

# Canaan Valley National Wildlife Refuge Hunting Plan - Draft *May 2022*



NATIONAL  
**WILDLIFE**  
REFUGE SYSTEM



Appendix A - Compatibility Determination  
Appendix B - Environmental Assessment

# **Canaan Valley National Wildlife Refuge Hunting Plan**

**Draft**

**U.S. Fish and Wildlife Service**

**Canaan Valley National Wildlife Refuge  
6263 Appalachian Highway  
Davis, WV 26260**

Submitted By:  
Refuge Manager

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Signature

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Date

Concurrence:  
Refuge Supervisor

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Signature

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Date

Approved:  
Regional Chief,  
National Wildlife Refuge System

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Signature

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Date

## Table of Contents

I. Introduction .....	1
II. Statement of Objectives .....	3
III. Description of Hunting Program.....	3
A. Areas to be Opened to Hunting .....	3
B. Species to be Taken, Hunting Periods, Hunting Access.....	6
C. Hunter Permit Requirements (if applicable).....	6
D. Consultation and Coordination with the State.....	7
E. Law Enforcement.....	7
F. Funding and Staffing Requirements .....	7
IV. Conduct of the Hunting Program.....	8
A. Refuge-Specific Hunting Regulations.....	8
B. Relevant State Regulations.....	9
C. Other Refuge Rules and Regulations for Hunting.....	9
V. Public Engagement .....	9
A. Outreach for Announcing and Publicizing the Hunting Program .....	9
B. Anticipated Public Reaction to the Hunting Program .....	10
C. How Hunters Will Be Informed of Relevant Rules and Regulations.....	10
VI. Compatibility Determination .....	10

## List of Tables

1. Table 1. Funding and Staffing Requirements.....	8
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## Appendices

Appendix A - Compatibility Determination .....	A-1
Appendix B - Environmental Assessment .....	B-1

# CANAAN VALLEY NATIONAL WILDLIFE REFUGE HUNTING PLAN

## **I. Introduction**

National wildlife refuges are guided by the mission and goals of the National Wildlife Refuge System (Refuge System), the purposes of an individual refuge, U.S. Fish and Wildlife Service (Service) policy, laws, and international treaties. Relevant guidance includes the National Wildlife Refuge System Administration Act (NWRSA) of 1966, as amended by the Refuge System Improvement Act of 1997, Refuge Recreation Act of 1962, and selected portions of the Code of Federal Regulations (CFR) and Fish and Wildlife Service Manual.

The primary purposes of Canaan Valley National Wildlife Refuge (NWR) are:

- “... for the development, advancement, management, conservation, and protection of fish and wildlife resources...” (Fish and Wildlife Act of 1956; 16 U.S.C. 742f (a)(4));
- “... for the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions.” (Emergency Wetlands Resources Act of 1986; 16 U.S.C. 3901(b)); and
- “... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (Migratory Bird Conservation Act of 1929; 16 U.S.C. 715d).

Canaan Valley National Wildlife Refuge (NWR) was established as the nation’s 500th NWR on August 11, 1994, with the purchase of 86 acres. Currently, the refuge spans 16,983 acres in West Virginia’s Grant and Tucker Counties. At close to 8,500 acres, this is the largest wetland complex in West Virginia and in the central and southern Appalachian Mountains. Dominant habitats on the refuge include herbaceous and shrub wetlands, open water, old fields, grasslands, and Northern hardwood forests.

The mission of the Refuge System, as outlined by the NWRSA, and as amended by the Refuge System Improvement Act (16 U.S.C. 668dd et seq.), is:

*“... to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”*

The NWRSA mandates the Secretary of the Interior in administering the Refuge System to (16 U.S.C. 668dd(a)(4):

- Provide for the conservation of fish, wildlife, and plants, and their habitats within the Refuge System;
- Ensure that the biological integrity, diversity, and environmental health of the Refuge System are maintained for the benefit of present and future generations of Americans;

- Ensure that the mission of the Refuge System described at 16 U.S.C. 668dd(a)(2) and the purposes of each refuge are carried out;
- Ensure effective coordination, interaction, and cooperation with owners of land adjoining refuges and the fish and wildlife agency of the States in which the units of the Refuge System are located;
- Assist in the maintenance of adequate water quantity and quality to fulfill the mission of the Refuge System and the purposes of each refuge;
- Recognize compatible wildlife-dependent recreational uses as the priority general public uses of the Refuge System through which the American public can develop an appreciation for fish and wildlife;
- Ensure that opportunities are provided within the Refuge System for compatible wildlife-dependent recreational uses; and
- Monitor the status and trends of fish, wildlife, and plants in each refuge.

Therefore, it is a priority of the Service to provide for wildlife-dependent recreation opportunities, including hunting, when those opportunities are compatible with the purposes for which the refuge was established and the mission of the Refuge System.

Public hunting at Canaan Valley NWR began in 1997. Prior to the refuge's establishment, the land that is now part of the refuge was open to hunting. Hunting is a traditional recreational activity on the refuge that provides quality big game, migratory game bird, upland game, and small game hunting opportunities. Access to most of the refuge's hunting units would be by vehicle. Some units have walk-in access from refuge trailheads. The Service proposes to expand hunting opportunities at Canaan Valley NWR to better align with State hunting regulations. In summary, we propose the following changes to the existing hunt plan:

- ***Species changes:*** Currently, the refuge is open to hunting in alignment with State species that are found on Canaan Valley NWR. There are no new species proposed as part of this plan.
- ***Huntable acreage:*** Land within the approved acquisition boundary in the northern part of the refuge contains 2,466 acres, including the Big Cove area (441 acres) owned by the Service. This acreage, if acquired in the future, would be open to hunting for all current species. The Big Cove area is currently closed to the public because it is landlocked.
- ***Method of take changes:*** The refuge will phase out use of lead ammunition for hunting all species by 2026. Hunters would be encouraged to use non-lead ammunition voluntarily until 2026.

- **Hunter orange:** No proposed changes. The refuge would continue to adhere to State regulations.
- **Other changes:** Hunter and archery education may be offered in coordination with partners such as the West Virginia Division of Natural Resources (WVDNR) and Canaan Valley Resort. The refuge would add another hunting blind along A Frame Road and move the location of the current blind from Beall Lane to Plant Road. In addition, following recommendations of State biologists, the refuge would institute additional regulations for deer hunting including a requirement to harvest a doe prior to harvesting a buck on the refuge. There would also be a new 1 buck/antlered deer annual bag limit per hunter on the refuge.

## **II. Statement of Objectives**

The objectives of a hunting program on Canaan Valley NWR are to:

- Provide the public with a recreational opportunity to experience wildlife on more refuge lands and increase opportunities for hunters, especially for youth and families;
- Design a hunting program that is in alignment with refuge habitat management objectives;
- Design a hunting program that is administratively efficient and manageable with existing staffing levels;
- Provide wildlife-dependent public recreation as mandated by and according to Service law and policy; and
- Implement a hunting program that is safe for all refuge users.

Hunting is consistent with Goal 4 of the refuge's 2011 Comprehensive Conservation Plan (CCP). This goal identified a need to provide high quality wildlife-dependent recreational uses and opportunities to enhance public appreciation, understanding, and enjoyment of the refuge's habitat, wildlife, and cultural history. This goal also included Objective 4.1 to provide a high quality hunting experience for refuge visitors.

## **III. Description of Hunting Program**

### **A. Areas to be Opened to Hunting**

Canaan Valley NWR is made up of one large tract and multiple private parcels within the acquisition boundary. The main tract at Canaan Valley NWR totals 16,983 acres in West Virginia's Tucker and Grant Counties. Hunting is allowed on 97 percent of the refuge. Land within the approved acquisition boundary in the northern part of the refuge contains 2,466 acres, including the Big Cove area (441 acres) owned by the Service. This acreage, if acquired in the

future, would be open to hunting for all current species. The Big Cove area is currently closed to the public because it is landlocked.

**Research Natural Area:** This unit is approximately 728 acres and is in the center of the refuge. This area was mentioned in the CCP (Goal 1, Objective 1.5) to be designated as such to protect the wetland plant communities and provide exemplary opportunities for research and education. In this designated area, deer hunting is allowed according to State regulations.

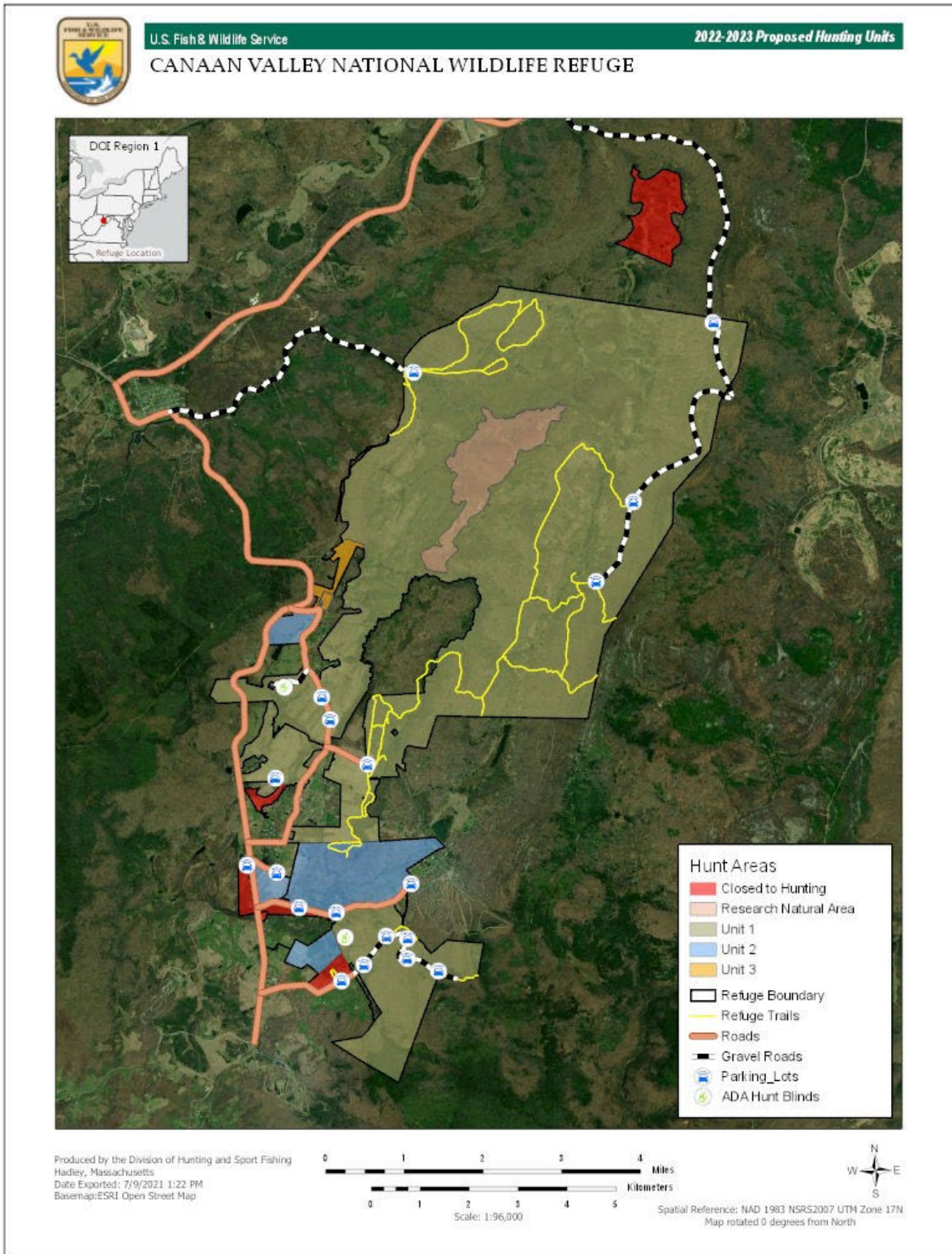
**Unit 1 - Rifle, Shotgun, Archery and Muzzleloader:** This unit is currently 14,219 acres and located in the main interior of the refuge. All huntable species are open to hunting in this unit. We allow stalking for big game in this unit if an elevated stand is not used.

**Unit 2 - Rifle (from an elevated stand), Shotgun, Archery and Muzzleloader:** There are three areas included in this unit, which is approximately 1,232 acres. Two of these areas are located north and south of Timberline road. The remaining area is located south of Canaan Heights. If a rifle is used in this area, it must be from an elevated stand.

**Unit 3 - Archery Only Zone:** This unit is approximately 123 acres and located around the Canaan Heights area of the refuge. Because of the proximity to residences, archery (including crossbow) is the only permitted method of take. All species that are open to hunting by State regulations can be hunted in this area.

