



U.S. Fish and Wildlife Service

Great Dismal Swamp National Wildlife Refuge

Hunting Plan

August 2021



Lake Drummond shoreline at Great Dismal Swamp NWR/USFWS

Appendix A – Hunting Compatibility Determination

Appendix B – Environmental Assessment

Appendix C – Intra-Service Section 7 Evaluation

Appendix D – Public Comments and Responses

Appendix E – Finding of No Significant Impact

**Great Dismal Swamp National Wildlife Refuge
Hunting Plan**

August 2021

U.S. Fish and Wildlife Service

**Great Dismal Swamp National Wildlife Refuge
3100 Desert Rd.
Suffolk, Virginia & 23434**

Submitted By:
Project Leader

Signature

Date

Concurrence:
Refuge Supervisor

Signature

Date

Approved:
Regional Chief
National Wildlife Refuge System

Signature

Date

Table of Contents

I. Introduction	1
II. Statement of Objectives	3
III. Description of Hunting Program	4
A. Areas to be Opened to Hunting.....	4
B. Species to be Taken, Hunting Periods, Hunting Access.....	4
C. Hunter Permit Requirements.....	7
D. Consultation and Coordination with the State	7
E. Law Enforcement	8
F. Funding and Staffing Requirements.....	8
IV. Conduct of the Hunting Program	9
A. Hunter Permit Application, Selection, and/or Registration Procedures	9
B. Refuge-Specific Hunting Regulations	10
C. Relevant State Regulations	11
D. Other Refuge Rules and Regulations for Hunting	11
V. Public Engagement	11
A. Outreach for Announcing and Publicizing the Hunting Program.....	11
B. Anticipated Public Reaction to the Hunting Program	12
C. How Hunters Will Be Informed of Relevant Rules and Regulations.....	12
VI. Compatibility Determination	12
 MAPS	
Figure 1. Proposed Hunt Unit Map.....	13

APPENDICES

- Appendix A – Hunting Compatibility Determination
- Appendix B – Environmental Assessment
- Appendix C – Intra-Service Section 7 Evaluation
- Appendix D – Public Comments and Responses
- Appendix E – Finding of No Significant Impact

GREAT DISMAL SWAMP 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, and laws and international treaties. Relevant guidance includes the National Wildlife Refuge System Administration Act of 1966 (NWRSA), 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 Service Manual.

Great Dismal Swamp National Wildlife Refuge (NWR, refuge) was established under the authority of the Great Dismal Swamp National Wildlife Refuge Act of 1974 (Public Law 93-402). The stated purposes of Great Dismal Swamp NWR are:

- “...protecting and preserving the unique and outstanding ecosystem, as well as protecting and perpetuating the diversity of animal and plant life therein”;
- “...to stabilize conditions in as wild a character as possible, consistent with achieving the refuge’s stated objectives”; and
- “... to promote a public use program when not in conflict with the primary objectives of the refuge.” (The Great Dismal Swamp National Wildlife Refuge Act (P.L. 93-402))

Great Dismal Swamp NWR is the largest intact remnant of a vast ecosystem that once covered more than 1 million acres of southern Virginia and northeastern North Carolina. Formal protection of this resource began in 1973, when Union Camp Corporation (a local forest products company) donated 49,097 acres to The Nature Conservancy (TNC). TNC conveyed the donated land to the Federal government, which, combined with additional purchased land, was used to establish the refuge in 1974.

The Service proposes to open and expand opportunities for big and upland game hunting at Great Dismal Swamp NWR to provide additional wildlife-dependent recreational opportunities, improve efficiency and management of the refuge’s hunting program, and better align with State programs. We propose the following changes as part of an update to the existing hunting plan:

1. Species changes: Add turkey, coyote and squirrel to the list of current huntable species (i.e., white-tailed deer and black bear).
2. Huntable Acreage: Open additional acreage to hunting by utilizing up to 10 additional hunting access points.
3. Method of take changes: Open to firearms (no rifles), archery, and muzzleloaders. Current methods are only shotgun and archery.

4. Hunter orange: No proposed changes. The refuge will apply State regulations.

5. Season/date changes: Hunting would occur during legal daylight hunting hours on Thursdays, Fridays, and Saturdays from October 1 through the first Saturday in January, according to State season dates for each species. This is an increase to approximately 42 days from the current 12 days for deer hunting, and 6 days for bear hunting.

6. Permit Fees: The refuge general hunt permit would include participation in the hunt for white-tailed deer, squirrel, coyote, and wild turkey. The fee for the general permit would be \$20. The bear hunt permit would be a separate \$20 fee. Permit fees would be waived for youth hunters under 16 years of age. The current fee structure is \$15 for white-tailed deer, and \$25 for black bear.

The use of non-toxic ammunition for will be required for all new species (turkey, coyote, squirrel) in 2021 and required for all species by 2026. This 5-year phase-in period will allow hunters time to adapt to the new regulations without diminishing hunting opportunities on the refuge. The refuge staff will provide information to assist in a valuable transition period that benefits fish, wildlife, and people. The use of non-toxic ammunition would benefit wildlife and habitat on over 100,000 acres of wetlands on the refuge by reducing potential bioaccumulation of lead in the environment.

The mission of the Refuge System, as outlined by the NWRSA and 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 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.

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

Hunting is a historic and traditional use of the Great Dismal Swamp and provides a quality wildlife-dependent recreational opportunity for participating hunters. Big game hunting was opened on the refuge in 1979 with initiation of the white-tailed deer hunt. In 1998, black bear hunting was added to the big game hunting program by developing a Compatibility Determination (CD) and adding bear hunting to the Code of Federal Regulations (50 CFR 32.66). Parameters for the bear hunt were further described and analyzed as part the refuge Comprehensive Conservation Plan (CCP) and Environmental Assessment, which was finalized and approved in July 2006. A new CD for the bear hunt was completed as well as a Bear Hunt Plan. The first bear hunt was held in 2006.

II. Statement of Objectives

The main objectives of the hunting program at Great Dismal Swamp NWR are to:

- provide a hunting program in alignment with refuge habitat management objectives (reduce invasive species, improve habitat conditions, benefit Federal trust species);
- provide the public with wildlife-dependent recreational opportunities and increase access for hunters;
- implement a hunting program that is administratively efficient and manageable with existing staff and funding levels; and
- conduct the hunt in a manner safe for hunters, other refuge users, neighbors and refuge staff.

The Service has long recognized that hunting is an integral part of a comprehensive wildlife management program and that positive benefits can be attributed to a well-managed hunt. Hunting is recognized as an acceptable, traditional form of wildlife-dependent recreation that can be, and sometimes is, used as a management tool to effectively manipulate wildlife population levels.

Hunting is consistent with the refuges' 2006 CCP's larger goal to "establish a public use program that will encourage awareness, understanding, appreciation and stewardship of the Great Dismal Swamp NWR ecosystem while complementing the refuge resource management objectives." Providing wildlife-dependent recreational opportunities helps foster an appreciation for wildlife and an understanding of the importance of environmental stewardship. Additionally, a well-managed hunt can provide the refuge an opportunity to manage wildlife population levels in a way that promotes biodiversity and support healthy ecosystems.

III. Description of Hunting Program

A. Areas to be Opened to Hunting

The refuge would manage up to nine hunt units (See Figure 1) with at least one hunter entry point per unit. Archery-only zones would be established in areas of high visitor use and/or adjacent to urban neighborhoods where appropriate, such as around the administrative offices, Washington Ditch entrance, and near the Black Bear Trail at the Portsmouth Ditch Entrance. We will provide unit maps at each of the parking areas that will highlight the archery zones. Additionally, 150-foot no-hunting buffers would be applied to refuge buildings, parking lots, roads, trails, ditches, and boardwalks.

The refuge management unit, identified as the Blocks (identified in the Proposed Hunt Unit Map, Figure 1), is an endangered species management area that would remain closed to all hunting activities until otherwise stated.

Future acquired lands would be evaluated and added to the appropriate hunt zones per this Hunting Plan and accompanying CD.

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

Big Game: On the Virginia portion, hunting would be opened to black bear, white-tailed deer, and fall turkey hunting. Hunting would occur from October 1 to the first Saturday in January, in alignment with Virginia Department of Wildlife Resources (VDWR) deer, bear and turkey seasons. If the Virginia hunting season dates change, refuge seasons would be adjusted to remain consistent with the State. Hunting on the refuge would occur on Thursdays, Fridays, and Saturdays only. Hunting hours are during legal daylight hunting hours in accordance with Virginia State regulations.

On the North Carolina portion, species and hunting seasons would be the same with the exception that the bear season would be shorter to align with North Carolina's State regulations. For bear hunting in North Carolina, the season would be in accordance with Bear Management Zone 2 hunting season, as designated by the North Carolina Wildlife Resources Commission (NCWRC). Similar to Virginia, hunting on the refuge would occur on Thursdays, Fridays, and Saturdays within the open season. Hunting hours are during legal daylight hunting hours in accordance with North Carolina State regulations. Species-specific hunt dates vary annually in accordance with State and local regulations. See Table 1 for

approximate open periods for huntable species on the refuge. Detailed hunt information, including season dates, will be updated annually and provided to registered hunters for further clarification.

In response to public comment, Spring turkey hunting in both Virginia and North Carolina, and September archery deer hunting in North Carolina, will be considered for opening as early as 2022.

An annual maximum harvest of 20 bears is imposed on the refuge bear hunt and, therefore, the bear season could be reduced as this quota is approached. The refuge would routinely assess bear harvest data and population trends as data becomes available and may make changes to the hunt as necessary.

In both states, hunting access would be walk-in (or bike-in) only from designated parking areas at all entry points, except one. The exception would be the Railroad Ditch entrance, which has approximately 10 miles of drivable roads available to hunters. Hunting access would occur through the four major public trailheads: Railroad Ditch Road, Washington Ditch Road, Jericho Lane, and Portsmouth Ditch Road. Additional entrances that are otherwise not open to the public would serve as hunter parking and access points.

Upland/Small Game: From October 1 to the first Saturday in January, the refuge would be opened to gray squirrel and coyote hunting in both the Virginia and North Carolina portions of the refuge. Hunting would occur on Thursdays, Fridays, and Saturdays only within the open season. Hunters would have access through the four major trailheads (Railroad Ditch, Washington Ditch, Portsmouth Ditch, and Jericho Lane), with additional hunter-only access points throughout the refuge perimeter. Hunting hours will be during legal daylight hours. Species-specific hunt dates vary annually in accordance with State and local regulations. See Table 1 for approximate open periods for huntable species on the refuge. Detailed hunt information, including season dates, will be updated annually and provided to registered hunters for further clarification.

Table 1. Approximate Season Dates for Hunting on Great Dismal Swamp NWR.

Hunt Unit	Approximate Season Dates
Portsmouth	<p>Deer: Firearms: October 1 to November 27 Muzzleloader: December 9 to January 1 Bear: October 1 to January 1 Turkey: Closed Coyote, Squirrel: October 1 to January 1</p>

Hunt Unit	Approximate Season Dates
Jericho	Deer: Firearms: October 1 to November 27 Muzzleloader: December 9 to January 1 Bear: October 1 to January 1 Turkey: <i>Closed in the City of Chesapeake</i> Archery: October 2 to November 5 Firearms: Youth & Apprentice Weekend: October 9 Regular Firearms: October 16 to 29, November 25, and December 2-11 Coyote, Squirrel: October 1 to January 1
North	Deer: Firearms: October 1 to November 27 Muzzleloader: December 9 to January 1 Bear: October 1 to January 1 Turkey: <i>Closed in the City of Chesapeake</i> Archery: October 2 to November 5 Firearms: Youth & Apprentice Weekend: October 9 Regular Firearms: October 16 to 29, November 25, and December 2-11 Coyote, Squirrel: October 1 to January 1
Washington	Deer: Firearms: October 1 to November 27 Muzzleloader: December 9 to January 1 Bear: October 1 to January 1 Turkey: Archery: October 2 to November 5 Firearms: Youth & Apprentice Weekend: October 9 Regular Firearms: October 16 to 29, November 25, and December 2-11 Coyote, Squirrel: October 1 to January 1
Railroad	Deer: Firearms: October 1 to November 27 Muzzleloader: December 9 to January 1 Bear: October 1 to January 1 Turkey: <i>Closed in the City of Chesapeake</i> Archery: October 2 to November 5 Firearms Youth & Apprentice Weekend: October 9 Regular Firearms: October 16 to 29, November 25, and December 2-11 Coyote, Squirrel: October 1 to January 1
Corapeake* (NC)	Deer: Archery: October 1 to January 1 Muzzleloader: October 1 to January 1 Firearms: October 16 to January 1 Bear: November 13* November 21, and December 11 to 26 Turkey: Closed Coyote: October 1 to January 1 Squirrel: October 18 to January 1

Hunt Unit	Approximate Season Dates
Weyerhaeuser* (NC)	Deer: Archery: October 1 to January 1 Muzzleloader: October 1 to January 1 Firearms: October 16 to January 1 Bear: November 13 to 21, and December 11 to 26 Turkey: Closed Coyote: October 1 to January 1 Squirrel: October 18 to January 1
Insurance* (NC)	Deer: Archery: October 1 to January 1 Muzzleloader: October 1 to January 1 Firearms: October 16 to January 1 Bear: November 13 to 21, and December 11 to 26 Turkey: Closed Coyote: October 1 to January 1 Squirrel: October 18 to January 1
Bull Blvd* (NC)	Deer: Archery: October 1 to January 1 Muzzleloader: October 1 to January 1 Firearms: October 16 to January 1 Bear: November 13 to 21, and December 11 to 26 Turkey: Closed Coyote: October 1 to January 1 Squirrel: October 18 to January 1

- *All NC bear season dates follow Gates County NOTE: Hunting on the refuge would occur on Thursdays, Fridays, and Saturdays within the open season, during legal daylight hunting hours in accordance with State regulations. Species-specific hunt dates vary annually in accordance with State and local regulations. Detailed hunt information, including season dates, will be updated annually and provided to registered hunters for further clarification.*

C. Hunter Permit Requirements

Hunters will be required to have a State Hunting License, as well as the refuge-specific Permit. See “Hunter Permit Application and/or Registration Procedures” below.

D. Consultation and Coordination with the State

The refuge reviewed the operations and regulations for neighboring State wildlife management areas and refuges to find consistency where possible. Since 2010, the refuge has included the hunt program in the Virginia State Hunting and Trapping Digest and permitted through the Virginia State license sales program to provide a cooperative “one-stop” location for hunting opportunities. The refuge first reached out to the State of Virginia on January 14, 2020 where we held a meeting with VDWR staff and local Virginia refuges to discuss opportunities to align with the State hunting program. In addition to this meeting, we had multiple follow-up calls with local State biologists from both VDWR and NCWRC early in the development of this Hunting Plan.

We have continued to consult and coordinate on specific aspects of the Hunting Plan with our State partners. The VDWR regional office reviewed the plan and refuge-specific regulations prior to public release. We received a letter from the State Executive Director dated December 10, 2020 that lauded the ongoing efforts to align refuge hunting regulations to State regulations and provide new opportunities. VDWR also supports our intent to adopt regulations that include non-lead ammunition requirements on select refuges into the future.

E. Law Enforcement

Great Dismal Swamp NWR is patrolled by Federal Wildlife Officers (FWOs) from the Division of Refuge Law Enforcement. In addition to FWO’s, Fish and Wildlife Special Agents, State Game Wardens, police officers and local sheriff’s department may patrol and conduct investigations on the refuge. Hunters utilizing the refuge are subject to reviews of permits, licenses, equipment, bag limits, vehicles and their contents. The following methods are used to notify the public of hunting regulations:

- Refuge hunters will be provided regulations and a hunt map upon purchasing a permit.
- Refuge regulations, maps and brochures will be posted on refuge hunt kiosks located at hunter access points, and on the refuge website.

F. Funding and Staffing Requirements

Annual hunt administration costs, including salary, equipment, law enforcement, brochures, collection of hunt data and analysis of biological information, totals approximately \$28,000 (Table 2). This includes staff time for planning, program preparation, outreach and public relations, permit administration, enforcement, posting, roads and parking lot maintenance. Other operating costs include signs, brochures, equipment and vehicle fuel and maintenance. Funding for the hunt program is not specifically allocated but will be taken from station base funds on an annual basis. It is anticipated funding would continue to be sufficient into the future. Hunt permit fees will be used to offset the costs of this program.

Table 2. Great Dismal Swamp NWR Annual Hunt Administration Costs

Identifier	Cost
Staff (Maintenance workers, Biologist, and Refuge Manager)	\$10,000
Maintain roads, parking lots, trails*	\$3,000
Materials (kiosks, signs, postings, brochures)	\$8,000
Law Enforcement	\$7,000
Total Annual Cost	\$28,000
<i>*Refuge trails and roads are maintained for a variety of activities. Costs shown are a percentage of total costs for trail/road maintenance and are reflective of the percentage of trail/road use for hunting and fishing. Volunteers account for some maintenance hours and help to reduce overall cost of the program.</i>	

IV. Conduct of the Hunting Program

Hunting is conducted in accordance with State and Federal regulations, as supplemented by refuge-specific regulations. However, the Refuge Manager may, upon annual review of the hunting program, impose further restrictions on hunting, recommend that the refuge be closed to hunting, or further liberalize hunting regulations up to the limit of State regulations. The refuge will restrict activity if it becomes inconsistent with other priority refuge programs or endangers refuge resources or public safety.

A. Hunter Permit Application, Selection, and/or Registration Procedures

Registration for hunting on the refuge will begin July 1 of each year. In addition to the State hunting license, hunters must purchase a special permit for Great Dismal Swamp NWR (covers both the VA and NC side). These would be obtained from a third-party vendor. The refuge general hunt permit would include participation in hunting for deer, squirrel, coyote, and wild turkey. The fee for a general permit is \$20. The bear hunt permit would be a separate \$20 fee. Permit fees will be waived for youth hunters under 16 years of age.

Selected hunters will receive their permit, pertinent regulations, and maps via email. Hunters must print, read, and sign their permit indicating that they understand and will follow refuge regulations. When hunting on the refuge, participants must have in their possession a paper or digital copy of their signed refuge hunt permit and their State hunting license.

Hunters that qualify for access to the designated Refuge Disabled Hunt Zone will need to obtain a valid State-issued Disabled Hunters license, a refuge hunt permit, and a refuge disabled hunt permit. The State-issued Disabled Hunters license can be obtained online from the VDWR's permitting website. The refuge hunt permit and disabled hunt permit will be obtained from a third-party vendor. Applications for the refuge disabled hunt permit will be accepted beginning July 1 each year. The refuge disabled hunt permit will allow the hunter to reserve an area to hunt in the designated Disabled Hunt Zones.

B. Refuge-Specific Hunting Regulations

To ensure compatibility with refuge purposes and the mission of the Refuge System, hunting must be conducted in accordance with State and Federal regulations, as supplemented by refuge-specific regulations (50 CFR 32.65), and information sheets/brochures. Refuge-specific stipulations are also detailed in the CD (Appendix A). Listed below are general procedures that pertain to hunting on Great Dismal Swamp NWR as of the date of this plan. These may be modified as conditions change or if refuge expansion occurs.

Deer, turkey, coyote, and squirrel. We allow hunting of these species in accordance with State regulations and subject to the following conditions:

- You must have in your possession a paper or digital copy of your refuge hunt permit and State hunting license.

- Hunting on the refuge occurs from October 1 until the first Saturday in January, on Thursday, Friday, and Saturday only as State seasons dictate.
- Hunters may use archery, shotgun, or muzzleloader. Rifles are prohibited.
- Possession of hunt dogs on the refuge is prohibited during any designated hunt date.
- Tree stands are allowed according to State regulations but must be removed by the last day of the refuge hunt season.
- Hunting, pursuing, capturing, chasing, stalking, injuring, destroying, or attempting to do the same on or within 150 feet of a refuge road, trail, boardwalk, parking lot, or building is prohibited.
- The use of non-toxic ammunition for proposed new hunting opportunities (coyote, squirrel, and turkey) will be required upon implementation of this plan in 2021. The use of non-toxic ammunition for hunting white-tailed deer and bear will initially be voluntary, and will transition to be required for use after a 5-year phase-in period is implemented (2026). This phase-in period will allow hunters time to adapt to the new regulations without diminishing deer or bear hunting opportunities on the refuge. The refuge staff will provide information to assist in a valuable transition period that benefits fish, wildlife, and people.

