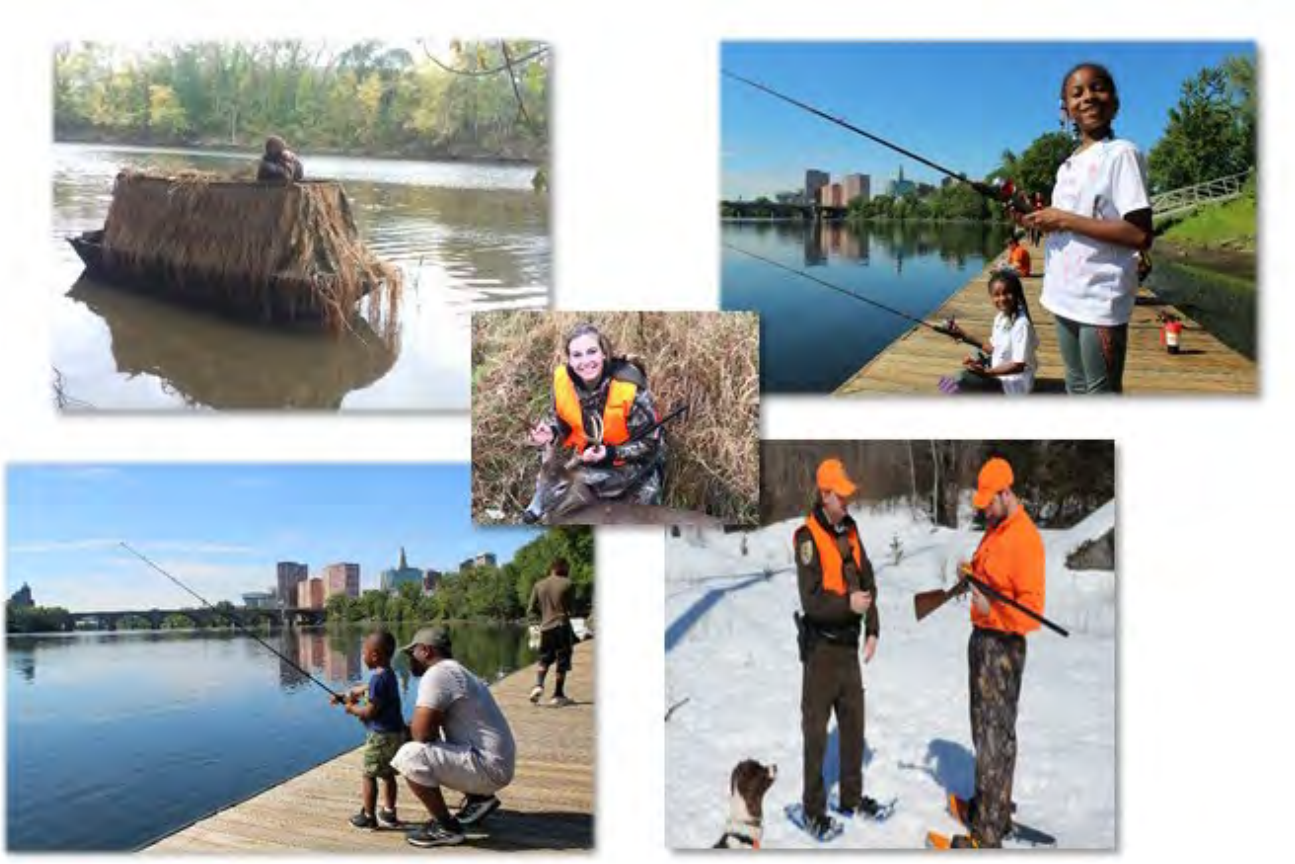
U.S. Fish and Wildlife Service

Silvio O. Conte National Fish and Wildlife Refuge

Massachusetts and Connecticut

Recreational Hunting and Fishing Plan

August 2019



Appendix A- Hunting Compatibility Determination
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Appendix C – Environmental Assessment and Finding of No Significant Impact
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Silvio O. Conte National Fish and Wildlife Refuge
Recreational Hunting and Fishing Plan
for Massachusetts and Connecticut

August 2019

U.S. Fish and Wildlife Service

Silvio O Conte National Fish and Wildlife Refuge
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9-24-19 — Date

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9/25/19 — Date

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I. INTRODUCTION

Silvio O. Conte National Fish and Wildlife Refuge (Silvio O. Conte NFWR, Conte Refuge, refuge) established by the Federal Property and Administrative Service Act of 1949 (40 U.S.C. 471-535), as amended; Fish and Wildlife Coordination Act of 1934 (16 U.S.C. 661-666c) as amended; Fish and Wildlife Act of 1956 (16 U.S.C. 742a-742j Stat. 1119) as amended; the Act of May 19, 1948, Public Law 80-537 (16 U.S.C. 667b-667d; 62 Stat. 240) as amended; and The National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended. Silvio O. Conte National Fish and Wildlife Refuge Act (Public Law 102-212).

In order to meet specific refuge and other broader U.S. Fish and Wildlife Service (Service) directives, the following purposes were established for Conte Refuge:

- To conserve, protect, and enhance the Connecticut River populations of Atlantic salmon, American shad, river herring, shortnose sturgeon, bald eagles, peregrine falcons, osprey, black ducks, and other native species of plants fish and wildlife.
- To conserve, protect, and enhance the natural diversity and abundance of plant, fish, and wildlife species, and the ecosystem upon which these species depend within the refuge.
- To protect species listed as endangered or threatened, or identified as candidates for listing, pursuant to the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.).
- To restore and maintain the chemical, physical, and biological integrity of wetland and other waters within the refuge.
- To fulfill the international treaty obligations of the United States relating to fish, wildlife, and wetlands.
- To provide opportunities for scientific research, environmental education, and fish and wildlife-oriented recreation and access to the extent compatible with the other purposes stated in this section.

Silvio O. Conte NFWR is managed as part of the National Wildlife Refuge System (Refuge System), whose mission is “to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans” (Refuge System Improvement Act of 1997).

The act further 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.

The Conte Refuge was established in 1997 when the Connecticut River Watershed Council donated Third Island in Deerfield Massachusetts to the Service. Named in honor of Silvio O. Conte, the late Congressman who represented Massachusetts' First Congressional District from 1959 until his death in 1991, Conte Refuge was established in the 7.2 million-acre Connecticut River watershed in Connecticut, Massachusetts, New Hampshire, and Vermont to conserve native fish, plants, and wildlife. Since its establishment, refuge-owned lands have grown to 22 units and division totaling more than 37,500 acres. These lands encompass a variety of unique habitats such as: northern forest valuable as nesting habitat for migrant thrushes, warblers and other birds; rivers and streams used by shad, salmon, herring and other migratory fishes; and an internationally significant complex of high-quality tidal fresh, brackish, and salt marshes.

The Massachusetts portion of the refuge encompasses 1,451 acres and receives approximately 60,000 visitors each year. We estimate that hunters account for about 2,500 of the visits each year. The Connecticut portion of the refuge encompasses 839 acres and receives approximately 1,000 visitors each year. We estimate that hunters account for 200 of the visits each year. The primary costs to administer the program include the maintenance costs to provide access to refuge lands, staffing costs for law enforcement, posting safety zones, and to provide hunter information on the refuge's website and kiosks. The total cost to administer the program is estimated to be $40,000 a year and about a $20,000 first year cost. These costs are anticipated to be covered with station-appropriated funds. No permits and/or refuge fees are collected for hunting.

Regulated sport hunting has been an important management tool and recreational activity at Silvio O. Conte NFWR for over a decade. Hunting pressure on the Massachusetts and Connecticut divisions can be described as moderate to light with a limited number of hunters participating. Based on the mixture of habitat types and staff observations, the most popular hunting is for white-tailed deer, cottontail rabbit, American woodcock, and waterfowl. The refuge adopted State hunting regulations for the division/units in both states, with some additional refuge-specific regulations to minimize conflicts with other refuge objectives and visitor activities. The hunting program will be reviewed annually.

II. STATEMENT OF OBJECTIVES

The objectives of a big game, small game, and migratory game bird hunting program, and a fishing program, on Silvio O. Conte NFWR are to:

1. Provide the public with a high-quality recreational experience on refuge lands and increase opportunities and access for hunters and fishermen;
2. Design a hunting/fishing program that is administratively efficient and manageable with existing staffing levels and that aligns with State regulations when possible;
3. Implement a hunting/fishing program that is safe for all refuge users;
4. Provide hunting and fishing opportunities for youth and those that need assistance; and
5. Design a hunting/fishing program that is in alignment with refuge habitat management objectives.

Based on State regulations, species to be hunted within each state may vary:

Big Game	**Massachusetts**	**Connecticut**
White-tailed deer, and wild turkey	X	X
Black bear	X	
Small Game		
Coyote, fox, raccoon, opossum, gray squirrel, snowshoe hare, cottontail rabbit, pheasant, quail, woodchuck*, European hare*, Hungarian partridge* and ruffed grouse	X	X
Bobcat	X	
Migratory Game Birds		
Ducks, geese, crows, rail, snipe, American woodcock	X	X

** These species are specifically noted in seasonal CT regulations*

III. DESCRIPTION OF HUNTING AND FISHING PROGRAM

A. Areas to be Opened to Hunting or Fishing

The 11 refuge units and divisions in Massachusetts, and four in Connecticut, are made up of a diversity of habitat types from mature forest, open water, grasslands, swamps, shrublands, and floodplain forest. This matrix of lands support a variety of species with target species being found in higher densities on some lands. The hunting and fishing program on refuge lands in each state will be in accordance with federal and state regulations, and additional refuge-specific regulations.

We are proposing all refuge lands that are found to be compatible with hunting and fishing be opened. Hunting was found not to be compatible on some lands where safety zones are present, with deed restrictions that do not allow hunting, or lands with significant cultural resources. See Table 1 below for the units and divisions that are open to hunting.

Table 1. Silvio O. Conte Divisions and Units Open to Hunting

Division / Unit	Acres Open to Hunting	Acres Closed to Hunting
Massachusetts		
Dead Branch Division	98	
Fort River Division	206	84
Hatfield Unit	20	
Honey Pot Wetlands Unit	21	
Mill River Division	252	
Mt. Toby Unit	29	
Mt. Tom Unit	141	
Third Island Unit	4	January 1 - June 30
Westfield River Division	262	
Fannie Stebbins Unit	0	363
Wissatinnewag Unit	0	21
Total Acres (MA)	***1,033***	***468***
Connecticut		
Deadman's Swamp Unit	31	
Salmon River Division	595	
Whalebone Cove Division	103	45
Roger Tory Peterson Unit	56	
Total Acres (CT)	***785***	***45***
TOTAL	***1,818***	***513***

Recreational fishing would be conducted on, and from the banks of, all water bodies within the boundaries of the Conte Refuge in Massachusetts and Connecticut that are open to fishing, including lakes, ponds, streams, and rivers. At present, this includes reaches on the following rivers: Fort River (Fort River Division), Connecticut River (Third Island Unit, Mill River Division, Mount Tom Unit, Fannie Stebbins Unit, Deadman's Swamp Unit, Salmon River Division, Whalebone Cove Divison), West Branch of the Westfield River (Westfield River Division), Dead Branch (Dead Branch Division), and Salmon River (Salmon River Division). There also are two ponds (Magnolia and Triangle) on the Mill River Division and a pond (Great Pond) on the Hatfield Unit.

B. Species to be Taken, Periods, and Access

Big Game

Big game will be taken according to the Commonwealth of Massachusetts or State of Connecticut regulations throughout the refuge, with the exception of refuge specific regulations listed below. Access to refuge lands for hunting is from public roads and adjoining public lands and water.

Migratory Birds
Migratory bird species taken during the migratory game bird hunting season and known to usually occur in and around the refuge include American woodcock (*Scolopax minor*), Canada goose (*Branta canadensis*), and over 10 duck species such as mallard (*Anas platyrhynchos*), wood duck *(Aix sponsa),* and black duck *(Anas rubripes).* Access to hunting refuge lands for hunting is from public roads and adjoining public lands and water. All refuge lands open to migratory bird hunting will be in accordance with applicable state migratory bird regulations.

Small Game (Upland Game, Squirrel, Furbearer)
Small game will be taken according to State regulations throughout the refuge, with the exception of no night hunting or the use of electronic calls. Access to refuge lands for hunting is from public roads and adjoining public lands and water.

Fish
The Connecticut River watershed supports a diversity of fishery resources. Cold, cool and warm-water species are in general abundance throughout the watershed. The watershed did not historically support as diverse a group of fishes as it does presently; many of the species considered resident were introduced (e.g., smallmouth bass, brown trout). Sections of the river also supports chain pickerel, largemouth bass, northern pike and walleye, and a variety of panfish such as bluegill and seasonal foraging migrations of striped bass. Common carp, white suckers, American eel, and catfish such as the introduced channel catfish and native brown bullhead are present in many areas. Cold-water tributaries provides important habitat for brook trout, rainbow trout, and Atlantic salmon. Other cold aquatic species that occur within this watershed include slimy sculpin, lake chub, and many species of invertebrates, including the State rare riffle snaketail dragonfly. Recreational fishing would be conducted under the Commonwealth of Massachusetts regulations for open water and ice-fishing, and state of Connecticut regulations for inland fisheries, with some additional restrictions to protect fish, wildlife, and habitat, and to reduce potential public use conflicts. During the seasons specified in the fishing regulations established annually by the States, fishing could occur between one half-hour before sunrise to one half-hour after sunset. Access to Third Island would be prohibited between January 1 and June 30 each year to protect nesting bald eagles.

C. Justification for the Permit, if one is Required

No refuge specific permit is required.

D. Consultation and Coordination with the State

Silvio O. Conte NFWR will work with Massachusetts Division of Fisheries and Wildlife (MassWildlife) and Connecticut Division of Energy and Environmental Protection (DEEP) staff to ensure safe and enjoyable recreational hunting and fishing opportunities. The States were key partners and engaged throughout the Comprehensive Conservation Planning (CCP) process completed in 2016, which addressed hunting and fishing.

Refuge and Regional Office staff have continued to meet and discuss hunting and fishing opportunities on all refuge lands, most recently in 2018. Law enforcement officers from both agencies work together to conduct patrols, safeguard hunters and visitors, and protect both game and nongame species.

E. Law Enforcement

Enforcement of refuge violations associated with the management of a national wildlife refuge is the responsibility of Refuge Law Enforcement Officers. Other Fish and Wildlife Officers, FWS Special Agents, Environmental Police Officers, and the local Police Department Officers occasionally assist the Refuge Law Enforcement Officers.

F. Funding and Staffing Requirements

Annual hunt administration costs for Silvio O. Conte NFWR, including salary, equipment, law enforcement, maintenance of sites, and communication with the public is approximately $44,000 annually, and $15,000 the first year. Specific to the recreational fishing program, annual costs are anticipated to average $8,000 per year (primarily for law enforcement).

Table 2. Anticipated Costs for Hunt Administration

Maintenance Workers	$ 10,000
Refuge Managers	$10,000
Visitor Services Manager	$ 5,000
Supplies/Brochures*	$ 5,000
Kiosks Signs*	$ 10,000
Trail/parking lot maintenance	$ 5,000
Total to implement (hunt)	**$ 45,000**
Supplies/Brochures	$1,000
Monitoring Resource Impacts	$1,000
Signage (Parking, etc.)	$1,000
Law Enforcement	$ 5,000
Total to implement (fish)	**$ 8,000**
TOTAL (hunting and fishing)	**$ 53,000**
*Not an annual cost	

IV. CONDUCT OF THE HUNTING AND FISHING PROGRAM

Listed below are refuge-specific regulations that pertain to Silvio O. Conte NFWR as of the date of this plan. These regulations may be modified as conditions change or if refuge expansion continues/occurs.

A. Application, Selection and Registration Procedures

No special application or registration is needed for hunting or fishing.

B. Refuge-Specific Hunting Regulations

To ensure compatibility with refuge purposes and the mission of the Refuge System, hunting

must be conducted in accordance with State and Federal regulations, as supplemented by refuge-specific regulations (50 CFR Chapter 1, Subchapter C), and information sheets/brochures. Refuge-specific stipulations are also detailed in the Hunting Compatibility Determination (appendix A).

- Refuge lands are closed to night hunting. Hunters are allowed on refuge lands 30 minutes before sunrise and 30 minutes after sunset.
- Treestands, blinds, or other hunting equipment must be removed from the refuge daily.
- No recorded or electronic calls can be used.
- Third Island unit is closed from January 1 through June 30.
- No baiting is allowed on refuge lands.