**Closed to Hunting:** There are five areas of the refuge that are currently closed to hunting, totaling approximately 697 acres. These areas include Big Cove which is north of the main tract (441 acres), a section south of Timberline Road beginning at Highway 32 (60 acres), a section west and south of Highway 32 near the center (74 acres), a section south of Cooper Road (65 acres), and a section of the Freeland tract located near Freeland Boardwalk (86 acres). There is no hunting in these areas due to proximity of highways and homes or limited access for the public. See map (Figure 1) for areas open and closed for public hunting on Canaan Valley NWR.

Figure 1. Map of Canaan Valley National Wildlife Refuge hunt areas.



## **B. Species to be Taken, Hunting Periods, Hunting Access**

***Big game:*** The refuge would be open to white-tailed deer, bobcat, black bear and wild turkey hunting. Big game hunting seasons are all in accordance with State hunting seasons with some exceptions for white-tailed deer. A 4-day special muzzleloader season will be held on Canaan Valley NWR in the beginning of November (dates are specified each year in the hunt brochure). In addition, the refuge would implement more restrictive bag limits and a requirement to harvest a doe prior to harvesting a buck on the refuge. Hunters would be limited to one buck (antlered deer) annually. Canaan Valley NWR will have a special “earn-a-buck” regulation across all deer seasons which requires a hunter to take an antlerless deer on Canaan Valley NWR prior to taking a buck on the Canaan Valley NWR. For example, if an individual wants to take a buck during the special muzzleloader season in November, they would need to take an antlerless deer during the archery/crossbow season or during the October antlerless season on the Canaan Valley NWR, or take an antlerless deer on the Canaan Valley NWR during the special muzzleloader season and prior to taking a buck during that season. Only antlerless deer taken on Canaan Valley NWR will meet the special “earn-a-buck” requirement. The buck firearms season would remain in effect as in previous years; however, hunters would be required to harvest an antlerless deer during the archery/crossbow or antlerless season on Canaan Valley NWR prior to taking a buck during the buck firearms season. All deer harvested during the special muzzleloader season would apply to the muzzleloader bag limit. In addition, all other season licensing and bag limit requirements would apply.

***Small/upland game:*** The refuge would be open to ruffed grouse, rabbit, hare, squirrel, coyote, fox, raccoon, woodchuck, opossum, and skunk hunting. Hunting seasons are in accordance with the State hunting seasons. Raccoon, coyote, and fox are open for night hunting with a special permit.

***Migratory game birds:*** The refuge would be open to waterfowl (lesser scaup, ring-necked duck, bufflehead, hooded merganser, green-winged teal, blue-winged teal, mallards, wood ducks, and Canada geese), mourning dove, coot, rail, gallinule, snipe, and woodcock hunting. Hunting seasons are in accordance with the State hunting seasons.

Dogs may be used for migratory bird, black bear, raccoon, rabbit, and hare hunting on the refuge and in accordance with State regulations. The number of dogs, identification requirements, and other refuge-specific regulations concerning the use of dogs for hunting on the refuge will be updated annually and available in the refuge hunting brochure.

Refuge lands may be accessed through the following roads: State Route 32, Cortland Road, Beall Lane, Timberline Road, Freeland Road, Forest Road 80, Camp 70 Road, and A Frame Road. Hunter parking lots are stationed throughout the access roads.

## **C. Hunter Permit Requirements (if applicable)**

Hunters will be required to follow State and Federal regulations for license and stamp requirements for hunting. Hunters must possess a signed refuge hunting brochure at all times

to hunt on the refuge. The brochure can be obtained at a refuge kiosk, online, or at the Visitor Center.

#### **D. Consultation and Coordination with the State**

National wildlife refuges, including Canaan Valley NWR, conduct their hunting program within the framework of State and Federal regulations. The refuge has developed this hunting plan in coordination with WVDNR. In developing this plan, the refuge reviewed operations and regulations for neighboring State Wildlife Management Areas to find consistency where possible. Refuge leadership consulted with WVDNR on May 5, 2021 to discuss proposed changes to the refuge's hunting plan. The State recommended including more restrictive regulations for deer harvest as part of this proposed plan. Following the meeting with WVDNR, refuge staff requested comments during the review process on this document for the record. A letter of support will be included in this hunt package.

#### **E. Law Enforcement**

Enforcement of refuge violations normally associated with management of a NWR is the responsibility of commissioned Federal Wildlife Officers (FWO). Other officers, Special Agents, State game wardens, and the local Sheriff's Department often assist the Canaan Valley NWR full-time FWO. In the event of a planned hunt, request for other officers may occur.

The following methods are used to enforce hunting regulations:

- Hunters must have a current refuge hunt brochure (signed) in their possession. This brochure contains refuge-specific regulations and provides a map of the areas open to hunting.
- Refuge boundaries and "no hunting" zones will be posted to the greatest extent possible.
- Law enforcement officers will randomly check hunters for compliance with Federal and State laws, as well as refuge-specific regulations pertinent to hunting.
- Information will be made available at the Canaan Valley NWR Visitor Center, individual kiosks located in designated hunter parking lots, and online on the refuge website at: [https://www.fws.gov/refuge/canaan\\_valley/](https://www.fws.gov/refuge/canaan_valley/).

#### **F. Funding and Staffing Requirements**

Annual hunt administration costs for Canaan Valley NWR total approximately \$9,910. Canaan Valley NWR funds are used to conduct hunts for big game, small game, upland game, and migratory game bird seasons. This includes staff time for planning and annual program preparation, outreach, public relations, permit administration, enforcement, posting, and road and parking lot maintenance. Other operating costs include signs, leaflets, equipment, and vehicle

fuel and maintenance. Funding for the hunt programs is not specifically allocated but will be taken from station base funds on an annual basis. It is anticipated that funding would continue to be sufficient to continue the hunting program at Canaan Valley NWR in the future.

**Table 1. Funding and Staffing Requirements**

<b>Identifier</b>	<b>Cost</b>
Staff time to implement hunt program (Maintenance Workers, Biologist, and Refuge Managers)	\$6,275
Maintain roads, parking lots, trails*	\$2,360
News releases, fact sheets, reports for Hunt Program	\$525
Maintain hunting signs	\$750
<b>Total Annual Cost</b>	<b>\$9,910</b>

*\*Refuge trails and roads are maintained for a variety of activities. Costs shown are a percentage of total costs for trail/road maintenance on the refuge and are reflective of the percentage of trail/road use for hunting. Volunteers account for some maintenance hours and help to reduce overall costs of the program.*

#### **IV. Conduct of the Hunting Program**

##### **A. Refuge-Specific Hunting Regulations**

To ensure compatibility with refuge purposes and the mission of the Refuge System, hunting on Canaan Valley NWR must be conducted in accordance with State and Federal regulations, as supplemented by refuge-specific regulations (50 CFR 32.67) and with a signed hunt brochure.

Listed below are refuge-specific regulations that pertain to hunting on Canaan Valley NWR as of the date of this plan. These regulations may be modified as conditions change or if refuge expansion continues/occurs.

- Only temporary tree stands and blinds may be used on the refuge. The temporary blinds and stands must have the hunter’s hunting license number or name and phone number printed on the blind or stand. They must be removed by the last day of the deer season.
- Access to the refuge for hunting may occur between 1 hour before sunrise and 1 hour after sunset. Legal shooting hours are in alignment with State regulations.
- Dog training and scouting are permitted 7 days prior to hunting seasons.
- We prohibit organized deer drives. We define a “deer drive” as an organized or planned effort to pursue, drive, chase, or otherwise frighten or cause deer to move in the direction of any person(s) who is part of the organized or planned hunt and known to be waiting for the deer.
- We prohibit the hunting of upland game species from March 1 through August 31.

- Hunters must report their harvests at [www.wvhunt.com](http://www.wvhunt.com) or by phone at 1 (844) 824-3251 (1 (844) UCheck1).
- Hunters are required to take an antlerless deer on Canaan Valley NWR prior to taking a buck on the Canaan Valley NWR.
- Annual bag limit for deer is limited to 1-buck/antlered deer only.
- Hunters are encouraged to voluntarily use non-lead ammunition when hunting big and upland game. By 2026, we will eliminate use of all lead ammunition for hunting on Canaan Valley NWR.

## **B. Relevant State Regulations**

The refuge conducts its hunting program within the framework of State and Federal regulations. Hunting regulations on the refuge are at least as restrictive as the State of West Virginia's and in some cases more restrictive. Additionally, the refuge coordinates with the State as needed to maintain regulations and programs that are consistent with the State's management programs. Refer to the annual WVDNR hunting and trapping regulations for more information (available at: [https://www.wvdnr.gov/hunting/hunting\\_regs.shtm](https://www.wvdnr.gov/hunting/hunting_regs.shtm)).

## **C. Other Refuge Rules and Regulations for Hunting**

- Off-road vehicles, including all-terrain vehicles and snowmobiles, are prohibited.
- Overnight parking is prohibited.
- Driving a nail, spike, climbing screw, or other metal object into any tree is prohibited.
- Camping, fires, or cutting trees or vegetation are not permitted.
- No motorized vehicles are permitted off refuge roads.
- All accidents or injuries must be reported to the refuge headquarters or law enforcement officer as soon as possible.

## **V. Public Engagement**

### **A. Outreach for Announcing and Publicizing the Hunting Program**

The refuge maintains a mailing list for news release purposes to local newspapers, radio, and websites. Special announcements and articles may be released in conjunction with hunting seasons. In addition, information about the hunt will be available at Canaan Valley NWR headquarters or on the Canaan Valley NWR website.

## **B. Anticipated Public Reaction to the Hunting Program**

Based on the comments received during the 2011 CCP review process and since hunting has already been allowed on Canaan Valley NWR for more than 25 years, little negative public reaction is expected. It is estimated that about 70,000 people visit Canaan Valley NWR annually. Visitors use the refuge to enjoy wildlife-dependent activities such as birdwatching, photography, hiking, biking, hunting, and fishing. Hunting is an important economic and recreational use of West Virginia's natural resources.

Refuge staff will continue to educate non-consumptive users about hunting seasons and provide guidance on the importance of wearing hunter orange during critical hunter periods.

## **C. How Hunters Will Be Informed of Relevant Rules and Regulations**

Dates, forms, hunting unit directions, maps, and permit requirements about the hunt will be available on the station website at: [https://www.fws.gov/refuge/Canaan\\_Valley/](https://www.fws.gov/refuge/Canaan_Valley/). General information regarding hunting and other wildlife-dependent public uses can be obtained by calling (304) 866-3858. Information is also available at kiosks located in designated parking areas and at the refuge headquarters at:

6263 Appalachian Highway  
Davis, West Virginia 26260

## **VI. Compatibility Determination**

Hunting and all associated program activities proposed in this plan are compatible with the purposes of the refuge. See the attached Compatibility Determination.

## COMPATIBILITY DETERMINATION

**USE:** Hunting

**REFUGE NAME:** Canaan Valley National Wildlife Refuge

**DATE ESTABLISHED:** August 11, 1994

### **ESTABLISHING and ACQUISITION AUTHORITIES:**

1. Fish and Wildlife Act of 1956 [16 U.S.C. 742f(a)(4)]
2. Emergency Wetlands Resources Act of 1986 [16 U.S.C. 3901b]
3. Migratory Bird Conservation Act of 1929 [16 U.S.C. 715d]

### **REFUGE PURPOSE(S):**

- “...for the development, advancement, management, conservation, and protection of fish and wildlife resources...” (Fish and Wildlife Act of 1956; 16 U.S.C. 742f (a)(4));
- “...for the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions.” (Emergency Wetlands Resources Act of 1986; 16 U.S.C. 3901(b)); and,
- “...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (Migratory Bird Conservation Act of 1929; 16 U.S.C. 715d).

### **NATIONAL WILDLIFE REFUGE SYSTEM MISSION:**

The mission of the National Wildlife Refuge System (Refuge System) is “to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans” (Refuge System Improvement Act of 1997, Public Law 105-57).

### **DESCRIPTION OF USE:**

#### **(a) What is the use? Is the use a priority public use?**

The use is public hunting of big game (white-tailed deer, bobcat, black bear, and wild turkey), small and upland game (ruffed grouse, rabbit, hare, squirrel, coyote, fox, raccoon, woodchuck, opossum, and skunk), and migratory game birds (mourning dove, coot, rail, gallinule, snipe, woodcock, and waterfowl) on Canaan Valley National Wildlife Refuge (NWR). Hunting was identified as one of six priority public uses of the Refuge System by the National Wildlife Refuge System Administration Act (NWRSA) of 1966, as amended by the Refuge System Improvement Act of 1997 (Public Law 105-57), when found to be compatible.