Black bear. In addition to the conditions listed above, and in accordance with State regulations, the following special conditions are also imposed on the refuge bear hunt:

- Bears must be checked through the State check station or electronic checking system. Additionally, hunters must notify the refuge of a bear harvest within 24 hours.
- There is an annual harvest limit of 20 bears on the refuge. The refuge bear hunt may be modified as this quota is approached. The refuge will routinely assess hunt data and may make changes to the bear hunt as necessary such as limiting the number of permits, acreage, and/or season.
- Bear hunting in the North Carolina portion of the refuge will follow the Bear Management Zone 2 NCWRC hunting season. The refuge bear hunt in the North Carolina units will occur on Thursday, Friday, and Saturday within NCWRC's open season.

C. Relevant State Regulations

All Great Dismal Swamp NWR hunters are expected to understand and comply with all State rules and regulations for the State they are hunting in. A complete list of State hunting rules and regulations can be found at the VDWR website at: <https://dwr.virginia.gov/> and the

NCWRC website at: <http://www.ncwildlife.org/>.

D. Other Refuge Rules and Regulations for Hunting

- Camping and all overnight uses are prohibited on the refuge.
- Trailer boats permitted at Lake Drummond only. Car-top boats are permitted elsewhere.
- Parking vehicles in any manner which blocks roads (including roads closed to vehicles) is prohibited.
- The refuge is open to all users during refuge hunts. Discharging a firearm from, across, or within 150 feet of a refuge road (including roads closed to vehicles), trails, boardwalks, buildings, or parking lots, is prohibited.

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 and websites. Special announcements and articles may be released in conjunction with hunting seasons. In addition, information about the hunt will be available at Great Dismal Swamp NWR visitor contact station (headquarters office), in trailhead kiosks, the station website and Facebook page, the VDWR Hunting and Trapping Digest, and VDWR hunting and permitting websites.

B. Anticipated Public Reaction to the Hunting Program

The outline of our hunt program was last discussed in the refuge's 2006 CCP and public comments were addressed at that time. Because the refuge has been open to hunting since 1979, and hunting has occurred in the area for many years before the creation of the refuge, we do not anticipate significant negative public reaction. Nevertheless, opening the bear hunt on the refuge originally was controversial and included a lawsuit.

We anticipated some negative public reaction associated with expanding the hunt to include additional acreage on the refuge, particularly from other user groups (i.e., wildlife observers and photographers). Adding parking areas around the refuge, and opening new areas to hunting, may be of concern to adjacent landowners and neighborhoods. Some hunters may be opposed to new regulations on lead ammunition.

We released the draft plan, Compatibility Determination (CD) and Environmental Assessment (EA) for public review and comment from April 9 through July 6, 2021, a total of 88 days. We distributed a press release to news organizations and alerted visitors to the plan's availability on the refuge website and Facebook page. In addition, a notice of availability was sent to 2020 registered Refuge hunt permittees. No public meetings were held due to COVID-19 public gathering safety guidance. During the comment period, we

received 21 letters, all written via email, from individuals and on behalf of various organizations. A summary of all substantive comments received, and our responses, can be found in Appendix D (Public Comments and Responses).

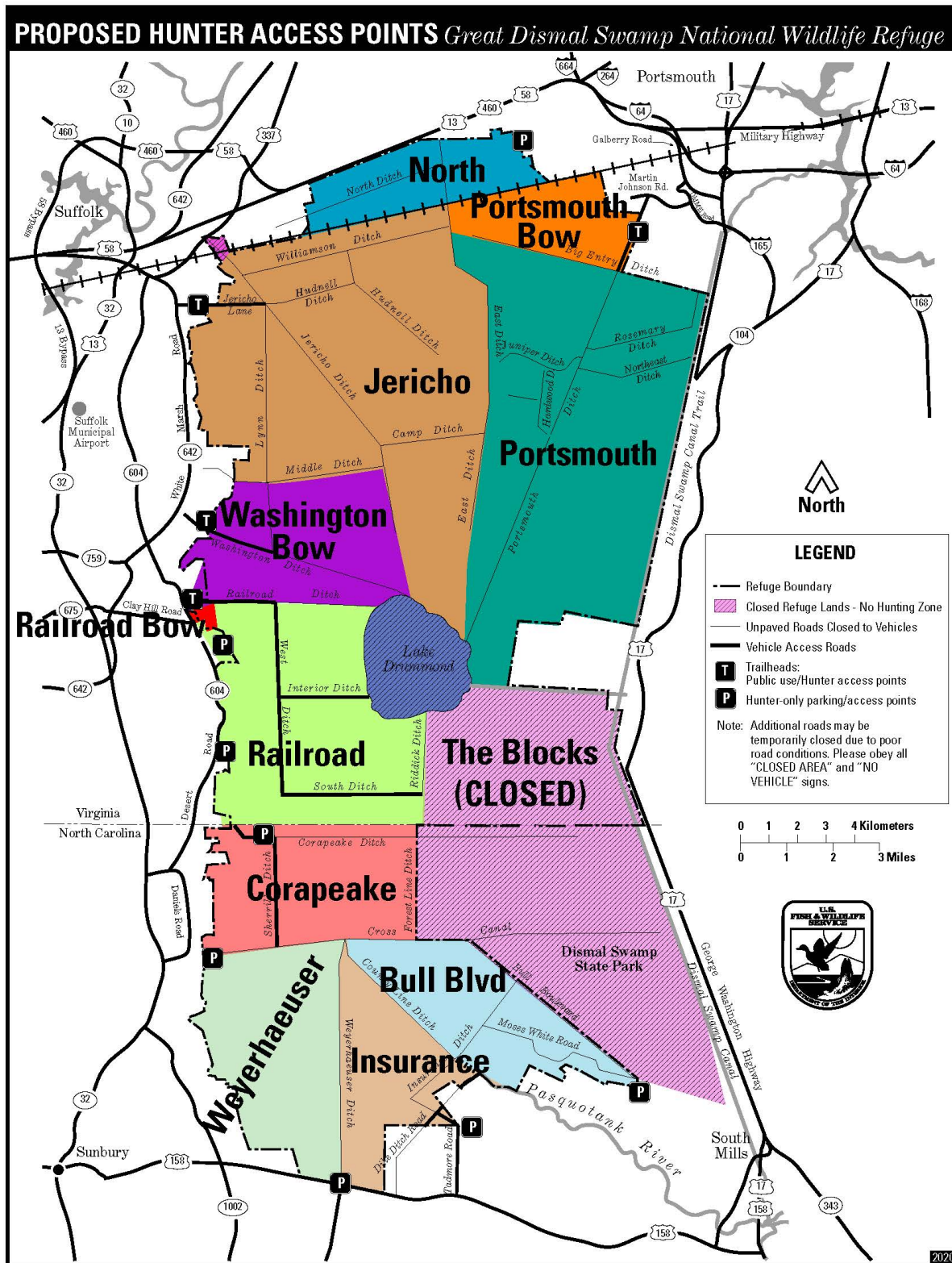
C. How Hunters Will Be Informed of Relevant Rules and Regulations

Information regarding hunting and other wildlife-dependent public uses can be obtained at Great Dismal Swamp NWR visitor contact station (headquarters office) at 3100 Desert Road, Suffolk, VA 23434, or by calling the refuge office at (757) 986-3705, and on the station website: www.fws.gov/refuge/great_dismal_swamp. Dates, forms, hunting unit directions, maps, applications, and permit requirements for the hunt will also be available on the station website and at the refuge visitor contact station (headquarters office). Hunters will also receive relevant rules and regulations by e-mail when they obtain the refuge hunt permit. Important hunt information will be posted on kiosks at hunter access points.

VI. Compatibility Determination

Hunting and all associated program activities proposed in this plan are compatible with the purposes of the refuge. See attached Great Dismal Swamp NWR Hunting Compatibility Determination (Appendix A).

Figure 1. Proposed Hunt Unit Map



APPENDIX A. COMPATIBILITY DETERMINATION

USE: Hunting

REFUGE NAME: Great Dismal Swamp National Wildlife Refuge

DATE ESTABLISHED: August 30, 1974

ESTABLISHING and ACQUISITION AUTHORITY(IES):

- 1) Great Dismal Swamp National Wildlife Refuge Act of 1974 (Public Law 93-402)
- 2) Act Authorizing the Transfer of Certain Real Property for Wildlife (16 U.S.C. 667b)
- 3) Fish and Wildlife Act of 1956, 16 U.S.C. 742f(a)(4), 16 U.S.C. 742f(b)(1)
- 4) Migratory Bird Conservation Act, 16 U.S.C. 715-715d, 715e, 715f-715r

REFUGE PURPOSE(S):

- “... protecting and preserving a unique and outstanding ecosystem, as well as protecting and perpetuating the diversity of animal and plant life therein ... directed to stabilize conditions in as wild a character as possible, consistent with achieving the refuge’s stated objectives ... (and), promote a public use program when not in conflict with the primary objectives of the refuge” (Great Dismal Swamp National Wildlife Refuge Act (P.L. 93-402)).
- “... particular value in carrying out the national migratory bird management program” 16 U.S.C. § 667b (Act Authorizing the Transfer of Certain Real Property for Wildlife).
- “... for the development, advancement, management, conservation, and protection of fish and wildlife resources....” 16 U.S.C. § 742f(b)(1) (Fish and Wildlife Act of 1956).
- “...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds” 16 U.S.C. § 715d (Migratory Bird Conservation Act).

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 white-tailed deer, black bear, wild turkey, coyote, and gray squirrel on Great Dismal Swamp 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 (on both the VA and NC portions of the refuge). The refuge would manage up to nine hunt units (see Figure 1 of the Hunting Plan) with at least one hunter entry point per unit. For all entry points, with the exception of the Railroad Ditch entrance, hunting access would be walk-in or bike-in only from designated parking areas. Archery-only zones would be established in areas of high visitor use and/or close to urban neighborhoods, where appropriate, such as around the administrative offices, near the Washington Ditch entrance, and along the Black Bear trail. We will provide unit maps at each of the parking areas that will highlight the archery zones. Additionally, a 150-foot no-hunting buffer zones would be applied around refuge buildings, parking lots, roads, trails, ditches, and boardwalks. Hunting would not occur in the “Blocks” management unit so long as reintroduction efforts of the red-cockaded woodpecker (RCW) continue. Future acquired lands would be evaluated and added to the appropriate hunt zones as found to conform to this Compatibility Determination (CD).

(c) When would the use be conducted?

Hunting would occur during legal daylight hunting hours on Thursdays, Fridays, and Saturdays from October 1 through the first Saturday in January, according to State seasons for each species. See Table 1 of the Hunting Plan for additional season information.

Spring turkey hunting in both Virginia and North Carolina, and September archery deer hunting in North Carolina, will be considered for opening as early as 2022.

(d) How would the use be conducted?

The refuge consists of lands in both Virginia and North Carolina. Hunting opportunities would be conducted according to relevant State, Federal (50 Code of Federal Regulations (CFR) pertaining to the Refuge System), and refuge-specific regulations (50 CFR 32.65).

The refuge hunt would include opportunities for hunting with archery, shotgun, and muzzleloader. Hunters will be required to obtain a refuge hunt permit in addition to all relevant State licenses. The permit can be obtained online from a third-party vendor. The refuge general hunt permit would include participation in the hunt for white-tailed deer, squirrel, coyote, and wild turkey. The general hunt permit fee is \$20. The refuge bear hunt permit would be a separate \$20 fee. Permit fees will be waived for youth hunters under 16 years of age.

There would be no limits to the number of refuge general hunt permits for deer, turkey, coyote, and squirrel; however, an annual maximum harvest of 20 bears is imposed for the refuge bear

hunt, and therefore the number of bear hunt permits could be reduced as bear hunter and harvest trends becomes unsustainable. The refuge will routinely assess the data and may make changes to the bear hunt as necessary, such as limiting the number of permits and acreage.

Tree stands will be permitted according to State regulations but must be removed by the last day of the refuge hunt season. Bear and deer harvests must be checked through a State check station or electronic checking system. Hunters must also notify the refuge of a bear harvest within 24 hours.

We propose to prohibit the use of lead ammunition for hunting on the refuge. It is well known that lead is a potent neurotoxin for wildlife. Prohibiting the use of lead ammunition at Great Dismal Swamp NWR is consistent with the lead shot ban for waterfowl that inhabit the same pond, marsh and open water habitats where hunting may occur. This action is intended to reduce the unintentional introduction of a known neurotoxin into habitats, diving ducks, loons, eagles, and other wildlife species sensitive to the effects of lead. The requirement for use of non-toxic ammunition will apply to all proposed new hunting opportunities including coyote, squirrel, and turkey. The use of non-toxic ammunition while hunting deer and bear will be implemented over a 5-year phase-in period, beginning with voluntary use in 2021 and requirement for use beginning in 2026. During the phase-in period, the refuge will provide information and education to hunters on non-toxic alternatives for hunting deer and bear.

(e) Why is the use being proposed?

Hunting is a healthy, traditional recreational use of renewable natural resources deeply rooted in America’s heritage, and it can be an important wildlife management tool. Great Dismal Swamp NWR’s Comprehensive Conservation Plan (CCP) identified goals and objectives to “establish a public use program that will encourage awareness, understanding, appreciation and stewardship of the Great Dismal Swamp NWR ecosystem while complementing the refuge resource management objectives.”

Department of the Interior Secretarial Order 3356 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. This use is one of the priority public uses of the Refuge System, and providing opportunities for visitors to hunt would promote stewardship of our natural resources and increase public appreciation and support for the refuge.

AVAILABILITY OF RESOURCES:

Annual hunt administration costs, including salary, equipment, law enforcement, brochures, collection of hunt data and analysis of biological information will cost approximately \$28,000 annually (Table A-1). This includes staff time for planning and annual program preparation, outreach and public relations, permit administration, enforcement, posting, roads and parking lot maintenance. Other operating costs include signs, brochures, equipment and vehicle fuel and maintenance. Funding for the hunt program 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 into the future. Hunt permit fees will be applied directly to offset costs of implementing the program.

Table A-1. Great Dismal Swamp NWR Annual Hunt Administration Costs

Identifier	Cost
Staff (Maintenance Workers, Biologist, and Refuge Manager)	\$10,000
Maintain roads, parking lots, trails*	\$3,000
Materials (kiosks, signs, postings, brochures)	\$8,000
Law Enforcement	\$7,000
Total Annual Cost	\$28,000
*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 and fishing. Volunteers account for some maintenance hours and help to reduce overall cost of the program.	

ANTICIPATED IMPACTS OF THE USE:

The following are anticipated impacts for hunting on Great Dismal Swamp NWR. For more specific impacts related to proposed changes to the Hunting Plan, please refer to the Great Dismal Swamp NWR Hunting Environmental Assessment (Appendix B).

Hunting has occurred on Great Dismal Swamp NWR since 1979 with no discernible adverse impacts to resources. Hunting provides compatible wildlife-dependent recreational 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.

This section predicts foreseeable impacts of implementing the hunting program on refuge resources. When detailed information may be deficient or unavailable, we base our evaluation on professional judgment and experience. We usually identify potential impacts within a long-range timeframe (i.e., 15 years); beyond that time frame they become more speculative.

Please keep in mind the relatively small total land mass of the hunting area of the refuge in comparison with the entire Atlantic Flyway or the breeding ranges of the many birds and wildlife that use it. We recognize that the refuge is not isolated ecologically from the land around it; however, we may have overstated positive or negative impacts in that larger geographic context. Nevertheless, many of the actions we propose conform with the CCP and other regional landscape plans, and provide positive, incremental contributions to those larger landscape goals.

Some disturbance to non-target wildlife species and vegetation may occur. However, these impacts should be minimal as hunting is regulated by the refuge and normally occurs outside the breeding season. Refuge-specific regulations such as prohibiting use of hunt dogs, implementing archery-only areas, limiting the hunt to 3 days a week, and reducing access to walk-in and bike-in only, are designed to prevent conflicts and reduce impacts on refuge resources.

All game hunting and associated hunter activity will likely cause indirect disturbance to non-target wildlife, but only in the short term. Due to most of the entry points being walk-in and bike-in only, impacts are expected to occur in a relatively small area. Vehicular disturbances to wildlife are expected to be minimal, as only one hunt unit will allow users to drive refuge roads.

Disturbances to birds are expected to be minimal, as hunting on the refuge occurs outside of nesting and migratory seasons. Short-term disruptions to other species like bats, turtles, frogs, and some mammals, are expected to be negligible, due to inactivity or hibernation during the hunting season.

The refuge would require the use of non-toxic ammunition for all species by 2026. This would benefit wildlife and habitat on over 100,000 acres of wetlands on the refuge by reducing potential bioaccumulation of lead in the environment. The negative impacts of lead on wildlife are documented and clear (Golden et al. 2016, Grade et al. 2019, and Hunt et al. 2009). To move towards reduction and future elimination of this threat on the refuge, we will be implementing a lead ban over a 5-year period to educate and work with hunters on the use of non-toxic alternatives.

Black Bear

Bear hunting opportunities would maintain the conservative nature of the hunt by prohibiting the use of hunt dogs and bait, and limiting annual harvest to 20 bears. Additionally, the hunt would only occur for 3 consecutive days each week and allow walk-in and bike-in only access at all except one entry point. These measures would limit disturbance to bears from hunting pressure and, therefore, this hunt would like not significantly affect the refuge's bear population. However, the refuge staff will routinely evaluate the bear hunt and make adjustments as necessary to reduce negative impacts on the bear population.

Deer

The white-tailed deer population is estimated between 901,000 and 1,117,000 individuals in Virginia and approximately 1 million individuals in North Carolina (DWR Deer Management Plan; NCWRC 2017). White-tailed deer harvests on the refuge are expected to have minimal adverse impacts to the Statewide or regional populations. From 2014 to 2019, the refuge averaged less than 200 permittees and harvested an average of 47 deer annually (harvest ranged from 28 to 83 deer).

Deer hunting helps to keep deer populations within the carrying capacity of the habitat, thus reducing excessive damage to vegetation caused by overbrowsing and maintaining understory habitat for other species. Deer densities, if maintained through regulated hunting, will sustain the native vegetation and forest regeneration associated with the natural communities in those regions. Regulated deer hunting will also maintain a deer herd in good physical condition that staves off malnutrition and disease. Overall, we expect the white-tailed deer hunt to continue to have a positive impact on refuge habitats and the wildlife that depend on them.

Turkey

In adhering to state regulations, fall turkey hunting will occur in four of the nine refuge hunt units (North, Jericho, Washington, and Railroad). Fall turkey hunting is closed in Chesapeake, Virginia as well as the State of North Carolina. Virginia estimates turkey population density through the number of spring gobblers killed per square mile of suitable habitat. As of 2017, densities in Suffolk are considered high with an increasing 10-year trend (DGIF 2017). The 5-year average wild turkey harvest for the city of Suffolk was 23 individuals, and the Statewide 5-year average was 2,630 (VDWR 2020b). Due to the low turkey densities on the refuge and

numbers of hunters, turkey harvest on the refuge is expected to be negligible and not likely to significantly affect turkey populations on or around the refuge.

Coyote and Squirrel

We anticipate squirrel hunting will have low participation rates on the refuge. Gray squirrels are common and abundant in southeastern Virginia and across North Carolina. Their populations are regulated by availability of habitat and food resources, particularly mast. There are no reliable coyote population estimates, but harvest surveys suggest populations are stable or increasing. In both States, coyotes are considered a non-game species and there are no daily bag limits. Allowing coyote hunting on the refuge may have a positive impact on other desirable species by reducing the number of coyotes in the local community.

Adverse impacts from hunting coyote and squirrel on the refuge are expected to be negligible. Refuge staff will monitor hunting to ensure it does not interfere with the primary goals of the refuge and to reduce conflicts with other public uses.

