CANAAN VALLEY
NATIONAL WILDLIFE REFUGE

ANNUAL NARRATIVE REPORT Calendar Year 1994

# CANAAN VALLEY NATIONAL WILDLIFE REFUGE

Tucker County, West Virginia

# ANNUAL NARRATIVE REPORT

Calendar Year 1994

U.S. Department of the Interior
Fish and Wildlife Service
NATIONAL WILDLIFE REFUGE SYSTEM

# **REVIEW AND APPROVALS**

# CANAAN VALLEY NATIONAL WILDLIFE REFUGE

Tucker County, West Virginia

# ANNUAL NARRATIVE REPORT

Calendar Year 1994

Refuge Manager

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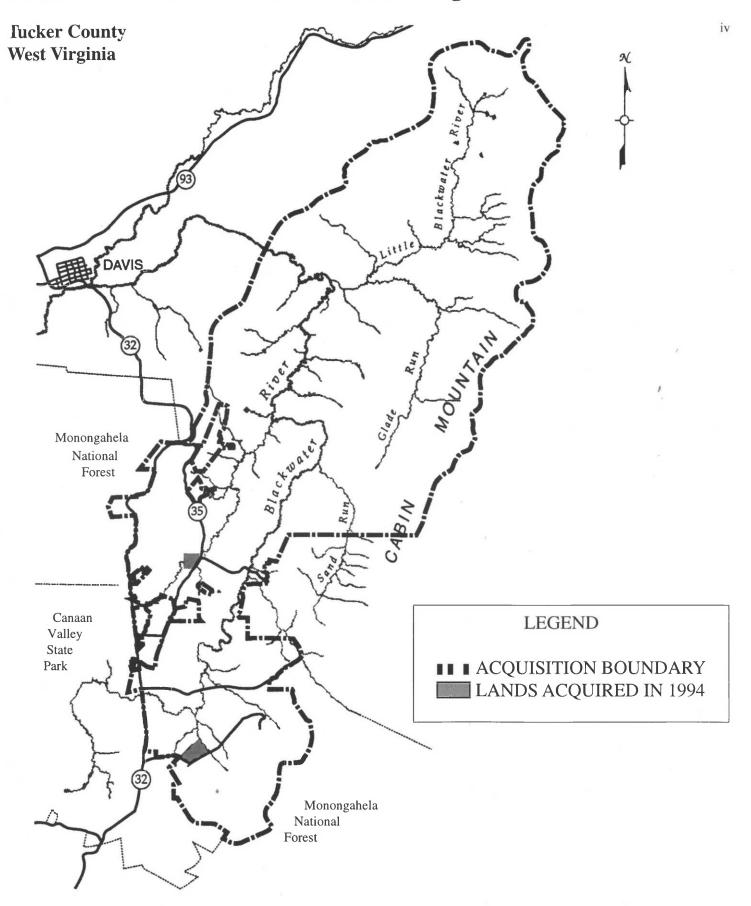
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# **CANAAN VALLEY National Wildlife Refuge**



#### INTRODUCTION

Canaan Valley (pronounced Ka-nane) is a high, wet valley in Tucker County, West Virginia. Fourteen miles long and three miles wide, it has an average elevation of 3200 feet. It is the highest valley of its size east of the Rocky Mountains. Its climate and habitats are typical of areas much further north, and the plants and animals found here are unusual for this latitude. Many valley species are at or near the southernmost edge of their ranges. Drained by the Blackwater River and its tributaries, the Canaan Valley contains the largest freshwater wetland area in West Virginia, and in the central and southern Appalachian Mountains.

More than 580 plant species known from the valley, and there are forty distinct plant communities, including swamp forests, alder thickets, marshes and bogs. About 20 percent of the species are considered to be northern plants. These various habitats support equally diverse wildlife populations, with 290 species of mammals, birds, reptiles, amphibians and fishes known or expected to occur there. It is nationally recognized as a breeding and fall migration area for the American woodcock, and supports many other migratory species including raptors, waterfowl, wading birds, shorebirds and neotropical migrants. The valley supports two listed species—the threatened Cheat Mountain salamander and the endangered Virginia northern flying squirrel.

Canaan Valley has an interesting history. It was once the site of the best representation of red spruce forest in the Eastern United States, if not the world. Like many areas in West Virginia, the original forest was destroyed by logging and subsequent fires and was completely gone by 1930. In the decades following, parts of the valley were used for grazing or growing vegetable crops, but most of the formerly agricultural land now lies idle. Today there are ski resorts, condominiums and vacation home developments in the southern end of the Valley, which is also the site of Canaan Valley Resort State Park.

