2008. Densities in the Pike Run WPRAs were 1 hen/mi² in the core area and 1 hen/mi² overall this year. The 6-year release and monitoring effort on this WPRAs is now complete.

In the Central Susquehanna WPRAs, a total of 993 pheasants trapped in South Dakota (2007) and Montana (2007, 2008 and 2009) were released during the 3-year population establishment phase. In 2011, spring hen densities were 12 hens/mi² in the core area of the Turbotville-PPL study area portion of the Central Susquehanna WPRAs, and 6 hens/mi² in the Turbotville-PPL study area overall. In both the core area and overall study area of the Greenwood Valley portion of the Central Susquehanna WPRAs, spring hen densities were 3hens/mi². We trapped 13 resident hens in late winter 2011 for survival monitoring, and were tracking 8 of these birds at the end of the fiscal year. Population monitoring on this WPRAs will conclude in 2012, the third year post trap and transfer. No additional wild pheasants will be released on this area.

In the Somerset WPRAs, winter 2011 marked the third and final year of wild pheasant releases. There were 297 birds (273 females and 24 males) released in 2011, following 318 pheasants (282 females, 36 males) in 2010 and 346 (277 females, 69 males) in 2009. We radiomarked 50 of the incoming females for survival monitoring, and were tracking 27 of these birds as the fiscal year ended. Spring 2011 hen densities in the Somerset WPRAs were 2 hens/mi². Pheasants will be monitored for an additional 3 years now that trap and transfer is completed, i.e., 2012 through 2014.

The initial wild pheasant releases in the Hegins-Gratz Valley WPRAs occurred in winter 2011 with 298 birds (274 females and 24 males) transferred from South Dakota. We radiomarked 65 of the incoming females and were still tracking 37 of these birds as the fiscal year closed. The first year for estimating hen densities on this WPRAs will be in the spring of 2012. Two more years of releases (300 birds / year) are planned, and monitoring will continue during the remainder of the transfer/release period (2012-13) and for an additional 3 years after trap and transfer is completed (2014-2016).

Study areas and habitat types have been delineated in the Franklin County WPRAs. We also conducted crowing counts on several routes within the WPRAs to obtain baseline

data on the existing pheasant population prior to initiation of trap and transfer. The first releases of wild-trapped pheasants (obtained from Midwestern states) on this new WPRA are anticipated in winter 2012, with a goal of releasing 300 each year for 3 years. Pheasants will be monitored during the transfer/release period, and for an additional 3 years after trap and transfer is completed (2012 through 2017).

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

Once again, the Agency provided Local government bodies much needed funding in support of local and county governments and programs where State Game Lands are situated. Eligible recipients of Local municipalities received \$1.20 per acre from the Game Fund for payment in-lieu-of taxes, as required by the Act of May 17, 1929, as amended. During the fiscal year \$1,737,258.12 was divided into three equal payments and sent to the county, school district and township where State Game Lands are located.

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

Considerable wildlife habitat was improved on private lands via Farm Bill Programs. This included 216 CREP plans that were written and became contracts. 100% of these contracts began implementation. This year's 2,435 acres brings the PA CREP and CRP total since 2000 to 206,921 acres, making Pennsylvania a leader in the program.

An additional 142 landowners offered to enroll 4,395 acres in conservation cover through the Wildlife Habitat Incentives Program (WHIP) and Environmental Quality Incentives Program (EQIP – Forestry).

As part of a concerted effort to manage invasive plant species on State Game Lands throughout the Commonwealth, the Bureau effectuated the treatment of 1,678 acres by way of the Agency's licensed right-of ways program. This required invasive plant treatment was made part of the maintenance conditions within each license's agreement and will be accomplished as part of the licensee obligations.

Strategic Objective 4.2 Increase State Game Lands acreage with an emphasis on access, indentures, in-holdings and critical or unique habitats.

Acquiring interior holdings, indentures and access into existing State Game Lands is always a high priority for the Game Commission. In FY 10 the Game Commission entered into several land exchanges wherein the Commission gained more acreage than it exchanged. These exchanges were always a direct benefit to the sportsmen and wildlife as a whole. In some instances the exchanges resolved ongoing boundary line disputes or targeted critical wildlife habitat adjacent to existing State Game Lands in exchange for acres having less habitat and/or recreational value. On one occasion such an exchange allowed for the Commission to acquire a complete interior holding. However, by far the

biggest exchange occurring in during FY 2010 was between the Game Commission and the Department of Conservation and Natural Resources (DCNR). That exchange involved Commission ownership of both surface acres, as well as acres which were held under easement by the Game Commission, yet the surface and timber actually was owned by the DCNR. Likewise, it involved one of the nation's premiere waterfowl management acres which had been extensively managed by the Game Commission for decades, yet the DCNR owned as part of the Pymatuning State Park in Crawford County. To complete the exchange, the Game Commission conveyed 4,816 acres to the DCNR, of which 1,780 acres was easement only, in exchange for DCNR's 4,250 surface acres which was largely a portion of Pymatuning State Park in Crawford County. This exchange was hailed by the general public as a great example of inter-agency cooperation benefiting all users of the lands and enabled both agencies to better meet their respective missions

The Commission also entered into numerous acquisitions as well. All said, there was one interior, four indentures and three new access routes added into existing State Game Lands, and over 4,402 acres of critical habitat transferred thru acquisitions or exchanges which directly benefit wildlife species of greatest conservation need. The bulk of the critical wildlife habitat including wetlands, stream and river riparian habitats, a heron rookery, and nearly 2500 acres of open water impoundment with palustrine and emergent wetland complexes in the Pymatuning waterfowl management area was acquired.

In fiscal year 2010, the overall the net gain of acreage to the Commission was 2012 acres which was added to the existing State Game Lands complexes throughout the Commonwealth. This brought the Commission's total State Game Land acreage to 1,450,754. The State Game Land System includes 305 separate Game Land tracts in 65 of Pennsylvania's 67 counties.

Below is a more detailed breakout of the Commission's real-estate acquisitions and land exchanges:

- 2 acres L-3539 SGL 302 riparian habitat associated with unnamed tributary which flows into Enlow Fork of Wheeling Creek
- 4,248 acres – L-3558 LEX with DCNR adjoining SGL 214 North Shenango, Sadsbury and Pine Townships, Crawford County. Large lake and surrounding wetlands associated with previously owned part of Pymatuning State Park
- 7 acres L-3562 SGL 232 Zappi LEX riparian habitat along Buck Run
- 3 acres – L-3565 wetland complex along Bennett Branch on 359-acre tract adjoining SGL 331 Huston Township, Clearfield County acquired from The Conservation Fund
- 5 acres – L-3569 SGL 135 Abraham Tract; wetlands associated with both Fenner Mill Run which flows into Ash Creek and Ash Creek which flows through the center of the property
- 1 acre wetland – L-3573 SGL 153 West Wheatfield Township, Indiana County from LEX with Penn DOT
- 21 acres L-3572 SGL 301 Wetlands and riparian habitat associated the Allegheny River

- 115 acres L3575 SGL 314 with 780 feet of lake frontage along Lake Erie and Great Lakes Region Lake Plain Palustrine Forest with wetlands and tributary to Raccoon Creek which flows through the property
- 2 acres - Great Blue Heron Rookery located along Bennett Branch on L-3565 359 acre tract adjoining SGL 331, Huston Township, Clearfield County acquired from The Conservation Fund
 - a 359-acre indenture in SGL 331, Clearfield County made possible due to a bequest of \$150,000 from the estate of Blanche Pollum, DuBois the Commission was able match Game Fund dollars to purchase.
- 112 acres adjacent to SGL 314 along Lake Erie
- 85 acres adjoining the Howard Nursery
- Subsurface mineral rights only acquired through a tax sale under portions of SGL 198 and SGL 330
- 127.5 acres through three donations of land.

Through the deliberate efforts of the Commission's own surveying teams there was a substantial amount of acres of State Game Lands newly surveyed. All said Fiscal Year 2010 ended with a total of 1,559 acres surveyed by the Commission and 35 separate boundary lines comprising over 60 total lineal miles. These added survey acres included two new public access routes established on State Game Lands, and four new administrative access routes established. Embedded into part of these accomplishments was a tremendous amount of deed research and legal reviews conducted by our legal team and survey section. A combined total of 3,855 work hours were spent researching, investing, and handling questions concerning titles, surveys, boundaries, rights-of-ways and land litigation. This was accomplished despite the ongoing need for vacancy backfills of licensed surveyors existing within the Agency.

The Surveying Section continues to be understaffed because we have not been able to replace individuals as they retire. Our goal is to have one 2-person survey crew geographically located in each of the six Game Commission Regions; however, due to a statewide hiring freeze 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 temporary pilot program of 3rd party sub-contracts to address immediate localized survey needs. This sub-contract effort has already proven to be successful in further reducing boundary line disputes and 3rd party encroachments occurring on State Game Lands. During FY10, these sub-contracts resulted in 26,240 linear feet of re-established State Game Lands boundary's, for a cost of \$52,660. However, in one such instance, a boundary line dispute was determined to be in favor of the adjacent landowner and caused for a reduction in the size of SGL 57 by 51.557 acres.

