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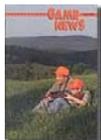
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DNA

A WILDLIFE conservation officer arrives, warrant in hand, at the door, he takes samples of the venison in the freezer or perhaps leftovers in the fridge, he gathers hair and blood from the truck bed, antlers from the garage, swabs the meat grinder and takes a few fresh bones from the scrap-pile buried outback. If he's at your house, you're probably not on Santa's "been good" list this year. He's gathering evidence to send to the new Wildlife DNA Lab at East Stroudsburg University - evidence that can prove your innocence or guarantee you'll be getting coal in your stocking this Christmas.

What is DNA anyway?

DNA can be found in nearly every type of cell: hair cells, skin cells, bone cells, muscle cells and white blood cells, to name a few. It is a sort of instruction manual for creating and maintaining a specific, individual organism. Unless the organism has an identical twin, its DNA is unique; no other organism will have the same DNA. Because it is unique, it can also be used as a "genetic fingerprint" to identify that specific organism.

But, DNA doesn't look like a fingerprint and it doesn't look like an instruction manual. Think of it as a very long, very thin string, packed very neatly and very compact. If you look closely at the string, you'll see it is actually two smaller strands twisted around each other. Each small strand is made up of letters - only four letters actually - As, Ts, Gs and Cs. The As in one strand always attach to Ts in the other, likewise, Gs and Cs are always paired together. The pairs link up like pairs of dancers, bonding the two strands together into one long thin string, Gs with Cs and As with Ts. Now, march that long string of dancers down to the nearest amusement park and get them in line for the biggest, baddest roller coaster. The string winds back and forth and back and forth, up and down and around and around until it is all organized very neatly into a very small area. With DNA, there could be three billion pairs of dancers in an area so small we can't even see it with a very fancy microscope. That's kind of what DNA looks like.

The order in which all the letter pairs line up is the genetic blueprint of the organism - its genetic code. There are sections of the string that are coding DNA. Some coding DNA establishes things like eye color and hair color in humans; some determines sex. Coding DNA sets certain specifications for the organism. Most of the letter pairs, however, aren't coding DNA. In fact, most DNA seems to be along for the ride. Scientists aren't sure what purpose most of this non-coding DNA serves or if it has a purpose at all, they even call some of it junk DNA.

Why should I care?

That "junk" is what scientists can use to determine whether a sample is human or non-human. Non-coding DNA can tell scientists what species the sample came from. It can be used to determine that a specimen came, most likely, from northern New York as opposed to western Pennsylvania.

Scientists can also use non-coding DNA to determine that the antlers in the aforementioned garage came off the carcass with the fresh bullet wound that was just found discarded on the side of road; that the meat in the freezer or fridge came from a minimum of three deer; that fresh parts from one of those deer were also in the scrap-pile outback. Someone might have some explaining to do.

But, DNA is useful beyond the purpose of law enforcement. The lab at ESU is one of only a dozen or so wildlife-DNA labs in the world. As databases of information on wildlife DNA grow and integrate, wildlife managers will have more and more information available to help them manage wildlife populations both locally and globally. Scientists can use DNA to estimate population sizes and sex ratios and to determine a population's genetic health based on genetic variation or susceptibility to disease. DNA can be used to determine hybridization and inbreeding. It can even be used to study the historic movement of wildlife populations.

Northeast Wildlife DNA Lab

The Northeast Wildlife DNA Laboratory opened its doors in October of 2005 as a service of the

Department of Biological Sciences at East Stroudsburg University. Some of the services the lab can provide are: determining the species or sex of a mammalian or avian sample, identifying a genetic fingerprint for an individual or population, estimating population sizes and sex ratios, determining the presence of hybridization and inbreeding, analyzing maternal or paternal lineage, parts and/or identity matching, and identifying a minimum number of individuals contained in a mixed sample. The lab can also provide expert testimony and forensic services for cases involving crimes against wildlife.

The fundamental goal of the lab is to build and maintain a library of DNA for all wildlife, using tissue, hair, blood, feathers, scales, bones, teeth and cheek swabs. Right now the lab is focusing on species that are a concern either because their populations are low, they are a focus of wildlife management issues, or they involve human health issues. The intent is to archive all wildlife DNA to use for reference and to preserve biodiversity information. As the archive becomes larger and more diverse, its capabilities will become more powerful and more diverse.

Some of the current projects:

- Tri-State Black Bear Population Genetics and Health Project - This project is using samples from Pennsylvania bear check stations, as well as black bear samples from throughout New Jersey and New York, to build a forensic reference database. Scientists plan to learn about the genetic diversity and health of black bear populations in the three states, as well as define genetic populations and determine relationships between populations within the tri-state area. The reference database will be particularly useful in processing black bear forensic cases for wildlife agencies in both Pennsylvania and New Jersey.
- Surveillance of tick-borne diseases -This endeavor will help scientists determine how common the infective agents that cause several tick-borne diseases are within tick populations.
- Pennsylvania reference databases - Samples from nearly every elk harvested in Pennsylvania are being used to help build a forensic reference database to assist the PGC in protecting the Pennsylvania elk herd from wildlife law violators. Forensic reference databases are also being built for Pennsylvania's black bear, white-tailed deer and wild turkey populations.

The Verdict

Law abiding hunters and wildlife enthusiasts can rest easier knowing that officers who protect our wildlife have another tool in their toolbox to help prosecute poachers and other game law violators. Lawbreakers, however, should know that it's getting easier to link them "beyond a reasonable doubt" to the crimes they've committed. Law enforcement officials are now able to pursue cases that they previously would not have been able to.

Wildlife biologists around the world will benefit from the valuable information they'll have available to help them understand and manage wildlife populations. Outdoor recreationists can enlist the services of the new lab to determine if a tick they found imbedded in their skin was carrying any diseases, and wildlife conservationists can appreciate the value of building a library that documents and stores information about the genetic diversity of our wildlife populations now and into the future.

- *Lori D. Richardson, Wildlife Education Specialist*

Blood and Guts

IT WAS THE 2004 bear season, and while we were certainly busy enough, we were now looking for the proverbial needle in a haystack. Clinton County WCO Ken Packard had just called to inform me that a 500-pound bear, shot the day before, had just been brought into the Antes Fort check station in Lycoming County by Roy Bozak, who was on license revocation for prior offenses. Ken had a hunch that something wasn't right, and because the bear had allegedly been taken in my district, he suggested that I check it out. The kill location, as provided to check station personnel by Roy and his wife Judy, who tagged the bear, was on a game lands in the Greens Run area. With little else to go on, Deputy Dave Sittler and I proceeded to the area with little expectation of finding anything.

Greens Run Road is a lightly used township dirt road that winds its way through a section of game lands off Route 150 near Howard. While proceeding south, looking for drag marks, blood or any other signs of a bear being taken in the area, we encountered a slow moving vehicle heading our way. As I pulled to the side of the road the vehicle stopped. The driver was a hunter from out of the area who wondered where all the bears were. After some small talk I decided to check his rifle, which was loaded. Then we had to go to the motel where he was staying, because of a problem with his license. After issuing him a citation we returned to Greens Run to continue our search.

After covering a mile or so I noticed something white up in the woods, approximately 50 yards off the road. It was a fresh bear gut pile minus the heart and lungs. The strange thing, though, was the complete lack of blood or drag marks to or from the gut pile. It appeared as though someone had carried the entrails up into the woods by hand and deposited them in plain view of the road. If any bear, especially a 500-pounder, had been taken at this location, there should have been drag marks, blood and limbs broken or turned. There wasn't a twig out of place.

I took photographs and a sample from the stomach contents and spleen and then went to call WCO Ken Packard. We also called the check station to confirm that no other bears were reportedly killed in that area.

Later that evening we met with WCO Packard. Ken knows a lot of people, and he knew a guy who knew a guy that might know if our suspect, Roy Bozak, had a camp anywhere in that area. Sure enough, this individual stated that Roy had a camp somewhere up Greens Run on property owned by Charlie Lamp. I knew that the Lamp property adjoined the game lands in question but had never been on it. The threat of snow and rain in the forecast hastened our decision to get out into that area early the next morning to find the camp, even though it was Thanksgiving and our families expected us home.

We parked at the game lands boundary line and began our search. About an hour later we located a dirt lane on the Lamp property that led to an old school bus fashioned into a hunting camp. A sign on the back window had Roy's name on it. As we cautiously made our way down the lane we immediately noticed a large pile of bagels and muffins out in front of the camp. Closer inspection revealed blood droplets. As I kicked away some of the leaves it immediately became apparent that someone had killed something at this location and tried to hide the evidence by covering the area with leaves. I found large amounts of blood under the leaves around the muffin pile, and a wide drag mark that led to a covered up larger pool of blood approximately 25 yards away. I was beginning to piece the whole case together in my mind.

I could almost see the bear as it made its way to the camp to feed on pastries. As it lingers around the bait the muzzle of a high-powered rifle is trained on its torso. At the shot the bear bolts and runs. It weakens quickly, shot through the chest, and falls. The pool of blood reveals the spot where it died. The bear was hastily field-dressed, the heart and lungs left intact. The shooter quickly realizes that not only does he need to hide the evidence, but now must somehow divert attention away from the camp in case of an investigation. The conspirators likely knew that Game Commission personnel at check stations ask about the location of kill for the report, so they deposited the entrails on nearby game lands, in plain view, where they could say the bear was taken.

The next day I interviewed Mr. and Mrs. Bozak. I said nothing about the camp, blood, muffins or gut piles. I simply stated that we had information that the bear may not have been taken legally and asked them for their story. They claimed that Judy shot the bear on the game land - where I found the gut pile. After field-dressing the bear, minus the heart and lungs, they rolled the bear down to the road where they flagged down a truck with several hunters. After loading the large bear into Roy's truck they went straight home to Mill Hall in Clinton County. A few friends stopped by to look at the bear and they took it to the check station the next day. I thanked them for their cooperation and told them I would be in touch.

WCO Packard made a few phone calls and finally located the head and hide at a local taxidermist. I secured a search warrant and retrieved the hide that day. Shortly thereafter I scheduled another interview with the Bozaks. This time I told them everything we knew. They now indicated that after shooting the bear on the game lands they drove up to their camp on the Lamp property. Roy said that he tried to unload the bear at the camp but realized it was too heavy. He could think of no reason for the blood at the muffin pile. I explained what I thought happened and advised them that I would be submitting the samples I collected to a lab for DNA analysis. "This is your opportunity to tell the truth and cooperate," I said.

"Do what you gotta do. That blood is not from our bear," was all Bozak said.

The U.S. Fish and Wildlife Service operates a forensics lab in Ashland, Oregon. Over the years officers from all over the country, including those here in Pennsylvania, have used the lab for cases involving DNA analysis. The only problem was that they were so backlogged with cases that it could take the lab years to get to the Bozak case. Many phone calls and e-mails later, I finally located a wildlife DNA lab in New York that could analyze my samples. I submitted the blood and tissue samples collected at the camp and from the gut pile found on the game lands, along with blood found in Mr. Bozak's truck and a piece of the bear hide seized from the taxidermist. A short while later I received the much anticipated results in a certified letter. The conclusion, as written by the technician, was that all samples submitted were from the same bear. I called Ray and Judy to set up our third interview.

"I could have told you that," was Roy's reply when I told him about the DNA lab results, but he would not elaborate. He was obviously prepared now to offer up yet another story that would somehow fit the growing pile of evidence we had accumulated. I told him I would be over in a couple hours to talk to him and his wife about the report. When I arrived I knocked on the door and could see Judy in the kitchen. When she saw me she ran and hid behind a cabinet and would not answer the door.

I filed charges shortly thereafter. Because we could not prove who actually shot the bear, and no one was willing to talk, they were both cited for possession of a bear taken unlawfully in a baited area. At a summary hearing in front of the District Justice the defendants were represented by an attorney. Neither defendant testified and both were found guilty. At the county court appeal, Roy was found not guilty, but Judy was found guilty and sentenced to pay a fine and restitution in the amount of \$3,750. She will lose her hunting license for three years.

A heads-up play by WCO Ken Packard and a fair amount of luck were needed to bring this case to justice. Most people are shocked to find out that we use DNA analysis to solve wildlife crimes. I know the Bozaks were.

- Terry D. Wills, Centre County WCO

Just a Couple of Trees

ON FEBRUARY 16, 2006, I was contacted by Pocono Mt. Regional Police detective Steve Mertz about the possibility of some trees being taken from SGL 127 in Coolbaugh Township.

Apparently a train traveling along Route 611 the previous Sunday had nearly struck a piece of equipment that was being used to haul trees across railroad tracks near Tobyhanna. One of the Pocono Mt. Regional Police's sharp-eyed K-9 officers, Joe Lutkowski, was traveling home and had heard the radio transmission. While passing the area he noted a small truck matching the description of the one seen along the railroad tracks. It was being driven erratically, because it was pulling a trailer that had two very large cherry logs on it. After stopping the truck, Officer Lutkowski discovered that neither of the two occupants had a driver's license, nor was either the truck or trailer registered or insured.

The two admitted to being at the site and to taking the trees, but they were unaware of any of the equipment being used to load the logs or where the logs came from. The equipment, it turns out, had been stolen from an excavator at a local job site and had been driven to the area where the trees had been cut.

Steve and I met that day and followed the excavator tracks over the train tracks and into the well marked game lands. We immediately noticed cherry trees that had been cut into log lengths and others cut that could not be felled. An old trailer was also left at the site. Steve and I agreed that we needed a PGC forester to take a look at the amount of cutting and give us an estimate for the value of the stolen trees.

Forestry supervisor Joe Ulozus came out the following day to give an estimate, and it became apparent that we had not realized the magnitude of the cutting. Several trails, hundreds of yards long had been blazed through the once pristine game lands. Wetland areas had been driven through, trees knocked over and, in the end, nearly \$20,000 worth of cherry trees had been cut. We proceeded to take photographs, make measurements and calculations, and gather and record all other related evidence.

Well aware of the magnitude of the theft, we decided it was time to go talk to the suspects again. Both agreed to talk, and this time they admitted that they were there and took some trees, but it was, "just a couple of trees," and they didn't understand what the big deal was.

Steve and I continued our investigation and began to talk to others implicated by the suspects. We were unable to locate one individual, but after getting consent to check his father's property we located a stolen pickup that was in the process of being cut up and destroyed. He was soon arrested for the stolen vehicle, however it was obvious he was not involved in the tree theft.

A second individual was soon located and we arrested him for the theft of some trees east of where the first two suspects were involved. He was also arrested and charged with possession of drugs and paraphernalia, which he had on him at the time. He, however, was not involved in our original theft, either. It appeared these two had had a falling out with the others and were not going to have anything to do with the two original suspects.

After completing interviews, we went to the mill the suspects had been using, located all receipts and were able to obtain photos of each trip the thieves took to sell their stolen goods. The workers and owners of the mill were very cooperative and assisted in all aspects of the investigation.

In the end, faced with an overwhelming amount of evidence, both of the original suspects pled guilty to felonies for the stolen trees and split responsibility for nearly \$25,000 in restitution for the trees damaged, destroyed or taken.

In all, Steve and I spent several weeks chasing down leads, conducting interviews and finally meeting with an assistant district attorney prosecuting the case. To some it was just a couple of

trees, but to others it was destruction and theft on a valuable game lands.

- Pete Sussenbach, Monroe County WCO

With Both Pride and Relief

I REALLY DON'T KNOW if the value of a hunting license can truly be measured. I was born and raised in the Keystone State, not leaving until 1993, when I joined Ducks Unlimited staff in the New England states. I travel back to Pennsylvania religiously every year, because it is in my heart and soul to return to the woods and the people that blessed me with my conservation ethic.