Threatened and Endangered Species

The red-cockaded woodpecker (*Picoides borealis*) (RCW) is a federally listed threatened species, which the Service has reintroduced on the refuge within the pine-pocosin area southeast of Lake Drummond. The 2,000-acre RCW management area has been selectively timbered to remove hardwood competition and create a more open area of pine, which is preferred by this species. The unit being managed for RCW would not open to hunting as long as translocations continue in the area. During foraging, it is possible for RCW to move through or into other areas of the refuge that are open to hunting. In addition, it is possible RCW will establish home territories in other areas open to hunting. The nesting, foraging, and feeding behaviors of this species occur in the upper portions of living pines over large tracts of land. Other than temporary impacts from hunter disturbance, no long-term adverse impacts would occur.

The Northern long-eared bat (NLEB) (*Myotis septentrionalis*) is federally listed as a threatened species under the Endangered Species Act. The bats typically spend winter hibernating in caves and mines, called hibernacula. They use areas in various sized caves or mines with constant temperatures, high humidity, and no air currents. During the summer, NLEBs roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). These bats seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. They rarely roost in human structures like barns and sheds.

The bat's range includes much of the eastern and north-central United States, and all Canadian provinces from the Atlantic Ocean west to the southern Yukon Territory and eastern British Columbia. The species' range includes 37 states and the District of Columbia. The species has been captured and recorded within Great Dismal Swamp NWR, both in Virginia and North Carolina. No summer maternity roosts are known to occur on the refuge currently. NLEBs are not likely to be impacted by hunting, as they are typically hibernating during the refuge hunt season. Other than temporary impacts from potential hunter disturbance, no long-term adverse impacts would occur.

Visitor Use and Experiences

The public would be allowed to harvest a renewable resource and the refuge would be promoting a wildlife-oriented recreational opportunity that is compatible with the purpose for which the refuge was established. The public would have an increased awareness of Great Dismal Swamp NWR and the Refuge System and public demand for more hunting would be met. The public would also have the opportunity to harvest a renewable resource in a traditional manner, which is culturally important to the local community.

Conflicts between hunters and other refuge users are expected to be minimal during the hunting season. Some trail users, birdwatchers, and photographers may be impacted by the presence of hunters or noise. User conflicts would be reduced by limiting the hunt to only 3 days a week and by implementing archery-only zones and no-hunting buffers around high public use areas. Moreover, by providing additional hunter access points beyond the four public use trailheads, hunters will be encouraged to disperse from other users. Trailheads would not be closed to other users during the refuge hunt. This is expected to reduce some conflicts by allowing all refuge visitors access to the trailheads including Lake Drummond Wildlife Drive, which is the most frequently used public area on the refuge.

As public use levels expand across time, unanticipated conflicts between user groups may occur. The refuge's visitor use programs would be adjusted as needed to eliminate or minimize each conflict and provide quality wildlife-dependent recreational opportunities.

Habitat and Vegetation

Negative impacts of recreational hunting could include the temporary trampling of vegetation and light soil erosion. However, hunting activities occur during the fall and winter when most species will have already undergone senescence or gone dormant. Hunters would have minimal impacts on plants during this period. Allowing several hunter access points throughout the refuge, impacts from repeated trampling are likely to be reduced, as hunters will be spread out over a larger area. We would continue to monitor the refuge for potential impacts and would take steps to limit access or close areas as needed to protect resources. Hunting could create a positive, indirect effect on vegetation through controlling the growth of the white-tailed deer population and therefore reducing the impacts of overbrowsing on desirable plant species.

Summary of Impacts

The refuge hunt program is designed to be sustainable through time, given relatively stable conditions, particularly because of close coordination with the State. Total impacts of hunting on populations at the refuge would be negligible. The proportion of the refuge's harvest of these species is negligible when compared to local, regional, and statewide populations and harvest.

Because of the regulatory process for harvest management in place within the Service, the setting of hunting seasons largely outside of the breeding seasons of resident and migratory wildlife, the ability of individual refuge hunt programs to adapt refuge-specific hunting regulations to changing local conditions, and the wide geographic separation of individual refuges, we anticipate no significant impacts on resident wildlife, migratory birds, and non-hunted wildlife of by use of hunting on the refuge.

PUBLIC REVIEW AND COMMENT:

This CD is part of the Great Dismal Swamp NWR Hunting Plan and the accompanying Environmental Assessment (EA). The proposal has been thoroughly coordinated with all interested and/or affected parties. We released the draft documents for public review and comment from April 9 through July 6, 2021, a total of 88 days. We distributed a press release to news organizations and alerted visitors to the plan’s availability on the refuge website and Facebook page. In addition, a notice of availability was sent to 2020 registered Refuge hunt permittees. No public meetings were held due to COVID-19 public gathering safety guidance. We received 21 public comment letters. A summary of all substantive public comments, and our responses, can be found in Appendix D of the final Hunting Plan.

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 purpose(s) and Refuge System mission, hunting can occur at Great Dismal Swamp NWR in accordance with State and Federal regulations and special 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:

- Hunting on the refuge occurs October 1 through the first Saturday in January, on Thursday, Friday, and Saturday only or as State seasons dictate.
- Possession of dogs on the refuge is prohibited during any designated hunt date.
- We will implement a phased approach for prohibition of lead ammunition that will allow hunters and the public additional time to understand and adapt to the new regulations. Conversion to non-toxic ammunition will phase-in over the next 5 years beginning with immediate prohibition for new hunting opportunities proposed in the plan (coyote, squirrel, and turkey) and encouragement of voluntary use for existing opportunities (deer and bear). The refuge staff will be working with hunters to move toward the required use of non-toxic alternatives for deer and bear hunting by 2026.
- There is an annual harvest limit of 20 bears on the refuge. The refuge bear hunt may be modified as this quota is approached. The refuge will routinely assess hunt data and may

make changes to the bear hunt as necessary; such as limiting the number of permits, acreage, and/or season.

JUSTIFICATION:

Hunting is a priority wildlife-dependent use for the Refuge System through which the public can develop an appreciation for fish and wildlife. 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.

Hunting is a traditional and well-established activity on Great Dismal Swamp NWR. It is consistent with the purposes for which the refuge was established, the Service policy on hunting, the Improvement Act of 1997, and the broad management objectives of the Refuge System. Not only does hunting satisfy a recreational need, but hunting on national wildlife refuges are also an important, proactive management action that can prevent overpopulation and the deterioration of habitat. Disturbance to other species will occur, but this disturbance is generally short-term. Suitable habitat exists on refuge lands to support hunting as proposed.

This activity would not conflict with any of the other priority public uses or adversely affect biological resources. Therefore, we have determined that hunting on the refuge, in accordance with the stipulations provided above, is a compatible use that would not materially interfere with, or detract from, the fulfillment of the Refuge System mission or the purposes of the refuge.

SIGNATURE:

Refuge Manager

(Signature)

(Date)

CONCURRENCE:

Regional Chief

(Signature)

(Date)

MANDATORY 15 YEAR RE-EVALUATION DATE:

(Date)

LITERATURE CITED:

- Augustine, D.J. and P.A. Jordan. 1998. Predictors of white-tailed deer grazing intensity in fragmented deciduous forests. *Journal of Wildlife Management* 62:1076-1085.
- Golden, N.H., S.E. Werner and M.J. Coffey. 2016. A Review and Assessment of Spent Lead Ammunition and its Exposure and Effects to Scavenging Birds in the United States. P.de.Voogt (ed.), *Reviews of Environmental Contamination and Toxicology* 237:123-191.
- Grade, T., P. Campbell, T. Cooley, M. Kneeland, E. Leslie, B. MacDonald, J. Melotti, J. Okoniewski, E.J. Parmley, C. Perry, H. Vogel and M. Pokras. 2019. Lead poisoning from ingestion of fishing gear: A review. *Ambio* 48:1023-1038.
- North Carolina Wildlife Resources Commission. 2018. Coyote Management Plan. North Carolina Wildlife Resources Commission, Raleigh, NC.
- North Carolina Wildlife Resources Commission. 2017. Species Profile: White-tailed Deer. Available online at: <https://www.ncwildlife.org/deer>.
- Virginia Department of Game and Inland Fisheries. 2017. Wild Turkey Population Status 2016-2017. Available online at: <https://www.dwr.virginia.gov/wp-content/uploads/Virginia-Wild-Turkey-Population-Status.pdf>.
- White, M.A. 2012. Long-term effects of deer browsing: composition, structure and productivity in a northeastern Minnesota old-growth forest. *Forest Ecology and Management* 269: 222-228.

Appendix B. Environmental Assessment for Hunting at Great Dismal Swamp National Wildlife Refuge

This Environmental Assessment (EA) is being prepared to evaluate the effects associated with this proposed action and to comply with the National Environmental Policy Act (NEPA) in accordance with Council on Environmental Quality 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

The U.S. Fish and Wildlife Service (Service) is proposing to expand hunting opportunities at Great Dismal Swamp National Wildlife Refuge (NWR) in accordance with the refuge's 2006 Comprehensive Conservation Plan (CCP). The refuge is currently open to hunting white-tailed deer and black bear. The refuge proposes to expand the hunting program to include wild turkey, coyote, and squirrel. The refuge also proposes to provide additional hunting opportunities by increasing total hunting days, increasing the number of hunter access points and land area, and adding archery-only zones.

A proposed action may evolve during the NEPA process as the agency 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

National wildlife refuges 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 (CFR) and Fish and Wildlife Service Manual (FWS).

The refuge was established pursuant to the Great Dismal Swamp NWR Act of 1974 (Public Law 93-402) to "manage the area for the primary purpose of protecting and preserving the unique and outstanding ecosystem, as well as protecting and perpetuating the diversity of animal and plant life therein. Management of the refuge will be directed to stabilize conditions in as wild a character as possible, consistent with achieving the Refuge's stated objectives." A secondary purpose is identified by the Act to "... promote a public use program when not in conflict with the primary objectives of the Refuge."

The mission of the Refuge System, as outlined by the NWRSA, 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”

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

- 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 is a historic and traditional use of Great Dismal Swamp NWR and provides a quality wildlife-dependent recreational opportunity to participating hunters. Big game hunting was opened on the refuge in 1979 with the initiation of the white-tailed deer hunt. In 1998, black bear hunting was added to the big game hunting program by amending the hunting program, developing a Compatibility Determination (CD), and adding it to the CFR (50 CFR 32.66). Parameters for the bear hunt were further described and analyzed as part the refuge CCP and EA, which was finalized and approved in July 2006. A new CD for the bear hunt was completed as well as a bear hunt plan. The first bear hunt was held in 2006 and both hunts have continued annually since.

Purpose and Need for the Proposed Action

Hunting is identified as one of the priority public uses legislatively mandated by the Refuge System Administration Act of 1966, as amended by the Refuge System Improvement Act of

1997 (Public Law 105-57) and reinforced as a priority use by Department of the Interior Secretarial Order 3356 (September 15, 2017). 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 Great Dismal Swamp 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 users, wildlife species, and the environment while on refuge lands.

The purpose of the proposed action is to provide compatible wildlife-dependent recreational opportunities on Great Dismal Swamp NWR. 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 become better environmental stewards.

Department of the Interior Secretarial Order 3356 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. To address the needs stated above, the proposed action will bring the refuge into greater 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). Great Dismal Swamp NWR's CCP identified goals and objectives to "establish a public use program that will encourage awareness, understanding, appreciation and stewardship of the Great Dismal Swamp NWR ecosystem while complementing the refuge resource management objectives." Finally, the proposed action will help to meet the statement of objectives detailed in the Hunting Plan.

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

Alternatives

Alternative A – Current Hunt Program - No Action Alternative

The No Action Alternative would continue to provide hunting opportunities for white-tailed deer and black bear on the refuge on approximately 60,000 acres. No expansion of hunting programs would occur, and the programs would be conducted as they are currently.

Alternative B – Expanded Hunt Program - Proposed Action Alternative

The refuge has prepared a draft Hunting Plan, presented in this document as the Proposed Action Alternative. Under the Proposed Action Alternative, the refuge would expand hunting opportunities by increasing the number of hunting days, providing additional hunter access points and acreages, and opening turkey, coyote and squirrel hunting. With this expansion, hunting opportunities would be available on approximately 100,000 acres. Furthermore, the refuge proposes to enhance hunting opportunities by expanding method of take options to include the use of muzzleloaders and by providing archery-only units.

In addition to the State hunting license, hunters must purchase a special permit for Great Dismal Swamp NWR. The permit can be obtained online through a third-party vendor. The refuge General Hunt permit would include participation in the hunt for white-tailed deer, squirrel, coyote, and wild turkey. The General Hunt permit fee is \$20. The refuge Bear Hunt permit will be a separate \$20 fee. Permit fees will be waived for youth hunters under 16 years of age.

The refuge hunt would operate on Thursdays, Fridays, and Saturdays from October 1 through the first Saturday in January. Hunters would be granted access through the four major public trailheads and several additional hunter-only access points. All access points would be walk-in and bike-in only from designated parking areas, with the exception of one public use trailhead (Railroad Ditch Road) that contains approximately 10 miles of drivable roads. The trailheads would be open to all users on hunt days.

Mitigation Measures to Avoid Conflicts

The Proposed Action Alternative has been designed to prevent conflicts and negative impacts on refuge habitat and resources, while expanding hunting opportunities on the refuge. Careful oversight by refuge staff would help minimize impacts of expanding hunting programs. The refuge manager reserves the right to close a unit to hunting or completely stop hunting should any unacceptable effects occur.

The refuge consists of approximately 113,000 acres, and due to hunter access being walk-in and bike-in only from all but one entry point, hunting would likely occur in a limited area around the refuge perimeter. Under this alternative, hunting in the interior parts of the refuge would be less likely to occur and would provide wildlife substantial available habitat with minimal human disturbance. Furthermore, by restricting hunter access to walk-in and bike-in only, the refuge encourages take of individuals, particularly bears, residing in close proximity to adjacent landowners. Over the last decade, an average of six bears per year have been taken with depredation permits in Suffolk and Chesapeake Counties. The refuge bear hunt encourages a more ethical alternative to removing these animals living near agricultural areas that may otherwise ultimately be the source of human-wildlife conflict.

Conflicts can arise between hunters and other public users, but it is not a substantial issue at the current level of use. Some trail users, birdwatchers, and photographers may be impacted by the presence of hunters or noise. User conflicts would be reduced by limiting the hunt to only 3 days a week and by implementing archery-only zones and no-hunting buffers around roads, parking areas, trails, and buildings. Moreover, by providing additional hunter access points beyond the four public-use trailheads, hunters would be encouraged to disperse from other users.

Hunting of white-tailed deer, black bear, wild turkey, coyote, and squirrel, will be limited to Thursday, Friday, and Saturdays only from October 1 through the first Saturday in January, in accordance with, and further restricted by, relevant State hunting seasons and regulations. This alternative provides a recreational experience to the public, while maintaining sustainable populations of five resident species. The Refuge Law Enforcement Officer, Virginia Department of Wildlife Resources (VDWR), and North Carolina Wildlife Resources Commission (NCWRC) conduct license, bag limit, and access compliance checks during hunting seasons.

This 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 Great Dismal Swamp NWR and the mission of the Refuge System. Future acquired lands would be evaluated and added to the hunt zones as found to conform with the Hunt Plan and accompanying CD.

Special Refuge-Specific Regulations

The refuge consists of lands in both Virginia and North Carolina. The proposed additional hunting opportunities would be conducted according to State, Federal (50 CFR pertaining to the Refuge System), and refuge-specific regulations that will be published in the *Federal Register* as part of the 2021-2022 Refuge-Specific Hunting and Sport Fishing Regulations.

- Hunting will be in accordance with the relevant open seasons, bag limits and other regulations for the state, city and county they are hunting in.
- Possession of hunt dogs on the refuge is prohibited during any designated hunt date.
- Hunters may use archery, shotgun (20 gauge or larger), or muzzleloader. Rifles are prohibited.
- Access is walk-in and bike-in only from designated parking areas, with the exception of the Railroad Ditch Road entrance.
- Hunting is prohibited within 100 feet of a road, trail, boardwalk, parking lot, or building.
- Tree stands are allowed according to State regulations but must be removed by the last day of the refuge hunt season.
- The refuge plans to require non-toxic ammunition for all species by 2026.

Alternative(s) Considered, But Dismissed From Further Consideration

In developing hunting plans for national wildlife refuges, we regularly receive comments and requests from some members of the public to eliminate hunting. An alternative that would close the refuge to all hunting was therefore considered but dismissed from detailed analysis. A "No Hunting Alternative" would not accomplish the purposes we seek to accomplish by the adoption of this hunting and fishing plan, as described in the "purpose and need" section of this EA. Closing the refuge to hunting would conflict with the Refuge System Improvement Act, which provides that hunting is an appropriate and priority use of the Refuge System, shall receive priority consideration in refuge planning and management, mandates that hunting opportunities should be facilitated when feasible, and directs the Service to administer the Refuge System so as to "provide increased opportunities for families to experience compatible wildlife-dependent recreation, particularly opportunities for parents and their children to safely engage in traditional outdoor activities, such as fishing and hunting." Furthermore, Department of the Interior Secretarial Order 3356, signed in 2017, directs the Service to enhance and expand public access to lands and waters on national wildlife refuges for hunting, fishing, recreational shooting, and

other forms of outdoor recreation. An alternative that failed to provide any opportunity to participate in hunting activities, where such activities are compatible with the purposes of the Refuge System, would also fail to meet the goals 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 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. This EA focuses on the 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.” Resources that will not be more than negligibly impacted by the action may be dismissed from further analyses (Table B-1). We determine significance by considering the degree of effects to that environment, and connected actions are used to assist in determining significance.

Great Dismal Swamp NWR protects a 113,000-acre remnant of a once vast forested peatland on the Atlantic Coastal Plain in southeast Virginia and northeast North Carolina. The refuge currently occupies lands in Chesapeake and Suffolk Counties in Virginia and Gates, Pasquotank and Camden Counties in North Carolina. The refuge is located approximately 30 miles from the Atlantic Ocean and is delineated on the south by U.S. Highway 158 in North Carolina, east by the Dismal Swamp Canal, north by Route 58 in Virginia, and west by the Suffolk Scarp.

The refuge is one component of an extensive land conservation network providing protection throughout the area. Within southeast Virginia and northeast North Carolina, other lands are protected by the City of Chesapeake, VDWR, Virginia Department of Conservation and Recreation (VDCR), NCWRC, U.S. Navy, U.S. Army Corps of Engineers, The Nature Conservancy, and other private entities.

As stated above, this section predicts the foreseeable impacts of implementing the hunting program in each of the alternatives. When detailed information may be deficient or unavailable, we base our comparisons on professional judgment and experience. We usually identify potential impacts within a long-range timeframe (i.e., 15 years); beyond that timeframe they become more speculative.

Please keep in mind the relatively small total land mass of the hunting area of the refuge in comparison with the entire Atlantic Flyway or the breeding ranges of the many birds and wildlife that use it. We recognize that the refuge is not isolated ecologically from the land around it; however, we may have overstated positive or negative impacts in that larger geographic context. Nevertheless, many of the actions we propose conform with the CCP and other regional landscape plans, and provide positive, incremental contributions to those larger landscape goals.

Some disturbance to non-target wildlife species and vegetation may occur. However, these impacts should be minimal as hunting is regulated by the refuge and normally occurs outside the breeding season. Refuge-specific regulations such as prohibiting use of hunt dogs, implementing

archery-only areas, limiting the hunt to 3 days a week, and reducing access to walk-in and bike-in only, are designed to prevent conflicts and reduce impacts on refuge resources.

For more information regarding the affected environment, please see Chapter 3 of the refuges' 2006 CCP which can be found online at:

https://www.fws.gov/uploadedFiles/Region_5/NWRS/South_Zone/Great_Dismal_Swamp_Complex/Great_Dismal_Swamp/FinalCCP_GDS.pdf.