A more detailed breakout of the Agency's survey accomplishments during FY10 is noted below:

Acres surveyed:

- SGL 211 at The Harrisburg Authority, DeHart Dam property, two public access areas established
- SGL 211 Dehart Dam Administrative 2 Right-of-Ways (3 acres)
- SGL 60 L-3475I E. P. Bender Tract - secured 2 temporary administrative access avenues
- SGL 217, Hauser Tract, Carbon County – secured (2) temporary administrative access avenues
- SGL 60 L-3475I E.P. Bender, Clearfield County - 235 acres
- SGL 135 L-3569 Abraham Tract, Lackawanna County - 95 acres
- SGL 168 L-3543 Kings Manor, Monroe County - 1060 acres completed with 30+/- acres pending
- SGL 289 L-3549 NTSWA exchange, Bradford County – 23.4 acres in; 26 acres out (2 more parcels to be completed)
- SGL 292 L-3560 Fazzi, Luzerne County – 5 acres (plus subdivision)
- SGL 314 L-3575 Coxon, Erie County - 112 acres
- SGL 44 L-3527 Brandy Camp Parcel Horton and Fox Townships, Elk County – 1721 acres 70 % completed and SGL 44 L-3526 Mead Run Parcel Horton Township, Elk County – 4048 acres 40% completed with one crew working all year)

Boundary Lines Surveyed:

- SGL 44 L-3526 Mead Run Parcel, Elk County - 90,000 feet (partial not complete)
- SGL 44 L-3527 Brandy Camp Parcel, Elk County - 75,000 feet (partial not complete)
- -SGL 60 L-3475I Bender Tract, Clearfield County - 16,125 feet
- -SGL 135, L-3569 Abraham Tract, Lackawanna County - 9,985 feet
- SGL 168, L-3543 Kings Manor, Monroe County - 92,600 feet
- SGL 211 Dehart Dam Administrative Right-of-Ways, Dauphin County 26,000 feet boundary tie in, 2,787 feet roadway survey layout 850 feet topography and cross section detail survey
- SGL 292 Fazzi Tract, Luzerne County - 1,200 feet
- SGL 289 L-3549 NTSWA exchange, Bradford County - 11,200feet
- SGL 310 L-3341 Mills Land Exchange, Wayne County - 9,800 feet
- SGL 314, L-3575 Coxon Property, Erie County - 10,925 feet

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. State Game Land Banks totaling 63 acres available for mitigation were previously established in Tioga and Northumberland Counties within PennDOT District 3-0. These agreements 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 7.72 acres were debited from these State Game Land banks during FY 10-11. 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 Lands Food & Cover crews. This year, 1,005 miles of boundary line were cleared, inspected, and marked.

Strategic Objective 4.3 Complete all comprehensive State Game Lands plans.

Comprehensive game land 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 Game Lands management. Plans were completed for 133,706 SGL acres in 36 separate plans. To date, 117 comprehensive management plans covering 504,000 acres have been completed.

The Forest Inventory and Analysis Program, which was established in 2005, is now in its first season of re-measuring plots established in the first 5 year cycle. This program is critical for accurate assessment of the forested areas of the State Game Lands. To date, a total of 875 permanent assessment plots have been established. These plots are being re-assessed on a 5-year cycle to determine changes in growth, health, and species composition of State Game Lands 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. Initial data gathering and analysis has been done on State Game Lands 176 in Centre County, the Scotia Barrens, for the 2010 prescribed fire season and pre-burn and post-burn data has been gathered for the 2011 prescribed fire season.

The Agency's Oil/Gas and Mineral Section provided oil, gas, and mineral information or historical resource recovery information to regional staff for Game Lands planning on seven State Game Lands. However, the biggest increase in workload was with respect to the Agency's Real Estate Division discerning and documenting the Commission's oil/gas and mineral ownership on various tracts throughout the Commonwealth. The bulk of this increase was directly associated with the Marcellus Shale gas play and resulted in 52 legal reviews and 34 oil/gas & mineral record updates, over 568 work hours involving title abstract and deed research, legal interpretation, ownership litigation and dispute resolutions, mapping of ownership, and answering the ongoing barrage of public inquiries regarding 3rd party private rights of oil/gas development which was already occurring on State Game Lands.

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

The regions have worked with numerous local townships and cities in the effort to manage wildlife. This is particularly true of deer management in urban areas and their efforts to control deer. It also entailed providing management advice on other nuisance issues and habitat development of species of special concern.

There are numerous projects with the Department of Conservation and Natural Resources on State Forest Land and State Parks. These projects include educational events and training at park facilities. Many habitat projects are developed on State Forest land that include the elk range and grazing areas, food plots for a variety of species, and management of habitat of special concern.

Projects on the Allegheny National Forest include food plots and increased hunter access on the National Forest. We have also worked with national Parks on deer management and the subsequent depredation issues in Valley Forge and Gettysburg.

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

During fiscal year 2010, the Game Commission issued 24 new right-of-way (ROW) licenses which included 13 pipelines, 3 electric lines, 1 fiber optics, 3 seismic surveys, 1 survey station, 3 road-use ROWs, and 17 Special Use Permits, with provisions protecting Game Commission interests. The total revenue and damage payments accruing from the new ROWs and paid into the Game Fund was \$2,923,583.66 with expected future additional annual revenue for these being \$167,359.99 per year so long as the licenses are active. ROW's and permit reviews encompassed a total of 1,678.95 acres of approved surface use on State Game Lands which 1,584.87 acres were temporary impacts only. Other related reviews entailed 35 pipelines; 1 compressor station, 12 access roads and 1 electric power line. All related impacts associated with the Agency's ROW program were mitigated through comprehensive re-vegetation plans and payment of \$2,151,986.82 for habitat damages in addition to monies received for damage to marketable timber. In several instances, applicants agreed to offset surface impacts by way of 3rd party commitments to acquire additional game lands acreage in direct support of Agency wildlife and recreational goals and objectives. These 3rd party replacement commitments resulted in \$950,973 being deposited into an interest bearing escrow account(s) in order to meet the approved license conditions of replacing lost wildlife habitat and recreational values. Supplementing the new ROW licenses and Special Use Permits issued this fiscal year, were 27 ROW amendments and/or assignments of licenses which were executed by Game Commission.

The regional breakdown of new ROW for the year was 12 in the Southwest; 14 in the Northcentral; 7 in the Northeast; 1 in the Southcentral and 7 in the Northwest. There were 23 miles of new pipeline ROW, 1.2 miles electric lines, 0.4 miles fiber optic line and 122.8 miles of seismic survey lines. In addition to the 24 new ROW licenses, 17 Special Use Permits and 27 ROW licenses had fees increased through amendments and assignments. Twelve amendments and 15 assignments of existing ROW licenses were

completed during the Fiscal Year. Ten ROW requests were either denied or rescinded due to unacceptable potential adverse impacts to State Game Lands wildlife resources, or as a result of viable alternatives being available to the applicant.

The WHM Bureau was also involved in drafting and executing two separate cooperative agreements designed to further support wildlife resource protection, conservation, and/or mitigation partnerships. One such cooperative agreement was with the Western Pennsylvania Conservancy on the acquisition of the 195-acre Cal-Penn tract adjoining SGL 295 and the other one was made as a result of a land exchange with the PA Turnpike Commission on SGL 169. In a concerted effort to improve upon the direction and efficiency of two of the Agency's management programs (oil/gas & mineral recovery and right-of ways licensing) the Bureau reviewed, developed, and revised its affiliated Standard Operating Procedures.

Coordination on non- Game Commission public lands provides additional hunting and habitat management opportunity. There are 78,523 acres of Army Corps of Engineers land managed by Game Commission through cooperative agreements.

An additional 37,000 acres of State Forest and State Park 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 Susquehannock, Lackawanna, 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.

Through participation in the Environmental Review Committee (ERC), staff were able to review and comment on potential wildlife habitat impacts associated with four projects proposed by the U.S. Fish & Wildlife Service's Partners for Fish & Wildlife Program and three flood control projects proposed by the Department of Environmental Protection's Bureau of Waterways Engineering. The Partners for Fish & Wildlife projects that were reviewed and recommended for approval by the Game Commission will result in the net creation, restoration and/or enhancement of over 8.2 acres of wetlands and the enhancement and protection of over 3,400 feet of riparian corridor.

Staff attended 25 field views and 38 meetings involving wind energy development on private lands in regards to potential 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 226 transportation projects (PennDOT, Turnpike, airports, rail) concerning species of special concern with 56 potential impacts. Habitat or

presence/absence surveys were conducted for 2 projects. Avoidance measures were required or recommended on 43 projects to avoid adverse impacts to species of special concern and their habitat. The surveys conducted were for bats. The survey results were used to avoid, minimize, or mitigate for unavoidable impacts. Two Environmental Impact Statements, two Environmental Assessments, and one Biological Assessment for transportation projects were also reviewed. Ten field views, 15 meetings, and Section 4(f) Training were attended related to transportation projects. Game Commission staff reviewed and approved 8 Section 4(f) checklist related transportation projects with potential impacts to State Game Lands.

A total of 495 Pennsylvania Natural Diversity Inventory (PNDI) reviews were completed for oil and gas projects throughout the state, 252 of which were related to Marcellus shale development. The reviews involved over 795 oil/gas wells (109 Marcellus wells), over 1,645 miles of oil/gas pipeline (1,241 for Marcellus), and 13 seismic surveys totaling over 2,641 square miles of survey area. Avoidance measures were recommended or required for 111 reviews to avoid or minimize adverse impacts to various bat species, various grassland nesting birds, marsh wrens, great blue herons, American bitterns, yellow-bellied flycatchers, blackpoll warblers, Swainson's thrushes, various area-sensitive forest bird species, northern goshawks, ospreys, bald eagles, Allegheny woodrats, rock voles, and northern water shrews. Thirty-four habitat surveys were required to assess the potential for adverse impacts to Allegheny woodrats or eastern small-footed myotis, and to avoid and minimize impacts to American bitterns, blackpoll warblers, yellow-bellied flycatchers, and Swainson's thrushes. A total of 17 reviews resulted in requests for, or the receipt of species surveys (i.e. mist netting, trapping, observations, etc.) to assess the potential for adverse impacts to bats, Allegheny woodrats, bald eagles, ospreys, northern goshawks, short-eared owls or northern harriers. Eight reviews required habitat replacement and/or habitat enhancements to compensate for direct and/or secondary impacts to Allegheny woodrats, eastern small-footed myotis or ospreys.

As a result of the PNDI coordination, over 1,739 miles of potential O/G pipelines and 3,941 square miles of potential seismic surveys were digitized and added to our GIS database for consideration of cumulative impacts during future PNDI reviews and to monitor the ever-expanding oil and gas development in the Commonwealth.

Species surveys were completed by the Game Commission at an active northern goshawk nest site, an active great blue heron rookery, two active Allegheny woodrat habitat sites, and a silver-haired bat roost site. Habitat surveys for Allegheny woodrats and/or eastern small-footed myotis were completed by the Game Commission at three additional sites. Winter helicopter surveys were also completed in the lower Pine Creek valley to assess the potential for Allegheny woodrat and small-footed myotis habitat delineation via aerial surveys for the avoidance and minimization of adverse impacts to these habitats during seismic surveys.