As early as 1961 many concerned citizens and groups urged the protection of the valley by establishing a national wildlife refuge there, and by 1979 the Service approved the creation of a refuge and completed an Environmental Impact Statement. Long considered a good site for a hydroelectric facility, Allegheny Power Systems received a Federal license to construct the Davis Power Project in 1977. It would have dammed the Blackwater River and flooded over 7,000 acres. The Corps of Engineers denied the Section 404 permit in 1978, but for the next decade there was litigation and several appeals.

The Service put the refuge project on hold until the early 1990's, when they requested funding, held numerous public meetings and wrote an Environmental Assessment. The Assessment took into consideration the changes that had occurred in the valley during the 1980's, and deleted 4,000 acres from the old boundary. The new acquisition boundary encompasses 24,000 acres, and does not include the developed areas.

The refuge was established in August, 1994 with the purchase of 86 acres in the southern part of the valley. In October the Canaan Valley National Wildlife Refuge was dedicated as our nation's 500th national wildlife refuge!

#### A. HIGHLIGHTS

- -- Canaan Valley National Wildlife Refuge is established on August 11 with the purchase of the Harr tract. (Section C.)
- -- The Refuge Manager arrives in September. (Section E.)
- -- The Beall tract is acquired on October 21. (Section C.)
- -- In a lavish ceremony, Canaan Valley is dedicated as the nation's 500th National Wildlife Refuge on October 22. (Section J.)
- -- Canaan Valley Refuge is featured on the CBS television show "Sunday Morning" on Christmas Day. (Section J.)

#### B. CLIMATE

Getting timely weather data for Canaan Valley may be difficult. Someone in the valley does collect weather information for the National Weather Service, but it is sent to a national center and not compiled and published until months later. I'll work on getting real data for next year. The weather during the last four months of 1994 was unseasonably warm and gorgeous, and there was very little snow. Everyone said that, not just the immigrants from Alaska!

In general, the climate of the valley is cold and humid. The growing season averages only 93 days, and temperatures range between a high of 95 degrees F. to a low of minus 26 degrees F. The mean annual temperature is 44 degrees F. and subfreezing temperatures have been recorded every month of the year. Precipitation averages 51 inches a year, and is evenly distributed throughout the year. Snow has been recorded every month except for July and August, and averages 120 inches per year.

#### C. LAND ACQUISITION

#### 1. Fee Title

The 86-acre Harr tract was purchased from The Conservation Fund on August 11, thus establishing the refuge. This tract (shown in Figures 1, 2 and 3) is bordered on two sides by Freeland Road, and on another side by a creek, Freeland Run. Some of the tract is pasture, and part of that is dotted with hawthorne trees. There are two bubbling sand springs and a couple of small streams on the tract as well. The tract also includes part of a large balsam fir swamp, which also includes red spruce and hemlock trees.



Figure 1. Panoramic view of the Harr Tract, the first tract purchased showing hawthorne savannah habitat.



Figure 2. Bubbling sand spring on the Harr tract.

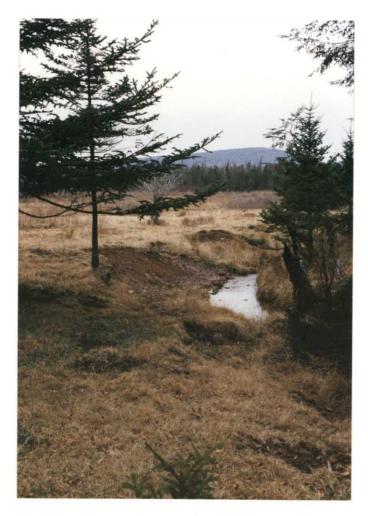


Figure 3. Small stream on the Harr Tract, balsam fir swamp in the background.

On October 21 the 37-acre Beall tract was purchased from The Conservation Fund. A small portion of this tract fronts on Cortland Road, and much of the habitat is spirea marsh along the North Branch of the Blackwater River, as shown in Figure 4. This tract borders lands owned by the Monongahela Power Company, the largest landowner in the valley.

#### 2. Easement

At the same time that the above tract was purchased in fee title, the Service purchased a conservation easement on an adjoining 18-acre tract, a large part of which is bordered by Cortland Road.

#### 3. Other

The Nature Conservancy owns 6 acres of wetlands on Highway 32, and these will be transferred to the Fish and Wildlife Service in the near future.