Still and quiet moments are 99 percent of the hunting experience. If you're like me, during such cherished time you labor over a million tactics to outwit a Virginia whitetail, pick the next place to catch a drake woody coming early to roost. Those hours are so much shorter for me as I enter my fifth decade, and like all "wiser" men, I'm crowded by the cares and concerns of modern American life. Pennsylvania memories burn deeper and more special with each recollection: the wild fragrance of a wood duck brought to hand by a proud Labrador after a canoe trip with a dear friend on Aughwick Creek; the jubilant moments with friends after the downing of a whitetail after a long deer drive on State Game Lands 64 near Cherry Springs in God's Country.

Those outdoor moments are without price, but not without cost. Their value is understood only by those who care to see such opportunities available for future enjoyment and future generations. As our day to day living gets more expensive, how do we think that stewardship of such vital Pennsylvania resources would be any different? We cannot let our wildlife or a professional organization such as the Game Commission be reduced to a second chair. I don't think anyone can honestly say that the Game Commission has not been prudent in the way it handles license revenue. Every January, in the pages of this splendid magazine we are given detailed information about the financial status of the Game Commission. If only others were as open. We may deliberate about this or that expenditure, but let us not mistake that a financially strong Commission keeps our wildlife and hunting experiences strong and, more importantly, enduring.

Ducks Unlimited understands that the price of restoring wild places is much greater than the cost of saving them before they are lost. But we will continue to restore damaged wetlands and uplands, we do it because it must be done. We must get to a point where the gain exceeds the loss. We as hunters are those who care the most and we must save what is left and repair the rest. We must keep the Game Commission fiscally strong and, in turn, our hunting places, and privileges, safe. I buy a nonresident hunting license every year, and will continue to do so, with both pride and a belief that future generations of young men and women will truly find themselves in Penn's Woods.

- Phillip C. Poux, Ducks Unlimited, Director of Development, Mid-Atlantic Region

15 for 17

WE UNCASSED our shotguns, gathered up our gear and dropped the tailgate of the truck to let Ranger out of his crate on what turned out to be an almost magical early November morning. Carl, Rich and I were hunting a state game lands in the southeast part of the state. Walking up a trail and lined up about 30 yards apart, we were all anxious to bust into the alder and birch thicket. The aroma of the rich, damp, fall vegetation wafted from the covert, beckoning us. At Rich's signal, and after giving Ranger the signal, with their ritual of having the cocker heel and showing him two shotgun shells - just to get his attention, and only after the over/under is snapped shut on the shells - does the dog know to dive into the cover. I took a step and a bird spiraled up about 15 yards out and headed straight away. My Weatherby's shot pattern of an ounce of number 8s centered the timberdoodle at the top of its rise, just before it ducked around a white pine, and I marked where it fell.

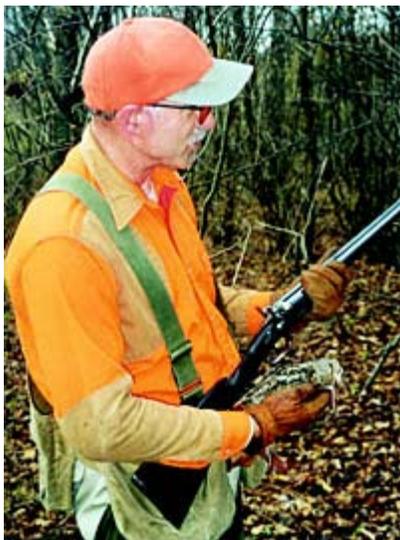
Less than a minute into the hunt and we had our first woodcock. "There's always a bird near where you started; that's why I put you there," Rich said as, with hand signals, he put the dog on the mark where the woodcock fell. Ranger found the bird in no time, and as soon as I slipped it into my game bag we continued on.

We worked through the thicket and into a wet area along a creek without putting up any more woodcock, although we did flush a grouse that no one got a shot at. "The migrants aren't here, it appears," Rich said. "Let's work back toward the vehicles and hunt another spot."

A half hour later we were back on the highway. "I'm taking you and Carl to my hotspot," Rich explained, before we got in the vehicles. "One condition, though. Don't tell anyone about the spot. It's a small covert tucked away on a game lands that holds a lot of woodcock when the migrants are in."

An hour later we pulled onto a dirt road leading to an out of the way parking area on the game lands. After gearing up and letting Ranger out of his crate we waded into a goldenrod field with an alder thicket beyond. Rich took the center with Ranger, with Carl on the right and me on the left. Immediately, Carl's James Woodward 16-bore double-barreled hammer gun cracked. "Did you get it?" Rich asked.

"Yeah," came the reply. "The bird got up right in front of me and flew straight away; an easy shot."



A bird that flies straight away from Carl is a dead bird, as he's a crack shot. With his passion for fine English hammer guns hand-crafted more than a century ago, Carl brings some etiquette to our bird hunts; Rich and I are just as happy putting birds in the bag with our Weatherbys. Call us uncouth if you must.

"Ranger's birdy," Rich said to me. "Get ready." I heard the telltale twittering as a woodcock got up between Rich and me. The bird angled toward Rich and he dropped it with one shot. Ranger brought the bird back and we admired its plumage for a minute or two before Rich slid it into his game pouch and waved the dog on. Ranger immediately put up another bird, and this one flew straight away and then cut sharply left, causing my shot to fly just behind the woodcock. I swung through the bird, touching the trigger again just as a little daylight appeared between the end of my barrels and the bird's long bill. As a few feathers slowly drifted down into the thicket, Ranger took a minute or so to find this bird after Rich directed him to the spot.

After working through the covert and regrouping, Rich suggested that we hunt a patch of cover on the other side of the road. He leashed the dog, we unloaded our guns and crossed the road.

Regrouping on the other side we walked through a stand of young pines and emerged on the edge of a large goldenrod field interspersed with pockets of alder and birch. We lined up, with Rich and Ranger in the middle again, Carl to the left and me on an old tram road that paralleled the field on the right. "Bird," Rich yelled, as Ranger rooted a woodcock out of a thick tangle. The timberdoodle crossed broadside right in front of me, a rare wide-open shot -and one that's easy to miss if you think too much about it. The woodcock seemed to just hang there, like a model airplane suspended from the ceiling of a kid's room, silhouetted against the blue morning sky, only 15 yards away. I dropped it with my skeet-choked bottom barrel. "I'm done, at least on woodcock," I announced.

Rich was saying something about shooting a cottontail here on his last trip, and for me to keep the gun loaded when I heard another bird go up, followed by Rich's shot. "I got it," came a muffled response as Rich and Ranger emerged from some thick cover.

Reaching the end of the field we repositioned ourselves to work an adjacent section back in the opposite direction. Ranger put up a woodcock that flew straight away and barely cleared the goldenrod. Carl swung into action, got his feet set and dropped the bird. "Good shot, Carl!" Rich exclaimed, and while Ranger went to make the retrieve another woodcock flushed behind Rich, who recovered nicely, dropping that bird with one shot.

"Pretty good covert, huh, guys?" Rich asked, rather smugly. The time he had put in working his champion spaniel and scouting for woodcock here had sure paid off. "There's always resident birds here," Rich said, "but when the migrants come through, watch out."

Toward the end of the field Carl killed his third woodcock with one shot. "That's it for woodcock," Rich said, as we each had our limit of three. "Now let's go get some pheasants."

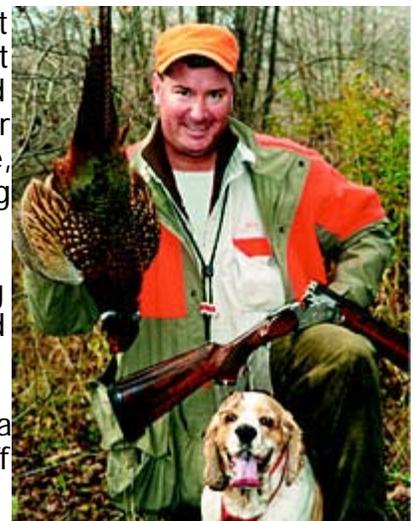
Loaded up and on the highway once again, we headed to another game lands, one that had recently been stocked. After a quick lunch, hamburgers all around, and one for Ranger, too, we parked near a gated Game Commission access road. After about a 300-yard walk up the road we reached the top where a panoramic view of weedfields, hedgerows and sorghum fields unfolded before us.

The dog got birdy in the very first patch of cover we hit - a brushy swale with a multiflora rose hedgerow at the bottom. "Ranger's on a running bird, stay with him, Carl," Rich implored. The dog booted the bird skyward out of the hedgerow, where it had stopped, and Carl dropped the cackling rooster with one shot. At the shot a ringneck catapulted into the air directly behind me, scaring me out of my wits. I had to untangle my feet in getting turned around, but I was able to get set and drop the bird with a load of copperplated 6s. We were amazed at how the bird held tight after I had walked past, and if I hadn't stopped to watch the action below, the bird probably wouldn't have flushed.

Next we got into a big sorghum field. Ranger immediately got on scent and the pheasant quickly figured out it was being pursued, taking flight about 35 yards in front of Rich. It was a fairly long shot and Rich missed - his first miss all day. When we reached the end of the field, Ranger began poking around in a thick patch of blackberry and honeysuckle, and a cackling rooster shot straight up out of the cover with the dog nipping at its tail feathers. Rich dumped the bird with one shot.

After pocketing the ringneck Rich recommended we work a long rectangular strip of sorghum. "We might have pushed birds into this field from the other field."

"Hey, Bob," Carl said. Hike up to the end of the field and post at a corner. Rich and I, with the dog, will drive from this end. You'll cut off any bird that runs ahead."

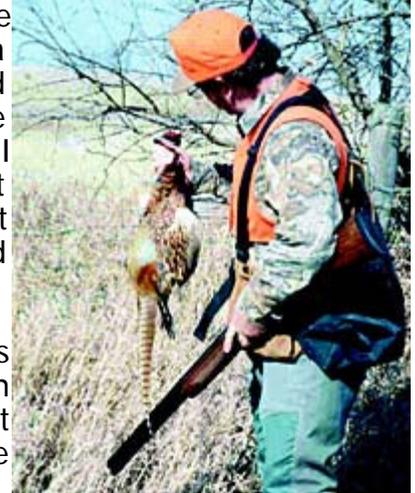


Carl was right. The shape of the field made it perfect for a drive and, besides, it was too narrow for

three of us to work abreast. I hotfooted it the 200 yards or so to the end of the field and posted at one corner in some short grass about the time my partners started through the field. Any bird that was pushed to the end of the field would have to take flight or try to cut back between the two hunters and dog.

Not 25 yards into the field, Ranger got on a bird that took flight and tried to cut out of the field on Carl's side. It didn't make it; Carl's load of 6s cut its flight short. Ranger made the retrieve, and then hunters and dog continued through the field toward me. (Carl now with his double broke open and balanced over his shoulder, as he had limited out.)

When the hunters and dog were about 75 yards from the end of the field, and me, Ranger lunged at a thick patch of sorghum and a pheasant exploded from the cover. The bird gained altitude and speed as it approached, but for safety reasons I had to wait until it cleared the field and was broadside, and by then it was really carrying the mail. I swung through the bird, put quite a bit of daylight between its iridescent head and the end of my gun barrels and pulled the trigger. At the shot the bird's wings folded and it arced to the ground, bouncing with a thud in the short grass. It was a long, high shot, one I was lucky to make.



Now late in the afternoon, we decided to hunt back toward the access road and down to the vehicles. Rich picked up his second ringneck with a nice shot after Ranger put it up in some thick saplings in a bordercut along the top of the field near the back side of the brushy swale where we had started earlier in the afternoon.

Rich put a leash on Ranger (the dog never wants to quit hunting) and we started the hike down the access road, game bags sagging under the weight of two roosters apiece. It had been a fun satisfying day, and with the sun sinking we rehashed the day's events. It was about then someone - I can't remember who - said, "You know, we killed 15 birds with 17 shots. That's something that doesn't happen often and might not ever happen again."

"Maybe so, but I can't wait to try it again," I said, as I shifted the Weatherby from one shoulder to the other and continued on down the road.

- Bobby D'Angelo, Game News Associate Editor

CSI Wildlife

HALLOWEEN - a perfect day for creepy, gross stuff (like maggots) in the classroom. In this case, we took the classroom (costumes and all) to the maggots.

Forensic Chemistry at Elizabethtown High School

8 a.m. and I was in the principal's office. Having been graduated some 15+ years, it still made me strangely uneasy and anxious, and I immediately felt ridiculous, shaking my head at my silliness. It's like seeing a cop when I'm driving - I suddenly feel like I've committed some wrongdoing. Why is that?

Dan Lynch the Wildlife Education Supervisor (and Deputy Wildlife Conservation Officer) in the Southeast Region, Scott Baylor, the Elizabeth-town High School chemistry teacher, and I headed out to the school farm to set up for the day's events. We arranged picnic tables for students to sit at, hauled equipment and props out of the back of Dan's truck and arranged them, and talked about time frames and schedules . . . routine classroom program kind of stuff.

Then, when Mr. Baylor went back to get his pupils, I helped Dan drag a dead deer out into the field and stash it inconspicuously - not exactly "classroom routine" by any means.

We also shoved a bullet into a hole in the deer's head, staged a blood trail, set out some trash and spent casings, carefully laid some tire tracks in the mud with the truck, and were back at the picnic tables, with plenty of time to spare, discreetly awaiting the students' return.

When the students arrived, Dan talked with them about wildlife conservation, hunting, and the role of the Game Commission and wildlife protection through law enforcement. He explained the variety of work that our Wildlife Conservation Officers do and how they often must "play Grissom" when conducting crime scene investigations involving wildlife.

There was a time, years ago, that Mr. Baylor had trouble getting students interested in chemistry. But with the onset of the popular CSI television shows and a catchy new course title, "Forensic Chemistry" fills right up each semester. Three of his classes came out to the farm this day for some hands-on experience investigating the "crime scene."

At one point during the introductory discussion, Dan asked the students, "Does it matter if a deer is shot with an arrow or a bullet?" It was early in the session and no one ventured to raise a hand. So Dan offered a scenario:

During early archery season, a Game Commission dispatcher gets a call about a gunshot heard after daylight. The caller also says he saw what looked like flames and fire and gives a description of two guys who loaded a deer into a nearby vehicle. An officer later confronts the men who say that the deer -a very nice buck - was initially shot with an arrow, but that it was only wounded. They'd gone back later (when the caller had seen them) to finish the deer off with a muzzleloader.

One of the students (I'll call him Archer) gave his buddy a sideways glance and a smirk. He is a hunter, one of the few in this group of students, and he knew what Dan knew - the story didn't add up and the guys with the dead deer were probably trying to cover something up.

Dan gave some hints and prodded the students until they all caught on. They came to understand that a muzzleloader is an unlikely choice of firearm for any hunter going to "finish off" a wounded deer, because it gives the shooter only one shot before he must reload. But, a muzzleloader would explain the flames that the caller saw. The students learned that an arrow leaves a different shape wound than a bullet, and why that can be important during an investigation. And, after discussing other "evidence" they concluded that these suspects had most likely taken the buck with a muzzleloader and then, among several other illegalities, tried to pass it off as a legal archery kill.

After giving the students some hands-on CSI-Wildlife experience using lead test kits, measuring vertical pupil dilation on fake eyeballs, and learning the differences in the pelvic bones of male and female deer, Dan took the class to the "crime scene" we'd set up earlier. He gave the students this background information:

Last night he'd gotten a call that a shot had been heard on the school farm. The caller knew that the property wasn't open to hunting and he'd seen an unfamiliar pickup in the field near where the students were now standing. When the caller drove back to investigate, the shooter drove off. The caller also said he'd noticed some trash in the field near where he'd seen the pickup. Dan was there now to conduct an investigation with the students' help.

The kids took Polaroid photos of the tire tracks, the spent casings and a used coffee cup, placing orange placards with big black numbers on them next to each piece of evidence, just like they do on CSI. They found more trash out in the field, along with some deer hair, and the kids took more photos. Archer was on the "blood" trail fairly quickly with two of his buddies. As the other students caught on, they followed after him, and soon the group stood around the carcass we'd stashed earlier.

