APPENDIX B
Environmental Assessment for Recreational Fishing at Canaan Valley National Wildlife Refuge

Environmental Assessment for Recreational Fishing at Canaan Valley National Wildlife Refuge

This Environmental Assessment (EA) is being prepared to evaluate the effects associated with this proposed action and complies with the National Environmental Policy Act (NEPA) in accordance with Council on Environmental Quality regulations (40 CFR 1500-1509) and Department of the Interior (516 DM 8) and U.S. Fish and Wildlife Service (Service) (550 FW 3) policies. NEPA requires examination of the effects of proposed actions on the natural and human environment.

Proposed Action:

The Service is proposing to open fishing opportunities for freshwater fish on the Canaan Valley National Wildlife Refuge (NWR, refuge) in accordance with the refuge's Comprehensive Conservation Plan (CCP) (USFWS 2011). Canaan Valley NWR is approximately 17,000 acres located in Davis, West Virginia, and in Grant and Tucker Counties, West Virginia. We propose to provide new access opportunities and open the refuge to recreational fishing.

This proposed action is often iterative and evolves over time during the process as the agency refines its proposal and learns more from the public, tribes, and other agencies. Therefore, the final proposed action may be different from the original. The final decision on the proposed action will be made at the conclusion of the public comment period for the EA and the 2020-2021 Refuge-Specific Hunting and Sport Fishing Regulations. The Service cannot open a refuge to hunting and/or fishing until a final rule has been published in the Federal Register formally opening the refuge to hunting and/or fishing.

Background:

The National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, and the Refuge Recreation Act of 1962 authorize public fishing on refuges where the fishing program is compatible with the other major purposes for which the area was established. As part of our CCP, which was approved in February 15, 2011, a compatibility determination was performed and fishing was deemed a compatible and worthwhile recreational opportunity to provide for the public, so long as management decisions are based on sound biological principles.

The establishing legislation and authorities for Canaan NWR are:

> "…the conservation of the wetlands of the nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions (Emergency Wetlands Resources Act of 1986; 16 U.S.C. 3901(b));
>
> "… for the development, advancement, management, conservation, and protection of fish and wildlife resources (Fish and Wildlife Act of 1956; 16 U.S.C 742f(a)(4));

> "…for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." 16 U.S.C. 715d (Migratory Bird Conservation Act of 1929).

The mission of the Service is:

> "...working with others to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people."

In addition to the overall mission of the Service, the National Wildlife Refuge System (Refuge System) also has its own mission as set forth by Congress in the Refuge System Improvement Act of 1997. It is as follows:

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

Additionally, the Refuge Improvement Act of 1997 identifies six priority public uses that are appropriate on national wildlife refuges, including hunting, fishing, wildlife observation, wildlife photography, and environmental interpretation and education. Developing a fishing program at Canaan Valley NWR relates directly to the overall mission of the Service and promotes one of these priority public uses. This will be a biologically sound program that seeks to create enjoyable recreation experiences, promote a greater understanding and appreciation of wildlife resources, and aid in the conservation of wildlife populations and their habitats.

The Refuge Recreation Act requires that funds be available for the development, operation, and maintenance of fishing programs. It is anticipated that inclusion of a fishing program will have a negligible impact on refuge financial resources. Due to the remoteness of some of the refuge's streams, the approximate number of anglers is hard to estimate.

Canaan Valley NWR is located in Davis, West Virginia, and in Tucker and Grant Counties, West Virginia. The refuge was established on August 11, 1994, with the purchase of 86 acres, but currently ranges over 17,000 acres (see Figure 1 in the Recreational Fishing Plan). The Service is authorized to acquire an additional 24,000 acres within the land acquisition boundary.

The refuge works to preserve unique high elevation wetlands, which includes the largest shrub and bog wetland complex in the southern Appalachians. This complex contains a mixture of wetland types, including muskeg, alder, wet meadow, swamp forest, and spiraea thicket. Other habitat types are present on the refuge as well. Upland areas provide grass and shrublands important for migratory birds. High elevation woodlands provide habitat for threatened and endangered species, including Cheat Mountain salamander and Indiana bat. Overall, the area supports over 580 species of plants (representing 40 different plant communities), as well as an estimated 290 species of mammals, birds, reptiles, amphibians, and fish. Of the 30 species of fish that occur in the tributaries of the Blackwater River, 19 are found to be native to the refuge.

