

# History of Wildlife Management in West Virginia

*This article is a synthesis of two documents: a popular article for Wonderful West Virginia magazine written by Walt Lesser in 1996 and a comprehensive Historical Review of Game Management written by Jack Cromer in 2002. Both authors are retired wildlife biologists from the DNR Wildlife Resources Section.*

From time to time, a look at the past prevents repeating mistakes or, at least provides satisfaction in seeing progress. In retrospect, the wildlife management profession in West Virginia experienced the same ills and shortcomings that were typical elsewhere. Human population expansion, industrial growth and development of steam power all led to the exploitation of this state's timber and wildlife resources following the Civil War. Such settlement and exploitation led to critically reduced numbers of some species, causing much concern to some people searching for means to change the course of events. History has shown that wildlife management usually started with the control of hunting followed by refuge establishment, "vermin control," restocking (game farming), and environmental controls (habitat protection and enhancement).



Game protectors patrolled on horseback in the early 1900s.  
WVDNR Law Enforcement Section

Facing page:  
Wildlife manager Eric Richmond photographs bear den site.

## Laws and Law Enforcement

Several species of large animals native to West Virginia were all killed off before hunting laws were passed. Elk, woodland bison and gray wolves were among the casualties. When West Virginia assumed statehood in 1863, it adopted a code of game and fish laws that had been enacted in the State of Virginia in 1849. The West Virginia Legislature passed its first law protecting wildlife in 1869 – killing game between February 14 and September 15, and killing certain species of birds was prohibited. A couple other laws were passed in ensuing years, but no state organization with authority to enforce the laws was established until 1897, when the legislature created the office of Game and Fish Warden. In 1901, the legislature passed a law that allowed the Warden to select deputy game and fish wardens to be paid by the fines they collected. It was not until 1909, however, until the first full-time wardens were hired by the Chief Forest, Fish and Game Warden. That same year, a law was passed that prohibited the shipment of game out-of-state. This law, combined with the federal Lacey Act of 1900, spelled the end for market hunters who killed large quantities of game to sell to people outside the state and country.



## Game Refuges and Management Areas

While most of the early timber cutting took place between 1880 and 1930, the logging peak occurred in the period 1902 to 1925. The cutting was then followed by uncontrolled fires, some of which burned for years. These habitat-destroying factors did more to eliminate certain species of wildlife than did unregulated hunting. Early forest, game and fish wardens had ideas to restore populations of deer, turkeys and bears, but had very limited funds to carry out programs.

Following the purchase of the first sections of the Monongahela National Forest in 1911 by the federal government, six refuges, also called "game breeding areas," were established on these lands. The primary reason for purchase of these refuges was "protection to the wild turkey," yet they were open to controlled public hunting when game populations such as deer were in need of control. Ironically, the last such federal refuge, called the Beaver Dam Refuge in Randolph County, was abandoned as late as 1963, when the area was opened to hunting. Regulations remain a very important wildlife management tool. Refuges, however, have rarely been successful in accomplishing wildlife management objectives, and their use for other than migratory species is seriously questioned.

In 1915, the state legislature passed a law giving the Forest, Game and Fish Warden authority to set aside certain tracts of land "...to be used as refuges for wild game and birds and on which no hunting shall be allowed." The first areas were joint state/private landowner cooperative game refuges. In 1922, the Game and Fish Commission established the following refuges on privately owned lands: Beech Run, Paint Creek, French Creek, Tibbs Run, Jackson's Mill,



Ron Snow

Begun as a refuge and game farm in 1922, the West Virginia State Wildlife Center now offers visitors the opportunity to see native wildlife.

Petersburg and Lakin State. Boundaries were posted and game protectors were authorized to control vermin on these areas.