They gathered data to estimate the time of death by checking the deer for rigor mortis and talked about muscle conductivity tests. Then one of the 50 girls who'd dressed as Miss America contestants for Halloween (having traded her gown for jeans and a t-shirt in the locker room, but still wearing her tiara and sash) stuck a nasal thermometer way up the deer's nose to take its temperature. The students discussed the data they'd just gathered; estimating a time of death and comparing it with the information the caller had given them. Then they used a metal detector to find the bullet in the deer's head and later retrieved the bullet with a pair of tweezers.

Having collected all available evidence to help identify and prosecute the wildlife law violator, Dan took the students back to the picnic tables to wrap up the exercise. He emphasized that what the students had just done through their crime scene investigation was establish a voice for the voiceless.

"It's important," said Dan, "and it's very rewarding. Wildlife can't speak for themselves; so it's part of my job to speak for our wildlife."

CSI Forensic Criminalistics Camp at Central Penn College

WCO Mike Doherty also teaches wildlife forensics. He's been delivering the Forensic Entomology module at Central Pennsylvania College's CSI-Forensic Criminalistics Camp since its inception five years ago. Junior and Senior high school students with a sincere interest in criminal forensics and a 3.0 or higher grade point average may apply for the 5-day summer camp near Harrisburg.

This CSI camp is the brainchild of Professor Robert Granzow, and this year 25 students were enrolled. At the end of the week, they took a test on everything they'd learned about processing a crime scene and collecting evidence. Those who graduated from camp are guaranteed acceptance into any of the college's 4-year criminalistic programs.

I joined Officer Doherty at camp this June and learned more than I ever imagined I could know about maggots.

Did you know they have no mouthparts to chew with? They can only slurp. Did you know that there are different species of flies (adult maggots) in the winter verses the summer? Did you know that mama flies arrive to lay their eggs on dead tissue within minutes? Did you ever want to know that masses of maggots pulsate and create their own heat and that there is such a thing as a maggot migration? Like I said, more than I ever thought I'd know.

Investigating crimes against wildlife presents interesting challenges. As Officer Doherty says, "squirrels make lousy witnesses and wildlife doesn't leave a paper trail." But bugs, specifically maggots and beetles, can supply accurate information about the time and nature of a death.

Metamorphic insects act like a clock; as soon as a carcass is exposed to insects, the clock starts ticking. Because maggots grow at a regular rate and shed their skins similar to the way a snake sheds its skin, scientists can use them as a stopwatch. Time of death is important because it can help officers determine who is responsible for a crime. For instance, was it a nighttime jacklighter? A daytime roadhunter? A closed-season violator? Even a small pile of third instar maggots under a carcass that's only skin and bones in the winter can be incriminating.

Wildlife may not be able to speak for themselves but ballistics, DNA, fingerprints, footprints, tire tracks, insects, maggots and more can be witnesses of a sort, providing evidence to solve crimes violating the wildlife code and providing the voiceless with a voice.

- Lori Richardson, PGC Education Specialist

A Partnership In Wildlife for Generations

FOR MORE THAN 20 years the United Bowhunters of Pennsylvania has worked to preserve and enhance the opportunities for Pennsylvania bowhunters. All actions of the organization are directed by a simple mandate, "Resource First." Most bowhunters, in developing the close-range capabilities necessary for success in their challenging endeavor, recognize that "Resource" includes all facets of the environment, both flora and fauna, and all the complex interactions and relationships necessary for a healthy environment to exist.

For every one of those 20-plus years there has been at least one UBP representative at every public meeting of the agency responsible for all wildlife management, for all citizens of the Commonwealth, the Pennsylvania Game Commission. Those of us who attend these meetings have learned - and reported back to our membership - that working for the Game Commission are the very best qualified people in each of those complex relationships mentioned above. Further, those people are following the same "resource first" mandate as the UBP, all while providing those of us who hunt the very best opportunities to pursue our favorite pastimes.

These days, however, nearly every wildlife management agency in the country is facing extreme financial difficulty. Only about one in thirteen Pennsylvanians hunts, and as all of us know, hunters have borne the major share of conservation expenses for more than a hundred years. As the percentage of our population that hunts continues to dwindle, fiscal responsibility on that percentage for conservation efforts increases. And, as we are all too well aware, the costs to manage our wildlife resources are not dwindling. Those of us who work closely with the Game Commission will quickly vouch for how much is accomplished every day and with an ever-tightening budget. But we must also acknowledge how many programs are suffering, or have even been cut, for lack of funds, just as we must acknowledge how much more could be accomplished if each of us contributed just a bit more.

Those organizations that have worked with the agency and the Legislature to address these financial problems have fully considered the same increases in the costs of doing business every one of us faces daily. We have fully weighed the economic concerns of all Pennsylvanians against the value of just one full day amidst our priceless natural and wildlife resources. And, as other organizations have reported, we conclude a bargain is still to be had by simply supporting a hunting license increase.

While such an increase would solve the immediate financial concerns of the Game Commission, our organization also believes it is time for every hunter and trapper to voice strong support for an alternative source of additional and significant funding for wildlife as well. Pennsylvania's wildlife resources are arguably our most valuable. It's time for those of us who hunt and trap to happily ante up, and time to explain to those who don't, why and for whom all we've done so.

- Ed Wentzler, Legislative Director, United Bowhunters of Pennsylvania

PA Teachers Go WILD!

IMAGINE you are an educator in need of an activity that teaches specific skills and concepts, is exciting and engaging for your students, can be modified for several different grade levels, complements your curriculum and helps meet Pennsylvania's Environment and Ecology Standards. Whether you teach afternoon kindergarten, middle school English, high school science or lead a youth group, you could be on your way to the schoolyard, the copy machine, the classroom or the PC with a variety of Project WILD activities to supplement your curriculum.

Project WILD is an award-winning, international, hands-on conservation education program that was started nearly 25 years ago; it teaches people about wildlife and the environment and how humans interrelate with both. WILD provides educators, primarily kindergarten through 12th grade, with interdisciplinary activities that help satisfy state and national standards and help educators comply with mandates of the No Child Left Behind Act. WILD's materials are scientifically sound and use educational practices proven to be effective.

The basic 500-page K-12 Activity Guide has more than 120 activities to help educators teach skills from analysis to synthesis using a wide variety of environmental related topics. The activities have been designed so educators can easily incorporate them into almost any classroom curricula and nearly any subject - not just science but also reading, English, social studies, math, civics or art.

WILD's mission is to provide wildlife-based conservation education that fosters responsible action. WILD's goal is to develop the awareness, skills, knowledge and commitment that is necessary for people to make informed decisions and act constructively and responsibly with respect to wildlife and the environment.

According to international administrators, WILD is one of the most widely used conservation and environmental education programs among K-12 educators. As the nation's longest standing wildlife education program, WILD is bringing hundreds of thousands of students from awareness to action as responsible citizens of our planet each year.

Theresa Alberici coordinates the program in Pennsylvania through the Game Commission's Bureau of Information & Education. Alberici works closely with the PA Department of Education as well as prominent conservation and environmental education organizations throughout the state and the country. Her passion for wildlife and the environment, along with her talents in creating curricula and her ability to work with educators has earned her recognition from the PA Department of Education and within the conservation education community.

In addition to Game Commission staff, nearly 200 facilitators in state parks, county conservation districts, nature centers and zoos conduct basic Project WILD workshops statewide. Their dedication makes the program successful.

Since 1983 more than 26,000 Pennsylvania educators have gone WILD with the Game Commission.

Below are some of the programs offered just this past year to educators through the PGC. Workshops are eligible for Act-48 hours, which educators need to acquire in order to retain their teaching certificates.

Basic Project WILD

This workshop, typically six hours long, can also be adapted for in-service training. Participants become familiar with the Project WILD program and activity guide by participating in hands-on, interdisciplinary student activities. Educators finishing the workshop receive the K-12 Project WILD Curricula and Activity Guide.

Endangered & Threatened Species

This workshop focused on endangered and threatened species. Educators learned about the politics involved in protecting these species as well as the circumstances that can lead to a species becoming

threatened or endangered. A canoe trip at Wildwood Lake to view the state endangered American lotus, was part of this workshop.

WILD About Elk

This 2-day workshop focused entirely on Pennsylvania's elk herd in the northcentral part of the state. Educators met with biologists and land managers working with our state's elk, and got to hear firsthand about the issues that arise when people and elk are living together in the same region. Participants also visited the elk range for up-close information on elk habitat as well as elk viewing opportunities, before heading home to their students, with information they learned right from the experts and a teacher's guide chock-full of elk facts and activities.

WILD in the City, Peregrines

This one-day workshop was designed to give educators a greater understanding of peregrine falcons, one of our state's endangered species. Educators learned about biology, habitat, migration, natural history and more from the biologists working closest with these magnificent birds. Participants viewed a peregrine up-close, watched them flying around the city and saw the nest box and web-cam at the nest site on the Rachel Carson Building in Harrisburg. Educators took home lots of background information and activities to use with their students, as well as information on real-time web cameras at nest box locations across the state, so (from their classrooms) they can watch peregrines hatch.

WILD on the Susquehanna

Educators spent this day-long workshop canoeing the Susquehanna and learning about its river habitat with biologists and naturalists. They visited one of the few nesting colonies of the great egret and black-crowned night heron in the state and searched for river otters, before studying macro-invertebrates and water testing.

WILD Action Grants

These grants are typically available annually to help organizations create wildlife habitat that can be incorporated into education programs and be enjoyed by the community and used by wildlife. Butterfly gardens, interpretive nature trails, habitat enhancement and native plant gardens are just a few examples of what's made possible through WILD Action Grants.

And More

Other education opportunities available through the PGC include:

Advanced WILD workshops - These workshops focus on specific species or topics. Educators get in depth background information and meet biologists and experts working in the field of focus. Workshops on bears, raptors and deer are popular.

Pennsylvania Songbirds and Pennsylvania Biodiversity - These two programs focus on songbirds and biodiversity, respectively, and are designed similarly to Project WILD with science-based student activities addressing state standards.

The *Wildlife of Pennsylvania* children's book (in English or Spanish) - This educational guide to Pennsylvania wildlife for young students to color is based on habitat and includes a color poster. A teacher's guide is also available.

FOR MORE INFORMATION on Project WILD and other conservation education opportunities available to educators through the Pennsylvania Game Commission or to be notified of upcoming workshops via email, contact Theresa Alberici at 717-783-4872 or talberici@state.pa.us.

- Lori Richardson, PGC Education Specialist

Common Ground

THE ONSET of any successful wildlife research project begins through use of the scientific method, and is initiated to accomplish predetermined objectives and goals. When studying wildlife populations, goals are most often based on a sample, or sub?set of a population. We can never really address the entire population, it would be difficult at best, if not impossible, so we design a study to monitor a representative sample of the population. Next, a specific feature of the population, such as survival, is addressed in an effort to answer one or more questions concerning the entire population.

Taking a study from "paper" into the "field" presents challenges. After all the questions and objectives have been established, we must conduct the research. The study area has to be established, the number of personnel needed must be determined and arranged for, as does equipment, and the necessary funding must be available.

Large?scale wildlife research, such as recent deer research projects conducted by the PGC, is largely a cooperative effort that cannot be accomplished without the combined efforts of many individuals. In recent years, the PGC has been fortunate to collaborate with many organizations and individuals in an effort to learn more about our state's deer population. Many of these cooperators are landowners residing within our study areas. For example, in the first year of the doe research study, our team's field duties took place in the Tuscarora State Forest. That year, trapping occurred only on state land and, although public land is an important aspect of the area's deer population, it represented only a portion of the existing habitat we needed to evaluate.

In contrast, our second trapping year focused primarily on habitat on State Game Lands and private lands. By including varied land types and habitats in our study area, the results of our research will be applicable to a variety of habitats statewide. We discovered that although the area included some State Game Lands, most of our trapping activities were carried out on private land. Where the first year we were able to roam freely without worrying about private property boundaries, the second year, we needed permission to access many of the trapping areas from private landowners.

I must admit, initially I was somewhat apprehensive about knocking on the doors of private landowners during what seemed like the climax of an ongoing debate between dissatisfied deer hunters and the PGC. Our first strategy was to enlist the help of the agency's Land Management Group and focus on landowners in the Farm Game Cooperative Program. These landowners already have established working relationships with the agency.

After initially speaking to Land Management Officer (LMO) Steven Bernardi, I was directed to Land Manager Kraig Kahley. Kahley was more than willing to introduce us to landowners enrolled in the co?op program, and we began by reviewing a list of current participants. I cannot stress enough the enthusiasm that Kahley displayed during our time spent reviewing properties in the study area, as well as the important and valuable information he provided to our trapping team.

After speaking with several co?op landowners, I was encouraged to go beyond just those enrolled in the program. The cooperation of the Farm-Game participants gave me the confidence to enlist the help of many other landowners in the area. Instead of my initial expectations of receiving some negative attitudes for the current deer issues, I noticed a real and sincere interest in the study, not only from those in the co?op program, but also from landowners not in the program, some of which even had their properties posted to hunting. It turned out that all the landowners I met (25 or more), were interested in one main goal, which happened to coincide with the original goal established by the agency when it began this research in the first place - to better understand and, in turn, better manage Pennsylvania's deer herd.

Since the onset of this study in January 2005, the staff of the Tuscarora State Forest District 3 in Blain has been nothing short of phenomenal in their kindness and dedicated assistance to our deer trapping teams. Moreover, many of the people I have met during this study I will never forget. I had the opportunity to meet so many wonderful people and made countless friendships. I actually feel

saddened that I may not have the pleasure of working with them again, because as we all know, the only thing constant in life is change and after this study I will be moving on to new adventures and challenges.

Through these incredible people, I have learned that oftentimes we allow ourselves to fall victim to media hype or hearsay that, in turn, predisposes us to think that things may be different than they really are. This can hinder our way of thinking and create walls that cloud our better judgment, preventing us from doing what really needs to be done.

Scientific wildlife research is the only real way for us to begin to truly understand and manage all of the commonwealth's precious wildlife resources. Today, successful and effective wildlife management can succeed only with the efforts and cooperation of many stakeholders. This includes not only the federal and state agencies, but also, and just as importantly, private landowners. With science as our guiding principal, and a sincere concern for all of our natural resources, we can, indeed, work together on public, private and, most importantly, common ground.

- Walter "Deet" James Jr., PGC Wildlife Biologist Aide

What Does Pheasant Hunting Mean to You?

SO WHAT HAPPENED to all the wild pheasants we had in the 1960s and early '70s?" It's a question I hear almost on a daily basis. Typically, everyone asking the question already has their answer in the back of their mind, and the majority of such answers seem to revolve around the loss of grassland and early successional habitats, which is exactly right.

To survive and reproduce, pheasants need secure nesting cover and winter shelter. Over the last 40 years, however, changing farming practices, widespread development and other landscape changes have resulted in large losses of available grassland and winter cover. Pheasant hunting remains strong in Pennsylvania, though today we rely on game-farm pheasants to satisfy the demand. However, last year, budget constraints forced the Game Commission to cut pheasant production, and it's going to remain at a reduced level this year. Pheasant propagation is one of the Game Commission's most costly programs, and the time has come for hunters to evaluate how much pheasant hunting really means to them. Are we willing to pay more for the opportunity to take our companions afield in search of the wily pheasant?

Each of the two proposed license increase bills includes a \$10 pheasant stamp that hunters would be required to buy, along with a general hunting license, to hunt pheasants. Like a state trout stamp, revenues from the pheasant stamp would help fund PGC's stocking program. However, it must be understood that pen-raised birds lack the survival and reproduction skills necessary to sustain a wild population. To do that, funding must also be dedicated to habitat restoration and the reintroduction of wild pheasants.

Local chapters of Pheasants Forever and the PGC have done an outstanding job of creating and enhancing grassland habitat on private and public lands in several counties. These grasslands benefit not only pheasant and even quail, but also a host of grassland songbirds and other wildlife, and there are many more places to create and enhance grasslands with cool season and warm-season grasses, forbs and legumes.

