

Erie National Wildlife Refuge Hunting and Recreational Fishing Supplemental Environmental Assessment

Executive Summary

Introduction

The U.S. Fish and Wildlife Service (Service) prepared this Supplemental Environmental Assessment (EA) to evaluate the effects associated with the proposed action of requiring non-lead ammunition and tackle beginning September 1, 2026, and to comply with the National Environmental Policy Act (NEPA) in accordance with the Council on Environmental Quality regulations (40 CFR 1500-1509) and Department of the Interior (43 CFR 46; 516 DM 8) and Service (550 FW 3) regulations and policies. This document is a supplement to, and updates, a previous EA for the Erie National Wildlife Refuge (NWR, refuge) Hunting and Recreational Fishing Plan, prepared and approved by the Service in September 2022 (hereafter referred to as the 2022 EA). The Service issued a Finding of No Significant Impact (FONSI) for the proposed action and 2022 EA on September 2, 2022.

As part of the final rule “2022-2023 Station-Specific Hunting and Sport Fishing Regulations” (2022 Rule) published in the Federal Register on September 16, 2022 (87 FR 57108), the following passage is specified:

“As part of the 2023-2024 proposed rule, Blackwater, Chincoteague, Eastern Neck, Erie, Great Thicket, Patuxent Research Refuge, Rachel Carson, and Wallops Island NWRs will propose a non-lead requirement, which will take effect on September 1, 2026. In the June 9, 2022, proposed rule (87 FR 35136), the Service intended to phase out the use of lead on these eight refuges by allowing the use of lead ammunition and tackle for all new hunting and fishing opportunities—until fall 2026, which is when the Service plans to require non-lead ammunition and tackle for all activities on these refuges. (To clarify, if a refuge proposed to expand pre-existing opportunities that previously required non-lead ammunition or tackle, then non-lead ammunition and tackle would still be required for those activities.) Based on the breadth of comments received on the eight refuges' plan to require non-lead ammunition and tackle by fall 2026, the Service will propose these requirements next year and provide another opportunity to comment during the 2023-2024 rulemaking.”

The Service committed in the 2022 Rule to consider the future of lead use based on numerous public comments. The Service received over 48,000 comments on the proposed rule, with a large portion of those comments concerning lead ammunition and fishing tackle. Thus, this Supplemental EA includes additional information analyzing the potential impacts of lead under alternatives of requiring or not requiring non-lead ammunition and tackle beginning September 1, 2026, and utilizes the latest research and best available science where applicable.

Purpose and Need

The purpose of the proposed non-lead ammunition and tackle requirement is to provide

compatible wildlife-dependent recreational hunting and fishing opportunities on Erie NWR. The stated objectives of a hunting and fishing program on Erie NWR are to:

- Allow visitors to enjoy quality wildlife-dependent recreation, appreciate the cultural and natural resources of the refuge, and increase their understanding and support of the refuge's mission;
- Provide the public with a high-quality recreational experience on refuge lands and waters and increase opportunities and access for hunters and anglers;
- Provide wildlife-dependent public recreation as mandated by and according to Service-related law and policy;
- Design a hunting and fishing program that is administratively efficient and manageable with existing staffing levels and in alignment with State regulations when possible;
- Provide hunting and fishing opportunities for youth, persons with disabilities, apprentice hunters and anglers, and other underrepresented groups; and
- Design a hunting and fishing program that aligns with refuge habitat management objectives, utilizing the Service's Hunt/Fish Opportunity Tool (SHOT) Station Report.

Lead ammunition and tackle can present a risk of adverse impacts to wildlife health and the best available scientific evidence shows that lead use is currently impacting wildlife nationwide. Some species present on the refuge are especially susceptible to lead exposure from ammunition and tackle. Additionally, even though the current level of lead available in the environment on the refuge may not be causing adverse impacts, the continued use of lead for hunting and fishing could lead to accumulated lead levels that present a danger to wildlife health. Thus, the proposed requirement to use non-lead ammunition and tackle beginning September 1, 2026, may immediately benefit wildlife health and protects against the accumulation of lead on the refuge beyond 2026. This requirement is also needed because by addressing a potential threat to wildlife health it ensures that both the current hunting and fishing programs, and any future openings and expansions, can be compatible with our conservation mission and the purposes of the refuge.

The need for the proposed action is evidenced by the requirement to meet the Service's priorities and mandates as outlined by the National Wildlife Refuge System Administration Act (NWRSA) of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, 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)). 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. The proposed action would also promote two of the priority public uses of the National Wildlife Refuge System (Refuge System). By providing opportunities for visitors to hunt and fish, we can promote stewardship of our natural resources and increase public appreciation and support for the Refuge System.

The No Action Alternative (see below), in contrast, does not meet this need because the use of lead ammunition for hunting and lead tackle for fishing on this refuge beyond September 1, 2026, would likely not be compatible recreational uses. Nevertheless, we are analyzing it as the No Action Alternative as it is the baseline needed to evaluate the proposed action. If the current

hunting and fishing program were to continue under the No Action Alternative, the Service would have to reevaluate the opportunities expanded in the 2022 Rule that permitted the use of lead ammunition and tackle, since these expansions were previously analyzed and adopted with the expectation of implementing the planned non-lead ammunition and tackle requirement beginning September 1, 2026. This reevaluation would include revisiting the relevant Hunting and Fishing Plan discussion, NEPA analysis, and ESA Section 7 analysis, in addition to evaluating compatibility, so that we can determine whether those opportunities can remain open on this refuge.

Alternatives

For this Supplemental EA, two alternatives are analyzed: the No Action Alternative and the Proposed Action Alternative. The No Action Alternative (Alternative A) would continue the refuge's current hunting and fishing program. The refuge offers big game (black bear, white-tailed deer, turkey), small/upland game (ruffed grouse, squirrel, cottontail rabbit, pheasant, woodchuck, quail, opossum, skunk, coyote), and migratory bird hunting opportunities. Big game and small and upland game may be hunted on all refuge hunt units, and migratory birds may be hunted on less than 40 percent of refuge lands. Fishing is available throughout the bodies of water in the Seneca Division and at select points in the Sugar Lake Division. All hunting and fishing seasons align with Pennsylvania (State) regulations. Under this alternative, the use and possession of lead shot would continue to be prohibited for hunting small/upland game and migratory bird species with a shotgun (all species except deer and turkey). Use of lead fishing tackle would continue to be allowed under this alternative.

Under the Proposed Action Alternative (Alternative B), we will eliminate use of lead ammunition for all hunting and lead tackle for fishing on Erie NWR starting September 1, 2026. Until then, only federally approved non-lead shot would be permitted while hunting with a shotgun for small/upland game and migratory birds. We will initially encourage the voluntary use of non-lead fishing tackle and non-lead ammunition where already not required (when using a shotgun to hunt white-tailed deer or turkey, and when using a rifle to hunt any species). Over the next 3 years, we will provide outreach and education opportunities for hunters and anglers to learn about lead impacts and available alternatives.

Environmental Consequences

Potential effects from lead ammunition and tackle use in the three-year transition period and potential positive environmental impacts due to the non-lead requirement, as compared to allowing the continued use of lead, are considered in this Supplemental EA.

Due to the continued use of lead (prior to September 1, 2026) for deer and turkey hunting, there remains concern about the bioavailability of spent lead ammunition (bullets) and lead fishing tackle on the environment, the health of fish and wildlife, and human health. The Service is aware of fish and wildlife species, including endangered and threatened species, that are susceptible to biomagnification of lead from their food sources. There is also evidence that some species are susceptible to direct ingestion of lead ammunition or lead tackle due to their foraging behaviors.

Public Review

With the 2022 EA package, including the EA, Hunting and Recreational Fishing Plan, and Compatibility Determinations, the public had the opportunity to review and comment on each of the draft documents from May 3 through August 8, 2022, a total of 97 days. We distributed a press release to news organizations and alerted visitors to the plan's availability on the refuge website. A total of five comment letters were submitted from the public that offered input to the refuge for the 2022 EA. A summary of the comments and our responses can be found in Appendix E of the 2022 EA.

This Supplemental EA has been thoroughly coordinated with all interested and/or affected parties. Refuge staff coordinated with State agency staff in preparation of the Hunting and Recreational Fishing Plan and incorporated their comments into the documents. There are currently no federally recognized tribes in Pennsylvania. The public will be notified of the availability of the Supplemental EA and associated documents for review and will include no less than a 60-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.

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Erie National Wildlife Refuge Hunting and Recreational Fishing Supplemental Environmental Assessment

This Supplemental Environmental Assessment (EA) is being prepared to evaluate the effects associated with the proposed action of requiring non-lead ammunition and tackle beginning September 1, 2026, 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 (43 CFR 46; 516 DM 8) and U.S. Fish and Wildlife Service (550 FW 3) regulations and policies. This document is a supplement to, and updates, a previous EA for the Erie National Wildlife Refuge (NWR, refuge) Hunting and Recreational Fishing Plan, prepared and approved by the Service in September 2022 (hereafter referred to as the 2022 EA). The Service issued a Finding of No Significant Impact (FONSI) for the proposed action and 2022 EA on September 2, 2022. 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

Erie NWR consists of two separate land divisions: Sugar Lake and Seneca. Sugar Lake Division lies 10 miles east of Meadville on the outskirts of Guys Mills village. The Seneca Division is about 10 miles north of Sugar Lake Division and 4 miles southeast of Cambridge Springs, Pennsylvania. The U.S. Fish and Wildlife Service (Service) is proposing to eliminate use of all lead ammunition for hunting and lead tackle for fishing on Erie NWR starting September 1, 2026. Until then, under this alternative, only federally approved non-lead shot would be permitted while hunting for small/upland game and migratory birds. We will encourage the use of non-lead ammunition for big game (white-tailed deer, black bear, turkey, and feral hog) hunts and non-lead fishing, and will educate hunters and anglers about lead and its impacts.

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 and Fish and Wildlife Service Manual.

The primary purposes of the refuge are:

- “for use as an inviolate sanctuary, or for any other management purpose, for migratory birds....” 16 U.S.C. § 7J5d (Migratory Bird Conservation Act).
- “for the development, advancement, management, conservation, and protection of fish and wildlife resources...” 16 U.S.C. § 742f(a) (4) 11...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may

be subject to the terms of any restrictive or affirmative covenant, or condition of servitude...” 16 U.S.C. § 742f(b) (1) (Fish and Wildlife Act of 1956).

- “(1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, and (3) the conservation of endangered species or threatened species...” 16 U.S.C. § 460k-1 (Refuge Recreation Act).

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 NWRSA 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.

As part of the final rule “2022-2023 Station-Specific Hunting and Sport Fishing Regulations” (2022 Rule) published in the Federal Register on September 16, 2022 (87 FR 57108), the following passage is specified:

“As part of the 2023-2024 proposed rule, Blackwater, Chincoteague, Eastern Neck, Erie, Great Thicket, Patuxent Research Refuge, Rachel Carson, and Wallops Island NWRs will propose a non-lead requirement, which will take effect on September 1, 2026. In the June 9, 2022, proposed rule (87 FR 35136), the Service intended to phase out the use of lead on these eight refuges by allowing the use of lead ammunition and tackle for all new hunting and fishing opportunities—until fall 2026, which is when the Service plans to require non-lead ammunition and tackle for all activities on these refuges. (To clarify, if a refuge proposed to expand pre-existing opportunities that previously required non-lead ammunition or tackle, then non-lead ammunition and tackle would still be required for those activities.) Based on the breadth of comments received on the eight refuges' plan to require non-lead ammunition and tackle by fall 2026, the Service will propose these requirements next year and provide another opportunity to comment during the 2023-2024 rulemaking.”

The Service committed in the 2022 Rule to consider the future of lead use based on numerous public comments. The Service received over 48,000 comments on the proposed rule, with a large portion of those comments concerning lead ammunition and fishing tackle.

Purpose and Need for the Action

The purpose of the proposed non-lead ammunition and tackle requirement is to provide compatible wildlife-dependent recreational hunting and fishing opportunities on Erie NWR. The stated objectives of a hunting and fishing program on Erie NWR are to:

- Allow visitors to enjoy quality wildlife-dependent recreation, appreciate the cultural and natural resources of the refuge, and increase their understanding and support of the refuge’s mission;
- Provide the public with a high-quality recreational experience on refuge lands and waters and increase opportunities and access for hunters and anglers;
- Provide wildlife-dependent public recreation as mandated by and according to Service-related law and policy;
- Design a hunting and fishing program that is administratively efficient and manageable with existing staffing levels and in alignment with State regulations when possible;
- Provide hunting and fishing opportunities for youth, persons with disabilities, apprentice hunters and anglers, and other underrepresented groups; and
- Design a hunting and fishing program that aligns with refuge habitat management objectives, utilizing the Service’s Hunt/Fish Opportunity Tool (SHOT) Station Report.

Lead ammunition and tackle can present a risk of adverse impacts to wildlife health and the best available scientific evidence shows that lead use is currently impacting wildlife nationwide. Some species present on the refuge are especially susceptible to lead exposure from ammunition and/or tackle. Additionally, even though the current level of lead available in the environment on the refuge may not be causing adverse impacts, the continued use of lead for hunting and fishing could lead to accumulated lead levels that present a danger to wildlife health. Thus, the requirement to use non-lead ammunition and tackle beginning September 1, 2026, may immediately benefit wildlife health and protects against the accumulation of lead on the refuge beyond 2026. This requirement is also needed because by addressing a potential threat to wildlife health it ensures that both the current hunting and fishing programs and any future hunting and fishing opening and expansions can be compatible with our conservation mission and the purposes of the refuge.

The need for the proposed action is evidenced by the requirement to meet the Service's priorities and mandates as outlined by the NWRSA of 1966, as amended by the Refuge System Improvement Act of 1997, 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)). 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. The proposed action would also promote two of the priority public uses of the Refuge System. By providing opportunities for visitors to hunt and fish, we can promote stewardship of our natural resources and increase public appreciation and support for the Refuge System.

The No Action Alternative (see below), in contrast, does not meet this need because the use of lead ammunition for hunting and lead tackle for fishing on this refuge beyond September 1, 2026, would likely not be compatible recreational uses. Nevertheless, we are analyzing it as the No Action Alternative as it is the baseline needed to evaluate the proposed action. If the current hunting and fishing program were to continue under the No Action Alternative, the Service would have to reevaluate the opportunities expanded in the 2022 Rule that permitted the use of lead ammunition and tackle, since these expansions were previously analyzed and adopted with the expectation of implementing the planned non-lead ammunition and tackle requirement beginning September 1, 2026. This reevaluation would include revisiting the relevant Hunting and Fishing Plan discussion, NEPA analysis, and ESA Section 7 analysis, in addition to evaluating compatibility, so that we can determine whether those opportunities can remain open on this refuge.

The EA serves as the NEPA document which analyzes the impacts on environmental, cultural, and historical resources of the proposed action

Alternatives

Alternative A – No Action Alternative

The No Action Alternative would continue the refuge's current hunting and fishing program. The refuge offers hunting for big game (deer, turkey, feral hog, and bear), upland game (ringneck

pheasant, ruffed grouse, cottontail rabbit, gray squirrel, coyote, raccoon, skunk, woodchuck, quail, opossum, porcupine, weasel, and fox) and migratory game birds (Canada geese, ducks, coot, mute swan, Wilson's snipe, mourning dove, crow, woodcock, and rail). Big game and upland game hunting are permitted throughout the refuge, except for within permanent no-hunting zones. These no-hunting zones are a 150-yard safety buffer around all refuge buildings, such as refuge headquarters; maintenance shop; Youth Conservation Corps (YCC) building; refuge residences and private residences adjacent to the refuge; and a 330-foot radius around bald eagle nesting sites between January 15 through August 15 each year. Migratory bird (coot, dark goose, mute swan, duck, and sea duck) hunting is permitted on Unit B in accordance with State seasons and regulations. Unit A is closed to migratory bird hunting.

Hunting and fishing take place during daylight hours only to avoid nighttime disturbance to wildlife. Hunters may enter the refuge 2 hours before State posted legal shooting time in the morning and must leave no later than 2 hours after legal shooting time in the evening. Anglers may access the refuge one half hour before sunrise to one half hour after sunset.

All hunting and fishing seasons align with State regulations. Use of lead tackle is currently allowed for all fishing activities, and use of lead ammunition is currently allowed for big game hunting, and when hunting small/upland game with a rifle. Lead could continue to be used, beyond September 2026 and potentially indefinitely, under a No Action Alternative for hunting deer and turkey, and for all fishing tackle.

Alternative B –Proposed Action Alternative

Under Alternative B, we will eliminate use of lead ammunition for hunting of all species, and use of lead tackle for fishing on Erie NWR starting on September 1, 2026. Currently, only federally approved non-lead shot would be permitted while hunting for upland game and migratory birds.

During the transition period, we will continue to encourage the use of non-lead ammunition for big game (white-tailed deer, black bear, turkey, and feral hog) hunts, and non-lead tackle for fishing, and will educate hunters and anglers about lead and its impacts. The transition period will allow hunters and anglers time to adapt to the new regulations so that they can continue to engage in hunting and fishing opportunities on the refuge without interruption. The refuge staff will provide information to assist in a valuable transition period that benefits fish, wildlife, and people.

The refuge manager, upon annual review of the hunting and fishing program, however, may take the necessary steps to impose further restrictions, recommend that the refuge be closed to the activities, or further liberalize regulations up to the limits of the State. We will restrict hunting or fishing if it becomes inconsistent with other, higher priority refuge programs or endangers refuge resources or public safety.

Other Alternatives Considered but Eliminated from Further Analysis

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 plan, as described in the Purpose and Need section of this Supplemental 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 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.

Refuge staff have worked closely with stakeholders and the Pennsylvania Game Commission (PGC) to develop the proposed action. There are no unresolved conflicts about the proposed action with respect to alternative uses of available resources. Additionally, the proposed action builds on an existing hunting and fishing program and includes the addition of seasons and areas developed, in part, from an initial scoping process of the refuge’s CCP. Therefore, the Service does not need to consider additional alternatives (43 CFR 46.310).

Affected Environment and Environmental Consequences

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

Erie NWR was established in 1959. The first lands for the refuge were purchased with funds provided from the sale of the Migratory Bird Hunting and Conservation Stamps (also known as Duck Stamps). Erie NWR is a namesake of the Erie Indians, a Native American Tribe that resided in the area. This refuge is not on the shores of Lake Erie, but lies in Crawford County, 35 miles south of the city of Erie and Lake Erie in northwestern Pennsylvania. The refuge consists of approximately 14 square miles.

Table 1. Resource Categories

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 (includes vegetation of special management concern)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Geology and Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Air Quality	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Water Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Floodplains	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wilderness	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Visitor Use and Experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cultural Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Refuge Management and Operations	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Socioeconomics and Environmental Justice	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following resources either (1) do not exist within the project area or (2) would either not be affected or only negligibly affected by the proposed action:

- Air quality - The Service’s hunting and fishing programs produce negligible impacts to air quality. Some hunting equipment can discharge gases and hunters and anglers using vehicles for transportation to and from recreational areas on the refuge produce emissions, but the amount of air pollution from these sources is negligible and the pollutants produced do not have substantial localized effects.
- Floodplains - The Service’s hunting and fishing programs do not affect water flows or other factors relevant to flooding and floodplain landscapes. Therefore, no effects to floodplains are expected as a result of proposed regulations changes and expanding access. No modifications will be made that will increase the floodplain elevation or negatively impact its function and value and thus there will be no impacts to E.O. 11988 – Floodplain Management. E.O. 11990-Protection of Wetlands only applies if the refuge creates structures to support hunting and fishing in wetlands. This Executive Order will be evaluated on a project-by-project basis, e.g., if an accessible blind or fishing dock were to be built in the future to support hunting and fishing activities. As it stands now,

there would be no impact to wetlands due to this proposed activity related to developing supporting infrastructure as no infrastructure projects are proposed specific to this action. Wetland impacts specific to vegetation and habitat and water quality are addressed in those respective sections. The proposed action complies with Executive Order 11988 – Floodplain management – Fed. Reg. 26951 (1977) and Executive Order 11990-Protection of Wetlands.