Furthermore, we allow the use of dogs when hunting waterfowl and upland game species. We prohibit launching of motorboats from the refuge, and we prohibit the use of reptiles and amphibians as bait.

C. Other Relevant Rules and Regulations

Hunting has been permitted on Silvio O. Conte NFWR lands through pre-acquisition compatibility determinations for many years, as most lands comprising the refuge were known hunting grounds historically. All refuge lands will be open to hunting unless posted closed, and hunting will conform to State seasons and be in accordance with Federal, State, and refuge-specific regulations for archery, firearms, and muzzleloader. Information sheets and maps for all hunting opportunities will be updated regularly and made available to hunters on the refuge website.

Access will be in the form of motor vehicles operating on roads open to the public and pedestrian access. Areas may be closed if there are unacceptable resource impacts such as soil erosion, repeated disturbance to susceptible wildlife, or unresolvable conflicts with other compatible priority public uses. The need for site closures will be considered by the refuge manager on a case-by-case basis. We will maintain a safe hunt by establishing safety/no hunt zones around refuge residences, buildings, and high-use public use trails, as necessary.

At the discretion of the refuge manager, some areas may be seasonally, temporarily, or permanently closed to fishing, if wildlife or habitat impacts or user conflicts are documented. Unauthorized introductions of both non-native and native fish can significantly disrupt aquatic ecosystems and destroy natural fisheries. No fish of any species may be introduced onto the refuge without appropriate State and refuge permits. This includes unused bait fish and viable eggs.

The hunting and fishing program will be reviewed annually, or as needed, to assess its effectiveness and to ensure that wildlife populations and habitat quality are managed appropriately.

V. PUBLIC ENGAGEMENT

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

The refuge maintains a mailing list for news release purposes of local newspapers, radio and television stations, and websites. Special announcements and articles may be released in conjunction with hunting seasons. In addition, information about hunting and fishing will be available at refuge office and on the refuge website.

B. Anticipated Public Reaction to the Hunting and Fishing Program

While there are members of the public that do not support hunting and fishing on national wildlife refuges, we are supported by many people who are eager to engage in these long-standing conservation traditions. We expect extensive support for this plan. Hunting and fishing are important economic and recreational uses of natural resources and can be important wildlife management tools.

No public use conflicts are expected to occur on the refuge during the hunting seasons. The refuge has managed hunting for over a decade with little to no conflict among refuge user groups. Overall, impacts to visitor services/recreation opportunities are considered short-term, minor and local. Conflicts and negative interactions among hunters are possible if they compete for hunting areas. The refuge reserves the right to implement new regulations, close areas to hunting, or revoke current and future access to the refuge from hunters.

The draft hunting plan, with an accompanying compatibility determination (CD) and environmental assessment (EA), was released to the public for a 30-day comment period on April 26, 2019. Public comments were accepted through May 26. No substantive comments were received during the comment period, and no changes were made to the plan.

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

General information regarding hunting and other public uses can be obtained at Silvio O. Conte NFWR office 103 E. Plumtree Rd., Sunderland, MA, 01375 or by calling 413-548-8002. Directions and maps are available on the station website at: *https://www.fws.gov/refuge/silvio_o_conte/* and at the refuge office.

The Massachusetts Hunting Abstract contains complete information about hunting in Massachusetts: *http://www.eregulations.com/massachusetts/huntingandfishing/*

The Connecticut Hunting and Trapping Guide contains information about hunting in Connecticut.
https://www.ct.gov/deep/cwp/view.asp?a=2700&q=606076&deepNav_GID=1633

VI. COMPATIBILITY DETERMINATIONS

Hunting, fishing and all associated program activities proposed in this plan are compatible with the purposes of the refuge. See appendix A and B for included compatibility determinations.

VII. REFERENCES

"Connecticut Hunting Seasons & Regulations - 2019." *ERegulations*, www.eregulations.com/connecticut/hunting/.

Massachusetts Division of Fisheries and Wildlife (MassWildlife). 2018. *https://www.mass.gov/orgs/division-of-fisheries-and-wildlife*. Accessed November 2018.

U.S. Fish and Wildlife Service. 2017. Waterfowl: Population Status, 2017. USFWS, Laurel, MD. 74pp.

Figure 1. Map of Silvio O. Conte NFWR Divisions and Units within Massachusetts
The Wissatinnewag Unit and Fannie Stebbins Unit are both closed to hunting