One of the most successful pheasant habitat programs currently taking place is in the Pike Run watershed of southwest Pennsylvania. The Tri-County Chapter of Pheasants Forever, along with the U.S. Fish and Wildlife Service and California University of PA, are reintroducing wild pheasants from South Dakota, and significant reproduction has already been reported. A similar project is planned for central Pennsylvania.

Pheasants Forever chapters will continue to take action on these opportunities, as our dedicated volunteers are passionate about our pheasant hunting traditions being able to provide them for future generations to enjoy. How passionate are you? Are you willing to support your local Pheasants Forever chapter? Are you willing to buy a \$10 pheasant stamp for hours of traditional upland game hunting, and for one of the best mentored youth pheasant hunting programs in the country? Are you willing to support the PGC's efforts in creating and enhancing grassland habitat in the state? What does pheasant hunting in Pennsylvania mean to you?

- *Shon Robbins, Pheasants Forever Regional Biologist*

The Rocks

"THE ROCKS," "Thousand Steps," "Devil's Potato Patch," are all names for a boulder field on SGL 156 in northern Lancaster County. The sandstone boulders, some the size of pickup trucks, are surrounded by woods: Poplars, maples and oaks tower over wild ginger, Jack-in-the-pulpit, and the less common yellow lady's slippers and showy orchis.

A spring seeps from underneath the boulders and flows from the base of the rocks and into Walnut Run, a small woodland stream that contains native brook trout. Scarlet tanagers, kinglets, warblers and many other birds inhabit the understory of witch-hazel, spicebush and dogwood.

This rich forest is an important part of the ecosystem and pleasing to the eye. Hunters, fishermen, hikers, bikers, birders and other outdoor enthusiasts visit the area in search of game, exercise or that elusive sighting of an uncommon migratory bird or spring wildflower. On a quiet spring morning thunderous gobbles from lovesick turkeys inhabiting the nearby Furnace Hills can be heard from the rocky vantage points.

The Rocks, as I have come to know it, also has an ominous side. Most of the boulders are scarred by graffiti. The trees are not spared either, as their painted trunks bear witness to the vandalism. Glass bottles, plastic jugs and beer cans are scattered throughout, with most lying in rock crevices. Some visitors come not to partake of the natural beauty, but rather to use illegal drugs.

My first visit to the rocks was in 2002, the year I graduated from the training school and was assigned to Lancaster County. I was filled with disgust at what I saw. The amount of trash and graffiti was appalling. As a sportsman and conservationist, I was especially annoyed that lands my hunting license dollars helped to purchase were being desecrated by people who probably didn't hunt or trap and definitely did not respect the natural environment.

As many WCOs will attest, especially those in more populated districts, State Game Lands are used heavily not just during the hunting seasons, but throughout the year, by hunters and nonhunters. Unfortunately, some of these users do not feel they have to abide by the regulations in place to protect wildlife habitat. For me, I found myself issuing warnings and citations for game lands violations on a monthly basis.

Many charges stemmed from infractions at the Rocks, where people left behind more than their footprints. Often I would watch a person carry in a drinking container, consume the contents, and then just toss it among the rocks. The clanging of an empty beer can or the pop of a glass bottle breaking on the rocks was an all too common sound.

Everyone seemed to have an excuse when I asked why they littered. Two folks I apprehended claimed they cleaned up the litter every week and were just leaving it there to get the next time. Others told me it was the Game Commission's fault for not providing trash receptacles. One person hit the nail right on the head when he answered, "I guess I'm just an idiot."

Drug and alcohol abuse was common. Despite this part of the game lands being a mere 100 yards off of Route 322, it provided a secluded spot for those seeking to partake of their illegal activities. Catching these violators did require me to wear a different work uniform and use covert methods.

Dressed in camouflage, I would sit where I had a good view of the boulder field and watch as individuals would emerge from the tree line below and climb up on the rocks. All too often I would then see someone pull out a baggie of marijuana, smoke the drug, and pass it around for others.

I was often met by stunned looks from these individuals when I emerged from the bushes, carrying my badge and stating, "Officer Zuck of the Game Commission. Stay where you are and keep your hands where I can see them." Many times drug users possess knives or guns, so in the interest of my safety, I would frisk the subjects to make sure they didn't have any objects they could use to injure me or others.

One time I was surprised by the boldness (or ignorance) of the drug users. As I was getting information from a litterbug I had apprehended, another young man came walking down the footpath we were on. Even though I was wearing jeans, a flannel shirt with the sleeves cut off, and a bandana tied around my head, I thought he would become suspicious of my presence and turn around and leave.

To my surprise he asked, "Hey, man, have any marijuana I can buy?" I reached into my pocket, pulled out my badge, identified myself, and told him to take a seat on the ground. Needless to say, the dumbfounded man got more than he asked for.

On another occasion, as I was leaving SGL 156 I passed a pickup heading for a parking lot near the rocks. Having a hunch the three occupants were up to something, I turned my vehicle around and followed them. After a short distance I came upon the truck parked in the middle of the parking lot, with the lights on and the engine running. Under the cover of darkness I slipped from my vehicle and walked to the rear of the pickup. Through the reflection in the driver side mirror I could see the driver smoking a marijuana pipe. I then moved to the rear edge of the driver side door and rapped on the window with my flashlight as I proclaimed, "State officer!"

Blood curdling screams came from inside the cab and echoed throughout the game lands. The three boys were on edge anyway, being parked in the middle of the woods at night, so their imaginations were running wild when I announced my presence. It turned out that I had cited two of the individuals at the Rocks for littering and now here they were doing drugs on the game lands.

Littering and the spray painting of rocks and trees were probably the violations with the most long-lasting effects. It was difficult to find a rock in the boulder field that did not carry the scars of this vandalism.

One time while I was hiding behind a large rock I watched a man spray-paint, "I Love Sally" on a rock 15 yards from me. Sally apparently approved of this "heroic" act, as she kissed him after viewing his handiwork. The romantic moment dissipated faster than the smell of the fresh paint when fellow officers and I converged on the couple.

On another occasion I was walking toward the boulder field when I heard the distinctive rattle of a spray can being shaken. When I reached a vantage point I was surprised to find 9- and 11-year-old boys painting the rocks. I couldn't believe boys so young were doing this by themselves, and it turned out I was right; a man and a woman were also present, the boys' uncle and his girlfriend. When I approached the group I advised them that their outdoor art class was over. I then asked why they were defacing the natural features of the game lands. The uncle said he didn't think it was a big deal because "everyone else did it." Like everyone else I caught spray painting on the game lands, they were fined and required to pay restitution for damages.

The stories I have shared here are just a few of the myriad violations I encountered while patrolling The Rocks and surrounding game lands. Thanks to the invaluable assistance of deputy conservation officers, neighboring WCOs and the Penn Township Police Department, the littering, vandalism and illegal drug activity on SGL 156 were drastically reduced.

From May 2002 to September 2004, patrols yielded 149 citations totaling \$14,690 in fines and restitution for damages. More than 100 of the citations involved persons possessing illegal drugs or minors consuming alcohol. The remaining fines were a result of littering and spray painting. Also of interest is that almost all of those cited for these violations never hunted or purchased a hunting license. They were polluting and damaging wildlife habitat that they did not help pay for and apparently didn't care about, either.

In closing, you do not have to be a conservation officer to ensure those who use the game lands adhere to the laws and regulations. As a hunter or trapper, you should feel deeply involved in protecting game lands, as your license dollars helped to purchase and protect game lands across the

commonwealth. Your local WCO would be glad to hear from you about violations, hunting related or not, occurring on your State Game Lands.

Jonathan S. Zuck, Bedford County WCO

In Search of Barn Owls

I LOVE THIS job, I thought as I crawled, wide-eyed, through a small door about three feet off the ground into a dark silo. My voice echoed strangely as I looked up to the top. Then the hissing and raspy screaming began. Wow! How cool is this? A week earlier I was pooped on by great egrets, today - barn owls. I love this job!

Kevin Wenner is one of the PGC's Wildlife Diversity Biologists (WDBs), he and Wayne Labsher are at this Northumberland County farm to band young barn owls. I'am lucky enough to join them.

Barn owls have been declining for several decades, and are classified as a species of special concern here, but biologists are confident that grassland management initiatives will provide excellent recovery potential for this beautiful bird.

John Pfleegor, the landowner, participates in CREP, the Conservation Reserve Enhancement Program, which means he's got plenty of grassland on his property. He learned about the barn owl project at a conservation district meeting from PGC Land Management Officer Keith Sanford. Pfleegor told Sanford about the barn owls nesting in his idle silo last spring. This spring the owls came back, and Wenner made arrangements to band them.

"If we don't know where barn owls are, we can't help them. We're relying on the public to let us know where they're seeing these owls," says Wenner.

While we were setting up to band the young owls, another local farmer stopped by and watched the banding, then went home and checked his idle silo. When he opened the door, he found a barn owl standing next to 6 to 8 eggs. He closed the door and called Wenner, who plans to band the young when they're old enough.

Meanwhile, a farmer in Cumberland County had a barn owl nesting in a silo on top of some silage he needed to get rid of. The farmer called his local WDB, Dan Mummert, and the two came up with a plan that would allow the farmer to continue with his operation and protect the nest. Mummert moved a chick and the remaining eggs into a nest box then mounted the box to the top of the silo, where the adult continued to care for her family. Remarkable!

Mummert says, "This project is a tremendous example of cooperation between many diverse groups to help one of our state's rarest species. The agricultural community, by taking the initiative to inform us of active nest sites, has had the greatest impact in making this program successful."

In addition to the farming community, other folks assisting the project include: the TriCounty Conewago Creek Association, PP&L, a 14-year-old who made and donated nest boxes, the U.S. Fish & Wildlife Service's Partners in Fish & Wildlife program, Audubon, scouts and many other dedicated volunteers.

Tammy Colt, southwest WDB, is excited about the public's enthusiasm. She states, "Since announcing the Barn Owl Conservation Initiative in March, we've had an overwhelming response. People want to help by building and monitoring nest boxes and improving habitat for barn owls."

Jamie Zambo is the WDB in the southeast; she and Mummert started the initiative last year. "Without the help of many dedicated volunteers and partners, we could not do this project. The barn owl project has even sparked a grasslands conservation movement in the Lehigh Valley area," says Zambo.

Barn owls need grassland habitat. Areas where there is active agriculture and lots of acres enrolled in CREP and WHIP (Wildlife Habitat Incentive Program) provide good habitat. A good population of small rodents such as meadow voles, shrews, mice and rats provides plenty of food for adult owls feeding youngsters. A family of barn owls can consume 3,000 rodents in a breeding season. Nesting sites are often located in barns and silos, and barn owls are just as apt to use nest boxes located in

appropriate habitat.

- *Lori Richardson, PGC Education Specialist*

Deer Management: Strategies for Landowners

The following is adapted from testimony Calvin W. DuBrock, Game Commission Bureau of Wildlife Management director, prepared for a House Agriculture and Rural Affairs Committee hearing about the impacts of deer damage.

THE WHITE-TAILED DEER, Pennsylvania's state animal, is arguably the most significant wildlife species inhabiting the Commonwealth. Deer live in every corner of Pennsylvania, from the largest cities to the wildest forests. The white-tailed deer is a native species of Pennsylvania's ecosystems. Wildlife conservation efforts in Pennsylvania are funded almost exclusively by hunters' license fees, and more than 90 percent of Pennsylvania's hunters are deer hunters. Deer are an important component to the Commonwealth's natural history and current wildlife conservation efforts. Deer are a welcome sight until conflicts arise with homeowners, farmers, foresters, motorists, gardeners, or landscapers. Deer populations can diminish the quantity and quality of the very habitat that supports them, cause crop and landscaping losses, increase exposure to Lyme disease, and threaten motorists on Pennsylvania's highways.

Since the 1920s, in accordance with the agency's duties and mission, the Game Commission has worked hard to balance the views of all sides of the deer management equation. Although people and circumstances have changed, key components of the public view of deer management remain the same. Hunters want to see and harvest many deer. Farmers and nursery owners want to grow their crops. Foresters want forests to regenerate. Landowners want to protect their property. Motorists want to safely drive highways.

Our present deer management program has three guiding goals. We are working to manage for: a healthy deer herd, a healthy habitat for all wildlife, and for reduced human-deer conflicts.

Recently, the House Democratic Policy Committee held a public meeting in Clearfield County to hear from hunters and local businesses that oppose the Game Commission's deer management program because they feel there are too few deer. Also, during the agency's annual appearance before the House Game and Fisheries Committee, 15 of 17 legislators voiced their concerns about the agency's deer management program and, again, stated there were too few deer.

The Game Commission is directed by law to use hunting as a method of management for white-tailed deer. The Game Commission supports and encourages hunting as a means of managing deer populations by annually making hunting opportunities available. For managing habitat for deer, however, the agency has direct control of only five percent of the Commonwealth's land area - state game lands.

We recognize that the traditional hunting seasons and bag limits may not be enough to provide relief to all landowners experiencing damage by deer. In these cases, increased efforts and opportunities may be required. For this reason, the Game Commission has several programs and strategies to help landowners address their problems.

Pennsylvania has one of the most liberal wildlife agricultural depredation laws in the country. By law, agricultural producers (or their employees) are allowed to kill depredating deer - antlered or antlerless - anytime, day or night, without a permit.

Further, for those producers who continue to experience an unacceptable amount of agricultural damage, the Game Commission created the Agricultural Deer Control Program, or "Red Tag" program. This special permit allows for the removal of antlerless deer outside of the regular hunting season and is related specifically to agricultural depredation.

The permit authorizes the landowner to enlist the aid of licensed hunters who are not associated with the farm to come on the property and harvest depredating deer. The number of these "subpermits" available to the landowner is generally one for every five acres of land under cultivation.

'Red Tag' permits (and associated subpermits) are valid from February 1 to September 28, excluding Sundays, from dawn to dusk. The permit is not valid from May 16 to July 31, inclusive, for general crop farming, and from May 16 to June 30 for vegetable farming -basically, during the fawning season. Again, only antlerless deer may be taken under this program.

The landowner may issue subpermits only to Pennsylvania residents who possess a valid resident hunting license. No fee may be charged for the subpermit. The landowner may restrict the type of firearm or bow used to take deer on lands they have enrolled.

In 2005, 168 farms were enrolled in the Red Tag program, and 867 deer were taken.

To make this program acceptable to more landowners in our more urbanized Wildlife Management Units, the Game Commission staff recommended and the Board of Game Commissioners at its April meeting approved a measure to remove the requirement that landowners in WMUs 5C and 5D be enrolled in one of our public access cooperative programs before being eligible for Red Tag. This action was the product of meetings arranged by Senate Game and Fisheries Committee Chairman Joe Conti and Representative Charles McIlhinney between Game Commission officials and landowners in the Philadelphia suburban counties.

Two programmatic attempts to assist farmers and other landowners have had mixed results.

One of the benefits of farmers enrolled in the agency's cooperative public access programs is their eligibility to receive deer deterrent fencing. However, given the agency's present financial situation, we have been forced to forgo funding this program. Should the agency receive increased revenues in the near future, we would be able to revisit this line item.

In 1999, the agency implemented the "LINK" program, which was designed to help landowners obtain assistance from hunters to address their wildlife damage problems. However, since the program was unveiled, there has been little to no enrollment, despite agency efforts to publicize the program and its benefits.

The Deer Management Assistance Program (DMAP) was implemented in 2003 and helps landowners achieve deer densities consistent with their land use goals through additional antlerless deer harvests. Public lands; private lands where no fee is charged for hunting; and private hunt clubs established prior to January 1, 2000, all are eligible. Interested landowners must submit an application by July 1 each year in order to be eligible for the fall hunting season. There is no fee required of the landowner.

In this program, qualifying landowners are issued DMAP harvest permit coupons at a rate of one coupon for every five acres of affected agricultural land, or one coupon for every 50 acres of all other land types. Landowners distribute coupons to licensed hunters they are willing to give access to their property. Hunters redeem their DMAP coupons from the Game Commission for a DMAP harvest permit. Landowners may not charge or accept any contributions in exchange for coupons.