The proposed fishing program rules will be the same as, or more restrictive than, regulations throughout the State of West Virginia (State). Additional restrictions may take the form of potential seasonal closures, prohibition of lead sinkers in ponds, and time of day when we would permit access for fishing, or other rules and regulations designed to protect fish and wildlife.

We will take an adaptive management approach to maintaining the fishery resources of the refuge. The West Virginia Division of Natural Resources (WVDNR) manages the fishery resources and stocking program in areas adjacent to the refuge, and we will work together to ensure the fishery resource remains healthy and sustainable.

Purpose and Need for the Proposed Action:

The purpose of this proposed action is to provide compatible wildlife-dependent recreational opportunities on Canaan Valley NWR. The need of the preferred action is to meet the Service's priorities and mandates as outlined by the Refuge System Administration Act 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)).

Fishing is a healthy and traditional recreational use of renewable natural resources deeply rooted in America's heritage, and it can be an important wildlife management tool. The Refuge System Administration Act of 1966, the Refuge System Improvement Act of 1997, and the Service's policies permit fishing on a refuge when it is compatible with the purposes for which the refuge was established and acquired. Canaan Valley NWR's CCP (2011) identified the goal to open and expand compatible fishing opportunities with specific objectives to expand freshwater fishing access on the refuge.

To address the needs stated above, the purpose of the proposed action will bring the refuge into compliance with current management objectives. Furthermore, Department of the Interior Secretarial Order 3356 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. The proposed action will also promote one of the priority public uses of the Refuge System, and providing opportunities for visitors to fish will promote stewardship of our natural resources and increase public appreciation and support for the refuge.

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

Alternatives Considered

Alternative A – [Current Management] – No Action Alternative
The No Action Alternative would not allow fishing opportunities and canoe/kayak access on Blackwater River or access to beaver ponds close to trails and refuge roads in Davis, West Virginia. Since the refuge is not currently open to fishing, no enhanced opportunities would occur.

Alternative B – [Open Fishing Opportunities and Enhance Access] – Preferred Alternative
Refuge staff have worked closely with the WVDNR to develop the current proposed recreational fishing plan. There are no unresolved conflicts regarding the proposed action with respect to the alternative uses of available resources. Additionally, the proposed action opens the fishing program, and includes the addition of some areas that were developed during the writing of the refuge's CCP. Therefore, the Service does not need to consider additional alternatives (43 CFR 46.310). Table 1 describes the primary differences between the two evaluated alternatives.

Table 1. Comparison of refuge fishing alternatives

	No Action Alternative	**Proposed Action Alternative**
Freshwater fishing via boat	Blackwater River	Blackwater River
	Laurel Landing	Glade Run and smaller tributaries
	Timberline Parking Area	Laurel Landing
		Timberline Parking Area
		Farm View Trail
Freshwater fishing via trail or road	Timberline crosses Idleman's Run at bridge	Timberline crosses Idleman's Run at bridge
	River's Edge Trail meets the Blackwater River	Freeland Road crosses Freeland Run
	Canaan Mountain Trail meets pedestrian bridge at Blackwater River	Beall South trail meets the Blackwater River
	Middle Valley Trail crosses Glade Run at North Glade Run Crossing	South Glade Run Trail crosses Glade Run
	Middle Valley Trail crosses Sand Run	Fishing Hook trail leads to a beaver pond
		Wherever managed roads or trails comes within approximately 10 yards of a river, stream or pond.
Cost of program (annual)	$500	$2,360
Improvements	None	Add informational signage at all sites

The Service has prepared a Recreational Fishing Plan, which is presented in this document as the Proposed Action Alternative. The updated recreational fishing plan proposes to open the refuge and increase or enhance fishing access and opportunities. Most sites have decent canoe/kayak access, except for the addition of Farm View Trail. Other sites will have improved signage and/or parking. A water trail map will be added in the future to help anglers know the locations of these opportunities.