TABLE B-1. POTENTIAL FOR ADVERSE IMPACTS FROM PROPOSED ACTION AND ALTERNATIVES

Resources	Not Applicable Resource does not exist in project area	No/Negligible Impacts Exists but no or negligible impacts	Greater than Negligible Impacts Impacts analyzed in this EA
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Water Quality	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
Cultural Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Refuge Management and Operations	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Socioeconomics and Environmental Justice	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

Affected resource description

White-tailed deer

White-tailed deer are found throughout most of the United States and can effectively occupy many habitat types. In Virginia, the deer populations has remained relatively stable in recent decades, with estimates ranging from 901,000 to 1,117,000 individuals. Deer population densities vary widely across the State. VDWR uses the deer density index, measured by bucks

killed-per-square-mile of habitat, to estimate population densities on private and public land across the State. Some of the more developed areas to the east of the refuge (like Chesapeake and Virginia Beach) have seen slight decreases in deer density on public land, while the more rural areas along the western boundary (Suffolk) of the refuge have seen increases in deer density in recent decades (1994 through 2013) (VDGIF 2015).

White-tailed deer are the most hunted species in North Carolina, and the current population is estimated at around 1 million individuals Statewide. Deer populations in North Carolina had been increasing rapidly until the 1990s, when changes to hunting management were made. In recent decades, deer population trends have been stable or slightly decreasing across most of North Carolina (NCWRC 2017).

There is no recent data on the population status and trends of white-tailed deer within the refuge. However, the refuge deer population is monitored for health and potential diseases via wildlife cameras.

Black bear

In the eastern United States, bear populations can be found throughout the Appalachian Mountains, as well as sporadically along the coast, establishing territories in fragmented forests and remnant swamp habitats. In Virginia, bear populations have increased over recent decades. These upward trends can be attributed to bear restoration efforts, effective harvest management strategies, public land purchases, reforestation efforts, oak forest maturation, and natural range expansions. Black bears have become established across the entire State, with sightings in nearly every county. The largest bear populations in Virginia occur in and near Great Dismal Swamp NWR, the Blue Ridge Mountains, and in the Allegheny Mountains. VDWR estimates the current Statewide bear population is between 16,000 and 17,000 per the VDGIF 2012-2021 Black Bear Management Plan. Unlike Virginia, where the refuge serves as a focal point for the black bear population, the bear population in coastal counties of North Carolina is more evenly dispersed.

Great Dismal Swamp NWR contains the largest breeding population of black bears in eastern Virginia. A bear population study completed in 1988 estimated the refuge contained 250 to 350 bears with densities of between 0.52 to 0.66 bears per square kilometer (Hellgren and Vaughan 1989). Another study in 2005 estimated a similar density of 0.56 to 0.63 bears per square kilometer (Tredick 2005). Similarly, a study in 1957 estimated the bear population in the Virginia portion of the refuge to be around 200 individuals with a density estimate of 1.1 bears-per-square-mile (Stickley 1957). Based on the findings of these studies, the bear population on the refuge is believed to be stable and likely at biological carrying capacity.

Wild turkey

Wild turkey populations are estimated at approximately 180,000 in Virginia. Virginia uses the number of spring gobblers killed-per-square-mile of suitable habitat as a relative index to turkey population density. As of 2017, turkey densities in Suffolk were considered high and increasing, and very low but increasing in Chesapeake (VDGIF 2017). Fall turkey hunting is closed in Chesapeake and in the State of North Carolina.

Anticipated Impacts

No Action Alternative

White-tailed deer

Estimated Hunter Numbers: less than 200

Estimated Take: Approximately 30 to 50

White-tailed deer hunting would continue to be permitted in designated areas of the refuge for 12 total hunting days. Hunters are granted driving access on refuge ditch roads in three hunting zones. From 2014 to 2019, the refuge averaged less than 200 permittees and harvested an average of 47 deer annually (harvest ranged from 28 to 83 deer). Under this alternative, the current levels of harvest would be expected as no new opportunities would be provided.

Black bear

Estimated Hunter Numbers: less than 100

Estimated Take: less than 2

Black bear hunting would continue to be permitted in designated areas of the refuge for a total of 6 hunting days. Hunters are granted driving access on refuge ditch roads in two bear hunt zones. The current bear hunt program on includes measures to limit overall bear harvest, by including a 20-bear annual quota and prohibiting the use of bait and hunt dogs. Under this alternative, current levels of harvest would be expected, as no new opportunities would be provided.

Wild turkey

Wild turkey hunting would not be offered on the refuge and no new hunting opportunities would be provided.

Proposed Action Alternative

White-tailed deer

Under the Proposed Action Alternative, additional acreage and hunting days would be open to hunting deer via additional hunter access points and an increase in total hunting days. The deer hunt would take place on Thursdays, Fridays, and Saturdays from October 1 through the first Saturday in January. Deer on the refuge may be temporarily displaced by hunters walking and driving in the refuge, but this impact is typically minimal and short-term. Hunting access would be limited to walk-in and bike-in only at all except one entry point, and potential vehicular disturbance is likely to be reduced. Although it is possible that the expanded hunting program could attract additional white-tailed deer hunters or increase harvest success rates, impacts to local or regional white-tailed deer populations would likely not change significantly.

Deer hunting helps to keep deer populations within the carrying capacity of the habitat, thus reducing excessive damage to vegetation caused by overbrowsing and maintaining understory habitat for other species. Deer densities, if maintained through regulated hunting, will sustain the native vegetation and forest regeneration associated with the natural communities in those regions. Regulated deer hunting will also maintain a deer herd in good physical condition that staves off malnutrition and disease. Overall, we expect the white-tailed deer hunt to continue to have a positive impact on refuge habitats and the wildlife that depend on them.

Black bear

Bear hunting opportunities would be increased with additional hunter access points, and an increase in total hunting days. Bear hunting would take place on Thursdays, Fridays, and Saturdays from October 1 through the first Saturday in January. The proposed action would preserve the conservative nature of the hunt by prohibiting the use of dogs and bait and maintaining an annual harvest quota of 20 bears. The hunt would occur for 3 consecutive days each week and be walk-in and bike-in only at all except one entry point, which would provide the bear population with both temporal and spatial rest from hunting pressure by providing hunt-free days and hunt-free areas within the interior refuge. With these measures in place, the expanded hunt would likely not significantly affect the refuge's bear population.

Wild turkey

Opportunities for hunting turkey would be added in conjunction with the deer and bear hunting season. Turkey hunting on the refuge would be permitted in the fall only in accordance with State regulations. 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 may not be biologically significant. There is some evidence to suggest that putting less pressure on turkeys increases hunt quality by making them less acclimated to hunter presence. Establishing days where no hunting occurs allows turkeys to forage undisturbed. Additionally, restricting hunting access to walk-in and bike-in on most areas of the refuge preserves a large area distanced from the refuge perimeter where hunting is less likely to occur. The 5-year average wild turkey harvest for the city of Suffolk was 23 individuals, and the statewide 5-year average was 2,630 (VDWR 2020b). Turkey harvest on the refuge is expected to be negligible and not likely to significantly affect turkey populations on or near the refuge.

Upland and Small Game

Affected resource description

Coyote

Coyotes are historically native to the plains of the Midwest and are believed to have expanded their range following a reduction of natural predators. The first sightings of coyotes in Virginia and North Carolina were in the late 1970s and 1980s, respectively. There are no reliable coyote population estimates in Virginia or North Carolina, but harvest surveys suggest populations are stable or increasing. In both states, coyotes are considered a non-game species and there are no daily bag limits. An estimated 39,446 coyotes were harvested via hunting and trapping in North Carolina during the 2018-2019 season (NCWRC 2020a).

Eastern gray squirrel

Eastern gray squirrels are common in southeastern Virginia and across the State of North Carolina. Their populations are regulated by availability of habitat and food resources, particularly mast. On the refuge, squirrel populations are likely most abundant in upland areas, or areas of the swamp with oak species that tolerate wetter soils. Statewide small game harvest reports suggest gray squirrel populations are stable.

Anticipated impacts

No Action Alternative

Coyote

Coyote hunting would not be offered on the refuge. No individuals would be harvested on refuge lands, as no new hunting opportunities would be provided.

Eastern gray squirrel

Squirrel hunting would not be offered on the refuge. No individuals would be harvested on refuge lands, as no new hunting opportunities would be provided.

Proposed Action Alternative

Coyote

The refuge coyote hunt would likely not significantly affect the coyote population. Under the proposed action, coyote hunting would occur on Thursdays, Fridays, and Saturdays concurrently with the refuge hunt season for deer and bear. Night hunting is prohibited on the refuge. Coyotes tend to be more active at night, so coyote harvest on the refuge is expected to be minimal. As a result of the hunting program, population dynamics and wildlife behavior may change for coyotes on and around the refuge. They may avoid certain areas of the refuge or become more prone to disturbance. A coyote harvest would result in a positive reduction of a non-game species population benefiting the adjacent landowners and community.

Eastern gray squirrel

Under this alternative, squirrel hunting would take place on Thursday, Friday, and Saturdays concurrently with the refuge hunt season for deer and bear. Squirrel populations are found in low densities on the refuge, as this species is typically observed on drier portions of the refuge and in areas with oak species that tolerate wetter soils such as swamp chestnut oak, pin oak, and willow oak. Squirrels on the refuge may be minimally impacted by short-term disturbances due to hunters driving and walking to and from hunting locations, although hunter vehicular access would be minimized under this alternative. Impacts on squirrels in and around the refuge are expected to be negligible since the populations are considered stable and are capable of rebounding quickly and we anticipate low harvest levels.

Non-target Wildlife and Aquatic Species

Affected resource description

The refuge is home to many resident and migratory wildlife species. Over 500 species of birds, insects, fish, reptiles, amphibians, and mammals exist or migrate through the unique (many rare) habitats of the swamp. The refuge contains typical pocosins of the southeast (they exist here at the northern extent of their range), and restored habitat for the Federally threatened red-cockaded woodpecker. The diversity and rarity of the habitats allow for the range of unique inhabitants that reside in the swamp.

We take into consideration the bioavailability of spent lead ammunition (bullets) and sinkers on the environment, endangered and threatened species, birds (especially raptors), mammals, and humans or other fish and wildlife susceptible to biomagnification. Lead shot and bullet fragments found in animal carcasses and gut piles are the most likely 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 continues 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 (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 at 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).

Additionally, recent studies have found that wildlife hunted with lead ammunition can increase risks to human health due to the ingestion of lead (Hunt et. al 2009). While no lead poisoning of humans has been documented from ingestion of wild game, some experts, including the Center for Disease Control, have recommended the use of non-toxic bullets when hunting to avoid lead exposure and that pregnant women and children under 6 should not consume wild game shot with lead ammunition (Streater 2009). This recommendation comes after a study done in North Dakota found that those who ate wild game had significantly higher levels of lead in their blood than those who did not (Iqbal et. al 2009).

Anticipated impacts

No Action Alternative

The current hunting program would be maintained with approximately 60,000 acres of refuge lands open to hunting. Non-target species may continue to be impacted by the presence of hunters walking and driving to and from hunting spots. The noise from discharging firearms may also disturb non-target species.

The refuge encourages hunters on the refuge to use non-toxic shot, but we would continue to follow State regulations as related to the allowance of lead ammunition. The refuge represents only a small percentage of the hunting for white-tailed deer and bear in the local area. Therefore, the continued allowance of toxic shot for hunting of white-tailed deer and bear on the refuge in alignment with State regulations would result in such a small addition of lead to the environment as compared to hunting in the local area and the State that the possible accumulative impacts of this alternative would not be significant.

Proposed Action Alternative

Hunting can have direct and indirect impacts on both target and non-target species. These impacts include direct mortality of individuals, changes in wildlife behavior, changes in wildlife population structure, dynamics, and distribution patterns, and disturbance from noise and hunters walking on- and off-trail (Cole 1990 and Cole and Knight 1990). However, under the anticipated levels of use these, impacts would likely be minimal. Hunters tend not to disperse very far from parking areas and roads, which leaves large areas of refuge land undisturbed. While resident and non-game wildlife in areas newly opened to hunters and hunting may be negatively impacted by disturbance that impact would likely be negligible.

Under the Proposed Action Alternative, additional hunter access points would lead to hunting in areas of the refuge that had not experienced hunting before. An additional 40,000 acres would be open to hunting under this plan. Due to most of these entry points being walk-in and bike-in only, impacts are expected to occur in a smaller area (i.e., the perimeter of the refuge) than if hunters retained driving access. Similarly, this alternative would likely disperse hunters out across a larger area of the refuge, reducing short-term disturbance impacts on non-target species.

Disturbances to birds are expected to be minimal, as hunting on the refuge occurs outside of nesting and migratory seasons. Short-term disruptions to other species like bats, turtles, frogs, and some mammals, would likely be negligible, due to inactivity or hibernation during the hunting season.

Under the proposed action, the refuge would require non-toxic ammunition for all species by 2026. This would benefit wildlife and habitat on over 100,000 acres of wetlands on the refuge by reducing potential bioaccumulation of lead in the environment.

Threatened and Endangered Species and Other Special Status Species

Affected resource description

Red-cockaded woodpecker

The red-cockaded woodpecker (*Picoides borealis*) (RCW), a federally listed threatened species, was a common species throughout the pinelands of the southeastern United States, from New Jersey to Louisiana. When the species was listed in 1970, fewer than 10,000 RCWs remained throughout their former range. Loss of habitat and changes in silviculture practices principally lead to this decline. Loss of habitat continues to be the current major threat to the species (USFWS 2003).

Great Dismal Swamp NWR and adjacent lands in Virginia and North Carolina are part of the Northern Essential Support Zone for the species identified in the Service's RCW Recovery Plan (2003). The Service has reintroduced RCW within the pine-pocosin area southeast of Lake Drummond; bordered on the north by Persimmon Ditch, the south by North Carolina State line, the west by Western Boundary Ditch and the east by South Martha Washington Ditch (USFWS 2004; USFWS 2006a). The 2,000-acre RCW management area has been selectively timbered to remove hardwood competition and create a more open area of pine, which is preferred by this species. The area being managed for RCW would not open to hunting.

Northern long-eared bat

The Northern long-eared bat (*Myotis septentrionalis*) is federally listed as a threatened species under the Endangered Species Act. Northern long-eared bats (NLEB) typically spend winter hibernating in caves and mines called hibernacula. They use areas in various sized caves or mines with constant temperatures, high humidity, and no air currents. During the summer, NLEBs roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). These bats seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. They rarely roost in human structures like barns and sheds.

The NLEB's range includes much of the eastern and north central United States and all Canadian

provinces from the Atlantic Ocean west to the southern Yukon Territory and eastern British Columbia. The species' range includes 37 states and the District of Columbia. The species has been captured and recorded within the refuge, both in Virginia and North Carolina. There are no known summer maternity roosts on the refuge.

Anticipated impacts

No Action Alternative

Under the No Action Alternative, the bear and deer hunt would continue to occur on select dates in October and November. The hunt would be limited to defined hunt zones that do not overlap with RCW habitat. Although hunting in RCW habitat does not occur, some RCW individuals may be near hunting activities while foraging in other parts of the refuge. Hunting-related impacts on RCW would remain negligible. Additionally, NLEBs would likely not be impacted by the expanded hunt program as they are typically hibernating during hunting season.

Proposed Action Alternative

Under this alternative, the RCW habitat and management area, "The Blocks," would continue to be closed to hunting as long as birds are being translocated to the area each fall. During foraging, it is possible for RCW to move through or into other areas of the refuge that are open to hunting. In addition, it is possible RCW will establish home territories in other areas open to hunting. The nesting, foraging, and feeding behaviors of this species occur in the upper portions of living pines over large tracts of land. Other than temporary impacts from hunter disturbance, no long-term adverse impacts would occur. No adverse impacts to reintroduced RCW would be expected from this alternative. Additionally, NLEBs would likely not be impacted by the expanded hunt program as they are typically hibernating during hunting season.

Habitat and Vegetation

Affected resource description

The natural communities and vegetation of Great Dismal Swamp NWR are described in the refuge's 2006 CCP and the **2020 Draft Habitat Management Plan (HMP)**. Vegetation varies throughout the refuge, and hunt areas include both upland and wetland habitats.

The natural communities present at Great Dismal Swamp NWR include:

- Mesic pine mixed hardwood forests;
- Non-riverine pine-hardwood forests;
- Pond pine pocosin;
- Peatland Atlantic white cedar forest;
- Maple-gum forested wetland;
- Coastal plain successional wetland;
- Cypress-gum forested wetland;
- The Lake Drummond pondshore; and
- Open water

Anticipated impacts

No Action Alternative

Under current levels of use, some impacts to vegetation due to trampling, creating footpaths, and

installing temporary tree stands have been observed. All-terrain vehicles are not permitted on the refuge, and all other vehicles are restricted to designated roadways. Although an individual hunter tends to use the same hunting spot, creating localized trampling of vegetation, hunter use is generally dispersed over large areas, and the trails used by hunters are usually devoid of thick ground cover due to the early winter time period. Hunters often trim vegetation in order to clear access to interior hunting spots. Hunters are allowed to use portable tree stands; however, these stands must be self-supporting and no equipment, devices or climbers may penetrate the bark surface. At current levels of use, impacts to the vegetation are negligible.

Proposed Action Alternative

The physical impacts of hunting on refuge vegetation would likely remain minimal. In this alternative, hunting would be limited to walk-in and bike-in only except for one location. Repeated visitation to any particular locale at the refuge could cause damage to vegetation and, therefore, wildlife habitat. Substantial, widespread habitat degradation could, through time, result in adverse effects to wildlife by reducing available cover, food, nesting habitat, etc. along heavily used access routes. Impacts to wildlife habitat would likely be minimal as most species would have already undergone senescence or become dormant. Additionally, the Proposed Action Alternative would add several additional hunter access points throughout the refuge. Due to the dispersed nature of hunters, and the addition of several new access points, impacts from repeated trampling would likely be reduced, as hunters would be spread out over a larger area.

Under the proposed action, the refuge would require the use of non-toxic ammunition for all species by 2026. This would benefit wildlife and habitat on over 100,000 acres of wetlands on the refuge by reducing potential bioaccumulation of lead in the environment. Hunting could also create a positive, indirect effect on vegetation through maintaining the white-tailed deer population at levels that support favorable growth of the understory.

Visitor Use and Experience

Affected resource description

Great Dismal Swamp NWR is open to all six priority public uses (hunting, fishing, wildlife observation, photography, environmental education, and interpretation) as outlined in the Refuge System Improvement Act of 1997. Hunting is a traditional and popular outdoor activity that is permitted on portions of the refuge in accordance with State and Federal seasons and regulations. Wildlife-dependent recreational uses are refuge priority activities implemented by refuge staff, volunteers, Friends of Great Dismal Swamp NWR, and local partners such as City of Suffolk Tourism. An average of 65,000 people visit the refuge annually.

Anticipated impacts

No Action Alternative

Under the No Action Alternative, hunting of white-tailed deer and black bear would continue on the refuge. On hunting days, the Railroad Ditch Trailhead (Lake Drummond Wildlife Drive) as well as the Jericho Lane Trailhead would be closed to all users except hunters. While this reduces some conflict in that it separates hunters from other user groups by eliminating noise and sight conflicts, it creates another conflict in that it reduces recreational opportunities for the other refuge visitors. Lake Drummond Wildlife Drive is a popular destination for refuge visitors, but it is currently only open to hunters on refuge hunt days.

Proposed Action Alternative

Conflicts between hunters and other refuge users are expected to be minimal during the hunting season. Some trail users, birdwatchers, and photographers may be impacted by the presence of hunters or noise. User conflicts would be reduced by limiting the hunt to only 3 days a week, and by implementing archery-only zones and no-hunting buffers around high public use areas. Moreover, by providing additional hunter access points beyond the four public-use trailheads, hunters will be encouraged to disperse from other users. In this alternative, trailheads would not be closed to other users during the refuge hunt. This is expected to reduce some conflicts by allowing all refuge visitors access to the trailheads, including Lake Drummond Wildlife Drive, which is the most highly used public area on the refuge.

As public use levels expand across time, unanticipated conflicts between user groups may occur. The refuge's visitor use programs would be adjusted as needed to eliminate or minimize each conflict and provide quality wildlife-dependent recreational opportunities.

Refuge Management and Operations

Affected resource description

There are currently 11 full-time employee positions at Great Dismal Swamp NWR. All staff and programs work together to make sure the refuge's hunt program is safe, successful, and biologically sound.