A total of 638 Pennsylvania Natural Diversity Inventory reviews were completed for construction and development projects throughout the state. These reviews identified a

total of 158 potential impacts to species of special concern were reviewed and commented. Surveys were conducted on 8 projects to avoid adverse impacts to Allegheny woodrat, eastern small-footed bats, and bald eagles or their habitats. Avoidance measures were required or recommended on 118 projects to avoid adverse impacts to federally and state listed endangered or threatened species and species of special concern and their habitats. A field survey was completed at 1 location for black-crowned night heron to determine the potential for a rookery on private property. 3 projects resulted in impacts that could not be avoided or minimized, therefore resulting in the creation or enhancement of 12.5 acres of habitat for various Threatened and Endangered species.

Staff reviewed and commented on 1 National Environmental Policy Act project proposal, attended 16 field views and 11 meetings involving private development projects. Staff reviewed and commented on 6 Community Development Block Grant projects, 1 ACOE stream or wetland permits, 18 projects located on Game Commission property, 8 PAFBC projects, 10 military projects, 38 USDA projects, 1 FWS project, 3 projects located on ANF property, and 63 projects located on DCNR property and one EPA underground injection Control proposal. Comments were provided that helped avoid and minimize impacts to streams, wetlands, and unique wildlife habitat.

A total of 97 environmental reviews were completed for various proposed mining or abandoned mine reclamation projects with a total acreage reviewed of over 22,105 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 24 project reviews to avoid or minimize adverse impacts to various bat species, various area-sensitive forest bird species, and northern water shrews. Twenty-two habitat surveys were required to assess the potential for adverse impacts to bats, Allegheny woodrats, or eastern small-footed myotis. The reviews also resulted in the requirement for one site to be trapped for Allegheny woodrats, 6 sites to be mist netted for bats, and numerous confirmed caves to be trapped for bats at 3 sites. Staff attended 11 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. During these field meetings, the Game Commission completed species surveys at an active bald eagle nest site and 2 inactive Allegheny woodrat habitat sites, completed habitat surveys for Allegheny woodrats and/or eastern small-footed myotis at 3 sites, and surveyed for potential bat hibernacula at 2 sites.

A total of eight state game lands were evaluated for potential leasing opportunities to generate revenue to the Commission and improve wildlife habitat. Leasing opportunities included oil, gas, or mineral recovery operations involving surface disturbance impacts. The evaluations including potential reclamation of abandoned mine features such as high walls and mine spoils, additional lands, and potential revenues that could potentially benefit wildlife and improve wildlife habitat.

A total of 2 PNDI reviews for wind energy projects located on private lands were completed for wildlife/habitat impacts. Both projects had potential impacts to one or more of the following species, Allegheny woodrat, eastern small-footed bats, and northern long-eared bats. Avoidance measures were requested on one project and one survey was requested to document post-construction mortality

Staff prepared one guidance document and three best management practices to further protect and minimize wildlife impacts resulting from associated oil & gas activity such as water impoundments, pipelines, and geophysical/seismic operations and seeding mixes beneficial for wildlife during site reclamation. Additionally, over 30 meetings were conducted throughout the year with regional Game Commission staff and operators to minimize surface impacts and improve wildlife habitat from resource recovery operations. Staff created 1 new guidance document related to Game Commission and DCNR timber harvest and vegetation management projects to further protect and minimize wildlife impacts. Staff created an internal use only guidance document for Game Commission environmental review staff regarding eastern small-footed bat impacts. This document was created to ensure consistent reviews of all projects with impacts to eastern small-footed bats.

The Bureau of Wildlife Habitat Management expended \$48,136.10 under the MOU with PennDOT for stakeholder coordination on transportation projects through out the Commonwealth. An additional \$66,679.18 was expended under the MOU with DEP (Bureau of Mining and Reclamation) relative to coal mining projects and stakeholder coordination meetings. Through a cooperative effort with DEP, OSM, USFW and the Game Commission, an escrow account was established designed to replace and mitigate for potential adverse losses to Indiana Bats (a federally listed endangered species) and their affiliated habitats from approved mining projects. This established escrow account provided stakeholders another means of adequately addressing potential wildlife impacts while simultaneously recovering coal reserves.

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 91 oil or gas well locations and their affiliated access ways on state game lands. Of these 59 were Marcellus Shale oil and gas well locations and 14 of these locations were under Game Commission oil/gas development leases and 45 locations are on State Game Land surface where the Game Commission 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 State Game Lands infrastructure such as culverts, bridges, gates, and enhanced erosion and sedimentation control structures at the expense of the Developer.

Staff also provided authorization for a mining company to leave a total of 1.7 miles of gravel road and 4 erosion and sedimentation control ponds on State Game Lands Nos.

108 and 184 to facilitate future administrative access on these parcels, and provide opportunities to maintain and improve the ponds for wildlife habitat post-mining.

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 39 contracts during the year, improved 48.9 miles of haul roads, constructed 10.6 miles of new roads (which became wildlife food strips after seeding), and placed 111 culverts. The value of these on-site infrastructure improvements exceeded \$545,255 and was cost borne by the timber operator and thus deducted from the totals of the timber bids. Additionally there were \$610,840 worth of improvements completed through timber sale contracts, including landing and skid road seeding with wildlife mixes, parking lot construction, gate installation, and deer exclosure fencing.

Providing hunting and furtaking opportunity are among State Game Lands mandates. During last year's hunting seasons, 4,279 miles of roads were maintained for hunter and habitat management access. In addition, 10,560 parking lots were maintained, 78 bridges were repaired, and 83 culverts replaced. Trails are also important for hunter access to game lands and 313 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 crews, who also conducts habitat management projects, conducted 1,235 range visits with major safety upgrade projects completed on two ranges.

To facilitate future efficiency, all buildings and other infrastructure have been input in the agency GIS for a total of 521 building locations mapped.

The Engineering Division demolished and removed 22 structures from game lands. These structures were mostly abandoned camps and agricultural buildings which were a public safety hazard. Removal of these structures was accomplished by outside contractors and Game Commission forces at a total cost of \$68,831.00.

Five new buildings were built during FY10-11. These include four new brooder houses at the Western Game Farm (WGF) and a new Food & Cover Crew Headquarters building for Indiana County. The four new brooder houses cost \$1,468,000.00 and will increase the production of pheasants and drastically reduce operating costs at the WGF. The new Indiana County food & cover crew headquarters building was necessary to provide an operations center for a new land management group. This building is a four bay structure with an office and work area. This new building cost \$157,082.02. Construction of the new Northwest Regional Office in Franklin was started in May 2011 and should be completed by March 2012. Installation of a new roof on the Southwest Regional Office in Ligonier was started in April 2011 and is nearly complete.

Eleven building renovation projects were completed in FY10-11. The HVAC system and fire suppression system for Game Commission Headquarters computer room were

replaced at a cost of \$61,308.00. Both systems were original from the construction of the building back in 1987. The systems were outdated and constantly in need of repair. A new bear check pavilion was constructed at the Northwest Regional Office in Jersey Shore. The assistant superintendent's house at the Northcentral Game Farm was renovated at a cost of \$14,720.00. The renovation consisted of removal of asbestos siding shingles and installation of new Styrofoam insulation, vinyl siding and aluminum window/door trim. Seven buildings were renovated/repared using Pittman-Robertson grant funding at a cost of \$83,461.86. These renovations/repared included two roof replacements, a furnace replacement, three siding/insulation installation projects and installation of new garage doors on a food & cover crew headquarters building.

The Engineering Division also constructed 16 new bridges on game lands in FY10-11. These bridges replaced existing deteriorated bridges, culverts or fords using Pittman-Robertson funds. Costs were reduced by buying materials in bulk and using Game Commission labor and rented equipment. The total cost of these 16 bridges is \$350,367.57; this works out to a cost of approximately \$677/linear foot. The new bridges opened or maintained access for the public and habitat management activities on 14 different game lands in five different regions.

Only one dam renovation was completed in FY10-11. This dam renovation project was on State Game Lands #213 in Crawford County and involved installation of new stone riprap. The project was completed using Game Commission labor and rented equipment at a cost of \$8,195.95. The Engineering Division conducted site inspections of ten dams during FY10-11. Plans were developed for repair projects on these dams and permit applications were submitted to DEP-Dam Safety. Work on these projects will be scheduled after the permits are issued by DEP. The Game Commission engineering staff also conducted the required safety inspections on the six high hazard dams owned by the agency. All six dams were found to be in excellent condition.

The Engineering Division conducted site inspections for 4 road projects during FY10-11. Plans were developed and permit applications were submitted for these projects. These road projects will be put out to bid when the necessary permits are obtained.

Strategic Objective 4.7 Enhance wildlife habitat on State Game Lands through the recovery of natural resources.

A Memorandum of Understanding (MOU) between the Game Commission and PennDOT allows PennDOT to create wetland mitigation sites on State Game Lands at no cost to the Game Commission. Four field views and 3 meetings were attended in regards to wetland mitigation sites that are currently being reviewed and considered under the MOU.

Early successional habitats are in decline across the state, causing them to be listed as key habitats in the Wildlife Action Plan. In addition to habitat improvements via the forestry program, 1,814 acres of forest and shrub land were treated by Game Commission Food &

Cover crews. An additional 3,083 acres was treated through third party contracts. Many of these acres will be maintained through the agency's prescribed fire program.

Grasslands are another key habitat, and many of the state's largest grasslands occur on strip mined sites. The Game Commission embarked on a grassland conservation initiative late in the year. Thus far, 1,196 acres of strip mines were reclaimed to native herbaceous habitat.

Invasive plants present an ongoing problem on State Game Lands. Invasive species that negatively impact wildlife habitat were detected and addressed on 3,106 acres of State Game Lands.

Tree and shrub seedlings totaling 211,316 were planted to improve habitat diversity on State Game Lands.