Although not technically a land acquisition issue, a serious problem arose with three vacation homeowners who were very unhappy about being included in the refuge boundary. Members of the same family, each owned a tract a few acres in size with a small home on it. They claimed that they had been unsuccessful in selling their

real estate because they had to disclose the government's right to condemn property within the refuge boundary to any prospective buyer. They also pointed out inconsistencies in the land acquisition policies stated in our Environmental Assessment.

Efforts to allay their fears by letter were totally unsuccessful, and Realty Specialist Rick Jorgensen and I finally



Figure 4. Spirea marsh along the North Branch of the Blackwater River on the Beall Tract, the second tract purchased.

met with them and their attorney in their Congressman's office in Frederick, Maryland. Our attempts to explain our willing seller policy and the advantages of being in the boundary were also futile. It was <u>not</u> a fun meeting, and Rick and I concluded that it would be in everyone's best interest to take their tracts out of the boundary. We recommended this to the Regional Director, and he agreed.

This was a difficult situation to deal with, but it helped me to better understand the "refuge opposition."

#### D. Planning

### 2. Management Plan

A <u>Station Management Plan</u> was written and released to the public in March, 1994, several months before the refuge was established. It was written by the Land Acquisition Planning Team, and addressed areas of concern that had been raised during four years of fact finding and public meetings in Tucker County. These three issues were compatibility, eminent domain and land acquisition priorities.

#### E. Administration

#### 1. Personnel

In 1994 the staff of Canaan Valley National Wildlife Refuge consisted of one person, Gail Baker, the Refuge Manager. I entered on duty on August 21, but because I moved from Alaska, it was a couple of weeks before I put my feet on the ground at Canaan Valley. (See Figure 5.)



Figure 5. Gail Baker, Refuge Manager.

#### 5. Funding

For both Fiscal Year (FY) 1994 and 1995 all of the funding for the refuge is from Land Acquisition funds. The refuge budget for FY 1995 is \$150,000. A total of \$4 million was appropriated from the Land and Water Conservation Fund for land purchases in Canaan Valley during FY 1994 and FY 1995. Approximately \$3.7 million remains.

#### 8. Other Items

This section should be titled "other people" or "cooperation with other programs of the Fish and Wildlife Service." Although I am the sole staff member of the Canaan Valley Refuge, I am not alone. The staff of the West Virginia Field Office (Ecological Services) in Elkins has provided me with everything from office space to vehicles to clothes! Their secretary, Traci Knight, pays my bills, keeps my time, maintains refuge files and answers lots of questions! (See Figure 6.) Lisa McCurdy loaned me her shoes for the dedication, and we are successfully sharing her winter uniform jackets. She also gives me insight and advice that only a former refuge employee can! Outreach Specialist Linda Smith created the Refuge exhibit (discussed in Section H) and is a gold mine of information on the plants and wildlife in the valley. The other three staff--Bill Tolin, John Schmidt and Dan Ramsey--have also helped me in various ways. As the Contaminants Specialist, Dan will have lots more to do as we acquire more land.



Figure 6. Traci Knight, West Virginia Field Office secretary. Traci provides administrative help to the refuge as well.

Without the efforts of Field Supervisor Chris Clower, there would not be a Canaan Valley Refuge. Chris spent months this year dealing with refuge issues: writing reports, answering letters, making phone calls, etc. After I got here he spent days orienting me to my new job. He showed me the area, introduced me to people, and gave me lots of advice! His continuing guidance is invaluable. This job would have been a lot harder and a lot less fun without the Field Office staff.

Bowden National Fish Hatchery (located six miles from Elkins and thirty miles from the refuge) has pickup trucks and a maintenance man. This means that Canaan Valley Refuge has access to both! Maintenance Man Tom Gardner spent several days cleaning up the Harr Tract (Section F) and installed the big sign there as well (Section I). Hatchery Manager Jack Jones has been very amenable about sharing his staff and truck.

In summary, I would like to say that in my 18-year career with the Service I have never seen "program lines" so blurred. We all work together as the Fish and Wildlife Service. I hope we all see more of this kind of cooperation as the ecosystem management approach develops.

#### F. Habitat Management

#### 1. General

There really was very little habitat to manage in 1994. However, the Harr Tract had a lot of junk on it--rolls of old rusty barbed wire, a small dump with everything from shoes to stoves, and many old fence posts. We knew that both dignitaries and the public would be visiting the tract as part of the dedication activities, so just before the dedication, we spent three days cleaning up the worst and most visible rubbish. We took 2,400 pounds of refuse to the county dump, and stockpiled the fence posts. This could not have been done without Tom Gardner

and the Bowden Hatchery truck! Fortunately we had gorgeous Indian summer weather, which you can see on Figures 7, 8 and 9.