On the refuge, infrastructure includes the refuge headquarters office, visitor contact station, fire and maintenance buildings, 1 refuge bunkhouse, and 5 outbuildings. The refuge also maintains approximately 12 kiosks, 5 boardwalks, and 2 piers. Hunters on the refuge currently utilize two trailhead parking lots and a network of ditch road trails.

Anticipated impacts

No Action Alternative

The refuge manager coordinates the budget each year to ensure funds are available, which include costs related to equipment, law enforcement, public outreach materials, collection and analysis of hunt data and biological information, and maintenance of roads, trails, and kiosks.

Hunters currently use refuge infrastructure, such as parking areas and refuge ditch roads, to gain access to hunting areas. Under the current program, hunters are able to drive on approximately 40 miles of ditch roads from three access points. Maintenance of ditch roads, through grading and clearing trees, is required to support this use. Overall, the impacts to refuge infrastructure are short-term and negligible.

Proposed Action Alternative

Estimated costs to implement this alternative are approximately \$28,000 annually. This is largely due to the increased time to manage the land expansion, including new hunter access points; expanded seasons for deer and bear; and opening seasons for turkey, coyote, and squirrel. It would require approximately 20 percent of the Law Enforcement Officer's time to oversee hunter use and compliance. Some visitor services, administration, management, biology, and maintenance time would also be needed to implement the program.

While there may be an increased number of hunters throughout the refuge, impacts to local roads and existing infrastructure would likely be negligible. Under the Proposed Action Alternative, hunters would continue to use refuge parking areas and may make stops at the visitor contact station to gather information. However, access would be limited to walk-in and bike-in only at all except one location, which is expected to decrease the impacts by hunters on refuge ditch roads. There may be slightly more traffic on refuge-adjacent roads as hunters drive to and park at new access points. Impacts to local public roads and refuge infrastructure would likely be negligible.

Socioeconomics and Environmental Justice

Affected Resource Description

The refuge is centrally located between the popular tourist destinations of Williamsburg and Virginia Beach, Virginia, and the Outer Banks of North Carolina. Many travelers that visit these sites make day trips to the refuge or stop on route from one destination to another (Virginia Tourism Corporation 2003).

In Virginia, the annual economic impact of white-tailed deer hunting is currently estimated at over \$500 million. Deer populations can have profound impacts on the economy through over-browsing vegetation causing millions of dollars in damage to crops and gardens, disrupting ecosystems, and posing safety hazards to vehicles on roadways (VDGIF 2015).

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 missions by identifying and addressing disproportionately high or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities.

Anticipated Direct and Indirect Impacts

No Action Alternative

Under the current hunt program, the refuge estimates approximately 400 hunter visits each year. The 2020 hunt season recorded 181 registered hunters, many of which reside outside the immediate community. Approximately 18 percent of 2020 registered hunters reside greater than 50 miles from the refuge, with approximately 9 percent residing more than 100 miles away. Many of these traveling visitors spend money on gasoline, equipment, food and lodging in the area surrounding the refuge. While positive, the contributions to the local economy can be considered negligible.

Proposed Action Alternative

With increased opportunities for hunting, the refuge expects a small increase in the annual economic output from these activities. Impact to the local economy from this alternative would include an increase in the number of hunters traveling into the area and/or the number of nights of lodging and meals spent in the area, stimulating the local economy beyond the current level. However, hunting only accounts for a fraction of expenditures related to the refuge, and additional economic impact is expected to be negligible. In 2017, hunting visits accounted for less than 1% of total refuge recreational visits and associated expenditures (USFWS 2019).

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 are not disproportionately affected by this activity or its impacts.

Monitoring

Many game species populations are monitored by VDWR and NCWRC through field surveys and game harvest reports, which provide an additional means for monitoring populations. The State has determined that populations of game species are at levels acceptable to support hunting and these assessments are reviewed and adjusted periodically. The refuge will continue to collect data on game harvested off the refuge through the State wildlife agencies' harvest reporting system.

The refuge conducts regular monitoring of target and non-target species, habitats, and environmental conditions. The refuge will be adaptive toward harvest management under the hunt program to ensure species and habitat health. Refuge-specific hunting regulations may be altered to achieve species-specific harvest objectives in the future. The refuge is in the process of drafting a HMP that will help guide these objectives.

Summary of Analysis

An objective 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, and no new hunting opportunities be provided. This alternative has the least short-term impacts to physical and biological resources; however, long-term impacts on habitat quality could be more adverse with additional deer overbrowsing. In addition, this alternative would reduce our actions as mandated under the Refuge System Administration Act and Secretarial Order 3356.

Alternative B – Proposed Action Alternative

As described above, this alternative is the Service's proposed action because it offers the best opportunity for public hunting that would result in minimal impact on physical and biological resources, while meeting the Service's mandates under the Refuge System Administration Act and Secretarial Order 3356. The Service believes that hunting on the refuge would not have significant impact on local or regional wildlife populations because the percentage likely to be harvested on the refuge, though possibly additive to existing harvest levels, would be a small fraction of the estimated populations. Hunting is monitored and regulated by the refuge, normally occurs outside the breeding season, and refuge-specific regulations such as prohibiting use of hunt dogs, implementing archery-only areas, limiting the hunt to 3 days a week, and reducing access to walk-in and bike-in only, are designed to prevent conflicts and reduce impacts on refuge resources. Additional hunting would not significantly increase accumulative impacts to wildlife from hunting at the local or regional levels, and would only result in minor, negative impacts to wildlife populations.

List of Sources, Agencies and Persons Consulted

North Carolina Wildlife Resources Commission
Virginia Department of Wildlife Resources

List of Preparers

Melanie Willard – Wildlife Refuge Specialist
Chris Lowie – Refuge Manager
Laura Howard – Visitor Services Assistant
Thomas Bonetti – Regional Hunting and Fishing Coordinator
Stacey Lowe – Regional Hunting and Fishing Chief

State Coordination

The refuge reviewed the operations and regulations for neighboring State wildlife management areas and refuges to find consistency where possible. Since 2010, the refuge has included the hunt program in the Virginia State Hunting and Trapping Digest and permitted through the Virginia State license sales program to provide a cooperative “one-stop” location for hunting opportunities. The refuge first reached out to the State of Virginia on January 14, 2020, where we held a meeting with VDWR and local Virginia refuges to discuss opportunities to align with the State’s hunting program. In addition to this meeting, we had multiple follow-up calls with local State biologists from both VDWR and NCWRC early in the development of this Hunting Plan.

We have continued to consult and coordinate on specific aspects of the Hunting Plan with our State partners. The VDWR regional office reviewed the plan and refuge-specific regulations prior to public release. We received a letter from the State Executive Director dated December 10, 2020 that lauded the ongoing efforts to align refuge hunting regulations to State regulations and provide new opportunities. VDWR also supports our intent to adopt regulations that include non-lead ammunition requirements on select refuges into the future.

Tribal Consultation

There is one Federally recognized Tribe in Suffolk, Virginia (the Nansemond Tribe) and one in North Carolina (the Eastern Band of Cherokee Nation), which is in south-central North Carolina approximately 430 miles from the refuge. The Tribal Nations will receive a personalized copy of the Draft EA to solicit formal review and comment. In addition, they will be invited to any public meetings.

Public Outreach

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 and fishing seasons. In addition, information about hunting and fishing will be available at refuge headquarters and on the refuge websites.

The public will be notified of the availability of the Great Dismal Swamp NWR Hunting Plan, EA and CD for review and will include no less than a 30-day comment period. We will inform the public through local venues, the refuge website, and social media. Comments received from the public will be considered, and modifications may be incorporated into the final plan and decision documents.

Determination

This section will be filled out upon completion of any public comment period and at the time of finalization of the Environmental Assessment.

- The Service’s action will not result in a significant impact on the quality of the human environment. See the attached “**Finding of No Significant Impact**”.

- The Service’s action **may significantly affect** the quality of the human environment and the Service will prepare an Environmental Impact Statement.

Preparer Signature:  Date: 8/13/2021

Name/Title/Organization: Thomas Bonetti, Hunting and Fishing Coordinator

References

- Augustine, D.J. and P.A. Jordan. 1998. Predictors of white-tailed deer grazing intensity in fragmented deciduous forests. *Journal of Wildlife Management* 62:1076-1085.
- Cole, D.N. 1990. Ecological impacts of wilderness recreation and their management. In J.C. Hendee, G.H. Stankey, and R.C. Lucas (Eds.), *Wilderness Management* (pp. 425–466). Golden, CO: North American Press.
- Cole, D.N. and Knight, R.L. 1990. Impacts of recreation on biodiversity in wilderness. *Natural Resources and Environmental Issues*, 0, 33-40.
- Gross, J., B. Cohen, B. Collier, and M. Chamberlain. 2015. Influences of hunting on movements of male wild turkeys during spring. *Proceedings of the National Wild Turkey Symposium*. 11. 259-268.
https://www.researchgate.net/publication/313900008_Influences_of_hunting_on_movements_of_male_wild_turkeys_during_spring.
- Hellgren, E.C. and M.R. Vaughan. 1989. Demographic analysis of a black bear population in the Great Dismal Swamp. *Journal of Wildlife Management* 53(4):969-977.
- Hunt W.G., R.T. Watson, J.L. Oaks, C.N. Parish, K.K. Burnham, R.L. Tucker, Belthoff, and G. Hart. 2009. Lead Bullet Fragments in Venison from Rifle-Killed Deer: Potential for Human Dietary Exposure. *PLoS ONE* 4(4): e5330. doi:10.1371/journal.pone.000533.
- Iqbal S., W. Blumenthal, C. Kennedy, F.Y. Yip, S. Pickard, W.D. Flanders, K Loring, K. Kruger, K.L Caldwell, M. Jean Brown. 2009. Hunting with lead: association between blood lead levels and wild game consumption. *Environmental Research* 109(8):952-9. doi: 10.1016/j.envres.2009.08.007.
- Kelly, T.R., P.H. Bloom, S.G. Torres, Y.Z. Hernandez, R.H. Poppenga, W.M. Boyce, C.K. Johnson. 2011. Impact of the California lead ammunition ban on reducing lead exposure in golden eagles and turkey vultures. *PLoS ONE*. 6(4): e17656. doi:10.1371/journal.pone.0017656.
- Kendall, R.J., T.E. Lacher Jr., C. Bunck, B. Daniel, C. Driver, C.E. Grue, F. Leighton, W. Stansley, P.G. Watanabe, and M. Whitworth. 1996. An ecological risk assessment of lead shot exposure in non-waterfowl avian species: upland game birds and raptors. *Environmental Toxicology and Chemistry* 15:4-20.
- Kramer, J.L., P.T. Redig. 1997. Sixteen years of lead poisoning in eagles, 1980-95: An epizootiological view. *Journal of Raptor Research*. 31(4): 327-332.
- North Carolina Wildlife Resources Commission (NCWRC). 2017. Species Profile: White-tailed Deer. Available online at: www.ncwildlife.org/deer. Accessed August 2020.

- North Carolina Wildlife Resources Commission (NCWRC). 2018. Coyote Management Plan. North Carolina Wildlife Resources Commission, Raleigh, NC, USA.
- North Carolina Wildlife Resources Commission (NCWRC). 2019 Official Black Bear Harvest Report. North Carolina Wildlife Resources Commission, Raleigh, NC, USA. Available online at: <https://www.ncwildlife.org/Portals/0/Hunting/Documents/Bear/2019-Official-Black-Bear-harvest.pdf>. Accessed September 2020.
- North Carolina Wildlife Resources Commission (NCWRC). 2020. Deer Harvest for 2019-20 Season Up Nearly 7 Percent from Previous Three-Year Average. North Carolina Wildlife Resources Commission, Raleigh, NC. Available online at: <https://www.ncwildlife.org/News/deer-harvest-for-2019-20-season-up-nearly-7-percent-from-previous-three-year-average>. Accessed August 2020.
- North Carolina Wildlife Resources Commission (NCWRC). 2020a. Furbearer Management Newsletter (Vol 14:1). North Carolina Wildlife Resources Commission, Raleigh, NC, USA.
- North Carolina Wildlife Resources Commission (NCWRC). 2020b. Statewide Reported Wild Turkey Harvest – Spring 2020. North Carolina Wildlife Resources Commission, Raleigh, NC, USA.
- North Carolina Wildlife Resources Commission. 2019. North Carolina Hunting Estimates Report 2018-19. <https://www.ncwildlife.org/Portals/0/Hunting/Documents/Huner%20Harvest%20Survey%20Summaries/HunterEstimates%20for%20pdf%2020191219.pdf>.
- Scheuhammer, A.M. and S.L. Norris. 1996. The ecotoxicology of lead shot and lead fishing weights. *Ecotoxicology* 5(5):279-95. doi: 10.1007/BF00119051.
- Stauber, E., N. Finch, P.A. Talcott, and J.M. Gay. 2010. Lead poisoning of bald (*Haliaeetus leucocephalus*) and golden (*Aquila chrysaetos*) eagles in the US inland Pacific Northwest- An 18-year retrospective study: 1991-2008. *Journal of Avian Medicine and Surgery* 24:279-287. doi: <http://dx.doi.org/10.1647/2009-006.1>.
- Stickley, Jr. A.R. 1957. The Status and Characteristics of the Black Bear in Virginia. Thesis, Virginia Polytechnic Institute and State University, Blacksburg, VA, USA.
- Streater, S. 2009. Wild meat raises lead exposure. *Environmental Health News*. Available: <https://www.scientificamerican.com/article/wild-game-deer-venison-condors-meat-lead-ammunition-ban/> (March 2017).
- Tredick, C.A. 2005. Population abundance and genetic structure of black bears in coastal North Carolina and Virginia using noninvasive genetic techniques. Thesis, Virginia Polytechnic Institute and State University, Blacksburg, VA, USA.

- United States (US) Census. 2020. Virginia Quick Facts. Census Bureau. Available online at: www.census.gov/quickfacts/VA. (Accessed August 2020).
- U.S. Fish and Wildlife Service (USFWS). 2003. Recovery plan for the red-cockaded woodpecker (*Picoides borealis*), second revision. U.S. Fish and Wildlife Service, Atlanta, GA. 296 pp.
- U.S. Fish and Wildlife Service (USFWS). 2004. Environmental Assessment for the Red-cockaded Woodpecker Habitat Enhancement and Reintroduction at the Great Dismal Swamp National Wildlife Refuge. U.S. Fish and Wildlife Service, Suffolk, VA.
- U.S. Fish and Wildlife Service (USFWS). 2006. Great Dismal Swamp National Wildlife Refuge and Nansemond National Wildlife Refuge Final Comprehensive Conservation Plan. U.S. Fish and Wildlife Service, Suffolk, VA.
- U.S. Fish and Wildlife Service (USFWS). 2013. Issuance of Annual Regulations Permitting the Hunting of Migratory Birds: Final Supplemental Environmental Impact Statement. Available online at: www.fws.gov/migratorybirds/pdf/policies-and-regulations/FSEISIssuanceofAnnualRegulations.pdf.
- U.S. Fish and Wildlife Service (USFWS). 2016. Adaptive Harvest Management: 2017 Hunting Season. U.S. Department of the Interior, Washington, DC. Available online at: www.fws.gov/birds/management/adaptive-harvest-management/publications-and-reports.php. (Accessed August 2020)
- U.S. Fish and Wildlife Service (USFWS). 2019. The Economic Contributions of Recreational Visitation at Great Dismal Swamp National Wildlife Refuge. Division of Economics, U.S. Fish & Wildlife Service.
- Virginia Department of Game and Inland Fisheries (VDGIF). Black Bear Management Plan (2012-2021). Virginia Department of Game and Inland Fisheries, Richmond, VA, USA.
- Virginia Department of Game and Inland Fisheries (VDGIF). 2014. Virginia Wild Turkey Management Plan (2013-2022). Virginia Department of Game and Inland Fisheries, Richmond, VA, USA.
- Virginia Department of Game and Inland Fisheries (VDGIF). 2015. Virginia Deer Management Plan (2015-2024). Virginia Department of Game and Inland Fisheries, Richmond, VA, USA.
- Virginia Department of Game and Inland Fisheries (VDGIF). 2016. Statewide Harvest Estimates: Table 2. Expanded Statewide Estimates of Total Harvest (With Standard Errors) for Virginia. Virginia Department of Game and Inland Fisheries, Richmond, VA, USA.

Virginia Department of Game and Inland Fisheries (VDGIF). 2017. Wild Turkey Population Status 2016-2017. Available online at: www.dwr.virginia.gov/wp-content/uploads/Virginia-Wild-Turkey-Population-Status.pdf. (Accessed August 2020).

Virginia Department of Wildlife Resources (VDWR). 2020. Deer Kill Data. Virginia Department of Wildlife Resources, Richmond, VA, USA. Available online at: <https://dwr.virginia.gov/wildlife/deer/harvest/>. Accessed September 2020.

Virginia Department of Wildlife Resources (VDWR). 2020a. Virginia 2019-2020 Black Bear Harvest Summary. Virginia Department of Wildlife Resources, Richmond, VA, USA.

Virginia Department of Wildlife Resources (VDWR). 2020b. Virginia 2019-2020 Fall Wild Turkey Harvest Summary. Virginia Department of Wildlife Resources, Richmond, VA, USA.

Virginia Department of Game and Inland Fisheries. 2015b. Virginia's 2015 Wildlife Action Plan. VGIF. <http://bewildvirginia.org/wildlife-action-plan>.

Virginia Department of Wildlife Resources. 2020. Fish and Wildlife Information Service. VDWR. <http://vafwis.org/fwis/>.

Virginia Department of Wildlife Resource (VDWR). 2020. 2020-2021 Hunting and Trapping in Virginia Regulations Digest. Available at: <https://dwr.virginia.gov/hunting/regulations/>

Virginia Department of Wildlife Resources. 2020. Spring Gobbler Harvest Survey. VDWR. <https://dwr.virginia.gov/wildlife/turkey/springharvestsummary/>.

Virginia Department of Wildlife Resources. 2020. 2019-2020 Deer Kill Summary. VDWR. <https://dwr.virginia.gov/wildlife/deer/harvestsummary/>

Virginia Tourism Corporation. 2003. 2002-2003 Tourism in Virginia: An Economic Analysis. VA Tourism Corp., Richmond, VA. Website: <http://www.vatc.org/administration/VTCFF0203.pdf>

OTHER APPLICABLE STATUTES, EXECUTIVE ORDERS AND REGULATIONS

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.

- Native American Graves Protection and Repatriation Act, 25 U.S.C. 3001-3013; 43 CFR Part 10.
- 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, and 450.
- Fish and Wildlife Act of 1956, 16 U.S.C. 742 a-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).

Water Resources

- Coastal Zone Management Act of 1972, 16 U.S.C.1451 et seq.; 15 CFR Parts 923, 930, 933.
- Federal Water Pollution Control Act of 1972 (commonly referred to as Clean Water Act), 33 U.S.C. 1251 et seq.; 33 CFR Parts 320-330; 40 CFR Parts 110, 112, 116, 117, 230-232, 323, and 328.
- Rivers and Harbors Act of 1899, as amended, 33 U.S.C. 401 et seq.; 33 CFR Parts 114, 115, 116, 321, 322, and 333. Safe Drinking Water Act of 1974, 42 U.S.C. 300f et seq.; 40 CFR Parts 141-148.
- Executive Order 11988 – Floodplain Management, 42 Fed. Reg. 26951 (1977).
- Executive Order 11990 – Protection of Wetlands, 42 Fed. Reg. 26961 (1977).

Appendix C

Hunt Program Expansion - Great Dismal Swamp NWR

Intra-Service Section 7 Evaluation

Description of Action

The U.S. Fish and Wildlife Service (Service) is proposing to expand hunting opportunities at the Great Dismal Swamp National Wildlife Refuge (NWR, refuge) in accordance with the refuge's 2006 Comprehensive Conservation Plan. The refuge is currently open to hunting white-tailed deer and black bear, and would expand the hunting program to include wild turkey, coyote, and squirrel. The refuge also proposes to provide additional hunting opportunities by increasing total hunting days, increasing the number of hunter access points and land area, and adding the use of muzzleloaders.