**(b) Where would the use be conducted?**

Hunting would occur throughout the refuge in both upland and wetland habitats. Canaan Valley NWR is currently comprised of one large tract of land with varying private property pieces found within the acquisition boundary. This tract is currently 16,983 acres in Davis, West Virginia in Tucker and Grant Counties. Hunting is allowed on 97 percent of the refuge. Land within the approved acquisition boundary in the northern part of the refuge contains 2,466 acres, including the Big Cove area (441 acres) owned by the Service. This acreage, if acquired in the future, would be open to hunting for all current species. The Big Cove area is currently closed to the public because it is landlocked.

Refuge units include the following:

**Research Natural Area:** This unit is approximately 728 acres and located in the center of the refuge (Figure 1). In the Comprehensive Conservation Plan (CCP) (Goal 1, Objective 1.5), this area was designated for protecting the wetland plant communities and providing exemplary opportunities for research and education. In this designation, deer hunting will be allowed according to State regulations. This hunt unit is open to deer hunting only.

**Unit 1 - Rifle, Shotgun, Archery and Muzzleloader:** This unit is currently 14,219 acres, located in the interior of the refuge. All species open to hunting as designated by State regulations can be hunted here. We allow stalking of big game with a rifle if an elevated stand is not used.

**Unit 2 - Rifle (from an elevated stand), Shotgun, Archery and Muzzleloader:** There are three areas included in this unit, which is approximately 1,232 acres. Two of these areas are located north and south of Timberline road. The remaining area is located south of Canaan Heights. If a rifle is used in this area, it must be from an elevated stand. Stalking big game with a rifle is not allowed.

**Unit 3 - Archery Only Zone:** This unit is approximately 123 acres located around the Canaan Heights area of the refuge. Because of the proximity to residences, archery (including crossbow) is the only permitted method of take. All species that are open to hunting by State regulations can be hunted in this area.

**Closed to Hunting:** There are five areas included in this unit, which is approximately 697 acres: Big Cove is north of the main tract (441 acres); a section south of Timberline road beginning at Highway 32 (60 acres); a section west and south of Highway 32 near the visitor center (74 acres); a section south of Cooper Road (65 acres); and a section of Freeland tract located near Freeland Boardwalk (86 acres). There is no hunting in these areas due to the proximity of highways and homes or inaccessibility for hunters. For detailed map showing the location of these areas, please see the hunt brochure or Figure 1.

**(c) When would the use be conducted?**

**Big game:** The refuge would be open to white-tailed deer, black bear, and wild turkey hunting. Big game hunting seasons and legal shooting hours are all in accordance with State regulations (with a few exceptions for white-tailed deer), which are approximately from September through

December. The refuge is open for access to hunters from 1 hour before sunrise until 1 hour after sunset.

***Small/upland game:*** The refuge would be open to hunting for ruffed grouse, rabbit, hare, squirrel, fox, raccoon, bobcat, woodchuck, opossum, and skunk. Hunting seasons are in accordance with the State hunting seasons, with exceptions from March 1 until August 31 when all small and upland game hunting is closed on the refuge. Raccoon, coyote, and fox are open for night hunting with a special use permit (SUP) obtained from the refuge manager.

***Migratory game birds:*** The refuge would be open to waterfowl (mallards, wood duck, Canada geese, lesser scaup, bufflehead, hooded merganser, and blue wing teal), mourning dove, coot, rail, gallinule, snipe, and woodcock hunting. Hunting seasons and legal shooting hours are in accordance with the State hunting regulations. Hunters may access the refuge from 1 hour before sunrise until 1 hour after sunset.

**(d) How would the use be conducted?**

We would continue to conduct the hunting program according to State and Federal regulations. Federal regulations in 50 CFR pertaining to the Refuge System, as well as refuge-specific regulations would apply (50 CFR §32.67 and hunt brochure). However, the project leader may, upon annual review of the hunting program, take the necessary steps to impose further restrictions, recommend that the refuge be closed to hunting, or further liberalize hunting regulations up to the limits of State regulations. The project leader could restrict hunting if it becomes incompatible with other priority public uses or endangers refuge resources or public safety. Stipulations are detailed later in this Compatibility Determination.

**(e) Why is the use being proposed?**

Hunting is one of the priority public uses outlined in the Refuge System Improvement Act of 1997. The Service supports and encourages priority uses when they are compatible on refuge lands. Hunting is a traditional activity and recreational use of renewable natural resources that is deeply rooted in America's heritage, and provides a connection to wildlife and conservation in a unique way.

This use will further align the refuge with the Department of the Interior's Secretarial Order 3356, which directs the Service to enhance and expand public access to lands and waters on NWRs for hunting, fishing, recreational shooting, and other forms of outdoor recreation. Hunting would promote the stewardship of our natural resources and increase the public's appreciation and support for the refuge. Hunting was also identified as an area of interest for the refuge in its 2011 Comprehensive Conservation Plan (CCP), which can be found at:

[https://www.fws.gov/refuge/Canaan\\_Valley/what\\_we\\_do/finalccp.html](https://www.fws.gov/refuge/Canaan_Valley/what_we_do/finalccp.html)

**AVAILABILITY OF RESOURCES:**

Annual hunt administration costs for Canaan Valley NWR total approximately \$9,910. Canaan NWR funds are used to conduct hunts for big game, small game, upland game, and migratory bird seasons. This includes staff time for planning and annual program preparation, outreach, and public relations, permit administration, enforcement, posting, and road and parking lot

maintenance. Other operating costs include signs, leaflets, equipment, and vehicle fuel and maintenance. Funding for the hunt programs is not specifically allocated, but will be taken from station base funds on an annual basis. It is anticipated that funding would continue to be sufficient to continue the hunting program at Canaan Valley NWR in the future.

**Table A-1. Funding for the hunt program at Canaan Valley NWR**

<b>Identifier</b>	<b>Annual Cost Estimate</b>
Staff (Maintenance Workers, Biologist, and Refuge Managers)	\$6,275
Maintain roads, parking lots, trails*	\$2,360
News releases, fact sheets, reports for Hunt Program	\$525
Maintain hunting signs	\$750
<b>Total Annual Cost</b>	<b>\$9,910</b>

*\*Refuge trails and roads are maintained for a variety of activities. Costs shown are a percentage of total costs for trail/road maintenance on the refuge and are reflective of the percentage of trail/road use for hunting. Volunteers account for some maintenance hours and help to reduce overall cost of the program.*

**ANTICIPATED IMPACTS OF THE USE:**

Hunting has occurred on the refuge since the creation of the refuge with no discernible adverse impacts to resources or significant conflicts with other priority public uses. Hunting provides compatible wildlife-dependent recreation opportunities that can foster a better appreciation and more complete understanding of wildlife and habitat, which can translate into stronger support for wildlife conservation, the refuge, the Refuge System, and the Service.

**Big Game (white-tailed deer, black bear, and turkey)**

The proposed hunting program would not result in substantial changes to the amount of refuge land accessed for hunting or amount of hunter participation for these opportunities, therefore we anticipate only a slight increase in harvest of big game species. This increase is consistent with population management goals within the State of West Virginia. In recent years, West Virginia has shifted gears from increasing the bear population to stabilizing population growth or reducing bear numbers in some management units. West Virginia hunters harvested 3,099 bears statewide in 2019 (WVDNR 2020).

In West Virginia, the statewide turkey population is estimated at approximately 140,000 individuals, distributed throughout all 55 counties. Hunters harvested 11,215 bearded turkeys in West Virginia during the 2019 spring gobbler season and a total of 1,113 during the fall turkey season statewide (WVDNR 2020). Relative to State harvest numbers, refuge impacts on statewide populations are expected to be negligible. Studies examining the direct effects of hunting on turkey behavior and movement are limited. One study conducted in Louisiana tracked the movements of wild turkey during the hunting season and found that distances traveled by wild turkeys were only 8 percent greater during hunting days than non-hunting days (Gross et al. 2015). Although hunting made it more likely for a turkey to change their movement patterns, a small-scale increase in range is not biologically significant.

White-tailed deer populations remain high and above the carrying capacity for the habitat. During the 2019-2020 season, there were 99,437 total deer harvested statewide (WVDNR 2020).

We anticipate that opening additional areas would increase the harvest white-tailed deer only slightly. Hunting will affect deer movement and the local population. Although hunting will likely change a deer's movement patterns, the short-term disturbance is likely not biologically significant.

In the 2020-2021 hunting season, Canaan Valley NWR opened an additional 342 acres for big game in accordance with State and refuge-specific regulations. An additional 754 acres of refuge land already open to hunting has expanded hunting opportunities to hunt with a rifle from an elevated stand. Impacts to local or regional black bear and wild turkey populations are not expected to change significantly. WVDNR sets the harvest limits for each county and may increase those limits to accommodate for the overabundance of deer based on distance sampling results. Hunting is an important tool that can reduce habitat degradation and competition, yielding healthier populations in the long term. Proposed refuge hunting program rules would be the same as, or more restrictive than, hunting regulations throughout the State of West Virginia. Refuge staff will regularly coordinate with the State and maintain hunting regulations that are the same as, or more restrictive, than the State for the protection of natural resources and the public. Relative to State harvest numbers, refuge impacts on statewide deer populations are expected to be negligible. The proportion of harvest on the refuge would be a very small portion of the total annual statewide harvest.

**Upland Game (ruffed grouse, rabbit, hare, squirrel, fox, raccoon, bobcat, woodchuck, coyote, opossum, and skunk)**

The refuge follows the State's regulations for hunting ruffed grouse, rabbit, hare, squirrel, fox, raccoon, and bobcat. We also follow State regulations for hunting, with the exception of hunting year-round, for woodchuck, coyote, opossum, and skunk. Hunting for these species will not occur from March through August on the refuge.

Raccoon, fox, and bobcat are considered abundant and there are no density estimates for any of these species currently available according to WVDNR (Rogers Pers. comm.). From 2015 to 2021, a total of 13 hunters with dogs participated in the raccoon hunt. Raccoon hunters often use dogs and hunt at night with a SUP. The SUP restricts dog numbers to minimize potential impacts to other wildlife. Night hunting for fox, raccoon, coyote, opossum, and skunk is allowed by obtaining a SUP. In 2020 when night hunting was allowed for these species, participation was low with 5 hunters participating for a total of 10 nights. The positive impacts of hunting these species, including the reduction of spring nest predation, resource competition, and direct consumption on other refuge wildlife outweigh the short-term negative impacts caused by hunters pursuing them with dogs at night (Fletcher et. al 2010).

Populations estimates of other upland game species (rabbits, hare, squirrel, woodchuck, and ruffed grouse) occurring in the valley are also unknown. Refuge staff do not conduct inventory of these species. Overall, the impacts to the local or regional upland game populations are not expected to change significantly. Proposed refuge hunting program rules would be the same as or more restrictive than hunting regulations throughout the State of West Virginia. Refuge staff will regularly coordinate with the State and maintain hunting regulations that are the same as, or more restrictive, than the State for the protection of natural resources and the public

### **Migratory game birds (waterfowl, mourning dove, coot, rail, gallinule, snipe, and woodcock)**

Migratory birds are managed on a flyway basis and hunting regulations are established in each State based on flyway data. Federal and State regulations would apply to the refuge waterfowl hunt. Hunting migratory game birds on the refuge would reduce the total numbers of birds in the Atlantic Flyway, but harvest would be within allowable limits as determined by the Service annually. Migratory game bird hunting on the refuge would make birds more skittish and prone to disturbance, reduce the amount of time they spend foraging and resting, and alter their habitat usage patterns (Bartlett 1987, Zicus 1981). Disturbance to non-target birds and resident wildlife would likely occur from hunting and associated hunter activity but would be short-term and temporary.

American woodcock is a trust species managed by the Service and has been categorized as a “species of decline.” The loss and degradation of early successional habitat is considered the most important factor for these population declines (Dessecker and McAuley 2001). Canaan Valley NWR has the largest population of woodcock in West Virginia. The number of woodcock hunters is not large enough to cause a decline in the overall population of American woodcock.

Overall, the effects on migratory birds are expected to be minimal. Proposed refuge hunting program rules will be the same as or more restrictive than hunting regulations throughout the State of West Virginia. Refuge staff will regularly coordinate with the State and maintain hunting regulations that are the same as or more restrictive than the State for the protection of natural resources and the public.