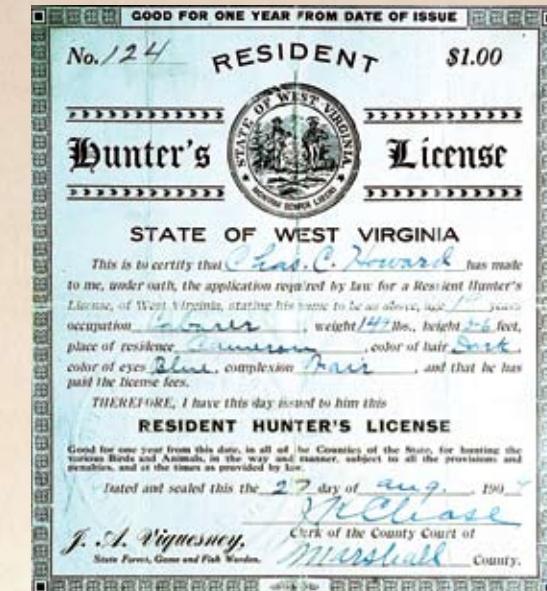
In 1923, the Game and Fish Commission bought the first state forest and game refuge. This 10,487-acre tract of cut-over forest land located near Marlinton became known as Seneca State Forest and Game Refuge. Other purchases in the 1920s included areas now known as Nathaniel Mountain and Short Mountain Wildlife Management areas, Kumbrabow State Forest, and Holly River and Watoga State parks. Early management efforts on these lands were again centered on the development of wild turkey habitat. These lands were reportedly managed for turkeys by the creation of refuges, development of wildlife food plots by creation of forest openings, development of springs, trail maintenance, and "coordinated winter feeding."

The last state-owned "game refuge" was the Horner Game Refuge in Lewis County that was disbanded in 1981. Some of the game refuge lands became known as public hunting and fishing areas, a title which was changed to wildlife management areas in 1989 to represent the variety of wildlife-associated recreation available on the areas.



Steve Shaluta  
Seneca State Forest, the first state-owned game refuge.

## Hunting Licenses Over the Years



Ron Snow

The first resident hunting licenses were sold in 1909.



Since 2002, hunters could buy and print their licenses from their home computer.

## Hunting Licenses

The first hunting license requirement was passed in 1899 and was for nonresidents only. The cost was \$25 - a huge investment at that time. The high cost along with lack of transportation and roads resulted in very little nonresident hunting. The fee was reduced to \$15 in 1906. The license was obtained from a game warden who kept \$1 of the fee for writing up the license. The license was effective for 12 months from the date of purchase.

In 1908, State Game and Fish Warden J.H. Marcum wrote, "I would most respectfully and earnestly recommend that the Legislature, at its coming session, pass an act making it a law that no person hunt in this State without a license." In the first Biennial Report of the Forest, Game and Fish Warden of West Virginia, 1909-1910, it was stated, "No state, after adopting the license system, has ever repealed the law, which proves that in all the different methods that have been inaugurated to provide ways and means for this work the only fair and successful one is by the License System."

These statements must have been effective because in 1909 the West Virginia Legislature passed an act

authorizing the first resident statewide hunting license. The license cost 75 cents with an additional fee of 25 cents to go to the county clerk issuing the license. The 1909-10 Biennial Report shows that for the year beginning December 1, 1909 and ending November 30, 1910 a total of 24,119 resident and 43 nonresident licenses were sold. Landowners were authorized to give reciprocal privileges to adjoining landowners to hunt on their property without a license. Minors under the age of 15 could not obtain a license without written permission of their parents.

This new funding source was short-lived. In 1911 the Legislature repealed the statute requiring residents to buy a license, believing the requirement was a detriment to the protection and propagation of game and fish.

In 1915, the legislature reauthorized a statewide hunting license which cost \$3. Hunting licenses were offered free to persons wishing only to hunt in their county of residence. County tags were red, statewide tags were white, and nonresident tags were blue. All licenses tags had to be displayed prominently on the arm. Nonresident hunting license fees rose to \$16.



WV DNR Archives

*Ring-necked pheasant pens at the French Creek Game farm in 1927.*

## Game Propagation and Restocking

The first mention of restocking of game was in the First Biennial report of the Forest, Game and Fish Warden in 1909-1910. Although it was believed that there was a sufficient amount of game left in the state for restocking purposes, it was stated, "...there should be an effort made to get this game distributed more evenly over the state." Further thought was given to experimenting with importing foreign game birds, purchasing deer, and restocking wild turkeys. Thus game propagation and purchasing for restocking had its breath of life in West Virginia.