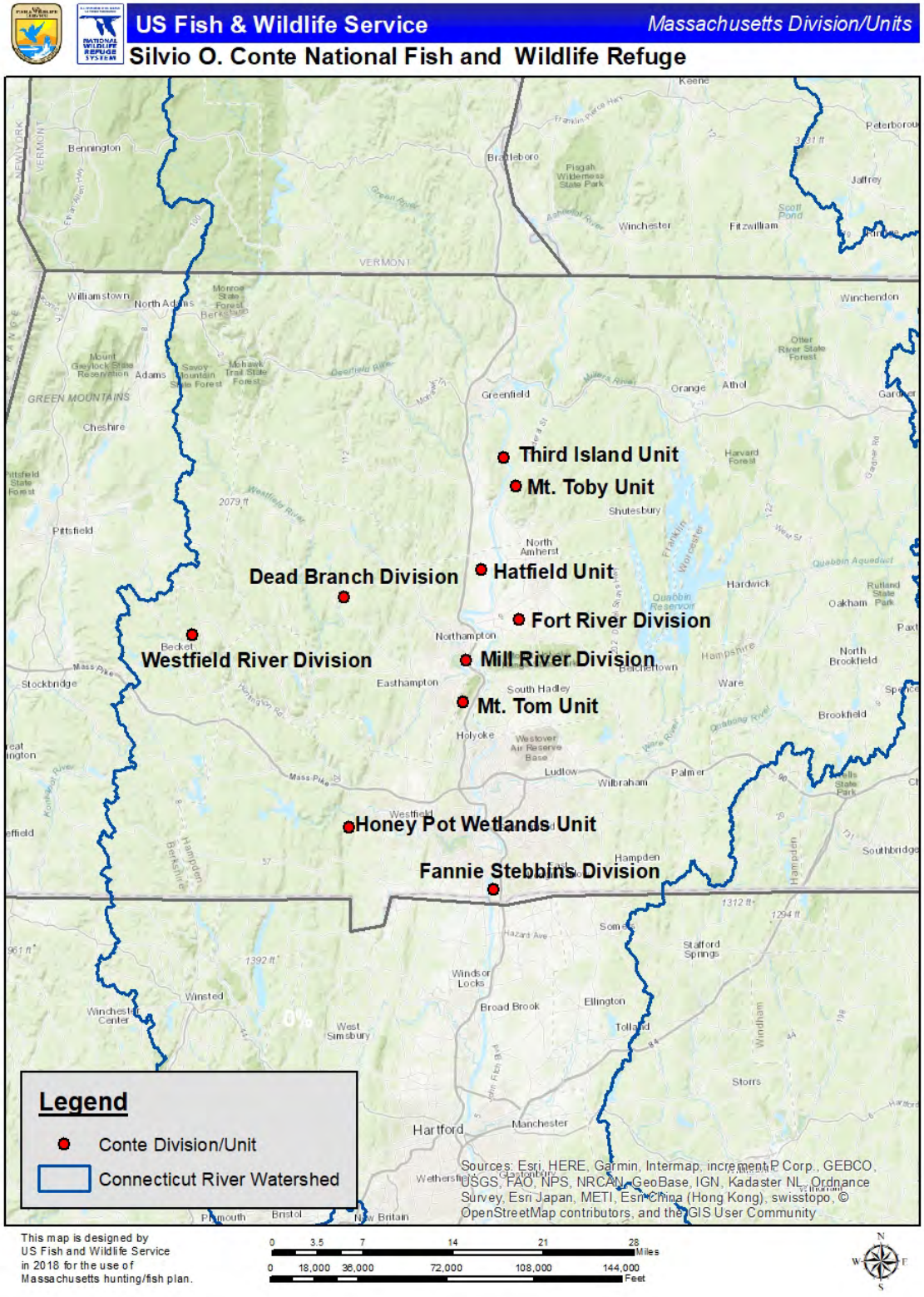


Figure 2. Map of the Dead Branch Division of Silvio O. Conte NFWR

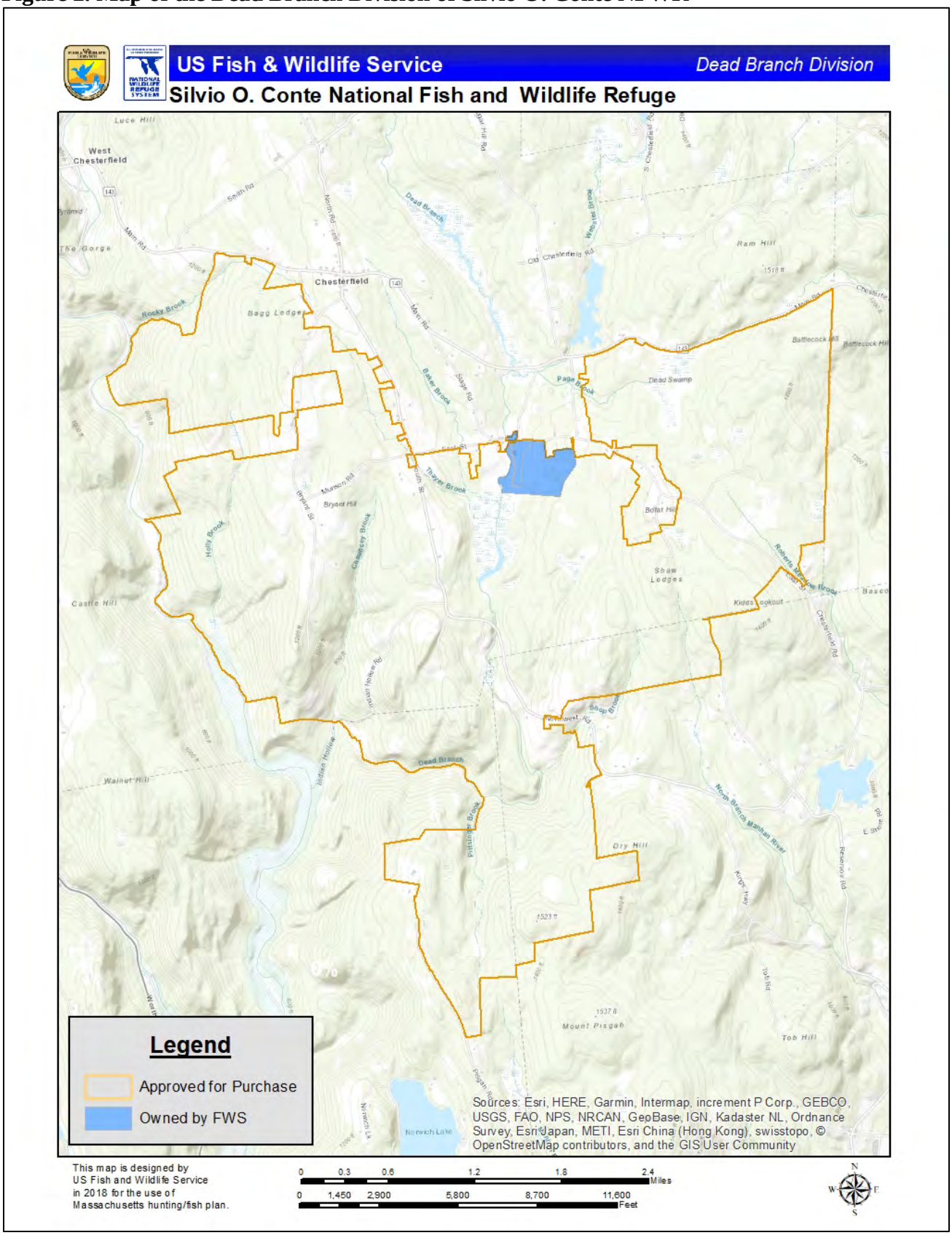


Figure 3. Map of the Fort River Division of Silvio O. Conte NFWR

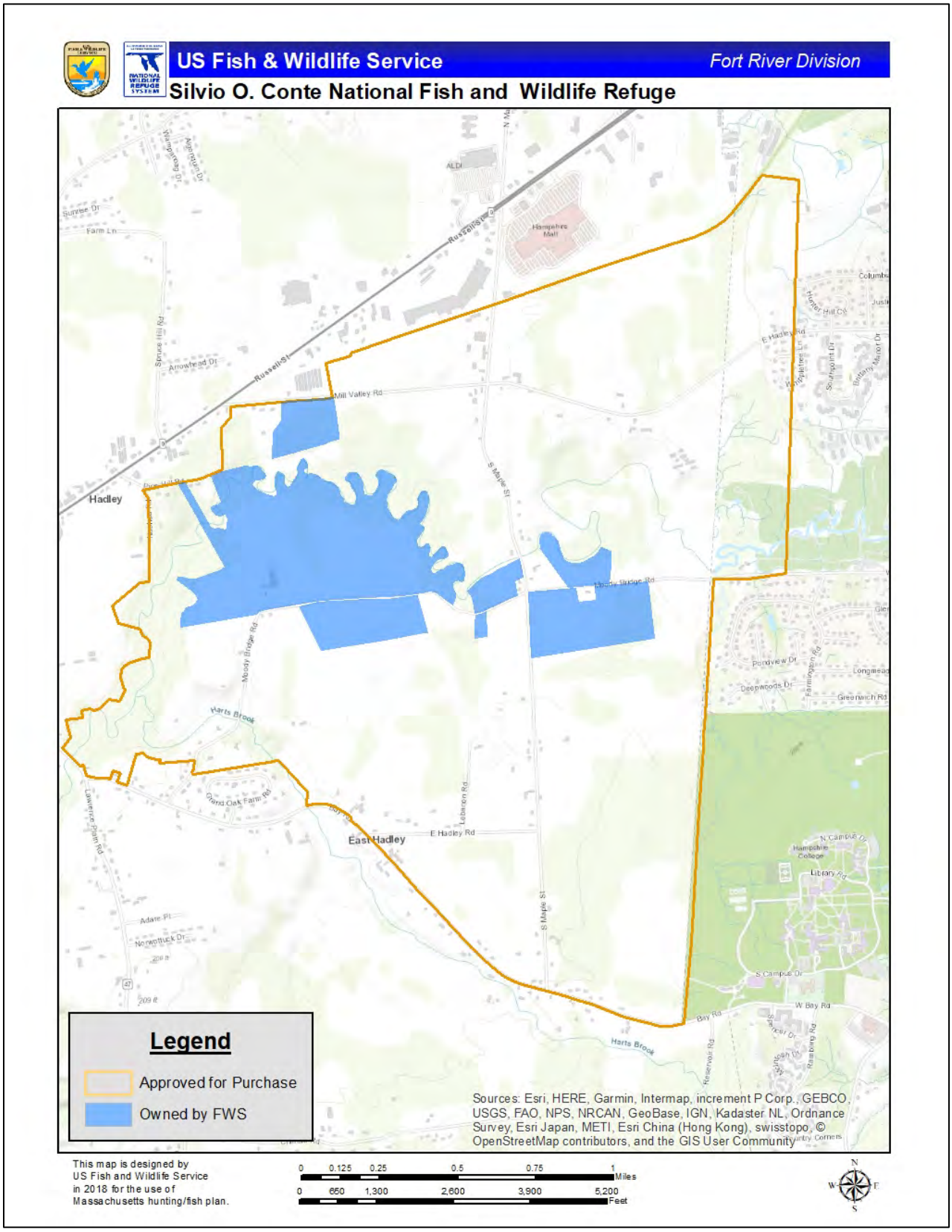


Figure 4. Map of the Hatfield Unit of Silvio O. Conte NFWR

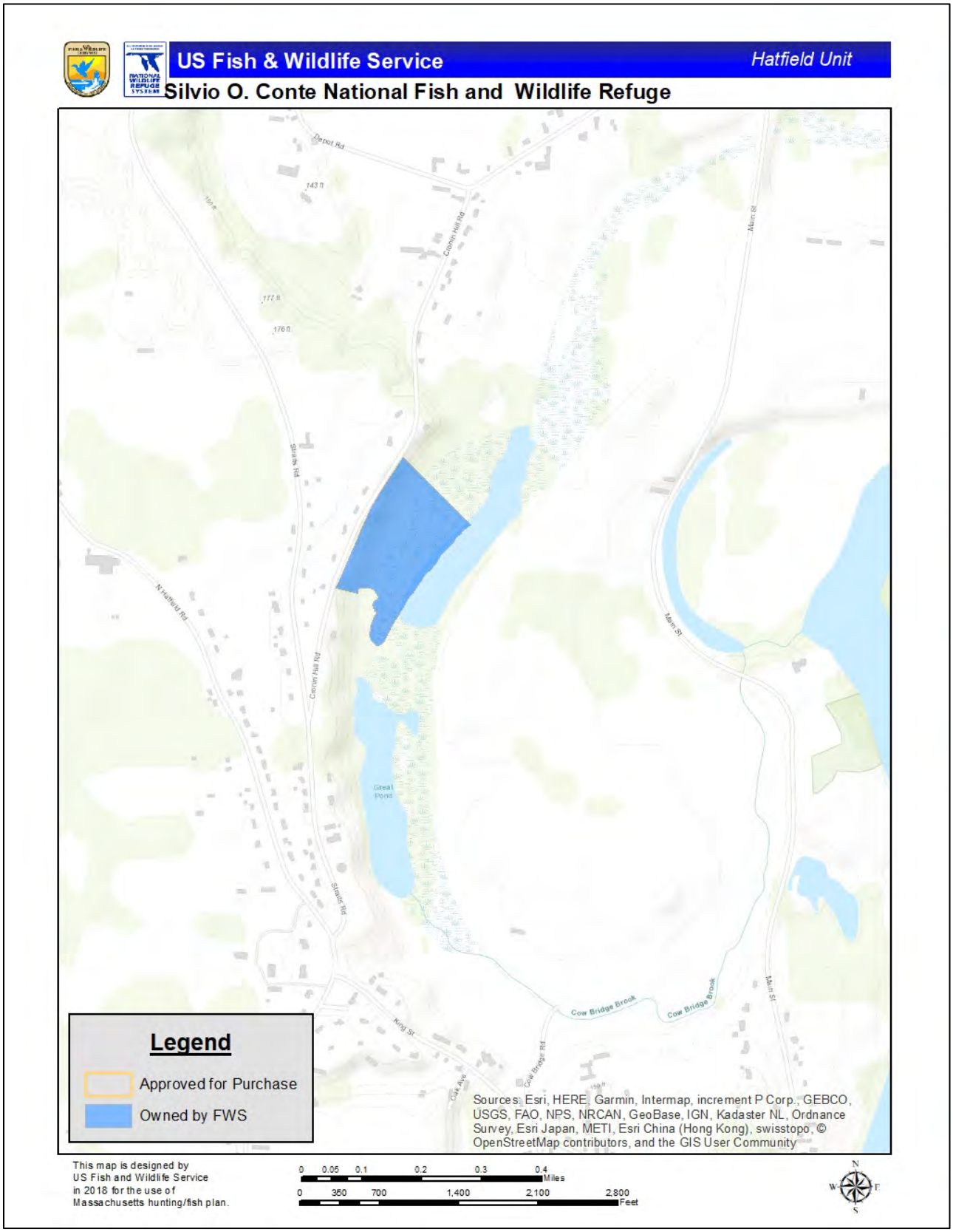


Figure 5. Map of the Honey Pot Wetlands Unit of Silvio O. Conte NFWR

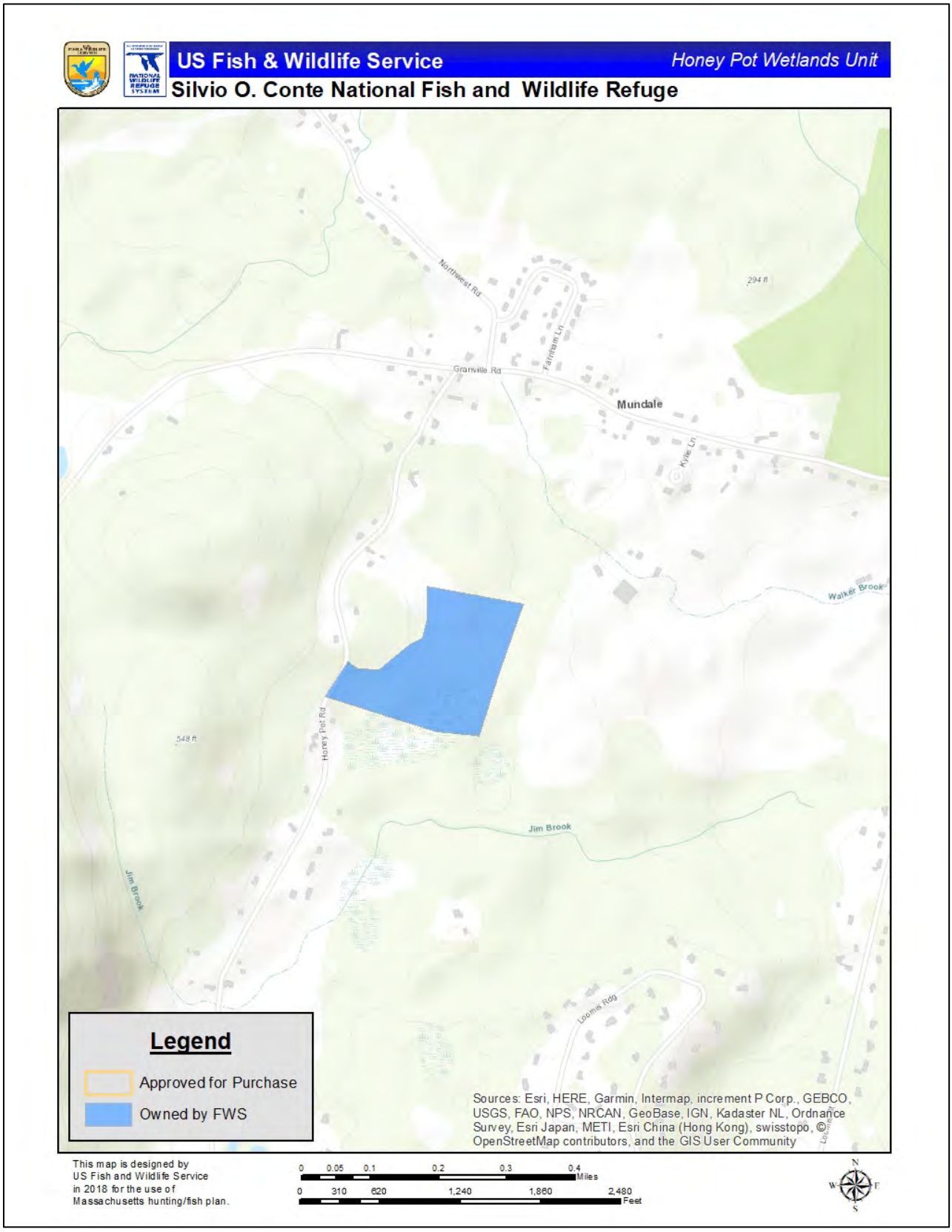


Figure 6. Map of the Mill River Division of Silvio O. Conte NFWR

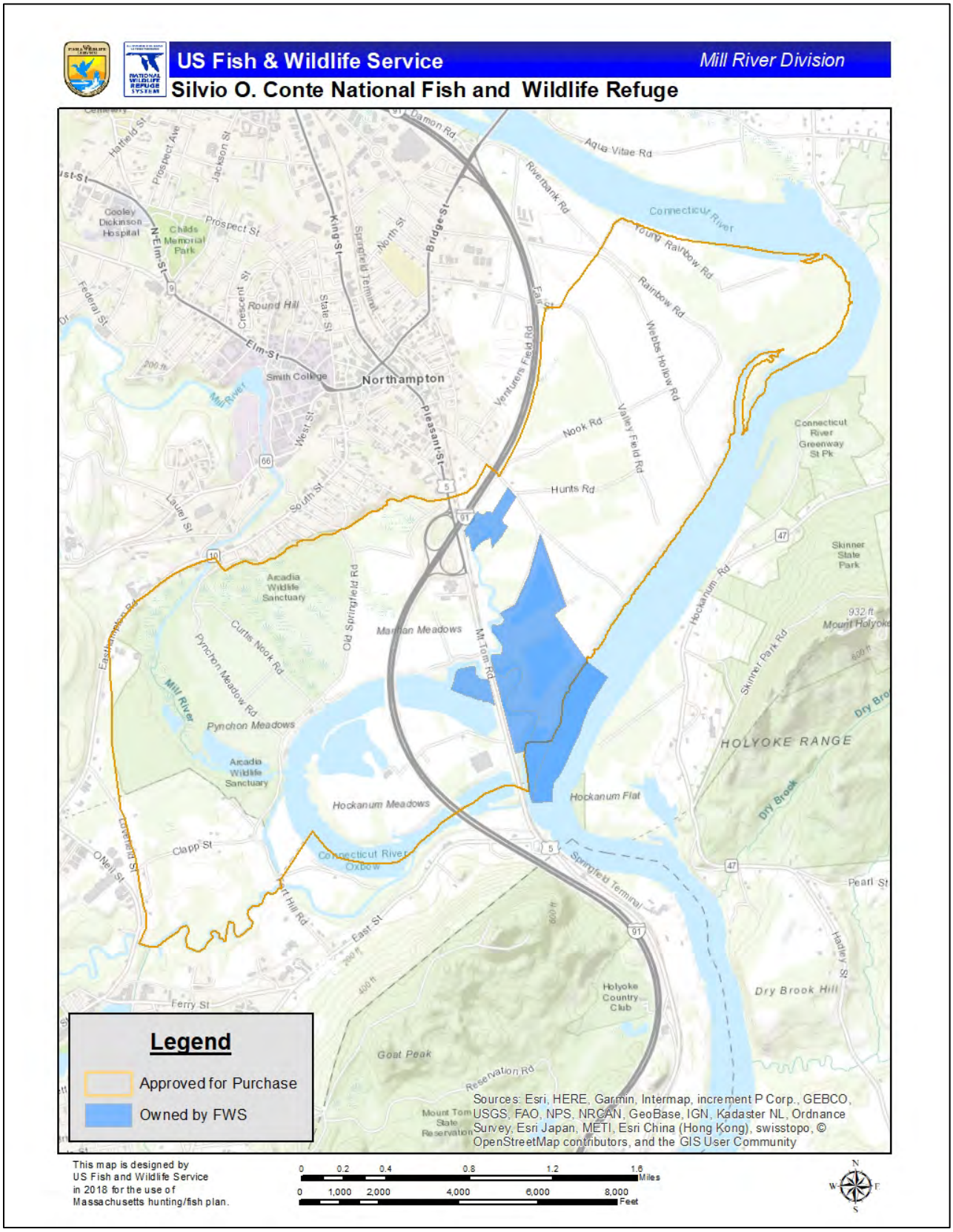


Figure 7. Map of the Mt. Toby Unit of Silvio O. Conte NFWR

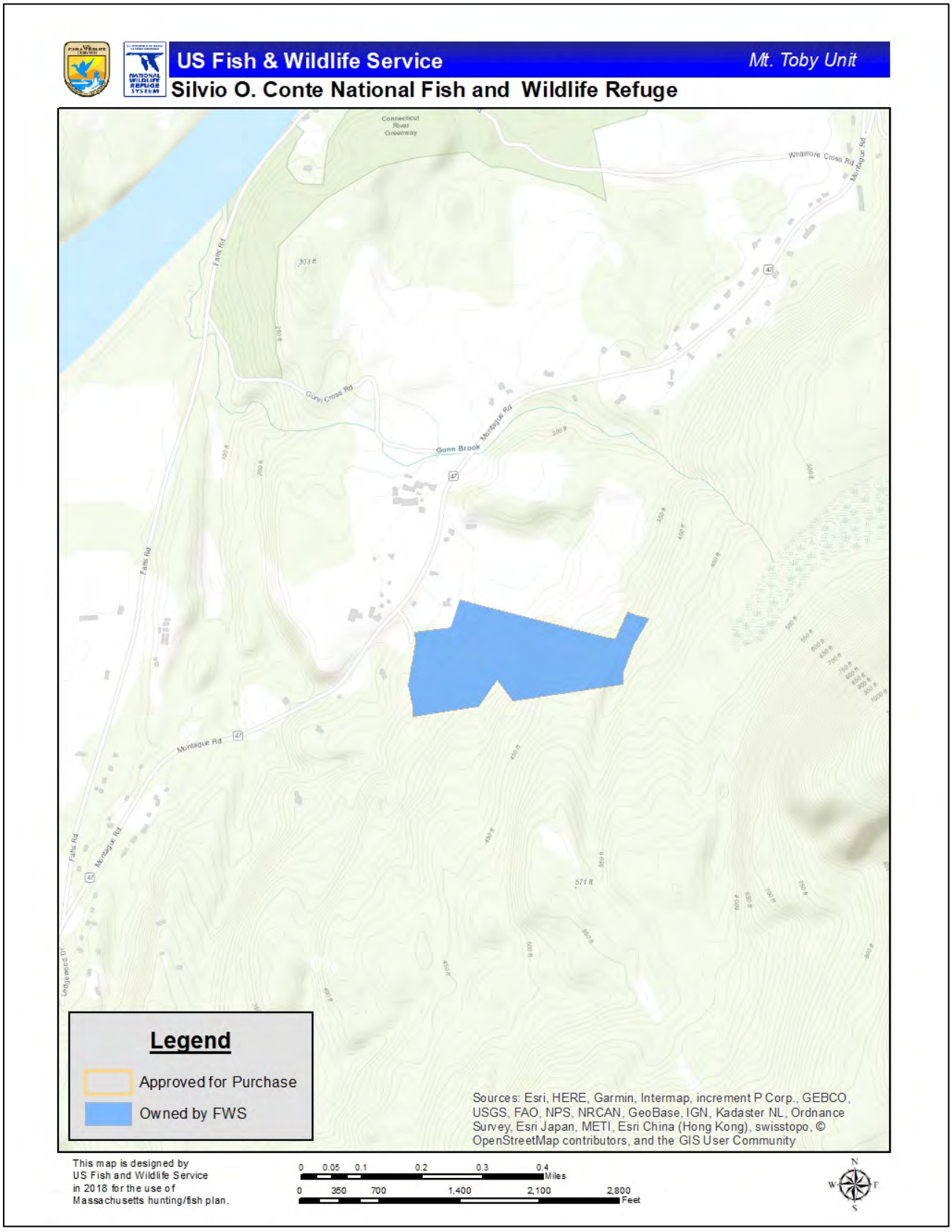


Figure 8. Map of the Mt. Tom Unit of Silvio O. Conte NFWR

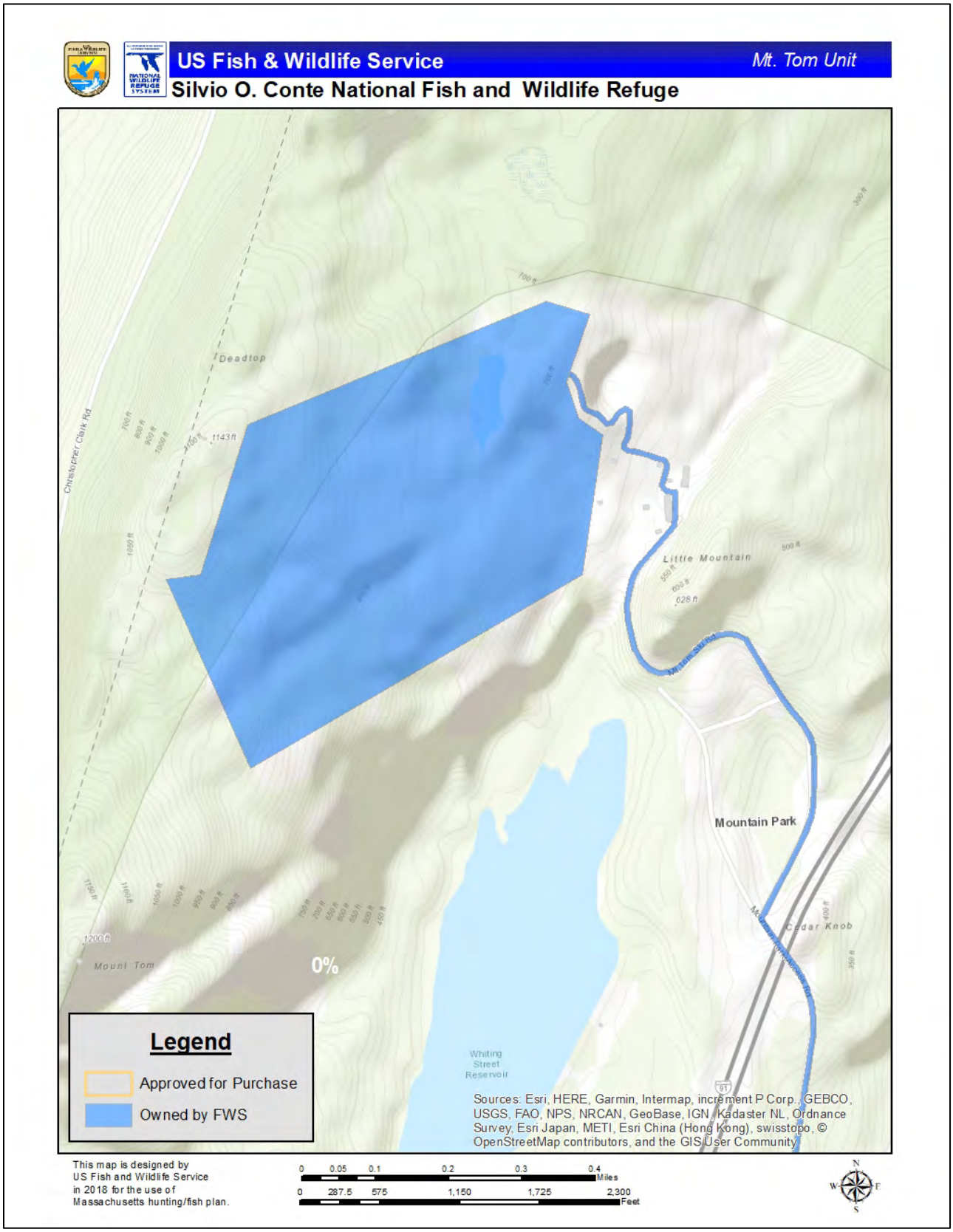


Figure 9. Map of the Third Island Unit of Silvio O. Conte NFWR

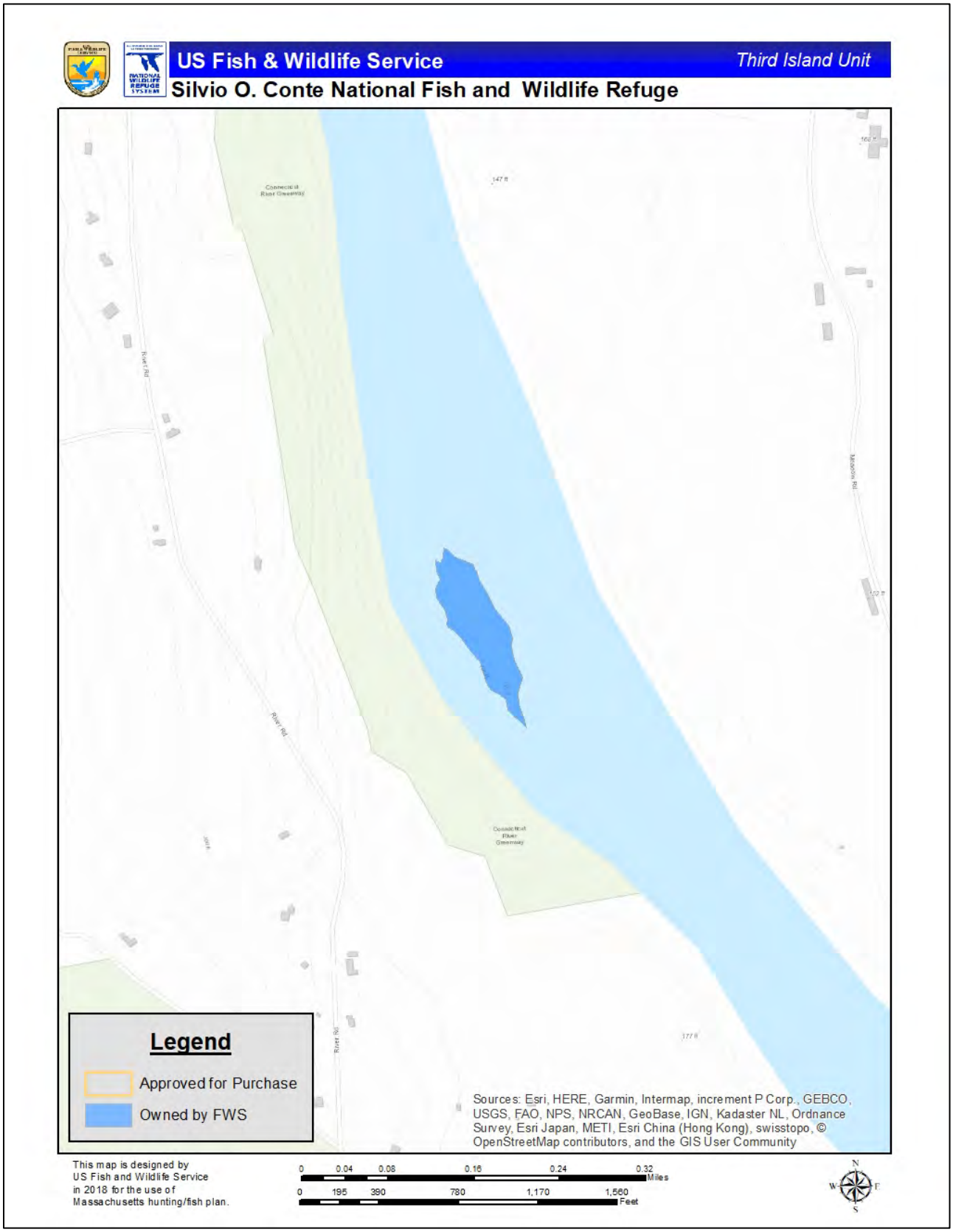


Figure 10. Map of the Westfield River Division of Silvio O. Conte NFWR

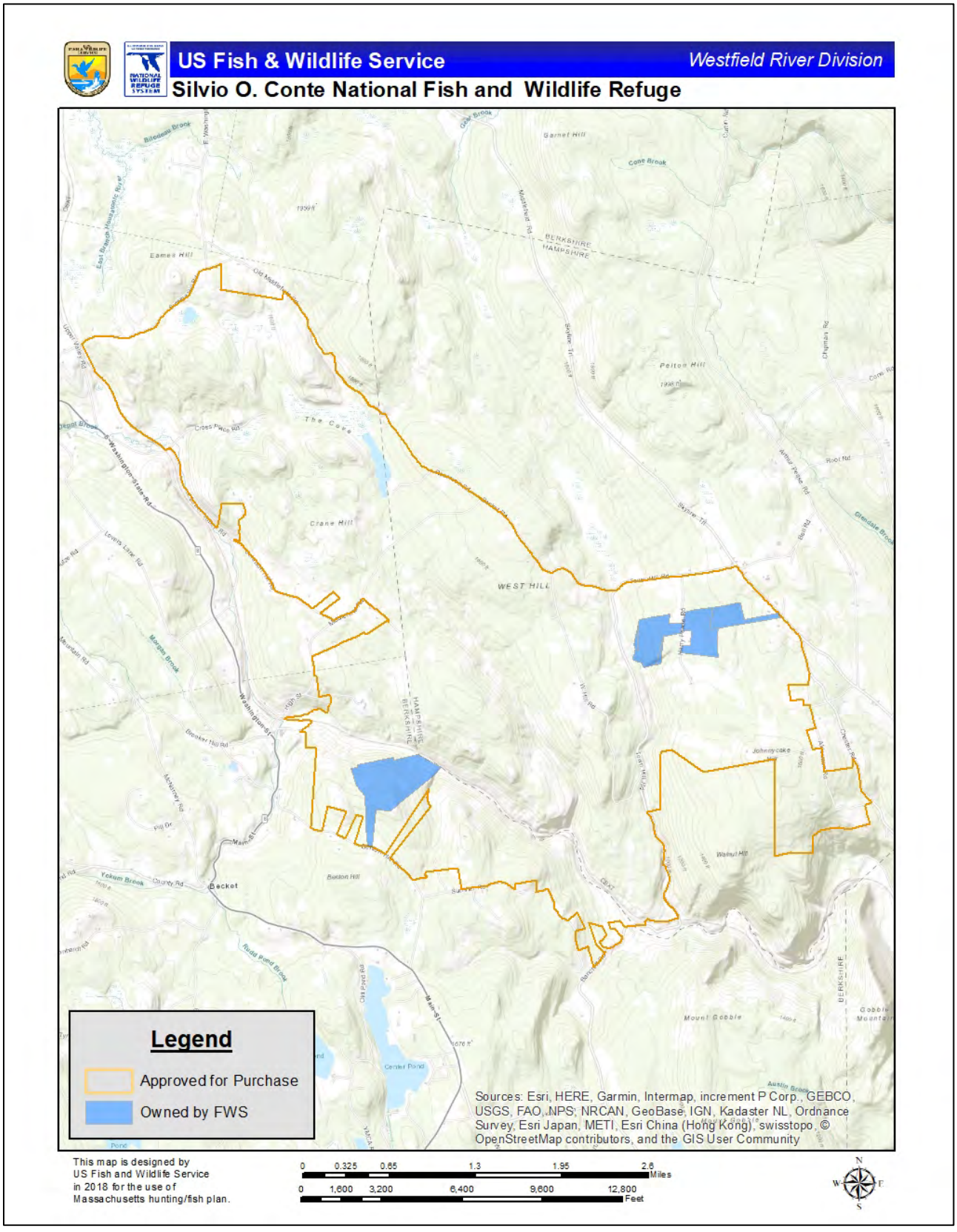


Figure 11. Map of Silvio O. Conte NFWR Divisions and Units within Connecticut

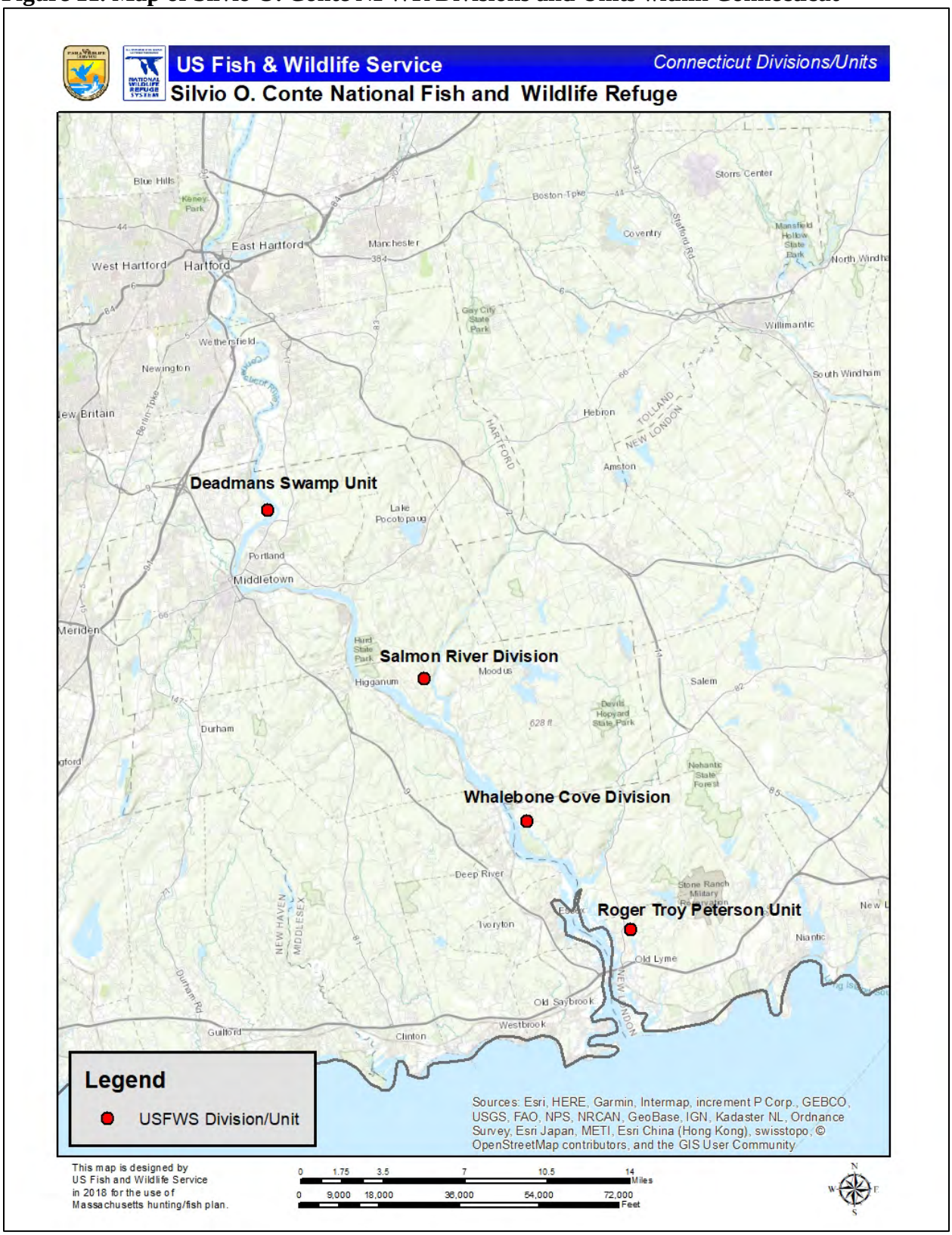


Figure 12. Map of the Deadmans Swamp Unit of Silvio O. Conte NFWR

Figure 13. Map of the Roger Tory Peterson Unit of Silvio O. Conte NFWR

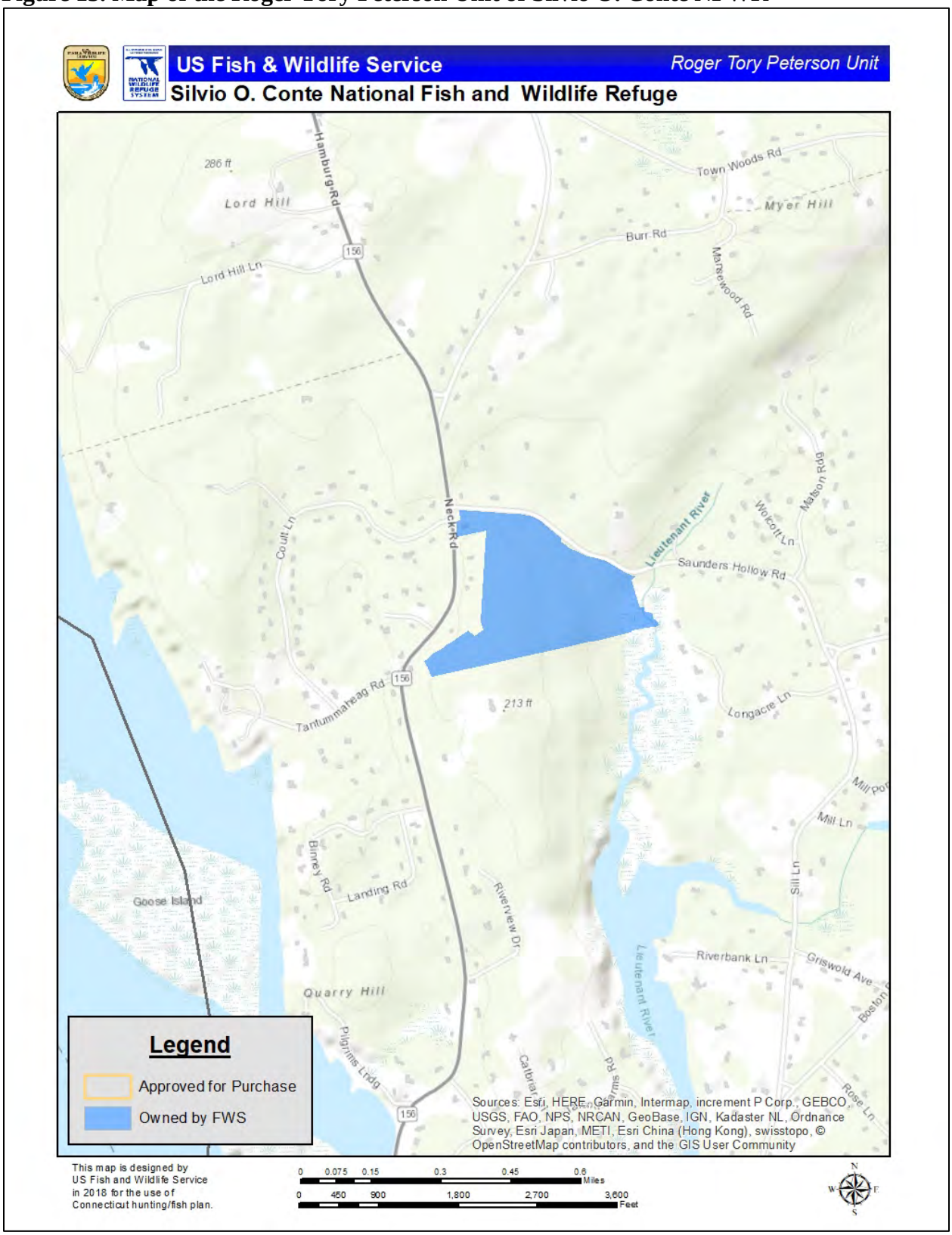


Figure 14. Map of the Salmon River Division of Silvio O. Conte NFWR

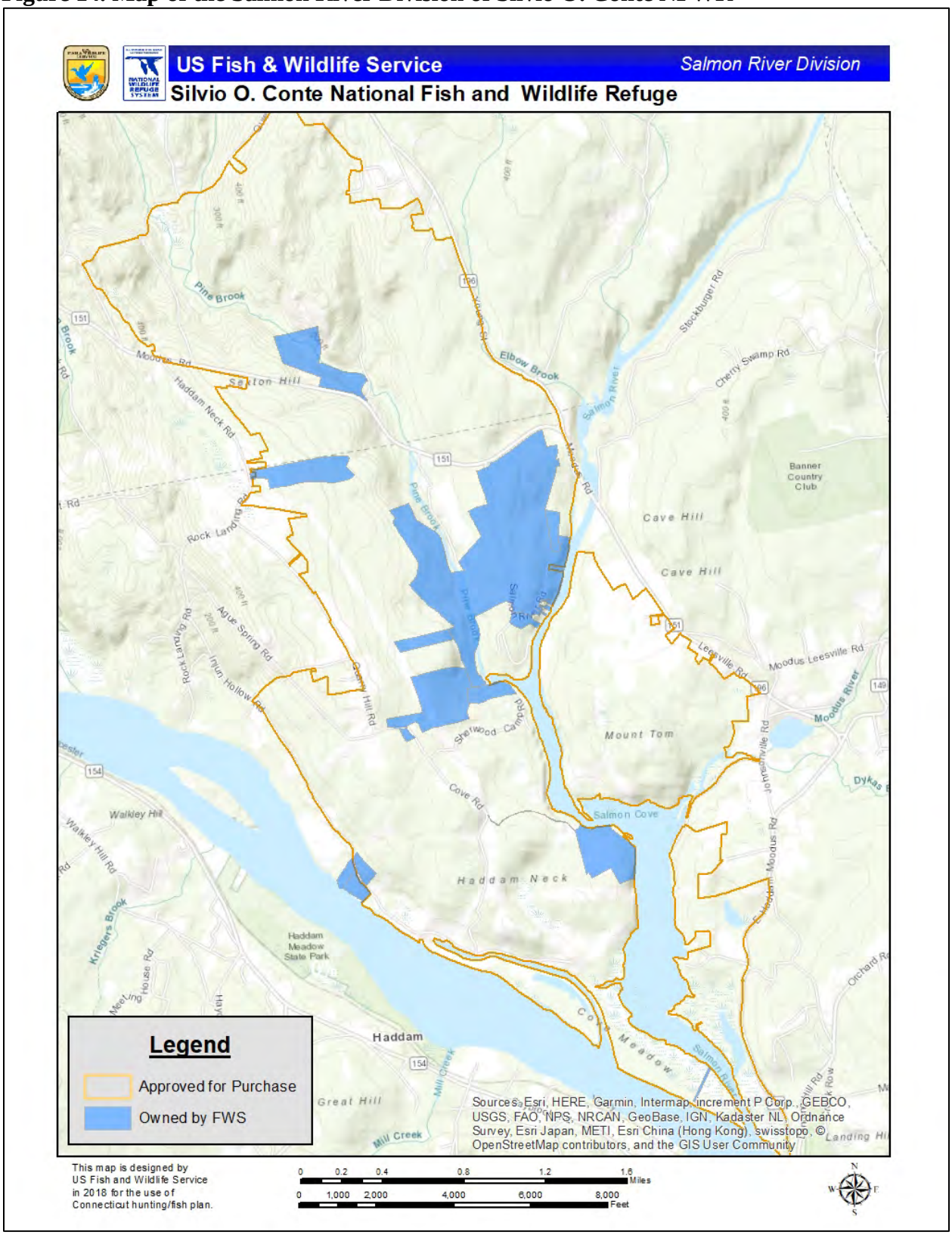
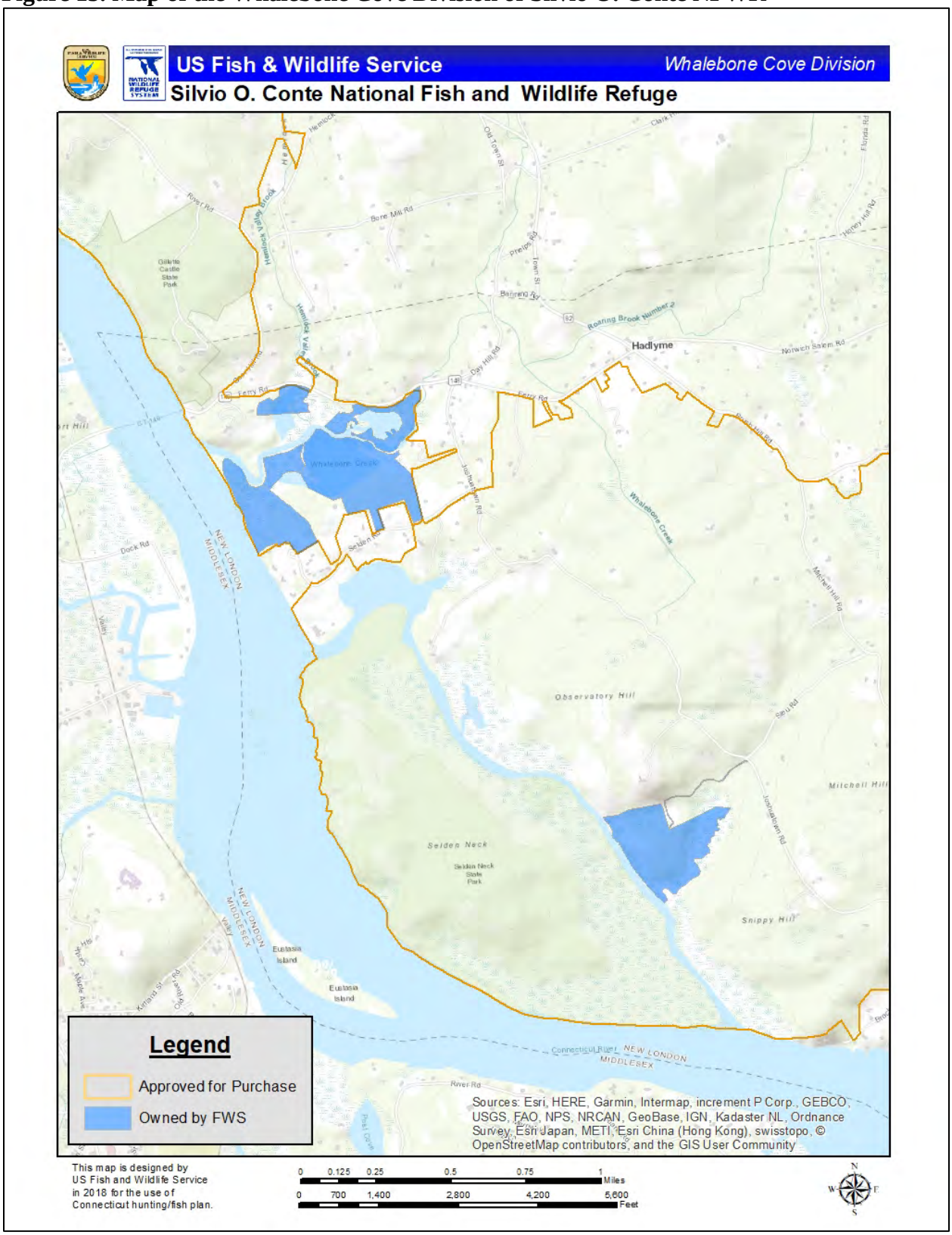


Figure 15. Map of the Whalebone Cove Division of Silvio O. Conte NFWR



COMPATIBILITY DETERMINATION

USE: Hunting (in Massachusetts and Connecticut)

REFUGE NAME: Silvio O. Conte National Fish and Wildlife Refuge (Silvio O. Conte NFWR, Conte Refuge, refuge)

DATE ESTABLISHED: October 3, 1997

ESTABLISHING and ACQUISITION AUTHORITY(IES):
Silvio O. Conte National Fish and Wildlife Refuge was established under the:

- Silvio O. Conte National Fish and Wildlife Refuge Act (Public Law 102-212);
- Migratory Bird Conservation Act of 1929, as amended (16 U.S.C. § 715d);
- Land and Water Conservation Fund Act of 1965 (Public Law 88-578).

REFUGE PURPOSE(S):
The 1991 Silvio O. Conte National Fish and Wildlife Refuge Act created the specific refuge purposes listed below:

- "To conserve, protect, and enhance the Connecticut River populations of Atlantic salmon, American shad, river herring, shortnose sturgeon, bald eagles, peregrine falcons, osprey, black ducks, and other native species of plants fish and wildlife;
- To conserve, protect, and enhance the natural diversity and abundance of plant, fish, and wildlife species, and the ecosystem upon which these species depend within the refuge;
- To protect species listed as endangered or threatened, or identified as candidates for listing, pursuant to the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.);
- To restore and maintain the chemical, physical, and biological integrity of wetland and other waters within the refuge;
- To fulfill the international treaty obligations of the United States relating to fish, wildlife, and wetlands;
- To provide opportunities for scientific research, environmental education, and fish and wildlife-oriented recreation and access to the extent compatible with the other purposes stated in this section" Public Law 102-212 (Silvio O. Conte National Fish and Wildlife Refuge Act).

"...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, management, advancement, conservation, and protection of fish and wildlife resources by purchase or exchange of land and water or interests therein...." 16 U.S.C. § 460l (Land and Water Conservation Fund Act of 1965, as amended).

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:
"The mission of the National Wildlife Refuge System (Refuge System) is to administer a national network of lands and waters for the conservation, management and, where appropriate,

restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" (Refuge System Improvement Act of 1997, Public Law 105-57).

DESCRIPTION OF USE:

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

The use is public hunting of big game, small game, and migratory game birds on Silvio O. Conte NFWR lands in Massachusetts and Connecticut. Hunting was identified as one of six priority public uses of the Refuge System by the Refuge System Administration Act of 1966, as amended by the Refuge System Improvement Act of 1997 (Public Law 105-57), when found to be compatible.

(b) Where would the use be conducted?

Hunting will occur on 9 of the 11 refuge units/divisions in Massachusetts, and 4 in Connecticut. In Massachusetts, these are comprised of Fort River Division in Hadley, Mill River Division in Northampton, Dead Branch Division in Chesterfield, Westfield River Division in Becket, Honeypot Road Wetlands Unit in Westfield, Mount Toby Unit, Sunderland, Hatfield Unit in Hatfield, Mt. Tom Unit in Holyoke, and Third Island Unit in Deerfield (Figures 1 through 10). The Third Island Unit would only be open for migratory bird hunting until December 31 of each year to protect nesting bald eagles.

In Connecticut, these include Deadman's Swamp Unit, Salmon River Division, Whalebone Cove Division, and Roger Tory Peterson Unit (Figures 11 through 15). Hunting may eventually occur on new lands added to existing divisions provided the uses are compatible.

(c) When would the use be conducted?

Refuge lands will be open to hunting consistent with the Commonwealth of Massachusetts and State of Connecticut hunting seasons. Refuge property will be open to hunting one half-hour before sunrise and end one half-hour after sunset. No night hunting will be allowed.

(d) How would the use be conducted?

All refuge lands will be open to hunting unless posted closed and hunting will conform to State seasons and be in accordance with State, Federal, and refuge-specific regulations for archery, firearms, and muzzleloader. Information sheets and maps for all hunting opportunities will be updated regularly and made available to hunters on the refuge website.

Access will be in the form of motor vehicles operating on roads open to the public and pedestrian access. Areas may be closed if there are unacceptable resource impacts such as soil erosion, repeated disturbance to susceptible wildlife, or unresolvable conflicts with other compatible priority public uses. The need for site closures will be considered by the refuge manager on a case-by-case basis.

The hunting program will be reviewed annually, or as needed to assess its effectiveness and to ensure that wildlife populations and habitat quality are managed appropriately.

(e) Why is the use being proposed?
Hunting is one of the priority public uses outlined in the Refuge Improvement Act. The U.S. Fish and Wildlife Service (Service) supports and encourages priority uses when they are appropriate and compatible on national wildlife refuge lands. Hunting is a healthy, traditional, recreational use of renewable natural resources that is deeply rooted in America's heritage. Hunting is also an important wildlife management tool.

The purpose of the proposed action will further align the refuge with the Department of the Interior's Secretarial Order 3356, which directs the Service to enhance and expand public access to lands and waters on national wildlife refuges for hunting, fishing, recreational shooting, and other forms of outdoor recreation. The proposed action will promote one of the priority public uses of the Refuge System. Hunting will also promote the stewardship of our natural resources and increase the public's appreciation and support for the refuge.