- Wilderness - The refuge does not have any designated wilderness areas per the Wilderness Act, 16 U.S.C. 1131 et seq. nor does the refuge have any waterways that fall under the Wild and Scenic Rivers Act, 16 U.S.C. 1271 et seq. Given this, no effect to wilderness or wild and scenic rivers are expected. The proposed action complies with the Wilderness Act, 16 U.S.C. 1131 et seq. and the Wild and Scenic Rivers Act, 16 U.S.C. 1271 et seq.

As such, these resources are not further analyzed in this EA. As stated above, this section predicts the foreseeable impacts of implementing the hunting and fishing 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 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 lands around it; however, we may have overstated positive or negative impacts in that larger geographic context. Nevertheless, many of the actions we propose conform to other regional landscape plans, and provide positive, incremental contributions to those larger landscape goals.

Potential effects from lead ammunition and tackle use during the 3-year transition period and potential positive environmental impacts due to the non-lead requirement, as compared to allowing the continued use of lead, are considered in this Supplemental EA.

Nationwide, there is concern about the bioavailability of spent lead ammunition (bullets) on the environment, endangered and threatened species, birds (especially raptors), mammals, and other fish and wildlife susceptible to biomagnification. Generally, in this analysis four types of potential lead impacts are addressed: lethal and sublethal impacts, for both target and non-target species.

Lead shot and bullet fragments found in animal carcasses and gut piles are the most prevalent source of lead exposure (Kelly et al. 2011). Many hunters do not realize that the carcass or gut pile they leave in the field usually contains lead bullet fragments. Research on the effects of lead ammunition and the fragments it can deposit in killed game continues to be conducted. Avian predators and scavengers can be susceptible to lead poisoning when they ingest lead fragments or pellets in the tissues of animals killed or wounded by lead ammunition (the result of lead's brittle quality causing fragmentation upon impact) or pellets in the tissues of animals killed or wounded by lead ammunition (Cade 2007; Church et al. 2006; Craig et al. 1990; Cruz-Martinez et al. 2015; Finkelstein et al. 2012; Herring et al. 2016; Hunt et al. 2006; Pattee et al. 1981; Pauli and

Buskirk 2007; Platt 1976; Redig et al. 1980; Rideout et al. 2012; Stroud and Hunt 2009; Warner et al. 2014). Lead poisoning may weaken raptors by reducing their strength and coordination, increasing muscle and weight loss, reducing motor skill function and making them lethargic, which may make them more susceptible to disease, vehicle strikes or power line accidents and increases mortality rates by leaving them unable to hunt (Golden et al. 2016; Kelly and Kelly 2005; Kramer and Redig 1997; O'Halloran et al. 1989). Furthermore, nestlings of raptors have impaired survival and growth when parents bring food that is embedded with lead fragments (Hoffman 1985a, 1985b; Pattee 1984).

Recent modeling has even indicated that lead poisoning suppresses population growth in eagles (Slabe et al. 2022). The extent to which elevated levels of lead have been documented in raptors admitted for rehabilitation can be found in a study of bald eagles and golden eagles in the Raptor Rehabilitation Program at the College of Veterinary Medicine at Washington State University from 1991 to 2008, where 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 et al. 2010).

To date, more than 30 species of birds have been documented to have ingested lead fishing tackle, along with 3 mammal and 2 reptile species (Grade et al. 2019). It is estimated that 75 North American bird species may be at risk of lead tackle ingestion due to their foraging behavior (US EPA 1994). Environmental lead exposure, even at low levels, could very well contribute to wildlife mortality by impairing organ functions, increasing susceptibility to trauma and disease, and hindering the complex mental processes and social behaviors required for reproductive success and survival (Grade et al. 2019). The proposed requirement of non-lead ammunition and tackle on the refuge starting September 1, 2026, will help address concerns about the bioavailability of lead on the refuge.

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

Affected Resource Description

The refuge does not currently collect data for deer, bear, or turkey harvest on the refuge. The refuge is contained within the State's Wildlife Management Unit (WMU) 1B. Data for that unit show an average of 9,175 antlered and 14,825 antlerless deer harvested between 2017 and 2020 (PGC 2016, 2017, 2018a, 2018b). The buck to doe ratio in the harvest is approximately 1:1. State deer density estimates for this region are approximately 30 per-square-mile (San Julian and Smith 2001) and have shown little change in the last several years. Data for WMU 1B showed an average of 298 turkey harvested in the fall and 1,941 harvested in the spring between 2016 and 2019 (PGC n.d.). Black bear harvests are reported by county rather than WMU. Data for Crawford County show an average of 56 bear harvested annually between 2016 and 2020 (PGC n.d.). Refuge staff believe that the refuge deer and turkey populations are similar to the overall western Pennsylvania population, which are intensely managed by the State of Pennsylvania, while the bear population may be slightly higher.

Anticipated Impacts

Alternative A

Under the No Action Alternative, Erie NWR's hunt program would not add any new big game hunting opportunities. Current levels of harvest would be expected as no new opportunities would be provided and public interest in big game hunting would likely remain the same. Impacts to white-tailed deer populations would also remain consistent and could include temporary and localized disturbance, changes in behavior, direct injury or mortality of individuals, and changes in population dynamics.

The current hunting program on refuge lands carries the potential for adverse health impacts to huntable big game wildlife species from discarded lead in the environment in addition to the inherent impacts of intentional harvest from hunting. Some wildlife species are susceptible to direct ingestion of lead fragments that may remain in gut piles discarded in the field and/or bioaccumulation of lead from their food sources, whether on land or in waters of the refuge. Continued use of lead ammunition under this alternative and any future expansions to the current hunting program, without restrictions on the use of lead ammunition, increases these potential adverse effects.

Alternative B

Refuges, including Erie NWR, conduct the refuge hunting and fishing program within the framework of State and Federal regulations. PGC sets hunting frameworks based on species' populations and monitored harvests. The proposed refuge hunting regulations will be the same as, or more restrictive than, hunting regulations throughout the State. By maintaining hunting regulations that are the same as or more restrictive than the State, the refuge can ensure that they are maintaining seasons that are supportive of management on a more regional basis. Such an approach also provides consistency with large-scale population status and objectives.

Lead that could enter the environment from proposed hunting activities would include fragments from ammunition that has left the body of harvested animals or left behind in discarded gut piles in the field. Given the estimated numbers of hunters and amount of take estimated using lead ammunition, the lead that would enter the environment over the next three years is likely very small.

As non-lead requirements for ammunition take full effect after September 1, 2026, health impacts to huntable wildlife species from discarded lead in the environment and the potential for exposure to lead that may result in adverse human health impacts decreases substantially and becomes negligible. Lead from previous hunting activities will still be present in the environment and may impact wild species; however, the impact is likely negligible given the likely low amount of lead currently present and availability in the environment from hunting activities and minor adverse risk of bioaccumulation. This residual lead from hunting or fishing activity will also degrade over time.

Small/Upland Game (ringneck pheasant, ruffed grouse, cottontail rabbit, gray squirrel, coyote, raccoon, skunk, woodchuck, quail, opossum, porcupine, weasel, and fox)

Affected Resource Description

Small/upland game hunting has been part of the hunt program for many years yet harvest of small/upland game is not recorded by the refuge. Participation in small/upland game hunting has been relatively low when compared with other public uses on the refuge and therefore likely has small impacts on these populations due the limited hunting pressure.

Over the past 5 years, harvests have declined Statewide for grouse and woodchuck, and have remained stable for rabbit, squirrel, pheasant, porcupine, furbearers, coyote, fox, and weasel (PGC Annual Project Report 2020). Year to year populations for small/upland game species tend to fluctuate and reproductive rates are typically high enough to maintain adequate population levels.

Anticipated Impacts

Alternative A

Under the No Action Alternative, there would be no additional small game hunting opportunities. There would be temporary and insignificant disturbance to vegetation and wildlife from hunters walking through the woods, fields, and marshes, but it would not affect the purpose of the refuge.

The current hunting program on refuge lands and waters carries the potential for adverse health impacts to huntable wildlife species from discarded lead in the environment. Animals can be poisoned by lead in a variety of ways, including ingestion of bullet fragments and shot pellets left in animal carcasses, spent ammunition left in the field, and lost fishing tackle (Haig et al. 2014).

Some wild game species are susceptible to direct ingestion of lead and/or bioaccumulation of lead from their food sources. These types of species that are susceptible to these circumstances are discussed in more detail in the non-target wildlife and aquatic species section, but are applicable to similar species that are hunted including predators and big game. Continued use of lead ammunition under this alternative and any future expansions to the current hunting program, without additional restrictions on the use of lead ammunition increases these potential adverse effects. In recognition of this, beginning in the 1996 hunting season, Erie NWR added the regulation that shotgun hunters must possess and use, while in the field, only non-lead shot.

Alternative B

Under the Proposed Action Alternative, potential for exposure to lead that may result in adverse impacts to human health due to the inadvertent consumption of lead in individual animals that are successfully harvested with lead ammunition or tackle would still exist during the next 3 years; however, it will likely be reduced as some hunters and anglers adopt early use of non-lead alternatives. As non-lead requirements for ammunition take full effect after September 1, 2026, lethal and sublethal impacts to huntable wildlife species from discarded lead in the environment and the potential for adverse human health impacts decreases substantially and becomes negligible. Lead from previous hunting and fishing activities will still be present in the environment and may impact wild species, though the impact is likely negligible given the likely low amount of lead currently present and availability in the environment from hunting and fishing activities and minor adverse risk of bioaccumulation.

Migratory Birds (coot, dove, woodcock, grouse, duck, sea duck, mute swan, Wilson's snipe, crow, dark goose, and rail)

Affected Resource Description

Migratory birds are managed on a flyway basis and hunting regulations are established in each State based on flyway data. The refuge lays within the Atlantic flyway and is an important area for spring and fall migrating waterfowl. Wood duck, hooded merganser, mallard, and Canada goose regularly nest on the refuge; another 10 species of waterfowl use the refuge during migration. The predominant waterfowl species hunted in Pennsylvania are mallard, wood duck, and Canada goose. Woodcock populations are increasing on the refuge as a result of ongoing young forest restoration work, as they require young, dense, moist woodland habitat with nearby openings or fields.

Anticipated Impacts

Alternative A

Federal and State regulations apply in the refuge waterfowl hunt. All migratory bird hunters must register through the Harvest Information Program (HIP) to provide harvest data for each species. Regulations are based on surveys and monitoring, data analyses, and rulemaking. Each year, the Service prescribes frameworks for migratory bird hunting dates and times, the allowable harvest, and the allowable number of birds in a hunter's possession. This framework: (1) allows for State selections of seasons and limits for recreation and sustenance, (2) aids Federal, State, and Tribal governments in the management of migratory birds, and (3) permits harvests at levels compatible with population status and habitat conditions.

Some bird species flee from human disturbance, which can lower their nesting productivity and cause disease and death (Knight and Cole 1991). Miller et al. found bird abundance and nesting activities (including nest success) increased as distance from a recreational trail increased in both grassland and forested habitats (1998). Bird communities in this study were apparently affected by the presence of recreational trails, where common species like American robins were found near trails and more specialized species like grasshopper sparrows were found farther from trails. Nest predation also was found to be greater near trails (Miller et al. 1998). Disturbance may affect the reproductive fitness of males by hampering territory defense, male attraction, and other reproductive functions of song (Arcese 1987). Disturbance, which leads to reduced singing activity, makes males rely more heavily on physical deterrents in defending territories, which are time and energy consuming (Ewald and Carpenter 1978). These potential negative impacts are anticipated to be minimal. Lead shot was completely banned for the hunting of waterfowl (i.e., ducks, geese, swans, brant and coot) throughout the United States beginning in 1991.

While there would be no lead use in hunting these species under Alternative A, lead use for other hunting or fishing could potentially impact these species. For example, the accumulation of lead in the soil from continued lead use could impact the vegetation and herbivorous insect food sources of doves. Similarly, lead ammunition from big game and small game hunting that ends up in or near water on the refuge, although this is unlikely to occur, could be ingested by waterfowl and result in negative impacts. Birds may also ingest sinkers, hooks, floats, lures, and

fishing line. In both cases, accumulation of lead in the environment over time increases the chances for negative impacts to occur.

Alternative B

Impacts described under the No Action Alternative would be comparable to the Proposed Action Alternative. To date, more than 30 species of birds have been documented to have ingested lead fishing tackle, along with 3 mammal and 2 reptile species (Grade et al. 2019). It is estimated that 75 North American bird species may be at risk of lead tackle ingestion due to their foraging behavior (US EPA 1994). Environmental lead exposure, even at low levels, could very well contribute to wildlife mortality by impairing organ functions, increasing susceptibility to trauma and disease, and hindering the complex mental processes and social behaviors required for reproductive success and survival (Grade et al. 2019). However, it is unlikely that the amount of lead entering the environment from the proposed fishing activities of Alternative B would cause additional adverse effects toward migratory bird species.

The refuge currently prohibits lead ammunition for hunting of these species, so the proposed lead use requirement would not change the impacts of these hunts. After the proposed non-lead requirement takes effect, there may also be a benefit to these species because no new lead will enter the environment.

Fish

Affected Resource Description

Warmwater fish known to occur within refuge boundaries include smallmouth bass, rock bass, sunfish, grass pickerel, and various species of suckers. PFBC stock rainbow, brook and brown trout just upstream of the Seneca Lake Division. A fish inventory was conducted by the Lower Great Lakes Fish and Wildlife Conservation Office in fall 2014 and spring 2015. Creek chub, mottled sculpin, and longnose dace were the species with the most individuals represented. Bluegill and pumpkinseed were the most numerous panfish species collected. Brown trout and brook trout were the only salmonids collected during the fish survey.

Muddy Creek is one of 10 major sub-basins of the French Creek watershed; the portion of Muddy Creek that flows through the Seneca Division provides habitat for 22 species of freshwater mussels, and 48 species of fish (Haynes and Wells, 2006). Muddy Creek also holds numerous species of darters crucial for the freshwater mussels to complete a stage of their lifecycle. Some notable darter species found here are the rainbow darter, Eastern sand darter, blue-breasted darter, and the greenside darter. The biodiversity of French Creek is among one of the highest in waterways east of the Mississippi River.

Anticipated Impacts

Alternative A

For recreational fishing, bank fishing is permitted on all creeks and beaver ponds within the Seneca Division except for a 330-foot radius around bald eagle nesting sites. Recreational fishing would also be allowed designated areas in the Sugar Lake Division. Under this alternative, the current recreational fishing program would be maintained. Harvest levels would likely not change dramatically under this action as no new opportunities would be provided.

These impacts are often disproportionate among fish species, sizes, ages, sexes, and based on other behavioral traits because anglers selectively catch fish based on these factors (Lewin et al. 2006). In general, anglers tend to target larger and older fish. The selective removal of larger and older fish can have a variety of impacts on fish population dynamics. First, it can decrease the age and size class distribution in fish populations. Second, larger and older fish tend to have greater reproductive capacity because they are better able to compete for spawning areas and generally have higher egg outputs. Because of this, their selective removal may reduce the population's overall reproductive success. Depending upon the species, anglers may also be more likely to catch males (e.g., some male largemouth bass are more aggressive towards lures) or females (e.g., in some species females grow faster). Also, fish that are more active during the day are often more vulnerable to being caught (Lewin et al. 2006).

Since fishing generally removes individuals from a population, it can lead to reduced population sizes and loss of genetic diversity at high levels. The loss of genetic diversity can ultimately reduce a population's fitness, resilience, and ability to adapt to environmental changes and stressors, such as climate change. The higher the fishing mortality, the greater these types of impacts will be (Lewin et al. 2006). Additional information regarding potential lead tackle and water quality impacts, and the effect on fisheries, can be found in the section on water quality.

Alternative B

Under this alternative, impacts to fish populations would be similar to those described under the No Action Alternative. It is unlikely that additional lead ammunition or tackle would be introduced to Service waters from future hunting and fishing activities beyond fall 2026, even if the Service's hunting and fishing programs are expanded. This would prevent lead contamination of refuge waters to impact fish populations, even if the amount of lead contamination prevented is negligible.

Non-Target Wildlife and Aquatic Species

Affected Resource Description

Erie NWR, due to diverse habitat types, is home to 250 bird species, 52 mammal species, 21 reptile and amphibian species, 48 fish species and 22 freshwater mussel species. The diverse habitat types found on Erie NWR attract many species of birds, including marsh birds, raptors, songbirds, and waterfowl, and 136 of these species are known to nest on the refuge. Thirty-seven of these birds are listed as species of concern for the refuge. Muddy Creek is a tributary to French Creek, and they hold numerous species of darters crucial for the freshwater mussels to complete a stage of their lifecycle. Some notable darter species found here are the rainbow darter, Eastern sand darter, blue-breasted darter, and the greenside darter. The biodiversity of French Creek is among one of the highest in waterways east of the Mississippi River.

The refuge's diversity led to its designation as an Important Bird Area (IBA) by the National Audubon Society in 2004. The IBA program is an international bird conservation initiative to identify the most important places for birds, and to conserve them.

Nationwide, there is concern about the bioavailability of spent lead ammunition (bullets) and

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

The best available science indicates that lead ammunition and tackle may have negative impacts on fish and wildlife. This broad potential for adverse impacts to non-target wildlife and aquatic species and the overall environment is not inherent to the activities of hunting and fishing, but specifically to the use of lead ammunition and tackle. Those potentially adverse impacts can be prevented by requiring non-lead ammunition and tackle for hunting and fishing activities. In recognition of this, beginning in the 1996 hunting season, Erie NWR added the regulation that shotgun hunters must possess and use, while in the field, only non-lead shot for all species except deer and turkey. Currently there are manufacturers that offer non-lead ammunition and fishing tackle, and some states have either implemented restrictions on the use of lead or offer incentives to use non-lead ammunition or fishing tackle (USFWS 1999, Center for Biological Diversity 2007, Arizona Game and Fish Department 2018, Washington Department of Fish and Wildlife 2022). In areas where non-lead ammunition and tackle are used, there have been declines in adverse effects to wildlife (Anderson et al. 2000, Samuel and Bowers 2000, Sieg et al. 2009, Kelly et al. 2011, Lewis et al. 2021).

Anticipated Impacts

Alternative A

No change to the hunting and fishing programs would occur, and the programs would be conducted as they are currently. We expect some minor disturbance by hunting and fishing activities to non-target wildlife. Most hunting on the refuge is confined to between September and February, overlapping briefly with the peak of fall neotropical bird migration which lasts until mid-October. Hunting does not occur during the breeding bird season in select grassland and shrubland habitat. Displacement of resident birds is usually brief, infrequent, and confined to the immediate area. Disturbance would be unlikely for many small mammals like bats which are inactive during hunting season and/or are nocturnal. Hibernation or torpor by cold-blooded reptiles and amphibians also limits their activity during the hunting season when temperatures are low, making encounters with reptiles and amphibians infrequent and inconsequential to local populations. Invertebrates are also not active during cold weather and will have few interactions with hunters during the hunting season.

Lead has no known biological function in living things, but the bioavailability of the spent lead ammunition and lead tackle, may have adverse impacts on the environment, especially for birds, specifically waterfowl, and raptors and mammals. For birds, this typically occurs through direct ingestion of lead through soil, sediment or directly from food items (Rattner et al. 2008). Upland game birds and waterfowl may be exposed to lead when they ingest spent shot or ammunition fragments along with grit or pebbles, they need to fill their gizzards, a specialized organ involved in breaking down food (Kreager et al. 2008; Franson et al. 2009). Avian predators and scavengers can be susceptible to lead poisoning when they ingest lead fragments (the result of lead's brittle quality causing fragmentation upon impact) or pellets in the tissues of animals killed or wounded by lead ammunition (Platt 1976; Pattee et al 1981; Craig et al. 1990; Church et al. 2006; Hunt et al. 2006; Cade 2007; Pauli and Buskirk 2007; Stroud and Hunt 2009; Finkelstein et al. 2012; Rideout et al. 2012; Cruz-Martinez et al. 2015; Herring et al. 2016).