Each DMAP harvest permit may be used to take one antlerless deer, during any deer hunting season, on the property for which it was issued.

For 2005-06, 691 properties were enrolled in DMAP, and the total reported DMAP harvest was 7,644.

It's worth noting that for 2005-06, the Game Commission reduced antlerless deer license allocations at the WMU level, thereby further encouraging hunters to consider DMAP landowners who have expressed the need for additional antlerless harvests.

Deer-human conflicts in developed areas are not new, nor is the agency's recognition of the problem. For example, in the early 1990s, the Game Commission implemented a municipal deer depredation permit program, which empowered municipalities to apply for a permit to assist their landowners in addressing these conflicts.

The agency's deer management program, adopted in 2003, calls for the implementation of an urban deer management plan. To develop such a plan, the agency began by seeking public input last summer and fall. We received more than 500 comments and suggestions, which were used to draft an urban deer management strategy, which was then made available for public review.

While traditional hunting is the most economical and effective way to manage deer populations, the Game Commission realizes that its application may be limited in some developed areas due to real and perceived safety concerns, social values and legal constraints. Communities not experiencing adequate relief from deer damage through traditional deer hunting often request additional aid from the Game Commission.

In light of these concerns, the Game Commission has legalized the use of crossbows in all deer hunting seasons in WMUs 2B, 5C and 5D, our three most developed WMUs. We have extended antlerless deer seasons by an extra five weeks in WMUs 5C and 5D. Also, while the more rural WMUs have seen cuts in antlerless deer license allocations, WMUs 2B, 5C and 5D have seen increases. We continue to evaluate antlerless license allocations on an annual basis, and try to provide hunters the greatest opportunity to obtain an antlerless deer license and to use it in these areas.

Deer herd reductions may result in reduced damage to landscape plantings, incidence of Lyme disease, and deer-vehicle collisions. Therefore, efforts to reduce the deer populations in our more developed areas will continue to be a management objective. Objectives and strategies of the urban deer management plan focus on increasing deer harvest, hunter success, and hunter opportunity, as well as develop and implement nontraditional harvest programs and education and outreach programs.

Recognizing that statewide deer management programs cannot always be applied equally across the Commonwealth, an objective in the agency's deer management plan was to test the use of local stakeholder groups to recommend management unit specific deer population goals. Stakeholders are asked to provide population goal recommendations based on consideration of available biological data and their values regarding deer populations. As envisioned, Citizen's Advisory Committee values would be shared with the Board of Game Commissioners and considered in the annual decision-making process when deer management regulations are being finalized.

The Game Commission recently concluded a pilot Citizen Advisory Committee in WMU 4B, in southcentral Pennsylvania. Representatives selected from ten stakeholder groups were represented on the committee, which included an agricultural representative, forest industry representative, and a rural non-farm landowner representative.

The experience provided the opportunity to inform stakeholders on the mission of the Game Commission, the complexities of deer management, and the importance of proper management; as well as an opportunity for the Game Commission to understand stakeholder values regarding deer management. We will be evaluating the process and effectiveness of such a committee and receive further guidance from the Board of Game Commissioners about the possible role that they will play in the future.

Deer management can have wide ranging impacts on wildlife, habitats, and citizens of Pennsylvania. Finding balance across the range of positives and negatives remains a challenge, and we remain open to positive, constructive input on ways to maximize deer harvests in those areas and on those lands most in need of assistance.

The Game Commission is committed to responsible management of all species in its charge. These programs I have just discussed illustrate the Game Commission's responsiveness to the issues surrounding deer management. We will continue to grow and modify programs as necessary to meet Pennsylvania landowners' deer management challenges and objectives.

- Calvin W. DuBrock, Director, Bureau of Wildlife Management

My Woodcock Mentor

CLARION County in the early 1970s is where I cut my teeth on the sounds of whistling wings of the woodcock. I became my father's sidekick at the ripe old age of four, hunting the gray dogwood creek bottoms along old railroad beds. Time after time these areas held the migration holdovers of the moonlit flight of the timberdoodle. My father had been a deputy WCO - or game protector, as they were called back then - for the past few years, passing on the heritage of being a skilled woodsman and versed in proper and safe gun handling practices; he was as serious a mentor as I was a pupil.

The first day of woodcock season was always greatly anticipated, and in our household even more of a tradition than the ever-popular deer season. The Christmas after my first foray into the woodcock coverts I was blessed with my first side-by-side double-barrel shotgun. It was made of the finest crafted plastic and armed with two suction cup darts, but to an eager future hunter it was the Parker of dart guns. The next year, when I turned six, my father got me a Winchester side-by-side 20-gauge. This was to be my woodcock gun, until we stumbled onto a L.C. Smith field grade 12-gauge with rare factory choking. It was a beautiful 26-inch barrel choked improved and full. Being an old-school bird hunter, my father always claimed that hunting woodcock with anything other than a classic side-by-side is unethical. A pharmacist by trade, my father was also one of the finest stock builders around. That statement would also be the testimony of many friends who carry one of my dad's classic rifles or shotguns. My father restocked my L.C. to fit my small frame and then, after several boxes of clay pigeons and several bottles of Hoppes # 9, the countdown to my 12th birthday began. I started honing my skills for finding woodcock coverts by spending many spring evenings with my father, doing peenting counts and knocking on landowners doors; it seemed that our woodcock season was 12 months long.

A favorite covert of Dad's that always produced many flushes fell victim to the 1970s coal mining boom. An area of prime habitat yielding an impressive native population had been turned into a grass backfill. The flight birds, though, still usually provided three or four days of good hunting. The bag limit back then was five, and Dad often limited out. He was a pretty impressive shot, and made the chase look easier than it actually was.

Finally, my first day to carry a real gun arrived. Unfortunately, I had just missed the previous season due to a November birthday, but I did get to warm the barrels during the late grouse season that year. We hunted a relatively new covert that had provided some action in the previous couple of years for Dad, but nothing like the old days. The first woodcock we flushed got up between my father and me and it was in our safe zone of fire, so Dad quickly folded the bird. A respectable number of flushes followed, and as luck would have it, a lifetime of anticipation finally became reality when a mature female flushed. I swung, squeezed the trigger and folded the bird. It was probably the proudest I'd ever seen my father, and I could tell just by the expression on his face; no words were necessary.

In the late 1990s my father reached retirement and, as I hated to see happen, my parents decided to move to Florida. Against my father's wishes, the scheduled departure after woodcock season was changed to before, due to the closing date for the sale of his house.

The past 15 years at our favorite covert hadn't been producing because the cover was maturing. The bag limit change to three birds years earlier helped keep some birds in the area, though, not to mention reducing our personal take.

I began the 2000 season with mixed emotions. With the one who had introduced me to the splendors of Penn's Woods now 1,400 miles away, the hunt just wasn't the same. Well, that was until I entered the familiar covert. I hadn't walked 50 yards before I began flushing birds. The first bird flushed off my bootlaces, and the L.C. Smith again did its part as the woodcock fell to the autumn leaves. I took one step to retrieve the downed bird and two more flushed. One thing I learned at a young age is that unless you're hunting over a skilled dog, never take your eyes off the mark of a downed bird, especially woodcock. I stashed the woodcock in my vest and another

exploded into flight. I swung and squeezed off a shot. Amazed by the fast action, I took some time to work the covert and filled my bag limit in less than 30 minutes. I removed the last shell from my shotgun, took a seat on the railroad bank and called my father on my cell phone.

My father knew what day it was and answered on the first ring. I told him he should have been here. Being the practical joker that I am, though, he didn't believe what I told him. I had 17 flushes in less than a half hour, three of which came after I had limited out and was walking back to the car. I could hear the mixed emotions in my father's voice; a mix of pride and sorrow of the one true passion he so greatly missed. The only way the hunt could have been better, of course, was to have him there. That season was full of action, the best I'd ever had. I wound up with 79 flushes in six outings.

The following year was much the same, and I received some good news for the next season. My parents had had enough of the Sunshine State and were moving back to Pennsylvania. I welcomed the season opener with more anticipation than ever. The covert didn't disappoint us. Birds were plentiful, and I soon received another lesson from the old veteran. The 2-year hiatus hadn't affected his proficiency, as his classic side-by-side put feathers in my father's gentle hand. As my father and I continued to work the covert, we reflected on the changes we've seen over the years and how the woodcock have adapted to the overgrown habitat. It seemed that the sound of flushing woodcock outnumbered the sightings, and we began to work areas around the covert and found new patterns that initiated additional shooting opportunities. We bagged a couple birds apiece, and as we worked our way through the final 50 yards of cover, two woodcock flushed; I folded the bird to the left as my father got the one on the right. A fitting conclusion to one of the best days we have ever shared.

Looking back on the past couple of years has brought a new appreciation for woodcock hunting. My father, now in his 70s, is slowing down physically, but the emotional rewards in having him out hunting for another season is beyond the words of this text. His name is C. Reid Hergenroeder, the best hunting mentor I've ever had and the reason my most treasured memories will always include the whistle of timberdoodle wings.

- Lawrence Hergenroeder, Forest County Deputy WCO

Location, Location, Location – Our House

WE'VE ALL HEARD that common realtor's phrase, "location, location, location." Just that one word signifies many different things to each of us as individuals, but most of all, it signifies value - or lack of it. As we approach another "cycle" for a hunting license fee increase, perhaps a similar phrase best exemplifies what many of us involved in this issue, in the current and past cycles, always begin to think, "timing, timing, timing."

Regardless of what some say, however, timing is never good, especially as far as our legislators are concerned; at least that's what we're always told. Somehow, when things are going well, there is a perception that there isn't a need for increased funding. And when things are going bad, there's a perception that increased funding isn't deserved. Negative perceptions are typically the results of misinformation, so let's look at some of the myths that surround this issue every time a license fee increase cycle comes about.

Myth 1 - Game Commission employees are overpaid. The truth is that the Civil Service Commission determines employee salaries, and all state agencies are obligated by law to compensate each employee based on the position evaluations as determined by the Civil Service. Neither the PGC Commissioners nor Executive Director can overrule or change Civil Service determinations.

Myth 2 - PGC employees can take a reduction in salaries or benefits or no salary increases, like many others in today's work force. The truth is that the Governor's Office of Administration determines what wage increases will be each year, as well as benefit changes. Any increased costs become the responsibility of each state agency. Again, neither the PGC Commissioners nor Executive Director can change those determinations, regardless of the financial condition of the agency.

Myth 3 - the agency has too many employees. The truth is that the state Office of Administration establishes the number of employees the agency is allowed to have. Although the Executive Director may choose to not fill vacant positions, he cannot create and hire new positions of his own accord.

Myth 4 - cut more timber and/or sell some of the Game Lands. For starters, the agency is not in the business of either timber management or timber harvesting for short-term financial gains. Established management plans consider the wildlife resource first and foremost. Profits from timber harvesting are secondary to the long-term wildlife management goals of the agency, as they should be. With respect to selling some of the 1.4 million acres of Game Lands, the agency is barred by law from selling any of its land holdings.

Myth 5 - the PGC Commissioners are responsible for the continued lack of funding. Truth is, the Commissioners are volunteers, nominated by the Governor and confirmed by the Senate, to make policy decisions with respect to how the agency manages the wildlife resources of the Commonwealth. Although that to some extent includes the management of funds allocated to the agency, the Commissioners are not mandated to determine the methods of revenue generation. It's the members of the General Assembly who are currently responsible for ensuring adequate funding for the management of those resources.

There has been only two increases in license fees in the past 20 plus years. Not bad for a multimillion dollar operation with roughly 700 employees. Few other state agencies, including our own General Assembly, could boast of such a financially prudent track record. However, with increasing costs abounding, whether it's fuel, health insurance, equipment or wages, it is necessary to occasionally increase license fees. And perhaps the timing is poor, but the time for an increase is upon us.

Without an increase in a variety of licenses, sportsmen will continue to see further cuts in programs and services. Expect to encounter closed shooting ranges, and more closed roads on our state game lands. Public access programs, which have already had some services reduced, may be reduced further, which can only lead to less public access for sportsmen - at a time when posted property is a growing concern of many. Expect less participation by agency employees at your club meetings and

youth field days; fewer hunter education classes; and increased poaching and other violations as the officers corps not only shrinks in numbers, but district sizes increase proportionately.

Although there are certainly alternative sources of funding, such as a percentage of state sales tax revenues garnered from wildlife related purchases, that can be used to cover increasing fixed costs, it appears our legislators have determined the preferred course, at this time, to consider an increase in license fees, perhaps with some new stamps/licenses. Sportsmen should voice their concerns of approval or disapproval, with regards to certain aspects of proposed license increase legislation; however, there should be no question as to the need for an increase in overall revenue, soon, to maintain existing agency programs. This is our call, and we can expect to get what we ask for. Ask for no increase, and we could possibly see the PGC merged with the Department of Conservation and Natural Resources, which would not only severely limit our input on wildlife management programs, but also remove our management of the 1.4 million acre game lands system that we, as hunters and trappers, have purchased. Just as owning a house requires that certain fixed costs be paid, such as water, heat and electricity, this is the sportsmen's agency and similar fixed costs are rapidly coming due. This isn't about wildlife species management or seasons and bag limits. This is about retaining what we hold near and dear to us - to those who came before us, and to those who will come after us. This is our House.

- *Ted Onufrak, President, Pennsylvania Federation of Sportsmen's Clubs*

Incident at Graveyard Hill

DOMINIC ANASTASI was puzzled by the two dim figures edging toward his treestand. He knew they had seen him, and common decorum should have precluded any chance they would set up nearby. After all, they were surrounded by 2,000 acres of forest, which was ample range for even the most discriminate deer hunter.

Not all hunters prescribe to the customary rules of courtesy, though, and these two happened to be elite members of that small minority. So, despite Dominic's obvious presence, one set up to his left and the other to his right.

It had been a long walk up Graveyard Hill. At least a mile, Dominic figured, and he wasn't about to be squeezed out by two ill-mannered intruders. This was prime deer country, and the opening hour of Pennsylvania's deer season was upon him. He'd just have to stick it out. In spite of the unsportsmen-like intrusions, his treestand gave him a distinct advantage. He could see deer coming from a long way off; they could not.

As dawn began to spread long fingers of light through the forest, Dominic watched for the flash of a tail or the gentle bob of a deer head. Gazing over the horizon and gradually working his way closer, he soon found himself scanning the ground directly below, and suddenly his knees began to weaken.

He recognized the two objects at once. Nestled on the dark forest floor, they couldn't be seen before, but now, with the morning light, they stood out plainly, a mere 50 feet away: one brown, the other white. How could it be? Salt blocks here in the middle of nowhere.

But now the situation was starting to make sense. This is why the two hunters had set up so close to him. He had inadvertently placed his treestand near their illegal bait. As a Pennsylvania state trooper and retired deputy conservation officer, Dominic was outraged by his discovery. He held back his emotions, though, and just quietly packed his gear and headed back down the mountain. The two intruders nodded unsuspectingly as Dominic passed them, unaware they would soon be rewarded for their unsportsmanlike behavior.

Once out of sight Dominic called me from his cell phone and we arranged to meet at the foot of Graveyard Hill. It would take him a half hour to hoof it down, about the same time it would take me to get there from the opposite end of the county, where Deputy Jeff Pierce and I were investigating another violation.

Dominic was waiting for us when we arrived. "Bill. Jeff." he said, sticking out a hand. "Great to see you guys again."

We grasped palms. "Sorry your hunt was wrecked."

"Hey. No problem," he shrugged. "I'll have other days to get a deer. Just so long as we nab these two; that's what's important now."

There were a lot of hunters in the area, and we were making the long uphill climb along a jeep trail when, suddenly, a shot rang out to our right. We froze in our tracks. "Wow! That was close!" I snapped.

Within seconds a doe came running from the woods and stopped within a few feet of us. I didn't want the hunter who we couldn't see to take another shot, so I bellowed, "Don't shoot! Humans! Do not shoot!"