Figure 7. Some of the junk on the Harr Tract. I hate rusty barbed wire!



Figure 8. Tom Gardner, Bowden National Fish Hatchery Maintenance Man, and hatchery pick-up truck. With Tom's help 2400 pounds of junk was removed from the Harr Tract just prior to the dedication.



Figure 9. That's me shoveling cow manure from the Harr Tract. I didn't want any of the visiting dignitaries to get their shoes dirty when they toured the 500th refuge!

#### 7. Grazing

The Harr Tract had been leased for summer grazing for several years. Realty staff said that the lessee knew he was supposed to remove the cows once the land was transferred from The Conservation Fund to the refuge. The cows continued to graze, and I started worrying about confrontations between them and the Assistant Secretary on dedication day. I really worried when I called the number given to us by The Conservation Fund and the person said "We don't own any livestock!" After a bit of sleuthing, I located the owner of the cows and asked him to remove the cows before his lease ended on November 1. Happily, he did so, though he professed to know nothing about the transfer of the land to the government or any requirement that he should have removed the cows at that time.

#### G. Wildlife

#### 1. Wildlife Diversity

As mentioned in the Introduction, there are 290 species of vertebrate animals known from Canaan Valley. Commonly observed mammals include white-tailed deer, raccoon, woodchuck, muskrat, chipmunk, red squirrel, striped skunk and eastern cottontail. Others, such as beaver, black bear, mink, bobcat and red fox, are present but infrequently seen. Commonly seen birds include mallard duck, Canada goose, common raven, American crow, and various species of songbirds, waterfowl, hawks and owls. It is nationally recognized as a breeding and fall migration area for the American woodcock.

#### 2. Endangered and Threatened Species

In the area of Canaan Valley, there are two Federally-listed species, the Threatened Cheat Mountain salamander and the Endangered Virginia northern flying squirrel. Both are dependent on similar habitat types-those above 3,200 feet in elevation dominated by mature northern hardwoods and conifers such as red spruce. The salamander has been confirmed as present in the southern part of the valley, and optimal habitat for the squirrel exists there as well.

#### H. Public Use

#### 1. General

As a new refuge manager, I have been trying to meet as many people as I can. They range from "refuge neighbors" to government officials. I know I can't remember all of them, but here is a list of those who may be important to future refuge operations:

#### Local contacts:

- -- Steve Bolar, Superintendent, Canaan Valley State Park
- -- Tucker County Planning Commission
- -- Karen Bonner, Chair of Tucker County Planning Commission and Canaan Valley resident (also husband Curtis Bonner)
- -- G. Dewey Rice, County Commissioner, General Manager of Canaan Valley Resort (Guest Services, Inc.)
- -- Chuck Munyon, Guest Services, Inc. at Canaan Valley State Park
- -- Mary Alice Klein, Superintendent, Tucker County Schools
- -- Chip Chase, Manager of the White Grass Cross Country Ski Facility
- -- Tucker County Chamber of Commerce
- -- Barbara Elza, Executive Director, Tucker County Convention and Visitors Bureau
- -- Tom Tuesing, Tucker County Administrator
- -- Mariwyn Smith, Editor and Publisher, the Parsons Advocate
- -- Ladd Jasper, Mayor of Davis
- -- Bob Woolwine, Monogahela Power Company in Elkins
- -- John Northeimer, Park Naturalist, Canaan Valley Resort
- -- Many landowners and refuge neighbors in Canaan Valley

#### Federal and state government contacts

- -- S. Jane Bobbitt, Congressman Mollohan's staff
- -- Roscoe Beall, Clerk of the Federal District Court (also wife Diane Beall)
- -- Sue Perry, West Virginia Cooperative Fish and Wildlife Research Unit (National Biological Service)
- -- Staff of the Operations Center, West Virginia Division of Natural Resources (I met everybody, but continue to have dealings with Jim Rawson, Scott Butterworth, Steve Brown and Roger Anderson.)
- -- Jim Page, Forest Supervisor, Monongahela National Forest
- -- Bill Woodland, District Ranger, Cheat District of the Monongahela National Forest
- -- Emerson Gorham, Special Agent, U. S. Fish and Wildlife Service, Morgantown
- -- Donald Campbell, Superintendent, Harpers Ferry National Historical Park