Timing

The refuge hunt would operate annually on Thursday, Friday, and Saturdays from October 1 through the first Saturday in January. Hunting would occur from 30 minutes before sunrise to 30 minutes after sunset.

Location

Hunters will be granted access through the four major public trailheads as well as several hunter-only access points. All access points will be walk/bike-in only from designated parking areas, with the exception of one public use trailhead (Railroad Ditch Road) that contains approximately 10 miles of drivable roads. The trailheads will be open to all users on hunt days.

Approximately 100,000 acres of refuge will be open to hunting. However, due to hunter access being walk/bike-in only from all but one entry point, hunting is expected to occur in a limited area around the refuge perimeter. See concept map below for hunting zones. Each hunting unit will have at least one hunter parking/access area along the perimeter of the refuge. Hunters will park and walk or bike-in. No hunting will occur on Lake Drummond.

Scope

Hunters will primarily use established infrastructure. Some new parking areas will be established along refuge roads and easements. Kiosks and signs will be put up around the refuge perimeter in hunting areas.

Methods/ Equipment

Shotgun, archery, and muzzleloaders will be allowed. No rifles. Currently, non-lead ammunition is voluntary. No hunt dogs. No baiting. Daylight hours only. Hunter access will be primarily by foot. Hunters will be allowed to erect temporary tree stands for the duration of the refuge hunt season.

Measures intended to avoid/minimize adverse impacts to listed species and their habitat

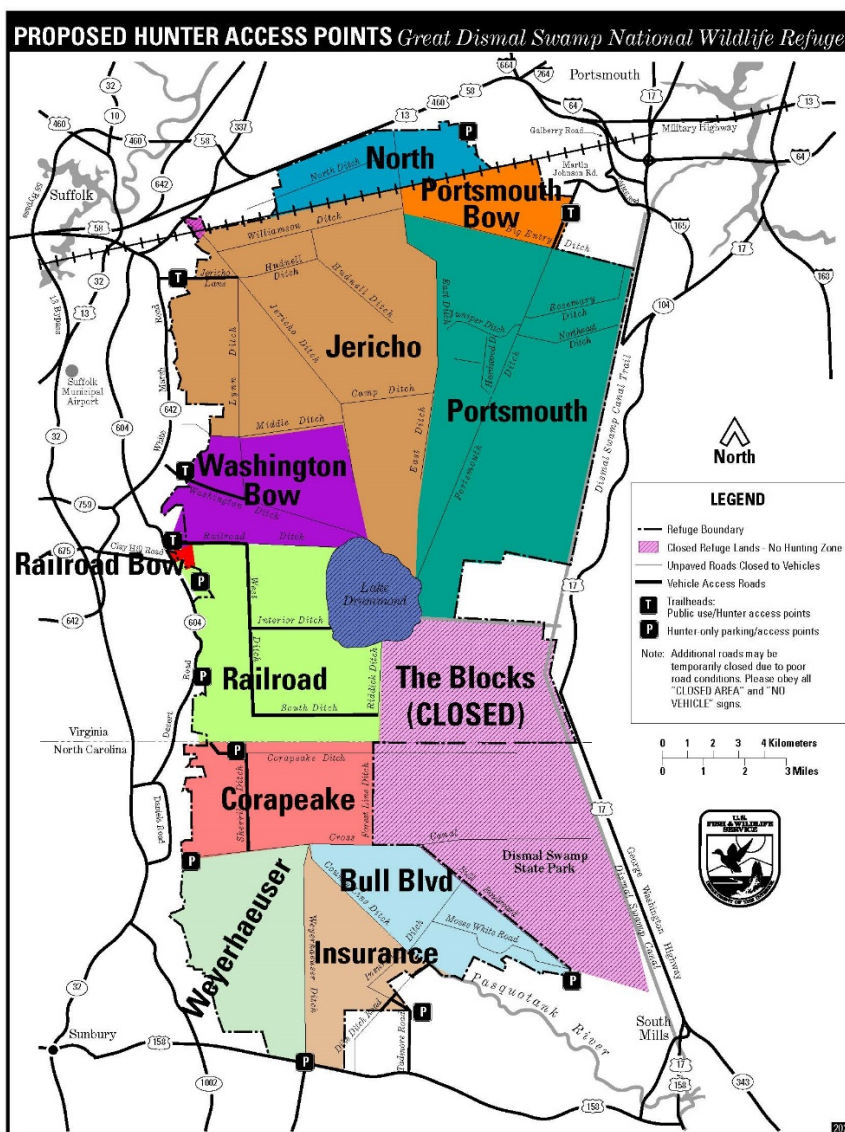
The 2,000-acre red-cockaded woodpecker habitat and management area, "The Blocks," would continue to be closed to hunting as long as birds are being translocated to the area each fall.

Northern long-eared bats are not expected to be impacted by the expanded hunting program, as they are typically hibernating during hunting season, and hunting will occur during daylight

hours only.

Impacts to wildlife habitat are expected to be minimal as most species will have already undergone senescence or become dormant. This hunting expansion would also add several additional hunter access points throughout the refuge. Due to the dispersed nature of hunters, and the addition of several new access points, impacts from repeated trampling are likely to be reduced, as hunters will be spread out over a larger area.

Additionally, hunting will occur on only 3 consecutive days a week during the hunt season and will be limited to walk-in only hunting from all but one location (and therefore not likely to hunt interior portions of the refuge). These measures will help provide both spatial and temporal relief from hunting impacts.





United States Department of the Interior



FISH AND WILDLIFE SERVICE

Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694 Fax: (804) 693-9032
<http://www.fws.gov/northeast/virginiafield/>

In Reply Refer To:

November 06, 2020

Consultation Code: 05E2VA00-2021-SLI-0564

Event Code: 05E2VA00-2021-E-01621

Project Name: Hunt Expansion at Great Dismal Swamp

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to

utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Raleigh Ecological Services Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
Phone: (919) 856-4520 Fax: (919) 856-4556

In Reply Refer To:

November 06, 2020

Consultation Code: 04EN2000-2021-SLI-0204

Event Code: 04EN2000-2021-E-00415

Project Name: Hunt Expansion at Great Dismal Swamp

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The species list generated pursuant to the information you provided identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Section 7 of the Act requires that all federal agencies (or their designated non-federal representative), in consultation with the Service, insure that any action federally authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of any federally-listed endangered or threatened species. A biological assessment or evaluation may be prepared to fulfill that requirement and in determining whether additional consultation with the

Service is necessary. In addition to the federally-protected species list, information on the species' life histories and habitats and information on completing a biological assessment or evaluation and can be found on our web page at <http://www.fws.gov/raleigh>. Please check the web site often for updated information or changes

If your project contains suitable habitat for any of the federally-listed species known to be present within the county where your project occurs, the proposed action has the potential to adversely affect those species. As such, we recommend that surveys be conducted to determine the species' presence or absence within the project area. The use of North Carolina Natural Heritage program data should not be substituted for actual field surveys.

If you determine that the proposed action may affect (i.e., likely to adversely affect or not likely to adversely affect) a federally-protected species, you should notify this office with your determination, the results of your surveys, survey methodologies, and an analysis of the effects of the action on listed species, including consideration of direct, indirect, and cumulative effects, before conducting any activities that might affect the species. If you determine that the proposed action will have no effect (i.e., no beneficial or adverse, direct or indirect effect) on federally listed species, then you are not required to contact our office for concurrence (unless an Environmental Impact Statement is prepared). However, you should maintain a complete record of the assessment, including steps leading to your determination of effect, the qualified personnel conducting the assessment, habitat conditions, site photographs, and any other related articles.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

Not all Threatened and Endangered Species that occur in North Carolina are subject to section 7 consultation with the U.S Fish and Wildlife Service. Atlantic and shortnose sturgeon, sea turtles, when in the water, and certain marine mammals are under purview of the National Marine Fisheries Service. If your project occurs in marine, estuarine, or coastal river systems you should also contact the National Marine Fisheries Service, <http://www.nmfs.noaa.gov/>

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office. If you have any questions or comments, please contact John Ellis of this office at john_ellis@fws.gov.

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Red-cockaded Woodpecker <i>Picoides borealis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered

Reptiles

NAME	STATUS
American Alligator <i>Alligator mississippiensis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/776	Similarity of Appearance (Threatened)

Endangered Species Act (ESA) Section 7 Determination Table

Project Name: Hunt Program Expansion at Great Dismal Swamp NWR

Date: 7/20/2021

Species/Resource Name	Habitat/Species Presence in Action Area	Sources of Info	ESA Section 7 Determination	Project Elements that Support Determination, and Potential Effects of the Proposed Action
<i>Insert name of species or resource as listed on Official Species List.</i>	<i>Indicate if suitable habitat and species are present in the Action Area (see examples in Step 5).</i>	<i>Explain what info suitable habitat/species presence is based on.</i>	<i>Using reasoning and decision tables in Step 5, select determination for each species (e.g. no effect, not likely to adversely affect, or likely to adversely affect).</i>	<i>Explain which project elements may impact the habitat or individuals of each species, the potential impact, and any Avoidance and Minimization Measures being implemented.</i>
Northern long-eared bat <i>Myotis septentrionalis</i>	Suitable habitat present; species present	Species habitat information in IPaC.	Not likely to adversely affect. Covered by 4(d) rule. Action may affect the Northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR § 17.40(o).	Project occurs during typical hibernation period and during daylight hours. Project not likely to disturb species or habitat. Northern long-eared bats (NLEB) may be located on the refuge year-round. Any gun use near bats' roosting trees could flush the 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 NLEB could hibernate and hunting programs would not result in any tree cutting or other habitat alteration. Hunters may erect temporary tree stands during the hunting season that could damage trees or disturb roosting bats.

				<p>Disturbance would likely not rise to the level of take.</p> <p>Hunting will occur outside of the maternity season after pups have begun to fly and are therefore less vulnerable. Additionally, hunters and anglers are not permitted on the refuge after sunset when bats are most active.</p>
<p>Red-cockaded woodpecker <i>Picoides borealis</i></p>	<p>Suitable habitat present; species present. Since 2015, RCW have been translocated into the refuge “Blocks” area annually. The population currently consists of approximately 11 individuals, residing in 6 cluster sites, with 3-4 potential breeding pairs/clusters per year.</p>	<p>Species habitat information in IPaC. Species has been translocated and established within the refuge</p>	<p>Not likely to adversely affect</p>	<p>Hunting occurs outside of nesting season. RCW management areas will be closed to hunting in years which translocations occur. Because hunting will not occur during nesting season, or in the area during translocations, potential impacts to this species will be minimized. Gun noise and hunter foot traffic could flush RCW from trees, but it is more likely that RCW would remain in the tree than be flushed and instances of flushing would not result in RCW mortality. Disturbance would likely not rise to the level of take.</p>
<p>Red knot <i>Calidris canutus rufa</i></p>	<p>No suitable habitat present; species not present</p>	<p>Species habitat information in IPaC; no suitable habitat</p>	<p>No effect</p>	<p>Species is not present on the refuge. There will be no effects as a result of the project.</p>
<p>American alligator <i>Alligator mississippiensis</i></p>	<p>Suitable habitat present; species not present</p>	<p>Species habitat information in IPaC; uncommon in this area; outside of species’ native range; no sightings</p>	<p>Not likely to adversely affect</p>	<p>Species not present in project area. No disturbance to species anticipated because they have not been observed on the refuge. It is not expected that this species would ever be present on the refuge despite suitable habitat.</p>

Lead

Lead ammunition can be used for white-tailed deer and bear hunting as described in the Hunting Plan during the refuge's five-year phase-out period. After that period, no lead ammunition will be permitted on the refuge. The amount of lead ammunition introduced to the environment because of hunting during this period will be negligible, given the restriction on lead ammunition for all other hunts, and the short amount of time when lead ammunition will be permitted. Lead shot and bullet fragments found in animal carcasses and gut piles are the most likely source of lead exposure. 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. The bioaccumulation of lead is a potential concern, but does not present a significant issue for this activity on this refuge because the refuge strongly encourages the removal of gut piles, which limits the likelihood of lead accumulating on and around the refuge. During the phase-out period, we will encourage big game hunters to use non-toxic ammunition voluntarily, and will educate hunters about lead.

Some hunters will choose non-lead methods of take such as archery. Moreover, the scarce amount of lead introduced on this refuge is not likely to adversely affect the listed species because those species will likely not be present or active in the refuge hunting areas during the hunting seasons. Lead introduced on this refuge is not likely to adversely affect the red-cockaded woodpecker because the project will occur outside of the nesting season, and because this species is not a scavenger and would not therefore be exposed to lead fragments left behind in any gut piles. The lead introduced on the refuge is not likely to adversely affect the American alligator because the species is not present in the project area and would therefore not be exposed to any lead on the refuge. The lead on the refuge will have no effect on the red knot because there is no suitable habitat for this species on the refuge and it will therefore not be present. The lead on the refuge is not likely to adversely affect the Northern long-eared bat because the project occurs during hibernation and this species is not a scavenger (i.e., bats would primarily forage on flying insects). 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.

IPAC/ECOS

Great Dismal Swamp NWR uses IPaC to identify threatened and endangered species, including for purposes of this Biological Evaluation. This is done because the IPaC database is the better of the Service's databases Great Dismal Swamp NWR may contain the best available information on species presence. Nevertheless, in order to ensure a thorough review, this Biological Evaluation considers all threatened and endangered species identified by both the IPaC and ECOS databases. Note, however, that these databases are updated regularly, approximately every 90 days, and, thus, it is possible that the specific threatened and endangered species identified as present on or near the refuge may change between the finalization of this Biological Evaluation and its publication and/or between finalization and your reading this document.

Staff present on the refuge and conducting this evaluation may have the best available information about the presence of fish and wildlife species. Thus, where species are identified by either database, but the refuge has information that the species is not actually present within the “action area,” we have explained that as the basis for our determination that any hunting and fishing activities will have no effect on the species.



United States Department of the Interior

FISH AND WILDLIFE SERVICE



Virginia Field Office
6669 Short Lane
Gloucester, VA 23061

Self-Certification Letter

Project Name: Hunt Expansion at Great Dismal Swamp

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Virginia Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA conclusions. These conclusions resulted in:

- “no effect” determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR § 17.40(o) [as determined through the Information, Planning, and Consultation System (IPaC) northern long-eared bat assisted determination key]; and/or
- “may affect, not likely to adversely affect” determinations for proposed/listed species and/or proposed/designated critical habitat.

We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the determinations described above for proposed and listed species and proposed and designated critical habitat. Additional coordination with this office is not needed.

Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species.

Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat becomes available, this determination may be reconsidered. This certification letter is valid for 1 year.

Information about the online project review process including instructions and use, species information, and other information regarding project reviews within Virginia is available at our website http://www.fws.gov/northeast/virginiafield/endspecies/project_reviews.html. If you have any questions, please contact Troy Andersen of this office at (804) 824-2428.

Sincerely,



Cindy Schulz
Field Supervisor

Virginia Ecological Services

Enclosures - project review package



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Assistant Regional Director-Ecological Services
5600 American Blvd. West
Bloomington, MN 55437-1458
Phone: (612) 713-5350 Fax: (612) 713-5292



In Reply Refer To:

November 06, 2020

Subject: Verification letter for the 'Hunt Expansion at Great Dismal Swamp' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Melanie Willard:

The U.S. Fish and Wildlife Service (Service) received on November 06, 2020 your effects determination for the 'Hunt Expansion at Great Dismal Swamp' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"^[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with ESA Section 7(a)(2) only for the northern long-eared bat. It does not apply to the following ESA-protected species that also may occur in the Action area:

- American Alligator, *Alligator mississippiensis* (Similarity of Appearance (Threatened))
- Red Knot, *Calidris canutus rufa* (Threatened)

- Red-cockaded Woodpecker, *Picoides borealis* (Endangered)

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)]

Summary of Public Comments and Service Responses on the Great Dismal Swamp National Wildlife Refuge Draft Hunting Plan and Environmental Assessment

July 2021

Introduction

The U.S. Fish and Wildlife Service (Service) completed the Great Dismal Swamp National Wildlife Refuge (NWR, refuge) Draft Hunting Plan (plan) and Environmental Assessment (EA). That document outlines two alternatives for managing hunting on the refuge and identifies Alternative B as the “Service-preferred alternative.”

We released the draft plan, Compatibility Determination (CD) and EA for public review and comment from April 9 through July 6, 2021, a total of 88 days. We distributed a press release to news organizations and alerted visitors to the plan’s availability on the refuge website and Facebook page. In addition, a notice of availability was sent to 2020 registered Refuge hunt permittees. No public meetings were held due to COVID-19 public gathering safety guidance.

Summary of Comments Received

Commenters Key

1. Eric Herlan
2. Rebecca Gwynn (VDWR)
3. Patricia Quinn
4. Rogard Ross (Conservation Chair, Cape Henry Audubon Society)
5. Bryan Poovey
6. Perrin de Jong (Staff Attorney, Center for Biological Diversity)
7. David Schlägel
8. Brian Stokes
9. Jebb Nolan
10. Herman Wilkins
11. Jacob Collier
12. Derrick Smith
13. Mark Randall
14. Chris Simonsen
15. Andrew Shvetz
16. Josh Peters
17. David Franklin
18. Douglas Walker
19. Kevin Rishel
20. Joshua Tabora
21. Laura Mae

During the comment period, we received 21 letters, all written via email, from individuals and on behalf of various organizations. In the discussions below, we address every substantive comment

received during the comment period. Comments were organized by subject. Directly beneath each subject heading, you will see a list of unique letter numbers that correspond to individually submitted comments.

We address and respond to substantive comments, which are those that suggest our analysis is flawed in a specific way (e.g., challenge the accuracy of information presented; challenge the adequacy, methodology, or assumptions of the environmental or social analysis and supporting rationale; present new information relevant to the analysis; present reasonable alternatives, including mitigation, other than those presented in the document).

Our discussion usually does not include detailed responses to comments we determined to be non-substantive, such as comments that solely support or object to our statements without providing reasoning that meet the criteria for a substantive comment; comments that do not pertain to the project area or proposal; or typographical corrections.

We grouped similar comments together and organized them by subject in the discussion below:

- General Comments on Hunt Plan
 - General overall support for proposed hunting expansion
 - General opposition to hunting on National Wildlife Refuges
 - Public Outreach

- Hunting Access
 - Access to Interior Refuge Roads and Lands
 - Refuge and Archery Zone Boundaries
 - Access to Parking Areas
 - More/Less Hunting Days
 - Scouting Days

- Hunt Administration
 - Balance of Public Uses
 - Spring Turkey Season
 - Archery and Rifle Season
 - Disabled hunters
 - Identification Requirements
 - Bear Hunt
 - Shotgun Size/Gauges
 - Lead Ammunition

- Biological
 - Turkey and Migratory Bird Populations
 - Red-cockaded Woodpecker Population

- Safety
 - Blaze Orange
 - Hunting Buffer Zones Around Trails

- Hunt Plan & EA Justifications
 - Socioeconomics Impacts
 - Statement Regarding Current Level of Use
 - Statement Regarding Hunting Ethics

The full versions of the Hunting Plan, CD, and EA are available online at:
https://www.fws.gov/refuge/great_dismal_swamp

For additional information, please contact the refuge at:

Chris Lowie
 Great Dismal Swamp NWR
 3100 Desert Rd.
 Suffolk, VA 23434
 Phone: (757)-986-3705
 Email: Chris_Lowie@fws.gov

Service Responses to Comments by Subject:

General Comments on the Hunt Plan

General Overall Support for Proposed Hunting and Fishing Expansion

The Service received several comments in support of the plan. Local residents, hunters, Virginia Department of Wildlife Resources, and the North Carolina Wildlife Resources Commission supported the hunting and fishing expansion. Support was received verbally and via email.
Letters: 2, 7, 8, 9, 10, 12 through 19

Response: We appreciate the support and remain interested in providing a variety of hunting opportunities for the public, which is supported by the National Wildlife Refuge System’s (Refuge System) priority public uses policy. Sections 5(c) and (d) of the National Wildlife Refuge System Improvement Act (Improvement Act) states “compatible wildlife-dependent recreational uses are the priority general public uses of the Refuge System and shall receive priority consideration in planning and management; and when the Secretary [of the Interior] determines that a proposed wildlife-dependent recreational use is a compatible use within a refuge, that activity should be facilitated, subject to such restrictions or regulations as may be necessary, reasonable, and appropriate.” Hunting is one tool used to manage and maintain wildlife populations at a level compatible with the environment while providing wildlife-dependent recreational opportunities and permitting the use of a valuable renewable resource. As development in the Virginia region grows at a greater rate than the available habitats to support wildlife, hunting is a valuable tool to maintain populations at a suitable carrying capacity at a landscape scale to prevent disease, starvation, road mortality, and human conflicts with wildlife. The refuge works closely with the Virginia Department of Wildlife Resources (VDWR) and North Carolina Wildlife Resources Commission (NCWRC) to manage hunting opportunities based on

the data they collect throughout the year for various game species. We often defer to them on hunting regulations that manage for sustainable populations of resident game species. Secretarial Order 3356 also directs “greater collaboration with state, tribes, and territorial partners” which encourages better alignment of refuge-specific regulations with State regulations.