According to known records, it is believed that the first importation of game animals by the state of West Virginia was in February 1913. Fifty head of elk were secured from the federal government and shipped from Yellowstone National Park to Marlinton, West Virginia and then taken to Allegheny Sportsmen's Association fenced enclosure at Minnehaha Springs. After being acclimated to their new area, they were then released in the surrounding mountains of Pocahontas County. In April 1913, 105 pair of English ring-necked pheasants and 65 pair of Hungarian partridges were released

in different sections of the state. The same summer, 3,382 ring-necked pheasant eggs were distributed to individuals throughout 23 counties.

No further mention of propagation or restocking was found in the Biennial Reports until 1922 when it was noted that early in the spring of that year the state began raising pheasants at the then privately owned land at French Creek. The next year, the State Game Farm, known today as the West Virginia State Wildlife Center, was established at French Creek. It was at the State Game Farm, and subsequently other locations around the state, where game species such as quail, turkeys, raccoons, rabbits, deer and pheasants were raised for distribution throughout the state.

It is interesting to note that in 1933 the director of conservation questioned the continued production of game birds and animals at the State Game Farm, claiming it never produced game in sufficient quantities to justify its existence. The same director's report questioned the wisdom of funding this propagation program compared to "managing native breeding stock to provide our much needed and desired increase of game of all species." It was further reported that the propagating facilities were totally inadequate to supply game needs for stocking purposes and that all birds and animals to be distributed were being purchased from dealers in other states. Obviously, by the early 1930s, the director of conservation wisely recognized that available funding could better be directed toward the protection and enhancement of wildlife habitat and the natural propagation of game using this habitat as opposed to the release of artificially produced animals incapable of surviving in the wild.



DNR Collection, West Virginia State Archives

*Live trapping and releasing deer in 1955.*

*Continued on page 14*



Bobcats and other predators were considered "vermin" in the first half of the 1900s.

## Predator Control

In the 1920s it was believed that to maintain and increase populations of game species, predators must be reduced and total "vermin" numbers held in check. Game wardens and managers of the state refuges were requested to destroy all predators possible while on patrol. In addition, the Commission employed a vermin exterminator in 1923 who would devote full time to trapping and hunting vermin. At that time the Conservation Commission (forerunner of the Division of Natural Resources) paid a bounty of \$2.50 per bobcat killed with the intention of increasing the bounty to \$3.50.

In the 1930s, vermin-killing contests were conducted by organizations in many counties and resulted in the elimination of hundreds of thousands of animals. During the 1934-35 fiscal year, 40 counties sponsored and conducted such contests believed, at that time, to be "beneficial." Vermin animals included hawks, rats, snakes, foxes, crows, mink, waterdogs and turtles, among others.

Bounties on several predators were paid by counties at various times in history. Pendleton County, for example, paid a bounty on bears at various times beginning in 1928. Randolph County permanently discontinued the bear bounty system in 1953. The black bear was finally designated a game animal by the 1969 legislature, at which time Pocahontas County discontinued its bear bounty system. Bounties were also paid on bobcats and foxes.

Control of predatory wildlife continued through the 1940s, 1950s and into the early 1960s. Predator control efforts eventually were eliminated as officials realized that the need for habitat management was more critical than the wasteful practice of predator control.

## Beginnings of Modern Wildlife Management

The United States Congress boosted financial support to state fish and wildlife agencies in 1937 when they passed the Federal Aid in Wildlife Restoration Act, or Pittman-Robertson Act. This act placed a tax on the manufacture of all firearms and ammunition. The revenue from this tax would be apportioned among the state wildlife agencies according to the number of licensed hunters and a state's acreage. To be eligible for this federal aid, state agencies were required to have a professionally trained staff and the funds had to be dedicated to biologically sound wildlife management programs. This act, whose preparers had extraordinary foresight, resulted in hunters supporting the funding of many fine programs, some of which led to great wildlife management success stories.

After decades of raising wild turkeys on farms and trying to mate farm-raised hens with wild gobblers failed to increase the population significantly, efforts were redirected toward live-trapping and transplanting wild birds with funding from the Wildlife Restoration Act. The first transplant occurred in 1950 when six turkeys were released on Coopers Rock State Forest. This was followed in 1953 by the release of nine birds on Bluestone Public Hunting Area. The results of these two releases were so exceptional that a full-time trapping and transplanting project was initiated in 1953. This program was expanded and continued until the program was terminated in 1989 when it was believed that all suitable range in the state was

occupied by wild turkeys. The huge success of this program was primarily attributed not only to the trapping and transplanting of wild birds but also to maturation of the forest following a period of intensive logging and burning in the early 1900s.