Lead poisoning affects the blood, nervous and immune systems of wildlife (Eisler 1988). According to Fallon et al. (2017) clinical signs may include "...ataxia, impaired mobility, lowered sensory abilities, vomiting, anemia, lethargy, gastrointestinal stasis, weakness and mortality." Exposure to high amounts of lead in a short amount of time typically causes severe impairment of these systems and results in rapid death (Gill and Langelier 1994; Kelly et al. 1998; Schulz et al. 2006). Exposure to smaller amounts of lead over longer time periods, however, can cause anemia, lethargy, neurological disorders, an impaired ability to fight off disease and other negative effects (Jacobsen et al. 1977; Wobester 1997; Friend and Franson 1999; Pattee and Pain 2003; Franson and Pain 2011; Pain et al. 2019). These effects can in turn lead to indirect negative effects of lead exposure, such as increased susceptibility to predation. Thus, even lead exposure that does not directly kill wildlife, sublethal lead poisoning can have substantial adverse effects on wildlife health, including on reproduction (Scheuhammer 1987; Kendall et al. 1996; Provencher et al 2016; Pain et al. 2019, SETAC 2021).

Overall, the Service anticipates no measurable negative impacts to resident non-hunted or fished wildlife populations locally, regionally, or globally due to the activity of hunting or fishing, as the impact of the current program does not result in more than temporary flushing or relocation. However, continuing to permit the use of lead ammunition and tackle on refuge lands and waters could mean an increase of lead in the environment, even at small amounts as estimated, and continue to have potentially negative impacts, especially potential cumulative impacts, to wildlife and aquatic species.

Alternative B

The best available science indicates that lead ammunition and tackle may have negative impacts on wildlife and the environment (Golden et al. 2016; Hanley et al, 2022; Slabe et al, 2022). Animals can be poisoned by lead in a variety of ways, including ingestion of bullet fragments and shot pellets left in animal carcasses, spent ammunition left in the field, and lost fishing tackle (Haig et al. 2014). Under Alternative B, continuing to permit the use of lead ammunition and tackle on refuge lands and waters until September 1, 2026, would mean a short-term increase of lead in the environment even at small amounts as estimated and would temporarily continue to have negative impacts to wildlife and aquatic species. To move towards reduction and future elimination of this threat on the refuge, we will be eliminating the use of lead ammunition and fishing tackle over a 3-year period to educate and work with hunters and anglers on the use of

non-lead alternatives. A transition to non-lead ammunition and tackle for all hunting and fishing activities will minimize the inadvertent exposure and subsequent lethal or sub-lethal impacts to wildlife, including bald and golden eagles, as well as other scavenging species, and provide hunters and anglers adequate time to transition to using alternatives. The continued use of lead ammunition and fishing tackle in the short term (3 years) under Alternative B may cause additional lethal or sublethal impacts to non-target wildlife and aquatic species. However, after the transition period is complete, this impact will be greatly reduced, and make it much more unlikely non-target species will be exposed to lead ammunition and fishing tackle from hunting and fishing activities on the Erie NWR. This reduced risk should continually decrease over time following the non-lead requirement as any remnant sources of lead from hunting and fishing activities will degrade.

The bioaccumulation of lead is a potential concern, but it does not likely present a significant issue on this refuge as: (1) non-lead shot is currently required for hunting waterfowl and any species with a shotgun except turkey and deer; (2) the refuge strongly encourages use of non-lead alternatives for hunting big game and for fishing for the next 3 years; (3) we would require the use of non-lead ammunition and tackle for all species beginning September 1, 2026; and (4) we will educate hunters, anglers, and the public to the potential adverse impacts of lead. Some hunters will also choose non-lead methods of take such as archery.

Threatened and Endangered Species, and Other Special Status Species

Affected Resource Description

There are about 22 species of freshwater mussels on the refuge, 5 of which are federally listed as threatened or endangered (Mohler et al. 2006). To date, known populations of federally listed species are concentrated in Muddy Creek in the Seneca Division. The refuge's federally listed mussel species currently include the endangered Northern riffleshell, clubshell, rayed bean, and snuffbox, and the threatened rabbitsfoot.

In addition to listed species of mussels, the refuge also contains the endangered Northern long-eared bat (confirmed by mist netting in 2015) and potentially the endangered Indiana bat (detected via acoustic surveys in 2013 and 2014). During the hunting season, bats that typically use the refuge for roosting in the summer will be migrating, or have already migrated, to a cave or abandoned mine located off-refuge for winter hibernation.

Main threats to the freshwater mussel species noted above include dams that fragment river connections and form silt-laden impoundments, stream channelization or ditching, stream dredging, commercial harvesting, water pollution, and zebra mussels.

Monarch butterflies use the refuge grasslands, old fields and roadsides during spring and fall migration as well as during the spring breeding season.

Pennsylvania is the eastern edge of the range for the eastern massasauga snake. In 2013, a survey was conducted to determine their population, and they were only found in two counties in western Pennsylvania. Eastern massasaugas have not been recorded on any refuge lands or waters. The closest recorded sighting of the species has been at Goddard State Park, 25 miles

south of the refuge.

Anticipated Impacts

In accordance with Section 7 of the Endangered Species Act (ESA), the refuge has completed an initial analysis of the effects of the proposed action. Given that the proposed action could change in light of the public comment period for the proposed rulemaking, the initial documentation is considered to be a draft and will not be finalized until the Service publishes a final rulemaking. Although the finalized ESA Section 7 documentation will accompany the final rule and NEPA decision documentation, a summary of the initial Section 7 analysis is reported here.

Alternative A

All refuge hunting and fishing would continue with no changes in species or areas hunted or fished. Under the No Action Alternative, impacts to threatened and endangered species would not increase since there would be no additional hunting or fishing on the refuge. Non-motorized boating used for waterfowl hunting in areas of Muddy Creek has the potential to affect mussel populations. Watercraft may scrape the bottom of the creek, disturbing the streambed and potentially crushing any exposed mussels. Similar impacts may result from hunters getting in and out of their boats and walking in the streambed if not using a boat. Minor wake from non-motorized boats and other watercraft activities may slightly increase suspended sediments that potentially erode mussels' shells, making them more susceptible to shell-dissolving pollutants (Box and Mossa 1999). Suspended sediments interfere with mussel respiration and feeding, often resulting in diminished health and can indirectly affect mussels by reducing light availability for photosynthesis and productivity of food resources (Box and Mossa 1999). Considering the low numbers of non-motorized boaters refuge staff have observed for hunting purposes, we anticipate these impacts to be minor.

Under the No Action Alternative, lead ammunition and tackle would still be permitted on refuge lands and waters into the future, which would mean a continued and increasing risk to listed species and special status species from lead present in the environment over time. Although the Service has preliminarily determined that the impacts of lead ammunition and tackle from the proposed action are not likely to adversely affect such species, the Service continues to seriously consider the effects of the accumulation of lead in the environment on certain refuge lands from these activities over time. For example, the bald eagle may eat discarded gut piles from animals harvested with lead ammunition or fish that have consumed lead tackle. Lead in water is widely recognized as adversely impacting water quality, which in turn could negatively affect listed mussels, as mussels in general can accumulate dissolved lead (Boisson et al. 1998; Mosher et al. 2012). Given that increasing the amount of lead introduced into the environment could lead to these effects over time, the Service concludes that the No Action Alternative would ultimately present a potential risk to these natural resources in the long run with continued use of lead tackle and ammunition.

Alternative B

Northern riffleshell mussel, clubshell mussel, rayed bean mussel, snuffbox mussel, and rabbitsfoot mussel

Mussels attach themselves to solid objects or to one another by proteinaceous threads called byssus threads; they often occur in dense clusters. To date, known populations of federally listed

species are concentrated in Muddy Creek in the Seneca Division.

Specific to potential impacts from continued use of lead ammunition during the interim period, there is a chance that lead could enter the water where mussels could be present. Typically, lead is not soluble in water unless the conditions are right, such as the body of water being more acidic than is typical for freshwater. The French Creek watershed, in which the refuge sits entirely, is known for its naturally high acid neutralizing capacity due to alkaline soils (WPC, 2002). The glacial material in the watershed is high in calcium carbonate (CaCO₃), as well as dolomite, another carbonate-rich material. This leads to the alkaline (slightly basic) nature of water in the French Creek watershed. Therefore, the water conditions are likely not acidic enough for lead to be soluble in the waters near the refuge. Lead may be present in the Muddy Creek sub-watershed from fishing tackle being left in the water or from lead fragments of ammunition being pushed to the river through runoff during rain events. Mussels are suspension-feeders, meaning they siphon water and feed on suspended algae, bacteria, detritus, and microscopic animals. Adult mussels are easily harmed by toxins and degraded water quality from pollution because they tend to stay in one place. Contaminants may kill mussels directly if concentrations are high enough, but they may also indirectly harm freshwater mussels by reducing water quality, which reduces survival and reproduction and lowers the numbers of host fish. Lead present in Muddy Creek from breakdown of lead tackle and ammunition fragments is evidently not in high enough concentrations to impact mussel reproduction, survival, or cause death of mussels. Mussel populations in Muddy Creek are stable and water quality monitoring is ongoing. We expect the effects from authorized lead use from tackle and ammunition over the next three years to be discountable and insignificant due to the small amounts of lead that are expected to enter the environment and the specific circumstances that would need to occur for lead to have a measurable effect on the species (e.g., water acidity and lead at high enough concentrations). Therefore, any potential lead added to the watershed in the interim, before the non-lead requirement would take effect in 2026, is also not likely to adversely affect mussels.

After the non-lead ammunition and tackle requirement takes effect in 2026, there may also be some beneficial impacts to the species because no new lead will enter the environment and the remaining lead will become less bioavailable over time, which will decrease the overall risk of adverse effects to this species. Therefore, proposed action to ultimately require non-lead ammunition and tackle is not likely to adversely affect this species

Indiana bat and Northern long-eared bat

Indiana bats and Northern long-eared bats primarily hibernate in caves and mines from October through April (the majority of the hunting season). If these species are present on the refuge, it is generally only during their maternity season, with females arriving at summer maternity sites from late-April to late-May and concluding from mid-July to early August when young bats become capable of flight.

Before the proposed non-lead ammunition and tackle requirements would take effect in 2026, the potential for impacts from lead to bats is discountable due to Indiana and Northern long-eared bats' diet and foraging habits. Lead bullet fragments would have to break down in the soil in order to be taken up by plants near the area in which the fragments fall on or penetrate the soil surface. Typically, however, plants do not take heavy metals up until they have reached critical

thresholds in the soil (Sharma and Dubey 2005). If lead is taken up by plants, it is mainly through the root system and partly, in minor amounts through the leaves. Inside the plants lead accumulates primarily in the root, but a part of it is translocated to the aerial portions. Larvae of certain herbivorous insect species could ingest some of the lead when they eat the exposed plants. Some of the insects could then be consumed by bats. Indiana and Northern long-eared bats' diet is insects such as moths, flies, leafhoppers, caddisflies and beetles, only some of which are herbivorous. In addition, bats are transitory in nature and will not consume their entire diets on the refuge area. Considering the chain of events that are necessary for exposure and the small amount of lead that would contribute to lead concentrations in refuge soils, it seems unlikely that bats that occur on refuges will consume lead derived from ammunition fired by hunters on the refuge. Therefore, any potential lead added to the environment during this interim time period, before the non-lead requirement takes effect on September 1, 2026, is not likely to adversely affect these species.

After the non-lead ammunition and tackle requirement takes effect in 2026, there may also be some beneficial impacts to the species because no new lead will enter the environment and the remaining lead ammunition and tackle will become less bioavailable over time, which will decrease the overall risk of adverse effects to these species. Therefore, proposed action to ultimately require non-lead ammunition and tackle is not likely to adversely affect these species.

Eastern massasauga

Eastern massasauga snakes have not been recorded on any refuge lands or waters. A 2-year inventory performed by the Western Pennsylvania Conservancy from 2003 to 2005 determined the population had declined from 19 populations in 6 counties to only 4 isolated populations restricted to Butler and Venango counties. The closest historic sighting of the species was in the mid-1960s, near present-day Goddard State Park, approximately 13 miles southwest of the refuge. This record occurred prior to the creation of Lake Wilhelm Dam in 1971, which flooded any available suitable habitat for the species within the valley bottom adjacent to Sandy Creek. According to Pennsylvania Fish and Boat Commission Herpetologist Kathy Gipe, the closest extant population is located 20 miles southeast of the refuge, south of Oil City, in Venango County (Laskaris 2022). Despite suitable habitats within the current range for this snake, there have been no records, even casual references, beyond these sites. As the species has never been seen on or near the refuge, and there is no chance that the proposed activity could affect the species, the proposed hunting and fishing activities will have “no effect” on the Eastern massasauga.

Monarch butterfly

Monarch butterflies use the refuge grasslands, wetlands, old fields, agricultural margins, and roadsides during spring and fall migration, as well as during the spring and summer breeding season. Hunting is allowed from September to February, with a turkey season in May. Fishing is allowed year-round during refuge hours.

Before the proposed non-lead requirement would take effect in 2026, we expect the effects from authorized lead use from ammunition and tackle in the interim to be discountable and insignificant due to the small amounts of lead that are expected to enter the environment and the specific circumstances that would need to occur for lead to have a measurable effect on the

species. The potential for lead impacts to monarchs is discountable due to their diets. Adult monarch butterflies feed on nectar. Nectar typically carries less lead contaminants than other parts of the plant if lead is absorbed through the plant. Larvae consume the leaves and stems of milkweeds, where higher concentrations of lead could be present, if lead is absorbed through the plant. Lead absorption by plants typically occurs first through roots and only makes its way into other plant parts if concentrations are high enough. This means that, as with bats, bioaccumulation through the plant to the monarch butterfly or larvae could potentially occur. However, as with bats, it relies on the very unlikely occurrence that lead concentrations in the soil from hunting activities reach high enough levels for uptake by plants, and in this case, it would further require uptake by milkweed and the specific plants that monarchs rely on for nectar sources. Therefore, any potential lead added to the environment during this interim time period, before the non-lead requirement takes effect on September 1, 2026, is not likely to adversely affect this species.

After the non-lead ammunition and tackle requirement takes effect in 2026, there may also be some beneficial impacts to the species because no new lead will enter the environment and the remaining lead will become less bioavailable over time, which will decrease the overall risk of adverse effects to this species. Therefore, proposed action to ultimately require non-lead ammunition and tackle is not likely to adversely affect this species.

All species

The best available science indicates that lead ammunition and tackle may have negative impacts on wildlife and the environment (Golden et al. 2016; Hanley et al, 2022; Slabe et al, 2022). Animals can be poisoned by lead in a variety of ways including ingestion of bullet fragments and shot pellets left in animal carcasses, spent ammunition left in the field, and lost fishing tackle (Haig et al. 2014). The voluntary use of non-lead ammunition and tackle will initially be encouraged, and we would require non-lead ammunition and tackle for all activities starting September 1, 2026 (after a 3-year transition period). This transition period will ensure continuity of visitor opportunities as hunters and anglers understand the changes and become more familiar with the availability and use of non-lead alternatives.

The bioaccumulation of lead is a potential concern, but it does not likely present a significant issue on this refuge as: (1) non-lead shot is currently required for hunting waterfowl and any species with a shotgun except turkey and deer; (2) the refuge will strongly encourage use of non-lead alternatives for hunting big game and for fishing for the next 3 years; (3) we will require the use of non-lead ammunition and tackle for all species beginning September 1, 2026; and (4) we will educate hunters, anglers, and the public to the potential adverse impacts of lead. Some hunters will also choose non-lead methods of take such as archery.

Habitat and Vegetation (including vegetation of special management concern)

Affected Resource Description

Both divisions of the Erie NWR support a variety of habitat types including streams, floodplain forests, bottomland swamps, freshwater impoundments, emergent wetlands, fens and seeps, mixed hardwood and softwood forest, grasslands, shrublands, as well as abandoned orchards, pine plantations, and croplands. The uplands are in various stages of succession. The major

streams that flow through the refuge are Muddy Creek and Dead Creek in the Seneca Division and Lake Creek and Woodcock Creek in the Sugar Lake Division, along with their associated tributaries.

While the use of lead in the Service's current hunting and fishing programs does not affect the traditional quality or characteristics of wildlife habitats such as vegetation cover, the use of lead ammunition, and to a lesser extent lead tackle, can introduce small amounts of lead into the soils and aquatic environments on refuge lands causing negligible negative effects given lead is a toxic pollutant. One likely scenario is that lead ammunition from a gunshot that misses its target or lead ammunition fragments that exits the target becomes lodged in the ground, introducing lead fragments into the soil. Other scenarios of lead being introduced to the soil is from gut piles left behind from harvested game, or derelict fishing tackle left behind. Lead enters aquatic environments via spent ammunition that has either exited or missed its intended target, or tackle left behind. Lead can become more bioavailable in aquatic environments having potentially more impact in habitats like wetlands and bottomland swamps which are present on the refuge. Although, lead typically has low solubility in water, certain conditions, including high acidity (such as naturally acidic bogs or wetlands downstream of acidic mine drainage), or direct point sources of discharge can increase lead in water (IPCS 1995; Eisler 1998; U.S. Department of Health and Human Services 2007).

It is unlikely that lead tackle would find its way into the soils of refuge lands unless dropped along the shore because it is much more likely to be discarded directly into refuge waters from lost tackle snagged on downed trees or debris in the water, if anywhere. However, some ammunition, including lead ammunition, may become lodged in soils following missed shots by hunters or from fragmentation off single projectile ammunition that penetrates and exits game species. When this does occur, it could lead to metals and other components of the ammunition impacting the composition of soils. In the case of lead ammunition, loose lead fragments may enter the soil after impact, and if the amount of lead reaches high enough concentrations, these lead fragments, if small enough, could be taken up by plants. If taken up by plants, lead can adversely affect plant growth. The introduction of lead in this manner is highly localized and it is unlikely that lead introduced from the Service's hunting and fishing program would introduce sufficient lead to the soils of any area for plants to take it up. There is scientific evidence that lead in soil can adversely impact plants, including inhibiting their growth of roots and cell walls provided concentration of lead is in the correct form and high enough concentration for plant absorption (Balsberg-Pahlsson 1989; Eisler 1998; Tomar et al. 2000). However, the toxicity of lead from soil absorption to seed germination is very small (Balsberg-Pahlsson 1989) and the migration of lead from soil to roots and other parts of plants generally is considered to be minimal (Sorvari et al. 2006; Rattner et al. 2008). Additionally, uptake of lead varies by plant species (Eisler 1998; Finster et al. 2004, U.S. Department of Health and Human Services 2007).

Anticipated Impacts

Alternative A

Under the No Action Alternative, there would be no new additional hunting or fishing opportunities and likely no new impacts. During hunting and scouting, hunters walk off-trail, damaging vegetation and creating new pathways in the process. Minor vegetation trampling is the most likely impact of the hunting program. However, this impact is diminished as most

plants are senescing or entering dormancy during the fall and winter seasons. Fishing occurs throughout all seasons and has the occasional foot traffic on vegetation while accessing fishing areas and we have seen no real evidence of disturbance. No significant negative impacts from the current programs have been observed under this alternative.

Although the amount of lead introduced, both annually and cumulatively to date, is unlikely to be enough in any particular area to negatively impact plants and habitats through soil contamination, under this alternative, there would be continued introduction of lead into the soils on refuge lands. In the long run, this increasing amount of lead could be taken up by plants, potentially causing direct negative impacts to vegetation and habitat on the refuge in areas with concentrated hunting and fishing activities. Although negative impacts from accumulated lead ammunition or tackle in soils remain a possibility in the future because continued use of lead ammunition would mean increasing lead levels over time, any potential impact is still likely a negligible impact to habitat and vegetation given the amount of lead annually introduced on the refuge from these activities.

Alternative B

Under the Proposed Action Alternative, as discussed above, it is unlikely that further introduction of lead into the soils on refuge lands that could be taken up by plants would occur once the non-lead ammunition and fishing tackle requirement takes effect in September 2026. Until the regulation takes effect, it is estimated the additional lead entering the environment from these activities will not reach a level that will negatively impact vegetation or habitat on the refuge. As current lead levels from hunting and fishing activities are likely not sufficient to negatively impact plants or their habitats over the long term, the proposed action would prevent future lead levels in the soil from becoming high enough to potentially negatively impact plants or habitat reducing that future risk of impact or cumulative impacts even more.

Geology and Soils

Affected Resource Description

The refuge supports excessively, well, poorly and very poorly drained (hydric) soils. The most common soil is very poorly drained and deep, nearly level to sloping soils that formed in materials weathered from stream deposits and glacial outwash. This soil can be found on floodplains and terraces. Typical vegetation found in this soil type can include soft maple, alder, elder, willow, and other tree species tolerant of wetland environments. The soil found on Erie NWR can support agricultural activities (i.e., hay, oats, and corn) and upland species such as elm, beech, red and sugar maple, ash, Eastern white pine, and Eastern hemlock (Heitmeyer and Aloia 2013, Soil Survey Staff, NRCS, USDA 2022)).