Freshwater Fish Species

Refuge areas open to freshwater fishing include Blackwater River and all tributaries that branch from this river that are accessible either by canoe/kayak or managed road or trail in Tucker County, West Virginia. There are opportunities for bank fishing along trails where a beaver pond comes within 10 yards of a managed road or trail. Several streams are within this distance (Table 1) and provide opportunities for fishing. A new canoe/kayak launch was built last year at Laurel Landing, which is located behind Brown Mountain parking lot. There are two other launch or retrieval points found on the refuge at Timberline Parking Area and Beall Trail. We will also create a new trail, Farm View Trail, which has a retrieval point and access to Blackwater River.

Beaver ponds on the refuge last from a few years to many years. Many are within sensitive wetland habitats. Plants in these habitats may be unusual for this latitude or may be globally rare, like the balsam fir (*Abies balsamea*) and bog clubmoss (*Lycopodiella inundata*). If an approved and managed road or trail provides access to a pond within approximately 10 yards, then it is open to fishing, otherwise, it is not open. This will minimize compaction of significant plant communities and disturbance of wildlife.

Vernal pools are confined wetland depressions, natural or man-made, that retain water for at least 2 consecutive months out of the year and are devoid of breeding fish populations. These freshwater pools are scattered throughout the refuge. These sites are generally less than 1-acre in size and are fed by rainfall. They provide critically important habitat for a variety of amphibian species. Based on the pool's importance for the suite of species that rely on them, and that few, if any, fish are found in the pools, the sites will not be open for fishing on the refuge.

Canaan Valley refuge-specific regulations will be published in the *Federal Register* as part of the 2020-2021 Refuge-Specific Hunting and Sport Fishing Regulations. Proposed refuge-specific regulations will prohibit the use of lead sinkers in freshwater ponds on the refuge, the use of gasoline motors, the possession, use, or collection of bait fish, commercial fishing, more than two attended poles with hook and line attached, and using bikes and/or horses off trail to access fishing spots. This Proposed Action Alternative offers increased opportunities for public fishing, enhances facilities, and fulfills the Service's mandate under the Refuge System Improvement Act of 1997. It provides a recreational experience to the general public while maintaining sustainable wildlife populations. The estimated cost to operate this fishing program is estimated to be $2,360 annually. Under this alternative, the refuge fish and wildlife officer and/or WVDNR conservation officers will monitor fishing, and conduct license, bag limit, and compliance checks. The Service has determined that the recreational fishing plan is compatible with the purposes of the Canaan Valley NWR and the Refuge System. It is found in the Recreational Fishing Plan.

Mitigation Measures and Conditions

- Nearly all fishing access points are located in areas separate from other visitor uses, such as wildlife observation and photography.
- Access to refuge freshwater lakes is limited to non-motorized (no internal combustion engines) boats to reduce conflict in small water bodies.
- Fishing on the refuge is proposed for the Blackwater River and its tributaries wherever approved and managed roads or trails cross a river, stream or pond or comes within approximately 10 yards of a river, stream, or pond.
- Anglers can travel along the stream, staying below ordinary low-water mark.
- If an approved and managed road or trail provides access to a pond within approximately 10 yards, then it is open to fishing, otherwise it is not open. This will minimize compaction of significant plant communities and disturbance of wildlife.
- Anglers must properly discard monofilament line and all other fishing waste.
- Maps and fishing information and regular social media posts, along with refuge and State law enforcement checks, will ensure the public is aware of applicable laws and policies.
- State regulations are followed regarding season dates and harvest rates.

Affected Environment

Canaan Valley NWR consists of approximately 17,000 acres. It is primarily comprised of wetland habitat, but also contains conifer and upland forest, grasslands, small acreages of scrub/shrub, and old field habitats. The proposed action would occur in multiple sites throughout the refuge but in only a few habitat types (Table 2).

Table 2. Primary refuge habitat plant community descriptions found in fishing areas

Habitat Type	Description
Forested Wetland	Wetland communities that includes deciduous and coniferous wetland forests, as well as a small amount of planted pine plantation.
Shrub Wetland	Shrub wetland communities primarily include speckled alder swamps, spirea thickets, and mixed shrub swamps.
Herbaceous Wetland	Wetland habitat that include both peatlands and wet meadows.