The 1911-12 report of the Forest, Game and Fish Warden states, "Beaver (*Castor canadensis* sp.), once common, but probably long since extinct within our limits." The many streams, mountains and other natural features within the state that have the word



Wild turkey studies and trapping and transplanting programs were in full swing in the 1960s.



Beaver

Steve Shaluta

beaver as a part of their name indicates the general distribution of the mammal here in earlier days. The severe drought of 1930 caused the agency to initiate a beaver restocking program in consideration of the water conservation abilities of the beaver. Beavers were obtained from Michigan and Wisconsin and relocated primarily in areas of Tucker, Randolph and Pocahontas counties. The transplanted beavers resulted in a population increase in a relatively short period of time. Descendants of these stockings were live trapped and

released at new sites, resulting in scattered colonies all over West Virginia.

A pioneer effort in squirrel research was launched in 1949 and ended in 1955. Every survey of hunter preference conducted in West Virginia ranked squirrels as the most popular game species in terms of hunter effort. It followed that long-term research was needed to answer the many questions cast upon state wildlife officials annually in order to do the best job of managing the state's squirrel populations.

DNR Collection, West Virginia State Archives

During the late 1940s and early 1950s, the game management program consisted largely of an inventory of the state's wildlife resources. In order to formulate sound biological management programs, it was first necessary to gather soil, timber and wildlife data on forested and non-forested plots throughout the state. Biologists, therefore, initiated the wildlife cover mapping and habitat analysis project in 1946. The project's objective was to determine the extent of various vegetative types and the suitability of these various types for wildlife. The end result was a complete forest and land-use vegetation cover map of the state along with wildlife management recommendations based on like areas of soils and vegetation types.

In 1948, a survey of West Virginia mammals was initiated to obtain practical management information on game and furbearing species. Particular attention was given to each mammal's life history, range, abundance, habitat preference, economic importance, and effects of land use on the species. Information was also obtained on the history of West Virginia mammals, and specimens were collected for a taxonomic study for available reference collections of hair, fur, skins, skulls and skeletons at West Virginia University.

A statewide farm-game management program also was launched in 1948. Through this program the Conservation Commission helped private landowners interested in having more game on their lands improve the available wildlife food and cover. Once a landowner expressed interest, a field survey was conducted to determine wildlife habitat limitations. A plan was then prepared showing needed practices the landowner agreed to establish. The Conservation Commission Game Division furnished all of the plants and some of the materials needed to carry out the landowner's plan. In addition, technical assistance was provided to the landowner by qualified biologists. In turn, the landowner was responsible for planting and maintaining the trees, shrubs and grain food patches by protecting them from fire and grazing. This project, except for technical assistance offered by biologists, was terminated in 1963 when the Game Division's management emphasis was shifted to state-owned lands.

A memorandum of understanding between the Conservation Commission and U.S. Forest Service was signed late in 1945. This cooperative agreement provided for a united approach to wildlife management on 303,600 acres of the Monongahela National Forest, which was divided into 10 individual areas with a resident wildlife manager assigned to each area. These management areas originally included six "game breeding areas," or refuges, open only to controlled public hunting when needed for species such as deer.

Ultimately, wildlife management area boundaries were extended to include all national forest lands in the state. The cooperative agreement was also modified to include portions of the George Washington and Jefferson national forests in West Virginia for a total national forest acreage of 1,032,000 – all of which was and still is available for public hunting. A state wildlife manager is responsible for habitat development and maintenance projects on each of the 12 national forest wildlife management areas. These managers develop and maintain wildlife openings, water sources, nesting structures, plantings, and roads and trails for hunter access. Biologists working on this national forest program, with the help of the managers, provide wildlife technical assistance and assist in the design of all projects conducted on these lands. Projects include forest plans, timber sales, special-use permits and wildlife habitat development. Wildlife management activities are primarily directed at forest game such as turkeys, bears, deer, grouse and squirrels, along with providing hunter access.