General Opposition to Hunting on National Wildlife Refuges

A couple commenters expressed general opposition to hunting at the Great Dismal Swamp NWR and/or in the Refuge System. Some commenters suggested the expansion does not align with the refuge’s purpose of migratory bird protection and conservation. *Letters: 6, 21*

Response: We allow hunting on refuge lands only if such activity has been determined compatible with the established purpose(s) of the refuge and the mission of the Refuge System as required by the Improvement Act. Hunting of resident and migratory wildlife species on refuges generally occurs consistent with State regulations, including seasons and bag limits. Secretarial Order 3356 also directs “greater collaboration with state, tribes, and territorial partners” which encourages better alignment of refuge-specific regulations with State regulations. Refuge-specific hunting regulations can be more restrictive (but not more liberal) than State regulations and often are more restrictive in order to help meet specific refuge objectives. These objectives include resident and migratory wildlife population and habitat objectives, minimizing disturbance impacts to wildlife, maintaining high-quality opportunities for hunting and other wildlife-dependent recreation, eliminating or minimizing conflicts with other public uses and/or refuge management activities, and protecting public safety.

The Service understands that some members of the public do not believe that hunting is ethical. The word “refuge” includes the idea of providing a haven of safety for wildlife, and as such, hunting might seem an inconsistent use of the Refuge System. However, the Improvement Act stipulates that hunting, if found compatible, is a legitimate and priority general public use of a refuge which should be facilitated. As detailed above, the decision to open a refuge to hunting must comply with all applicable laws, regulations, and policies; requires rigorous examination; and provides opportunities for public comment, all to ensure that hunting is consistent with the purpose of the specific refuge and the mission of the Refuge System.

Furthermore, we manage refuges to support healthy wildlife populations that in many cases produce harvestable surpluses that are a renewable resource. As practiced on refuges, hunting and fishing do not pose a threat to wildlife populations. It is important to note that taking certain individual animals through hunting does not necessarily reduce a population overall, as hunting can simply replace other types of mortality, including disease, starvation, and road collisions. In some cases, however, we use hunting as a management tool with the explicit goal of reducing a population. Therefore, facilitating hunting opportunities is an important aspect of the Service’s roles and responsibilities as outlined in the legislation establishing the Refuge System, and the Service will continue to facilitate these opportunities where compatible with the purpose of the specific refuge.

We do not take lightly the decision to allow hunting on a refuge, and we never allow hunting if there is evidence that it will impair the purposes of the refuge, public safety, or the mission of the Refuge System. Refuge managers use a variety of techniques to minimize disturbance to non-target species of wildlife, such as time and space zoning. In some cases, hunting may be part of a management program to reduce the population of nuisance species; otherwise, hunt programs are carefully designed and regulated so as not to affect the sustainability of wildlife populations. Refuge managers are authorized to suspend a hunt program at any time if it appears as though the hunt is causing unacceptable impacts to refuge values or resources.

Public Outreach

Two comments received were concerned about the Refuge's outreach regarding the proposed changes and the public comment period. *Letter 5, 21*

Response: The refuge maintains a mailing list for news release purposes to local newspapers, radio, and websites. While we sent our press release to news organizations, they are under no obligation to print it. It is our common practice to allow 30 days for public review and comment of a NEPA document or compatibility determination. Information about the plan was also available through our station's Facebook page and on our station's website from April 9 through July 6, a total of 88 days. In addition, a notice of availability was sent to a list of the Refuge's 2020 registered hunt permittees.

Hunting Access

Access to Interior Refuge Roads and Lands

Comments received stated concerns about interior refuge roads being closed to vehicles; reducing overall accessible hunting acreage, it may lead to hunters staying away from the interior (especially older/disabled hunters), making the exterior more crowded, lowering the quality of the hunt; recommendations to continue to permit vehicle or allow ATV access. *Letters: 1, 5, 12, 13, 15*

Response: This topic was considered at length when proposing the new hunting program. Factors evaluated included past road use by hunters, maintenance of roads to allow access, past closures due to poor road conditions, refuge closures to other users on hunt days, adequate access for hunters and non-hunters, and the proposed increase in hunt days and access points.

Prior to this proposal, the refuge had provided approximately 100 miles of vehicular access open to hunters. These roads could also be open to non-hunters; however, non-hunters are allowed vehicular access to 12 miles. In the recent past, patrols have shown that hunters have not been travelling to the interior of the refuge, either by choice, or due to road or area closures. When hunters are seen in the interior, most are found driving and not parked to hunt. Refuge roads deteriorate very quickly during fall/winter wet periods.

Refuge staff cannot adequately maintain the 100 miles of roads for more hunt days over a longer period of time. Poor road conditions would lead to more road closures, which is

not convenient for hunters. Under the proposal, entrance roads and parking areas will remain accessible, except for unforeseen situations (i.e., hurricanes/nor'easter storms). All hunter access points will provide vehicular access directly to lands open to hunting for all. Additional hunter-only access points are being provided to distribute hunters throughout the hunt units. In conclusion, vehicular access to the interior of the refuge is not in high demand. Providing more locations for park and walk is expected to distribute hunters, similarly to what would occur if roads were open.

Similarly, overall accessible acreage is not expected to be significantly reduced. Lands that were more accessible due to drivable refuge roads will be less accessible due to walking or biking in. However, lands previously closed are now open; and, less accessible are more accessible with the additional parking areas allowing shorter walks.

The previous 12-day hunt program closed the refuge to all other users at hunter-only access points, which included the popular Lake Drummond Wildlife Drive. By increasing the number of hunt days and season length, it is not prudent to close the refuge to other uses for more days at these trailheads. In an attempt to provide balance and fairness to all users, everyone will have the same accessibility at trailheads entrances. As stated above, hunters will have additional hunter-only access points.

One comment was received inquiring if the “Blocks” zone will reopen. *Letter 5*

Response: Based on the proposed hunting program restricting vehicular access on the refuge (see comment, *Access to Interior Refuge Roads and Lands*), and our endangered red-cockaded woodpecker re-introduction program (see comment *Red-cockaded Woodpecker Population*), the Blocks Hunt Unit is not being considered for opening at this time.

One comment was received is opposed to the increased access to the refuge interior to prevent disturbances to the huge tract of undisturbed land in the interior. *Letter 20*

Response: The new hunting program is not increasing access to the interior of the refuge (see comment, *Access to Interior Refuge Roads and Lands*).

Refuge and Archery Zone Boundaries

Two comments were received with concerns about signage to delineate refuge land from private land and the archery-only zones. *Letters: 1, 5*

Response: Much of the refuge boundary is posted with signage. Additional signage has been installed, with more to be installed prior to hunting season and continued over time. Refuge staff will prioritize areas based on hunter use of new access points and known issues. Refuge boundaries are also identified on mobile hunting “apps.”

Archery-only zones will be delineated first by landmarks, such as public or refuge roads. Where these landmarks do not exist, the zone boundary will be marked with painted trees along private property and archery/gun boundary lines. In addition, hunt units and

archery-only units will be delineated on a map issued to hunt permittees, posted at parking areas, and available on the internet. With refuge assistance, it is the responsibility of the hunter to know where they are hunting.

One comment asked if gun hunters would be able to park at Washington Ditch and walk along the archery unit to reach the general unit. *Letter 5*

Response: After reconsidering potential conflicts, we will change the boundaries of the Washington Archery Unit to alleviate these concerns. These changes are reflected in the final plan.

Access to Parking Areas

Comments recommended adding more information on specific locations of parking areas, and regarding safety and crossing private property at specific parking locations. *Letters: 2, 5*

Response: The refuge will provide specific parking entrance locations on all paper and electronic maps, with street name and address and/or GPS coordinates. The refuge will ensure all hunter access, including ingress/egress rights-of-ways across private property, will comply with the government's deeded rights and/or private property permission for use. The refuge has evaluated entrance and parking areas for turn-a-rounds and ingress/egress without infringing on private property that is not allowed.

More/Less Hunting Days

One comment recommended to allow hunting a full-week (except Sundays). *Letter 2*

Response: The refuge considered more days of the week; however, providing fewer hunt days per week will help reduce hunter and non-hunter conflict, increase their respective experience, and reduce disturbance to non-game species. (*Also see comment Balance of Public Uses*).

One comment suggested increasing the number of hunt days more moderately (half of the proposed). *Letter 12*

Response: In an effort to increase hunting opportunities and become more aligned with State hunting season dates, the refuge extended to the full season dates allowed in the States (except NC early archery – see comment *Archery and Rifle Season*), which includes a late archery and muzzleloader season.

Scouting Days

One comment was received regarding the number of scouting days. *Letters: 15*

Response: In the past, the refuge hosted one scouting day prior to the start of the hunt season. This was partly due to the limited number of hunting days (12 total). With the addition of new hunter access points and limiting vehicular access to the interior of the refuge, the refuge will host one or more scouting dates in 2021 to help hunters orient themselves with these changes. With a new expanded hunting plan, hunters will have

more than 40 hunting days to familiarize themselves with the refuge and scouting days may not be necessary. The need for scouting days in subsequent years will be reevaluated annually.

Hunting Administration

Balance of public uses

Some comments expressed concerns with balancing hunter and non-hunter activities on the refuge. One comment suggested that expansion of hunting opportunities gives preference over other public uses. Some reviewers were concerned about potential conflicts between user groups. *Letters: 4, 5, 21*

Response: Congress, through the Administration Act, as amended, envisioned that hunting, fishing, wildlife observation and photography, and environmental education and interpretation would all be treated as priority public uses of the Refuge System. Therefore, the Service facilitates all of these uses on refuges, as long as they are found compatible with the purposes of the specific refuge and the mission of the Refuge System. For this plan, we specifically analyzed the possible changes to the hunting programs. We appreciate the widespread interest in using the refuge for non-consumptive recreational uses. The refuge has a robust visitor services program that includes all six of the priority wildlife-dependent recreational use.

Public trailheads will remain open to all visitors on hunt days. User conflicts will be reduced by limiting the hunt to only 3 days per week, leaving 4 days open for visitors to solely engage in wildlife observation, photography, and environmental education and interpretation activities without nearby hunter activity. In addition, hunter-only access points, the establishment of archery-only zones, and no-hunting buffers around roads and trails in high use areas will help to further segregate user groups on designated hunt days.

Spring Turkey Season

Several commenters expressed interest in adding a Spring turkey hunt. *Letters: 2, 8, 20*

Response: In the 2021-22 season, the refuge will offer only a Fall turkey hunt as outlined in the plan. However, we will re-evaluate the opportunity for Spring turkey and may choose to implement it in future years.

Archery and Rifle Season

One commenter (*Letter 15*) would like a North Carolina archery season and a rifle season and another (*Letter 11*) would like clarification if the Virginia archery season is according to State regulations.

Response: To stay in alignment with State hunting regulations, the refuge will consider opening the North Carolina September archery season in 2022. Similarly, the Virginia archery season will be available in accordance with the Virginia Department of Wildlife Resources hunting regulations.

We understand rifles potentially allow longer and more accurate shots; however, adding rifle as a method of take does not increase or reduce hunting opportunities, as both States allow rifles during the “regular firearms” season dates.

Disabled hunters

One reviewer asked for greater clarification regarding the administration of disabled hunting in the refuge. *Letters: 1*

Response: Disabled hunters will need to obtain their associated State hunting license and obtain one or both of the Refuge Disabled Hunt Permits. The two available Refuge Disabled Hunt Permits are the Disabled Bear Hunt Permit (for hunting bear) and the Disabled General Hunt Permit (for hunting deer, turkey, coyote, and squirrel). The Disabled hunt permit allows for one accompanying assistant. The assistant must obtain their own hunt permit if they intend to hunt.

Disabled hunt permits can be obtained through the same venue that the other hunt permits are obtained. Disabled hunters with this permit can hunt from the road ONLY in the designated Disabled Hunt Area. Disabled hunters may also use this permit to hunt in the general hunting areas of the refuge, however, NOT from the road as in accordance with the general rules and regulations.

The designated Disabled Hunt Area for the 2021 season will continue to be Hudnell Ditch in the Jericho Lane Trailhead. Up to two hunters may use this spot at once, and will need to call the refuge in advance to reserve a spot and obtain the gate code.

Importantly, the Jericho Lane Trailhead will continue to be open to other users on hunt days. The refuge will notify and educate visitors, including the use of signage, that indicates Hudnell Ditch is closed to non-hunters. However, it is the responsibility of the hunter to exercise caution while hunting in this area.

We will continue to evaluate options for new disabled hunting areas in the future. Complete hunt details will be available in hunt brochures and on the station website. Please contact the Refuge Headquarters office if further clarification is needed.

Identification Requirements

One commenter sought clarification on required identification while hunting in the Refuge. *Letter 1*

Response: The refuge does not require a hunter to carry photo identification. Hunters are expected to carry either a paper copy or electronic copy of their hunt licenses and permits.

Bear Hunt

A suggestion was made to combine the Refuge Bear Permit and the Refuge General Hunt Permit into one permit. *Letter 2*

Response: The refuge maintains a 20-bear annual quota applied to the refuge bear hunt. Keeping these permits separate allows refuge staff to manage this quota by providing a means of identifying and contacting bear hunt permittees. We appreciate the commenter's intent to increase accessibility and streamline the permitting process. The refuge will continue to evaluate the program and search for more effective ways to manage the bear hunt.

A commenter wanted clarification about how the refuge will be notified of bear harvests in a timely manner as to not exceed the annual quota. *Letter 5*

Response: Hunters will be required to notify the refuge within 24 hours of bear harvest.

Shotgun Size/Gauges

One comment was received proposing the use of shotguns smaller than 20 gauge as approved weapons, particularly with the upcoming mandate for non-toxic shot. *Letter 20*

Response: The refuge will change the plan to allow any shotgun size.

Lead Ammunition

While many letters stated support in some aspects of the lead ammunition phase-out, several commenters had concerns and questions about the implementation. *Letters 1, 3, 4, 6, 21*

Response: We understand this is a concern and a challenging factor for those wanting to move toward non-lead ammunition in general. While some stores in Virginia and North Carolina may not currently provide sufficient access to non-lead ammunition, there are numerous producers and sellers in the online market. With the increasing implementation of non-lead ammunition throughout the United States, the market is growing and additional demand is expected to create a rise in production and availability. The refuge took this concern into account while planning the new hunting plan, and anticipates the 5-year phase-out approach will give hunters and retailers sufficient time to adjust to these changes.

Some comments were supportive of the lead ban, but would prefer that it were implemented immediately rather than over a 5-year period. *Letters 3, 6, 21*

Response: All new species opportunities (coyote, turkey, squirrel) will require lead-free ammunition to hunt on the refuge beginning in 2021, while the use of lead ammunition for existing game species (deer and bear) will be phased out in 5 years. We determined that implementing a 5-year phase-out period towards lead on existing game species would allow hunters time to adapt to the changes, as well as provide time for the refuge to implement additional education and outreach about lead contamination and non-toxic options available to hunters.

One comment suggested the EA did not delve into enough detail about lead contamination in relation to soils, as well as to threatened and endangered species. *Letter 6*

Response: The purpose of an EA is to briefly provide sufficient evidence and analysis for determining whether to prepare and EIS or a Finding of No Significant Impact (FONSI). Lead ammunition can be used for white-tailed deer and bear hunting as described in the Hunting Plan during the refuge's 5-year phase-out period. After that period, no lead ammunition will be permitted on the refuge. The bioaccumulation of lead is a potential concern, but does not present a significant issue for this activity on this refuge because the refuge strongly encourages the removal of gut piles, which limits the likelihood of lead accumulating on and around the refuge. During the phase-out period, we will encourage big game hunters to use non-toxic ammunition voluntarily, and will educate hunters about lead. The amount of lead ammunition introduced to the environment because of hunting during this period will be negligible, given the restriction on lead ammunition for all other hunts, and the short amount of time when lead ammunition will be permitted.

There are two endangered species on the refuge; Northern long-eared bat (NLEB) and Red-cockaded woodpecker (RCW). Lead contamination through direct consumption is not anticipated for these species, due to their diets and foraging behavior. Since lead contamination can carry through multiple trophic levels, indirect impacts from lead contamination are possible, however negligible. At this time, hunting will not be permitted in the "Blocks" unit (see comment, *Red-cockaded Woodpecker Population*), which will further reduce any potential for lead contamination in RCW nesting and foraging habitat. The lead on the refuge is not likely to adversely affect the Northern long-eared bat because the project occurs during hibernation and this species is not a scavenger. 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.

Additional information on potential impacts to threatened and endangered species can be found in the Intra-Service Section 7 Evaluation (Appendix C). The consultation pursuant to Section 7 of the Endangered Species Act is an internal document until finalized; thus, it was not included as part of the draft package, but can be found in the final version.

Biological

Turkey and Migratory Bird Populations

A comment received stated that the Virginia quail and American woodcock should be removed from the hunting plan. *Letter 21*

Response: This was likely a misinterpretation of information, as these species are not listed in the plan to be hunted in Great Dismal Swamp NWR.

One commenter expressed concerns with wild turkey populations and the justification for hunting them. *Letter 5*

Response: Wild turkey populations are monitored by VDWR and recent reports, available to the public via the VDWR website, indicate their populations are stable or increasing in the counties around the Refuge.

Hunting is a priority public use of the Refuge System, as stipulated in the Administration Act. When found to be compatible, hunting opportunities should be provided to the public. Development of the hunting plan included input from hunters and State partners. Species seasons that have been directly requested by hunters and State partners were primarily considered in this plan.

We will work with partners to develop more robust methodology of determining local population sizes and conduct additional surveys as feasible. If the results of monitoring programs indicate that resident wildlife populations are unable to withstand any of the proposed harvest management strategies, the regulations would be made more restrictive or seasons would be closed until the population can withstand the harvest pressure. The Refuge will be adaptive towards harvest management under the hunt program to ensure species and habitat health. Refuge-specific hunting regulations may be altered to achieve species-specific harvest objectives in the future.

Red-cockaded Woodpecker Population

One comment was received inquiring if the “Blocks” zone, will reopen, in reference to the red-cockaded woodpecker population. *Letter 5*

Response: Since 2015, red-cockaded woodpeckers have been translocated into the refuge “Blocks” area annually. The population currently consists of approximately 11 individuals, residing in 6 cluster sites, with 3 to 4 potential breeding pairs/clusters per year. The goal of the project is to establish five breeding groups to support the overall management objective of a viable population on the refuge (CCP 2006). The Red-cockaded Woodpecker Recovery Plan, Section 3.A, states, “*Once a translocated bird is released, no observations are required until the following breeding season. Observations of translocated birds should be minimized to reduce disturbance as much as possible.*” This recommendation, and based on the new hunt program restricting vehicular access on the refuge (see comment, *Access to Interior Refuge Roads and Lands*), the Blocks Hunt Unit is not being considered for opening at this time.

Safety

Blaze Orange

One comment asked why non-hunters will not be required to wear blaze orange. *Letter 21*

Response: The refuge cannot require non-hunters to wear blaze orange. The refuge will provide the recommendation to wear blaze orange during their visit on hunt days. This

recommendation, with hunt dates, will be posted on the refuge web page and at kiosks.