Lead is naturally present in all soils and generally occurs in the range of 15 to 40 parts lead per million parts of soil (ppm), or 15 to 40 milligrams lead per kilogram of soil (mg/kg). Pollution can increase soil lead levels to several thousand ppm (University of Massachusetts Amherst 2022). Soil surveys have not been completed on the refuge to determine exact lead concentrations of soil on the refuge. However, based upon a map showing the spatial distribution of soil lead concentrations (ppm dry weight) across the continental United States it is estimated that the lead concentrations found in the soil of the refuge is between 20 to 25 ppm (Haig et al.

2014). This range is within the normal range of lead concentration generally found in soils. There is no single threshold that defines acceptable levels of lead in soil, however, the EPA defines a soil lead hazard as bare soil on residential real property or on the property of a child-occupied facility that contains total lead equal to or exceeding 400 parts per million (ppm) in a play area, or an average of 1,200 parts per million of bare soil in the rest of the yard based on soil samples (EPA 2020).

Anticipated Impacts

Alternative A

Under the No Action Alternative, it is anticipated that minor impacts to soils would continue to occur as a result of hunting and fishing. Erosion potential would likely vary during the season based on soil moisture and temperatures. During much of the hunting season, soils may be frozen or covered in snow, thereby reducing the impacts greatly. When fishing, minor soil erosion may occur near the water's edge. At the current use level, impacts to soils like erosion and compaction are not significant.

Under this alternative it is unlikely that there would be continued introduction of lead into the soils and aquatic environments on refuge lands that could further increase concentrations of lead in refuge soils. The amount of lead introduced, both annually and cumulatively to date, is unlikely to be enough in any particular area to result in soil contamination that would reach soil lead hazard levels defined by the Environmental Protection Agency. Yet, negative impacts from lead ammunition in soils remain a possibility in the future because continued use of lead ammunition would continue to increase lead levels over time, however it is still likely negligible given the small amount of lead added annually from these activities.

Alternative B

Under this alternative it is unlikely that further introduction of lead into refuge soils would occur once the regulations take effect which would further reduce the potential effects of lead accumulation in the soil over the long-term. As lead concentrations are not estimated to reach levels of concerns for soil contamination under Alternative A, the transition period of continued use of lead for the next three years is expected to also have negligible impacts on soil.

Water Quality

Affected Resource Description

The French Creek and the West Branch of French Creek originate in Chautauqua County in western New York and flow southwest to their confluence in Erie County, Pennsylvania, to form the main branch. The South Branch of French Creek rises in southeast Erie County near the town of Corry, PA and flows west to its confluence with the main branch near Union City. The main branch then follows a southerly route through Crawford County, the northeast corner of Mercer County, and into Venango County where it joins the Allegheny River at Franklin, PA. The main branch of French Creek is approximately 117 miles long. The French Creek Watershed encompasses approximately 1,250 square miles of land, more than 790,000 acres. The French Creek acts as the northern border of the Seneca Division on the refuge. The Muddy Creek and Dead Creek are tributaries of French Creek and run through the Seneca Division. Woodcock

Creek and Lake Creek both run through the Sugar Lake Division of the refuge and are important drainages within the watershed.

The Service maintains water quality in the interest of ecological health and impacts to water quality are considered for all hunting and fishing activities on Service lands and waters. Subject to determining it will not adversely impact water quality, the Service permits hunting near and fishing in the Service's waters, including with lead ammunition and tackle. This means lead ammunition and lead tackle may be present in refuge waters. Lead in ammunition and tackle in aqueous environments can dissolve into the surrounding water, under certain water quality conditions, by weathering and abrasion (Eisler 1988; Rattner et al. 2008). The Service considers the amount of lead ammunition and tackle in Service waters to be minimal, and thus the amount of lead, to be negligible at this current time. Yet, lead may be present in some amount. Lead in water is widely recognized as adversely impacting water quality. At high enough concentrations, lead in water presents a serious ecological and human health threat (U.S. Department of Health and Human Services 2007; Rattner et. al. 2008).

Anticipated Impacts

Alternative A

Non-motorized boats are only permitted in Area 5 and only from the second Saturday in June through September 15. The use of boats by hunters and anglers has the potential to affect water quality negatively by increasing erosion, stirring up bottom sediments, or introducing pollutants into waterways. The impacts from boating are expected to continue to be minor and short-term, as no evidence exists that current hunting and fishing activity at the refuge degrade water quality on or around waterways associated with refuge properties. Hunting and fishing are, therefore, expected to have minimal adverse impacts on wetlands based upon staff observations of past effects. These impacts are not likely to be significant at the existing level of use.

The No Action Alternative would allow for hunting and fishing activities to continue adding lead ammunition and derelict tackle to refuge waters. The lead ammunition and tackle may then release lead into the surrounding water, decreasing water quality. Although future expansions to the hunting and fishing programs could also increase the amount of lead contamination of refuge waters, impacts to water quality are negligible given the small amount of lead added to refuge waters from lead ammunition fragments and abandoned derelict fishing tackle.

Alternative B

Under this alternative, it is unlikely that additional lead ammunition or tackle would be introduced to Service waters from future hunting and fishing activities beyond fall 2026, even if the Service's hunting and fishing programs are expanded. This would prevent lead contamination of refuge waters, even if the amount of lead contamination prevented is negligible. Thus, the proposed action would have a positive, if minor, benefit to water quality in refuge waters. Continued use of lead ammunition and tackle over the 3-year transition period will have negligible impacts as long-term impacts of this continued use in Alternative A is considered negligible.

Visitor Use and Experience

Affected Resource Description

Erie NWR is open to all six priority public uses (hunting, fishing, wildlife observation, photography, environmental education, and interpretation). In 2017, there were 9,553 hunting visits and 3,650 fishing visits made to Erie NWR. There were also 17,264 other priority use (wildlife observation, photography, environmental education, and interpretation) visits made to the refuge in 2017 (USFWS 2017). In 2019, 860,743 general hunting licenses and 934,238 fishing licenses (all available kinds) were sold by the State of Pennsylvania (PGC 2020b, Schneck 2020).

Anticipated Impacts

Alternative A

This alternative would continue the current hunting and fishing areas on the refuge. The refuge currently allows visitors to hike on the five hiking trails during hunting season without restrictions. It is recommended that visitors wear blaze orange while hiking during hunting seasons to remain visible to any hunters. Visitor conflicts currently do not arise on the refuge with the current fishing and hunting activity. Under the No Action Alternative, visitor use on the refuge would likely not increase.

As lead ammunition and tackle will continue to be used there will be continued exposure to potential adverse risks to hunters and anglers' health by consuming harvested game or using lead tackle. Anglers may be more susceptible to elevated levels of lead in blood from use of lead tackle as lead could transfer to hands while tying on lures and weights and be accidentally ingested (Grade et al. 2019; Sahlmeier et al. 2015). Studies have found that wildlife hunted with lead ammunition and consumed by humans can increase exposure to potential risks to human health due to the accidental ingestion of lead fragments (Fisher et al. 2006; Tsuji et al. 2008; Iqbal et al. 2009; Hunt et al. 2009; Cornatzer et al. 2009; Kosnett 2009; Verbugge et al. 2009; Johnson et al. 2013; ATSDR 2020). 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).

Other users will likely not face risks associated with exposure to lead from lead ammunition or tackle discarded on the refuge as the additional lead added is expected to stay under contaminated soil levels that would adversely impact human health. If continued, this could potentially negatively impact visitor health, although this impact is likely negligible.

Alternative B

Starting September 1, 2026, hunters and anglers would be required to use non-lead ammunition and tackle. Although the activity of hunting and fishing would not change, hunters and anglers may have a harder time finding equipment that meets this new requirement, potentially reducing their quality of experience if they are not able to partake in the activity. However, quality of experience may increase over time as these resources become more available as demand for non-lead ammunition and tackle increases.

To prevent the loss of hunters and anglers from being able to participate in these activities the

transition over three years is proposed to allow hunters and anglers time to replace fishing tackle and find suitable ammunition alternatives. Hunters can purchase non-lead ammunition in most gun stores and sporting goods retailers. If the bullet size, caliber, or gauge is unavailable, most retail stores will special order ammunition or it can be ordered through the mail or online. There are many companies that sell lead-free tackle that can be ordered directly through mail or online if not available in local bait shops. If anglers and hunters are not able to find non-lead alternatives there may be a slight decrease in participation of these activities for a short time period after regulations take effect. However, non-lead ammunition and tackle is becoming more widely available for anglers and hunters to purchase so it is likely hunting and fishing visits will not appreciably decline as a result of this regulation change. The transition also allows anglers and hunters to acclimate and prepare for participating in hunting and fishing activities in compliance with the new regulations.

Long-term, this action could produce positive human health benefits for all visitors to the refuge with a decreased risk of exposure to lead ammunition or tackle discarded on refuge land and waters in the future. Thus, the proposed action will have a potentially positive effect, if any effect, on visitor health.

Cultural Resources

Affected Resource Description

In 2008, GAI Consultants, Inc. completed an archaeological overview study and created sensitivity models for the refuge. The overview involved examining existing archaeological data such as historical texts and atlases, county histories, scientific reports, archaeological site files, and Service documentation; having conversations with refuge personnel; and visiting libraries and historical societies local to the refuge area. The model incorporated several variables (e.g., percent slope, cost distance to streams, cost distance to confluences, distance to prime farmland, and hydric soils) to identify potential areas of archaeological sensitivity within the refuge (Glenn et al. 2010). The refuge will use all the information provided by the archaeological overview and sensitivity model to inform future refuge projects. When an action is proposed in an area of archaeological sensitivity or where potential sites have been identified, the Service will perform an archaeological investigation to locate any archaeological or historical resources that may be present.

The Service, as the lead Federal agency, has chosen to use the NEPA substitution process to fulfill obligations under the National Historic Preservation Act of 1966, as amended (NHPA). While obligations under NHPA and NEPA are independent, the regulations implementing NHPA allow for the use of NEPA review to substitute for various aspects of the NHPA section 106 (16 U.S.C. 470f) review to improve efficiency, promote transparency and accountability, and support a broadened discussion of potential effects that a project may have on the human environment (36 CFR 800.3 through 800.6). During preparation of the Supplemental EA, the Service will ensure that the NEPA substitution process will meet any NHPA obligations.

Anticipated Impacts

Alternative A

Hunting and fishing, regardless of method or target species, are activities that do not pose any

threat to prehistoric or historic properties on or near the refuge. No impacts to cultural resources are anticipated above what may be caused by any refuge visitor. Although hunters and anglers would be able to access parts of the refuges that are closed to other visitors, this access alone is not expected to increase vandalism or disturbance to cultural resources by individuals while they are hunting or fishing, nor is it likely that hunters or anglers would be more likely to engage in vandalism or disturbance than any other refuge visitor.

Alternative B

Under this alternative, we expect that we would continue to observe no adverse impacts.

Refuge Management and Operations

Affected Resource Description

Hunters and anglers on the refuge utilize 27 parking areas (7 in the Seneca Division and 20 in the Sugar Lake Division), refuge roads, and a network of trails. Anglers can access fishing spots by foot using refuge trails or by road. There are four information kiosks: one on Route 27 and Boland Road, one east of Route 173 and Richie Road, one on Route 408 and Swamp Road, and one outside of the refuge headquarters off Route 198 in Guys Mills.

There are three trails in the Sugar Lake Division: the Beaver Run Trail, Tsuga Nature Trail, and Deer Run Trail (with an observation deck). On the Seneca Division, there is the Muddy Creek Holly Trail and the Trolley Line Trail. The Muddy Creek Holly Trail and Deer Run Trails are accessible to those with physical disabilities. In the Sugar Lake Division, there are three wildlife observation areas, one having an observation blind. The Refuge Headquarters/Visitor Center is located off Route 198 in the Sugar Lake Division.

There are currently four permanent, full-time employee positions that oversee the refuge. Federal Wildlife Officers receive assistance from State Conservation Officers and local police departments to enforce the laws and refuge regulations.

Anticipated Impacts

Alternative A

Under the No Action Alternative, refuge infrastructure would continue its current usage with negligible short-term impacts. Approximately \$5,500 of the Erie NWR's budget is spent on the current hunting program and \$2,000 is spent on the current fishing program. The Refuge Manager coordinates the budget each year to ensure funds are available. The refuge does not charge the public any permit fees or any other kind of funding to hunt or fish on the refuge.

Alternative B

Under the Proposed Action Alternative, the proposed non-lead ammunition requirement will not impact refuge infrastructure. It is anticipated that funding would continue to be sufficient to administer the hunting and fishing program at Erie NWR in the future.

Socioeconomics and Environmental Justice

Affected Resource Description

This refuge is not on the shores of Lake Erie, but lies in Crawford County, 35 miles south of the

city of Erie and Lake Erie in northwestern Pennsylvania. Erie NWR created about eight jobs in 2017. In 2019, the population of Crawford County was 84,629. The median income was \$50,304 with a per capita median income of \$26,582. The poverty rate for Crawford County is 12.6 percent (Census 2014). The industries that employ the most people are manufacturing, healthcare and social assistance, and retail trade.

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 Impacts

Alternative A

In 2017, there were 9,553 hunting visits and 3,650 fishing visits made to Erie NWR (USFWS 2017). Although this sum is minimal compared to the annual output of tourism in the area, it represents a negligible but positive impact. These wildlife dependent recreational visits to the refuge have a minor, long-term beneficial impact to the local economy.

There is a possibility of human health impacts from the current hunting and fishing program allowing and continuing to allow the use of certain types of lead ammunition and tackle for the harvest of certain species. However, minority and/or low-income communities are not disproportionately at risk or impacted. The Service has found these impacts negligible for all opportunities in the current hunting and fishing programs.

Alternative B

The Proposed Action Alternative would have a positive, but negligible, effect on human health. It would reduce the risk of potential exposure to increased blood lead levels for hunters and anglers engaged in these activities on the refuge through reduced incidental consumption or handling of lead (Frank et al. 2019, Fisher et al. 2006, Tsuji et al. 2008, Iqbal et al. 2009, Grade et al. 2019, Sahmel et al. 2015). Under this alternative where use of lead ammunition and fishing tackle will be eliminated after 3 years, hunters and anglers will experience decreased exposure and risk of elevated blood lead levels due to incidental consumption or handling of lead ammunition and tackle from these activities. The Service has found these impacts negligible for all opportunities in the current hunting and fishing programs.

There is, however, some possibility of negative economic impacts for socioeconomically disadvantaged hunters and anglers who must comply with the requirements. Even though non-lead ammunition and tackle can cost the same, or up to 30 percent more expensive, as lead, the cost of several boxes per year is minor compared to the other expenses involved such as firearm cost. Deer and turkey hunting also require less ammunition than small game. The minor economic burden involved in transitioning between ammunition and/or tackle types could be more impactful to low-income hunters and anglers. Today, the cost of lead tackle is still much less than the lead-free alternatives potentially making the transition more difficult for low-income anglers (Marohn 2020).

To help prevent the negative impacts of this switch, the refuge will continue specific outreach about the requirement to these groups and has put in place measures to mitigate the economic input beyond the transition proposal, which already affords hunters and anglers time to gradually transition their supplies of ammunition and tackle. The Service will continue educating hunters and anglers on the use of non-lead ammunition and tackle during the proposed transition period, provide links to resources on companies that produce non-lead ammunition and tackle for purchase, and work with partner organizations on non-lead ammunition or tackle issues. With these mitigation measures, minority and/or low-income communities are not disproportionately impacted from this alternative.

Monitoring

Many game species populations are monitored by PGC 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 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. The refuge conducts regular monitoring of target and non-target species, habitats, and environmental conditions.

Summary of Analysis

Alternative A – No Action Alternative

There would be no additional costs to the refuge under this alternative. There would be no change to the current public use and wildlife management programs on the refuge. There would not be an increase in economic impacts to local economies. New hunting and fishing opportunities would not be created under this alternative, including newly available acreage and frontage.

Effects on wildlife and habitat would likely not be significant in the short term, although there may be some potential negative effects under this alternative due to lead being present and bioavailable for wildlife and aquatic species to ingest, and could have negative impacts if lead accumulates to high levels over time. Given that increasing the amount of lead in the environment could lead to negative effects over time, this alternative could ultimately have some negative impacts on certain endangered, threatened, and special status species over time with continued use of lead ammunition and tackle. The refuge would still be able to manage for species of concern and meet the refuge purpose to conserve wetlands and manage for migratory birds. Water quality and soil impacts are likely negligible from continued use of lead ammunition, as the addition of lead from these activities in a given hunting/fishing season are small. There will be no impacts to special designations of the refuge. There would be no effect to cultural resources and impacts to the socioeconomics of the area are negligible.

While this alternative provides wildlife-dependent recreation opportunities on the refuge, in line with the Service's priorities and mandates, it does not meet the purpose and needs of the Service as described above because it would allow for continued lead use in hunting and fishing activities, which would continue to pose a threat to human health and the environment.

Nevertheless, we are analyzing it as the No Action Alternative as it is the baseline needed to evaluate the proposed action. The nature of discarded lead means that continuing to allow the use of lead ammunition and tackle on Service lands and waters would mean adding newly deposited lead to the current amount of lead already in the environment on Service lands and waters. This would mean the risk of adverse impacts from lead available in the environment would continue and even increase for natural resources and for human health under the No Action Alternative, as described throughout this document. If the current hunting and fishing program were to continue under the No Action Alternative, the Service would have to reevaluate the hunting/fishing opportunities expanded in the 2022 Rule that permitted the use of lead ammunition and tackle, since these expansions were previously analyzed and adopted with the expectation of implementing the planned non-lead ammunition and tackle requirement beginning September 1, 2026.

Alternative B – Proposed Action Alternative

This alternative is the Service’s proposed action because it offers the best opportunity for public hunting and fishing that would reduce the potential impacts on physical and biological resources from lead entering the environment, while meeting the Service’s mandates under NWRSA and E.O. 3356. The proposed requirement to use non-lead ammunition and tackle beginning September 1, 2026 will have a positive impact in reducing the potential for lead to affect wildlife health and preventing accumulation of lead at higher levels beyond 2026.

Economic impacts to hunters and anglers due to required use of non-lead ammunition and tackle will be mitigated by a proposed transition and outreach programs. This alternative best meets the objectives identified in the Hunting and Recreational Fishing Plan as well as the purpose and need of this document.

List of Sources, Agencies and Persons Consulted

Wildlife Management Institute
French Creek Valley Conservancy
Pennsylvania Game Commission
Pennsylvania Fish and Boat Commission
Ducks Unlimited
Western Pennsylvania Conservancy
Pennsylvania Department of Conservation and Natural Resources
Foundation for Sustainable Forests
Crawford County Conservation District

List of Preparers

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George Molnar, Contaminants Biologist
Laura Kelly, Cover Graphics

State Coordination

National wildlife refuges, including Erie NWR, conduct their hunting and fishing programs within the framework of State and Federal regulations. The refuge developed this hunting and fishing plan based on coordination with the PGC and PFBC. Refuge leadership consulted with PGC R3 Coordinators on April 30, 2021, to discuss proposed changes to the refuge's hunting and fishing plans, and also with PFBC staff the week of May 3, 2021, to discuss proposed changes to the fishing program.

Tribal Consultation

Erie NWR, as part of a refuge complex with Iroquois NWR, has consulted with the Seneca Reservation in the past. Refuge staff will coordinate with federally recognized Tribal governments in areas of mutual interest, including hunting and fishing opportunities.

Public Outreach

The public will be notified of the availability of the Erie NWR Hunting and Recreational Fishing Plan, EA and CDs for review and will include no less than a 60-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.

For the 2022 EA, we released the draft plan and EA for public review and comment from May 3 through August 8, 2022, a total of 97 days. We distributed a press release to news organizations and alerted visitors to the plan's availability on the refuge websites. A total of five comment letters were submitted from the public that offered input to the refuge.

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 or on the Erie NWR website.

Determination

This section will be filled out upon completion of the 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: _____

Name/Title/Organization: _____

References

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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, 93.
- 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).

Draft Compatibility Determination

Draft Compatibility Determination for Hunting; Erie National Wildlife Refuge.