The Board of Commissioners approved a total of seven oil/gas and mineral recovery lease actions during 2010-2011, which includes the following:

- One shallow oil & gas agreement (SGL 276)-Limited to two shallow oil and gas wells on 103.04 acres and protects an additional 300 acres of Game Lands surface with privately-held oil & gas
- Four Marcellus-related Oil & Gas Agreements (SGL 114 [2,881.5 acres], 172 [722.3 acres], 208 [2,523.8 acres], 268 [1,930 acres])-Four of these oil and gas agreements are non-surface which protects 6,127.6 acres from surface disturbance activities relating to oil and gas development; one is 1,930 acres and is limited to 3 well pads with land exchange of 584.78 acres which therefore protects approximately 1,915 acres and replaces the temporarily surface disturbance on a 1 to 40 acre ratio.
- Two Sandstone Surface Mining Agreements (SGL 75, 100) related to Marcellus development and utilizing existing disturbed land currently being surface mined or reclaimed on Game Lands. One sandstone mining lease requires the operator to repair existing road infrastructure on several Game Lands in the Northcentral Region.

The approved bonus cash value to the Commission for these actions is \$22,796,700. In 2010-2011, these approvals provided for the acquisition or 3rd party replacement commitment of 10,062.78 acres involving several key tracts of lands having critical wildlife habitat and recreational benefits. The more notable tracts identified where the Kane tract -584.78 acres, Deemer tract -9,306 acres, & Wildlands tract -172 acres. These noted lands were valued at a total of \$6,129,946 (Kane tract -\$409,346, Deemer-\$5,583,600, Wildlands-\$137,000) and it is the 3rd party commitment from oil/gas leases which will provide the funding for their acquisition. By end of Fiscal Year 2010, there was 216.87 acres of land acquired through leases, contracts, and/or secondary uses of State Game Lands per habitat replacement obligations and anticipated game lands surface impacts. The acquisitions for habitat and recreational losses replaced by 3rd party commitments were as follows:

85 acres L-3566 Leathers Estate, Centre County adjoining Howard Nursery (\$386,000)

95 acres L-3569 Abraham Tract, Lackawanna County adjoining SGL 135 (\$340,000)

36.87 acres of 359 total acre purchase, Bennett Branch, Clearfield County adjoining SGL 331 (\$33,185) 65.8 acres of coal rights only L-3581 Clarion County Tax Sale SGL 330 Clarion County (\$2,751.54)

The Oil/Gas & Mineral Development Section reviewed and coordinated with Regional staff and industry on a total of 91 permitted oil/gas well locations on state game lands during 2010-2011. Total revenues received from oil/gas and mineral recovery operations in 2010-2011 were \$6,491,496 which includes oil/gas and coal royalties, rental and lease bonus payments were deposited into the Game Fund.

The Oil/Gas and Mineral Recovery Section currently manages 58 different companies operating a total of 109 executed lease agreements on 66 State Game Lands. Approximately 80,716 acres are currently under Game Commission approved oil and gas leases.

Oil/gas and mineral ownership continues to be researched and updated in response to Marcellus shale drilling activity during 2010-2011. OGM ownership research was conducted on a total of 331 parcels (over 122,580 acres), distributed among 54 different game lands complexes and results were input into the Commission's GIS database. A total of 5 mineral lease boundaries were added GIS database. All new oil/gas permit and drilling information on Game Lands and throughout Pennsylvania from DEP data, including the associated well attribute data, were also added to or updated in the GIS database.

The OGM Section continues to research adverse claims in conjunction with legal staff of oil/gas/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 31 inspections of 12 existing oil, gas or mineral development leases on game lands to ensure compliance with the lease conditions, and additional field reviews were conducted for 2 proposed gas pipeline right of ways on 2 game lands to ensure the protection of special concern species habitat and aquatic resources, and to review potential future leasing actions. Twelve inspections were also conducted at 3 separate oil/gas operations on game lands where the mineral rights are not under Commission ownership.

Maintaining optimum habitat diversity on game lands is an important goal of our Forest Habitat Management Program. Forty-five (45) forest habitat management projects containing 6,550 acres were offered for bid to commercial timber harvest operators

during the past fiscal year. These projects contained approximately 17.8 million board feet for which bidders offered \$4,432,849. Although this represents an increase in total acres previous year, it still represents a significant decrease from average bid values experienced 3-5 years ago, which shows the continuation of depressed timber markets in the economy.

There were 1,652 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.

Timber contractors harvested 5,690 acres that yielded more than 18.7 million board feet of logs and 152,207 tons of pulpwood. These operations generated \$7,636,251. This was a significant increase of 704 acres over the previous fiscal year. However, these additional acres only yielded \$1.5 million less in revenue. The increase in harvesting activity seems to indicate a stability returning to the timber markets, but the dollar values attached to the timber will likely not increase much over the next few years as the industry recovers from the economic slump.

Additional forest non-commercial habitat improvement projects including regeneration treatments, crop tree releases, and pre-commercial thinnings resulted in 1,731 additional acres of improved habitat. Also, the forestry staff provided support to the ever-growing mineral recovery and right-of-way operations on 330 acres of State Game Lands, which demonstrates a continued increase in OGM and ROW operations.

With the stabilization of more balanced deer populations, positive impacts are being noted in forest habitats. The Game Commission is actively removing deer enclosure fencing in areas where habitats have successfully regenerated. In the 2010 Fiscal Year 1,143 acres of fencing were removed, while only 979 acres of fence were constructed.

A project involving over 16 acres of abandoned mine lands, including 27,000 cubic yards of abandoned mine spoil, on State Game Lands No. 75 were reclaimed and the soil productivity enhanced as partial compensation for wildlife habitat impacts associated with a surface coal mining lease executed by the Commission in 2009. This work was completed with the cooperation of Kyler Environmental Services.

A total of 27 acres of abandoned mine lands, including over 1000 feet of abandoned highwall and 13 acres of abandoned coal refuse on State Game Lands No. 100 were reclaimed in cooperation with EXCO Resources, Gamesa Energy USA, AMFIRE Mining, and Kyler Environmental Services. The productivity and wildlife habitat value of approximately 49 acres of reclaimed surface mine was enhanced through the application soil amendments, primarily paper mill byproducts, and a herbaceous wildlife seed mix on State Game Lands No. 311 through cooperation with the Rocky Mountain Elk Foundation and the Domtar Paper Mill.

Staff has reviewed and authorized the Department of Environmental Protection's Bureau of Abandoned Mine Reclamation to complete 51 acres of an 87-acre abandoned mine

reclamation project on a portion of State Game Lands No. 108. Once completed, the project will result in the reclamation of approximately 1,900 feet of abandoned highwall and associated spoils on and immediately next to the game lands, and the filling and stabilization of an area of surface subsidence resulting from the collapse of abandoned deep mine workings on the game lands.

The Commission is implementing 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. The 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. The Fish and Boat Commission continues to conduct stream quality monitoring throughout the state and on State Game Lands. The Susquehanna River Basin Commission has set up multiple water quality monitoring stations throughout the Susquehanna River Basin, one on State Game Lands, where Marcellus shale oil and gas development activities are occurring. The Department of Environmental Protection has also conducted baseline stream sampling on private and public lands, including two State Game Lands, to monitor stream chemistry in areas of Marcellus Shale oil and gas development areas.

Strategic Objective 4.8 Identify and manage critical habitats identified in the Wildlife Action Plan.

All comprehensive management plans submitted this year (133,706 SGL acres in 36 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.

One of the strategies utilized in managing key habitats is prescribed fire. The agency 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: Agency standard operating procedures adopted, active voting membership maintained on the Prescribed Fire Council, cooperative agreements renewed with The Nature Conservancy, 53 burn plans submitted and reviewed to treat nearly 2,766 acres, and 221 personnel trained in advanced prescribed fire courses.

GOAL 5: Enhance the public's understanding of the Pennsylvania 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.

A total of nine public presentations on wind energy reached over 1,000 members of the general public, academia, or non-profit organizations. These presentations related the agency mission and responsibilities to work conducted through the Game Commission Wind Energy Voluntary Cooperative Agreement

Staff prepared and presented an Oil/Gas and Mineral Recovery presentation to the Board of Commissioners with emphasis on the Marcellus shale development on game lands. Staff also conducted a presentation on Marcellus shale development for the Pa Federation of Sportsmen's club annual meeting. Three other presentations were given regarding Marcellus shale development. Staff also provided a presentation to the Marcellus Shale Coalition regarding the Game Commission's PNDI review process as it relates to various oil/gas exploration and development projects, and one presentation was made to the Pennsylvania Land Trust Association regarding real estate acquisition processes.

Twenty-two phone, letter, and e-mail inquiries on resources recovery operations on game lands were submitted by the public or news media and 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.

We completed 4 CACs in WMUs 2D, 2F, 2G, and 3C. With these 4 CACs, we have completed CACs in all 22 WMUs over the last five years.

The annual waterfowl symposium was held in August at Haldeman Island to obtain input from the public and hunting organizations on waterfowl and migratory game bird season proposals for 2010-11. Based on this input, waterfowl season selections for Pennsylvania were developed, submitted to the USFWS, and announced to the public via a news release and waterfowl regulations brochure. In our season selections, we incorporated constituent requests to shift the dates of the duck season in the Northwest Zone to keep this season open during the rifle deer season, and to extend the season ending date of the snow goose conservation season.

In January, we participated in 2-day meeting with 25 stakeholders from the Appalachian Mountain Woodcock Initiative to discuss habitat restoration priorities. We attended the annual Woodcock Limited of PA meeting, provided an update on management plan implementation status for population objectives, and participated in a habitat tour at Bald Eagle State Park. We also met with representatives of Woodcock Limited on a separate occasion to review progress on implementation of the strategies in Pennsylvania's woodcock management plan. We solicited comments on the possible extension of the woodcock season from Woodcock Limited's membership, as well as the 500+ hunters in the grouse / woodcock cooperator survey. These comments were considered when making recommendations on the 2011 woodcock season structure. As the fiscal year closed, public comments were being received on the preliminary ruffed grouse management plan.

The annual turkey management plan review meeting with the Pennsylvania Chapter of the National Wild Turkey Federation was held on 8 June. We maintain a close partnership with this organization including attendance at PANWTF Board meetings to both provide information and receive input.

We held the annual pheasant working group meeting with Pheasants Forever and other partners on March 31. At this meeting, with assistance from Executive Office and Wildlife Habitat Management staff, we presented information and received public input on all aspects of the pheasant management plan (WPRAs, large-scale habitat trends and programs, propagation activities, etc.).