AVAILABILITY OF RESOURCES:

There are sufficient funds within the refuge's annual operating budget to administer this hunting program. All hunts will be administered in accordance with existing Federal and State regulations.

Maintenance Workers	$10,000
Refuge Managers	$10,000
Visitor Services Manager	$ 5,000
Supplies/Brochures*	$ 5,000
Kiosks Signs*	$ 10,000
Trail/parking lot maintenance	$ 5,000
Total to implement	**$45,000**
*Not an annual cost	

ANTICIPATED IMPACTS OF THE USE:

Hunting has occurred on some refuge lands for many years with no discernible adverse impacts to resources. Hunting provides wildlife-dependent recreational opportunities that can foster a better appreciation and more complete understanding of wildlife and habitat, which can translate into stronger support for wildlife conservation, the refuge, the Refuge System, and the Service.

Vegetation
The current number of hunters comprises a small fraction of the refuge's total visitation. Hunters traverse areas that are open to other refuge visitors and often travel on existing roads and game trails. Some foot travel is anticipated from hunting, but it will generally be dispersed over large areas. The physical effects on refuge vegetation from hunters is expected to be minimal.

Hunting could create a positive, indirect effect on vegetation through controlling 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, Cote et al. 2004, White 2012). Opening the refuge to deer hunting will help to maintain habitat in its current form, prevent habitat degradation due to over browsing, and promote successful natural regeneration and a more sustainable plant

community. Well-managed hunting program can effectively control deer and produce dramatic changes in the forest vegetation (Behrend et al. 1970). An overabundance of deer can suppress native vegetation, which may help to facilitate the success of invasive species in forested habitats (Knight et al. 2009). Lessening the impact of excessive deer herbivory is a key forest management strategy (White 2012, Nuttle et al. 2013) and will likely become even more important as the climate warms (Galatowitsch et al. 2009). Deer hunting on the refuge can create a positive effect on vegetation through better regeneration of forest canopy species and an increase in the diversity of the herbaceous understory.

Possible negative cumulative impacts of recreational hunting include the temporary trampling of vegetation and light soil erosion. Spring turkey season could cause some trampling effects to emerging plants, especially in wet areas; however, we do not expect these impacts to be substantial, because turkey hunter density is expected to be low and dispersed. Most hunting occurs during the fall, but hunters tend to disperse when in the woods; we do not anticipate substantial hunter-related impacts to habitats. Some hunt seasons extend into winter when plants are dormant, and the ground is either frozen and/or covered in snow. Hunters would have little impact on plants during this period. For these reasons, cumulative impacts to plant communities and soils are not likely to be significant during either the fall or spring hunting seasons.

Effects on Soils
It is anticipated that hunting on the refuge will have minor impacts to soils. Soils can be compacted and/or eroded due to repeated foot traffic, especially in wetland habitats. The potential for soil erosion will vary during the year based on soil moisture and temperatures. At the anticipated use levels, and because hunters tend to disperse when searching for game, impacts to soils (erosion and compaction) are not likely to be significant.