Open water/aquatic	Composed of riverine habitat (Blackwater River and its tributaries) and beaver ponds.
Shrubland	Includes Glade St. John's wort, mountain holly, and hawthorn.
Old Field	Old field grasslands and grass-forb meadows that were former pastures that have not reforested.
Managed Grasslands	Former pastures that are currently managed as grasslands for grassland breeding birds.
Northern Hardwood	Predominate forest type on the refuge composed of black cherry groves, upland aspen groves, and un-vegetated balds and ridges that occur within the forest.
Conifer (spruce)/Mixed Forest	Includes hardwood/conifer upland forests and conifer upland forest.

For more detailed information regarding the affected environment, please see chapter 3 of the refuge's CCP (USFWS 2011), which can be found here: https://www.fws.gov/refuge/Canaan_Valley/what_we_do/conservation.html

Environmental Impacts of the Action

This section analyzes the environmental consequences of the action on each affected resource, including direct and indirect effects. This EA focuses primarily with analyses of the environmental consequences on a resource when the impacts on that resource could be more than negligible and, therefore, be considered an "affected resource." Resources that will not be more than negligibly impacted by the action have been dismissed from further analyses.

Impact Types

Direct effects are those which are caused by the action and occur at the same time and place. Effects can be ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historical, cultural, economic, social, or medical.

Indirect effects are those which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Effects can be ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historical, cultural, economic, social, or medical.

Table 3. Description of the affected resources and impacts of the two alternatives

NATURAL RESOURCES	
AFFECTED ENVIRONMENT	**ANTICIPATED IMPACTS**
Freshwater Finfish The refuge contains many freshwater sites that support fish populations. Species found in Blackwater River, smaller tributaries, and ponds were brown bullhead (*Ameirurus nebulosus*), yellow bullhead (*Ameirus natalis*), stonecat (*Noturus flavus*), rainbow trout (*Onchorhynchus mykiss*), brown trout (*Slamo trutta*), brook trout (*Slavelinus fontinalis*), rock bass (*Ambloplites rupestris*), green sunfish (*Lepomis cyan*ellus), pumpkinseed (*Lepomis gibbosus*), bluegill (*Lepomis macroshirus*), and largemouth bass (*Micropterus slamoides*).	**No Action:** Currently, Blackwater River, smaller tributaries, and select beaver ponds are most of the freshwater fishing sites found on the refuge, and have been a precedent before the refuge was established. The WVDNR owns the stream or river up to the high water mark. Regardless, fishing would remain open in those areas. Water is accessed by canoes or kayaks and fishing occurs from the banks, and where streams, rivers, or ponds intersect refuge managed roads or trails. Most people fish from the bank, or walk in to a site from nearby trails or roads. Negligible, short-term impacts to freshwater fish populations are expected from this alternative. **Proposed Action:** Increasing opportunities to areas within 10 yards of a river, stream or pond would be added in this alternative. Most of the sites are in a low-populated area (Tucker County) with few other freshwater fishing options, so opening will increase the number of anglers on the refuge by an estimated 400 angler visits per year, which is about 1 additional angler visit per day. Fishing could slightly decrease the fish population at Blackwater River, but the impact is expected to be negligible. WVDNR has a trout stocking program that has been in place for many years. This will further minimize the impact for rainbow and brown trout.
Other Wildlife and Aquatic Species The refuge supports a diversity of northeastern West Virginia species including game and nongame species, reptiles, amphibians, and invertebrates, which are important contributors to the biodiversity on the refuge. A majority of songbirds	**No Action:** This alternative currently results in some short-term, but negligible, negative impacts to small mammals, birds, and other wildlife due to disturbance in areas where access for fishing activities occurs. **Proposed Action:** The presence of anglers can impact wildlife. Disturbances vary with the species involved and the type, level, frequency, duration, and time of year such activities occur. Anticipated disturbances to