#### Environmental group contacts

- -- Chad Casner, Audubon Council of Pennsylvania
- -- Suzanne Offutt, West Virginia Audubon Society
- -- Norm Steenstra, West Virginia Citizen Action Group

#### Environmental group contacts (continued)

- -- Paul Trianosky, The Nature Conservancy of West Virginia
- -- Cindy Rank, West Virginia Highlands Conservancy

#### Other contacts

- -- Andre Normandeau, Guest Services, Inc. in Washington, D. C.
- -- Charles Estes and Kiena Smith, Estes and Associates, Washington, D. C.
- -- Rick Steelhammer, the Charleston Gazette

#### 6. Interpretive Exhibits

Linda Smith, Outreach Specialist with the West Virginia Field Office, put together a large Canaan Valley Refuge exhibit with a little help from me. (See Figure 10.) We used it at the dedication, and it remained in the lobby of the Canaan Valley Resort for several more days.

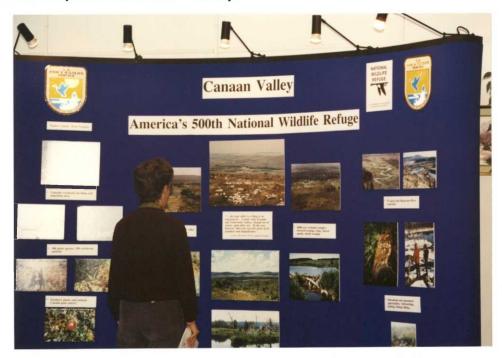


Figure 10. The Canaan Valley NWR exhibit. It was designed by WVFO Outreach Specialist Linda Smith - another example of the great cooperation among the FWS staffs in West Virginia!

#### 7. Other Interpretive Programs

During 1994 several interpretive programs of various types and lengths were presented, including the following:

- -- Informal meeting with the Council of the West Virginia Audubon Society (September)
- -- Field trip and talk with Chris Clower for the West Virginia Highlands Conservancy (a day-long event, October)

- -- Field trip after the dedication, led by Jim Hudgins, formerly of the West Virginia Field Office staff (October)
- -- Talk and bus trip for the Project Leaders of the National Capital Region of the National Park Service (November)
- -- Brief talk to the Tucker County Hospitality Training Class, which primarily included members of the Civilian Conservation Corps and the Tucker High School "Tourism" class (December)
- -- First newspaper column, "Refuge Ramblings" published in the <u>Parsons Advocate</u> (December)

#### I. Equipment and Facilities

#### 8. Other

As yet, Canaan Valley National Wildlife Refuge has no equipment (except for furniture) and no facilities. We do have a nice big sign, shown in Figure 11, which was put up on the Harr Tract. My office is a cubicle in the West Virginia Field Office in Elkins. They loaned me a computer and I drive their vehicles when I need them. I have a separate telephone line and voice mail, which spares Traci (and everyone else) from having to answer my phone.



Figure 11. We don't have much in the way of equipment and facilities, but our sign has been "planted" (by Tom Gardner) on the Harr Tract!

#### J. Other Items

#### 3. Items of Interest

#### a. Dedication

On Saturday, October 22, Canaan Valley National Wildlife Refuge was dedicated as our nation's 500th National Wildlife Refuge. Four hundred people attended the lavish ceremony-- followed by an equally lavish buffet lunch--on a perfect Indian Summer day at Canaan Valley Resort State Park. Afterwards, there were free rides on the State Park ski lift and a guided bus tour of the valley with stops at the Harr and Beall tracts. Many people said it was the best such event they had ever attended! I have to agree, but it was my first event like this.

The dedication was also a model of cooperation and help from other people. Janet Marvin, Outdoor Recreation Planner at Erie National Wildlife Refuge in Pennsylvania, is the special event czar (czarina?) in Region 5. She is GOOD! I could not have pulled this thing off without Janet. She knew what needed to be done, and either did it herself or pointed me in the right direction. On the dedication day itself, she directed a team of Outdoor Recreation Planners from throughout the Region, and they did everything from direct traffic and put up signs to set up the podium and place the ferns and flowers. Their presence contributed to the "smoothness" and professionalism of the event. Again, I couldn't have done it without them. We have dozens of dedication photos, but none of this group, which is very unfortunate. They were:

Janet Butler, Ohio River Islands National Wildlife Refuge Dorothy Gerhart, Iroquois National Wildlife Refuge Pam Hess, Ninigret National Wildlife Refuge Tom McFadden, Great Swamp National Wildlife Refuge Yvonne Schultz, Mason Neck National Wildlife Refuge

Two other non-refuge people who helped were:

Jim Hudgins, East Lansing Field Office Pam Rooney, Technical Services, Regional Office.