Refuge Use Category

Hunting

Refuge Use Type(s)

Recreational hunting of big game (deer, turkey, feral hog, and bear), upland game (ringneck pheasant, ruffed grouse, cottontail rabbit, gray squirrel, coyote, raccoon, skunk, woodchuck, quail, opossum, porcupine, weasel, and fox) and migratory game birds (Canada geese, ducks, coot, mute swan, Wilson’s snipe, mourning dove, crow, woodcock, and rail).

Refuge

Erie National Wildlife Refuge

Refuge Purpose(s) and Establishing and Acquisition Authority

“...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds” (Migratory Bird Conservation Act, 16 U.S.C. 715 – 715R).

“...for the development, advancement, management, conservation, and protection of fish and wildlife resources... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services.” (16 U.S.C. 742f(b)(1), Fish and Wildlife Act of 1956).

“...suitable for -- (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...” (16 U.S.C. 460k-1, Refuge Recreation Act of 1966, as amended).

National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System, otherwise known as 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 (Pub. L. 105-57; 111 Stat. 1252).

Description of Use

The use is recreational hunting on Erie National Wildlife Refuge (NWR, refuge) in northwest Pennsylvania. This includes hunting for big game (deer, turkey, feral hog, and bear), upland game (ringneck pheasant, ruffed grouse, cottontail rabbit, gray squirrel, coyote, raccoon, skunk, woodchuck, quail, opossum, porcupine, weasel, and fox) and migratory game birds (Canada geese, ducks, coot, mute swan, Wilson’s snipe, mourning dove, crow, woodcock, and rail). Hunting is identified as one of the six priority public uses of the Refuge System under the National Wildlife Refuge System Administration Act (NWRSA) of 1966 (16 U.S.C. 668dd-668ee), as amended by the Refuge System Improvement Act of 1997, when found to be compatible.

Is this an existing use?

Yes. This compatibility determination reviews and replaces the 1994 compatibility determinations (CD) for big game hunting, upland game hunting, and migratory game bird hunting.

What is the use?

The use is hunting. It is a priority public use of the Refuge System under the NWRSA of 1966 (16 U.S.C. 668dd-668ee) and the Refuge System Improvement Act of 1997 (Public Law 105-57).

Is the use a priority public use?

Yes

Where would the use be conducted?

Hunting zones have been simplified to only two units (Unit A and B). Big game and upland game hunting would be permitted throughout the refuge, except for within permanent no-hunting zones. These no-hunting zones are a 150-yard safety buffer around all refuge buildings, such as refuge headquarters; maintenance shop; Youth Conservation Corps (YCC) building; refuge residences and private residences adjacent to the refuge; and a 330-foot radius around bald eagle nesting sites between January 15 through August 15 each year.

Migratory bird (coot, dark goose, mute swan, duck, and sea duck) hunting would be permitted on Unit B in accordance with State seasons and regulations. Unit A is closed to migratory bird hunting. Migratory bird hunting will be allowed in the following areas:

- Sugar Lake Division (see Map 1 for specific locations);
- Area west of Hanks Road (including Woodcock Creek);
- Area south of Shaffer Road and north of Route 27 (including Pool 7N and 7S);
- Area north of Fowler Road;
- Seneca Division (see Map 2 for specific locations); and
- Section east of Swamp Road and west of Teepleville Road and south of Muddy Creek.

When would the use be conducted?

Hunting will be conducted in accordance with Federal and State regulations. In cooperation with the State, we may adjust hunt season dates and bag limits in the future to be more restrictive than State regulations as needed to achieve wildlife population levels consistent with refuge goals. Hunting will only occur on the refuge between September 1 and May 31. Night hunting is not allowed on the refuge. Hunters may enter the refuge 2 hours before State posted legal shooting time in the morning and must leave no later than 2 hours after legal shooting time in the evening.

Deer. Deer hunting and scouting would be permitted during the State archery, shotgun, and muzzleloader seasons between September 1 and the last day of February. Archery hunting is open from early October to mid-November and then again for a week in late December after the regular shotgun season closes in accordance with State season dates. The regular shotgun season occurs from mid-November to mid-December and muzzleloader season is during 1 week in mid-October and 1 week in December. These are general season periods and may change as the State of Pennsylvania regulations change. All hunting hours will follow State regulations. The refuge will support special hunts (e.g., senior citizens, women, youth, etc.) in conjunction with the Pennsylvania Game Commission (PGC) and/or Sportsmen's Club(s).

Turkey. Turkey hunting seasons are open in accordance with State seasons and regulations. Fall season normally occurs for 1 week in early November and a few days in late November. Spring turkey hunting is open for most of May. The seasons may change as the State regulations change. All hunting hours will follow State regulations.

Black bear. Black bear hunting will occur in accordance with State season and regulations. Muzzleloader season for black bear hunting occurs in accordance with State seasons and normally occurs 1 week in mid-October. Special firearms season is open for 2 days in late October. Bow hunting is open the last week in October and the first week in November. General hunting is a 5-day season at the end of November, with a second 1-week season the first week of December. These are general season periods and may change as the State regulations change. All hunting hours will follow State regulations. The refuge will support special hunts (e.g., senior citizens, women, youth) in conjunction with the PGC and/or Sportsmen's Club(s).

Upland game. Upland game hunting will occur in accordance with State seasons and regulations by species, but it will conclude on the refuge no later than the last day of February. The refuge will support special hunts in conjunction with the PGC and/or Sportsmen's Club(s). Cottontail rabbit, squirrel, pheasant, and ruffed grouse hunting is open from mid-October to the last day of February. Hunting for raccoon, skunk, opossum, and fox is open from late October to mid-February. Quail hunting is open from late October to late November. These are general season periods and may change as the State regulations change. The State has no closed season for woodchuck, coyote, skunks, or opossum hunting, so hunting on the refuge for these species would be allowed from September 1 until the end of February (see State regulations for some exceptions during big game hunting season where hunting for these species is not allowed).

Migratory bird. All hunting hours will follow State regulations. The refuge will foster and sponsor a Youth Orientation Day leading into Youth Hunt (one or two events for waterfowl) in conjunction with the PGC and/or Sportsmen's Club(s). This would include a half-day of instruction. Annual migratory game bird seasons are selected by the State from a framework established by the Service. The State selections are made after reviewing last year's season results, survey data, and input gathered from migratory game bird hunters and the public. Once these seasons are finalized, they will be posted on the PGC's website. The State has no closed season for mute swans so hunting on the refuge for this species would be allowed from September 1 until the end of February.

Feral hog. Feral hog hunting would be permitted on the refuge from September 1 until the end of February. Feral hogs are not a regulated game species in the State. Hunting hours will follow the State-regulated hours for deer hunting.

How would the use be conducted?

We will continue to conduct the use according to State and Federal regulations. Federal regulations in 50 CFR pertaining to the NWRSA, as well as existing refuge-specific regulations will apply. 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 limits of State regulations. We will restrict hunting if it becomes inconsistent with other higher priority refuge programs or endangers refuge resources or public safety.

All persons hunting on the refuge must hold a valid State hunting license. Refuge hunting rules and regulations can be found at the refuge headquarters, information kiosks throughout the refuge, and online. Hunters must abide by all refuge rules and regulations while hunting on the refuge. Individuals hunting on the refuge are subject to the inspection of licenses, hunting equipment, harvested game, vehicles, and their contents by Federal or State officers. Unarmed hunters may scout hunting areas from September 1 through the end of February and 7 days prior to the start of the hunting seasons. All hunters must wear solid-colored hunter orange clothing or material in accordance with State regulations.

Dogs may be used for hunting in accordance with State regulations but must always be under the immediate control of the hunter. Dog training is not permitted on the refuge and dogs are prohibited while scouting. We prohibit hunting with the use of raptors (falconry) to take small game or migratory birds due to the potential for incidental take of unintended species of small game or migratory birds and the risk of spreading disease to other avian species on the refuge.

Vehicles are only allowed on established roads marked open for vehicular travel and parking areas. Vehicles must be parked off the lane of travel and clear of gates. Canoes and other non-motorized boats (watercraft) may only be used for waterfowl hunting. Waterfowl hunters would be responsible for carrying boats to hunting locations as there is no vehicular access available for these areas. There are no established boat launches or access points. Watercraft must be removed from the refuge within one hour after hunting hours end for the day.

Temporary portable tree stands, blinds, and platforms are acceptable and must be removed within 2 weeks of the end of the hunting season. Hunters cannot use screw-in steps, nails, spikes, wire, or bolts as climbing or hanging devices, or to attach a stand to a tree.

Deer may be hunted with centerfire rifles, shotguns, muzzleloaders, or archery equipment during designated State and refuge seasons. Turkey may be hunted with manually operated rifles and handguns, including rim fires, manually operated and semiautomatic shotguns, muzzleloaders, or archery equipment during designated State and refuge seasons. Decoys may be used for turkey hunting in accordance with State regulations. All decoys must be removed daily within 1 hour after hunting hours end. Bear may be hunted with centerfire rifles, handguns, shotguns, muzzleloaders, or archery equipment during designated State and refuge seasons. Feral hogs may be hunted with the same firearms allowed for coyote and fox hunting. Migratory game birds may be hunted with manual and semiautomatic shotguns or archery equipment during designated State and refuge seasons. Non-lead shot is required for all shotgun hunting of migratory game birds.

Upland game may be hunted with centerfire rifles, handguns, shotguns, muzzleloaders, or archery equipment during designated State and refuge seasons. The use and possession of lead shot is prohibited for hunting with a shotgun of all upland game.

Hunters are encouraged to voluntarily use non-lead ammunition when hunting deer, and turkey, bears, and feral hogs. Beginning September 1, 2026, we will eliminate use of all lead ammunition for hunting on Erie NWR.

Why is this use being proposed or reevaluated?

This use is a priority public use and being reevaluated to meet the 15-year mandatory requirement for reevaluation. Hunting is one of the six priority public uses outlined in the Refuge System Improvement Act of 1997. The Service supports and encourages priority uses when they are appropriate and compatible on national wildlife refuge lands. Hunting is used in some instances to manage wildlife populations. 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.

Furthermore, 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. The proposed action would promote 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

Table A-1 shows the estimated amount of funds needed to administer the hunting program at Erie NWR. Refuge trails and roads are maintained for a variety of activities. Costs shown are a percentage of total costs for trail and road maintenance on the refuge and are reflective of the percentage of trail and road use for this activity. Annual hunting administration costs for Erie NWR including brochures, data collection and analysis, etc. totals approximately \$5,500. It is anticipated that funding would continue to be sufficient to administer the hunting program at Erie NWR in the future. Volunteers account for some maintenance hours and help to reduce overall cost of the program.

Table A-1. Erie NWR Funding and Staffing Requirements for Hunting

Identifier	Cost
Hunt Program Staff	\$2,550
Outreach: Signature, Brochures, and Reports	\$650
Parking Lot/Facilities Maintenance	\$2,300
Total Annual Cost	\$5,500

Anticipated Impacts of the Use

Potential impacts of a proposed use on the refuge's purpose(s) and the Refuge System mission

Impacts of hunting to refuge resources, whether adverse or beneficial, are those that are reasonably foreseeable and have a reasonably close causal relationship to the use. This CD includes 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.” Some of the impacts addressed in this CD include those from both hunters and anglers, as the CD was developed in connection with the Environmental Assessment for the Hunting and Recreational Fishing Plan.

Short-term impacts

Potential 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 (Bell and Austin 1985; Cole 1990; Cole and Knight 1990). In many cases, hunting removes a portion of the wildlife population that will otherwise naturally

succumb to predation, disease, or competition (Bartmann et al. 1992). Typical changes in deer behavior in response to hunting include avoidance of certain areas, becoming more wary, staying closer to cover, and shifting feeding times (like feeding more at night) (King and Workman 1986). For waterfowl species, hunting may also make them more skittish and prone to disturbance, reduce the amount of time they spend foraging and resting, alter their habitat usage patterns, and disrupt their pair and family bonds (Bartelt 1987; Madsen 1985; Owen 1973; Raveling 1979; White-Robinson 1982).

In general, refuge visitors engaged in hunting will be walking off-trail in designated areas open to hunting. General disturbance from recreational activities, including hunting, vary with the wildlife species involved and the activity's type, level, frequency, duration, and the time of year it occurs. The responses of wildlife to human activities, such as hunting, include avoidance or departure from the site (Burger 1981; Kahl 1991; Kaiser and Fritzell 1984; Klein 1993; Korschen et al. 1985; Owen 1973; Whittaker and Knight 1998), the use of suboptimal habitat (Erwin 1980; Williams and Forbes 1980), altered behavior or habituation to human disturbance (Burger 1981; Havera et al. 1992; Klein 1993; Korschen et al. 1985; Morton et al. 1989; Ward and Stehn 1989; Whittaker and Knight 1998), attraction (Whittaker and Knight 1998), and an increase in energy expenditure (Belanger and Bedard 1990; Morton et al. 1989). The amount of disturbance tends to increase with decreased distance between visitors and birds (Burger 1986).

The proposed action newly opens a relatively small acreage (159 acres) and expands opportunity on existing acreage to species that either aren't present (feral hogs) or are not especially popular among hunters (swans, weasels, porcupine), so we expect only a very minor increase in the number of hunters and anglers using the refuge. We estimate that an increase of less than 10 hunters and 30 anglers annually would result in an annual take of 10 deer, 1 bear, 1 turkey, 2 squirrels, and 50 fish each year.

Migratory Birds. Some bird species flee from human disturbance, which can lower their nesting productivity and cause disease and death (Knight and Cole 1991). Miller et al. found bird abundance and nesting activities (including nest success) increased as distance from a recreational trail increased in both grassland and forested habitats (1998). Bird communities in this study were apparently affected by the presence of recreational trails, where common species like American robins were found near trails and more specialized species like grasshopper sparrows were found farther from trails. Nest predation also was found to be greater near trails (Miller et al. 1998). Disturbance may affect the reproductive fitness of males by hampering territory defense, male attraction, and other reproductive functions of song (Arcese 1987). Disturbance, which leads to reduced singing activity, makes males rely more heavily on physical deterrents in defending territories, which consumes time and energy (Ewald and Carpenter 1978). These potential negative impacts are anticipated to be minimal.

There could be disturbance related to increased human presence and noise associated with hunting. However, the Service maintains the ability to mitigate potential conflicts through limitations of no-hunting zones, days and seasons of hunting, no night hunting, migratory bird hunting on only 40 percent of the refuge, and methods of take for many opportunities permitted.

Non-target Wildlife. While some disturbance to non-target wildlife species is expected, we anticipate that impact to be minimal because hunting is regulated by the refuge and occurs outside the breeding season (except for the spring turkey season). While spring turkey season is during the spring migration, we believe the limitation on the amount of time hunters are afield in the first half of May will lessen the impact to migratory birds and those that breed on the refuge. The no-hunting zones will require hunters to stay away from and not disturb nesting bald eagles. We expect any impact on migratory waterfowl to be negligible considering that most big game hunting takes place in upland habitats away from the marshes where the birds feed and rest. Additionally, rifle and shotgun deer hunting will only occur on the refuge for approximately 2 weeks which will give the birds an opportunity to feed and rest undisturbed in those areas before and after the season. Black bear hunting seasons are open intermittently through the fall, which will similarly provide opportunities for birds to feed and rest in those areas before and after. Resident wildlife impacts will also be minimal due to the same reasons stated above.

Lead ammunition and tackle can be used on the refuge for hunting and fishing as detailed in the Hunting and Recreational Fishing Plan. We require the use of non-lead shot when hunting with a shotgun for all species except deer and turkey. The best available science indicates that lead ammunition and tackle may have negative impacts on wildlife and the environment (Golden et al. 2016, Hanley et al, 2022, Slabe et al, 2022). To move towards reduction and future elimination of this threat on the refuge, we will be eliminating the use of lead ammunition and tackle over a 3-year period to educate and work with hunters and anglers on the use of non-lead alternatives. A transition to non-lead ammunition for all big game hunting will minimize the inadvertent exposure and subsequent lethal or sub-lethal impacts to bald and golden eagles, as well as other scavenging species. Eagles and other scavengers can be susceptible to lead poisoning when they ingest lead fragments or pellets in the tissues of animals killed or wounded by lead ammunition. Recent modeling has even indicated that lead poisoning suppresses population growth in eagles (Slabe et al. 2022).

Lead shot and bullet fragments found in animal carcasses and gut piles are the most likely source of lead exposure for non-target species. Many hunters do not realize that the carcass or gut pile they leave in the field usually contains lead bullet fragments. 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 poisoning may weaken raptors by reducing their strength and coordination, leading to muscle and weight loss, reducing motor skill function, and making them lethargic, which may make them more susceptible to disease, vehicle strikes, or power line accidents and increases mortality rates by leaving them unable to hunt (Kramer and Redig 1997, O'Halloran et al. 1989, Kelly and Kelly 2005, Golden et al. 2016). The bioaccumulation of lead is a potential concern, but it does not likely present a significant issue on this refuge, as: (1) non-lead shot is currently required for hunting waterfowl and any species with a shotgun except turkey and deer; (2) we would require the use of non-lead ammunition and tackle for all species beginning September 1, 2026; (3) the refuge strongly encourages use of non-lead alternatives for hunting big game (deer and turkey) and for fishing for the next 3 years; (4) we will educate hunters, anglers and the public to the potential adverse impacts of lead; and (5) the updated hunting and fishing activities are not likely to introduce substantially more lead into the environment over existing amounts with the current or proposed hunting program. Some hunters will also choose non-lead methods of take such as archery.

Threatened and Endangered Species.

Northern riffleshell mussel, clubshell mussel, rayed bean mussel, snuffbox mussel, and rabbitsfoot mussel

There are at least 22 species of freshwater mussels on the refuge, 5 of which are federally listed as threatened or endangered (Mohler et al. 2006). Any potential disturbance from the proposed hunting and fishing activities is anticipated to have an insignificant effect on freshwater mussels. Overall, as compared to big game and upland game bird hunting, the refuge sees a low number of migratory bird hunters, and most of those hunters are concentrated on the Sugar Lake Division (where no federally listed mussels have been identified). On the Seneca Division, hunters can walk across streams and creeks to access hunting areas, but the probability of encountering federally listed mussels in the river bottom habitats of Muddy Creek is low due to the clustering of mussel populations, limited access through thick, shrubby terrain, steep riverbanks, and swift, deep waters present in the creek during portions of the hunt season. This would limit any potential disturbances from hunters to a small and insignificant number of events. Therefore, we expect insignificant, if any, impacts to federally listed mussels from public hunting or fishing, and any disturbance from hunters or anglers (by boat or foot traffic) would be both discountable and insignificant.

Specific to potential impacts from continued use of lead ammunition during the interim period, there is a chance that lead could enter the water where mussels could be present. Lead present in Muddy Creek from breakdown of lead tackle and ammunition fragments is evidently not in high enough concentrations to impact mussel reproduction, survival, or cause death of mussels. Mussel populations in Muddy Creek are stable and water quality monitoring is ongoing. We expect the effects from authorized lead use from tackle and ammunition over the next three years to be discountable and insignificant due to the small amounts of lead that are expected to enter the environment and the specific circumstances that would need to occur for lead to have a measurable effect on the species (e.g., water acidity and lead at high enough concentrations). Therefore, any potential lead added to the watershed in the interim, before the non-lead requirement would take effect in 2026, is also not likely to adversely affect mussels.

Indiana bat and Northern long-eared bat

Indiana bats and Northern long-eared bats have two windows when bat presence potentially overlaps with hunting activities. The first window, extending from September 1 to September 30, with hunt seasons beginning September 1. However, most activity during this time would be limited to scouting. There is a brief period in late September when archery hunting may overlap with the presence of late-season bats. However, each day less than 10 archers spread out over approximately 9,000 acres and the likelihood of archers disturbing roosting bats is exceedingly low and therefore discountable.

The second window, during the spring turkey hunt, extends May 1 to May 31. It is possible that hunters could be in the vicinity of roost trees. However, with low numbers of turkey hunters (even fewer than the late-September archery season) spread over approximately 9,000 acres, there is a very low probability that a hunter would disturb roosting bats with noise of a firearm.