and some raptors breed on the refuge.	wildlife are likely to be short term and infrequent based on the current and anticipated level of use. Sedimentation impacts will likely be minor from foot travel. Long-term impacts may include certain wildlife species avoiding trail corridors as a result of this use over time. It is not expected that disturbance impacts will be significant.
Threatened and Endangered Species and Other Special Status Species A Section 7 Endangered Species Act review, in coordination with the Service's West Virginia Field Office, indicates that for federally listed species, the Cheat Mountain salamander (Plethodon netting) is present on the refuge.	**No Action:** This alternative would not impact threatened and endangered species. **Proposed Action:** The threatened Cheat Mountain salamander (*Plethodon nettingi*) is associated with high elevation forested habitat, typically with some component of red spruce and/or Eastern hemlock, and it is likely they are restricted to the cooler mountain slopes and ridges. Primary access for fishing will occur only in the lower elevations and valley floor and will not traverse known or potentially occupied habitat of either species. Therefore, there are no anticipated impacts to these species as a result of allowing fishing access.
Vegetation (including vegetation of special management concern) Vegetation varies throughout the refuge, but fishing areas are generally maximally vegetated. Fishing habitat descriptions are provided in Table 2.	**No Action:** Negligible negative impacts currently occur to vegetation due to fishing. Some riparian vegetation at the Timberline Parking fishing areas is trampled, and foot trails have been created by anglers. Cutting vegetation is prohibited on the refuge. Some illegal vegetation clearing may occur along vegetated banks (*e.g.,* Blackwater River), but the impact is minor. No off-road vehicles are permitted on the refuge. Many plant species considered rare in the state are found associated with riparian wetlands in the Canaan Valley (Bartgis and Berdine 1991). Fishing along riparian corridors may cause disproportionate trampling impacts to rare plants than other public use activities. **Proposed Action:** Foot travel to and use of fishing locations can have indirect impacts to plants by compacting soils and diminishing soil porosity, aeration and nutrient availability that affect plant growth and survival (Kuss 1986). Walking to fishing areas during the growing season could cause increased damage to plants in the wetland communities. Plants in the process of growth and

	producing flowers and, are growing in wet or moist soils, are the most sensitive to disturbance from trampling effects (Kuss 1986). It is anticipated that increasing fishing access will cause minor vegetation loss. Foot travel may increase root exposure and trampling, and some rare plant species could be impacted by anglers walking around beaver ponds or along riparian corridors. Angler density is expected to remain manageably low so any damage to refuge habitats should be minimal. Additionally, the area of impact is generally spread to a variety of sites which prevents a concentrated impact at any one location. Overall, pedestrian access for fishing is not anticipated to cause any significant impacts to plants or plant communities.
Air Quality Overall air quality is good, with no current criteria pollutants exceedances, but of recent concern is ground level ozone which has exceeded the EPA 8-hour standard (75 ppb) for safe health levels on 1 to 5 days per year from 1995 to present.	**No Action:** Negligible, short-term adverse impacts occur on the refuge related to the current fishing program due to the use of fossil fuels by anglers traveling to the refuge. **Proposed Action:** A negligible, short-term adverse impact could be associated with increased emissions from vehicles if fishing participation increases; however, it is anticipated that if those new anglers were not traveling to the refuge, they would likely be traveling to other locations or engaging in other activities that would have comparable emission releases. Additionally, new boating access is limited to non-motorized boats so no new emissions releases would occur due to boating.

Water Resources The main water body is the Canaan Valley is the Blackwater River. Tributaries to the Blackwater enter along its course through the valley and many of them flow through the refuge. These tributaries include the Little Blackwater River, Glade Run, the North Branch, Sand Run, Yokum Run, and Freeland Run. Additionally, numerous unnamed small streams and springs feed the Blackwater as it travels through the valley, adding to its size. The Blackwater River and its major tributaries are low gradient streams on the refuge.	**No Action:** Impacts to water resources are generally by motorized boats used by anglers that may inadvertently leak polluting substances in tidal creeks. No motorized boats are permitted in freshwater areas of the refuge. Impacts are considered minor and short-term. **Proposed Action:** New refuge areas open to boating associated with fishing could be impacted from increased activities and boats (*e.g.,* littering). Angler foot traffic on existing trails will create only minor hydrologic impacts and is not anticipated to worsen existing hydrologic problems. Maintenance will be required to create adequate and proper drainage so that existing routes do not impact local hydrology. These impacts are not likely to be significant at the existing level of fishing use. The impact is expected to be minor and short-term.
Wetlands The refuge is comprised of over 8,400 acres of wetlands, which is the largest area of wetlands in West Virginia, and 166 acres of open water/aquatic areas.	**No Action:** Impacts to wetlands are generally through trampling and sedimentation through rain runoff. Walking to fishing areas during the growing season could cause increased damage to plants in the wetland communities. Plants in the process of growth and producing flowers and, are growing in wet or moist soils, are the most sensitive to disturbance from trampling effects (Kuss 1986). Sedimentation can directly kill aquatic invertebrates which impacts the success of amphibian larvae and adults (Sadoway 1981). **Proposed Action:** Foot travel to and use of fishing locations can have indirect impacts to wetlands through the alteration of drainage patterns. Bartgis and Berdine (1991) note that roads and trails can divert water from their original drainage patterns in Canaan Valley. This can result in some drainages becoming dry while others accelerate erosion by being forced to carrying more water. Pedestrian access for fishing is not anticipated to cause any significant impacts to wetland communities.