Pictures are worth thousands of words, so the dedication is shown in Figures 12 through 33.

#### b. Media Coverage

Canaan Valley National Wildlife Refuge was prominently featured in the media this fall, primarily because of the dedication and its status as the 500th refuge in the country. The dedication was well-covered by the two local papers, the Tucker County Parsons Advocate and the Elkins paper, the Inter-Mountain. The Parsons Advocate had published an earlier article, which was primarily about me. I think the best article was one in the "Sunday Section" of the Charleston Gazette-Mail; it featured two color photos of the Harr Tract and a brief history of the efforts to establish the refuge. In addition to local papers, stories about the 500th Refuge were featured in other areas of the country as well. I was interviewed by the Miami Herald, and they published an article which tied together the first refuge-Pelican Island in Sebastian, Florida--and my ascertainment work in Florida with Canaan Valley. In addition to newspapers, articles appeared in magazines, newsletters and journals such as the Audubon Activist, the Highland Voice, Fisheries, Outdoor News Bulletin, and many others.

I was interviewed by a Public Radio Station in Upstate New York, and apparently it was aired by other stations as well, because someone in the Regional Office heard it.

The best media coverage came on the CBS "Sunday Morning" show on Christmas Day. Each year they do a segment on new national parks and refuges called "Our Gifts to Ourselves." Not only did it feature video footage of Canaan Valley landscapes and wildlife, it also showed a lot of the dedication ceremony, Director Beattie's speech, and the music of the Tucker Community Chorus. Both the speech and the chorus were also part of the show's finale! It was a good way to end 1994.

#### 4. Credits

This report was written entirely by me, Gail Baker, the Refuge Manager. Field Office Secretary Traci Knight used her desktop publishing skills and produced this nice, professional narrative! Photos were taken by the following people: Gail Baker, Tom Gardner, Lisa McCurdy, Janet Marvin (and other members of her "team") and Diana Weaver (Public Affairs, Regional Office).



Figure 12. The dedication was held in two tents on the grounds of the Canaan Valley Resort State Park.



Figure 13. Speakers platform decorated with ferns and chrysanthemums.



Figure 14. Speakers platform with the chairs filled. From left to right: Gail Baker, Refuge Manager; Ronald Lambertson, Regional Director; Senator Robert Byrd; Congressman Alan Mollohan; George Frampton, Assistant Secretary of Interior; Mollie Beattie, FWS Director; James Rawson, Supervisor of Coordination - Wildlife Resources Section of West Virginia DNR; County Commissioner Dewey Rice.



Figure 15. Special music was provided by the Tucker Community Chorus. This music was featured on CBS "Sunday Morning" in December.



Figure 16. Ron Lambertson introduced the dignitaries.



Figure 17. Bill Zinni, Realty Ascertainment Biologist and Chris Clower, Field Supervisor of the West Virginia Field Office, received awards during the dedication ceremony. Their efforts were critical to the establishment of Canaan Valley National Wildlife Refuge.



Figure 18. County Commissioner Dewey Rice was the first speaker.



Figure 19. Jim Rawson represented the State of West Virginia at the dedication. He supported the concept of a refuge in Canaan Valley for many years.



Figure 20. Director Beattie made remarks celebrating the dedication of the 500th National Wildlife Refuge. She was also featured in the CBS "Sunday Morning" program.



Figure 21. Assistant Secretary Frampton was obviously delighted to be dedicating Canaan Valley NWR. He was not the only person smiling that day!



Figure 22. Congressman Mollohan introduced Senator Byrd and praised the efforts of the Canaan Valley Task Force, the multi-agency group which was instrumental in getting the refuge established.



Figure 23. Senator Byrd gave an inspirational speech, proving once again that he is one of our country's great orators!



Figure 24. Ron Lambertson gave Senator Byrd and Congressman Mollohan commemorative plaques to thank them for their efforts on behalf of Canaan Valley NWR.