### **Other Wildlife and Non-target Species**

Hunting on Canaan Valley NWR would likely affect other wildlife on the refuge to some degree. Increased hunting visitation may result in additional short-term disturbance to wildlife, especially in areas previously closed to hunting. This includes temporary displacement of resident wildlife from foot traffic moving through the area and increased disturbance. While resident and non-game wildlife in areas newly opened to hunters and hunting may be negatively impacted by disturbance, that impact is expected to be negligible. The degree of the impact by the alternative is not expected to be different from what may already occur (including temporary displacement of songbirds, raptors, and resident wildlife from foot traffic moving through the area).

Disturbances to non-game bird species have been minimal, since migrating and breeding activities occur from April to August when no hunting except for spring turkey season occurs. Turkey hunters utilize the refuge at low enough densities that they will not likely impact ground nesting songbirds. Species that are not allowed for take are mink, fisher, most migratory birds, and feral hogs. The current hunt season with the proposed additional hunting opportunities is not expected to increase impacts to refuge wildlife significantly.

### **Habitat and Vegetation**

The three major types of habitat found on the refuge are wetlands, forest, and shrub land/grasslands. The physical effects on the refuge wetland and upland vegetation are expected to be minimal during most the hunting season. Most of the hunting takes place between September and January when plants are dormant. Potential impacts would come from turkey

hunters trampling on vegetation from mid-April to mid-May. These effects are expected to be minimal and dispersed based on anticipated levels of participation in the hunt.

Positive effects on the vegetation would result from a reduction in the white-tailed deer population. The impacts of dense deer populations on forest regeneration and the composition and diversity of the herbaceous understory have been documented and observed in Canaan Valley (Russell, Zippin and Fowler 2001). Continuing to allow hunters on Canaan Valley NWR, specifically for white-tailed deer hunting, would maintain the habitat as it is now and prevent further degradation due to overbrowsing. Well-managed hunting can effectively control deer and produce dramatic changes in the forest vegetation (Behrend, et al., 1970). The impact of deer hunting on the vegetation would be positive and result in better regeneration of forest canopy species and an increase in the diversity of the herbaceous understory. In summary, there would be few if any negative impacts from this use on the refuge's vegetation, but there would be beneficial impacts from the decrease of white-tailed deer browsing on the refuge's vegetation due to the decrease in the number of deer on refuge lands.

### **Threatened and Endangered Species**

Three federally listed bat species can be found on or adjacent to the refuge: endangered Indiana bat (*Myotis sodalis*), endangered Virginia big-eared bat (*Corynorhinus townsendii virginianus*), and the threatened Northern long-eared bat (*Myotis septentrionalis*). The federally listed (threatened) Cheat Mountain salamander (*Plethodon netting*) can also be found on or adjacent to the refuge.

Cheat Mountain salamanders can be found in high elevation forested habitat, and it is likely they are restricted to cooler mountain slopes and ridges. These species are not active during the time of day and year that hunting will occur.

Areas open to hunting are not expected to affect Indiana bats, Virginia big-eared bats, or Northern long-eared bats because hunters are accessing the refuge when the bats are not present. Hunting is only allowed from September to January, with a short spring turkey season. The bats primarily use mines and caves in the winter to hibernate and use upland forests to forage and roost throughout the rest of the year. Bat species may occur in some areas in the hunting zones, and may be disturbed if hunters walk through an area or use their roost trees for stand placement. Bats are typically nocturnal and inactive during hunting seasons and times, and not present for most of the hunting seasons; therefore, disturbance would be highly unlikely. Potential disturbances from expanded hunting, such as an increase in gun noise or additional portable tree stands, would likely not rise to the level of take. Tree climbing and placing portable tree stands, or noise from firearms, could flush roosting bats from the trees, but it is more likely that the bats would remain in the tree than be flushed, and instances of flushing would not result in bat mortality. There is no hunting near any cave or mine where bats could hibernate (i.e., hibernaculum), and hunting programs would not result in any tree cutting or other habitat alteration. Therefore, hunting will likely have little impact on these listed species.

The negative impacts of lead on wildlife are documented and clear (Golden et al. 2016). To move towards reduction and future elimination of this threat on the refuge, we will be eliminating the use of lead ammunition over a 4-year period to educate and work with hunters on

the use of non-lead alternatives. The phased transition to lead-free ammunition for all hunting will minimize the inadvertent exposure and subsequent lethal or sub-lethal impacts to bald and golden eagles, as well as other scavenging species. Eagles and other scavengers can be susceptible to lead poisoning when they ingest lead fragments or pellets in the tissues of animals killed or wounded by lead ammunition.

Lead shot and bullet fragments found in animal carcasses and gut piles are the most likely source of lead exposure. Many hunters do not realize that the carcass or gut pile they leave in the field usually contains lead bullet fragments. Research will continue on the effects of lead ammunition and the fragments it can deposit in killed game. Avian predators and scavengers can be susceptible to lead poisoning when they ingest lead fragments or pellets in the tissues of animals killed or wounded by lead ammunition. Lead poison may weaken raptors and increase mortality rate by leaving them unable to hunt, or more susceptible to vehicles or power line accidents. The bioaccumulation of lead is a potential concern, but it does not likely present a significant issue on this refuge, as: 1) non-lead shot is currently required for hunting waterfowl; 2) we are proposing a 4-year phase out to the use of lead ammunition for all species by 2026; 3) the refuge strongly encourages use of non-lead alternatives for hunting big or upland game for the next 4 years; 4) we will educate hunters and the public to the potential adverse impacts of lead; and 5) the updated hunting activities are not likely to introduce substantially more lead into the environment over existing amounts with the current or proposed hunting program. Some hunters will also choose non-lead methods of take such as archery.

As the foraging ecology of the bats (i.e., eating flying insects) is known, the only way the species would be exposed to lead from hunting is through bioaccumulation from herbivorous insects. Such prey (and only some of their prey are herbivorous) could eat plants that have taken up lead from the soil, but it is unlikely because plants only uptake lead when it is in soil in highly concentrated levels and the proposed hunting expansion would not introduce enough lead for that possibility. Current and proposed levels of hunting, along with non-lead alternative education, would not result in lead levels toxic to any threatened or endangered species that occur on the refuge.

### **Visitor Use and Experience**

Canaan Valley NWR is open to all six priority public uses outlined in the Refuge Improvement Act of 1997 (hunting, fishing, wildlife observation, wildlife photography, environmental education, and interpretation). Total recreation visits were 73,501, creating a total economic output of \$2.65 million dollars. According to a study conducted by the Service, roughly 3 percent of all refuge visits were for hunting, 48 percent of refuge visits were for hiking or biking, and 58 percent of refuge visitation was for other non-consumptive uses (USFWS 2019).

The number of hunters using the refuge has been consistently around 2,300 to 2,700 annually. Continued hunter presence and use, during the regular refuge hunting timeframe (September through February, and mid-April through mid-May) is not expected to significantly increase the number of conflicts among user groups. Most hunter-to-hunter conflicts are expected to be minor and can be managed by law enforcement. Conflicts that arise with other user groups are expected to be minor, and can be managed through outreach, trail closures, messaging about importance of hunter orange during hunting season, and signage. If conflicts do arise, mitigation efforts will be

designed and implemented to lessen impacts to other wildlife-dependent user groups. Acquisition of additional acreage that will be acquired would follow the same guidance.

**PUBLIC REVIEW AND COMMENT:**

This CD is a part of the Canaan Valley NWR hunting package. This plan was coordinated with all interested and/or affected parties, including WVDNR staff. The public will be notified of the availability of the Hunting Plan, Environmental Assessment, and CD with no less than a 30-day comment period. We will inform the public through local venues, the refuge website, and social media.

**DETERMINATION (CHECK ONE BELOW):**

Use is not compatible

Use is compatible, with the following stipulations

**STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:**

To ensure compatibility with refuge purposes and Refuge System mission, hunting can occur at Canaan Valley NWR in accordance with State and Federal regulations and refuge-specific restrictions to ensure that wildlife and habitat management goals are achieved, and that the program is providing a safe, high quality hunting experience for participants. This hunting program will be monitored and potentially modified or eliminated if any the program's components are found not compatible.

The following stipulations are necessary to ensure compatibility:

- Raccoon, coyote, and fox are open for night hunting with a SUP obtained from the refuge manager.
- Hunting is permitted in accordance with State seasons from September 1 through February 28. Turkey may be hunted during the State's spring season.
- Hunting seasons and legal shooting hours are in accordance with the State hunting regulations with some exceptions for white-tailed deer. Hunters may only access the refuge from 1 hour before sunrise until 1 hour after sunset.
- Only persons possessing a current, signed Canaan Valley NWR hunting permit, a government-issued photo ID, and a West Virginia State hunting license are authorized to hunt on the refuge.
- Non-lead ammunition will be required for hunting all species beginning in fall of 2026.

**JUSTIFICATION:**

Canaan Valley NWR is in a rural area where hunting is an established, traditional activity that predates the refuge opening. Some disturbance to the habitats, vegetation, and wildlife is expected in areas open to hunting, but impacts would be negligible to overall habitat and wildlife conservation. Since the refuge is already open to hunting, we do not expect any significant impacts because of the current acreage or additional acreage in the future.

Hunting is a priority wildlife-dependent use for the Refuge System through which the public can develop an appreciation for fish and wildlife. In addition, the Department of the Interior Secretarial Order 3356 directs the Service to enhance and expand public access to lands and waters on NWRs. Service policy is to provide expanded opportunities for wildlife-dependent uses when compatible and consistent with sound fish and wildlife management and ensure that they receive enhanced attention during planning and management.

This activity would not conflict with any of the other priority public uses or adversely impact biological resources. Therefore, through this CD process, we have determined that hunting on the refuge, in accordance with the stipulations provided above, is a compatible use that will contribute to and not materially interfere with, or detract from, the fulfillment of the Refuge System mission or the purpose of the refuge.

**SIGNATURE:**

Refuge Manager

\_\_\_\_\_

(Signature)

\_\_\_\_\_

(Date)

**CONCURRENCE:**

Regional Chief

\_\_\_\_\_

(Signature)

\_\_\_\_\_

(Date)

**MANDATORY 15 YEAR RE-EVALUATION DATE:**

\_\_\_\_\_

(Date)

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# **Canaan Valley National Wildlife Refuge Hunting Environmental Assessment**

This Environmental Assessment (EA) is being prepared to evaluate the effects associated with the proposed action and complies with the National Environmental Policy Act (NEPA) in accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1509) and Department of the Interior (43 CFR 46; 516 DM 8) and U.S. Fish and Wildlife Service (550 FW 3) regulations and policies. NEPA requires examination of the effects of proposed actions on the natural and human environment. A list of laws and executive orders evaluated through this EA is included at the end of this document.

## **Proposed Action**

Canaan Valley National Wildlife Refuge (NWR) was established as the nation's 500th national wildlife refuge on August 11, 1994, with the purchase of 86 acres. Currently, the refuge spans 16,983 acres in West Virginia's Grant and Tucker Counties. At close to 8,500 acres, this is the largest wetland complex in West Virginia and in the central and southern Appalachian Mountains. Dominant habitats on the refuge include herbaceous and shrub wetlands, open water, old fields, grasslands, and Northern hardwood forests.

The U.S. Fish and Wildlife Service (Service) proposes to open and expand hunting opportunities on current acreage and an additional 2,025 acres if acquired. Hunting would be in accordance with the West Virginia Division of Natural Resources (WVDNR) programs and regulations. In summary, we propose the following updates for the 2022 Canaan Valley NWR Hunting Plan:

- Land within the approved acquisition boundary in the northern part of the refuge contains 2,466 acres, including the Big Cove area (441 acres) owned by the Service. This acreage, if acquired in the future, would be open to hunting for all current species. The Big Cove area is currently closed to the public because it is landlocked.
- The Service would initially promote voluntary use of non-lead ammunition where not already required by existing regulations. This process will involve education about the impacts of lead on non-target species and the use of non-lead alternatives.
- To move towards reduction and future elimination of this threat on the refuge, we will be eliminating the use of lead over a 4-year period to educate and work with hunters on the use of non-lead alternatives. The phased transition to non-lead ammunition will minimize the inadvertent exposure and subsequent lethal or sub-lethal impacts to wildlife.
- Hunter and archery education may be offered through partnerships with WVDNR and Canaan Valley Resort.

- Increase accessibility for disabled hunters by building an additional accessible hunt blind at the end of A Frame Road and relocating one hunt blind from Beall Lane to Plant Road.
- In addition, following recommendations of State biologists, the refuge would institute additional regulations for deer hunting including a requirement to harvest a doe prior to harvesting a buck on the refuge. There would also be a new 1-buck/antlered deer annual bag limit per hunter on the refuge.