Through various media outlets and in-person presentations and contacts, Section biologists provided information on game bird research and management efforts to a variety of audiences such as civic and sporting groups, schools, and landowners. These contacts provided additional opportunities for stakeholder input.

In January 2011, a draft of the 2010-2019 Bald Eagle Management Plan was made available for public review. Comments were accepted via the agency website and by mail during a 60-day period. One hundred forty individuals and organizations offered 680 comments. Following final revision, the Board of Commissioners accepted the plan at its April 2011 meeting. In May 2011 we met with leaders from the Mammal and Ornithological Technical Committees of the Pennsylvania Biological Survey to discuss species of greatest conservation need and reviewed the status of current and candidate endangered and threatened bird and mammal species.

Game Birds - Presented waterfowl harvest and population information at the annual waterfowl symposium at Haldeman Island in August 2010, and received input from the public and waterfowler organizations on waterfowl season proposals for the 2010-11 season. Comments solicited on woodcock season extension from more than 500 grouse and woodcock cooperating hunters via the 2010 'From the Coverts' newsletter, and from membership of Woodcock Limited of PA. Met with conservation organization Woodcock Limited of PA to review progress on implementation of Pennsylvania woodcock management plan and discuss opportunities for collaboration to benefit woodcock. Staff met with contractors from Wildlife Management Institute to discuss priorities regarding woodcock habitat restoration in PA. Public were comments solicited on preliminary ruffed grouse management plan.

We incorporated stakeholder requests for changes to timing of Northwest Duck Zone season, and for extension of snow goose conservation season, in 2010-11 waterfowl hunting season selections and incorporated stakeholder preferences in consideration of 2011 woodcock season structure.

Deer - We completed the final 4 citizen advisory committees (CACs) in Wildlife Management Units (WMUs) 2D, 2F, 2G, and 3C.

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

In cooperation with the Governor's Office of Strategic Services (OSS), we completed the final 4 citizen advisory committees (CACs) in Wildlife Management Units (WMUs) 2D, 2F, 2G, and 3C.

We attended a Chronic Wasting Disease (CWD) response plan meeting and evaluated 5 and 10 mile distances and their potential to contain deer movements. Data from field studies was used to assess the value of each distance.

Game Commission staff participated in Atlantic Flyway Council 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.

The member states of the Atlantic and Mississippi Flyway Councils and the USFWS are working together to address long-term declines in pre-season black duck bandings through a 5-year pilot project (2010-14) to band black ducks during the post-season (winter) period. In Pennsylvania, banding occurred primarily in the Northwest and Southeast regions and we banded a total of 201 black ducks (25% more than in 2010), as well as 342 mallards, 37 mallard x black duck hybrids, and 11 individuals of 4 other species. Although pre-season (summer) duck banding remains our best way to achieve needed sample sizes for mallards and wood ducks, we capture relatively few (20-30) 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 in the Atlantic Flyway.

We also continued our participation in the federal band reporting rate study to assess reporting rates for recovered bands. This is the 7th consecutive year of our participation in this important study.

Staff continued collaboration with various stakeholders involved in early succession habitat initiatives, including Wildlife Management Institute's Appalachian Mountains Young Forest Initiative, Appalachian Mountains Golden-Winged Warbler Initiative, Woodcock Limited, Ruffed Grouse Society as well as several DCNR State Parks and District Forest offices. Collaborative efforts remain a priority in implementing the woodcock management plan and will also be a focus of grouse management plan implementation.

We worked closely with NWTF Regional biologist who provides technical guidance in all aspects of wild turkey management. The Bureau's wild turkey biologist continues to serve as technical representative to the NWTF. As such, the biologist reviewed and provided comments on 9 NWTF grant-in-aid wild turkey research proposals from across the country and Mexico. The recently completed tri-state gobbler study was a cooperative

effort with state wildlife agencies in New York and Ohio, PCFWRU, NWTF, PANWTF, and National Band and Tag, Inc. and was partially funded by the NWTF and the current hen harvest and survival rate study is being conducted in cooperation with the NWTF, PANWTF, and USFWS. We attended quarterly PANWTF Board meetings and presented Game Commission quarterly turkey technical committee reports.

The WMU 5A Wild Turkey Task Force, formed in 1997, is comprised of staff from Game Commission, Department of Conservation and Natural Resources-Bureau of Forestry (DCNR-BOF), NWTF, PANWTF and local NWTF Chapters. The task force meets once annually to review progress of the existing turkey management recommendations for WMU 5A. Implementation of these recommendations has resulted in an increased turkey population in WMU 5A and the task force supported the BWM recommendation to re-open the fall turkey season in 2010 under a conservative 3-day format.

A WPRA Manual was developed to outline the criteria, procedures, and methodology for establishment and evaluation of WPRAs, and the roles and responsibilities of the Game Commission and partner organizations in this effort.

We continued to provide financial support for the National Bobwhite Conservation Initiative Coordinator position based at the University of Tennessee to facilitate regional implementation of the national bobwhite recovery plan. Staff also served on the national management board and the technical steering committee for this initiative.

We finalized an extension to a cooperative agreement with Ducks Unlimited, INC to provide funds in support of the North American Waterfowl Management Plan and North American Wetlands Conservation Act projects in Canada. A waterfowl habitat restoration project in Quebec, the Baie Lavallière habitat project, is an important wetland habitat for many species of migratory birds and is an important staging area for waterfowl that are associated with the Atlantic Flyway and Pennsylvania.

Game Bird Section staff also participated in the annual Northeast Upland Game Bird Technical Committee meeting to discuss regional game bird population and habitat management projects and charges provided to the committee from the Northeast Wildlife Administrators.

Bird and mammal monitoring and recovery is accomplished through the cooperation of at least 85 partner organization (notably Audubon Pennsylvania and the Pennsylvania Society for Ornithology) contributing their expertise and personnel including hundreds of volunteers, resulting in thousands of volunteer hours per year. The Pennsylvania Biological Survey serves an official advisory role to the Game Commission through its Ornithological and Mammal technical committees and the Steering Committee. Involvement of the Pennsylvania Natural Heritage Partnership facilitates intra-state data management benefits.

Regionally, monitoring and research by the bird, mammal, and grants/planning sections are coordinated for greater efficiency and effectiveness through regional (interstate) 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, and Indiana Bat recovery team. This coordination assures improved (10%) match rates for work on federally endangered species (Indiana bat and piping plover). National guidance and coordination occurs through the regional Wildlife Action Plan committees. Game Commission biologists served on the steering committee for the second Northeast Regional Conservation Framework workshop, and helped review and select grants guided by this Framework.

Non-Game/Endangered Mammal Section biologists participated in more than 75 meetings during the past fiscal year. Most meetings, whether conventional, webinar, conference call or field reviews, involved both stakeholder and state or federal agency partners. Nearly half were conducted by telephone or video conferencing, reducing travel expenses and time demands. Conventional meetings ranged from small-group discussion about specific projects, management issues or habitat sites, through 1- to 3-day statewide or regional meetings, including the Northeast Fish and Wildlife Diversity Technical Committee and a combined meeting of the Northeast, Southeast and Midwest Bat Working Groups, to national meetings, including the annual White Nose Syndrome national symposium.

The Non-Game/Endangered Bird Section continued to collaborate on many state and regional conservation initiatives. We represent the Game Commission on the following state committees, which involved at least one meeting: Ornithological Technical Committee and status sub-committee and the Pennsylvania Society for Ornithology editorial board. Similarly, regional initiatives included: Northeast Partners in Flight, Appalachian Mountains Joint Venture Technical Committee and Management Board, Atlantic Flyway Non-game Bird Technical Committee, and the Association of Fish and Wildlife Agencies Southern Wings program. We also represent the Game Commission on: the Wild Resource Conservation Fund Advisory Committee; the Northeast Fish and Wildlife Diversity Technical Committee, the Association of Fish and Wildlife Agencies on Threatened and Endangered Species Policy, Energy and Wildlife, and Bird Conservation, committees; and several regional project steering committees. One such project, the regional habitat mapping effort recently completed its GIS landcover map. We contributed to a regional paper, "Status, biology, and conservation priorities for North America's eastern golden eagle population," recently accepted by the "Auk." In addition, we participated in over 25 conference calls, webinars, and other travel-saving electronic meetings. We also served on the steering committee for a regional conservation planning conference, held in Albany, which revisited the northeast conservation agenda which established the Regional Conservation Need grant program.

Regional Wildlife Diversity Biologists met with private landowners to learn their particular interests and evaluate habitat on their properties, and with NRCS personnel regarding Wildlife Habitat Improvement Program (WHIP) and Environmental Quality

Incentive Program (EQIP) funds that could help to implement habitat management plans. Regional biologists also participate in meetings of county conservation districts, watershed and stewardship associations, woodland owners groups, conservancies, and local special-interest working groups.

Wildlife Diversity – Regional Wildlife Diversity biologists assist landowners applying for NRCS WHIP and EQIP funds to help implement Private Landowner Assistance Plans. PA Cooperative Fish and Wildlife Research Unit provide grassland management on reclaimed minelands; Penn State University is implementing grassland management at Fort Indiantown Gap through a State Wildlife Grant (SWG) co-op project. SWG-funded habitat project completed (Piney Tract, Allegheny woodrat) and new (golden-winged warbler) are listed under Output Measures below.

Game Birds - Reviewed and ranked 20 proposals for wildlife habitat and research projects to be funded under the Great Lakes Fish and Wildlife Restoration Act. We drafted letters providing Game Commission comments on the USFWS's Supplemental Environmental Impact Statement on the Issuance of Annual Regulations Permitting the Hunting of Migratory Birds, and the Comprehensive Conservation Plan for Canaan Valley National Wildlife Refuge (WV). Cooperative woodcock monitoring efforts with Appalachian Mountain Young Forest Initiative were expanded in spring 2011. We are also working with PSU Center for Watershed Stewardship on a multi-parcel private lands plan for riparian ESH habitat improvement in a Centre County watershed, and providing technical assistance to DCNR Bureau of Forestry on managing State Forests for early succession species (6 State Forests interested thus far). We continue to provide financial support (in cooperation with other agencies) for both the NWTf regional biologist position, and the National Bobwhite Conservation Initiative Coordinator position. We finalized an extension to a cooperative agreement with Ducks Unlimited, INC. to provide funds in support of the North American Wildlife Management Plan and the North American Wetlands Conservation Act in Canada.