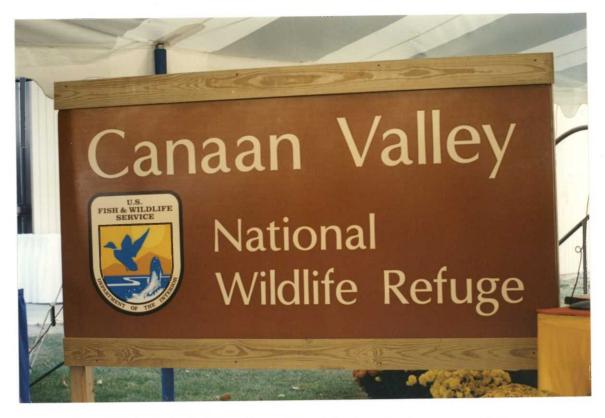


Figure 25. In the final formal act of the dedication, the sign was unveiled!



Figure 26. A sumptuous lunch was provided for all 400 attendees in the "food tent."



Figure 27. In addition to being delicious, the food was beautifully presented. Food and other "extras" were provided by Guest Services Inc., the Fish and Wildlife Foundation, the Conservation Fund and the National Wildlife Refuge Association.

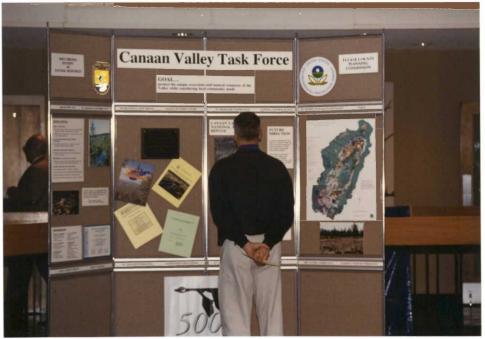


Figure 28. The Canaan Valley NWR exhibit (Figure 10) and this one on the Canaan Valley Task Force were viewed by many at the dedication.



Figure 29. Kathy Zeamer, Regional Office Outreach Specialist, with Mrs. Byrd.



Figure 30. Former President Theodore Roosevelt paid a surprise visit to the dedication! Teddy established Pelican Island as the first National Wildlife Refuge in 1903.



Figure 31. The Chestnut Ridge Band provided great West Virginia music before and after the ceremony. This photo also shows the perfect weather!



Figure 32. Senator Byrd enjoyed singing along with the Band.



Figure 33. The idea for a refuge in Canaan Valley was first voiced in 1961! It finally became a reality -- thanks to West Virginia Field Supervisor Chris Clower and Senator Robert Byrd. They have a right to look happy and satisfied.





# Canaan Valley NATIONAL WILDLIFE REFUGE

Tucker County • West Virginia

# U.S. FISH AND WILDLIFE SERVICE • FACT SHEET

# America's 500th National Wildlife Refuge

anaan Valley in Tucker County, West Virginia, is a beautiful and rare treasure with nationally significant wetlands, unusual character and unparalleled opportunities for outdoor education and research.

High altitude and a cool, moist climate have created a unique wetland and northern forest treasure in Canaan Valley. In recognition of the Valley's unusual attributes, the Secretary of the Interior designated a portion of Canaan Valley a National Natural Landmark in 1974. The Valley was praised for its grandeur and magnificence and compared to Yosemite and Yellowstone valleys. The designation recognized the Valley as a significant natural area, one of a very special group of places illustrating the diversity of the country's natural history.

On August 11, 1994, the U.S. Fish and Wildlife Service purchased land establishing Canaan Valley National Wildlife Refuge as the 500th refuge in the National Wildlife Refuge System. Managing land within Canaan Valley as a refuge will maintain the ecological diversity of the Valley and the Blackwater River drainage basin for present and future generations of West Virginians and all Americans.

# A Very Special Place

The Valley harbors a unique boreal ecosystem—a collection of plants and animals usually found much farther north. Some say it's a little bit of Canada gone astray. The site contains a high diversity of species and communities because of the wet soils, high altitude and cool climate. The many northern species found here make Canaan Valley a virtual living museum of the Ice Age in West Virginia.

The Valley contains the largest freshwater wetland area in the Central and Southern Appalachians, and its extensive wetland ecosystem has been specifically identified as a priority for protection at the federal level under the Emergency Wetlands Resources Act of 1986. The West Virginia Department of Natural Resources considers the Valley the most important wetland in the state. Canaan Valley represents an uncommon opportunity to protect such a large and unique wetland ecosystem.

# Geography

anaan Valley NWR is West Virginia's second refuge and the only refuge wholly within the state borders. Located in some of the most rugged and mountainous terrain in West Virginia, the Valley is 14 miles long and 5 miles wide and has an average elevation of 3,200 feet. It is the highest valley of its size east of the Rocky Mountains.