In the unlikely event that noise from firearms disturbs roosting bats, the bats would most likely remain in the tree during daylight hours. Such disturbances are temporary and last only for the duration of the noise, not fundamentally unlike other temporary disturbances that bats may naturally experience without long-term effects, and therefore any potential effects are expected to be insignificant. Other possible disturbances include hunters climbing and placing portable tree stands on trees. However, hunters typically select live trees for safety reasons while bats are most often in dead or dying trees with large slabs of peeling bark. Further, hunting activities would not result in any roost tree destruction as no tree cutting or other habitat alteration is permitted on the refuge.

The potential for lead impacts to bats through bioaccumulation is discountable due to Indiana and Northern long-eared bats' diets and foraging habits. Lead bullet fragments would have to break down in the soil in order to be taken up by plants near the area in which the fragments fall on or penetrate the soil surface. In light of the chain of events that are necessary for exposure and the small amount of lead that would contribute to lead concentrations in refuge soils, it seems that bats that occur on refuges are not likely to consume lead derived from ammunition fired by hunters on the refuge. Because the potential for overlap in time or space between hunters and bats is very low; because the expected impacts to roosting bats even if there is overlap are expected to be insignificant; and because the potential for lead impacts are discountable, the proposed hunting and fishing activities are not likely to adversely affect the Northern long-eared bat or Indiana bat.

Eastern massasauga

Eastern massasauga snakes have not been recorded on any refuge lands or waters. A 2-year inventory performed by the Western Pennsylvania Conservancy from 2003 to 2005 determined the population had declined from 19 populations in 6 counties to only 4 isolated populations restricted to Butler and Venango counties. The closest historic sighting of the species was in the mid-1960s, near present-day Goddard State Park, approximately 13 miles southwest of the refuge. According to Pennsylvania Fish and Boat Commission Herpetologist Kathy Gipe, the closest extant population is located 20 miles southeast of the refuge, south of Oil City, in Venango County (Laskaris 2022). Despite suitable habitats within the current range for this snake, there have been no records, even casual references, beyond these sites. As the species has never been seen on or near the refuge, and there is no chance that the proposed activity could affect the species, the proposed hunting and fishing activities will have "no effect" on the Eastern massasauga.

Monarch butterfly

Monarch butterflies use the refuge grasslands, wetlands, old fields, agricultural margins, and roadsides during spring and fall migration, as well as during the spring and summer breeding season. Hunting is allowed from September to February, with a turkey season in May. Hunting and fishing activities have not been shown to have negative impacts on monarch breeding or migration. When hunters are walking through habitat used by monarchs, primarily from September to mid-November, monarchs are passing through on their annual southerly migration, seeking nectar sources including goldenrods, sunflowers, blazing stars, and asters.

Hunters and anglers are most likely to use tracts through forested parts of the refuge, where

monarchs and their nectaring plants generally do not occur. Furthermore, given that only light foot travel from hunters and anglers accessing the area is expected to occur on these acres, we anticipate that any potential damage to nectaring plants from foot traffic disturbance will be extremely unlikely, and therefore considered discountable. These impacts are considered insignificant and discountable, as the disturbance would consist of monarchs being temporarily flushed by hunters, a similar reaction to other temporary disturbances that monarchs may naturally experience without long-term effects.

The potential for lead impacts to monarchs is discountable due to their diets. Adult monarch butterflies feed on nectar. Nectar typically carries less lead contaminants than other parts of the plant if lead is absorbed through the plant. However, as with bats, it relies on the very unlikely occurrence that lead concentrations in the soil from hunting activities reach high enough levels for uptake by plants, and in this case, it would further require uptake by milkweed and the specific plants that monarchs rely on for nectar sources. Overall, lead is strongly adsorbed onto soil particles and is not readily translocated to above-ground portions of plants (McLaughlin 2002). Given that hunters and anglers are not likely to overlap with areas where monarch and their plants are known to occur; that any potential disturbance from noise is expected to be insignificant; and that bioaccumulation through plants into caterpillars or butterflies is discountable, the proposed activities are not likely to jeopardize the monarch butterfly.

All species

The best available science indicates that lead ammunition and tackle may have negative impacts on wildlife and the environment (Golden et al. 2016, Hanley et al, 2022, Slabe et al, 2022). Wildlife can be poisoned by lead in a variety of ways including ingestion of bullet fragments and shot pellets left in animal carcasses, spent ammunition left in the field, and lost fishing tackle (Haig et al. 2014). The use of non-lead ammunition will initially be voluntary, and we would require non-lead ammunition for all activities starting at the beginning of the fall 2026-2027 hunting season, September 1, 2026 (after a 3-year transition period). This transition period will ensure continuity of visitor opportunities as hunters understand the changes and become more familiar with the availability and use of non-lead alternatives. We will educate hunters about the impacts of lead and strongly encourage non-lead ammunition alternatives for the next 3 years.

The bioaccumulation of lead is a potential concern, but it does not likely present a significant issue on this refuge as: 1) non-lead shot is currently required for hunting waterfowl and any species with a shotgun except turkey and deer; 2) the refuge strongly encourages use of non-lead alternatives for hunting big game and for fishing for the next 3 years; 3) we would require the use of non-lead ammunition and tackle for all species beginning September 1, 2026; 4) we will educate hunters, anglers, and the public to the potential adverse impacts of lead; and 5) the updated hunting and fishing activities are not likely to introduce substantially more lead into the environment over existing amounts with the current or proposed programs. Some hunters will also choose non-lead methods of take such as archery.

We understand that re-initiation of consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law), and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not

considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

A more detailed discussion of threatened and endangered species, and the potential impacts of the proposed hunting activities to those listed species, can be found in the Intra-Service Section 7 Biological Evaluation (Appendix D).

Big game (deer, turkey, feral hog, and bear). Impacts to big game species could include temporary and localized disturbance, changes in behavior, direct injury or mortality of individuals, and changes in population dynamics. The refuge does not currently collect data for deer, bear, or turkey harvest on the refuge. The refuge is contained within the State's Wildlife Management Unit (WMU) 1B. Data for that unit show an average of 9,175 antlered and 14,825 antlerless deer harvested between 2017 and 2020 (PGC 2016, 2017, 2018a, 2018b). The buck to doe ratio in the harvest is approximately 1:1. State deer density estimates for this region are approximately 30 per square mile (San Julian and Smith 2001) and have shown little change in the last several years. Data for WMU 1B showed an average of 298 turkey harvested in the fall and 1,941 harvested in the spring between 2016 and 2019 (PGC n.d.). Black bear harvests are reported by county rather than WMU. Data for Crawford County show an average of 56 bear harvested annually between 2016 and 2020 (PGC n.d.). Refuge staff assume that the refuge deer and turkey populations are similar to the overall western Pennsylvania population, which are intensely managed by the State of Pennsylvania, while bear may be slightly higher.

Small/upland game (ringneck pheasant, ruffed grouse, cottontail rabbit, gray squirrel, coyote, raccoon, skunk, woodchuck, quail, opossum, porcupine, weasels, and fox). Small/upland game hunting has been part of the hunt program for many years yet harvest of small/upland is not recorded by the refuge. Small/upland game hunting has had relatively low use when compared with other public uses on the refuge. There will be temporary and insignificant disturbance to vegetation and wildlife from hunters walking through the woods, fields, and marshes, but will not affect the purpose of the refuge. A study by Nixon et al. concluded that squirrel populations are variable depending on mast production for the year and population numbers were more impacted by mast production than hunting (1975).

Over the past 5 years, harvests have declined Statewide for grouse and woodchuck and have remained stable for rabbit, squirrel, pheasant, and porcupine, while furbearers, coyote, fox, and weasel have also remained stable (PGC 2020a). Year to year, populations for small/upland game species tend to fluctuate and reproductive rates are typically high enough to maintain adequate population levels. Any potential negative impacts are anticipated to be minimal.

Vegetation and Soil. The physical effects on vegetation from hunting are expected to be minimal. Hunting may result in some trampling of vegetation, but since most of the vegetation will be dormant for most of the hunting season, we expect the impact to be minimal. Additionally, hunter use is generally dispersed over large areas, minimizing the impact to any one area. All-terrain vehicles will not be allowed on the refuge and other vehicles are restricted to public roads.

Positive effects on the vegetation would result from a reduction in the white-tailed deer population. The impacts of dense deer populations on forest regeneration and the composition and diversity of the herbaceous understory have been well documented (Tierson et al. 1966, Behrend et al. 1970, Tilghman 1989). Well-managed hunting can effectively control deer populations and produce dramatic changes in the forest vegetation (Behrend et al. 1970). The impact of deer hunting on the vegetation would be positive, resulting in better regeneration of forest canopy species and an increase in the diversity of the herbaceous understory. In summary, there would be few if any negative impacts from this use on the refuge's vegetation, but there would be beneficial impacts from the decrease of deer browsing on the refuge's vegetation.

It is anticipated that minor impacts to soils would occur because of hunting. Erosion potential would likely vary during the season based on soil moisture and temperatures. During much of the hunting season, soils may be frozen or covered in snow, thereby reducing the impacts greatly. At the current use level, impacts to soils like erosion and compaction are not significant.

Hydrology. Paths (both on-trail and off-trail) used by hunters can affect the hydrology of an area, primarily through alteration of drainage patterns. It is anticipated that existing trails would continue to influence hydrology regardless of pedestrian travel. Most hunters using the refuge would be walking off-trail potentially creating new trails and therefore new drainage patterns. We expect those impacts to be minimal since hunters do not use the same paths repeatedly. Additionally, during some of the hunting season, soils may be frozen or covered in snow, thereby reducing the impacts. Refuge staff has observed only negligible or minor problems with erosion, incision, or stream alteration to date. Therefore, current and projected participation in these uses is not expected to increase these minor issues. Thus, no additional hydrologic impacts are anticipated from this use.

Visitor Use. Hunting provides additional wildlife-dependent recreational opportunities and can foster a better appreciation and more complete understanding of the wildlife and habitats associated with the western Pennsylvania landscape. This can translate into more widespread and stronger support for wildlife conservation, the refuge, the Refuge System, and the Service.

Hunting is a popular, longstanding public use on the refuge. Of all the hunting activities on the refuge, big game hunting is by far the most popular with an average of 7,555 visits over a 4-year time frame (2014 to 2018), and upland game hunting is the second most popular with an average of 1,164 visits from 2010 to 2014. Migratory bird (including waterfowl and non-waterfowl) hunting is the least popular with an average of 825 visits from 2010 to 2014. All areas of the refuge are open to some form of hunting except for safety zones.

While many hunters use the refuge to hunt deer, more do so during the shotgun season than any other season. The heaviest usage is during the first full week of the shotgun season and on the weekends. Conflicts between hunters may occur. In some cases, competition among hunters for choice sites is keen and has led to unethical behavior. Hunters may only use portable tree stands that must be removed daily. However, some stands are left in place illegally for prolonged periods or are nailed directly into trees.

The activity of deer hunters has some impact on other refuge visitors, but non-hunters must

remain on refuge trails, so impacts are minimal. While the bow hunting season has little to no impact on the public, the shotgun and muzzleloader season may. Some users may be impacted by the presence and noise associated with shotgun and muzzleloader hunting which occurs on the entire refuge. Visitors will be impacted by this as they walk on refuge trails and visit refuge overlooks or they may avoid the refuge completely for concerns of safety. Similar impacts to visitors are associated with bear and turkey hunting. Although conflicts between user groups can arise, that does not appear to be an issue at the present levels of use. In the future, we may need to manage public use to minimize conflicts and ensure public safety. That may include public outreach or zoning to separate user groups.

Economic. According to the 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, approximately 775,000 residents and nonresidents participated in hunting in Pennsylvania in 2011. That same year, hunters spent approximately \$970 million on activities and equipment related to hunting (USFWS and US Census Bureau 2014). While we do not have exact numbers of hunters on the refuge units, visitors participating in this use provided some economic benefit to the local economies by purchasing goods and services (like food, lodging, and gas) in and around the refuge.

Long-term impacts

Cumulative impacts on the environment result from incremental impacts of a proposed action when these are added to other past, present, and reasonably foreseeable future actions. While cumulative impacts may result from individually minor actions, they may, viewed as a whole, become substantial over time.

The potential for adverse impacts to human health due to the inadvertent consumption of lead in individual animals that are successfully harvested with lead ammunition would still exist during the next three years, however it will likely be reduced as some hunters adopt early use of non-lead ammunition. As non-lead requirements for ammunition take full effect in 2026, health impacts to huntable wildlife species from discarded lead in the environment and the potential for adverse human health impacts decreases substantially and becomes negligible. Lead from previous hunting activities will still be present in the environment and may impact wild game species, however, the impact is likely negligible given the likely low amount of lead currently present and availability in the environment from hunting activities and minor adverse risk of bioaccumulation.

The Service believes that hunting on the refuge will not have a significant impact on local, regional, or Atlantic flyway migratory bird populations because the percentage likely to be taken on the refuges, though possibly additive to existing hunting takes, would be a tiny fraction of the estimated populations. In addition, overall populations will continue to be monitored and future harvests will be adjusted as needed under the existing flyway and State regulatory processes.

Economic impacts to hunters and anglers due to required use of non-lead ammunition and tackle will be mitigated by a transition approach and outreach programs. Additional hunting would not add more than slightly to the cumulative impacts stemming from hunting at the local, regional, or Atlantic flyway levels.

Public Review and Comment

This Compatibility Determination (CD) is part of the Erie NWR Hunting and Recreational Fishing Plan and the accompanying Environmental Assessment (EA). The plan was coordinated with all interested and/or affected parties, including Pennsylvania Game Commission (PGC) and Pennsylvania Fish and Boat Commission staff. We distributed a press release to news organizations and alerted visitors to the plan's availability on the refuge websites. We released the original draft plan, CDs and EA for public review and comment from May 3 through August 8, 2022, a total of 97 days. A total of five comment letters were submitted that offered input to the refuge. Any comments and our responses can be found in the 2022 EA Finding of No Significant Impact (Appendix E).

Determination

Is the use compatible? Yes.

Yes

Stipulations Necessary to Ensure Compatibility

To ensure compatibility with the refuge's purpose and the Refuge System mission, hunting can occur at Erie NWR in accordance with State and Federal regulations and special refuge-specific regulations (50 CFR 32.38) 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 of the program's components are found not compatible. Adherence to the regulations, as detailed in the hunting plan and associated hunt-specific brochures, will ensure compatibility with the purpose for which the refuge was established. The following stipulations are necessary to ensure compatibility:

1. We only allow non-motorized boats for waterfowl hunting in permitted areas;
2. We prohibit field possession of migratory game birds in areas of the refuge closed to migratory game bird hunting;
3. We only allow hunting on the refuge from September 1 through the end of February, with the exception of the spring turkey hunt;
4. We prohibit the use of raptors (falconry) to take small game and migratory birds;
5. There is a 150-yard safety zone around all refuge buildings;
6. We require the use of non-lead shot when hunting with a shotgun for all species except deer and turkey;
7. Non-lead ammunition will be required for hunting all species beginning September 1, 2026; and
8. Night hunting is prohibited. Hunters may enter the refuge 2 hours before State posted legal shooting time in the morning and must leave no later than 2 hours after legal shooting time in the evening.

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 satisfies a recreational need, but hunting on national wildlife refuges is 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 impact biological resources. Therefore, through this compatibility determination process, we have determined that hunting on the refuge, in accordance with the stipulations provided above, is a compatible use that will not materially interfere with, or detract from, the fulfillment of the Refuge System mission or the purpose(s) of the refuge.

Signature of Determination

Refuge Manager Signature and Date

Signature of Concurrence

Assistant Regional Director Signature and Date

Mandatory Reevaluation Date

Delete this text and insert year for reevaluation

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Draft Compatibility Determination

Draft Compatibility Determination for Fishing; Erie National Wildlife Refuge.

Refuge Use Category

Fishing

Refuge Use Type(s)

Fishing (non-commercial). The harvest of fish, shellfish, or other aquatic organisms for recreational purposes and/or personal consumption (includes collection of bait for personal use).

Refuge

Erie National Wildlife Refuge

Refuge Purpose(s) and Establishing and Acquisition Authority

“...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds” (Migratory Bird Conservation Act, 16 U.S.C. 715 – 715R).

“...for the development, advancement, management, conservation, and protection of fish and wildlife resources... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services.” (16 U.S.C. 742f(b)(1), Fish and Wildlife Act of 1956).

“...suitable for -- (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...” (16 U.S.C. 460k-1, Refuge Recreation Act of 1966, as amended).

National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System, otherwise known as 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 (Pub. L. 105-57; 111 Stat. 1252).

Description of Use

The use is recreational fishing on Erie National Wildlife Refuge (NWR, refuge) in northwest Pennsylvania. Fishing is identified as one of the six priority public uses of the Refuge System

under the National Wildlife Refuge System Administration Act (NWRSA) of 1966 (16 U.S.C. 668dd-668ee), as amended by the Refuge System Improvement Act of 1997, when found to be compatible.

Is this an existing use?

Yes. This compatibility determination reviews and replaces the 2005 compatibility determination (CD) for fishing.

What is the use?

The use is fishing. It is a priority public use of the Refuge System under the NWRSA of 1966 (16 U.S.C. 668dd-668ee) and the Refuge System Improvement Act of 1997 (Public Law 105-57).

Is the use a priority public use?

Yes

Where would the use be conducted?

Fishing is permitted in the following areas in the Sugar Lake Division:

- Woodcock Creek at north end: from the northern refuge boundary, upstream or south past Hickory Corners Road for about one-tenth of a mile;
- Woodcock Overlook Pond: on the west side of Hanks Road;
- Woodcock Creek south: downstream from Hanks Road for 150 feet;
- Peterson Pond: bank fishing permitted on the west side of McFadden Road;
- Pool 4 Outlet: downstream from Shaffer Road for 150 feet;
- Pool 9 Dike area: bank fishing on the dike and below the dike along Lake Creek for about 400 feet. Boats without motors and ice fishing permitted upstream from the dike north 3,000 feet; and
- Pool K: bank fishing permitted along the dike, on 300 feet of southwestern shore and on the accessible fishing pier.

Bank fishing is also permitted in all creeks and beaver ponds in the Seneca Unit north of Muddy Creek and west of Swamp Road. There would be 4 miles of additional frontage opened to fishing on Muddy Creek and Dead Creek.

When would the use be conducted?

All fishing seasons would align with State regulations. Fishing is permitted from one-half-hour before sunrise until a one-half-hour after sunset.

How would the use be conducted?

There is no refuge-specific permit for fishing, but anglers must have in their possession a valid fishing license as outlined by State regulations. Anglers can access waters by foot or road. All fishing must comply with Pennsylvania Fish and Boat Commission (PFBC) regulations and the following specific conditions:

1. Seneca Division is open to bank fishing only. Wading is not permitted.
2. Fishing is permitted from one-half-hour before sunrise until one-half-hour after sunset.
3. Boats (without motors) are only permitted in Area 5 and only from the second Saturday in June through September 15.
4. All watercrafts must be removed from the refuge within one-half-hour after sunset.
5. Ice fishing is permitted in Areas 5 and 7 only.
6. The taking of frogs and turtles is prohibited.
7. The use or possession of live baitfish is prohibited.
8. The taking or possessing of shellfish is prohibited.
9. Fishing within a 330-foot radius of any bald eagle nesting site is prohibited.
10. We would prohibit the use of lead tackle for fishing (2026).

At the discretion of the refuge manager, we may close some areas seasonally, temporarily, or permanently to fishing if wildlife or habitat impacts or user conflicts become an issue. In cooperation with State fisheries biologists, we may manipulate the fisheries or habitat to promote or improve the local native fishery resource, if warranted. That may include changing fishing regulations (season dates, creel limits, and methods of take), directly manipulating the fisheries by controlling exotic species or stocking, adjusting water levels, introducing or removing fish barriers, manipulating in-stream or stream bank habitat.

Why is this use being proposed or reevaluated?

This use is a priority public use and being reevaluated to meet the 15-year mandatory requirement for reevaluation. Fishing is one of the six priority public uses outlined in the Refuge System Improvement Act of 1997. The Service supports and encourages priority uses when they are appropriate and compatible on national wildlife refuge lands.

Furthermore, 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. The proposed action would promote one of the priority public uses of the Refuge System and providing opportunities for visitors to fish would promote stewardship of our natural resources and increase public appreciation and support for the refuge.

Availability of Resources

Table B-1 shows the estimated amount of funds needed to administer the fishing program at Erie NWR. Annual fishing administration costs for Erie NWR including brochures, data

collection and analysis, etc. totals approximately \$2,000. It is anticipated that funding would continue to be sufficient to administer the fishing program at Erie NWR in the future.