Through the direct efforts of the Bureau's Real Estate Division, Agency land acquisition funding was brokered by various partner relationships directly resulting in numerous State Game Lands acquisitions and habitat improvements. With seven planned projects having been reviewed and initiated, the Agency was able to bring three separate projects to fruition. These projects leveraged money, equipment, and manpower for agency affiliated wildlife conservation programs totaling \$730,714. Acquisitions such as Coxon property adjacent to SGL314 in Erie County, the Wheeler property in Somerset County SGL 93, and the Bennett Branch indenture of SGL 311 in Clearfield County were some of the more notable gains to the State Game Lands complexes and sportsmen alike. Partners and funding involved were the Western Pennsylvania Conservancy, Blanche Pollum Estate, Families of Flight 93, The Conservation Fund, Laurel Mountain Midstream Operating, LLC, USFWS Great Lakes Restoration Initiative, and Wildlife for Everyone Endowment Foundation, and the Joint Venture Habitat Restoration & Protection Program.

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

Strategic Objective 6.1 Partner with the *Wildlife For Everyone Endowment Foundation*, other foundations and Non-Governmental Organizations to financially support wildlife conservation programs and projects.

Through partnerships the Game Commission was able to increase the size of two existing State Game Lands and add 116 acres to the State Game Lands system. During FY 10, The Conservation Fund continued their commitment to recently created SGL 93 when they assisted with acquiring 4 acres in Shade Township, Somerset County. In fiscal year 2006 the Game Commission acquired our first tract of land in Somerset County north of the proposed site of the Flight 93 National Memorial creating SGL 93 named in honor of Flight 93's crew and passengers who heroically sacrificed their lives on September 11, 2001. (SGL 93 originally located in Clearfield County was renumbered SGL 331.) The 4 acres were acquired with funding from the Wildlife for Everyone Endowment Foundation (WFEEF), The Conservation Fund, Laurel Mountain Midstream Operating, LLC and from a ROW/land exchange with eleven landowners on SGL 111 in Somerset County. In order to effectuate the final restoration of the 4-acre parcel acquired, Waste Management agreed to partner with the WFEEF and accept the debris from the demolished house and outbuildings.

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

During the reporting year, two Federal Assistance Program grant proposals were developed and submitted by the Hunter-Trapper Education Division. The first is the Pennsylvania Hunter and Trapper Education Grant (PA-W-76-E), an on-going grant since the year 2000. This proposal was awarded a grant in the amount of \$874,500. The second was a one-year extension of a new grant, the Pennsylvania Hunter/Trapper Recruitment and Retention Grant (PA-W-80-E). This proposal was awarded a grant in the amount of \$459,000.

The Game Commission was the recipient of \$235,714 in land acquisition funding from foundations and non-governmental organizations. The funding was used to increase the size of SGL 314 by 112.6 acres through a partnership with the Western Pennsylvania Conservancy (WPC). WPC applied for grants and received \$250,000 from Department of Conservation and Natural Resources' Community Conservation Partnerships Program, \$245,000 from the USFWS Great Lakes Restoration Initiative, Joint Venture Habitat Restoration and Protection Program and \$10,000 from the Erie Community Foundation.

The Game Commission also received three donations of land and one donation of money to acquire land within 15 air miles of DuBois. The first donation was 121 acres adjoining SGL 302 in Richhill Township, Greene County from Consol Pennsylvania Coal Company, LLC. The second donation was 5.278 acres adjoining SGL 292 in Laurel Run Borough, Luzerne County from Albert and Amelia Fazzi. The third donation was 0.53 acres in Eldred Township, McKean County from Jeffrey K. Young. The Game

Commission received \$152,714.05 from the estate of Blanche Pollum to be used to acquire land within 15 air miles from DuBois. Combining Game Fund dollars and funds from third party commitments for compensation of habitat and recreational losses from previously approved Commission actions the Game Commission was able to acquire 359-acre indenture into SGL 331 in Huston Township, Clearfield County.

The WHM Bureau benefited from two separate grant arrangements valued at \$495,000 during the course of Fiscal Year 2010. Through a partnership with the Western Pennsylvania Conservancy (WPC) the Game Commission was able to increase the size of SGL 314 by 112.6 acres. WPC applied for grants and received \$250,000 from the Department of Conservation and Natural Resources' Community Conservation Partnerships Program, \$245,000 from the USFWS Great Lakes Restoration Initiative, Joint Venture Habitat Restoration and Protection Program and \$10,000 from the Erie Community Foundation.

The Habitat Division secured a \$1.5 million competitive grant award from the Farm Service Agency to increase participation in the Game Commission's Hunter Access program and improve habitat on cooperator lands. Of 28 states that applied for these Voluntary Public Access and Habitat Improvement program funds (VPA-HIP), the Game Commission received the largest grant award.

With assistance from the Pennsylvania Fish & Boat Commission and American Rivers, the Game Commission prepared and submitted a grant application to the U.S. Fish & Wildlife Service for a \$28,000 grant to assist the Game Commission in removal of the Duck Marsh Pond dams on an unnamed tributary to Mosquito Creek on State Game Lands No. 34. The removal of these dams will result in the restoration of up to 29 acres of emergent and scrub/shrub wetlands, the restoration of up to 1.4 miles of 1st order streams and springs currently within the impoundments or upstream of these barriers, and the restoration of the natural temperature regime in an additional 3.5 miles of stream below dams.

During the reporting year, two Federal Assistance Program grant proposals were developed and submitted by the Hunter-Trapper Education Division. The first is the Pennsylvania Hunter and Trapper Education Grant (PA-W-76-E), an on-going grant since the year 2000. This proposal was awarded a grant in the amount of \$874,500. The second was a one-year extension of a new grant, the Pennsylvania Hunter/Trapper Recruitment and Retention Grant (PA-W-80-E). This proposal was awarded a grant in the amount of \$459,000.

Grant funding from the U.S. Fish and Wildlife Service was instrumental in implementation of banding efforts targeting black ducks (\$4,870).

Staff from various bureaus and regions developed grouse/woodcock habitat management proposals to submit to the Ruffed Grouse Society for funding under their "PA Drummer" program. There were 8 Game Commission proposals submitted representing 5 of the 6 regions; all but one of these projects will likely receive funding.

The wild turkey hen harvest and survival rate study was awarded a federal Pittman-Robertson program research grant covering 75% of the total project costs, or \$1,239,825 (\$268,000 in FY 2010). A grant was awarded by The National Wild Turkey Federation (NWTf) totaling \$56,060 for the last 4 fiscal years of the study. The PA Chapter NWTf has committed to funding \$35,000.

Schuylkill Co. Pheasants Forever assisted with funding for transmitters on Hegins-Gratz WPRA.

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

In an informal manner, issues were raised to provide funding other than the increase in license fees. There was a bill introduced in the Senate to raise fees. Other discussions included a part of the Marcellus tax or fee. We introduced the idea of a small portion of the \$214 million in sales tax that is generated by the hunting industry. The idea of a state Pittman Robertson Tax was also floated. None of these ideas met with any success.

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

The Game Commission continues to receive donations from a variety of sources. There are those who donate when they purchase their license. Others offer donations when they visit our website. On several occasions people have requested donations to the Game Commission in lieu of flowers as part of their wishes.

No formal friend of wildlife program has been established. In the coming year we will do a survey to see what interests lie with our heritage species and determine if the citizens of the commonwealth are interested in supporting a wildlife program through individual donations.

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.

As part of the agency's Hunter Education Instructor Recruitment Plan, a suite of tools was developed in 2010. The suite revolves around a theme title of "Pass It On", which emphasizes the importance of continuing our hunting and trapping heritage. The tools include the following:

Recruitment DVD – This is a six-minute video which cameos the role and importance of volunteer instructors and how to apply. It is being played at the

conclusion of all hunter education classes, 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. Another 5,000 copies of the brochure have been printed and distributed during this reporting year.

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.

All of the above continues to be used during this reporting year. The entire package was recognized by the Association for Conservation Information, Inc. as one of their 2011 national award winners for its excellence in content and design. The group is comprised of state and federal natural resource agencies from across North America.

Volunteers and landowners who assist with the hen harvest and survival rate study receive certificates of appreciation from the field personnel they assist.

Strategic Objective 7.2 Promote and increase professional development opportunities for employees

Game Bird Section staff participated in numerous working meetings of technical and professional committees of which they are members. Section biologists also published and presented research and management findings, and participated in various training opportunities including SILVAH Oak (forest management) training, meetings of 2 state chapters of The Wildlife Society, Penn State University School of Forest Resources webinars, and wildlife disease training. The Game Commission hosted a 3-day North American Banding Council (NABC) waterfowl banding workshop at Pymatuning in August 2010. Attendees included 35 agency personnel (biologists, wildlife veterinarian, Wildlife Conservation Officers and deputies, land managers, temporary personnel, and volunteers), as well as instructors from NABC and Bird Banding Laboratory (BBL). Thirty-two attendees completed the NABC exam, and 28 received certification as banders or trainers. The workshop included field demonstrations at Pymatuning Wildlife Management Area on duck capture, identification and banding techniques as well as classroom PowerPoint presentations on all aspects of migratory game bird capture and banding (e.g. BBL procedures and considerations; pre- and post-season banding for swans, Canada geese, dabbling ducks, diving ducks, mourning doves, and woodcock; mallard/black duck hybrid identification; and animal welfare and disease issues). Compilation of course evaluations and material from the workshop were distributed to Game Commission staff participating with the waterfowl banding program.

Several Wildlife Management staff acted as peer-reviewers for articles submitted to the *Journal of Wildlife Management* and *Journal of Mammalogy*.

Wildlife Diversity staff biologists attended educational seminars in their areas of expertise during many research and professional conferences at which they also presented sessions. Regional Wildlife Diversity Biologists participated training on the U.S. Department of Agriculture Farm Bill provided by the Natural Resource Conservation Service, wildlife diseases, wild lands firefighting, the use of prescribed fire for habitat management, vernal pool and *wetland restoration*, and *global information and positioning systems*.