VISITOR USE AND EXPERIENCE	
AFFECTED ENVIRONMENT	**ANTICIPATED IMPACTS**
The refuge is open to all six priority public uses (hunting, fishing, wildlife observation, wildlife photography, environmental education and environmental interpretation). About 50,000 people visit the refuge each year: 3,200 to the Visitor Information Center; 40,000 on 30 miles of foot trails; 2,000 hunters; and 100 anglers, among other users.	**No Action:** Nearly all of the refuge's fishing activities occur in areas where none of the other priority public uses occur. No known conflicts have occurred as a result of these mixed uses. **Proposed Action:** Fishing is viewed as an effective and justifiable method of access that enables the public to discover, experience, and enjoy the refuge and participate in a priority public use. Potential habitat degradation from angler foot traffic to breeding/nesting birds and wildlife species warrants monitoring. Due to the low level of fishing activity occurring on beaver ponds and rivers on the refuge, no significant impacts to refuge resources are anticipated. However, if unanticipated impacts are noted, corrective actions will be taken to protect refuge resources.

CULTURAL RESOURCES	
AFFECTED ENVIRONMENT	**ANTICIPATED IMPACTS**
There are no known cultural resources on or near the designated access points or any of the fishing areas.	**No Action:** No adverse impacts would occur under this alternative. **Proposed Action:** No adverse impacts would occur under this alternative.

REFUGE MANAGEMENT AND OPERATIONS	
AFFECTED ENVIRONMENT	**ANTICIPATED IMPACTS**
Land Use Infrastructure for access to fishing areas associated with refuge management includes roads and trails. While most fishing occurs west of the Headquarters area, anglers using Blackwater River may use the Visitor Information Center to gather information or use the restrooms. The refuge is crisscrossed with well-traveled roads owned by local municipalities and counties.	**No Action:** Current levels of use of refuge infrastructure are short-term and have negligible impact. **Proposed Action:** Existing infrastructure maintained by towns and counties will continue to provide access to anglers. Proposed improvements will likely increase the number of anglers on the refuge, but impacts to local public roads and refuge infrastructure are expected to be negligible.
Administration There are currently six full-time employee positions at the refuge. One Park Ranger position is currently vacant. We also have short-term biological and maintenance support positions. Fishing-related job duties are performed by the fish and wildlife officer (law enforcement and community coordination); park ranger or assistant refuge manager (online public communication and website updates); refuge and assistant refuge managers (assuring administrative record is updated, ensure fishing-related tasks are accomplished); and maintenance staff (maintaining signs, trail maintenance, removing trash, parking lot maintenance). The refuge has an annual budget of about $800,000.	**No Action:** Since Canaan Valley NWR is officially not open to fishing, minimal funds are spent on this program **Proposed Action:** Estimated staff costs to implement this alternative are an additional $2,360. This is largely due to the increased time to manage the addition of new sites. It will require approximately 1 percent of the refuge fish and wildlife officer's time to enforce fishing, as well as about 1 percent of refuge management time (two people) to oversee and implement the program. Some assistant refuge manager and maintenance time will also be needed. Improvements outside normal operations may require funding from sources other than the annual refuge-operating budget.