Hydrology (Water Resources and Wetlands)
Hydrology impacts from hunting would be minimal and only result from the use of roads and trails. Unsurfaced trails are susceptible to a variety of impacts including vegetation loss and compositional changes, soil compaction, erosion and muddiness, exposure of plant roots, trail widening, and the proliferation of visitor created side trails (Marion and Leung 2001). However, these effects are considered minimal as hunters are generally dispersed, which reduces repeated erosive actions on soils. Hunters will not be permitted to use vehicles off of designated refuge roads, although some dust, drift, or runoff may land in streams when hunters are travelling on designated roads adjacent to streams.

Wildlife
Hunting can have direct and indirect impacts on both target and non-target species. These impacts include: direct mortality of individuals, changes in wildlife behavior, changes in wildlife population structure, dynamics, and distribution patterns, and disturbance from noise and hunters walking on- and off-trail (Cole and Knight 1990, Cole 1990, Bell and Austin 1985). In many cases, hunting removes a portion of the wildlife population that would otherwise naturally succumb to predation, disease, or competition (Bartmann et al. 1992).

In general, refuge visitors engaged in hunting will be walking off-trail. 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 (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). Burger (1986) found the level of disturbance in birds tends to increase when the distance is decreased between visitors and 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. (1998) found bird abundance and nesting activities (including nest success) increased as distance from a recreational trail increased in both grassland and forested habitats.

Big Game

White-tailed Deer

The regulated hunting of deer in accordance with State regulations would not compromise the persistence of deer on the refuge or surrounding lands. Deer populations are maintained in accordance with the available habitat through regulated hunting. High deer densities have been shown to negatively affect plant and animal communities. Therefore, a hunting program would help to facilitate ecological diversity by mitigating the effects of high deer densities. Deer densities, if maintained through regulated hunting, will sustain the native vegetation and forest regeneration associated with the natural communities in those regions. Regulated deer hunting will also maintain a deer herd in good physical condition that staves off malnutrition and disease.

MassWildlife and Connecticut DEEP actively monitor their state's deer population and overall physical condition of the herd through the collection of harvest numbers and biological parameters. The biological data from harvested deer, along with habitat data and other information, are used by biologists to manage the deer herd throughout each state. Deer harvested on the refuge would likely be replaced by other deer within a relatively short time. Hunting other game species (e.g., turkey or small game) will have a transient effect on deer as deer flush and move away from hunters. Deer will use energy and experience physiological stress when avoiding hunters and other refuge visitors.

Black Bear

The black bear is cherished by Massachusetts hunters as a valuable game species for both its meat and pelt. Black bears are the Commonwealth's largest predator and have few natural enemies. MassWildlife uses regulated hunting as a means of controlling population growth while monitoring the population to ensure that the legal harvest is sustainable. There are an estimated 4,500+ black bears in Massachusetts. A total of 268 bears were harvested in Massachusetts in 2017 (Mass.gov). Hunting is a critical tool in maintaining this population objective. Although considered a valuable game species, black bears annually cause extensive agricultural and property damage and are capable of inflicting injuries to humans. Most bear-related human injuries have involved bears that were not afraid of humans. Hunting is used not only as a tool to manage population size and health, but also as a means of keeping bears wary of humans.

Wild Turkey
In the late 1970s, MassWildlife biologists reintroduced 37 wild turkeys to the State. Only 40 years after the reintroduction, an estimated 25,000 turkeys now range throughout the State and have successfully exploited Massachusetts mosaic of forestland and farmland. Wild turkeys have thrived in Massachusetts and public participation in turkey hunting has continued to increase. In 2017, over 3,000 wild turkeys were harvested and turkeys have become a valuable game species in the State.

In Connecticut, from the 1950s through the early 1970s, attempts at wild turkey restoration through artificial propagation were largely unsuccessful. The major breakthrough in restoration efforts occurred when free-roaming wild turkeys were live-captured and translocated using a rocket net. Between 1975 and 1992, 356 wild turkeys were released at 18 sites throughout the state. These releases and subsequent population expansion have resulted in the successful restoration of wild turkeys to all 169 Connecticut towns (Dept. Env. Protection). Around 1,500 wild turkeys are harvested each year in Connecticut and turkeys have become a valuable game species in the state.

Populations of turkeys that exceed the biological carrying capacity of their habitat can be decimated by diseases (including Avian Pox that can spread to other bird species) and are capable of degrading their habitat. Populations that are allowed to exceed the cultural carrying capacity can cause extensive agricultural damage. U.S. Department of Agriculture Wildlife Services reports that many farms within the Connecticut River valley already sustain damage to their stored silage and corn crops from wild turkeys. Regulated hunting plays an important role in limiting the damage to agriculture from turkeys.

Small Game

Based on State regulations, small game species to be hunted within each state may vary:

Small Game		
Coyote, fox, raccoon, opossum, gray squirrel, snowshoe hare, cottontail rabbit, pheasant, quail, woodchuck*, European hare*, Hungarian partridge*, and ruffed grouse	X	X
Bobcat	X	

** These species are specifically noted in seasonal CT regulations*

Many small game species present on the refuge are r-strategists species, demonstrating high productivity and mortality rates, with population densities often tied to the quality of available habitat. Most of the small game species' populations are positively influenced by increasing percentages of younger forest age classes that provide the mix of cover and foods for these animals. Refuge lands have large amounts of early successional forestland. This provides a significant high quality habitat foundation to support higher densities of these species. Even so, population fluctuations can be driven by weather, changes in predator populations, and annual fluctuations in food supplies. Hunting mortality is compensatory and generally not considered to be a factor affecting population size (Edwards et al. 2003). The number of hunters pursuing small game is predicted to be low and is not expected to have negative impacts on populations.

Furbearing Species
Because the furbearer hunting seasons are largely set at a time of year when pelts are prime and of highest value, the harvest of furbearers during the regulated hunting seasons provides citizens an opportunity to utilize these sustainable, renewable fur resources. Several of these furbearing species are commonly viewed as nuisance animals due to their feeding behavior, which can conflict with the interests of humans.

Migratory Birds
Migratory birds are managed on a flyway basis and hunting regulations are established in each state based on flyway data. Federal and State regulations would apply. Hunting migratory birds on the refuge would reduce the total numbers of birds in the flyway, but harvest would be within allowable limits as determined by the Service annually. Hunting waterfowl on the refuge would make the birds more skittish and prone to disturbance, reduce the amount of time they spend foraging and resting, alter their habitat usage patterns (Raveling 1979, Owen 1973, White-Robinson 1982, Madsen 1985, Bartelt 1987). Disturbance to non-target birds and resident wildlife would likely occur from hunting and associated hunter activity, but would be short-term and temporary. Overall, the effects on migratory birds are expected to be minimal do to the low number of hunters on refuge lands.

Federally-listed Species
The refuge requested a Section 7 informal consultation with the Service's New England Field Office under the Endangered Species Act (16 U.S.C. 1536).

Indiana bats, Northern long-eared bats, dwarfwedge mussel, puritan tiger beetle, and shortnose sturgeon have been documented in the Connecticut River valley. Hunting is likely to have no effect on these species given the time of year the activities take place and where. Refuge staff will continue to monitor for the presence of threatened or endangered species on the refuge. If they are found on the refuge, the effects of hunting on these species will be evaluated.

Other Visitors and Users
The refuge is open to all six of the Refuge System's priority public uses (hunting, fishing, wildlife observation, wildlife photography, environmental education and environmental interpretation) where found compatible. Conflicts between hunters and other refuge visitors can occur, particularly where there is concentrated use by both groups. The Fort River Division in Hadley, Massachusetts, is a location that attracts both hunters, and an increasing number of non-hunting refuge visitors.

The Fort River Nature trail is a 1.1 mile long Americans with Disabilities Act-compliant nature trail that is very popular with refuge visitors. A no-hunting safety zone has been established around the trail to separate the two users groups and to keep the public safe. The refuge staff will monitor other properties and if circumstances warrant, modify public access such that conflicts are avoided (e.g., restricted hunting zones, enhanced outreach). Because hunting is generally a long-standing use in the area and is dispersed across a large landscape, it is anticipated that there would be negligible impacts to those individuals participating in fishing, wildlife observation and photography, environmental education, and wildlife interpretation.

Cumulative Impacts
Cumulative impacts 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 refuge hunt program is designed to be sustainable through time, given relatively stable conditions, particularly because of coordination with MassWildlife and Connecticut DEEP.

The cumulative impacts of hunting on big game (white-tailed deer, black bear in Massachusetts, and wild turkey) small game (coyote, fox, raccoon, bobcat in Massachusetts, opossum, gray squirrel, snowshoe hare, European hare, cottontail rabbit, pheasant, quail, Hungarian partridge and ruffed grouse) and migratory game birds (ducks, geese, crows, rail, snipe, and woodcock) populations at the refuge are expected to be negligible. The proportion of the refuge's harvest of these species is negligible when compared to local, regional, and statewide populations and harvest. See the 2019 Recreational Hunting and Fishing Plan Environmental Assessment (Appendix C) for a thorough summary of impacts.

PUBLIC REVIEW AND COMMENT:
This Compatibility Determination (CD) is part of the Silvio O. Conte NFWR Recreational Hunting and Fishing Plan and the accompanying Environmental Assessment (EA). The documents were released to the public for a 30-day comment period on April 26, 2019. We informed the public through local venues, the refuge website, and social media. Public comments were accepted through May 26. No substantive comments were received during the comment period, and no changes were made to the plan.

DETERMINATION (CHECK ONE BELOW):

_____ Use is not compatible

___X__ Use is compatible, with the following stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:
To ensure compatibility with refuge purpose(s) and Refuge System mission, hunting can occur at Silvio O. Conte NFWR in accordance with State and Federal regulations, and refuge-specific restrictions to ensure that wildlife and habitat management goals are achieved, and that the program is providing a safe, high-quality hunting experience for participants. We will evaluate this program annually and if monitoring indicates that this use or any of its component are not compatible (materially interferes with or detracts from fulfillment of the Refuge System mission or the purposes of the refuge), we would curtail, modify or eliminate the use or component.

The following stipulations are necessary to ensure compatibility:

- The refuge will be open for hunting one-half hour before legal sunrise and close one-half hour after legal sunset to hunters.
- Electronic calls are not allowed.
- Temporary tree stands and blinds must be removed at the end of each day.
- No baiting is allowed on refuge lands.

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 consideration 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.

We do not expect this activity to conflict with any of the other priority public uses or adversely impact biological resources. The use will not cause an undue administrative burden. We will manage the use in accordance with Federal and State regulations, as well as refuge-specific regulations to ensure that wildlife and habitat management goals are achieved, and that the use is providing a safe, high quality experience for participants. Annual adjustments can be made to the use or any of its components to ensure its continued compatibility. Therefore, through this compatibility determination process, we have determined that hunting on Silvio O. Conte NFWR, 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 purposes of the refuge.

SIGNATURE:
Refuge Manager

Andrew C. Farmer 9-24-19
(Signature) (Date)

ACTING **CONCURRENCE:**
Regional Chief

Sharon Marine 9/25/19
(Signature) (Date)

MANDATORY 15 YEAR RE-EVALUATION DATE: 9/25/2034
(Date)

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COMPATIBILITY DETERMINATION

USE: Recreational Fishing (in Massachusetts and Connecticut)

REFUGE NAME: Silvio O. Conte National Fish and Wildlife Refuge (Silvio O. Conte NFWR, Conte Refuge, refuge)

DATE ESTABLISHED: October 3, 1997

ESTABLISHING and ACQUISITION AUTHORITY(IES):

- Silvio O. Conte National Fish and Wildlife Refuge Act (Public Law 102-212).
- Migratory Bird Conservation Act of 1929, as amended, (16 U.S.C. § 715d).
- Land and Water Conservation Fund Act of 1965 (Public Law 88-578)

REFUGE PURPOSE(S):
The 1991 Silvio O. Conte National Fish and Wildlife Refuge Act created the specific refuge purposes listed below:

- "To conserve, protect, and enhance the Connecticut River populations of Atlantic salmon, American shad, river herring, shortnose sturgeon, bald eagles, peregrine falcons, osprey, black ducks, and other native species of plants fish and wildlife;
- To conserve, protect, and enhance the natural diversity and abundance of plant, fish, and wildlife species, and the ecosystem upon which these species depend within the refuge;
- To protect species listed as endangered or threatened, or identified as candidates for listing, pursuant to the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.);
- To restore and maintain the chemical, physical, and biological integrity of wetland and other waters within the refuge;
- To fulfill the international treaty obligations of the United States relating to fish, wildlife, and wetlands; and
- To provide opportunities for scientific research, environmental education, and fish and wildlife-oriented recreation and access to the extent compatible with the other purposes stated in this section" Public Law 102-212 (Silvio O. Conte National Fish and Wildlife Refuge Act).

"...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, management, advancement, conservation, and protection of fish and wildlife resources by purchase or exchange of land and water or interests therein...." 16 U.S.C. § 460l (Land and Water Conservation Fund Act of 1965, as amended).

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:
"The mission of the National Wildlife Refuge System (Refuge System) is to administer a national network of lands and waters for the conservation, management and, where appropriate,

restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" (Refuge System Improvement Act of 1997, Public Law 105-57).

DESCRIPTION OF USE:

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

The use is recreational fishing on Conte Refuge in Connecticut and Massachusetts. Fishing was identified as one of six priority public uses of the Refuge System by the Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the Refuge System Improvement Act of 1997 (Public Law 105-57), when found to be compatible.

(b) Where would the use be conducted?

The use would be conducted on, and from the banks of, all water bodies within the boundaries of the Conte Refuge in Massachusetts and Connecticut that are open to fishing including lakes, ponds, streams, and rivers. At present, this includes reaches on the following rivers: Fort River (Fort River Division), Connecticut River (Third Island Unit, Mill River Division, Mount Tom Unit, Fannie Stebbins Unit, Deadman's Swamp Unit, Salmon River Division, Whalebone Cove Division), West Branch of the Westfield River (Westfield River Division), Dead Branch (Dead Branch Division), and Salmon River (Salmon River Division). There also are two ponds (Magnolia and Triangle) on the Mill River Division and a pond (Great Pond) on the Hatfield Unit.

(c) When would the use be conducted?

The use would be conducted during the seasons specified in the fishing regulations established by MassWildlife or Connecticut DEEP, and would occur between one-half hour before sunrise to one-half hour after sunset. Access to Third Island is prohibited between January 1 and June 30 each year to protect nesting bald eagles.

(d) How would the use be conducted?

Recreational fishing will be conducted under the Commonwealth of Massachusetts fishing regulations for open water and ice-fishing, and State of Connecticut fishing regulations for inland fisheries with some additional restrictions to protect fish, wildlife, and habitat, and to reduce potential public use conflicts. This compatibility determination applies to shoreline fishing and fishing access from refuge lands.

The only current access for canoes and kayaks is on the Mill River Division (in Massachusetts) and the Salmon River Division (in Connecticut) where people can launch into the Connecticut River. However, these areas are not popular because there are other sites with better access and several developed boat launches. Motorboat launching is not allowed on the refuge. At the current time, these are the only locations on the refuge suitable to launch non-motorized boats.

Shoreline fishing would occur on the banks of previous listed streams and rivers, and along the banks of the Hatfield Unit and Mill River Division ponds. At the discretion of the refuge manager, some areas may be seasonally, temporarily, or permanently closed to fishing, if wildlife or habitat impacts, or user conflicts are documented.

Unauthorized introductions of both non-native and native fish can significantly disrupt aquatic ecosystems and destroy natural fisheries. No fish of any species may be introduced onto the refuge without appropriate State and refuge permits. This includes unused bait fish and viable eggs.

(e) Why is the use being proposed?
Fishing is one of the priority public uses outlined in the Refuge Improvement Act. The Service supports and encourages priority uses when they are compatible on national wildlife refuge lands. Providing recreational fishing will promote stewardship of our natural resources and increase public appreciation and support for the refuge. Further, fishing is a traditional recreational use of renewable natural resources deeply rooted in America's heritage.

The purpose of the proposed action will further align the refuge with the Department of the Interior's Secretarial Order 3356, which directs the Service to enhance and expand public access to lands and waters on national wildlife refuges for hunting, fishing, recreational shooting, and other forms of outdoor recreation.

AVAILABILITY OF RESOURCES:

There are sufficient funds within the refuge's annual operating budget to administer recreational fishing. All fishing will be administered in accordance with existing Federal and State regulations excepted as noted below.