Table B-1. Erie NWR Funding and Staffing Requirements for Fishing

Identifier	Cost
Hunt Program Staff	\$450
Outreach: Signature, Brochures, and Reports	\$850
Parking Lot/Facilities Maintenance	\$700
Total Annual Cost	\$2,000

Anticipated Impacts of the Use

Potential impacts of a proposed use on the refuge's purpose(s) and the Refuge System mission

Impacts of fishing to refuge resources, whether adverse or beneficial, are those that are reasonably foreseeable and have a reasonably close causal relationship to the use. This CD includes 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.” Some of the impacts addressed in this CD include those from both hunters and anglers, as the CD was developed in connection with the Environmental Assessment for the Hunting and Recreational Fishing Plan.

Short-term impacts

Vegetation and Soils. Bank and trail erosion from human activity (dragging and launching of boats and foot traffic) may cause negative impacts including increasing the aquatic sediment loads of streams and rivers or altering riparian or lakeshore habitat or vegetation in ways harmful to fish or other wildlife. Non-motorized boat access for fishing will be restricted to Area 5. The Pool 9 dike area in Area 5 is already somewhat developed due to the large water control structure installed there to control water levels in the impoundment. Therefore, bank erosion should be minimal in this location since there is already a hardened surface. The refuge will monitor this area to ensure that impacts from launching boats do not expand outside of the already hardened area and may close this area if conditions warrant. All new trail and access construction will follow best management practices. Therefore, we do not expect trail erosion to increase because of foot traffic related to increased fishing opportunities.

It is unlikely that further introduction of lead into the soils on refuge lands that could be taken up by plants would occur once the non-lead requirement takes effect in the September 2026-2027 season. Until the regulation takes effect, it is estimated the additional lead entering the environment from these activities will not reach a level that will negatively impact vegetation or habitat on the refuge by 2026. As current lead levels from hunting and fishing activities are likely not sufficient to negatively impact plants or their habitats over the long term, the proposed action would prevent future lead levels in the soil from becoming high enough to potentially negatively impact plants or habitat reducing that future risk of impact or cumulative impacts even more.

Hydrology and Water Resources. Pollutants from human waste and litter have the potential to have negative impacts on water quality. Additionally, paths (both on- and off-trail) used by anglers can affect the hydrology of an area, primarily through alteration of drainage patterns. It is anticipated that existing trails would continue to influence hydrology regardless of pedestrian travel. Some anglers may walk off-trail to access a fishing area, thereby creating new trails and therefore new drainage patterns. We expect those impacts to be minimal considering anglers are not using the same paths repeatedly. Refuge staff has observed only negligible or minor problems with erosion, incision, or stream alteration to date. Therefore, current and projected participation in these uses is not expected to increase these minor issues.

Fish Species. Recreational fishing by the public can have negative impacts on fish populations if it occurs at high levels or is not managed properly. Potential impacts from fishing include direct mortality from harvest and catch-and-release, injury to fish caught and released, changes in age and size class distribution, changes in reproductive capacity and success, loss of genetic diversity, altered behavior, and changes in ecosystems and food webs (Lewin et al. 2006, Cline et al. 2007). In addition, recreational fishing may lead to the accidental or deliberate introductions of non-native fish that may negatively affect native fish, wildlife, or vegetation. The addition of a refuge law enforcement officer will help supplement State enforcement and help reduce the potential for non-native introductions.

These impacts are often disproportionate among fish species, sizes, ages, sexes, and based on other behavioral traits because anglers selectively catch fish based on these factors (Lewin et al. 2006). In general, anglers tend to target larger and older fish. The selective removal of larger and older fish can have a variety of impacts of fish population dynamics. First, it can decrease the age and size class distribution in fish populations. Second, larger and older fish tend to have greater reproductive capacity because they are better able to compete for spawning areas and generally have higher egg outputs. Because of this, their selective removal may reduce the population's overall reproductive success. Depending upon the species, anglers may also be more likely to catch males (e.g., some male largemouth bass are more aggressive towards lures) or females (e.g., in some species females grow faster). Also, fish that are more active during the day are often more vulnerable to being caught (Lewin et al. 2006).

The likelihood of mortality is related to the type of fishing gear used, where the fish is hooked, how the fish is handled, angler experience, and environmental conditions. In general, circle hooks tend to cause less damage than barbed hooks. Also, fish hooked in the lips or jaws tend to have minimal mortality as compared to fish hooked in the gills, esophagus, intestine, or eyes. Fish caught and released with nonlethal injuries may also be exposed to parasites and bacterial or fungal infections. Individuals that are caught and then handled may also experience stress, which can lead to changes in physiology and behavior which can in turn impact their growth, reproduction, and immune system (Lewin et al. 2006).

Since fishing generally removes individuals from a population, it can lead to reduced population sizes and loss of genetic diversity at high levels. The loss of genetic diversity can ultimately reduce a population's fitness, resilience, and ability to adapt to environmental changes and stressors, such as climate change. The higher the fishing mortality, the greater these types of impacts will be (Lewin et al. 2006).

While fishing does remove individuals from the population, we do not anticipate that current or projected fishing pressure will affect the refuge's fish populations. The State sets catch limits, designated waters, and fishing seasons to protect the State's fish populations.

Non-target Species. Since fishing occurs along and in wetland areas, it has the greatest potential to impact aquatic and semi-aquatic species in refuge fishing areas. In particular, fishing has the potential to disturb waterfowl, wading birds, and federally listed freshwater mussels. Fishing seasons in Pennsylvania coincide in part with spring/early summer nesting and brood-rearing periods for many species of aquatic-dependent birds. Anglers can also affect the number, behavior, and temporal distribution of birds, including bald eagles, common ravens, and American crows (Knight and Cole 1991). Human activity, including walking along trails and boat use, has the potential to affect the distribution, abundance, and species richness of water birds by disturbing birds that are overwinter, resting, foraging, reproducing, and nesting.

Disturbance from recreational activities vary with the wildlife species involved and the activity's type, level, frequency, duration, and the time of year it occurs. The responses of wildlife to human activities include avoidance or departure from the site (Owen 1973, Burger 1981, Kaiser and Fritzell 1984, Korschen et al. 1985, Kahl 1991, Klein 1993, Whittaker and Knight 1998), the use of suboptimal habitat (Erwin 1980, Williams and Forbes 1980), altered behavior or habituation to human disturbance (Burger 1981, Korschen et al. 1985, Morton et al. 1989, Ward and Stehn 1989, Havera et al. 1992, Klein 1993, Whittaker and Knight 1998), attraction (Whittaker and Knight, 1998), and an increase in energy expenditure (Morton et al. 1989, Belanger and Bedard 1990). Anglers and other boaters may disturb nesting birds by approaching too closely to nests, causing nesting birds to flush. Flushing may expose eggs to predation or cooling, resulting in egg mortality. We will close refuge areas, as needed, to fishing and boating around sensitive nest sites. Areas used around bald eagle nests are closed to fishing activity during the nesting season, January 15 to August 15. We will also continue public outreach and the placement of warning signs.

Visitors to the refuge engaged in fishing will generally be walking along refuge trails and roads or non-motorized boats in refuge ponds. A study by Miller, Knight, and Miller indicates that species composition and nest predation was altered adjacent to trails in both forested and grassland habitats (1998). Species composition changes are due to the presence of humans and not the trail or roadway itself. On the other hand, nest predation does appear to be a function of the trail which allows access to mammalian nest predators. Several studies have examined the effects of recreationists on birds using shallow-water habitats adjacent to trails and roads through wildlife refuges and coastal habitats in the eastern United States (Burger 1981, Burger 1986, Klein 1993, Klein et al. 1995, Rodgers and Smith 1995, Rodgers and Smith 1997, Burger and Gochfeld 1998). Overall, the existing research clearly demonstrates that disturbances from recreation activities have at least temporary effects on the behavior and movement of birds within a habitat or localized area.

The use of boats for fishing can also have impacts on fish and other species. Potential impacts include increased stress levels, increased water turbidity, loss of food sources, and the dislodging of eggs and larvae from their substrate (Lewin et al. 2006).

Lost fishing tackle may harm waterfowl, eagles, and other birds externally by catching and tearing skin. Fishing line may also become wrapped around legs or wings and hinder movement, around bills which impairs feeding or cause constriction with subsequent reduction of blood flow and tissue damage. An object above or below the water surface may snag entangled animals, from which they are unable to escape. Nineteen percent of loon mortalities in Minnesota were attributed to entanglement in fishing line (Ensor et al. 1992). Entanglement in fishing line has also caused mortality in bald eagles. Birds may also ingest sinkers, hooks, floats, lures, and fishing line. The best available science indicates that lead ammunition and tackle may have negative impacts on wildlife and the environment (Golden et al. 2016; Hanley et al, 2022; Slabe et al, 2022). To move towards reduction and future elimination of this threat on the refuge, we will be eliminating the use of lead tackle and work with anglers on the use of non-lead alternatives. The transition to non-lead tackle for fishing will minimize the inadvertent exposure and subsequent lethal or sub-lethal impacts to bald and golden eagles, as well as other fish and wildlife, and plants. The PFBC also has an advertising campaign explaining the wildlife hazards associated with line and lead tackle.

Threatened and Endangered Species

Northern riffleshell mussel, clubshell mussel, rayed bean mussel, snuffbox mussel, and rabbitsfoot mussel

Mussels attach themselves to solid objects or to one another by proteinaceous threads called byssus threads; they often occur in dense clusters. To date, known populations of federally listed species are concentrated in Muddy Creek in the Seneca Division. Any potential disturbance from the proposed hunting and fishing activities is anticipated to have an insignificant effect on freshwater mussels. Anglers will not be allowed to fish beyond the frontage of Muddy and Dead Creeks, limiting the potential disturbance from anglers in areas where federally listed mussels are located. In addition, we only allow non-motorized boats by permit only, which requires that boats do not scrape along the bottom and educates boaters about the federally listed mussels present. Therefore, we expect insignificant, if any, impacts to federally listed mussels from public hunting or fishing, and any disturbance from hunters or anglers (by boat or foot traffic) would be both discountable and insignificant.

Typically, lead is not soluble in water unless the conditions are right, such as the body of water being more acidic than is typical for freshwater. The French Creek watershed, in which the refuge sits entirely, is known for its naturally high acid neutralizing capacity due to alkaline soils (WPC, 2002). The glacial material in the watershed is high in calcium carbonate (CaCO₃), as well as dolomite, another carbonate-rich material. This leads to the alkaline (slightly basic) nature of water in the French Creek watershed. Therefore, the water conditions are likely not acidic enough for lead to be soluble in the waters near the refuge. Lead present in Muddy Creek from breakdown of lead tackle fragments is evidently not in high enough concentrations to impact mussel reproduction, survival, or cause death of mussels. Mussel populations in Muddy Creek are stable and water quality monitoring is ongoing. We expect the effects from authorized lead use from tackle and ammunition over the next 3 years to be discountable and insignificant due to the small amounts of lead that are expected to enter the environment and the specific circumstances that would need to occur for lead to have a measurable effect on the species (e.g., water acidity and lead at high enough concentrations). Therefore, any potential lead added to the

watershed in the interim, before the non-lead requirement would take effect in 2026, is also not likely to adversely affect mussels.

Indiana bat and Northern long-eared bat

Indiana bats and Northern long-eared bats primarily hibernate in caves and mines from October through April. Anglers will be able to use a portion of these lands, but their impacts will be concentrated to areas around water. There is no nighttime fishing allowed, so any potential impacts would be limited to anglers walking through the unit during refuge hours to gain access to water banks for fishing. The effects to bats by anglers walking through the habitat where bats may be roosting is discountable, given the bats and anglers are likely not to overlap in space or time of day and walking activities are not expected to rouse bats from roosting habitat.

Because the expected impacts to roosting bats even if there is overlap are expected to be insignificant; and because the potential for lead impacts are discountable, the proposed hunting and fishing activities are not likely to adversely affect the Northern long-eared bat or Indiana bat.

Eastern massasauga

Eastern massasauga snakes have not been recorded on any refuge lands or waters. A two-year inventory performed by the Western Pennsylvania Conservancy from 2003 to 2005 determined the population had declined from 19 populations in 6 counties to only 4 isolated populations restricted to Butler and Venango counties. The closest historic sighting of the species was in the mid-1960s, near present-day Goddard State Park, approximately 13 miles southwest of the refuge. This record occurred prior to the creation of Lake Wilhelm Dam in 1971, which flooded any available suitable habitat for the species within the valley bottom adjacent to Sandy Creek. According to Pennsylvania Fish and Boat Commission Herpetologist, Kathy Gipe, the closest extant population is located 20 miles southeast of the refuge, south of Oil City, in Venango County (Laskaris 2022). Despite suitable habitats within the current range for this snake, there have been no records, even casual references, beyond these sites. As the species has never been seen on or near the refuge, and there is no chance that the proposed activity could affect the species, the proposed hunting and fishing activities will have “no effect” on the Eastern massasauga.

Monarch butterfly

Monarch butterflies use the refuge grasslands, wetlands, old fields, agricultural margins, and roadsides during spring and fall migration, as well as during the spring and summer breeding season. Fishing is allowed year-round during refuge hours. Hunting and fishing activities have not been shown to have negative impacts on monarch breeding or migration. Anglers are less likely to walk through monarch butterfly habitat, as they will use established trails and access points.

Hunters and anglers are most likely to use tracts through forested parts of the refuge, where monarchs and their nectaring plants generally do not occur. Furthermore, given that only light foot travel from hunters and anglers accessing the area is expected to occur on these acres, we anticipate that any potential damage to nectaring plants from foot traffic disturbance will be extremely unlikely, and therefore considered discountable. These impacts are considered insignificant and discountable, as the disturbance would consist of monarchs being temporarily

flushed by anglers, a similar reaction to other temporary disturbances that monarchs may naturally experience without long-term effects. Given that hunters and anglers are not likely to overlap with areas where monarch and their plants are known to occur, the proposed activities are not likely to jeopardize the monarch butterfly.

All species

The best available science indicates that lead ammunition and tackle may have negative impacts on wildlife and the environment (Golden et al. 2016; Hanley et al, 2022; Slabe et al, 2022). Animals can be poisoned by lead in a variety of ways including ingestion of bullet fragments and shot pellets left in animal carcasses, spent ammunition left in the field, and lost fishing tackle. The use of non-lead tackle will initially be voluntary, and we would require non-lead tackle for all activities starting September 1, 2026 (after a 3-year transition period). This transition period will ensure continuity of visitor opportunities as anglers understand the changes and become more familiar with the availability and use of non-lead alternatives.

The bioaccumulation of lead is a potential concern, but it does not likely present a significant issue on this refuge as: 1) non-lead shot is currently required for hunting waterfowl and any species with a shotgun except turkey and deer; 2) the refuge strongly encourages use of non-lead alternatives for hunting big game and for fishing for the next 3 years; 3) we would require the use of non-lead ammunition and tackle for all species beginning September 1, 2026; 4) we will educate hunters, anglers, and the public to the potential adverse impacts of lead; and 5) the updated hunting and fishing activities are not likely to introduce substantially more lead into the environment over existing amounts with the current or proposed programs. Some hunters will also choose non-lead methods of take such as archery.

We understand that re-initiation of consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law), and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

A more detailed discussion of threatened and endangered species, and the potential impacts of the proposed fishing activities to those listed species, can be found in the Intra-Service Section 7 Biological Evaluation (Appendix D).

Visitor Use. Fishing provides additional wildlife-dependent recreational opportunities and can foster a better appreciation and more complete understanding of the wildlife and habitats associated with the western Pennsylvania landscape. This can translate into more widespread and stronger support for wildlife conservation, the refuge, the Refuge System, and the Service. Erie NWR is open to all six priority wildlife-dependent recreational uses. In 2017, fishing visits made up 12 percent of total refuge visitation, which totaled 3,650 visits (USFWS 2017).

Ideally, expanded fishing activities conducted on Erie NWR would positively contribute to appreciation and protection of fish and wildlife, both on and off the refuge. The beneficial

impacts of providing this wildlife-dependent activity and the modest increases in opportunities include helping meet the existing and future demands for outdoor recreation and education. An increase in recreational fishing on the refuge may lead to conflict and competition between the anglers. Additionally, anglers may also impact other user groups. For example, they may disturb or flush wildlife that other users were observing. Although these conflicts may arise, it is not a significant issue at the present levels of use, and we do not expect the number of anglers to rise to such a level that it would become an issue in the future. Should significant conflicts become evident, we may need to manage public use to minimize conflicts and ensure public safety. That may include public outreach or zoning to separate user groups.

Economic. The 2011 national survey of fishing, hunting, and wildlife-associated recreation reveals that 1,101,000 Pennsylvania residents and nonresidents 16 years old and older fished in Pennsylvania (USFWS and US Census Bureau 2014). That same year anglers spent approximately \$485 million on activities and equipment related to fishing (USFWS and US Census Bureau 2014). While we have not maintained exact numbers of anglers on the refuge units, visitors participating in this use provided some economic benefit to the local economies by purchasing goods and services (e.g., food, lodging, gas) in and around the refuge.

Other Impacts. Accidental introduction of invasive plants, pathogens, or exotic invertebrates attached to non-motorized boats in Area 5 could negatively impact refuge waters. Some invasive aquatic plants do exist on the refuge. However, we have not carried out extensive surveys of aquatic invasive plants. We can mitigate their impacts by continuing education, outreach, and initiating an intensive monitoring program. The refuge will provide PFBC outreach materials to educate visitors about invasive management practices (e.g., no washing, bait dumping, felt lined boots, etc.). The PFBC has an aggressive public education effort to warn the boating community about the introduction of invasive species.

Long-term impacts

Cumulative impacts on the environment result from incremental impacts of a proposed action when these are added to other past, present, and reasonably foreseeable future actions. While cumulative impacts may result from individually minor actions, they may, viewed as a whole, become substantial over time.

The potential for adverse impacts to human health due to the inadvertent consumption of lead in individual animals that are successfully harvested with lead ammunition or tackle would still exist during the next three years, however it will likely be reduced as some hunters and anglers adopt early use of non-lead alternatives. As non-lead requirements take full effect in 2026, health impacts to fish and wildlife species from discarded lead in the environment and the potential for adverse human health impacts decreases substantially and becomes negligible. Lead from previous hunting or fishing activities will still be present in the environment and may impact species, however, the impact is likely negligible given the likely low amount of lead currently present and availability in the environment from hunting activities and minor adverse risk of bioaccumulation.

The Service believes that fishing on the refuge will not have a significant impact on local,

regional, or other populations because the percentage likely to be taken on the refuges, though possibly additive to existing takes, would be a tiny fraction of the estimated populations. Economic impacts to hunters and anglers due to required use of non-lead ammunition and tackle will be mitigated by a proposed transition approach and outreach programs.

Public Review and Comment

This Compatibility Determination (CD) is part of the Erie NWR Hunting and Recreational Fishing Plan and the accompanying Environmental Assessment (EA). The plan was coordinated with all interested and/or affected parties, including Pennsylvania Game Commission (PGC) and Pennsylvania Fish and Boat Commission staff. We distributed a press release to news organizations and alerted visitors to the plan's availability on the refuge websites. We released the original draft plan, CDs and EA for public review and comment from May 3 through August 8, 2022, a total of 97 days. A total of five comment letters were submitted that offered input to the refuge. Any comments and our responses can be found in the 2022 EA Finding of No Significant Impact (Appendix E).

Determination

Is the use compatible? Yes.

Yes

Stipulations Necessary to Ensure Compatibility

To ensure compatibility with refuge purpose(s) and Refuge System mission, fishing can occur at Erie NWR in accordance with State, Federal, and special refuge-specific regulations to ensure that wildlife and habitat management goals are achieved, and that the program is providing a safe, high quality fishing experience for participants. This fishing 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:

1. We allow non-motorized watercraft use in Area 5. Watercraft must remain in an area from the dike to 3,000 feet (900 meters) upstream.
2. Boats (without motors) are only permitted in Area 5 and only from the second Saturday in June through September 15.
3. Seneca Division is open to bank fishing only. Wading is not permitted.
4. Fishing is permitted from one half hour before sunrise until one-half-hour after sunset.
5. Ice fishing is permitted in Areas 5 and 7 only.
6. Fishing within a 330-foot radius of any bald eagle nesting site is prohibited.
7. We prohibit the taking of turtles or frogs.
8. We prohibit the collecting or releasing of baitfish.
9. We prohibit the taking or possession of shellfish on the refuge.
10. We would prohibit the use or possession of lead tackle for fishing beginning September 1, 2026.