SOCIOECONOMICS	
AFFECTED ENVIRONMENT	**ANTICIPATED IMPACTS**
Local and Regional Economies Canaan Valley NWR is located in Davis, West Virginia, in the northeastern portion of the state known as the Potomac Highlands Region. It is within a few hours' drive of several large metropolitan areas including Pittsburgh, Washington, D.C. and Baltimore. Total expenditures regionally were $2.5 million with non-residents accounting for $2 million in 2017. Expenditures on refuge fishing activities alone accounted for about 21 percent of all expenditures (Caudill and Carver 2019).	**No Action:** Fishing has been occurring since the refuge was formed. Majority of the fishing occurs on WVDNR property. **Proposed Action:** Fishing use of the refuge would increase as a result of the proposed action due to improvements in refuge facilities, which would have long-term economic benefits to the community. Therefore, additional local and regional economies will have short- and long-term minor beneficial impacts due to the proposed action.
ENVIRONMENTAL JUSTICE	
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.	The Service has not identified any potential high and adverse environmental or human health impacts from this proposed action or any of the alternatives. The Service has identified some minority or low-income communities within the impact area. Minority or low income communities will not be disproportionately affected by any impacts from this proposed action or any of the alternatives.

Cumulative Impact Analysis

Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions".

For more information on the national cumulative impacts of the Service's hunting and fishing program on the Refuge System, see "U.S. Fish and Wildlife Service, Cumulative Impacts Report *2020-2021 National Wildlife Refuge and National Fish Hatchery Proposed Hunting and Sport Fishing Openings (2020)*".

Past, Present, and Reasonably Foreseeable Activity in Area of Analysis	Descriptions of Anticipated Cumulative Impacts
Fishing Fishing occurs on public lands that are found adjacent to several locations of Canaan NWR. These include: Monongahela National Forest, Little Canaan Wildlife Management Area, and Canaan Valley State Park.	We conduct the refuge fishing program within the framework of State regulations. Harvest rates are established by WVDNR. The proposed fishing program rules will be the same as, or more restrictive than, regulations throughout the State of West Virginia. By maintaining regulations that are the same as or more restrictive than the State, we can ensure that we are maintaining seasons that are supportive of management on a more regional basis. Such an approach also provides consistency with large-scale population status and objectives. The refuge regularly coordinates with the State about the fishing program. Fish in freshwater refuge habitats are limited in their geographic range as those areas have limited flows in or out of the system. Cumulative impacts to freshwater fish are limited to rivers, streams, and beaver ponds.
Development and Population Increase The population of West Virginia has been increasing, though only slightly, for decades. In Tucker County, there has been a slight decrease over the past 10 years. Due to the rural location of the refuge, developmental pressure is minimal around the refuge.	Because the refuge works closely with the WVDNR, who oversees fishing regulations and harvest rates, the refuge fishing program can be adjusted to ensure it meets regional and landscape level goals in the region and does not contribute to negative cumulative impacts brought on by development of human population increases and consumption.

Use of lead fishing gear Lead tackle is permitted in West Virginia but will be prohibited on the refuge's freshwater ponds. A concern related to fishing is the use of lead sinkers and jigs for fishing. "Sinkers" are weights of various sizes and shapes used to sink a fishing line below the surface of the water; "jigs" are weighted hooks, often brightly painted or otherwise decorated, used as lures in angling. Because sinkers and jigs are generally much larger than shot pellets, a single lead sinker may induce acute lead poisoning. In North America, lead poisoning from sinker ingestion has been documented in common loons; trumpeter, tundra, and mute swans; and sandhill cranes. Many other species of waterbirds have feeding habits similar to those in which sinker ingestion has been documented (e.g., diving ducks, grebes, herons, osprey, bald eagles). These species could also be at risk for lead poisoning from sinker ingestion (Scheuhammer 1996)."	Although lead sinkers are legal to use in West Virginia, negative impacts to wildlife are of concern and it will be prohibited on the freshwater ponds on the refuge. The refuge does not have jurisdiction over the entire streambed. Anglers may choose to use non-lead alternatives such as tin, steel, or ceramic sinkers. The refuge will educate anglers on other alternatives to lead sinkers, as well as work with the refuge's friends group to provide alternatives to lead sinkers in their bookstore. This can reduce the impacts of lead to wildlife and the environment.
Climate Change The refuge recognizes that conditions related to global climate change may affect our ability to meet long-term biological objectives. Across the Appalachian region, current observations have shown average temperatures to have risen more than 1.5°F; winter average temperatures by 4°F. In general, spring is arriving earlier, summers are growing hotter, and winters are becoming warmer and less snowy.	Under this alternative, the refuge would work with the WVDNR and use an adaptive management approach for its fishing program, reviewing the program regularly and revising if necessary. For example, the refuge's active role in spruce restoration on the refuge and throughout the region is thought to be a way to help reduce the severity of climate stresses on the variety of rare and endemic species associated with these forests and high elevation wetlands. Increasing historic conifer cover in headwater streams may help reduce the overall warming effects and help maintain cold-water fisheries on the refuge such as brook trout and redside dace.