Brochures/Sign Maintenance……...….	$ 1,000
Monitoring Resource Impacts……......	$ 1,000
Signage (Parking, etc).....	$ 1,000
Law Enforcement …….	$ 5,000
Total Annual Cost…….	$ 8,000

ANTICIPATED IMPACTS OF THE USE:

The Connecticut River, its tributaries, and area ponds support a diverse array of both cold-water and warm-water fish species, many of which can be found on the various tracts of the Conte Refuge. For more details, see the Comprehensive Conservation Plan (CCP) at *https://www.fws.gov/refuge/Silvio_O_Conte/what_we_do/finalccp.html*.

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). 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).

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 populations 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.

Catch-and-release fishing can also have impacts on individual fish, including immediate or delayed mortality (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, or more susceptible to bacterial or fungal infections. Individuals that are caught and then handled may also experience stress, which can lead to changes in physiology and behavior that can in turn affect their growth, reproduction, and immune system.

Since fishing generally removes individuals from a population, at high levels it can lead to reduced population sizes and loss of genetic diversity (Lewin et al. 2006). 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. These impacts increase with higher levels of mortality.

While fishing does remove individuals from the population, we do not anticipate that current or projected fishing pressure would affect the refuge's fish populations as a whole. The State sets catch limits, designates special regulations for certain rivers, streams and lakes, and fishing seasons to protect the State's fish populations. Refuge lands are currently not popular fishing destinations; however, some use does occur. These areas were open to fishing prior to Service acquisition, and since acquisition, fishing has continued under pre-acquisition compatibility determinations. Based on experience, these areas are lightly used by anglers and we do not expect adverse effects on fish populations. Illegal take can also affect fish populations.

Impacts on Other Wildlife

Since fishing occurs along the shores of, or in, streams, rivers, and lakes, it has the greatest potential to affect wildlife associated with riparian, wetland, and aquatic habitats. In particular, fishing has the potential to disturb nesting birds. Fishing seasons in Massachusetts and Connecticut overlap with spring-early summer nesting and brood-rearing periods for many species of riparian- and aquatic-dependent birds. Anglers can also affect the number, behavior, and temporal distribution of some species of birds, including bald eagles, common ravens, and American crows (Knight et al. 1991).

Third Island Unit would be open to shoreline fishing from July 1 through December 31, which is outside the bald eagle nesting season. Human activity, including both 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 overwintering, resting, foraging, 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 Knight1998), and an increase in energy expenditure (Morton et al. 1989, Belanger and Bedard 1990). Shore anglers and those in canoes or kayaks 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. This does not appear to be a problem at this time, but if that changes we would work closely with MassWildlife and Connecticut DEEP to take steps to protect vulnerable birds.

Visitors to the refuge engaged in fishing would generally walk along refuge trails or along the shores of streams and ponds. Some might launch kayaks or canoes onto the Connecticut River at the Mill River Division or Salmon River Division, although to-date these have not been popular areas to launch. A study by Miller et. al. (1998) indicated that species composition and nest predation were altered adjacent to trails in both forested and grassland habitats. It appears that 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 may improve access for 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.

Discarded fishing tackle may harm waterfowl, eagles, and other birds externally by catching and tearing skin. Fishing line may also become wrapped around body parts and hinder movement (legs, wings), impair feeding (bill), 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. Ingested tackle may cause damage or penetration of the mouth or other parts of the digestive tract, resulting in impaired function or death.

Ingestion of lead fishing gear is the single largest cause of mortality for adult loons in New England (Massachusetts Department of Fish and Game 2013a). Veterinarians at Tufts University - School of Veterinary Medicine examined over 483 dead adult loons from fresh waters and

determined that approximately 44 percent of these birds died as the result of lead poisoning from the ingestion of lead fishing gear. Their ongoing research has documented that ingestion of lead sinkers (including split shot) accounted for approximately 79 percent of the dead adult loons from fresh water. Just a single lead sinker can poison a loon. The states prohibits any lead fishing sinkers and lead jigs weighing less than 1 ounce in all inland freshwater. The refuge and the State would provide education and outreach on the hazards of lead sinkers and discarded fishing tackle.

Water Quality Impacts
Pollutants from motorboats, human waste, and litter have the potential to have negative impacts on water quality. Surface water quality testing has not been carried out on Refuge Units/Divisions in either state. We would initiate public outreach and education on littering, pollutants, and proper waste disposal if the use increases substantially above current use levels to help mitigate water quality impacts.

Bank and trail erosion from human activity (e.g., canoe/kayak landings, foot traffic) may increase aquatic sediment loads of streams and rivers, and alter riparian or streamside habitat/vegetation in ways harmful to fish or other wildlife. Currently, there is no evidence that anglers or other visitors are adversely affecting shorelines or banks. At current levels of use, we do not expect trail erosion to increase because of foot traffic related to fishing. Boaters on the Connecticut River may beach watercrafts on Third Island outside the bald eagle nesting season and on the Mill River Division. In Connecticut, boaters may beach watercrafts on Salmon River Division, Deadman's Swamp Unit, and Whalebone Cove Division. However, boat landings on the division appear to be limited due to the lack of suitable beaches. The only refuge waters suitable to boating are the two ponds on the Mill River Division. Magnolia and Triangle Pond is linked to the Connecticut River via a channel and boaters do fish the ponds, although use appears to be light. Boating impacts to the banks appear to be minimal because the banks are vegetated and stable.

Hydrology
Paths used by anglers can affect the hydrology of an area by altering drainage patterns. Some anglers may walk off-trail to access a fishing area, thereby creating new trails and affecting drainage. However, we expect those impacts to be minimal considering anglers are not repeatedly using the same paths, and levels of use are unlikely to create adverse effects. Refuge staff has observed only negligible problems associated with erosion, incision, compaction or stream alteration, and we do not expect any increase in these negligible impacts.

Other Impacts
Accidental or deliberate introductions of non-native fish may negatively impact native fish, wildlife, or vegetation. The refuge would continue to work cooperatively with the states in providing educational outreach and signs on preventing introductions of non-native fish and to contain introductions if they occur.

Accidental introduction of invasive plants, pathogens, or exotic invertebrates, attached to fishing boats may also affect native vegetation, wildlife, and habitats. The refuge has controlled water chestnut on the Mill River Division ponds for ten years and fewer years at the Hatfield Unit. However, no comprehensive invasive aquatic plant inventories have been completed on any of

the existing units or divisions. There are several invasive plants that are likely established on the refuge including: purple loosestrife, phragmites, milfoil, hydrilla, etc. We can help mitigate the potential for introductions by posting educational materials on kiosks at entrances.

The 2011 national survey of fishing, hunting, and wildlife-associated recreation reveals that 532,000 people 16 years old and older fished in Massachusetts (USFWS and USCB 2013). Properties administered by the Conte Refuge were a destination for some of this wildlife-dependent recreation. Visitors fishing on the refuge help to benefit the local economy by purchasing gas, food, fishing equipment, and lodging.

Due to the relatively low rate of angler activity observed on existing divisions and units, we are not aware of current conflicts between anglers and other user groups. Should any significant conflicts become evident, we may need to manage uses more deliberately. That may include providing additional education and outreach or limiting the type of access.

Cumulative 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 refuge fishing program is designed to be sustainable through time, given relatively stable conditions, particularly because of close coordination with MassWildlife and Connecticut DEEP. The cumulative impacts of fishing on fish populations at the refuge are negligible.

PUBLIC REVIEW AND COMMENT:
This Compatibility Determination (CD) is part of the Silvio O. Conte NFWR Recreational Hunting and Fishing Plan and the accompanying Environmental Assessment (EA). The documents were released to the public for a 30-day comment period on April 26, 2019. We informed the public through local venues, the refuge website, and social media. Public comments were accepted through May 26. No substantive comments were received during the comment period, and no changes were made to the plan.

DETERMINATION (CHECK ONE BELOW):

_____ Use is not compatible

___X___ Use is compatible, with the following stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:
To ensure compatibility with refuge purpose(s) and Refuge System mission, fishing can occur at Silvio O. Conte NFWR in accordance with State and Federal regulations, and special refuge-specific restrictions to ensure that wildlife and habitat management goals are achieved, and that the program is providing a safe, high-quality 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:

- Fishing may occur from one-half hour before sunrise to one-half hour after sunset.
- Boats are only permitted to be launched in designated areas.

JUSTIFICATION:

The National Wildlife 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 will promote public appreciation and support for the refuge. Recreational fishing will not materially interfere with or detract from the mission of the Refuge System or the purposes for which the refuge was established. We find that recreational fishing conducted according to the Commonwealth of Massachusetts and State of Connecticut seasons and limits will be compatible with the principles of sound wildlife management and otherwise in the public interest.

SIGNATURE:
Refuge Manager Andrew C. French 9-24-19
(Signature) (Date)

ACTING **CONCURRENCE:**
Regional Chief Sharon Marina 9/25/19
(Signature) (Date)

MANDATORY 15 YEAR RE-EVALUATION DATE: 9/25/2034
(Date)

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Environmental Assessment for Recreational Fishing and Hunting on Silvio O. Conte National Fish and Wildlife Refuge

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

Proposed Action

The Service is proposing to open fishing and hunting opportunities for big game, small game and migratory birds in Massachusetts and Connecticut on the Silvio O. Conte National Fish and Wildlife Refuge (Silvio O. Conte NFWR, Conte Refuge, refuge) in accordance with the refuge's Recreational Hunting and Fishing Plan. The Conte Refuge is proposing all refuge-owned land in the two states be opened for hunting and fishing when found to be compatible, and consistent with Federal, State, and refuge hunting and fishing regulations.

This proposed action is often iterative and evolves over time during the process as the agency refines its proposal and learns more from the public, Tribes, and other agencies. Therefore, the final proposed action may be different from the original. The final decision on the proposed action will be made at the conclusion of the public comment period for the EA.

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 Refuge System Administration Act 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 Service Manual.

The refuge was established pursuant to The Silvio O. Conte National Fish and Wildlife Act (Public Law 102-212 H.R.794). The purpose of the refuge is to:

- To conserve, protect, and enhance the Connecticut River populations of Atlantic salmon, American shad, river herring, shortnose sturgeon, bald eagles, peregrine falcons, osprey, black ducks, and other native species of plants fish and wildlife.
- To conserve, protect, and enhance the natural diversity and abundance of plant, fish, and wildlife species, and the ecosystem upon which these species depend within the refuge.
- To protect species listed as endangered or threatened, or identified as candidates for listing, pursuant to the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.).
- To restore and maintain the chemical, physical, and biological integrity of wetland and other waters within the refuge.
- To fulfill the international treaty obligations of the United States relating to fish, wildlife,

and wetlands.
- To provide opportunities for scientific research, environmental education, and fish and wildlife-oriented recreation and access to the extent compatible with the other purposes stated in this section.

The mission of the Refuge System is to:
"... 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 act mandates the Secretary of the Interior in administering the System to (16 U.S.C. 668dd(a)(4):
- Provide for the conservation of fish, wildlife, and plants, and their habitats within the NWRS;
- 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 as 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.

The Conte Refuge has managed hunting and fishing on some refuge lands for over a decade through pre-acquisition Compatibility Determinations (CDs) that were completed when lands were acquired. The Massachusetts portion of the refuge receives approximately 60,000 visitors each year, with estimates of 2,500 hunting and 350 fishing visits each year. The Connecticut portion receives approximately 1,000 visitors each year, with estimates of about 200 hunting and 35 fishing visits. The refuge does not require any refuge specific permits or fees. Administration costs for hunting/fishing programs are low due to the small acreages and rural nature of most units. Primary costs to administer the program include maintenance costs to provide access to refuge lands and staffing costs for law enforcement, posting safety zones, and to provide information on the refuge's website and kiosks. The total cost to administer the hunting program is estimated to be $45,000 a year, with a $15,000 first year cost. The cost for a fishing program is estimated to be $8,000 a year. These costs are covered with station-appropriated funds.

Regulated sport hunting has been an important management tool and recreational activity at Silvio O. Conte NFWR for over a decade. Hunting and fishing pressure can be described as light with a limited number of hunters participating in all the seasons. Based on the mixture of habitat types and staff observations, the most popular hunting is for white-tailed deer, cottontail rabbit, American woodcock, and waterfowl. The refuge adopted State hunting regulations with some additional refuge-specific regulations to minimize conflicts with other refuge objectives and visitor activities. The hunting program will be reviewed annually.

Purpose and Need for the Proposed Action

Hunting and fishing are healthy, traditional recreational uses of renewable natural resources deeply rooted in America's heritage, and they can be important wildlife management tools. The Refuge System Administration Act of 1966, the Refuge System Improvement Act of 1997, other laws, and the Service's policies permit fishing and hunting on a national wildlife refuge when it is compatible with the purposes for which the refuge was established and acquired.

The Comprehensive Conservation Plan (CCP) addressed hunting and fishing with broad objectives.

> *Objective 3.1 - Hunting: Support quality public hunting opportunities in the Connecticut River watershed in cooperation with willing landowners to promote a unique understanding and appreciation of natural resources and their management, including the role of the Service and other public lands in resource conservation, while also protecting a traditional outdoor pastime deeply rooted in America's natural and cultural heritage and conservation history.*
>
> *Objective 3.2 - Fishing: Support quality public fishing opportunities in the Connecticut River watershed in cooperation with willing landowners to promote an understanding and appreciation of natural resources and their management, including the role of the Service and other public lands in resource conservation, while also protecting a traditional outdoor pastime deeply rooted in America's natural heritage and conservation history.*

The Recreational Hunting and Fishing Plan further defined and enhanced these objectives. Objectives of a big game, small game, and migratory game bird hunting program, and a fishing program, on Silvio O. Conte NFWR are to:

1. Provide the public with a high-quality recreational experience on refuge lands and increase opportunities and access for hunters and fishermen;
2. Design a hunting/fishing program that is administratively efficient and manageable with existing staffing levels and that better aligns with State regulations;
3. Implement a hunting/fishing program that is safe for all refuge users;
4. Provide hunting and fishing opportunities for youth and those that need assistance; and
5. Design a hunting/fishing program that is in alignment with refuge habitat management objectives.

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

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

Alternatives Considered

The No Action Alternative would continue the refuge's current hunting and fishing program, which allows specific refuge lands to be hunted and/or fished under the guidance of pre-acquisition CDs. Hunting and fishing regulations for these refuge lands are consistent with Massachusetts and Connecticut hunting regulations, however, additional refuge-specific regulations also apply.

Refuge staff have worked closely with stakeholders to develop the current proposed hunt/fish plan. There are no unresolved conflicts about the proposed action with respect to the alternative uses of available resources. Additionally, the proposed action builds on an existing hunting and fishing program, and includes areas developed during the completion of the Refuge's CCP, which involved an extensive public review process; therefore, the Service does not need to consider additional alternatives (43 CFR 46.310).

Proposed Action Alternative- Expand Hunting and Fishing Opportunities

The refuge has prepared a recreational hunting and fishing plan, presented in this document as the Proposed Action Alternative. Under the Proposed Action Alternative, the Service is proposing to expand its hunting and fishing opportunities to all Units/Divisions in Massachusetts and Connecticut where these uses are found to be compatible. All Units/Divisions opened to hunting and fishing under this proposed action will follow Federal and State regulations and subject to additional refuge-specific regulations.

Big Game

Big game will be taken according to state regulations throughout the Massachusetts and Connecticut sections of the refuge with the exception of refuge-specific regulations listed below. Access to refuge lands is from public roads and adjoining public lands and water, where they occur.

Migratory Birds

Migratory bird species taken during the migratory game bird hunting season and known to usually occur in and around the refuge include American woodcock (*Scolopax minor*), Canada goose (*Branta canadensis*), and duck species such as mallard (*Anas platyrhynchos*), wood duck

(Aix sponsa), and black duck *(Anas rubripes).* Access to refuge lands is from public roads and adjoining public lands and water, where they occur. We allow the use of dogs when hunting waterfowl and upland game species. Refuge staff will work with partners to identify areas that will provide access for hunting and fishing. All refuge lands open to migratory bird hunting will be in accordance with Federal, State, and refuge regulations.

Small Game (Upland Game birds, Squirrel and Rabbit, Furbearers)
Small game will be taken according to Commonwealth of Massachusetts and State of Connecticut regulations throughout the refuge, with the exception of refuge specific regulations listed. Access is from public roads and adjoining public lands and water, where they occur.

Fishing
Fishing will occur year round according to applicable state fishing regulations. Access to refuge waters is from public roads and adjoining public lands and water, where they occur.

Special Refuge Specific Regulations
- Refuge lands are closed to night hunting and fishing. Hunters are allowed on refuge land 30 minutes before sunrise and 30 minutes after sunset.
- Treestands, blinds, or other hunting equipment must be removed from the refuge daily.
- No recorded or electronic calls can be used.
- No baiting is allowed on refuge lands.
- We allow the use of dogs when hunting waterfowl and upland game species.
- We prohibit launching of motorboats from the refuge.
- We prohibit the use of reptiles and amphibians as bait.