The number of employees representing the agency on technical and professional committees and organizations:

- 3 – Northeast Deer Technical Committee
- 2 – Eastern Elk Management Workshop
- 3 - Atlantic Flyway Council and AFC Migratory Game Bird Technical Section
- 2 – Atlantic Coast Joint Venture Management Board and ACJV Technical Committee
- 1 – Eastern Management Unit Dove Technical Committee
- 4 – Northeast Upland Game Bird Technical Committee
- 1 – Northeast Habitat Technical Committee
- 1 – National Wild Turkey Technical Committee
- 1 – National Bobwhite Technical Committee
- 1 – AFWA Committees (Resident Game Bird Working Group, Agricultural Policy Committee)
- 3 - Pennsylvania Biological Survey Steering Committee, Ornithology Technical Committee, Mammal Technical Committee
- 2 – Appalachian Mountain Joint Venture Technical Committee, and Management Board

Number and names of organizations to which agency staff belong:

The Wildlife Society
Audubon Society

Pennsylvania Biological Survey
Northeast Association of Fish and Wildlife Agencies (NEAFWA)
Association of Fish and Wildlife Agencies (AFWA)
The Wildlife Disease Association (WDA)
The American Association of Wildlife Veterinarians (AAWV)
Pennsylvania Society for Ornithology

A number of published articles finished by employees:

12 – J. T. Fleegle, “Life and Times of the Whitetail” in each monthly issue of *Pennsylvania Game News*.

1 – K. Sanford, C. DeLong, and L. Crespo. Wild Pheasants Welcomed Back. Oct. 2010 issue of *Pennsylvania Game News*

1 - L. Williams, Timberdoodle Time, March 2010 issue of eBird

1 - L. Williams, Pennsylvania Woodcock Season Extended, Summer 2011 issue of *From the Singing Ground*, newsletter of Woodcock Limited

1 – R. Boyd and M. Weaver, Small Game and Furbearer Harvests, Dec. 2010 issue of *Pennsylvania Game News*

1 - W. Cottrell, CWD in Pennsylvania—Will it Come? What are the Risks? Nov 2010 issue of *Pennsylvania Game News*

Wildlife Diversity – 4 published articles: G. Turner, co-author of “Habitat Characteristics and Revised Gap Landscape Analysis for the Northern Flying Squirrel” in *The American Midland Naturalist*, G. Turner, co-author of “The Potential Role of *Strongyloides robustus* on Parasite-Mediated Competition Between Two Species of Flying Squirrels” in *Journal of Wildlife Diseases*, G. Turner, lead author of “A 5-year Assessment of Mortality and Geographic Spread of White Nose Syndrome in North American Bats” in *Bat Research News*; C. Butchkoski, sole author of “Pennsylvania Bat Gating Efforts” in *Proceedings of the 2010 U.S. Department of Interior Office of Surface Mining forum on Protecting Threatened Bats at Coal Mines*. Also 14 species accounts published in *Terrestrial Vertebrates of Pennsylvania: A Complete Guide to Species of Conservation Concern* (2010 Johns Hopkins University Press): D. Brauning on piping plover, short-eared owl, peregrine falcon, least bittern, common tern; D. Gross on olive-sided flycatcher, long-eared owl, yellow-bellied flycatcher, Swainson’s thrush, blackpoll warbler, red crossbill; D. Mummert on marsh wren; C. Butchkoski on Indiana bat, G. Turner on northern flying squirrel.

Staff members were participants in a number of technical committee, workshops, symposia and conferences attended.

Northeast Deer Technical Committee

Eastern Elk Management Workshop

Atlantic Flyway Council meeting and associated Technical Committee Meetings

Atlantic Coast Joint Venture Management Board and associated Technical Committee Meetings

Atlantic Flyway waterfowl wingbee

EMU Dove Technical Committee annual meeting

Woodcock Wingbee (Game Commission hosted)

Northeast Upland Game Bird Technical Committee

National Wild Turkey Technical Committee Meeting

10th National Wild Turkey Symposium

PA Biological Survey Steering Committee Meeting

Wildlife Society – PA chapter conference

Wildlife Society - West Virginia chapter Joint Meeting with West Virginia Chapter of Society of American Foresters

Penn State University School of Forest Resources webinars: “Grouse and Woodcock Ecology and Management” and “Integrated Vegetation Management: Use of Herbicides in Forest Management”

2 technical meetings of the Northeast Black Bear Technical Committee were attended and 2 documents associated with these meetings were prepared – a status report for bears in Pennsylvania, and a whitepaper summarizing the committee’s recommendations for use of aversive conditioning.

2 inter-state meetings of the Mid-Appalachian Bear Study Group were attended to review annual data on bear mortality (harvest and non-season), fall food conditions, human-bear-conflicts, bear management/regulation changes, and ongoing black bear research in the mid-Appalachian region.

1 meeting of the Eastern Black Bear Workshop was attended to collaborate on status and range mapping of bears in the eastern North America and review methods for estimating and modeling bear population size.

1 meeting of the Northeast Furbearer Resources Technical Committee.

Wildlife Diversity – Atlantic Flyway Council meeting and associated Technical Committee meetings, North American Bird Conservation Conference joint with Partners in Flight, Appalachian Mountain Joint Venture Management quarterly board meetings (4), U.S. Committee for North American Bird Conservation annual meeting, Northeast Wildlife Diversity Technical Committee meetings (2), Pennsylvania Biological Survey Steering Committee, Ornithology Technical Committee and Mammal Technical Committee semiannual meetings (6), U.S. Department of Interior Office of Surface Mining technical forum, Northeast, Southeast and Midwest Bat Working Groups joint annual meeting, White Nose Syndrome National Symposium, Federal Assistance Coordinators meeting, 60th International Meeting of the Wildlife Disease Association meeting jointly with the American Association of Wildlife Veterinarians, Pennsylvania Game Breeders, and North American Game Bird Association.

Staff within the Bureau of Wildlife Habitat Management, actively participate in, and are members of numerous professional state and federally recognized wildlife related organizations. There are five Bureau employees holding leadership positions in affiliated professional organizations, such as the Association of Fish & Wildlife Agencies, the Great Lakes Energy Wind Collaborative, the Invasive Species Council, and the Organization of Wildlife Lands and Realty Specialists.

Environmental Planning and Habitat Protection Division staff gave a total of eight presentations at conferences and workshops reaching 550+ people. Staff was interviewed for two newspaper articles and conducted two radio programs regarding wind energy and also was interviewed for two newspaper articles regarding Marcellus Shale development. Staff also attended numerous conferences, meetings, or workshops on abandoned mine reclamation and natural gas to continue understanding and gaining knowledge on industry practices and environmental protection. Professional development was achieved through the attendance at the following conferences, training sessions and workshops: Wetland & Riverine Assessment Procedures Training provided by DEP, Environmentally Sensitive Maintenance for Dirt & Gravel Roads provided by the Center for Dirt & Gravel Roads, North American Shale Gas Symposium provided by the American Conference Institute and the Canadian Institute, Stream Ecological Services & Riparian Forest Buffer Workshop provided by the Stroud Water Research Center, ArcGIS 10 Training provided by ESRI, Northeast Shale Gas Symposium, National Association of Abandoned Mine Land Programs Conference.

Strategic Objective 7.3 Increase employee knowledge and understanding of the Pennsylvania Game Commission.

The Bureau of Wildlife Habitat conducted interagency training with varied staff relative to prescribe fire burning, hunter access programs, habitat impact analysis, oil/gas and mineral leasing program, right of way program, and engineering contract procurement.

The efforts resulted in improved staff efficiency and program management throughout the state and provided a basis for mid-level management career progression.

Deer biologists provided deer management training program to all Game Commission employees during meetings in the regions and Harrisburg. All agency staff completed annual deer management training.

BWM staff prepared and presented several wildlife management programs for the week-long new employee orientation program in September 2010.

Regional land management personnel were provided SOP 40.2 training on pheasant stocking.

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

The Bureau of Wildlife Habitat Management conducted a major workload analysis resulting from Marcellus shale oil/gas development on State Game Lands and private lands throughout the Commonwealth. The results of the analysis found that the Commission was in dire need of additional workforce compliment in 3 of the 6 Agency regions (SW, NC, & NE) due largely to increased workloads from environmental reviews and field reviews needed to protect, minimize and mitigate surface impacts to wildlife resources. Issues of seismic permit reviews, oil/gas ownership rights, 3rd party private oil/gas right developments, leasing proposals, pipeline right of ways, and the overall protection of wildlife habitats and inherent recreational values associated with the State Game Lands, were among the larger workload contributors.

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

Strategic Objective 7.5 Promote recognition for employees and volunteers.

Numerous employees and partners were recognized by certificates of appreciation and prints at Commission Meetings for their wildlife efforts.

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 | 113 |
| Regional Instructor of the Year | 6 |
| State Instructor of the Year | 1 |
| Hunter Education Service | 465 |
| Conservation Ethics | Unknown |
| Senior Wildlife Conservation | Unknown |
| Junior Wildlife Conservation | Unknown |
| Certificate of Appreciation | Unknown |
| Certificate of Participation | Unknown |

Wildlife Conservation Officer Deputies with over 40 years of service were recognized at an annual commission meeting. Additionally all employees with 25 years of service were recognized at the June Commission Meeting.

Six Conservation Officers and Deputies were given certificates of achievement for life saving actions.

The Grove family was presented the Pennsylvania Game Commission Medal of Valor for his heroic actions on November 11, 2010 that resulted in his death.

Strategic Objective 7.6 Modernize the administrative infrastructure.

GIS technology is essential to improve efficiency and maximize habitat programs. Currently, 40% of game lands information is updated in GIS format. The Habitat Division also created several IT tools to modernize Silvah data collection tool and provide a project tracking database.

GIS-based maps (25-30 per week) are being created by Regional GIS staff and the program Section Chief for projects including real estate acquisitions, legal cases, and wildlife management plans.

A contract was let to tie the land management record systems and the State Game Lands Planning system together to provide a single GIS based source for all information relating to State Game Lands.