Immediately a voice responded to our right. "Hello."

Confident our presence was known we moved forward along the trail, and within seconds the hunter materialized to our right. He was sitting below us in a hollow 50 yards away, and although we were

wearing fluorescent orange vests and hats, the sloping terrain had veiled our presence from the hunter as the deer came running toward us.

I walked down to the hunter and informed him that before long we would likely be returning down the same path, that shooting in that direction was not safe as other hunters would also be using the trail as the day progressed. He said he'd move to higher ground, which would give him a better view.

We walked another half hour to the top of the mountain where Dominic pointed out the first hunter. "There's one of 'em, Bill," he said in a low voice. The man was standing at the base of a tree, a scoped rifle cradled in his arms, looking away from us.

I nodded to Dominic and Jeff. "Got him. You two head over to his partner."

The hunter was in his late 50s, 6-foot tall and heavy set. He saw me coming and stood woodenly as I approached. "State Game Commission," I said. "You're hunting in a baited area."

The man looked genuinely bewildered. "Bait? Where? I don't know anything about any bait."

I unloaded his firearm, inspected his hunting license and asked for identification. He was from New Jersey. Looking around I could see no sign of food or salt blocks. "Are you hunting with someone today?"

"Yes, my son," he pointed. "He's over there, with the two men that came up with you."

Dominic and Deputy Pierce were standing 50 yards below us questioning a hunter. "Okay," I said. Let's walk down and see what we have."

The man's son was huge, and amiable. He was kneeling by a doe he had just killed, a drag rope secured to its neck. I could see two salt blocks nearby. "Conservation Officer Wasserman," I said.

He looked up, eyes like saucers. "I know. I have two of your books."

His statement really caught me off guard. Had I foolishly thought all these years that only the "good guys" were reading my stuff? I put a lot of my inner thoughts and feelings into what I write, and the idea that violators might be getting to know me better as a result did not set well with me. "Why are you doing this?" I said.

The big guy just shrugged and looked away. "Sir, my father had no idea about the salt blocks. I brought them up here two months ago. Never told him about it; this is my fault. Just tell me what the fine is. I'm guilty. I'll pay."

Before I could respond, though, my portable radio blurted a message about another baiting incident at the opposite end of the mountain. The informant's name was confidential, but the dispatcher told me he'd left the code name Jay.

I radioed back and asked the dispatcher to have Jay meet us in one hour. Deputy Pierce had written down all the necessary information concerning the case at hand. We could file citations later. For now we needed to get back down the mountain and on our way. The two men walked down with us, the son dragging his deer as if it weighed no more than a rag doll. I was glad he was the friendly easygoing type.

Dominic soon resumed his hunt, splitting off about halfway down the mountain to join his father. We thanked him for assisting us and continued down the hill and to my patrol vehicle. I strapped the confiscated deer to my rack and told the men that citations would soon be forthcoming. Time was flying and we had to move on.

Jay was waiting for us when Pierce and I arrived. He was eager to get started. "I think they may have left already," he said anxiously. "It's noon and they might want lunch."

"Hope not." I said. "We were on another case and couldn't get here any sooner. All we can do is head out to their stand and see what happens."

"I'll take you right to them," Jay said. His jaw set as he turned briskly toward the broad, rolling meadow behind us and marched off like a captain leading his men into battle. He moved with great agility for a big man. Pierce and I followed dutifully behind.

"I was pushing through for my father earlier when I saw them," he told me once I'd caught up and managed to keep pace. "Neither of these guys is wearing orange and there was a bunch of corn scattered by one of their tree-stands. I'm not sure about the second stand. Once I saw the bait I just kept walking like I didn't know anything."

"Excellent." I puffed.

"Yeah, I didn't want them to know I was on to 'em. I just waved to the one guy like nothing was wrong, and then hoofed it out of there and called you."

Jay stopped suddenly and pointed, "That's their truck up on the hill to your left. Guess they're still here."

We continued across the giant meadow and began walking downhill through a vast wooded area. Suddenly Jay slapped my shoulder with a firm backhand and stopped dead. "Somebody's down below."

A bearded man wearing an orange hat and vest was walking almost parallel to us. We moved toward him fast. "State Game Commission," I announced. "Stop where you are."

I walked over to the man and asked for identification. It was another hunter from New Jersey. "Where's your gun?"

"It's back at the truck, with my brother. We were just leaving when I realized I'd forgotten my tarsal gland. Have it hanging by my treestand up ahead."

"Is that where you were hunting earlier?"

"Yeah."

I glanced at Jay. A leering smile of condemnation crossed his face as he slowly shook his head.

When our suspect realized that the man with me was the hunter he had seen earlier in the day, a look of grim realization came over him. "Okay. You got me," he groaned. "I was hunting farther back in the woods. This treestand is my brother's. C'mon, I'll show you where I was, and, yes, I have corn sprinkled about."

We walked 200 yards into the woods before we came to his treestand. Several bushels of cracked corn had been placed close by. I took photographs for evidence and proceeded out of the woods toward the pickup we had seen earlier. The violator followed, along with Deputy Pierce and Jay. A man sitting inside the truck identified himself and admitted to hunting deer in a baited area.

The Graveyard Hill incident is now closed. All four individuals have pled guilty and paid their fines. However, without the help of Dominic Anastasi and Jay, who were willing to give up their time, these violators would never have been brought to justice. I salute both of these fine men.

- William Wasserman, Wyoming County WCO

The Magic Hour

IT HAD BEEN an extremely slow season. In fact, about the slowest I had experienced in 25 years of spring turkey hunting. It was the third week of the 2005 season, and in about 20 hours of hunting I had heard only one gobbler. Many turkey hunters feel that toms have been gobbling less in recent years. Some say it's because of the substantial turkey population; the gobblers nowadays are more likely to be "henned up." Others blame the lack of gobbling on the high hunting pressure and hunters calling up birds before the season.

For whatever reason, after three weeks of almost total silence, I was pretty discouraged. When my friend, Roland, however, called on Friday May 20 to say that the previously silent birds started gobbling again on his property in Schuylkill County earlier in the week, my enthusiasm perked up somewhat. Roland reported hearing at least two, possibly three gobblers. I told him I'd be at his cabin well before daylight the next morning.

The next morning a heavy fog on Second Mountain slowed me down, and by the time I pulled into the lane leading to Roland's cabin, it was almost shooting time. "No harm done," I told Roland when I entered the cozy camp. "The birds will probably stay on the roost a little later on a foggy morning like this, anyway."

Roland said he would set up his decoys in a small grassy opening behind his camp, where he had heard one of the birds earlier in the week. I decided to hike up a logging road that snaked up the mountain behind the cabin. I reached a bend in the road and then cut through a clearcut into some mature woods where another friend of Roland's and mine, Tony, had killed a longbeard in 2003.

I was with Tony on that hunt. It was the second Saturday of the season, and we heard the tom gobbling just off the roost. We tried every tactic in the book and couldn't do anything with that bird, so we split up and decided to just hang out in the area to see what would happen. The tom never gobbled again, but Tony killed the bird when it slipped in on his decoy at 10:45.

Roland said a bird had gobbled in that area a few days earlier, and he wasn't sure if it was the same gobbler he had heard right behind the camp or if it was another bird. I ambled out a long bench and set up under a big hemlock tree. The fog was still pretty thick and I noticed movement about 60 yards away. Three deer materialized out of the fog, picked their way behind me and then vanished as quickly as they had appeared.

It was quiet, with no breeze at all, and I thought that I'd be able to hear a gobbler from a long way off, despite the thick foliage typical late in the season. I've often wondered just how much the leafed-out vegetation in late May affects how far a gobbler can be heard. During the first and second weeks of the season it seems you can hear birds ridges away, but during the late season you might not hear one in the next hollow.

My anticipation of hearing a gobbler or two burned off about the same time as the fog, around 9 o'clock. I had called sparingly, a few soft yelps or clucks every half hour or so, since 6 o'clock, to no avail. With nothing happening, I put on my orange cap and decided to hike to another section of the property, near where I had killed a gobbler in 2002 (see "Goblin' Moon," March 2003). After gobbling on the roost, that bird had lockjaw until about 10:30. I had stayed in the area all morning - I'll do that if I know a gobbler is around - and eventually I heard him gobble from a long way off, across some open fields. I set up against a large tree and worked that bird in, killing him at 10:45.

After working my way through a thick clearcut, I reached a spot just over the ridge from where I had killed my bird in 2002 and sat down on a log to rest. I drank some water and ate some candy pulled from one of the many pockets on my turkey vest. I pulled out my pocket watch - 10 o'clock - and decided to stay put for an hour or so, but when it got a little breezy I thought that now I had to contend not only with the thick foliage but also the wind. The chance of hearing a gobbler, if one was anywhere around, would be even more difficult. I was thinking about what a slow spring gobbler

season it had turned out to be when I heard it, or at least I thought I had heard it - a gobble far off in the distance. I wasn't sure, though. Maybe my mind was playing tricks on me. But then I heard it again. It was a gobble.

Because of the wind I pulled an old Lynch box call from its pouch in my vest and sent out some loud, course yelps. The bird gobbled back, and a few moments later gobbled again even closer. He was definitely on the move in my direction, and coming at a pretty good pace. I scrambled to the base of a big oak, hung my orange hat on some nearby saplings and replaced it with my camo hat. I clucked a few times, set the call in the leaves beside me, and just as I pulled up my facemask a booming gobble sounded from just over a rise 75 yards or so away.

The gobbler obligingly tipped me off to exactly where he was, and I shouldered the Winchester Model 1300 Short Turkey gun and waited. A big black shape ghosted up over and then stopped on top of the rise, and stared a hole right through me, apparently looking for the "hen" he had heard.

I remember thinking, don't move, don't even blink, or he's gone. It was a classic "hang-up" situation in the making, I thought, but the gobbler surprised me by standing there only a minute or two before once again coming steadily toward me. I noticed a long thick beard swinging from the bird's chest and the bright red and blue head looked enormous. When the tom was about 45 yards out in front I clicked off the safety and my finger tensed on the trigger.

The bird let loose with a thunderous gobble that reverberated through the hollow and seemingly shook the ground. I nearly pulled the trigger then, but when he continued high stepping it toward me I figured I'd let him come. At 35 yards he angled right and moved behind some saplings. I better take him when he steps clear of the trees, I remember thinking, before he gets behind me, and when he emerged from the cover I settled the red front sight between the green dots of my rear sight and held just above the juncture of the neck and body and jerked the trigger. The 12-gauge 3-inch Winchester Supreme load of number 5s knocked the bird backwards, and it had ceased thrashing its wings in about the time it took me to grab my orange hat and cover the 30 yards to reach my trophy.

I rolled the bird over and examined the thick beard, which later taped an even 10 inches. One of the bird's spurs was broken, but the other was an inch long and sharp. I figure it was a 3-year-old bird. The gobbler's wingtips were worn flat, evidence that he had been doing some serious strutting during the spring. I removed my license from the holder and began filling out my tag, and when I got to the "time killed" space I took out my watch; 10:35. After attaching the tag to the turkey's leg and while field-dressing the bird, something occurred to me. My last three gobblers had been taken between 10 and 11 o'clock, and a later check of my hunting journal revealed that nearly 70 percent of the gobblers I've harvested in 25 years of spring turkey hunting have been taken during that time period.

It makes sense when you think about what's going on in the turkey world. Gobblers that are with hens all morning might gobble a little, but they're reluctant to investigate a lone hen when they've got plenty of the real thing for company. I've killed a few gobblers over the years not long after they got off the roost early in the morning, but usually when that happened it was because I was positioned between the tom and his hens. By 10 o'clock or so, especially later in the season, the hens usually leave the toms to incubate their eggs, and often these lonely gobblers will investigate calls or areas where they heard calls earlier in the morning. I've had them sneak in silently in those situations, too.

Another reason I've found for sticking it out through the late morning hours, especially on heavily hunted public land, is that many hunters quit by 9 or 9:30, especially if the gobblers are quiet. Not only are gobblers more apt to investigate late morning calls, but also you're less apt to have another hunter interfere with a bird you're working.

I wrapped my orange alert band around the gobbler and slung the bird over my shoulder, picked up the shotgun and started my hike out. When I reached the clearcut, I had to set the tom down and

rest for a minute. The bird was heavy, but it was a satisfying weight to tote. It had been a satisfying hunt, and a satisfying season, one that had been one of my slowest but changed for the better in a hurry.

During the spring gobbler season I hunt from the opening bell til noon - or until I kill a bird - because I know that anything just might happen, particularly during that magic hour between 10 and 11.

- *By Bob D'Angelo, Associate Editor, PA Game News*

Bling in Your Gamebag

AT 4:30 this February morning I'm headed east on I-81 with the radio crankin' me awake and the heater struggling to edge out the cold air in the car. I feel small and vulnerable, sharing the road with all the 18-wheelers; I guess they are the only other folks with a reason to be up and about at this hour. But, as they'll continue on their journeys today, I'll soon be (if all goes as planned) hob-knobbin' with some gobblers.

This is my third attempt at turkey trapping this winter with Land Management Officer Dave Mitchell and Bob Eriksen, regional biologist for the National Wild Turkey Federation (NWTf). The first two days we sat on a bait site in Lehigh County with a very enthusiastic landowner. Bob Ehle has been managing his 110 acres for wildlife for several years. He's done such a good job providing food and cover for wildlife that the turkeys didn't want to come to the cracked-corn bait.

Without snow on the ground, turkeys are often hard to coerce into a situation where they can be caught by a rocket net and banded. As we sat and watched, those longbeards walked right passed our bait twice the first day, and on the second day, while we heard them carrying on, they never made an appearance. Several days later, Mitchell, Eriksen and Ehle were finally able to bring those gobblers in and band them -but not while I was there. Mitchell called it the "writer's kiss-of-death." Nothing ever goes as planned when a writer or photographer is on the scene.

This day we're hoping for better luck; we'll be on the other side of Lehigh County, at the Saucon Valley Country Club. Mitchell called the afternoon before to let me know he'd been baiting these toms for several days and that they were hitting the bait regularly. He was watching them on the bait as we spoke and said that, although it was against his better judgment, Eriksen had convinced him to wait until the next morning to fire the net, when I could be there. Mitchell hoped the birds would be back; Eriksen was confident they would return.

Arriving at the country club at dawn, I met grounds-crewman Tony Johnston. Eriksen and PGC biologist Jack Gilbert set the charges on the rocket net while Mitchell laid the bait line and Johnston trimmed tree limbs to keep them from fouling the net.

As the roar of the chainsaw drifted away, I heard a gobble and looked to Mitchell for confirmation. The birds had roosted off in the direction from which the gobble came, so we finished up, moved the trucks back a comfortable distance away from the site, pulled the trigger wire inside one of the trucks, settled in and waited.

We'd been sitting only about an hour and a half when our radio crackled, "We've got gobblers comin' in," whispered Mitchell.

The birds were way off to our right, coming out of the spruces. Mitchell, Eriksen and Johnston sat in a truck to our right, which blocked my and Gilbert's view. As the birds were still a ways off, we were able to turn on the truck to roll the window down and secure a clear view of the trap site.

The cold, which had been creeping into my toes, came pouring through the window, but now, with the excitement of the birds coming in, I was suddenly warm.

Far off, I could make out the movement of dark, shadowy figures near the ground. They weaved in and out of sight behind trees and swells in the ground. Eventually they moved into view. Four, no six... wait... ten, holy cow, there were more... 14, 18 and counting.

Eight gobblers came strutting, fans-out, across the green toward the 8th hole where we were parked. In total, 32 birds were headed our way.

The turkeys dinked around, zigzagging through spruces and sand traps. At one point I thought they were going to head back into the woods.

Then the hens made a beeline for the bait, they ran - literally ran -to the bait line. It was wild to watch. I guess they were trying to get some bait into their crops before the gobblers got there and chased them off.