Drained by the Blackwater River and its tributaries, the Valley contains more than 8,400 acres of wetlands. The quality of water that collects from the entire Valley and drains into the Blackwater is an important factor in the health and well-being of all the plant and animal communities in the area.

#### Habitat

The Valley supports many unusual and rare plants and animals, not only for West Virginia, but also for the Eastern United States. Several species in the Valley are at or near the southernmost edge of their ranges.

Canaan Valley is home to 40 different wetland and upland plant communities supporting more than 580 different species of plants. Many plant species were introduced during the Pleistocene glacial period. The cool, most climate maintained species here that elsewhere followed the retreat of the glaciers north to Canada.



As many as 109 plant species in the Valley have distinctly northern ranges, and at least 25 plant species are listed as rare in West Virginia. Among these are woodland horsetail, northeastern lady fern, American mannagrass, nannyberry, alderleaved buckthorn, Jacob's ladder, and several bulrushes and sedges. Two plants of federal concern for their rarity may occur in the Valley: Darlington's spurge and butternut.

The Valley wetlands contain swamp forests, alder thickets, muskegs, wet meadows and wet aspen, spiraea and hypericum thickets as well as marshes and bogs. Much of the habitat above 3,200 feet is dominated by mature northern hardwoods and conifers such as red spruce.

#### Fish and Wildlife

The diverse Valley habitats support equally diverse wildlife populations, with 290 species of mammals, birds, reptiles, amphibians and fishes known or expected to occur there. Canaan Valley is a breeding and fall migration concentration area for the nation's largest breeding unit of American woodcock, and it supports many other migratory species, including raptors, waterfowl, wading birds, shorebirds and songbirds.

Bald eagles and peregrine falcons occasionally use Valley habitats during migration, and eagles nest within 15 miles of the Valley.



The Valley supports two species on the federal Endangered Species List—the threatened Cheat Mountain salamander and the endangered Virginia northern flying squirrel. Other rare species of federal concern may occur in the Valley, including: southern rock vole, northern water shrew, eastern wood rat, northern goshawk, loggerhead shrike, cerulean warbler, Appalachian Bewick's wren, American bittern, least bittern, red-shouldered hawk, short-eared owl, northern harrier, sedge wren and golden-winged warbler. The black duck has been identified as a priority species because of its declin-

ing populations. Species of state concern include Jefferson salamander, northern coal skink, osprey, long-eared owl, Cooper's hawk, pygmy shrew, star-nosed mole and meadow jumping mouse.

## People

Today, a steady population of nearly 8,000 people resides in and around Canaan Valley in Tucker County. Many families here trace their ancestral roots to the pioneers who settled the Valley more than 100 years ago. Many seasonal residents also make their vacation homes in this area. Tourist-related retail, recreational or service jobs have replaced many of the mining, farming or forest-related livelihoods of the past.

Hundreds of private landowners, local citizens, conservation organizations, and federal, state and municipal agencies have worked together during the past 15 years in order to establish the Canaan Valley NWR as the newest treasure in the nation's National Wildlife Refuge System.

# Refuge Management

The Service has recognized the unique attributes of Canaan Valley since the early 1960s. By 1979, a refuge proposal was approved; however 15 years passed before land was purchased to establish the refuge.

While the potential refuge acquisition area encompasses more than 20,000 acres, land will be purchased only from willing sellers as money becomes available to the Service for that purpose.

Canaan Valley NWR will be managed by the U.S. Fish and Wildlife Service, an agency in the Department of the Interior, for the people of the United States as part of the National Wildlife Refuge System. The Service is the principal agency through which the federal government carries out its responsibilities to conserve, protect and enhance the nation's fish and wildlife resources.

Refuge development will emphasize wildlife management, environmental education, interpretation and a broad range of wildlife-oriented recreation. Public involvement will continue to be part of the refuge planning process.

For further information please contact: Canaan Valley National Wildlife Refuge, Temporary Office, P.O. Box 1278, Route 250, South, Elkins Shopping Plaza, Elkins, West Virginia 26241 (304) 637-7312.

#### U.S. Fish and Wildlife Service

The National Wildlife Refuge System is a network of more than 90 million acres of lands and waters in the United States—the largest wildlife refuge system in the world. The System stretches from Northern Alaska to Caribbean islands and from Northern Maine to Hawaii and Pacific islands. Refuges in all 50 states, eight territories and the Commonwealth of Puerto Rico provide a legacy of natural resources for our nation.