This proposed action may evolve during the NEPA process as the Service refines its proposal and gathers feedback from the public, Tribes, and other agencies. Therefore, the final proposed action may be different from the original. The proposed action will be finalized at the conclusion of the public comment period for the EA.

### **Background**

NWRs are guided by the mission and goals of the National Wildlife Refuge System (Refuge System), the purposes of an individual refuge, Service policy, and laws and international treaties. Relevant guidance includes the National Wildlife Refuge System Administration Act (NWRSA) of 1966, as amended by the Refuge System Improvement Act of 1997, Refuge Recreation Act of 1962, and selected portions of the Code of Federal Regulations and Fish and Wildlife Service Manual.

The primary purposes of Canaan Valley NWR are:

- “... for the development, advancement, management, conservation, and protection of fish and wildlife resources...” (Fish and Wildlife Act of 1956; 16 U.S.C. 742f (a)(4));
- “... for the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions.” (Emergency Wetlands Resources Act of 1986; 16 U.S.C. 3901(b)); and
- “... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (Migratory Bird Conservation Act of 1929; 16 U.S.C. 715d).

The mission of the Refuge System, as outlined by the NWRSA, as amended by the National Wildlife Refuge System Improvement Act (16 U.S.C. 668dd et seq.), is

*“... to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans”*

The NWRSA mandates the Secretary of the Interior in administering the Refuge System to (16 U.S.C. 668dd(a)(4):

- Provide for the conservation of fish, wildlife, and plants, and their habitats within the Refuge System;
- Ensure that the biological integrity, diversity, and environmental health of the Refuge System are maintained for the benefit of present and future generations of Americans;
- Ensure that the mission of the Refuge System described at 16 U.S.C. 668dd(a)(2) and the purposes of each refuge are carried out;
- Ensure effective coordination, interaction, and cooperation with owners of land adjoining refuges and the fish and wildlife agency of the States in which the units of the Refuge System are located;
- Assist in the maintenance of adequate water quantity and water quality to fulfill the mission of the Refuge System and the purposes of each refuge;
- Recognize compatible wildlife-dependent recreational uses as the priority general public uses of the Refuge System through which the American public can develop an appreciation for fish and wildlife;
- Ensure that opportunities are provided within the Refuge System for compatible wildlife-dependent recreational uses; and
- Monitor the status and trends of fish, wildlife, and plants in each refuge.

Hunting has been a long-time traditional activity in the Valley before the refuge was established in 1997 and Canaan Valley NWR continues that tradition for the public. Hunting for migratory birds, big game, and upland game has been a part of the experience of getting people outside and connecting people with nature. Access to most refuge units is by vehicle and by foot to get to the desired hunting locations.

### **Purpose and Need for the Action**

Hunting is identified as one of the six priority public uses legislatively mandated by the NWRSA of 1996, as amended by the Refuge System Improvement Act of 1997 (Public Law 105-57) and reinforced as priority uses by Department of the Interior Secretarial Order 3356 (September 15, 2017). The need for action revolves around hunting as a priority use. The refuge is required to allow hunting that is compatible with the purposes of the refuge and consistent with State regulations where possible. Additionally, hunting is a healthy, traditional recreational use of renewable natural resources deeply rooted in America's heritage and can be an important wildlife management tool.

National wildlife refuges, including Canaan Valley NWR, conduct hunting programs within the framework of Federal, State, and refuge regulations. Hunters on the refuge are expected to be ethical and respectful of other hunters, non-consumptive visitors, wildlife, and the environment while on refuge lands.

The purpose of the refuge's hunting program is to provide opportunities for hunters to enjoy the refuge, to increase their understanding of the regional environmental importance of the refuge, and to be consistent with refuge management goals and objectives. Expanding hunting access on the refuge provides an opportunity to motivate visitors to value, support, and contribute to the refuge and the Refuge System and ultimately become better environmental stewards.

Department of the Interior Secretarial Order 3356, signed in 2017, directs the Service to enhance and expand public access to lands and waters on refuges for hunting, fishing, recreational shooting, and other forms of outdoor recreation. The proposed action would also promote priority public uses of the Refuge System and stewardship of our natural resources. It would increase public appreciation and support for the refuge by providing opportunities for visitors to hunt. To address the needs stated above, the proposed action would bring the refuge into compliance with the management guidance detailed in the orders, policy, and Federal law to "recognize compatible wildlife-dependent recreational uses as the priority general uses of the Refuge System" and "ensure that opportunities are provided within the Refuge System for compatible wildlife-dependent recreational uses" (16 U.S.C. 668dd (a)(4)). Finally, the proposed action would help to meet the statement of objectives detailed in the Hunting Plan.

This EA serves as the NEPA document which analyzes the impacts on environmental, cultural, and historical resources of expanding hunting opportunities on the refuge.

## **Alternatives**

### **Alternative A – No Action – Maintain Current Hunting Opportunities**

The No Action Alternative would continue the current refuge hunt program started in 1997. The refuge would continue to provide hunting opportunities for big game (white-tailed deer, black bear, and wild turkey), small/upland game (ruffed grouse, rabbit, hare, squirrel, coyote, fox, raccoon, bobcat, woodchuck, opossum and skunk) and migratory birds (waterfowl including ducks and geese, mourning dove, coot, rail, gallinule, snipe, and woodcock). No expansion or reduction of hunting programs would occur, and the program would be conducted as it currently is.

### **Alternative B – Expand Hunting Opportunities – Proposed Action Alternative**

The refuge has prepared a hunt plan which is presented in this document as the Proposed Action Alternative.

The refuge is currently open in alignment with State species that are found in Canaan Valley NWR. The main tract at Canaan Valley NWR totals 16,983 acres in West Virginia's Tucker and Grant Counties. Hunting is allowed on 97 percent of the refuge. Land within the approved acquisition boundary in the northern part of the refuge contains 2,466 acres, including the Big Cove area (441 acres) owned by the Service. This acreage, if acquired in the future, would be open to hunting for all current species. The Big Cove area is currently closed to the public because it is landlocked.

The refuge currently has two hunt blinds available for use by people with disabilities. One blind is located on Timberline Road, which has a gate and lock located on a small access road that

leads to the hunt blind. The other hunt blind is located on Beall South trail and would be moved to Plant Road for a better hunting experience. Another accessible hunt blind would be installed at the end of A Frame Road, which is mentioned in the 2011 Comprehensive Conservation Plan (CCP) as a photography/observation blind under Objective 4.3. Utilizing this blind for hunting as well would maximize use during most of the year and during hunt seasons.

Nationwide, there is concern about the bioavailability of spent lead ammunition (bullets) and sinkers on the environment, endangered and threatened species, birds (especially raptors), mammals, and other fish and wildlife susceptible to biomagnification. Lead shot and bullet fragments found in animal carcasses and gut piles are the most prevalent source of lead exposure (Kelly et al. 2011). Many hunters do not realize that the carcass or gut pile they leave in the field usually contains lead bullet fragments. Research on the effects of lead ammunition and the fragments it can deposit in killed game continues to be conducted. Avian predators and scavengers can be susceptible to lead poisoning when they ingest lead fragments or pellets in the tissues of animals killed or wounded by lead ammunition. Lead poison may weaken raptors and increase mortality rates by leaving them unable to hunt or more susceptible to vehicles or power line accidents (Kramer and Redig 1997). In a study of bald eagles and golden eagles admitted to the Raptor Rehabilitation Program at the College of Veterinary Medicine of Washington State University from 1991 to 2008, it was found that 48 percent of bald eagles and 62 percent of golden eagles tested had blood lead levels considered toxic by current standards. Of the bald and golden eagles with toxic lead levels, 91 percent of bald eagles and 58 percent of golden eagles were admitted to the rehabilitation facility after the end of the general deer and elk hunting seasons in December (Stauber 2010). The requirement of non-lead ammunition on the refuge after fall 2026 will help address concerns about the bioavailability of lead on the refuge.

The refuge would engage with partners such as Canaan Valley State Park and WVDNR to create a hunter/archer education course. A more detailed description of the Proposed Action Alternative can be found in the Hunting Plan.

We would continue to conduct hunting according to State and Federal regulations. Federal regulations pertaining to the Refuge System are in 50 CFR and found on the refuge hunt brochure. However, the refuge manager may, upon annual review of the hunting program, take the necessary steps to impose further restrictions, recommend that the refuge be closed to hunting, or further liberalize hunting regulations up to the limits of the State regulations. We would restrict hunting if it became incompatible with other priority refuge programs or endangered refuge resources or public safety.

#### *Measures to Avoid Conflicts:*

Hunters must have a current refuge hunt brochure/permit (signed) in their possession. This brochure contains rules specific to the refuge and provides a map of the areas to be hunted.

- Refuge boundaries and “no hunting” zones will be posted to the greatest extent possible.

- Law enforcement officers will randomly check hunters for compliance with Federal and State laws, as well as refuge specific regulations pertinent to hunting; and
- Information will be made available at the Canaan Valley NWR visitor center, at individual kiosks located in designated hunter parking lots, and online on our website at: [https://www.fws.gov/refuge/canaan\\_valley/](https://www.fws.gov/refuge/canaan_valley/).

The specific regulations listed under the Proposed Action Alternative were designed to prevent conflicts and negative impacts on refuge habitat while expanding opportunities on the refuge for hunting. Careful oversight by refuge staff would also mitigate impacts of implementing this expanded hunting program. The refuge manager reserves the right to close a unit to hunting or completely cease hunting should any adverse effects occur.

Hunting is a well-established activity at Canaan Valley NWR. Only minimal disturbances to most wildlife are expected since hunting occurs during the non-breeding season for birds, and most migratory species are already gone. Refuge hunting occurs from September through February, with the exception of minimal turkey hunting mid-April through mid-May, and the greatest number of hunters are anticipated in November and December.

Conflicts can arise between sportspeople and other refuge visitors, but are not substantial at the current levels of use. Some trail users, birdwatchers, and photographers may be impacted by the presence of hunters or noise, but public outreach and signs at trailheads are used to address most user group conflicts. Visitors utilizing the trails will be informed of the importance of wearing hunter orange during the firearms portion of the deer hunting season in the fall. Overall, refuge hunting is expected to have a continued positive impact by increasing community participation of distinct user groups at the refuge.

This Proposed Action Alternative offers increased opportunities for public hunting and fulfills the Service's mandate under the NWRSA. The Service has determined that the hunt plan is compatible with the purposes of Canaan Valley NWR and the mission of the Refuge System.

### **Affected Environment and Environmental Consequences**

This section is organized by affected resource categories and for each affected resource discusses both (1) the existing environmental and socioeconomic baseline in the action area for each resource and (2) the direct, indirect, and cumulative effects and impacts of the proposed action and any alternatives on each resource. The effects and impacts of the proposed action considered here are changes to the human environment, whether adverse or beneficial, that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action or alternatives. Cumulative impacts are defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. This EA focuses on written analyses of the environmental consequences on a resource only when the impacts on that resource could be more than negligible and therefore considered an "affected resource." Any resources that would not be more than negligibly impacted by the action may be dismissed from further analyses.

The refuge consists of approximately 27 square miles in Tucker and Grant Counties, West Virginia. Canaan Valley NWR is composed of three main habitat types; wetlands, upland early successional habitat, and upland forest. Habitat types found on the refuge are classified as 34 percent freshwater wetlands, 1 percent open water and riverine, and 65 percent upland forest. Hunting would occur in the northern portion of the refuge within mixed wetland and upland forest. (See map of the general area and proposed hunting area on the refuge in the Hunting Plan, Figure 1).

Table B-1 identifies those resources that either do not exist within the project area or would either not be affected or only negligibly affected by the proposed action. As such, these resources are not further analyzed in this EA.