Justification

Fishing is a priority wildlife-dependent use for the Refuge System through which the public can develop an appreciation for fish and wildlife and reinforced as a priority use by Secretarial Order 3356 (September 15, 2017). The Service's policy is to provide expanded opportunities for wildlife dependent public uses when compatible and consistent with sound fish and wildlife management and ensure that they receive enhanced attention during planning and management. The Refuge System Improvement Act of 1997 identifies fishing as a priority public use. Priority public uses are to receive enhanced consideration when developing goals and objectives for refuges if they are determined to be compatible. Providing fishing opportunities would promote public appreciation and support for the refuge. The stipulations above would ensure control and provide management flexibility should detrimental impacts develop. Allowing this use furthers the mission of the Refuge System by providing a wildlife dependent recreational use for benefit of the American public while conserving fish, wildlife, and plant resources. This activity is a compatible use that will not materially interfere with or detract from the mission of the Refuge System or the purposes for which the refuges were established.

Signature of Determination

Refuge Manager Signature and Date

Signature of Concurrence

Assistant Regional Director Signature and Date

Mandatory Reevaluation Date

Delete this text and insert year for reevaluation

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**Erie National Wildlife Refuge
Hunting and Recreational Fishing Plan**

June 2023

U.S. Fish and Wildlife Service

**Erie National Wildlife Refuge
11296 Wood Duck Lane
Guys Mills, PA 16327**

Submitted By:
Project Leader

Signature

Date

Concurrence:
Refuge Supervisor

Signature

Date

Approved:
Regional Chief (Acting),
National Wildlife Refuge System

Signature

Date

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ERIE NATIONAL WILDLIFE REFUGE HUNTING and RECREATIONAL FISHING 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 (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.

Erie National Wildlife Refuge (NWR, refuge) was established pursuant to Migratory Bird Conservation Act of 1929 (16 U.S.C. §715). The primary purposes of the refuge are:

- “for use as an inviolate sanctuary, or for any other management purpose, for migratory birds....” 16 U.S.C. § 715d (Migratory Bird Conservation Act).
- “for the development, advancement, management, conservation, and protection of fish and wildlife resources...” 16 U.S.C. § 742f(a) (4) 11...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude...” 16 U.S.C. § 742f(b) (1) (Fish and Wildlife Act of 1956).
- “suitable for (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, and (3) the conservation of endangered species or threatened species...” 16 U.S.C. § 460k-1 (Refuge Recreation Act).

Erie NWR was established in 1959. The first lands for the refuge were purchased with funds provided from the sale of the Migratory Bird Hunting and Conservation Stamps (also known as Duck Stamps). Erie NWR is a namesake of the Erie Native Americans who resided in the area. This refuge is not on the shores of Lake Erie, but lies in Crawford County, 35 miles south of the city of Erie and Lake Erie in northwestern Pennsylvania.

Erie NWR is the only refuge in the nation protecting endangered Northern riffleshell and clubshell mussels. French Creek, the most biologically diverse stream in Pennsylvania, flows near the refuge where over 80 species of native fish can be found. Erie NWR is designated as an Important Bird Area by the National Audubon Society and attracts more than 230 species of birds.

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.”

The NWRSAA 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 recreation 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.

Erie NWR consists of two separate land divisions: Sugar Lake Division and Seneca Division. Sugar Lake Division lies 10 miles east of Meadville on the outskirts of the Guys Mills village. The Seneca Division is about 10 miles north of Sugar Lake Division and 4 miles southeast of Cambridge Springs, Pennsylvania.

The Service proposes to expand hunting and fishing opportunities at Erie NWR and open additional acres on the Seneca Division. Two parcels of land have been acquired since 2013. We propose the following changes as part of the update to this existing hunting and fishing plan:

1. **Species changes:** Open hunting to mute swan, feral hog, weasels, and porcupine.
2. **Hunttable acreage:** Open an additional 159 acres to hunting.
3. **Method of take changes:** The refuge will require use of non-lead ammunition for

hunting all species beginning September 1, 2026. Hunters would be encouraged to use non-lead ammunition voluntarily until the requirement takes effect in 2026.

4. **Fishing:** Open additional 4 miles of frontage to fishing along Dead and Muddy Creeks. We will require use of non-lead tackle for fishing in fall 2026. Anglers would be encouraged to use non-lead tackle voluntarily until the requirement takes effect in 2026.

II. Statement of Objectives

The objectives of a hunting and fishing program on Erie NWR are to:

1. Allow visitors to enjoy quality wildlife-dependent recreation, appreciate the cultural and natural resources of the refuge, and increase their understanding and support of the refuge's mission;
2. Provide the public with a high-quality recreational experience on refuge lands and waters and increase opportunities and access for hunters and anglers;
3. Provide wildlife-dependent public recreation as mandated by and according to Service law and policy;
4. Design a hunting and fishing program that is administratively efficient and manageable with existing staffing levels and in alignment with State regulations when possible;
5. Provide hunting and fishing opportunities for youth, persons with disabilities, apprentice hunters and anglers, and other underrepresented groups; and
6. Design a hunting and fishing program that aligns with refuge habitat management objectives, utilizing the Service's Hunt/Fish Opportunity Tool (SHOT) Station Report.

These objectives will help to maintain historic, wildlife-dependent public uses and provide accessible hunting and fishing opportunities in cooperation with local accessibility experts and organizations. We will ensure the public's understanding of the refuge's hunting and fishing opportunities by providing quality maps, signs, and information in outreach materials and on the station web pages.

The NWRSAA, as amended by the Refuge System Improvement Act of 1997, and the Refuge Recreation Act of 1962 authorize public hunting and fishing on refuges when compatible with the purposes for which the refuge was established. As part of this document, compatibility determinations were prepared. Assuming management decisions are based on sound biological principles and that user time and space restrictions are utilized to minimize wildlife disturbance, hunting and fishing are deemed compatible and worthwhile recreational opportunities to provide for the public.

III. Description of Hunting and Fishing Programs

A. Areas to be Opened to Hunting and Fishing

Hunting zones have been simplified to only two units (Unit A and B). Big game and upland game hunting would be permitted throughout the refuge, except for within permanent no-hunting zones. These no-hunting zones include: a 150-yard safety buffer around all refuge buildings, such as refuge headquarters; maintenance shop; Youth Conservation Corps (YCC) building; refuge residences and private residences adjacent to the refuge; and a 330-foot radius around bald eagle nesting sites between January 15 through August 15 each year.

Migratory bird (coot, dark goose, mute swan, duck, and sea duck) hunting would be permitted on Unit B in accordance with State seasons and regulations. Unit A is closed to migratory bird hunting. Migratory bird hunting will be allowed in the following areas:

- Sugar Lake Division (see Map 1 for specific locations);
- Area west of Hanks Road (including Woodcock Creek);
- Area south of Shaffer Road and north of Route 27 (including Pool 7N and 7S);
- Area north of Fowler Road;
- Seneca Division (see Map 2 for specific locations); and
- Section east of Swamp Road and west of Teepleville Road and south of Muddy Creek.

For recreational fishing, the refuge would open 4 miles of frontage on Muddy and Dead Creeks. Bank fishing is permitted on all creeks and beaver ponds within the Seneca Division except for a 330-foot radius around bald eagle nesting sites. Recreational fishing would be allowed in the following areas in the Sugar Lake Division:

- **Woodcock Creek at north end:** from the northern refuge boundary, upstream or south past Hickory Corners Road for about one-tenth of a mile;
- **Woodcock Overlook Pond:** on the west side of Hanks Road;
- **Woodcock Creek south:** downstream from Hanks Road for 150 feet;
- **Peterson Pond:** bank fishing permitted on the west side of McFadden Road;
- **Pool 4 Outlet:** downstream from Shaffer Road for 150 feet;
- **Pool 9 Dike area:** bank fishing on the dike and below the dike along Lake Creek for about 400 feet. Boats without motors and ice fishing permitted upstream from the

dike north 3,000 feet; and

- **Pool K:** bank fishing permitted along the dike, on 300 feet of southwestern shore and on the accessible fishing pier.

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

Hunting will only occur on the refuge between September 1 and May 31. Night hunting is not allowed on the refuge. Hunters may enter the refuge 2 hours before State posted legal shooting time in the morning and must leave no later than 2 hours after legal shooting time in the evening. Anglers may access the refuge one-half-hour before sunrise and one-half-hour after sunset.

Migratory Bird Hunting

Migratory bird species open to hunting on the refuge would be coot, dove, woodcock, duck, sea duck, mute swan, Wilson's snipe, crow, Canada goose and rail. The refuge offers special hunts for youth, senior, disabled, and active-duty military personnel (Pennsylvania resident hunters) for migratory bird hunting.

Upland Game Hunting

Upland game species open to hunting on the refuge would be rabbit, skunk, coyote, opossum, raccoon, fox, squirrel, woodchuck, porcupine, weasel, grouse, pheasant, and quail. Upland game hunting would be permitted on all units of the refuge in accordance with State regulations.

Big Game Hunting

White-tailed deer, bear, and turkey hunting is permitted on all units of the refuge in accordance with State seasons and regulations. Mentored and youth hunts are open during all turkey hunting seasons. Feral hog hunting is permitted on all units of the refuge from September 1 through the end of February in accordance with all other State hunting seasons. The refuge offers special big game hunts for youth, senior, disabled, and active-duty military personnel (Pennsylvania resident hunters) on all hunting units.

Recreational Fishing

All fishing seasons are in accordance with Pennsylvania State regulations. Available species include rainbow, brook and brown trout, largemouth bass, yellow perch, bluegill, sunfish, carp, crappie, and bullhead.

C. Permit Requirements

Hunting: Refuge-specific hunting permits are not required; however, hunters must still read and follow all refuge hunting regulations. All persons hunting on the refuge will be required to obtain the necessary State and Federal licenses, permits, and stamps.

Recreational Fishing: There is no refuge-specific permit for fishing, but anglers must have in their possession a valid fishing license as outlined by State regulations.

D. Consultation and Coordination with the State

NWRs, including Erie NWR, conduct their hunting program within the framework of State and Federal regulations. The refuge has developed this hunting and fishing plan in coordination with the Pennsylvania Game Commission (PGC). In developing this plan, the refuge reviewed the operations and regulations for neighboring State Wildlife Management Areas to find consistency where possible. On April 30, 2021, refuge leadership consulted with the PGC to discuss proposed changes to the refuge's hunting and fishing plan and received support for the proposal.

E. Law Enforcement

Enforcement of refuge violations normally associated with management of a refuge is the responsibility of commissioned Federal Wildlife Officers (FWOs). Other officers, Special Agents, State game wardens, and the local Sheriff's Department often assist the Federal law enforcement officers.

The following methods are used to control and enforce hunting and fishing regulations:

- Refuge and hunt area boundaries will be clearly posted;
- The refuge will provide brochures on the website that show hunt and fish areas and list refuge specific regulations;
- The refuge will post the hunt brochure and maps on the four major informational kiosks on the refuge; and
- FWOs will randomly check hunters and anglers for compliance with Federal and State laws.

F. Funding and Staffing Requirements

Table 1 shows the estimated amount of funds needed to administer the hunting and fishing program at Erie NWR. Refuge trails and roads are maintained for a variety of activities. Costs shown are a percentage of total costs for trail and road maintenance on the refuge and are reflective of the percentage of trail and road use for this activity. Annual hunt and fish administration costs for Erie NWR including equipment, brochures, analysis of biological information, etc. total approximately \$7,500. Estimated annual costs for administering the fishing program would be \$2,000 and the hunting program would be \$5,500. It is anticipated that funding would continue to be sufficient to administer the hunting and fishing programs at Erie NWR in the future.

Table 1. Erie NWR Funding and Staffing Requirements

Identifier	Cost
Hunt/Fish Program Staff	\$3,000
Outreach: Signature, Brochures, and Reports	\$1,500
Parking Lot/Facilities Maintenance	\$3,000
Total Annual Cost	\$7,500

IV. Conduct of the Hunting Program

A. Hunter/Angler Permit Application, Selection, and/or Registration Procedures (if applicable)

Refuge-specific hunting and fishing permits are not required; however, hunters and anglers must still know and follow all refuge hunting regulations. All persons hunting on the refuge will be required to obtain the necessary State and Federal licenses, permits, and stamps.

B. Refuge-Specific Hunting and Fishing Regulations

Listed below are refuge-specific regulations and procedures that pertain to hunting and fishing on Erie NWR as of the date of this plan. These regulations and procedures may be modified as conditions change or if refuge expansion continues.

- Night hunting is prohibited. Hunters may enter the refuge 2 hours before State posted legal shooting time in the morning and must leave no later than 2 hours after legal shooting time in the evening.
- Scouting is allowed throughout the hunting season dates and 7 days prior to the start of each hunting season.
- We require the use of non-lead shot when hunting with a shotgun for all species except deer and turkey.
- Hunters are encouraged to voluntarily use non-lead ammunition when hunting deer and turkey. Beginning September 1, 2026, we will prohibit the use of all lead ammunition for hunting on Erie NWR.
- Beginning September 1, 2026, we will prohibit the use and possession of lead tackle for angling purposes.
- Fishing is permitted from one-half-hour before sunrise until one-half-hour after sunset.
- The use or possession of live baitfish is prohibited on the Seneca Division.
- Ice fishing is permitted in Areas 5 and 7 only (Pool 9 and Pool K).

C. Relevant State Regulations

The refuge conducts its hunting program within the framework of State and Federal regulations. Hunting and fishing at the refuge is at least as restrictive as the State of Pennsylvania and more restrictive in some cases. Additionally, the refuge coordinates with the State as needed to maintain regulations and programs that are consistent with the State's management programs. Refer to the annual PGC hunting and trapping regulations digest for more information.

D. Other Refuge Rules and Regulations for Hunting and Fishing

- **Spotlights.** Using illuminating devices, including automobile headlights, for the purpose of spotlighting is prohibited.
- **Camping.** Camping, overnight parking, open fires and littering are prohibited.
- **Vehicles.** Vehicle travel is allowed on designated roads and parking areas only. Snowmobiles and all-terrain vehicles are prohibited.
- **Dogs.** Dogs may always be used for hunting but must be under the immediate control of the hunter.
- **Wading.** Seneca Division is open to bank fishing only. Wading is not permitted.
- **Boats.** Boats (without motors) are only permitted in Area 5 and only from the second Saturday in June through September 15. Boats must remain in an area from the dike to 3,000 feet upstream. All watercrafts must be removed from the refuge within one half hour after sunset.
- **Frogs, turtles, baitfish, and shellfish.** The taking or possession of frogs, turtles, baitfish, and shellfish is prohibited.
- **Safety Zones.** There is a 150-yard safety zone around all refuge buildings

V. Public Engagement

A. Outreach for Announcing and Publicizing the Hunting and Fishing Program

The refuge maintains a mailing list, for news release purposes, to local newspapers, radio, and websites. Special announcements and articles may be released in conjunction with hunting and fishing seasons. In addition, information about the hunt and fish programs will be available at Erie NWR headquarters office, on the Erie NWR website and on Erie NWR's social media page.

B. Anticipated Public Reaction to the Hunting and Fishing Programs

Hunting and fishing have already been allowed on Erie NWR for more than 40 years and little negative public reaction is expected. Hunting and fishing are important economic and recreational uses of Pennsylvania's natural resources. The refuge anticipates little to no negative reactions to this hunting and fishing plan.

For the 2022 EA, we released the draft plan and EA for public review and comment from May 3 through August 8, 2022, a total of 97 days. We distributed a press release to news organizations and alerted visitors to the plan's availability on the refuge websites. A total of five comment letters were submitted from the public that offered input to the refuge.

The refuge anticipates some public concern about obtaining non-lead ammunition and tackle given the phasing out of lead use on the refuge. It is for this reason that the requirement to use non-lead ammunition and tackle will not be implemented until September 1, 2026, providing hunters and anglers time to learn about available alternatives and transition their supplies.

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

Hunting and fishing information is available on the refuge website. Dates, maps, and refuge-specific requirements related to the hunting and fishing programs will be available on the station websites at: <https://www.fws.gov/refuge/erie/>. General information regarding hunting and fishing can be obtained by request and at the refuge office at:

11296 Wood Duck Lane
Guys Mills, PA 16327
(814) 789-3585

VI. Compatibility Determination

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

Figure 1: Map of Erie NWR, Sugar Lake Division

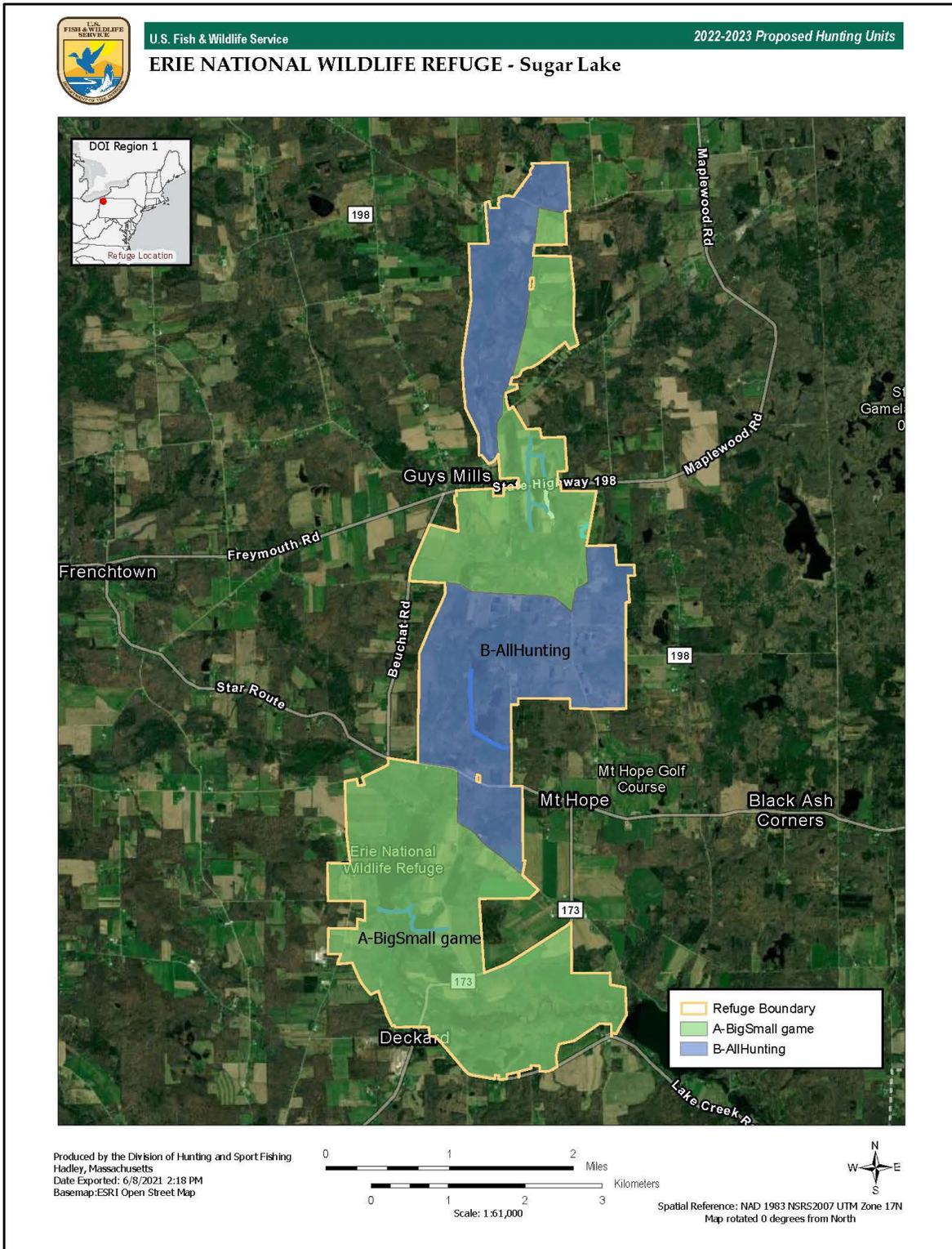


Figure 2: Map of Erie NWR, Seneca Division