DNR personnel seeded abandoned logging roads in the national forest with plants eaten by wildlife.

## Wildlife Diversity Program

Until the 1980s, the terms wildlife management and game management could be used interchangeably around the country. All funds for wildlife research and management were paid by hunters through license sales and the manufacturer's tax on hunting equipment mentioned earlier. With game species representing approximately 10 percent of the state's wildlife species, it was obvious that little was known about the status of the majority of the wildlife in the Mountain State.

Any information collected on nongame species was done by the DNR Natural Heritage Program which began in the late 1970s. The 1979-80 DNR annual report stated, "The Natural Heritage Program is set up to collect and put into one file as much data and information on biological diversity and natural features in the state as is available. With this information the program routinely provides environmental data for the preparation of environmental reports, for review of regulatory permits ..., for scientific research and to identify significant natural areas in the state. The data base for the program contains site and background information on rare, threatened and endangered plant and animal species...."

In 1981, the program was incorporated into the Wildlife Resources Division. Considerable effort was made to update the occurrence and biological information for many species. To provide a dedicated funding source for the program, the state legislature passed a bill allowing taxpayers to donate a portion of their state tax refund to the program. The first year saw donations of \$167,000. In coming years, additional tax refund checkoffs were added to the state's tax form, resulting in a decrease down to \$15,800 in donations in 1989. The checkoff was eliminated by the legislature in 1991. Alternative sources of funding include the sale of the annual wildlife calendar, proceeds from the wildlife license plates, the sale of books, pins and other various items, federal grants and matching funds, and beginning in 1994, general state revenue funds (later derived from the lottery revenue).

Since its inception, the Nongame Wildlife and Natural Heritage Program has focused on education and outreach, research, monitoring and management. In 2002, the program was renamed the Wildlife Diversity Program to better reflect the mission of the Wildlife Resources Section to manage all species of wildlife for the use and enjoyment of all the state's citizens.

Wildlife Diversity Program biologists have spent



Wildlife biologist places osprey in artificial nest box along Potomac River. Note second osprey in upper left corner.

much time afield at all hours of the day and night conducting population inventories to determine baseline population numbers. They then conduct chronic surveys in the years that follow to compare population levels with those baseline numbers. Bats, freshwater mussels, dragonflies, salamanders, bald eagles and northern flying squirrels are among the numerous species which biologists have inventoried. They monitor 16 sites for the Northern flying squirrel in a long-term study to detect population trends of this mammal.

Various survey methods are used, including listening for frog calls, estimating hibernating bats by sight, catching and banding birds and bats in mist nets, and recording mussel populations underwater using scuba gear. Research projects have involved attaching radio transmitters to species as diverse as bats and rattlesnakes to learn more about their behavior and habitat requirements. For the endangered Northern flying squirrel, biologists conduct food habit studies, and movement and habitat use studies through the use of radio telemetry.

Biologists have been actively involved in the reintroduction of the peregrine falcon and osprey. They have installed 18 gates across cave entrances to protect endangered bats from human disturbance. Working with partners, Wildlife Diversity personnel



Wildlife biologist scans stream bottom for freshwater mussels.

are rearing juvenile mussels to supplement populations of rare mussels and to reintroduce species that have disappeared from the state. They work with federal and state land managers as well as private landowners to conserve imperiled species on their land.

Wildlife Diversity personnel developed a detailed, extensive Wildlife Conservation Action Plan in 2006. The goal is to conserve the diversity of West Virginia fish and wildlife resources by emphasizing those species in greatest need of conservation.