**Table B-1. Potential for Adverse Impacts from Proposed Action and Alternatives**

<b>Resources</b>	<b>Not Applicable: Resource does not exist in project area</b>	<b>No/Negligible Impacts: Exists but no or negligible impacts</b>	<b>Greater than Negligible Impacts: Impacts analyzed in this EA</b>
Species to Be Hunted/Fished	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Non-Target Wildlife and Aquatic Species	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Threatened and Endangered Species and other Special Status Species	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Habitat and Vegetation (including vegetation of special management concern)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Geology and Soils	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Air Quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floodplains	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wilderness	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Visitor Use and Experience	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cultural Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Refuge Management and Operations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Socioeconomics and Environmental Justice	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Big Game**

*Affected Resource Description*

White-tailed Deer

In West Virginia, during the 2020 and January 2021 hunt seasons, deer hunters harvested a total of 106,861 deer in the combined deer seasons. This combined deer season harvest is the 30th highest total deer harvested on record for West Virginia. Canaan Valley NWR is in Tucker

County, which is in District 1 and hunters in District 1 harvested 1,646 deer in West Virginia during the 2020 combined seasons. According to the report, the deer harvest per square mile of habitat is 4.09 for Tucker County (WVDNR 2020). WVDNR and the Service conducted a distance sampling survey in 2020. The results of that survey indicated that the average density on Canaan Valley NWR is 58 deer per square mile. According to WVDNR biologists this data collected this year and last year suggests a density of deer and proportional to habitat composition on the refuge as a whole (Skelly 2020).

### Wild Turkey

The statewide turkey population is estimated at approximately 140,000 individuals in 2020. Hunters harvested 11,320 bearded turkeys in West Virginia during the 2020 spring gobbler season. In District 1, 86 wild turkeys were harvested during spring season and 18 wild turkeys were harvested during the fall season (WVDNR 2020).

### Black Bear

In recent years, West Virginia has shifted management strategies from increasing the bear population to stabilizing population growth or reducing bear numbers in some management units. West Virginia hunters harvested 3,541 bears during the combined 2020 archery and firearms season. In District 1, 98 black bears were harvested during the combined 2020 seasons (WVDNR 2020).

### *Anticipated Impacts*

#### **No Action Alternative**

Current hunting of white-tailed deer, wild turkey, and black bear would continue to be permitted in designated areas of the refuge in accordance with State seasons and regulations. It is estimated that during the 2020-2021 hunt season, 3,500 big game hunt visits were made to the refuge. Under the No Action Alternative, current levels of hunter participation and harvest would be expected to remain the same as no new opportunities would be provided.

#### **Proposed Action Alternative**

Under the Proposed Action Alternative, the refuge would continue to provide the public with the opportunity to hunt on Canaan Valley NWR. An additional 2,466 acres would be open to hunting of white-tailed deer, wild turkey, and black bear. These lands include Big Cove, 441 acres which has been landlocked and not accessible to the public. With the acquisition of 2,025 acres surrounding it, hunters would have access to this area. Expanded hunting opportunities for white-tailed deer would enhance the experience and allow for more deer to be harvested. Estimations of big game visits are 1,548 hunters per year according to the 2019 Refuge Annual Performance Plan (RAPP). An estimated additional 200 deer, 12 turkeys, and 20 bears would be harvested as the result of this expansion. The estimated additional number of hunters would be around 50.

Refuges, including Canaan Valley NWR, conduct the refuge hunting program within the framework of State and Federal regulations. WVDNR sets hunting frameworks based on species' populations and monitored harvests. The proposed refuge hunting regulations will be the same as, or more restrictive than, hunting regulations throughout the State. By maintaining hunting regulations that are the same as or more restrictive than the State, the refuge can ensure that they

are maintaining seasons that are supportive of management on a more regional basis. Such an approach also provides consistency with large-scale population status and objectives.

### **Small/Upland Game**

#### *Affected Resource Description*

##### Ruffed Grouse

The population status of ruffed grouse is declining according to WVDNR and neighboring states. Pennsylvania is coming up on the last year of a 10-year grouse population management plan. The decrease in amount of early successional habitat favored by grouse and impacts from West Nile Virus are major factors affecting grouse populations (Stauffer et. al. 2018). The research has shown that the impact to be greater in lower elevations versus the mountainous areas of Tucker County.

##### Rabbits and Hare

The population status of the species of lagomorphs occurring in the Valley is varied. The Eastern cottontail population is stable, but the Appalachian cottontail population is less known, and the snowshoe hare is at the southern end of its range (USFWS 2011). Studies were conducted on these species around 1974 and refuge staff conducted harvest surveys from 2002 to 2005 (only 16 rabbits and one hare were harvested). Information on population levels of this species is limited due to lack of surveys or inventory on the refuge. Hunters occasionally hunt snowshoe hare but harvest information is not obtained.

##### Squirrels

Red squirrels are the most common species of squirrel on the refuge. Most squirrels, like gray and fox squirrels, prefer habitats with oak and hickory forests which are not present on Canaan Valley NWR. Upland forests on the refuge have black cherry, hawthorn, sugar maple, and birch trees. Local population data are not available for these species.

##### Raccoons, Foxes (Red and Gray), and Bobcats

Raccoons, red fox and gray fox, and bobcats occur in the Valley. Relative abundances are considered common, more so for raccoon and bobcat. There are no density estimates for any of these species (Roger, Pers. comm. 2021). Refuge staff have observed the presence of all these species on the refuge.

##### Coyote

The estimated statewide coyote population according to WVDNR is 11,000 to 12,000 individuals. Several visual and auditory observations of coyote have been observed by refuge staff, but local population data are unavailable.

##### Opossum, Woodchuck, and Skunk

Hunting for opossum, woodchuck, and skunk in the Valley or elsewhere in West Virginia is almost always incidental to hunting other species. Skunk populations in the valley are small and not frequently seen by refuge staff. The populations of opossum and woodchuck are unknown in the valley.

#### *Anticipated Impacts*

### **No Action Alternative**

Under this alternative, hunting of small/upland game as described above would continue to be permitted in designated areas of the refuge in accordance with State regulations. Refuge staff do not have an accurate description of the number of hunters per species, but ruffed grouse hunters are more numerous than others. Total number of hunters for all species using the refuge is estimated to be 2,300 to 2,700 annually. Estimations of upland game visits are 132 hunters which include some of these species based on the 2019 RAPP. Hunting for all species will continue to be in accordance with State regulations for seasons and harvest limits for all species listed here. Under the No Action Alternative, current levels of harvest would be expected to be maintained annually.

### **Proposed Action Alternative**

Under the Proposed Action Alternative, the refuge would continue to provide the public with the opportunity to hunt on Canaan Valley NWR. An additional 2,466 acres (if acquired) would be open to hunting of all game species described above. These lands include Big Cove which has been landlocked and not accessible to the public. With the acquisition of 2,025 acres surrounding it, this would give hunters access to the area.

According to the State, these species are common (WVDNR, personal communication). While following State regulations, hunting would continue in accordance with State seasons and regulations. Harvest information has been difficult to obtain due to limited refuge staff and reporting efforts for certain species. Opening additional lands to hunting would likely result in only a small increase in hunter participation and harvest, so the Proposed Action Alternative is unlikely to have any significant impact to local or regional populations.

### **Migratory Game Birds**

#### *Affected Resource Description*

Waterfowl are managed by flyways, which follow the major migratory routes. Their population trends are monitored by the Service through the collection of data including band recoveries, hunter questionnaires, wing returns, breeding population and habitat surveys, and mid-winter waterfowl surveys (Caithamer and Dobovsky, 1995). The migratory waterfowl in Canaan Valley are a very small part of a large population of birds that are managed by the Service on a flyway basis under the Migratory Bird Treaty Act.

#### American Woodcock

The American woodcock is a popular migratory game bird for hunting in West Virginia and throughout the northeastern United States. Woodcocks are managed by the Service with data collected from annual wing collection surveys, Harvest Information Program (HIP), and singing ground surveys. The Service divides the woodcock into populations or management units (Eastern and Central) in North America. The boundary between the two regions is the boundary between the Atlantic and Mississippi flyways. The refuge is in the Eastern unit and serves as one of West Virginia's largest concentrations of woodcock (USFWS 2019).

#### Waterfowl

The refuge has small numbers of breeding waterfowl including American black duck, mallard, wood duck, and Canada goose. Of the species present on the refuge, black ducks are the only

species of management concern listed by the Service. Black ducks have been surveyed in the Eastern Survey Area of the United States. Recent average population size estimates of 701,000 were recorded between 2008 and 2017 (USFWS 2018). Black ducks are also listed by the WVDNR as a species of special concern (S2B: very rare or imperiled) due to the restricted habitat available for this species in the State.

#### Rails, Gallinule, and Coot

Different rail species are occasionally observed on the refuge, but accurate population numbers are unknown. Breeding records on the refuge are available only for Virginia rail. The harvest of these species is likely incidental when waterfowl hunting.

#### Mourning Dove and Snipe

The occurrence of either of these species is dependent upon habitat conditions, weather patterns, and factors affecting their migratory behavior. In Canaan Valley, neither of these species are abundant and few hunters target these species intentionally.

#### *Anticipated Impacts*

##### **No Action Alternative**

Migratory birds are managed on a flyway basis and hunting regulations are established in each State based on flyway data. Federal and State regulations would apply in the refuge waterfowl hunt. Hunting migratory game birds on the refuge would reduce the total numbers of birds in the Atlantic Flyway, but harvest would be within allowable limits as determined by the Service annually. Disturbance to non-target birds and resident wildlife would likely occur from hunting and associated hunter activity but would be short-term and temporary.

The number of woodcock hunters is large enough to cause a decline in the overall population of American woodcock. Harvest limits are set in collaboration with the Service, Migratory Birds, State wildlife agencies, and other partners to ensure the number of hunters would not have negative impacts to the population.

Under this alternative, hunting of migratory game birds as described above would continue to be permitted in designated areas of the refuge. Refuge staff do not have an accurate number of hunters pursuing each species, but American woodcock hunters are more numerous than the other species overall. Total number of hunters for all species listed above is estimated to be 10 waterfowl visits and 216 other migratory game bird visits in 2019, based off the 2019 RAPP. Hunting regulations would continue to be in accordance with State regulations on seasons and harvest limits for all species listed here. Under the No Action Alternative, current levels of harvest would be expected to be maintained.

##### **Proposed Action Alternative**

Under the proposed action, more acreage would be opened to migratory bird hunting. Expanded hunting opportunities for migratory game birds would allow for more opportunities for a quality hunt experience. An estimated 15 waterfowl, 12 American woodcock, and minimal harvest of rails, gallinules, coots, mourning doves, or snipes would be harvested as the result of this expansion. Opening of additional lands to hunting would likely result in only a small increase in hunter participation and harvest of any of the species.

The Service believes that due to the time of year in which it is allowed, hunting on the refuge will not add significantly to the cumulative impacts of migratory bird management on local, regional, or flyway populations because the percentage likely to be taken on the refuge, though possibly additive to existing hunting takes, would be a tiny fraction of the estimated populations. In addition, overall populations will continue to be monitored and future harvests will be adjusted as needed under the existing flyway and State regulatory processes. Several points support this conclusion: (1) the proportion of the national waterfowl harvest that occurs on national wildlife refuges is only 6 percent (Service 2013); (2) there are no populations that exist wholly and exclusively on national wildlife refuges; (3) annual hunting regulations within the United States are established at levels consistent with the current population status; (4) refuges cannot permit more liberal seasons than provided for in Federal frameworks; and (5) refuges purchased with funds derived from the Federal Duck Stamp must limit hunting to 40 percent of the available area. As a result, changes or additions to hunting on the refuge will have minor impacts on wildlife species in West Virginia. Although the Proposed Action Alternative will increase hunting opportunities compared to the No Action Alternative A, the slight increase in hunter activity will not rise to a significant cumulative impact locally, regionally, or nationally.

### **Non-Target Wildlife and Aquatic Species**

#### *Affected Resource Description*

Canaan Valley is home to a diversity of wildlife in meadow, forest, riparian, and wetland habitats. There are 286 fish, amphibian, reptile, mammal and bird species that are known or expected to occur. Most of the wildlife on the refuge are associated with boreal forested habitats typical of northern latitudes. High elevation and expansive wetland complexes provide habitat for species like fisher, saw whet owl, and mink. Some of the species found here that are non-target wildlife include raptors, non-passerines, passerines, reptiles, amphibians, invertebrates, and numerous fish.

A total of 30 species of fish occur in the rivers, streams, and beaver ponds of the refuge and the Blackwater River drainage. Large-mouth bass, rainbow trout, brook trout, brown trout, bluegill, creek chub, and various kinds of minnows make up most of the population of fish.

A total of 18 species of amphibians and 10 species of reptiles are known to occur on the refuge. Wetland habitats are great areas for wood frogs, American toads, and spotted salamanders to breed, reproduce, and thrive. Several amphibians such as the spotted, red-backed, Northern slimy and Wehrle's salamanders are found in the wooded habitat.