Radio Communication systems were being evaluated and updated as budget allows. This is a complicated process as each county has different systems. Regional radio systems are being upgraded based on the changing tower environment.

The Computerized Dispatch System was initiated in March. This system will provide more positive control of incidents and the management of Conservation Officer work. The system will also provide historical data for incident management and citations as well as nuisance response.

Strategic Objective 7.7 Analyze processes to insure continued improvement of programs.

There was an in depth analysis of the tracking of incidents in the regions that resulted in the new Computerized Dispatch System.

We continued implementing the results from the workload studies on land management groups distribution and the Wildlife Conservation Officer distribution.

The Bureau of Administration evaluates the Pennsylvania Automated License System to make improvements to the license sales system for administration purposes and what is best for the customers.

The Bureau of Information and Education conducted an analysis of Hunter Trapper Education demand and showed we had a lot of demand in the fall as a result of web analytics. We increase the number of H T E courses for the fall.

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 2010-11, the Game Commission implemented a “zero-base” budget approach for the Bureaus, Regional Offices and Executive Office. Zero-base budgeting requires all expenses to be justified in accomplishing the goal and mission of the agency. This method is instrumental in 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 fiscal year. The Game Fund balance as of June 30, 2011, was \$45,835,253 which is an increase of \$1,439,986 from June 30, 2010.

The total spending plan increased by \$5,899,178, while the projected revenue for the same period also increased by \$8,563,462 from the previous year. The increase in revenues was a result of two significant areas; investment income on securities and deposits, and increase in available federal funds. The investment income increase was due to the current economic market conditions being more favorable than the previous fiscal year, and restructuring of the investment pools by the Treasury Department. The federal funds increase was due to the increase in the sale of firearms and ammunition.

The increase in spending over the previous fiscal year was primarily due to the additional habitat improvement projects implemented across the state, made possible by the increase in federal funds. For the third full year, the agency sold hunting and furbearer licenses and permits through our Automated Licensing Sales (PALS). The agency also implemented the IVR (voice recognition) harvest reporting system. During fiscal year 2010-11, a total of \$1,826,351 was paid in transaction fees and harvest reporting fees to the vendor for the functionality of the PALS system.

Continuing into the current fiscal year, 2010-11, the Game Commission has been notified by the U.S. Department of Fish and Wildlife Services that additional federal monies from excise tax could become available as a result of increased sales of hunting equipment and ammunition. In order to draw down these additional federal dollars, it is necessary for the Game Fund to incur the initial expense and then request reimbursement. As such, it is necessary to request a higher spending authority from the Game Fund.

An additional challenge we are facing is the recovering from the damages that occurred as a result of Hurricane Irene and Tropical Storm Lee. Although Pennsylvania was declared a federal disaster and will be eligible for federal funding, the agency is incurring expenses from existing spending authorization and awaiting federal reimbursement of 75 percent. It is projected that the Game Commission has incurred damages up to \$5 million.

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 saving measures already in place, the Game Commission has continued the procedures for approval of overtime and compensatory time. Prior approval will be required at the Bureau Director level, as well as monthly reporting to the Executive Office. 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.

In order to more efficiently capture habitat improvement work being conducted on State Game Lands, the agency continues to capture “in-kind” services, which ultimately could result in other financial resources becoming available.

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 Analyst 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. The following table provides an overview of the three escrow accounts.

| 12/01/2011 | PSU | First Commonwealth | P&N | First Commonwealth | | Community Band & Trust Company |
|-------------------------|------------|-----------------------|-------------------|---------------------|------------|--------------------------------|
| Initial Amount | 07/01/2010 | \$5,230,599.38 | 07/01/2010 | \$362,943.75 | 07/01/2010 | \$1,565,235.16 |
| Deposits this period | | \$0.00 | | \$4,321,000.00 | | \$1,060,974.00 |
| Withdrawals this period | | \$0.00 | | \$(23,548.00) | | \$0.00 |
| | | | | | | |
| Balance | 06/30/2011 | \$5,230,599.38 | | \$4,660,395.75 | | \$2,626,209.16 |
| | | | | | | |
| Committed: | Stewart | (\$400,000.00) | Deemer | (\$4,000,000.00) | Deemer | (\$1,639,586.00) |
| | Mantle | (\$395,000.00) | Flight 93 | (\$22,720.00) | Hauser | (\$137,000.00) |
| | Rockview | (\$723,600.00) | Cambria Tax Claim | (\$77,272.50) | Rockview | (\$367,938) |
| | Hoover | (\$745,000.00) | | | | |
| | | | | | | |
| Actual Balance | | \$2,966,999.38 | | \$560,403.25 | | \$481,685.16 |
| | | | | | | |
| | | | | | | |

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 seven formal complaints during fiscal year 2010 - 2011. 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.

Of the seven complaints filed, a finding of “Exonerated” was issued in three, “Sustained” in one and a finding of “Not Sustained” in three.

A regional breakdown of complaints in 2010-11 is as follows: Southwest Region, 1; Northcentral Region, 3; Northeast Region, 2; and Southeast Region, 1.

The findings have the following meanings:

Exonerated – The incident occurred, but the employee’s actions were justified, lawful, proper and consistent with policies and directives.

Not Sustained – The evidence fails to demonstrate by a preponderance of the evidence that the allegation occurred.

Sustained – The allegation is supported by a preponderance of the evidence to indicate the employee or volunteer did commit one or more of the alleged acts.

GROWING GREENER II
JULY 1, 2010 TO JUNE 30, 2011

Report of Pennsylvania Game Commission Activities
Related to Growing Greener II Funding

In July 2005, the Pennsylvania Game Commission joined the rest of the Commonwealth in hailing the enactment of Growing Greener II, a voter-approved plan that invests \$625 million in environmental programs. Included in this legislation is an allotment of \$20 million for state facilities and lands managed by the Commission. The Commissioners have subsequently approved the use of Growing Greener II funds for proceeding with critical infrastructure upgrades at Commonwealth-owned lands including buildings, roads and dams managed by the Game Commission. These projects are just part of needed renovations, repairs and upgrades at state-owned facilities managed by the Commission. The projects are arranged by region.

These projects have been completed, are under construction or are being designed. The time frame for the projects is from July 1, 2010 to June 30, 2011. These projects total \$3,727,740.75 in funds used for upgrades to building facilities and other improvements to infrastructure.

Northwest Region

Northwest Regional Office: The Northwest Regional Office was constructed back in the 1950s. The existing building was too small to service the public and adequately house the regional work staff. The existing building also had structural and facility deficiencies including a leaky roof, substandard doors and windows, poor insulation and inadequate wiring and data systems. The new building nearing completion will be an energy efficient structure that can house all the regional personnel and has room for staff expansion. The existing building was demolished before the new building construction. The regional office staff was moved to temporary rental office space.

The Game Commission signed a funding agreement with Department of General Services (DGS) allocating \$2,513,982.05 million for the project. Construction of the new building began in May 2011, and is expected to be completed in March 2012. The building is expected to come in according to the budget funding agreement with DGS.

Pymatuning Wildlife Education Center (SGL 214): The existing visitor center at Pymatuning is an outdated building that cannot adequately host the public. The building has substandard HVAC and electrical systems and has no room for hunting administration, staff offices and other public programs. The existing building does not have ADA-compliant restrooms, and the roof, windows and doors are substandard, according to current building codes. A new building will be constructed at the site that is based on the design of the Middle Creek Visitor Center. The old building will be demolished after the new building is completed.

The Game Commission signed a funding agreement with DGS allocating \$700,000.00 for the project. DGS currently is reviewing proposals from architectural firms for the design of the new building. The design is expected to start in early 2012. No timeline for construction has been set at this time.

Western Game Farm Brooder Houses: The Game Commission recently completed the construction of four new brooder houses at the Western Game Farm (WGF). Problems developed as a result of the insulation and interior vinyl panels in the houses. A change order was issued to correct the problem. The corrections to all four new brooder houses will be completed in January 2012 and the brooder houses will be available for pheasant brooding in April/May 2012.

A total of \$74,000.00 was allocated to the repair work at the brooder houses.

Southwest Region

Southwest Regional Office: The Southwest Regional Office is in a former elementary school constructed back in the 1950s. The existing flat membrane roof is the original roof on the building. The roof is deteriorated and leaking.

The Game Commission signed a funding agreement with DGS allocating \$250,000.00 for installation of a new roof on the building. DGS has hired Clark Contractors to install a new roof at a cost of \$217,703.54. The new roof was essentially completed in October 2011. DGS developed a punch list of minor items for the project that will be completed in Spring 2012.

Northcentral Region

No projects to report on during this time period.

Southcentral Region

No projects to report on during this time period.

Northeast Region

No projects to report on during this time period.

Southeast Region

Repair Sunfish Pond (SGL 46): The existing stone spillway has deteriorated to the point that it threatens the safety of the dam and a nearby roadway. The dam is in an area frequented by the public; further loss of the spillway walls is a threat to public safety. An emergency breach of the dam was completed in May 2011. The Department of Environmental Protection (DEP) still has not issued a permit for the project; this has taken DEP almost two years to review the submitted plans.

Plans and specifications have been prepared by the Game Commission. The project, which is expected to be out for bid in 2012, has an estimated cost of \$131,155.00.

Clarks Creek Bridge (SGL 211): The Game Commission obtained a right-of-way to cross the lands of the Harrisburg Water Authority, upstream of DeHart Dam, to access SGL 211, which had been inaccessible. To provide vehicle access, the Game Commission constructed an access road from Route 325 to Clarks Creek. This bridge will carry the access road over Clarks Creek.

The Game Commission completed construction of the new 50-foot bridge in June 2011 at a cost of \$35,800.16.

Clarks Creek Road (SGL 211): A second section of access road has to be constructed from the new bridge over Clarks Creek to reach SGL 211. This section of road is about 1,700-feet in length. Once the access road is completed, vehicles can reach SGL 211 in Clarks Creek valley from Route 325.

Plans and specifications have been prepared by the Game Commission. The Game Commission still is waiting for a permit from DEP for the project. The project is expected to be bid in early 2012. The cost estimate for this project is \$55,100.00.