One of the last gobblers to arrive came in at a full strut. He was spectacular; absolutely da-man. The sun was just right, and brilliant colors bounced off his regal feathers. He was beautiful. I was entranced.

BANG!

The net shot out into the air, the sound of the rockets echoed, birds and feathers flew every which way, and the guys leapt out of the trucks and sprinted to the net to secure the turkeys they'd caught, all while a cloud of smoke drifted slowly through the chaos. I breathed in the heavy smell of gunpowder.

WOW! What a way to start the day. That gobbler will be even more hip sporting the bling-bling of a new legband, I thought.

Why are we trapping these toms?

The NWTf and three state wildlife agencies are conducting a 4-year study to estimate the harvest rates of spring gobblers in Pennsylvania, Ohio and New York. Each state received 300 bands to fit to male turkeys this winter, before the spring hunting seasons. In Pennsylvania, the 300 bands were dispersed across the state, 50 to each region. The PGC - like the wildlife agencies in Ohio and New York - is providing personnel and equipment to capture and band 300 birds each year of the study. NWTf is covering the cost of the Pennsylvania Cooperative Fish & Wildlife Research Unit at Penn State to coordinate the tri-state effort and analyze the data.

Each aluminum leg band will be secured to a male turkey's leg, and each band has a unique letter-number combination. Each band is also imprinted with a toll-free telephone number with which to report a harvest or recovery of the banded bird.

Perhaps the most exciting news for spring turkey hunters is that half of the birds being banded will also have information on the band indicating that a reward of \$100 will be paid if the band is reported before July of 2009. NWTf is covering the cost of the rewards. In Pennsylvania, 150 birds, 25 in each region, will be wearing these special incentive bands. Though the chance of harvesting a bird wearing a \$100 band is remote, the information being gathered is nonetheless significant.

Duane Diefenbach, who is heading up the study at the Pennsylvania Cooperative Fish & Wildlife Research Unit says, "For many game species we have estimates of how many animals are harvested, but what we typically lack is knowing the harvest rate - the percentage of the population taken by hunters - because we lack population estimates. This study, for the first time, will provide an estimate of harvest rates for turkey gobblers in Ohio, New York and Pennsylvania."

In addition to estimating harvest rates of male turkeys during the spring season, the research unit will also be able to estimate the state-wide population and annual survival rate of male turkeys.

PGC wild turkey biologist Mary Jo Caselana adds, "The multi-state approach provides a larger sample and, thus, a better understanding of the variability in harvest rates. It will allow comparisons of harvest and survival rates among the three states, with their varying harvests, hunter numbers and hunter densities."

Caselana also says, "Age-specific harvest rate information will enable the state agencies to predict the effect of spring turkey seasons on the age-structure of the male turkey population. Recent research has found that harvest rates vary among age classes of wild turkeys and can greatly influence the number of adult gobblers in the spring harvest."

A sub-study on band retention rates is also being conducted. The bands being used for the harvest rate study are rivet bands - an aluminum band that is secured using a stainless steel rivet. It is virtually impossible for a turkey to lose a rivet band. National Band & Tag Company has donated a selection of butt-end bands to evaluate how well each of four different types stay on wild turkeys. The retention rates of butt-end aluminum, anodized aluminum, enameled aluminum and stainless steel bands will be evaluated.

We caught four adult males and five adult females at the country club. Each of the males is now fitted with a rivet band on his right leg, as part of the harvest rate study, and one of the four different types of butt-end bands on his left leg, as part of the band retention study. Two out of the four rivet bands offer \$100 rewards for being reported.

While the five hens we caught won't be part of this study, the PGC is gathering breast feathers from both male and female turkeys for the Northeast Wildlife DNA Laboratory at East Stroudsburg University. The feathers will be used to help build a forensic DNA database and will be placed in a long term DNA archive for future studies.

In addition to everything we'll be learning about wild turkeys through these efforts, we'll also be able to learn a little bit about humans -turkey hunters in particular.

The Pennsylvania Cooperative Fish & Wildlife Research Unit will be able to estimate reporting rates by comparing the number of \$100 reward bands reported to the number of non-reward bands reported. Reporting rate estimates help biologists determine harvests and may enable them to compare results from previous studies not using rewards.

Who would've guessed we could learn so much from a few turkeys. No, not Mitchell and Eriksen - the actual turkeys.

Thanks for a great day, guys!

- *Lori D. Richardson, Wildlife Education Specialist*

Mistake Kill? You Make the Call.

SECTION 2306 of the Game and Wildlife Code, is titled, "Killing game or wildlife by mistake." The section reads as follows: "Any person who, while hunting or trapping for game or wildlife, which may be lawfully taken, by accident or mistake kills or attempts to kill any game or wildlife other than bears, elk or threatened or endangered species, contrary to the provision of this title shall pay restitution pursuant to subsection (b) to an officer of the commission." Subsection (b) indicates "a fee of \$25 shall be paid for each deer, \$20 for each turkey and \$15 for each other wild bird or wild animal, other than a bear, elk or an endangered or threatened species."

This section goes on to say under additional actions, "If the officer receiving the payment and written statement after further review and investigation is not satisfied the killing or attempted killing was an accident or a mistake, but was caused by negligence or carelessness, or if the person fails to pay the prescribed restitution within 10 days, the officer shall cause the person to be prosecuted for the unlawful killing or attempted killing of game or wildlife."

Several times every year hunters call to report a "mistake" kill. For me, this section is one of the most frustrating sections of the Game Law to enforce. One reason is that some hunters have honestly made a mistake and are trying to rectify their mistake on their own. Others, though, turn them in only because they know, for one reason or another, that they're likely to be reported. Then there are those few individuals who will shoot at whatever deer they see, and if caught, they just claim the deer as a "mistake." Fortunately, witnesses often come forward and report what really happened.

Another reason this section is frustrating is the phrase, "caused by negligence or carelessness." A definition of negligence is a failure to exercise the care that a prudent person does. Everyone should remember that the first commandment of safe shooting is to identify your target and what's beyond. I have to determine if the killing was legitimate or if it was "caused by negligence or carelessness." For me this is the most difficult part.

Following are some scenarios that have occurred during my career as a WCO in several districts. You decide if I should have accepted or denied these statements. As you read them remember that I, as a WCO, do not have to accept the written statement. I am charged by law to file a citation if it is determined that the animal is not a "mistake" kill, but that it was caused by carelessness or negligence. These statements are printed just as they were written on the original affidavit and some explanations are included within brackets where needed.

The following occurred before antler restrictions, antlered deer only season.

To the left about 40-50 feet were two hunters. To the right of me about 40-50 feet was a hunter. In the woods in front of me they were putting on a drive. I saw three deer in the same woods. Two of the three deer were standing. I could tell they were does. The third deer was walking through the woods. Through the twigs and brush I thought I saw spikes. With that and all the excitement, I pulled the trigger. It ran 25 feet and then dropped. I walked over and realized it was a doe.

I was watching a small herd of deer when a buck moved down through them. The buck was standing between two trees when I shot. The doe, hidden by a tree, picked her head up at the time of the shot. The shot caught her in the neck.

I was walking out of the woods and walked into an open field and saw a buck running with a doe and I began to fire at the buck and must have hit the doe. I did not see a doe around the buck when I shot at it.

Duck came in low into the decoys ½ hour after [opening] shooting hours. Cloudy conditions made duck look like a hen mallard. Shot duck then realized it was a black duck. [Black duck season was closed during this period. Hunter also admitted he was not all that good at duck identification and that he shot upon the urging of his hunting partner who was a longtime waterfowler.]

Due to fairly dense canopy of foliage in the area of my treestand said deer approached behind me unnoticed. When it ran through a few small open spots I failed to see the antlers. After it stopped

about 75 yards away it was screened by foliage but still visible in outline. Not having seen the antlers, I thought it was a doe. I didn't see the antlers until I walked up to it. **[This deer was an 8-point buck with four points on each antler and was shot in the head during antlerless only season.]**

I had an underwater rear foot trap set specifically for beaver. No bait was used due to the waterfowl that were using this beaver pond. As I did my daily check I saw that the duck **[hen woodduck]** had become caught in my trap, which was a drowning trap.

The following scenarios happened after antler restrictions were in effect.

I mistakenly harvested a protected deer. I thought the deer was antlered having three points on his right side. The deer instead only had two points on that side. I feel the mistake was made due to the presence of briars and saplings. This incident occurred this morning at 7:15 a.m. I was in my treestand and spotted the deer moving through the brush about 125 yards downhill from me. I viewed the deer in the scope and it appeared to have a G-2 tine, G-3 & G-4. I took the shot. However upon close inspection it did not possess all the points that I envisioned. When I shot I was very confident that I saw three points or I would not have shot. **[This deer had two points on one antler and a spike on the other.]**

At 5:55 p.m. the deer in question stepped out into the streambed 22 yards away. From my vantage point 15 feet in a tree the deer appeared to have three points on the right antler. I opted to hold my shot until the deer turned his head to give me a better view. The deer then turned and walked downstream away from me. At this point I had a clear view of his antlers and what appeared to be confirmation of a 3rd point on the right side. I then took the shot at 25 yards quartering away. The deer ran 30 yards and collapsed. Upon inspection of the deer I realized my error and phoned the Southeast Region Office at 6:15. **[This deer had two points on both antlers.]**

Deer were moving from left to right, three does and a buck in the brush. I saw the "Y" and what I took to be a brow tine more than one inch long. After the kill the brow tine turned out to be the broken antler on the right side. **[This deer had two points on one antler and a broken spike on the other.]**

I was on stand saw buck in brush and saw three points on both sides, not counting brow tines. When I went up to deer it only had four points, two on each side. Must have been picking up brush as more points. **[This deer had two points on each antler.]**

I saw two bucks running in the woods, one was an 8-point that was the one I was shooting at. After shooting I went and found blood. After following the blood trail and finding the deer I noticed I shot a protected buck by mistake. After securing the deer I then called the mistake kill in to the Game Commission. **[This deer had two points on one antler and a spike on the other.]**

I saw deer in an opening 35-40 yards below my treestand. I realized it was a legal buck. Right side of antler looked like it had a split main beam w/stickers out toward the end of the main beam. At that point I made a commitment if I got a good shot I would take this buck because of the interesting rack. I maintained a visual as the buck walked along the woods line. All I could see at this point was it legs. I had a shooting lane 20 yards from my treestand to the grass road. The buck I was watching made it to the opening, and I focused on his body and made a kill shot. **[This deer had two points on each side and the shooter had binoculars, which were not used.]**

While hunting a hollow in Chanceford Township at approximately 12:40 p.m. I saw a buck coming out of the thick briars 50-60 yards to my right. He walked up the hill through intermittent briars and quartered my way until he was slightly higher than me on the sidehill but still in the middle of small saplings and brush. Standing quartering toward me at 20 yards I continued to check the antlers and was convinced that the buck's right beam had an odd, almost horizontal brow tine. I drew back and released an arrow with the buck standing at 20 yards. He turned and trotted 40 yards up the hill, stopped and fell over. **[This deer had two points on each side.]**

The following are written statements from more "mistake" killed deer. While the actual deer that was killed was not recorded, the fact that a mistake kill affidavit was filled out means that the shooter either didn't have the proper license/tag for the deer shot, shot a protected deer, shot more deer than allowed or shot an antlerless deer in an antlered only season.

I was walking through the woods. Kicked up this deer. Thought it was a doe. Shot at approximately 75 yards. I had already shot my buck and had used my antlered tag.

While watching a big buck I saw another deer coming. I looked at it and thought it was a doe. Looking back at the big buck again for a few minutes then back to what I thought was a doe with its head down feeding, I shot it. The sun was just coming over the hill when I first saw the deer and I did not see any horns on the second deer.

I saw a buck in some thick mountain laurel. I shot at the deer. I knew I hit the deer and I thought it stayed on its feet so I shot it again. When I walked to spot I found a dead buck. Then I realized I shot at a second buck, so I followed the blood trail to that deer. The first buck dropped out of sight after the first shot. That's why I shot at the second deer.

I was hunting with my two sons when a group of 10 deer broke out through the brush. I looked the deer over to see if they had horns as they were trotting through the woods. I shot at what I thought was the largest doe in the group. When we approached the deer we noticed that it had antlers (spikes). I then told my sons that we must report the kill. When we saw the officers, I reported the kill to them on my own accord.

I was watching a doe walk through a clearing and then it went behind some brush and I could not see it. I watched the other side of the brush and the deer came through with its head down to the ground like it was feeding. I put the gun up and eyed the deer in the scope and shot it. I didn't see the horns.

I shot at what I thought was an antlered deer. At that point I thought I missed the deer. A few minutes later some does came down and I shot one. Went down to tag the doe and another hunter came and told me there is a dead buck up on the hill.

I was on stand and saw deer. Watched deer for about 10 minutes in brush. Deer moved down to clearing; I saw no antlers and shot deer when I walked up to it the off side antler had a spike down along the side of its head.

On this day while deer hunting I saw an antlered deer some distance away. When I shot at this deer and unseen protected deer was between us and I shot the protected deer by mistake. I was shooting uphill at the deer.

Entered the woods late in the afternoon and a deer came from right to left. I watched the animals for a few minutes waiting for a clear shot. As the deer got within approximately 40-45 yards I took my shot. Did not see horns.

*Around 5:30 p.m. my dad and I were in his treestand A deer came up through the cornfield and I put my gun up and checked for horns. I didn't see any and I asked my dad if he noticed any horns. We both agreed it was a doe, so I shot and hit it. It ran in the fencerow and died. We went to where we saw the deer fall and noticed it was a buck. We then called it in. **[Junior hunter during the early antlerless rifle season in October.]***

While in my treestand at approximately 7:50 a.m. a single deer ran up the hill, through the laurel, to approximately 25 yards of the tree I was in. I saw horns when he was running up the hill to me. He stopped and looked up at me. It was snowing very hard and I looked his head over and thought I saw three points on the one side. Knowing I probably didn't have very long to shoot, I pulled down on his shoulder and shot. He ran approximately 35 yards where I saw I made a mistake.

Me and my son were sitting on log when two deer came past at about 100 yards on other hill and I shot at second deer (I thought it was a doe). My son shot at the first one and missed. I hit deer and it dropped. I seen a flash of antlers when the deer dropped. Shot the deer in the neck. I saw six deer on top of a hill. I took a look with binoculars and didn't see horns, so I picked the biggest body deer and shot one time, only to find the deer had spikes. The deer was in the thick brush and it looked like a 6-point. The trees made it look like he had more points.

Are you confused and frustrated? How many of these statements would you have accepted? This is not always an easy call to make and unfortunately, WCOs often hear only one side of the story. In reading these accounts you learned how hunters shoot moderate distances at running deer, shoot at deer in brush, don't use binoculars and kill ducks out of season with beaver traps. You also saw how upon going up to a downed deer the hunter is surprised to see that it's not a legal antlered deer, but a protected deer. Remember: **Positively identify your target and what's beyond.**

- Guy Hanson, York County WCO

Reducing Deer-Human Conflicts

THE GAME COMMISSION'S Deer Management Plan has three main goals: healthy habitat, healthy deer and - for lack of a better term - a healthy relationship between deer and humans. All three goals are individually subjective, but the goal involving the relationship between deer and humans affects, perhaps, more of our general public than the other goals.

Conflict often arises when deer and humans interact. For instance, an increase in the deer population can lead to an increase in deer-vehicle collisions, more agricultural damage, further habitat damage and the spread of Lyme disease.

As the human population expands and development continues to spread into our farms and forests, interactions between deer and humans become more frequent. Bigger cities and growing urban areas not only reduce opportunities to manage deer, they also actually result in ideal habitat where deer populations can grow at high, unchecked rates.

Conflict between deer and people varies greatly among individuals. For some farmers, a single deer in their fields may be one too many. For others, reasonable numbers of deer are accepted. Further, many landowners feed deer, encouraging large numbers to live nearby, while others believe one deer (eating their prized ornamental landscaping) is too many. For most motorists, seeing deer in fields and forests while driving is enjoyable, but hitting one with a vehicle suddenly becomes one too many deer.