Summary of Findings and Conclusions

The purpose of this EA is to briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a Finding of No Significant Impact (FONSI). The term "significantly" as used in NEPA requires consideration of both the context of the action and the intensity of effects.

No Action Alternative – There would be no additional costs to the refuge under this alternative. There would be no change to current public use and wildlife management programs on the refuge under this alternative. The refuge would not increase its impact on the economy and would not provide new fishing and access opportunities, other than those already planned at Scotts Landing. This alternative has the least direct impacts of physical and biological resources; however, not enhancing fishing opportunities and access will have a long-term adverse impact on public engagement and support of the refuge. In addition, it would minimize our mandates under the NWRSAA and Secretarial Order 3356.

Proposed Action Alternative – This alternative is the Service's proposed action because it offers the best opportunity for public fishing that would result in a minimal impact on physical and biological resources, while meeting the Service's mandates under the NWRSAA and Secretarial Order 3356.

The Service believes that fishing on the refuge in accordance with WVDNR regulations will not have a significant impact on habitat, wildlife, or the human environment. Opening new fishing sites would promote a priority use of the Refuge System and support CCP goals. Expanding fishing on the refuge in an area where quality fishing exists but public access is limited, would support local economies and engage more people in outdoor recreation, fostering natural resource stewardship. The refuge will evaluate the fishing program on a regular basis and modify, as needed, to protect fish, wildlife, and their habitats.

List of Sources, Agencies and Persons Consulted

To prepare the current plan and alternatives, refuge staff met with the WVDNR.

- West Virginia Division of Natural Resources – Wildlife, Cliff Brown
- West Virginia Division of Natural Resources – Fisheries, David Wellman

List of Preparers

Ron Hollis – Refuge Manager
Matthew Boarman – Wildlife Refuge Specialist
Dawn Washington – Wildlife Biologist
Brett Hartwig – Fish and Wildlife Officer

State Coordination

Refuge staff met with WVDNR representatives on November 20, 2019, to discuss the current fishing program and to discuss recommendations for the future. After that meeting, several further conversations were held and emails exchanged to gather more information and recommendations. WVDNR has reviewed and provided initial comments on the associated draft recreational fishing plan.

Public Outreach

Initial scoping targeted representatives from WVDNR in a November 2019 meeting. They were informed that all members and the general public would have the opportunity to provide comments later in the process. The EA and recreational fishing plan will be advertised to the public for comment via the refuge's website, social media accounts, and press releases. At least one public meeting will be held during the 30-day comment period.

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 on this permit application **may significantly affect** the quality of the human environment and the Service will prepare an Environmental Impact Statement.

Preparer Signature: _____Date:_____

Name/Title/Organization: _____

_____

Certifying Officer Signature: _____Date:_____

Name/Title: _____

References

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Kuss, F.R. 1986. A review of major factors influencing plant responses to recreation impacts. Environmental Management, 10:638-650.

Sadoway, K.L. 1986. Effects on intensive forest management on amphibians and reptiles of Vancouver Island: problems analysis. Research, B.C. Ministries of Environment and Forests. IWIFR-23. Victoria, BC.

U.S. Fish and Wildlife Service [USFWS]. 2011. Canaan Valley National Wildlife Refuge Comprehensive Conservation Plan. February 2011.USFWS, Division of Planning, Hadley, MA. 200pp.

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