Hunting Buffer Zones Around Trails

One comment recommended a 300-foot buffer instead of 100 feet to hiking paths. *Letter 4*

Response: The States and local governments have regulations of 300- to 600-foot buffers from public roads, highways, and/or buildings. Using their definitions, refuge roads are not considered public roads or highways. With the dense vegetation of the refuge, visibility is less than 300 feet. Therefore, a 300-foot buffer does not necessarily establish a higher level of safety, due to lack of visibility to see a non-hunter along a trail at 300 feet. However, we have reconsidered to extend the buffer to 150 feet to still allow visibility, increase safety amongst users, and reduce multi-user conflict.

Hunt Plan, EA, and Justifications

One comment noted “Furthermore, an EIS is required for this plan due to the agency’s acknowledgment of significant impacts to non-target species, T&E species, wildlife habitat and vegetation....” *Letter 6*

Response: No such acknowledgment was made in the EA. As we developed the plan, we used the “sound professional judgment” of the refuge manager, biologists, and other staff in making inherently complex management decisions to ensure that each proposed action complies with Service mandates. We incorporated field experience, knowledge of refuge resources, considerations of the refuge’s role within an ecosystem, applicable laws, and best available science in making our decisions. Service biologists and wildlife professionals, in consultation with the State, often determine the optimal number of each game animal that should reside in an ecosystem and then utilize hunt parameters (e.g., bag limits, sex ratios) based on those analyses. We carefully considered how the proposed hunt fits with the refuge goals, objectives, and strategies before allowing the hunt. As we monitor and evaluate the hunting program into the future, other species seasons may be considered.

In the EA, we analyze and predict the foreseeable impacts of implementing the hunting program in each of the alternatives. When detailed information may be deficient or unavailable, we base our comparisons on professional judgment and experience. We usually identify potential impacts within a long-range timeframe (i.e., 15 years); beyond that timeframe they become more speculative. Although over 100,000 acres, keep in mind the relative land mass of the hunting area of Great Dismal Swamp NWR in comparison with the entire Atlantic Flyway or the breeding ranges of the many birds and wildlife that use it. We recognize that the Refuge is not isolated ecologically from the land around it; however, we may have overstated positive or negative impacts with our predictions in that larger geographic context. Nevertheless, the actions we propose conform with the refuge’s CCP and other regional landscape plans, and provide positive, incremental contributions to those larger landscape goals.

Socioeconomic Impacts

One comment received suggested that the socioeconomic impacts as described in the EA could have a greater than negligible impact because of the associated improvements in hunt quality for the area. *Letter 20*

Response: In recent years, hunting visits have accounted for less than 1 percent of total refuge recreational visits and associated expenditures. While a small increase in the annual economic output is expected from expanded hunting opportunities, the overall contributions to the local economy are anticipated to be negligible.

Statements Regarding Current Level of Use

One comment sought clarification about how the Refuge evaluates the current level of use in regards to conflict between hunters and other public users. *Letter 5*

Response: We anticipate that at current levels of hunting use, which is minimal compared to other user groups, the potential for conflict between user groups is not likely to increase significantly. We understand this statement may have been misinterpreted. Although we do not anticipate a significant increase in conflict between user groups, we do recognize the potential and will reevaluate the program administration in future years if repeated conflict occurs and can be mitigated.

Statements Regarding Hunting Ethics

A commenter suggested a statement regarding ethical harvest was an opinion, not biological fact, and should be removed from the Environmental Assessment. *Letter 5*

Response: We are in agreement that the concept of ethics may be an opinion, and appreciate the feedback and critique of our draft documents. While science remains at the forefront of our consideration, field experience, knowledge of refuge resources, consideration of a refuge's role within an ecosystem, applicable laws, hunting ethics, and "sound professional judgement" of refuge staff, are all things that play a part in our decision-making.

**FINDING OF NO SIGNIFICANT IMPACT
ENVIRONMENTAL ASSESSMENT OF HUNTING PLAN**

GREAT DISMAL SWAMP NATIONAL WILDLIFE REFUGE

The U.S. Fish and Wildlife Service (Service) is proposing to expand hunting opportunities at Great Dismal Swamp National Wildlife Refuge (NWR) in accordance with the refuge's 2006 Comprehensive Conservation Plan (CCP) and the 2021 Hunting Plan. The refuge is currently open to hunting white-tailed deer and black bear. The refuge proposes to expand the hunting program to include wild turkey, coyote, and squirrel. The refuge also proposes to provide additional hunting opportunities by increasing total hunting days, increasing the number of hunter access points and land area, and adding archery-only zones.

Selected Action

Alternative B—Proposed Action Alternative

The Service proposes to open and expand opportunities for big and upland game hunting at Great Dismal Swamp NWR to provide additional wildlife-dependent recreational opportunities, improve efficiency and management of the refuge's hunting program, and better align with State programs. Under this alternative, we will:

- Add turkey, coyote and squirrel to the list of current huntable species (i.e., white-tailed deer and black bear);
- Open additional acreage to hunting by utilizing up to 10 additional hunting access points;
- Open to firearms (no rifles), archery, and muzzleloaders. Current methods are only shotgun and archery;
- Allow hunting to occur during legal daylight hunting hours on Thursdays, Fridays, and Saturdays from October 1 through the first Saturday in January, according to State season dates for each species. This is an increase to approximately 42 days from the current 12 days for deer hunting, and 6 days for bear hunting;
- Revise the refuge general hunt permit, to include participation for white-tailed deer, squirrel, coyote, and wild turkey. The fee for the general permit would be \$20. The bear hunt permit would be a separate \$20 fee. Permit fees would be waived for youth hunters under 16 years of age. The current fee structure is \$15 for white-tailed deer, and \$25 for black bear; and
- Require the use of non-toxic ammunition for all new species (turkey, coyote, squirrel) in 2021, and required for all species by 2026. This 5-year phase-in period will allow hunters time to adapt to the new regulations without diminishing hunting opportunities on the refuge.

The refuge consists of lands in both Virginia and North Carolina. Hunting opportunities would

be conducted according to relevant State, Federal, and refuge-specific regulations (50 CFR 32.65). However, the Refuge Manager may, upon annual review of the hunting program, impose further restrictions on hunting, recommend that the refuge be closed to hunting, or further liberalize hunting regulations up to the limit of State regulations. The refuge will restrict activity if it becomes inconsistent with other priority refuge programs or endangers refuge resources or public safety.

This alternative was selected over the other alternatives because (1) it helps fulfill the statement of objectives detailed in the Hunting Plan; (2) it would result in a minimal impact on physical and biological resources; and (3) it meets the Service's mandates under the National Wildlife Refuge System Administration Act (NWRSA) of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, and Department of the Interior Secretarial Order 3356. The Service believes that expanding hunting opportunities on Great Dismal Swamp NWR will not have a significant impact to wildlife, other uses, or refuge administration. This alternative will best meet the purpose and need, refuge objectives, and Service mandates.

Department of the Interior Secretarial Order 3347 – “Conservation Stewardship and Outdoor Recreation,” signed March 2, 2017, and Secretarial Order 3356 – “Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes, and Territories,” signed September 15, 2017, includes direction to Department of the Interior agencies to “increase outdoor recreation opportunities for all Americans, including opportunities to hunt and fish; and improve the management of game species and their habitats for this generation and beyond.” The selected alternative will also promote one of the priority public uses of the Refuge System, and providing opportunities for visitors to hunt will promote stewardship of our natural resources and increase public appreciation and support for the refuges.

Other Alternatives Considered and Analyzed

Alternative A—No Action Alternative

The No Action Alternative would continue to provide hunting opportunities for white-tailed deer and black bear on the refuge on approximately 60,000 acres. No expansion of hunting programs would occur, and the programs would be conducted as they are currently. There would be no additional costs to the refuge under this alternative, nor would there be any 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. This alternative has negligible short-term impacts to physical and biological resources. This alternative was not selected because it would not fulfill the Service's mandate under the NWRSA and Secretarial Order 3356 to expand compatible priority uses as well as the proposed action.

Summary of Effects of the Selected Action

An Environmental Assessment (EA) was prepared in compliance with the National Environmental Policy Act (NEPA) to provide decision-making framework that (1) explored a reasonable range of alternatives to meet project objectives, (2) evaluated potential issues and impacts to the refuge, resources and values, and (3) identified mitigation measures to lessen the degree or extent of these impacts. The EA analyzed the potentially affected environment and

evaluated the degree of the effects associated with the proposed action and no action alternative. It is incorporated as part of this finding.

Implementation of the agency’s decision would be expected to result in the following environmental, social, and economic effects:

Table E-1. Summary of Impacts

Affected Environment	Potential Impacts of the Selected Action
Big game (white-tailed deer, black bear and wild turkey)	<p>Negligible short-term impacts. Deer on the refuge may be temporarily displaced by hunters walking and driving in the refuge, but this impact is typically minimal and short-term. Hunting access would be limited to walk-in and bike-in only at all except one entry point, and potential vehicular disturbance is likely reduced. Although it is possible that the expanded program could attract additional white-tailed deer hunters or increase harvest success rates, impacts to local or regional white-tailed deer populations would likely not change significantly.</p> <p>Bear hunting opportunities would be increased with additional hunter access points, and an increase in total hunting days. We will prohibit the use of dogs and bait, and maintain an annual harvest quota of 20 bears. The 3 consecutive hunt days each week, and access regulations, would provide the bear population with both temporal and spatial rest from hunting pressure by providing hunt-free days and hunt-free areas within the interior refuge. With these measures in place, the expanded hunt would likely not significantly affect the refuge’s bear population.</p> <p>Turkey hunting on the refuge would be permitted in the fall only in accordance with State regulations. Turkey harvest on the refuge is expected to be negligible and not likely to significantly affect turkey populations on or near the refuge.</p>
Upland and small game (coyote and squirrel)	<p>Negligible short- and long-term impacts to these species. Coyote hunting would occur on Thursdays, Fridays, and Saturdays concurrently with the refuge hunt season for deer and bear. Night hunting is prohibited on the refuge. Coyotes tend to be more active at night, so coyote harvest on the refuge is expected to be minimal.</p> <p>Squirrel populations are found in low densities on the refuge, as this species is typically observed on drier portions of the refuge. Squirrels may be minimally impacted by short-term disturbances due to hunters driving and walking to and from</p>

Affected Environment	Potential Impacts of the Selected Action
	<p>hunting locations, although vehicular access would be minimized. Impacts on squirrels in and around the refuge are expected to be negligible since the populations are considered stable and are capable of rebounding quickly and we anticipate low harvest levels.</p>
<p>Non-target wildlife and aquatic species</p>	<p>Minimal short-term adverse impacts. Additional hunter access points would lead to hunting in areas that had not experienced hunting before. An additional 40,000 acres would be open to hunting under this plan. Due to most of these entry points being walk-in and bike-in only, impacts are expected to occur in a smaller area (i.e., the perimeter of the refuge) than if hunters retained driving access. Similarly, this alternative would likely disperse hunters out across a larger area of the refuge, reducing short-term disturbance impacts on non-target species. Disturbances to birds are expected to be minimal, as hunting on the refuge occurs outside of nesting and migratory seasons. Short-term disruptions to other species like bats, turtles, frogs, and some mammals, would likely be negligible, due to inactivity or hibernation during the hunting season.</p> <p>Long term, the refuge would require non-toxic ammunition for all species by 2026. This would benefit wildlife and habitat on over 100,000 acres of wetlands on the refuge by reducing any potential bioaccumulation of lead in the environment.</p>
<p>Threatened and endangered species and other special status species</p>	<p>For more detail, see the completed Intra-Service Section 7 Evaluation (Appendix C). There are two endangered species on the refuge; Northern long-eared bat (NLEB) and red-cockaded woodpecker (RCW). Lead contamination through direct consumption is not anticipated for these species, due to their diets and foraging behavior. At this time, hunting will not be permitted in the “Blocks” unit, which will further reduce any potential impacts in RCW nesting and foraging habitat. Hunting is not likely to adversely affect the NLEB, since roosting, feeding, and pup rearing activities occur outside of the refuge hunting seasons.</p>
<p>Habitat and vegetation</p>	<p>Minimal adverse impacts. Hunting would be limited to walk-in and bike-in only except for one location. Repeated visitation to any particular locale at the refuge could cause damage to vegetation and, therefore, wildlife habitat. Impacts to wildlife habitat would likely be minimal as most</p>

Affected Environment	Potential Impacts of the Selected Action
	species would have already undergone senescence or become dormant. Due to the dispersed nature of hunters, and the addition of several new access points, impacts from repeated trampling would likely be reduced, as hunters would be spread out over a larger area.
Visitor use and experience	Minimal adverse impacts to other public uses. Conflicts between hunters and other refuge users are expected to be minimal during the hunting season. Some trail users, birdwatchers, and photographers may be impacted by the presence of hunters or noise. User conflicts would be reduced by limiting the hunt to only 3 days a week, and by implementing archery-only zones and no-hunting buffers around high public use areas. Moreover, by providing additional hunter access points beyond the four public-use trailheads, hunters will be encouraged to disperse from other users. In this alternative, trailheads would not be closed to other users during the refuge hunt. This is expected to reduce some conflicts by allowing all refuge visitors access to the trailheads, including Lake Drummond Wildlife Drive, which is the most highly used public area on the refuge.
Cultural resources	No adverse impacts. There are no historic buildings or other obvious cultural resources on the refuge that would be readily susceptible to impacts from hunting.
Refuge management and operations	Minimal short- and long-term impacts. While there may be an increased number of hunters throughout the refuge, impacts to local roads and existing infrastructure would likely be negligible. Hunters would continue to use refuge parking areas and may make stops at the visitor contact station to gather information. However, access would be limited to walk-in and bike-in only at all except one location, which is expected to decrease the impacts by hunters on refuge ditch roads. There may be slightly more traffic on refuge-adjacent roads as hunters drive to and park at new access points. Impacts to local public roads and refuge infrastructure would likely be negligible.
Socioeconomics and environmental justice	Negligible short- and long-term impacts. Expanding hunting programs on Great Dismal Swamp NWR will likely assist the local economy by attracting additional refuge visitors to the area, but the additional economic impact is expected to be negligible as compared to current management.

Measures to mitigate and/or minimize adverse effects have been incorporated into the selected action. Specific regulations for the Proposed Action Alternative were designed to prevent conflicts and negative impacts on refuge habitat and resources while expanding hunting opportunities on the refuge. Careful oversight by refuge staff will mitigate impacts of implementing expanded hunting programs. The refuge manager reserves the right to close a unit to hunting or completely stop hunting should any adverse effects occur.

Conflicts can arise between sportsmen/women and other public users, but it is not a substantial issue at the current or proposed 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 possible conflicts. Overall, refuge hunting is expected to have a continued positive impact by increasing community participation of distinct user groups at the refuge.

While refuges, by their nature, are unique areas protected for conservation of fish, wildlife and habitat, the proposed action will not have a significant impact on refuge resources and uses for several reasons:

1. In the context of local and State hunting programs, the selected action will only result in a tiny fraction of the estimated populations and harvest. The Service works closely with the State to ensure that additional species harvested on a refuge are within the limits set by each state to ensure healthy populations of the species for present and future generations of Americans.
2. The Refuge System uses an adaptive management approach to all wildlife management on refuges, monitoring and re-evaluating hunting opportunities on the refuge on an annual basis to ensure that the program continues to contribute to the biodiversity and ecosystem health of the refuge, and that the impacts from these opportunities do not add up to significant impacts in combination with the environmental trends and planned actions on and near the refuge.
3. The adverse effects of the selected action on air, water, soil, habitat, wildlife, aesthetic/visual resources, and wilderness values are expected to be non-existent, minor and/or short-term. The benefits to long-term ecosystem health from the selected action, in conjunction with other existing refuge programs, will far outweigh any of the short-term adverse impacts discussed in the EA and document. The action will result in beneficial impacts to the human environment, including the biodiversity and ecological integrity of the refuge, as well as the wildlife-dependent recreational opportunities and socioeconomics of the local economy, with only negligible adverse impacts to the human environment as discussed above.
4. The refuge-specific regulations detailed in 50 CFR are measures that will reduce or avoid impacts. Hunting regulations will be enforced by Federal and State law enforcement officers. Providing information through various forums will ensure the public is aware of applicable laws and policies.
5. The selected action, along with the proposed mitigation measures, will ensure that there is

low danger to the health and safety of refuge staff, visitors, and hunters themselves.

6. The action is not in an ecologically sensitive area.
7. The action is not likely to adversely affect any threatened or endangered species; and will have no effect to federally designated critical habitat.
8. The action will not impact any cultural or historical resources.
9. The action will not impact any wilderness areas.
10. There is no scientific controversy over the impacts of this action, and the impacts of the proposed action are relatively certain.
11. The proposal is not expected to have any significant adverse effects on wetlands and floodplains, pursuant to Executive Orders 11990 and 11988 because hunters must use established access points that will not be located near sensitive habitats.

Additionally, the following stipulations are necessary to ensure compatibility:

- Hunting on the refuge occurs October 1 through the first Saturday in January, on Thursday, Friday, and Saturday only or as State seasons dictate.
- Possession of dogs on the refuge is prohibited during any designated hunt date.
- We will implement a phased approach for prohibition of lead ammunition that will allow hunters and the public additional time to understand and adapt to the new regulations. Conversion to non-toxic ammunition will phase-in over the next 5 years beginning with immediate prohibition for new hunting opportunities proposed in the plan (coyote, squirrel, and turkey) and encouragement of voluntary use for existing opportunities (deer and bear). The refuge staff will be working with hunters to move toward the required use of non-toxic alternatives for deer and bear hunting by 2026.
- There is an annual harvest limit of 20 bears on the refuge. The refuge bear hunt may be modified as this quota is approached. The refuge will routinely assess hunt data and may make changes to the bear hunt as necessary; such as limiting the number of permits, acreage, and/or season.

These measures to mitigate and/or minimize adverse impacts have been incorporated into the proposal. The proposal is compatible with the purposes of the refuge and the mission of the Refuge System (see the Compatibility Determination, Appendix A in the Hunting Plan).

Public Review

The plan has been thoroughly coordinated with all interested and/or affected parties. Refuge staff coordinated with State agency staff in preparation of the Hunting Plan, Compatibility Determination, and EA, and incorporated their comments into the documents. We released the

draft plan, Compatibility Determination (CD) and EA for public review and comment from April 9 through July 6, 2021, a total of 88 days. We distributed a press release to news organizations and alerted visitors to the plan’s availability on the refuge website and Facebook page. In addition, a notice of availability was sent to 2020 registered Refuge hunt permittees. No public meetings were held due to COVID-19 public gathering safety guidance. We received 21 public comment letters. For more detail, and a summary of all substantive public comments and our responses, see Appendix D (Public Comments and Responses).

Modifications were incorporated into the final plan and decision documents. The refuge will make the following changes to the proposed hunting program:

- 1) We modified the boundaries of the Washington Ditch Archery-only Zone to reduce potential conflicts between hunters and non-hunters in the area;
- 2) We modified the plan to allow any shotgun size, rather than larger than 20 gauge;
- 3) We extended the no-hunting buffer zones that would be applied around refuge buildings, parking lots, roads, trails, ditches, and boardwalks from 100 feet to 150 feet;
- 4) We will reconsider allowing a spring turkey hunt.

Determination

Based upon a review and evaluation of the information contained in the EA, as well as other documents and actions of record affiliated with this proposal, the Service has determined that the proposal to expand and open hunting opportunities at Great Dismal Swamp NWR does not constitute a major Federal action significantly affecting the quality of the human environment under the meaning of section 102(2)(c) of NEPA. As such, an environmental impact statement is not required. An EA has been prepared in support of this finding (Appendix B) and is available upon request to the refuge.

The Service has decided to select the proposed action as described in the EA and implement the Hunting Plan for Great Dismal Swamp NWR upon publication of the final 2021-2022 Station-Specific Hunting Regulations. This action is compatible with the purposes of the refuge and the mission of the Refuge System, and consistent with applicable laws and policies. See attached Compatibility Determination (Appendix A).

Regional Chief
National Wildlife Refuge System

Date