A total of 50 species of mammals occur on the refuge. In the upland habitats of Canaan Valley, several species such as the long-tailed weasel, fisher, southern rock vole, and various voles can be found. In the wetland habitats, such species as muskrat, mink, and Southern bog lemming can be found living here. In addition, species listed above for hunting are found here as well. Migratory birds are known to pass through the valley and have been well documented by point counts, bird banding stations, and recreational birders. There are at least 181 bird species recorded to occur on the refuge. Through refuge land bird point counts, a total of 104 bird species have been recorded breeding on the refuge. The refuge lies within Bird Conservation

Region (BCR) 28 located in the Appalachian Mountain region. One third of these species have been documented in the sparrow family.

#### *Anticipated Impacts*

##### **No Action Alternative**

Under this alternative, the current hunting program would be maintained with 16,302 acres of refuge lands open to hunting, according to Federal, State, and refuge regulations. Some wildlife may be disturbed, displaced, or distressed as hunters walk, discharge firearms, or use hunting dogs on the refuge. Disturbance to birds is expected to be minimal, since most breeding activities occur from April to August when only a small number of turkey hunters are hunting. Short-term disruptions to wildlife including frogs, bats, and some mammals are expected to be minor. This alternative results in some short-term but negligible negative impacts to species mentioned where human access for hunting occurs.

##### **Proposed Action Alternative**

Under the Proposed Action Alternative, the refuge would continue to provide the public with hunting opportunities in alignment with State regulations. Some wildlife may be disturbed, displaced, or distressed as hunters walk, discharge firearms, or use hunting dogs on the refuge. Disturbance to birds is expected to be minimal, since most breeding activities occur from April to August when only a small number of people are hunting turkey. Short-term disruptions to wildlife including frogs, bats, and some mammals are expected to be minor.

Positive impacts from harvesting fox, raccoon, and coyote include reduced nest predation and improved resource competition for other refuge wildlife (Fletcher et al 2010, Pieron, M.R. et al 2012). This alternative would result in some short-term but negligible negative impacts to species mentioned where human access for hunting occurs.

#### **Threatened and Endangered Species, and Other Special Status Species**

##### *Affected Resource Description*

Three federally listed endangered or threatened bat species can be found on or adjacent to the refuge: the endangered Indiana bat (*Myotis sodalis*), endangered Virginia big-eared bat (*Corynorhinus townsendii virginianus*), and threatened Northern long-eared bat (*Myotis septentrionalis*). The federally threatened Cheat Mountain salamander (*Plethodon netting*) can be found on and adjacent to the refuge, and the candidate monarch butterfly (*Danaus plexippus*) have been documented on the refuge. The West Virginia northern flying squirrel (*Glaucomys sabrinus fuscus*) which occurs in refuge forests was delisted as an endangered species in March 2013. The bald eagle (*Haliaeetus leucophalus*), delisted in August 2007, uses the refuge during the breeding and migration seasons. The small whorled pogonia (*Isotria medeoloides*) is threatened and its range overlaps with the refuge, but it has not been documented on the refuge.

#### *Anticipated Impacts*

##### **No Action Alternative**

Under this alternative, the current hunting program would be maintained with 16,302 acres of refuge lands open to hunting, according to Federal, State, and refuge regulations. Some wildlife may be disturbed, displaced, or distressed as hunters walk, discharge firearms, and/or use hunting dogs on the refuge. Short-term disruptions to species like West Virginia Northern flying

squirrel and bats (Indiana, Virginia big-eared, and Northern long-eared) are expected to be minor. During the months that hunters are actively hunting, Cheat Mountain salamanders are found beneath the surface and are torpid. Hunting is likely to have minimal effect on these species given the time of year the activities take place and where hunting occurs.

### **Proposed Action Alternative**

Under the Proposed Action Alternative, the refuge would continue to provide the public with the opportunity to hunt on Canaan Valley NWR. Some wildlife may be disturbed, displaced, or distressed as hunters walk, discharge firearms, and/or use hunting dogs on the refuge. No additional disturbance to bats (Northern long-eared, Indiana, and Virginia big-eared) is expected, since most of the roosting, feeding, and breeding activities occurs from April to August, outside of the refuge hunting season. Short-term disruptions to threatened and endangered species are expected to be minor.

Cheat Mountain salamanders can be found in high elevation forested habitat, and it is likely they are restricted to cooler mountain slopes and ridges. These species are not active during the time of day and year that hunting will occur.

Areas open to hunting are not expected to affect Indiana bats, Virginia big-eared bats, or Northern long-eared bats because hunters are accessing the refuge when the bats are not present. Hunting is only allowed from September to January, with a short spring turkey season. The bats primarily use mines and caves in the winter to hibernate and use upland forests to forage and roost throughout the rest of the year. Bat species may occur in some areas in the hunting zones, and may be disturbed if hunters walk through an area or use their roost trees for stand placement. Bats are typically nocturnal and inactive during hunting seasons and times, and not present for most of the hunting seasons; therefore, disturbance would be highly unlikely. Potential disturbances from expanded hunting, such as an increase in gun noise or additional portable tree stands, would likely not rise to the level of take. Tree climbing and placing portable tree stands, or noise from firearms, could flush roosting bats from the trees, but it is more likely that the bats would remain in the tree than be flushed, and instances of flushing would not result in bat mortality. There is no hunting near any cave or mine where bats could hibernate (known as hibernaculum), and hunting programs would not result in any tree cutting or other habitat alteration. Therefore, hunting will likely have little impact on these listed species.

The negative impacts of lead on wildlife are documented and clear (Golden et al. 2016). To move towards reduction and future elimination of this threat on the refuge, we will be eliminating the use of lead ammunition over a 4-year period to educate and work with hunters on the use of non-lead alternatives. The phased transition to non-lead ammunition for all hunting will minimize the inadvertent exposure and subsequent lethal or sub-lethal impacts to wildlife, including bald and golden eagles, as well as other scavenging species. Eagles and other scavengers can be susceptible to lead poisoning when they ingest lead fragments or pellets in the tissues of animals killed or wounded by lead ammunition.

Lead shot and bullet fragments found in animal carcasses and gut piles are the most likely source of lead exposure. Many hunters do not realize that the carcass or gut pile they leave in the field usually contains lead bullet fragments. Research will continue on the effects of lead ammunition

and the fragments it can deposit in killed game. Avian predators and scavengers can be susceptible to lead poisoning when they ingest lead fragments or pellets in the tissues of animals killed or wounded by lead ammunition. Lead poison may weaken raptors and increase mortality rate by leaving them unable to hunt, or more susceptible to vehicles or power line accidents. The bioaccumulation of lead is a potential concern, but it does not likely present a significant issue on this refuge, as: 1) non-lead shot is currently required for hunting waterfowl; 2) we are proposing a 4-year phase out to the use of lead ammunition for all species by 2026; 3) the refuge strongly encourages use of non-lead alternatives for hunting big or upland game for the next 4 years; 4) we will educate hunters and the public to the potential adverse impacts of lead; and 5) the updated hunting activities are not likely to introduce substantially more lead into the environment over existing amounts with the current or proposed hunting program. Some hunters will also choose non-lead methods of take such as archery.

We anticipate the amount of lead introduced on the refuge to decline with our proposed measures. Therefore, the scarce amount of lead introduced on this refuge from updated hunting activities is not likely to adversely affect the salamander or bat species because those species will not be present or active in the refuge hunting areas during the hunting seasons. Furthermore, these species are not scavengers and therefore will not be impacted by bioaccumulation of lead or lead fragments in gut piles left on the refuge after hunting seasons.

As the foraging ecology of the bats (i.e., eating flying insects) is known, the only way the species would be exposed to lead from hunting is through bioaccumulation from herbivorous insects. Such prey (and only some of their prey are herbivorous) could eat plants that have taken up lead from the soil, but it is unlikely because plants only uptake lead when it is in soil in highly concentrated levels and the proposed hunting expansion would not introduce enough lead for that possibility. Current and proposed levels of hunting, along with non-lead alternative education, would not result in lead levels toxic to any threatened or endangered species that occur on the refuge.

Monarch butterflies use refuge grasslands, old fields and roadsides during spring and fall migration as well as during the spring breeding season. Hunting is allowed from September to February, with a short spring turkey season. Hunting has not been shown to have negative impacts on monarch breeding or migration. While hunters and their dogs, used only during some bird and bear seasons, are walking through habitat used by monarchs there could be some impacts. These negligible impacts are primarily from September to mid-November and during the short spring turkey season, when monarchs are passing through and plants have senesced. Therefore, the proposed acres addition for hunting is not likely to adversely affect monarch butterflies.

### **Habitat and Vegetation**

#### *Affected Resource Description*

Canaan Valley has three major types of habitats that make up the largest percentage of refuge habitats including wetlands, upland early successional habitat, and upland forest. Within wetlands, there are shrub wetlands, open water, and herbaceous wetlands. Common species found here are speckled alder, meadowsweet shrub, chokeberry, bushy St. John's wort, soft stem bulrush, rice cutgrass, star sedge, and cottongrass fen. Within upland early successional habitat,

there are grasslands, shrublands, and old fields. Common species found here are meadowsweet spiraea, bushy St. John's wort, hawthorns, goldenrod, and sheep fescue. Within upland forests, there are Northern hardwoods and conifer/mixed forests. Common species found here are black cherry, striped maple, red spruce, hemlock, yellow birch, and mountain laurel. With the diversity of plant species within the refuge, there are finer habitat types located within these broader habitat types. All hunting of big game, small/upland game and migratory game birds occur in these three habitat types on the refuge.

### *Anticipated Impacts*

#### **No Action Alternative**

Some impacts to vegetation include hunters walking off-trail, setting up temporary tree stands, and scouting for deer. Different hunters, like ruffed grouse hunters, will usually stick to upland and grassland habitats. Most of the hunting for both white-tailed deer and ruffed grouse occurs during the time when plants are entering dormancy. Positive effects on the vegetation would result from a reduction in the white-tailed deer population. Continuing to allow hunters on Canaan Valley NWR, specifically for deer hunting, would at least maintain the habitat as it is now and prevent further degradation due to overbrowsing. Well-managed hunting can effectively control deer and produce dramatic changes in the forest vegetation (Behrend, et. al., 1970). In summary, there would be few if any negative impacts from this use on the refuge's vegetation, but there would be beneficial impacts from the decrease of deer browsing on the refuge's vegetation.

#### **Proposed Action Alternative**

The effects of hunting the same species on additional acres for vegetation and soils would be minimal as hunters are dispersed widely across the refuge with many entry points. Only minor effects to vegetation from walking off-trail or trampling are expected. Since all-terrain vehicles and tree cutting are not allowed, and most plants are entering dormancy, minimal impacts are expected. There may be an increase in the potential spread of invasive plant species as a result of their existence on the newly acquired areas, including garlic mustard and Japanese stilt grass. This is expected to impact native vegetation and would need to be managed yearly to reduce the impact. The physical effects on the refuge wetland and upland vegetation are expected to be minimal during the majority of the hunting season. Most of the hunting takes place between September and January when plants are dormant. Potential impacts would come from turkey hunters trampling on vegetation from mid-April to mid-May if hunter participation is numerous. We anticipate these effects would be minimal given anticipated levels of use.

### **Geology and Soils**

#### *Affected Resource Description*

Canaan Valley NWR lies in the high plateau zone of the Allegheny Mountains. It has an average elevation of 3,200 feet above sea level. Pottsville sandstone forms the ridges surrounding the Valley with younger sandstones, shale, and coal of the Mauch Chunk and Pottsville groups lying underneath (USFWS 2011). There are several types of soils divided into five physiographic categories. The majority of the soils vary from well drained or excessively drained to very poorly drained. Canaan Valley has the largest expanse of wet terrace land and muck and peat soils in Tucker County (USFWS 2011).

### *Anticipated Impacts*

#### **No Action Alternative**

Under this alternative, the current hunting program would be maintained with 16,302 acres of refuge lands open to hunting, according to Federal, State, and refuge regulations. The physical effects of hunting on refuge geology and soils are expected to be minimal during the majority of the hunting season. The physical impacts of hunters and hunting dogs trampling refuge soils is expected to be insignificant due to the soil being partially or completely frozen or snow-covered.

#### **Proposed Action Alternative**

Under the Proposed Action Alternative, hunting would continue to be allowed on Canaan Valley NWR. The physical effects of hunting on refuge geology and soils are expected to be minimal during the majority of the hunting season. The physical impact of hunters and hunting dogs trampling refuge soils on the additional land proposed to open for hunting is expected to be insignificant due to the soil being partially or completely frozen or snow-covered.

### **Visitor Use and Experience**

#### *Affected Resource Description*

Canaan Valley NWR is open to all six priority public uses outlined in the Refuge Improvement Act of 1997 (hunting, fishing, wildlife observation, wildlife photography, environmental education, and interpretation). Based on the 2017 Banking on Nature Report, less than 1 percent of refuge visits were for hunting, 38 percent of refuge visits were for hiking or biking, and 97 percent of refuge visits were for non-consumptive uses (USFWS 2017).