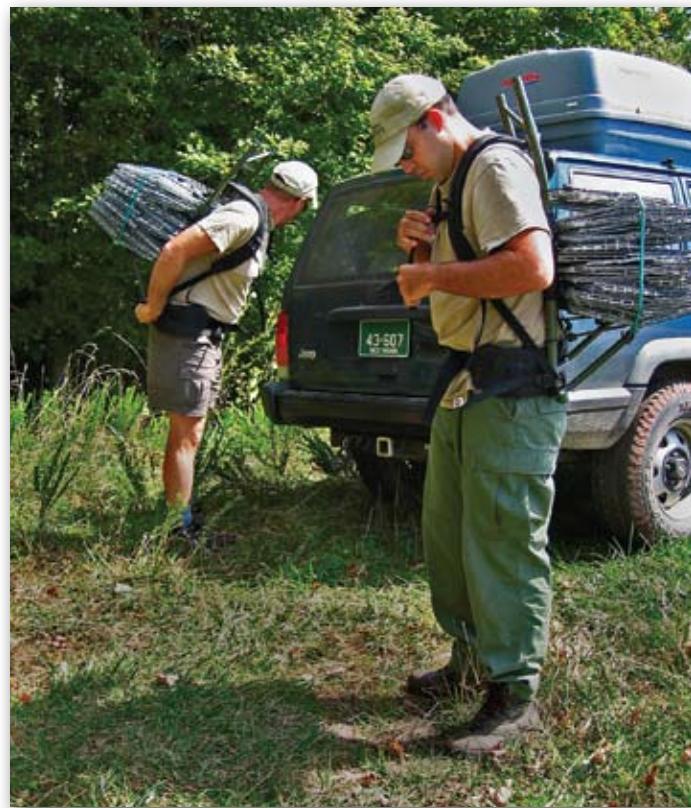
The Diversity program enlists the help of the public, be they graduate students or pure volunteers, in a variety of ways. The DNR Wildlife Resources Section has provided grant money to conduct surveys on animals as diverse as crayfish and golden-winged warblers, and to study the effects of various timber management practices on songbirds. Atlas projects to determine the location of breeding birds and amphibians and reptiles throughout the state have been initiated and funded by the Wildlife Resources Section and assisted by wildlife personnel. They established the Master Naturalist Program which trains volunteers to teach others about wildlife along with assisting with wildlife management, outreach and research projects. More than 110 schools in 41 counties have received grants to develop Outdoor Wildlife Learning Sites which focus on enhancing wildlife habitat on school property.

## Conclusion

With the state nearly 80 percent forested, it is no wonder that forest wildlife species have done so well considering the management applied and the natural maturation of our forests. On the other hand, those species that prefer early successional or young-age-class vegetation declined in numbers. Examples of such species include ruffed grouse, cottontail rabbit, bobwhite quail, woodcock and many songbirds.

Long before settlement by Europeans, this country's forests were destroyed by lightning-caused fires, insect damage and climatic factors. The woodland bison and elk which once roamed our hills caused considerable disturbance to soils and vegetation on the forest floor. Native American people were also known to affect vegetation by doing a considerable amount of burning. Recognizing the considerable values derived from this practice, Native Americans burned for numerous purposes including land-clearing, keeping woods in an open condition, and driving game. Wildlife species that need young vegetation to survive and regenerate did so with the aid of such vegetative disturbances.

Serious protection of our woodlands started in the 1930s following the widespread logging and subsequent wildfires which took place until about 1928. This protection from both natural and artificial forces changed forests from what was once a diverse habitat situation, to that of mature forests presently 60 to 80 years of age. Mature timber, with open understories, benefit such species as turkeys, bears and squirrels but is of little value to those species requiring young plants. An example of this can be seen by examining



DNR biologists head to the field with live traps used for monitoring Allegheny wood rat populations.

Craig Stihler

forest inventories conducted for the state in 1975 and again in 1989. For example, the amount of saw timber inventoried between these two years increased by 34 percent, while seedling/sapling-sized stands -- habitat for early successional species -- decreased by 62 percent. It is no small wonder that we are presently blessed with good populations of turkeys, bears and squirrels, while many of our songbirds along with grouse and rabbits are experiencing population lows.

For a variety of wildlife we should encourage the management of habitat for species that prefer mature woodlands as well as those that like young forest growth. This situation can usually be accomplished through a well-rounded forest management program such as that presently conducted on some corporate and state-owned forests and wildlife management areas. Perhaps the next time you see a cutover area, you will recall that the resulting habitat will favorably affect many wildlife species. For more information on timber management for wildlife, see the feature story in this issue.

Wildlife management over the years has consisted of numerous techniques, some effective, some not so effective. These techniques manage either wildlife populations directly or their habitat. The end result has been an abundance of wildlife for all people to enjoy.