To get a better understanding of human/deer conflicts, the Game Commission plans to incorporate stakeholder opinions on deer-human conflicts through the use of Citizen Advisory Committees. A pilot project will soon begin - if it hasn't already - in WMU 4B. The pilot Citizen Advisory Committee will give the agency an opportunity to better understand stakeholder values. Just as important, though, is that this process will give stakeholders an opportunity to understand not only the PGC's deer management program, but also become familiar with the positions and concerns of other stakeholders. The Citizen Advisory Committees will then provide a recommended WMU deer population level for consideration to the PGC.

Rather than attempt to define management objectives (i.e., how many deer-human conflicts are acceptable) according to individual values, the PGC's efforts to reduce deer-human conflicts will focus on providing deer management tools.

The agency understands that agricultural deer damage can have significant effects on farmers' harvests. While public hunting has historically been the most effective way to control deer numbers in agricultural areas, in some situations, hunting is not adequate. The PGC's Red-Tag and Green-Tag programs have helped farmers control excessive deer damage to their crops, while state law provides anyone who farms for a living the right to kill deer they see destroying their crops.

Statewide, the DMAP program provides greater flexibility for both agricultural and nonagricultural landowners with deer damage. The program helps landowners achieve deer densities consistent with their land-use objectives by providing antlerless deer permits, in addition to the statewide allocation, to qualifying applicants.

Efforts are currently underway to improve the PGC's response to requests regarding deer-human conflict resolution. An urban deer management strategy is being developed, and input from both the public and agency field staff has been received. In developing a new and consistent public response approach, the agency may employ new deer management techniques or modifications of techniques already being used.

Although the PGC can't eliminate deer-human conflicts altogether, the agency can provide tools and guidance to help resolve the conflicts. Finding resolution will require the long-term cooperation and commitment of citizens and local authorities, and may challenge hunters to think of themselves more

as managers of a resource than consumers of a product.

Continuing to address its overall mission of protecting and conserving the state's wildlife for all Pennsylvanians - present and future - the agency moves forward with the new Deer Management Plan, fostering fewer deer-human conflicts, promoting healthy deer populations and nurturing healthy habitat.

- *Cal DuBrock, Director of the Bureau of Wildlife Management*

The Backyard Poachers

ON MONDAY, March 14, 2005, I received information from a paramedic with Conemaugh Hospital's DART team. The informant said that earlier in the day he responded to an address in Johnstown for an "unconscious person" call. He went on to say that once there he made contact with the victim, a man named Josh Piller. Piller told him that the reason he passed out was because he was in the garage while his brothers were cutting up a deer. The paramedic did not see the deer or parts, though.

I called the Southwest Region Office. Dispatchers there checked the Roadkilled Deer permits issued within the past week. No permits had been issued to any person in Cambria County by the last name of Piller, nor to the address provided.

The following day I went to the address and knocked on the front door several times without getting an answer. I then went to the next street, which was the street to the rear of the address in question, where I noticed a two-car block garage with wooden bi-fold doors. One door was propped open with a broken concrete block. I walked toward the garage, but then noticed deer hair on the concrete immediately in front of the doors, so I collected several hairs as evidence along with a latex glove with what appeared to be blood splatted on it.

As anyone walking or driving along the alley could see into the garage, I stood outside and looked in and saw parts of deer hide, lots of deer hair, bloody ropes hanging from the rafters, blood on the walls and blood on a vehicle inside.

I informed WCO Shawn Harshaw of my findings, and he called Fish and Boat Commission Deputy Michael Nardecchia to bring a digital camera to the location. While waiting for Deputy Nardecchia I noticed two individuals leave from the rear of the Piller residence. One, later identified as Les Piller, stayed on the porch. The other, later identified as Jed Piller Jr., walked into the garage.

I got out of my vehicle and called out, "Mr. Piller?"

"Yeah," Jed Jr. yelled back.

I asked to speak with him, and when he came out of the garage I showed him my badge and credentials and explained why I was there.

Jed Jr. stated that they had picked up some roadkilled deer in Ligonier on Sunday night. Jed's brother Les Piller came over and he also said they had picked up some roadkills around Ligonier somewhere.

While informing them that they had not obtained permits for the deer I noticed that each had blood splattered on his work boots and that Les also had some on his pants.

Deputy Nardecchia arrived and photographed the interior of the garage. When asked where the deer parts were, Jed Jr. said that the heads were still in the garage. He then offered to take Deputy Nardecchia in to retrieve them.

A few moments later, Jed Jr. and Deputy Nardecchia came out with two deer heads. The throat had been cut on one. When asked why they would need to cut the throat on a dead deer, Jed Jr. said that he didn't want the deer to jump up and kick him.

They both seemed to be getting extremely nervous. Les was biting his fingernails, and Jed Jr. wouldn't look at me when answering questions and frequently shuffled his feet.

I informed them that I believed they were lying, but both then swore they were telling the truth. At that point I suggested that they take a minute or two to think it over.

Both men then said they were willing to tell the truth. Les stated that they were at a party on

Sunday, the previous day. Jed Jr. said that he was discussing how much he liked venison with a person he knew only as Cain. Les said that Cain told them they could go and kill some deer, and that they then went out, and with Jed Jr. holding the spotlight, Cain shot the deer. Les just helped cut them up. Jed Jr. added that he had never met Cain before, but believed he lived in Franklin, near the steel mill.

Both agreed to provide a written statement, and while they sat in my warm vehicle to fill out the statement forms, I remained outside and made several calls with my cell phone. After they completed their statements, I asked Les and Jed Jr. to retrieve all the deer meat they had in their possession. Les returned from his home with one grocery bag of partly frozen meat. When asked where the rest was, Jed Jr. said that he had some at his home in Johnstown. We made arrangements to collect the meat later that evening.

When asked where the hides and carcasses were, Jed Jr. replied that they had burned them. Les said Cain took them behind a lumberyard and burned them. I told both Pillers that as long as Cain cooperated and corroborated their version of the incident, they would be charged only with possession of illegally killed deer.

Deputy Nardecchia and I went to find Cain and located a house on his street with profanities and "Cain" spray-painted on it. A young man exited a garage nearby, and I asked where Cain lived. The individual said that he was Cain. I identified myself and asked him how old he was and he replied 16. Because Cain was a juvenile, I instructed him to get a parent so I could explain why I was there. Cain emerged from his home with his mother and she invited us into her home.

After we explained that Cain was implicated as the shooter of some deer taken illegally, he said that Les Piller shot four deer and that he just helped load them into the van. He stated that he didn't own a gun nor has access to one. Cain said that he met the Pillers at a party on Sunday evening, and that the Pillers offered to give him a ride. Somewhere around Ligonier, Jed Jr. used a spotlight to illuminate a deer standing in a field, and Les Piller shot it. As they were about to load that deer a State Police cruiser approached them. Les Piller drove off, leaving the dead deer in the field. Cain said they then turned off Route 711 and Jed Jr. again used the spotlight to shine deer in a field. Jed Jr. allegedly started screaming, "Jackpot! Jackpot!" and Les then shot three deer in that field. Cain admitted to helping load the deer in the vehicle after returning to Johnstown to get Jed Piller, the father of Les and Jed Jr.

I asked Cain why I should believe him, and he said that a Ned Boar was there, too, and would tell the same story. Cain gave me Boar's address and phone number, and then agreed to provide a written statement.

I phoned the Boar home and spoke with Ned's father and asked if I could come over and talk to Ned, and he agreed.

Deputy Nardecchia remained with Cain, while I went to the Boar residence. Along the way I met Officer Steven Dunn of the East Conemaugh Police Department. Officer Dunn offered to take me to the Boar home, because it was difficult to locate. Officer Dunn mentioned that Ned Boar had been cited several times in the past for criminal violations.

We met with Ned and his parents. I explained that I was investigating the illegal possession of deer by the Pillers and that Cain had said Ned was there, too. Ned said that he would cooperate and explained that the group returned to Johnstown to hide the rifle and get Jed Piller Sr. Jed Sr. drove a van to the Ligonier area, where Jed Jr., Cain and he loaded three deer into the van. At this time Les remained in the passenger seat.

Both Cain and Ned described the rifle used by Les as a bolt action with a scope. Ned knew the rifle was a 7mm Remington Magnum, because he picked up one of the spent cartridges, which he gave me.

When we were about to leave, Ned's mother told me that Cain's mother was on the phone, asking to speak with me. She told me that Les Piller and Jed Piller Jr. were just at her home, in a red van, looking for Cain.

I contacted Deputy McCombie by cell phone to request his assistance. Deputies McCombie and Nardecchia went to look for Jed Piller Sr. at his address in Johnstown, because he reportedly had the rifle used in the poaching incident, while I contacted Southwest Region Director Matt Hough who said he'd meet him at the Piller residence.

Matt Hough met me at Les's residence but Les wasn't home. Fearing that the Pillers might try to retrieve the evidence left near the lumber company, we headed there. No evidence was found, though, so Matt and I returned to Les Piller's house. When we pulled in, Les came out and waived for us to approach. I told him that he was in a lot more trouble, and he acknowledged that he was scared and had let Jed Jr. talk him into lying.

He went back to his home, retrieved a rifle and returned to the location of the deer. He didn't know the names of the roads where he spotted the deer, but said he drove toward Ligonier on Route 271. When he came to 711 he turned toward Seward. Les said that he shot the first deer in a field near the Game Commission Southwest Region Office. Then he drove down the road and shot three more. Les said that they loaded one deer and returned to Johnstown, where he hid the rifle and called his father, Jed Sr., for help with the deer. They used his father's green van to load and carry three deer. Les took us to a refrigerator on his back porch, where there was a large quantity of venison, which we seized as evidence. Les told us that his father had the rifle.

Les offered to take us to the location where he and Jed Jr. had dumped the carcasses, and we found several plastic bags containing entrails, boxes of hair and hides, two deer heads and a large plastic tarp with four carcasses wrapped in it. Several of the carcasses had bullet wounds in them. Digital photos were taken and the heads and hides were retained as evidence.

Later that evening I received a call from Officer Doug Komar from the Johnstown Police Department. He informed me that Jed Piller Jr. and Les Piller started a fight with an individual whom they believed reported their poaching activities. Officer Komar filed Disorderly Conduct citations on the Pillers.

Officer Komar also gave me a phone number where I could reach Jed Piller Sr., who wanted to surrender the rifle to me. I met him and he produced a Savage bolt action 7mm Remington Magnum rifle with a Tasco scope. Jed Sr. said that his only participation was driving the van with the deer in it. I informed him that he would receive citations for his participation.

The fines in this case totaled \$14,400. Les was fined \$4,000 for four violations; Jed Sr., \$3,000 for three violations; Jed Jr., \$4,400 for six violations; Ned Boar, \$2,000 for four violations; and Cain Grubber, \$1,000 for one violation. All made plea agreements for their part in the unlawful taking and possession of four deer taken in a closed season near the PGC Game Commission Southwest Region Office.

- Erin P. Kabler, Cambria County Deputy WCO

Managing for a Healthy Herd

In November, Cal DuBrock, Director of the Bureau of Wildlife Management, explained how the Game Commission's Deer Management Plan was developed in his article, "Managing Deer - Setting the Direction." In December, the goal of managing deer for healthy habitat was described. This month's focus is on the goal of managing for a healthy deer herd. The final goal, reducing human-deer conflicts, will be addressed in a future issue. To view the Deer Management Plan, visit the Game Commission's website at www.pgc.state.pa.us.

THE GOAL OF MANAGING for a healthy deer herd should be a "nobrainer." It's hard to imagine any hunter - or anybody else, for that matter - tolerating practices that would lead to poor deer health.

Translating the goal of a healthy deer herd into management action, however, is not simple. As with habitat health, one person's definition is likely to be different from the next. For some, a healthy herd may mean balanced age structures and sex ratios. For others it may mean births of twins or triplets and being able to see large numbers of deer. Still others may believe a healthy herd to be heavier body weights; large, mature antlered bucks; or a more defined rut.

Defining a healthy herd and coming up with ways to monitor the health of the herd is also complicated by environmental factors.

Environmental factors play a significant role in the health of a deer population, but are most often beyond the control of a wildlife management agency. The Game Commission can't, for example, predict an ice storm, a series of harsh winters or a drought. The agency can do virtually nothing about deficiencies in regional soil nutrients or meager mast crops, either.

A deer population's health is a product of its environment and the deer density. Soil nutrients and the resulting forage impact the population. Soil nutrients affect the quality of the forage, and forage quality directly influences nutrition. But deer density affects forage quantity, thereby influencing the overall nutrition of the herd. Thus, the available forage affects deer health and deer numbers, and the resulting deer density affects the available forage for the new year's herd in an endless cycle.

It's easy to think that reducing the herd would lead to better forage and healthier deer, but in some places it may not be so simple. In areas of poor quality soil, even if the deer population is decreased, the forage will remain nutritionally deficient and, in turn, herd health may not improve with reduced deer abundance.

Because of these complicating factors, the Game Commission must define a healthy deer herd in a way that best reflects changes in deer abundance. But, it must also consider the influences of environmental factors, account for differences in WMUs across the state, and weigh the associated personnel and equipment costs of the various potential ways of measuring deer health. The strengths and weaknesses of potential measures are being assessed as the agency searches for the most appropriate ways to evaluate and monitor deer population health.

Identifying appropriate measures of deer health provides a basis upon which future deer management recommendations will be made. Unfortunately, monitoring deer health is not, and likely will never be, as simple as we would like. As a result, the Game Commission will make deer management recommendations based on the best available data and continue to evaluate the program and make improvements where needed.

Thus, the agency moves forward with the new Deer Management Plan, addressing its mission of protecting and conserving the state's wildlife for all Pennsylvanians.

- Cal DuBrock, Director of the Bureau of Wildlife Management

Boake Run Mine Acid Abatement Project

THE Boake Run Mine Acid Abatement Project on SGL 100 has been constructed to address acid mine drainage into Boake Run which is causing degradation of the main receiving stream, Sterling Run. Sterling Run supports a native trout population upstream of the confluence of these two waterways. Downstream, the ability of aquatic life to survive has been severely impacted.

Boake Run's contamination began from past mining operations starting in the 1960s with Rouge & Timpey Coal Company. Additional operations moved into the area and culminated in 1990 with the Avery Coal Inc., operating just east of SGL 100.

The metal laden water, which has contaminated Boake Run Watershed, enters through a series of seeps coming off of the reclaimed surface mines and flows into the drainage area, reducing the water to a pH level of 4.3. This stream travels approximately 1.6 miles where it meets Sterling Run.

The major emphasis of the project consists of treating Boake Run by diverting a majority of the stream flow, up to 500 gal/min, through a limestone bed and providing a series of ponds to let the contaminants settle out. The primary contaminant of the stream is aluminum, which will settle out as the water moves through the bed of 13,250 tons of limestone which has the purpose of raising the pH level. After flowing through the treatment system the treated water will then reenter Boake Run with a reduced acid loading and provide some dilution to the existing stream.

Approximately 1,100 linear feet of existing stream has been relocated, thirteen acres of land were disturbed for the construction of the treatment system and is now planted with grasses and legumes to benefit wildlife. Eleven different species of nut and fruit producing trees and shrubs were planted as well, to act as food producers in the near future.

Mark Kleman from the Bureau of Abandoned Mine Reclamation office in Ebensburg designed the project. EM Brown was the contractor selected for construction of the project. The Game Commission contracted the removal of the trees and will assist with the maintenance of the project.

With one summer of operation behind us, the water in Boake Run now has a pH of 7.8. Water at the confluence of Boake run and Sterling Run is currently averaging a pH level of 6.0.

The project was funded under the ACSI (Appalachian Clean Stream Initiative) account, the ACSI money is part of the OSM (Office of Surface Mining) money set aside to clean up streams in the 11 Appalachian states.

The total cost for the project hasn't been totaled, but it should be approximately \$900,000.

- *Richard Macklem, I & E Supervisor, Northcentral Region*