The number of hunters using the refuge has been consistently around 2,300 to 2,700 annually. As mentioned in the 2011 CCP, the refuge would maintain two accessible hunt blinds for persons with disabilities. A reservation system would continue to be used to monitor the number of hunters, time spent in the blind, and the overall quality of access for all hunters. The blinds are currently located on Timberline Road and the Beall South trail. The refuge proposes to move the accessible hunt blind from the Beall South trail to Plant Road. Another location is at the end of A Frame Road as a photography/observation blind along the trail at the end of the road. The location will be evaluated by refuge staff to utilize it as an accessible hunt blind as well. Since hunting season goes from September through February, this blind could serve two purposes based on the time of year it would be utilized for hunting purposes.

### *Anticipated Impacts*

#### **No Action Alternative**

Hunting, especially for species like white-tailed deer and American woodcock, is a traditional activity during the fall in West Virginia. Typical complaints received are associated with conflicts arising with other hunters. In addition, another concern was lack of hunter orange worn by other visitors utilizing the trails. To address safety concerns of both hunters and other visitors using the trails, refuge staff have increased signage, messaging, and even provided hunter orange vests upon request for use by refuge visitors. With the precautionary measures in place, minimal impacts to visitor use and experience are expected.

#### **Proposed Action Alternative**

Under the Proposed Action Alternative, the refuge would continue to provide the public with the opportunity to hunt on Canaan Valley NWR. Continued hunter presence and use during the regular refuge hunting timeframe (September through February, mid-April to mid-May) is not expected to significantly increase the number of conflicts among user groups. Most hunter-to-hunter conflicts are expected to be minor and can be managed by law enforcement. Conflicts that arise with other user groups are expected to be minor and can be managed through outreach, trail closures, messaging about importance of hunter orange during hunting season, and signage. If conflicts do arise, mitigation efforts would be designed and implemented to lessen impacts to other wildlife-dependent user groups. Acquisition of additional acreage that will be acquired will follow the same guidance as stated in this hunting plan.

## **Cultural Resources**

### *Affected Resource Description*

Canaan Valley is Massawomeck ancestral land. The Massawomeck people were avid travelers and used this large territory to cultivate food and trap animals. In the 1500s and early 1600s, European colonization and regional tribal conflict caused their population to decline. The last documented mention of the Massawomecks occurred in the mid-1600s. In 2002, the Mid-Atlantic Archaeological Research, Inc. located the only known prehistoric archaeological site on the refuge. This site yielded sparse chert flakes. These chert flakes will be placed in the visitor center for display for the public providing an opportunity to learn about the indigenous people that first inhabited this landscape. A reconnaissance overview was completed in 2007 which notes that due to extensive timbering, farming, and fire history of Canaan Valley, many sites on the valley floor may be heavily disturbed. In collaboration with Tucker County Highlands History and Education Project, refuge staff conducted several investigations on Canaan Valley and early settlement history. Results of that field research were several headstones, foundations, and old home sites that are on refuge lands.

### *Anticipated Impacts*

#### **No Action Alternative**

It is Service policy to preserve the cultural, historic, and archaeological resources in the public trust, and avoid any adverse effects wherever possible. Section 106 of the National Historical Preservation Act of 1966, as amended, required the Service to evaluate the effects of any of its actions on cultural resources (historic, architectural, and archaeological properties) that are listed or eligible for listing in the National Register of Historic Places. Current hunting programs on the refuge do not have any adverse impacts to cultural resources on the refuge.

#### **Proposed Action Alternative**

Although hunters would be able to access parts of the refuge that are closed to the public, this access is not expected to increase disturbance to cultural resources. Since the new acreage, if acquired, is new to the Service but hunting has been allowed prior to Service ownership, consultation with the Regional Archaeologist would occur. After consultation, if cultural resources are expected in the area, then refuge staff would ensure they are protected, following Service policy.

## **Refuge Management and Operations**

### *Affected Resource Description*

Canaan Valley NWR is located along Highway 32 in Tucker County, Davis, West Virginia. The facilities located here include an administrative office/visitor center, shop, pole shed, above-ground fuel tanks, and parking areas. Along Freeland Road are the Freeland Boardwalk and the three-bedroom house used for seasonal interns. Along the 31 miles of trails are wooden kiosks located at the trail heads for information for hunters and other visitors. An additional building is located on Promise Land Road and is used for cold storage. Located on River's Edge Trail, off the Brown Mountain parking lot is a canoe/kayak launch called Laurel Landing. Several parking areas are located along roads such as A Frame Road, Camp 70, Forest Road 80, Timberline Road and Beall Lane.

### *Anticipated Impacts*

#### **No Action Alternative**

Hunters currently use refuge infrastructure such as parking areas, trails, and roads to gain access to a portion of refuge lands. Most refuge lands are accessible by road, while the canoe/kayak launch allows for access to the interior of the refuge without having to walk far. The impacts to refuge infrastructure from hunting are short-term and negligible under the existing program.

#### **Proposed Action Alternative**

While increased hunter opportunity is anticipated, impacts to the local public roads are expected to be negligible. A Frame Road has a three-way roadway use agreement between the owners. The understanding is that each owner will contribute fairly to the repairs as needed for the road. Refuge staff maintain the roads on the refuge. Additional operating costs are expected to be minimal for expanding refuge hunting opportunities as the infrastructure are already in place. The total estimated costs to implement the proposed action remains relatively unchanged at \$9,910.

### **Socioeconomics and Environmental Justice**

#### *Affected Resource Description*

The refuge is in a rural area with smaller towns like Oakland, Maryland (1,745 people) and Elkins, West Virginia (7,072 people) less than 40 miles away. Larger metropolitan areas like Pittsburgh, Pennsylvania, Washington DC, and Charleston, West Virginia are within driving distance of Canaan Valley NWR. With newly constructed road systems like Corridor H, access to the refuge is within a day's drive of these metropolitan areas. The refuge contributes directly to the local economy through annual revenue shared payments to each county, based on Congressional appropriations, land acquisition, and proceeds.

The refuge contributes indirectly to the local economy by providing invaluable recreational opportunities to residents, tourists, and travelers. A NWR visitor survey from 2018 showed that the top three activities visitors participated in during the prior 12 months were hiking (89 percent), wildlife observation (66 percent), and bird watching (39 percent). According to a report titled "The Economic Contributions of Recreational Visitation at Canaan Valley National Wildlife Refuge," the contribution of recreational spending in local communities was associated with about 33 jobs, \$705,000 in employment income, \$251,000 in total tax revenue, and \$2.7 million in economic output (USFWS 2019).

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires all Federal agencies to incorporate environmental justice into their mission by identifying and addressing disproportionately high or adverse human health or environmental effect of their programs and policies on minorities and low-income populations and communities.

#### *Anticipated Impacts*

##### **No Action Alternative**

The current program has a long-term beneficial impact to the local economy. It also serves the public with hunting opportunities that are free of charge and a method of providing food for low-income families.

##### **Proposed Action Alternative**

For the proposed alternative, hunters would continue to use the existing infrastructure to access hunting areas and there would be little, if any, additional impact to the local economy as a result of expanding the acreage open to hunting.

The Service has not identified any potential high and adverse environmental or human health impacts from this proposed action or any of the alternatives. Minority or low-income communities would not be disproportionately affected by any impacts from this Proposed Action or any of the alternatives.

##### **Monitoring**

Many game species populations are monitored by the State agencies through field surveys and game harvest reports if collected, which provide an additional means for monitoring populations. The State has determined that populations of these game species are at levels acceptable to support hunting and these assessments are reviewed and adjusted periodically. The refuge will be adaptive towards harvest management under the current hunt program to ensure species and habitat health. Refuge-specific hunting regulations may be altered to achieve species-specific harvest objectives in the future.

##### **Summary of Analysis**

The purpose of this EA is to briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

##### **Alternative A – No Action Alternative**

There would be no additional costs to the refuge under this alternative. There would be no change to the current public use and wildlife management programs on the refuge. There would not be an increase in economic impacts to local economies. New hunting opportunities would not be created under this alternative. This alternative has negligible short-term impacts to physical and biological resources. This alternative would reduce our actions as mandated under the NWRSA and Secretarial Order 3356.

##### **Alternative B – Proposed Action Alternative**

This alternative is the Service's proposed action because it offers the best opportunity for public hunting that would result in a minimal impact on physical and biological resources, while meeting the Service's mandates under NWRSA and Secretarial Order 3356. The Service believes that hunting on the refuge will not have a significant impact on local, regional, or flyway migratory bird populations because the percentage likely to be taken on the refuge, though possibly additive to existing hunting takes, would be a tiny fraction of the estimated populations. In addition, overall populations will continue to be monitored and future harvests will be adjusted as needed under the existing flyway and State regulatory processes.

Additional hunting would not add more than slightly to the cumulative impacts stemming from hunting at the local, regional, or flyway levels, and would only result in minor, negative impacts to migratory bird or other species populations. This alternative best meets the purpose and need stated earlier. This alternative best meets the purpose and need stated earlier.

### **List of Sources, Agencies and Persons Consulted**

#### West Virginia Division of Natural Resources

Cliff Brown – Refuge Liaison to WVDNR

Rich Rogers – Furbearer Program Coordinator

Steve Rauch – District I Wildlife Biologist

### **List of Preparers**

Ron Hollis, Refuge Manager

Dawn Washington, Wildlife Biologist

Matthew Boarman, Assistant Refuge Manager

Wilson Darbin, Visitor Services Assistant

Stacey Lowe, Regional Hunting and Fishing Chief

Tom Bonetti, Hunting and Fishing Coordinator

Laura Kelly, Cover Graphics

### **State Coordination**

Canaan Valley NWR and WVDNR staff work together to ensure safe and enjoyable recreational hunting opportunities. In the past 4 years, these staff have expanded hunting opportunities on over 700 acres of refuge property, reduced redundancy in regulations, increased awareness to hunter education, and created avenues for work in the future. On May 5, 2021, the refuge manager met with WVDNR liaison to coordinate the draft proposed hunt plan. The draft hunt plan will incorporate any further comments received from the State.

### **Public Outreach**

The refuge maintains a mailing list of local newspapers, radio, television stations, and websites for news releases. Special announcements and articles may be released in conjunction with hunting seasons. In addition, information about the hunt program will be available at our visitor center and on the Canaan Valley NWR website and Facebook page.

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## **CULTURAL RESOURCES**

- American Indian Religious Freedom Act, as amended, 42 U.S.C. 1996 - 1996a; 43 CFR Part 7.
- Antiquities Act of 1906, 16 U.S.C. 431-433; 43 CFR Part 3.
- Archaeological Resources Protection Act of 1979, 16 U.S.C. 470aa-470mm; 18 CFR Part 1312; 32 CFR Part 229; 36 CFR Part 296; 43 CFR Part 7.
- National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470-470x-6; 36 CFR Parts 60, 63, 78, 79, 800, 801, and 810.
- Paleontological Resources Protection Act, 16 U.S.C. 470aaa-470aaa-11.
- Executive Order 11593 – Protection and Enhancement of the Cultural Environment, 36 Fed. Reg. 8921 (1971).

## **FISH AND WILDLIFE**

- Bald and Golden Eagle Protection Act, as amended, 16 U.S.C. 668-668c, 50 CFR 22.
- Endangered Species Act of 1973, as amended, 16 U.S.C. 1531-1544; 36 CFR Part 13; 50 CFR Parts 10, 17, 23, 81, 217, 222, 225, 402, 450.
- Fish and Wildlife Act of 1956, 16 U.S.C. 742a-m.
- Lacey Act, as amended, 16 U.S.C. 3371 et seq.; 15 CFR Parts 10, 11, 12, 14, 300, and 904.
- Migratory Bird Treaty Act, as amended, 16 U.S.C. 703-712; 50 CFR Parts 10, 12, 20, and 21.
- Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds, 66 Fed. Reg. 3853 (2001).

## **NATURAL RESOURCES**

- Clean Air Act, as amended, 42 U.S.C. 7401-7671q; 40 CFR Parts 23, 50, 51, 52, 58, 60, 61, 82, and 93; 48 CFR Part 23.
- Wilderness Act, 16 U.S.C. 1131 et seq.
- Wild and Scenic Rivers Act, 16 U.S.C. 1271 et seq.
- Executive Order 13112 – Invasive Species, 64 Fed. Reg. 6183 (1999).