Mitigation Measures to Avoid Conflicts
- Safety zones will be posted in areas of high visitation such as boardwalks and around buildings to reduce the interaction between hunters and other user groups.
- Current hunting and fishing information will be available at the refuge's headquarters and posted on the refuge's website and at on-site kiosks.
- Hunting and fishing will take place during daylight hours only to avoid nighttime disturbance to wildlife.

This proposed alternative offers increased opportunities for public hunting and fishing and fulfills the Service's mandate under the Refuge System Improvement Act of 1997. The Service has determined that the hunt and fish plan is compatible with the purposes of the Conte Refuge and the mission of the Refuge System.

Affected Environment
The Massachusetts portion of the Conte Refuge consists of 11 Units and Divisions, which are located in the Connecticut River watershed in western Massachusetts (see Figure 1 within Hunting and Fishing Plan). The Connecticut portion of the Conte Refuge consists of 4 Units and Divisions, which are located in the Connecticut River watershed in Connecticut (see Figure 11 within Hunting and Fishing Plan). The refuge is made up of a wide range of habitat types depending on the Unit/Division.

Habitat Type	Description
Hardwood Forest	Hardwood forest communities represent a large matrix community throughout the watershed. They include deciduous-dominated forests, such as northeast interior dry-mesic oak, Central Appalachian dry oak-pine, North Atlantic coastal plain dry hardwood forest, and Laurentian-Acadian northern hardwood forests, as well as mixed wood communities, such as Laurentian-Acadian pine-hemlock-hardwood, Appalachian hemlock-northern hardwood, and northeast coastal interior pine-oak forests. Deciduous-dominated communities are often associated with moist, loamy, fertile soils and are most common below 2,500 feet elevation on gentle to steep slopes. Tree species common to this habitat are sugar and red maple, American beech, yellow and white birch, quaking aspen, and to a lesser extent basswood, white ash, and black cherry. Mixed-wood forests are often along transitional zones between deciduous and coniferous dominated habitats, and thus are characterized by plant species and soil properties that stem from both. Most often these are found on either gently sloping benches or plateaus or at higher elevations (2,000 to 2,500 feet), where soils are typically shallow above a restricting pan layer. These forests are important for several priority species including wood thrush, American woodcock, and black-throated blue warbler.
Hardwood Swamp	Forested swamps occur in large and small patches within and around the larger upland formations. They occur on terrain with little to no slope, in topographic depressions and sumps, and often in watershed headwater basins. Drainage is typically poor to very poor with seasonal fluctuations varying greatly in areas that stem from stream or lake flooding, and less so where groundwater or surface runoff is the primary source. Soils vary from shallow to deep and can be predominately mineral, organic, or muck with occasionally a peat component (Gawler 2008). Hardwood forested swamps vary in their hydrological regimes—from wetlands having standing water for only a small part of the year, to wetlands which are quite wet and have seasonally flooded and/or saturated surfaces for a substantial part of the year. Forested swamps provide important wildlife habitat; for example, forested wetlands tend to have more total birds as well as more bird species nesting in a given area than upland forested sites (Newton 1988). Red maple swamps occur in a wide range of settings and provide habitat for a large variety of wetland–dependent species including wood ducks, marbled salamanders, and beaver.

Pasture / Grassland	In the Connecticut River watershed, pasture, hay, and grasslands are primarily the result of agricultural production activities. Although, historically there was natural grasslands in the region, most likely in major river valley and along the coast, very little natural grassland remains today (Dettmers and Rosenberg 2000). Today, little historic natural grassland remains. Although agricultural lands are not native wildlife habitat; they can serve the needs of many species. Forage lands or pasture, hay fields, open vegetable patches, and sod fields can be valuable to many species of birds, mammals, reptiles and amphibians. These grassland ecosystems have since been impacted by development and fragmentation. Some level of grassland conservation and, where appropriate, restoration, is warranted based on the historic evidence and the desirability of retaining grassland species (often state-listed) in each state.
Shrub Swamp / Floodplain Forest	*Shrub Swamps:* Shrub swamps are wetlands dominated by woody shrubs. They occur throughout the watershed and are highly variable depending on climate, past disturbance, hydrology, and mineral enrichment. These habitats are typically subject to seasonal flooding and saturated soils. They are often found in transitional zones between marshes and forested wetlands, along pond and lake margins, and along rivers and streams (Gawler 2008, Thompson and Sorenson 2000). *Floodplain Forests:* Annual spring high water flows in the Connecticut River valley have created a substantial number of floodplains. In the past, "bulldozing" by ice and large trees floating down river during floods produced naturally disturbed scour areas adjacent to the river channel. However, in areas without constant scouring, floodplains host rich forest habitats. Connecticut River floodplain forests are usually dominated by silver maple, Eastern cottonwood, and black willow, with an understory of ostrich fern, wood nettle, and/or false nettle. Historically, American elm was an important constituent before eradication from Dutch elm disease. These riverside forests provide critical nursery habitats (e.g., shade, cover) for some fish and important migratory stopover habitat.
Freshwater Marsh	Freshwater marshes are open wetlands found throughout the watershed. They are dominated by herbaceous vegetation such as sedges, grasses, and cattails with little or no woody vegetation present. Soils are typically a mixture of muck, mineral, and peat and can be seasonally flooded to permanently saturated. Freshwater marshes are rich and very productive biological communities. They are identified as having high ecological and

	functional importance within the state wildlife action plan. Marshes may be shallow or deep, with water levels ranging from a few inches to several feet. Marshes support a variety of emergent plants such as cattails, grasses, and sedges.
Open Water	Open water habitats include rivers, streams, ponds, lakes and associated transitional habitats influenced by fluctuating water levels. Diadromous and indigenous fish, freshwater mussels, mayflies, dragonflies, and amphibians rely on these communities for some stage of their life cycle. These habitats also provide foraging opportunities for other species including waterfowl, herons, egrets, mink, and otter.

For more information regarding descriptions of all refuge resources, please see the refuge's CCP, Volume 2, State of Massachusetts Lands (*https://www.fws.gov/refuge/Silvio_O_Conte/what_we_do/finalccp.html*).

Environmental Consequences of the Action

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

Tables C-1 through C-5 provide: 1) a brief description of the affected resources in the proposed action area; and 2) anticipated impacts of the proposed action and any alternatives on those resources, including direct and indirect effects. Table C-6 provides a brief description of the cumulative impacts of the proposed action and any alternatives.

Impact Types:

- ***Direct effects*** are those caused by the action and occur at the same time and place;
- ***Indirect effects*** are those which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable; and
- ***Cumulative impacts*** result 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.

Table C-1. Affected Natural Resources and Anticipated Impacts of the Proposed Action and Any Alternatives

NATURAL RESOURCES	
Affected Resource	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
Big Game *(White-tailed Deer, Black Bear, Wild Turkey)* Populations of these species have generally remained steady to slight increase in Massachusetts and Connecticut. Both states will adjust seasons, and limits to maintain healthy populations. There is currently no hunting of black bear in Connecticut.	**No Action:** White-tailed deer, black bear, and wild turkey are currently hunted on some refuge lands (where pre-acquisition Compatibility Determinations (CDs) for hunting was completed when the lands were acquired). Current or lower levels of these species harvested would be expected under this action as no new opportunities would be provided, and likely, public interest in big game hunting would remain the same. There would continue to be limited mortality to the hunted big game species. These impacts are considered negligible due to the relatively small number of hunters. *White-Tailed Deer* -There are now more than 95,000 white-tailed deer in Massachusetts. Densities range from about 10 to 15 deer per square mile in northwestern Massachusetts. In areas of Massachusetts where there is adequate hunting access, deer numbers appear to be balanced with the habitat and are within state management goals. MassWildlife estimates deer populations across the 15 Wildlife Management Zones by annually evaluating hunter harvest data and biological data collected at check stations. Currently hunting pressure is low on the refuge's Massachusetts units/divisons, and it is estimated that less than 10 to 20 deer, and 10 to 15 turkeys, are harvested annually. Connecticut DEEP manages white tailed deer population through 13 different zones. Through zone management, CT DEEP is able to adjust permit availability to react to changes in deer populations to influence harvest rates. During the 2017 hunting season, 12,080 deer were legally harvested and reported. Very small numbers of hunter utilize refuge lands in Connecticut, and only 1 to 2 deer are harvested, and 1 to 2 turkeys are harvested annually. We believe that most hunters do not know that some divisions/units are open to hunting in Connecticut.

	Black Bear (Massachusetts only) -Though Massachusetts is the third most densely-populated state in the country, black bears have been increasing in numbers and distribution since the 1970s. There are an estimated 4,500+ black bears in Massachusetts and their population and range continues to expand eastward in the State. In 2017, a total of 268 bears were harvested during all three hunting seasons (MassWildlife). *Wild Turkey* – Massachusetts' wild turkey population now exceeds 25,000 and is growing. In 2017, over 3,000 turkeys were harvested in the State during the spring and fall hunting seasons. Connecticut's wild turkey population now has been relatedly stable since the early 2000s. In 2017, 1,584 turkeys were harvested in the State during the spring and fall hunting seasons. **Proposed Action:** Additional refuge lands will be opened to hunting under the Proposed Action. An increase in the size of the hunting area would increase the number of deer harvested on the refuge, thus producing a positive effect on habitat by reducing deer browsing. Although hard to predict the increase in hunters interest, we estimate that 15 to 30 deer could be harvested annually on lands open to hunting. It is unlikely the number of hunters will increase considerably, though some increase is expected with expanded opportunities. Increasing the opportunities for hunting should lead to a small influx of new users to the refuge. Developing partnerships with other agencies or conservation groups to promote hunting opportunities could also help to increase the numbers of hunters in the future. A total of 252,212 Massachusetts hunting licenses were issued in 2017, and a little over 128,000 Connecticut hunting licenses were issued in 2018 (National Hunting License Data).
Small Game (coyote, fox, raccoon, opossum, gray squirrel, snowshoe hare, European hare, cottontail rabbit, quail, pheasant, ruffed grouse, and Hungarian partridge. Bobcat only in Massachusetts.	**No Action:** Small game hunting in Massachusetts on refuge lands currently occurs from September through March under State regulations (for those lands with pre-acquisition CDs for hunting), and some species of small game hunting can occur throughout the year in Connecticut. Rabbit hunting is the most pursued small game species on refuge lands; fewer people hunt furbearers and the other small game species on refuge lands.

Small game species are found throughout the Connecticut River Watershed.	**Proposed Action:** This alternative would open new lands to small game hunting. These lands are currently open for other wildlife-dependent recreation, and addition of small game hunting is predicted to have a small disturbance impact to other wildlife. Some small game species present on the refuge are r-strategists species, demonstrating high productivity and mortality rates, with population densities often tied to the quality of available habitat. Most of the small game species' populations are positively influenced by increasing percentages of younger forest age classes that provide the mix of cover and foods for these animals. Refuge lands have large amounts of early successional forest land. This provides a high quality habitat foundation to support higher densities of these species. Even so, population fluctuations can be driven by weather, changes in predator populations, and fluctuations in food supplies.
Migratory Birds Waterfowl, woodcock, and rail seasons and bag limits are set by states within a framework set by the Service and based on surveys, harvest data, and habitat data. Populations of these species have remained relatively stable.	**No Action:** Migratory birds are currently hunted on some refuge lands where pre-acquisition CDs for hunting was completed when the lands were originally acquired. Migratory bird hunting would occur on refuge lands that are currently open to hunting. Less than 100 ducks, geese, and woodcock per year are harvested in each state on refuge lands. **Proposed Action:** The Massachusetts migratory bird season is currently open from September through January, and the Connecticut migratory bird season is currently open from October through January. Hunting would not have a significant impact on local, regional, or Atlantic Flyway waterfowl populations because the percentage taken on the refuge, though possibly additive to existing hunting take, would measure a fraction of a percent of the estimated migratory game birds populations. With increased hunting opportunity, it is estimates that less than 75 birds would be taken in each state on refuge lands. In addition to direct mortality, hunting could result in some short-term redistribution due to disturbance. Each state sets season length and harvest limits for all species we propose to open to hunting at the Units/Divisions. They have determined that populations are at levels acceptable to support a public hunt while maintaining healthy population levels that are commensurate with the carrying capacity of the habitat.

Other Wildlife and Aquatic Species The refuge supports a diversity of wildlife species in western Massachusetts and Connecticut, including game and nongame species, reptiles, amphibians, and invertebrates, which are important contributors to the overall biodiversity on the refuge. Some songbirds and raptors breed at the refuge, whereas others utilize the refuge for wintering and during migration. The refuge is part of a mosaic of public and private lands, with some lands serving as sanctuaries. Some of these sanctuary areas help to offset potential disturbance effects.	**No Action:** The current hunting and fishing taking place on refuge lands may cause a short-term disturbance to wildlife. The number of hunters is low and tend not to disperse very far from parking areas and roads, which leaves large areas of refuge land undisturbed. Some foot trails could develop along the edges of open water from repetitive walking of anglers. **Proposed Action:** Impacts would be similar to those described in the No Action alternative, but increasing the number of acres open to hunting may result in additional short-term disturbance to wildlife over a larger area since additional Units/Divisions would be open to hunting.
Threatened and Endangered Species (T&E) and Other Special Status Species Dwarfwedge mussel is a Federally listed species and historically found in parts of the Fort River and some of its tributaries in Hadley, Massachusetts. The Fort River snakes its way through the Fort River Division until it empties into the Connecticut River. Puritan tiger beetle is a Federally listed species historically found at the Deadmans Swamp unit in Cromwell. This is one of very few known populations along the entire stretch of the Connecticut River. Shortnose sturgeon is also a federally listed species found in portions of the main stem of	**No Action:** The hunting and fishing currently occurring on the refuge have not affected dwarfwedge mussel, nor the puritan tiger beetle. The number of visitors currently participating in hunting and fishing on the refuge is low and not expected to have an adverse impact on T&E species. **Proposed Action:** Fishing may have a negative direct impact on these two species if anglers step on them while wading in the stream or walking along riverbanks. Fishing could have a slight negative indirect effect on freshwater mussels if anglers stir up sediment when wading, as mussels are filter feeders and increased sedimentation could reduce the efficiency of feeding. With the speed and ability for beetles to move out of the way, odds would be very low of any take of beetles. The number of anglers is expected to be low and unlikely to cause any noticeable decrease in water quality or habitat. Indiana bats, and Northern long-eared bats have been documented in the Connecticut River valley. Areas open to hunting or fishing are not expected to impact Indiana or Northern long-eared bats since hunters are not permitted on the refuge after sunset, which is when bats are most active. The proposed actions is not expected to have negative impacts on threatened or endangered species. However, if

Connecticut River.	there is a potential for hunting and fishing to have a negative impact on T&E species, we will close the area or implement restrictions to protect T&E species.
Vegetation (including vegetation of special management concern) Vegetation varies widely throughout refuge lands, encompassing shrubby and herbaceous communities, as well as forested communities with a wide array of canopy types.	**No Action:** Some refuge lands are currently open to hunting and fishing under State regulations and seasons, subject to refuge-specific regulations. Hunters and anglers could negatively affect vegetation by trampling and creating foot paths. Current levels of use for hunting and fishing have negligible impacts to vegetation (i.e., factors include: low number of users, low frequency of use, and dispersed use patterns). Hunting may have a slight, positive impact to vegetation and to refuge habitats by reducing the number of deer (i.e., reduced deer browsing). **Proposed Action:** Additional lands would be open to hunting and fishing under the proposed action. Trampling of vegetation on newly opened lands could increase slightly because of the increased number of users and an increase in the frequency of use. However, the number of visitors participating in hunting and fishing on the refuge lands is expected to remain small compared to other types of visitation and adverse impacts to vegetation is not expected. An increase in hunting opportunities on the refuge may have a slight, positive impact to vegetation and to habitats by reducing the number of deer (i.e., reduced deer browsing), especially in areas with high deer populations that are adversely affecting the vegetative community.
Water Resources Recreational fishing would be open for the season and species as regulated by MassWildlife or the State of Connecticut. Refuge Units/Divisions have streams, ponds on, or adjacent to, refuge lands with a wide diversity of species documented in the Connecticut River valley.	**No Action:** Hunting and fishing would continue to occur on refuge lands where pre-acquisition CDs were completed and uses were found to be compatible. Current levels of fishing and hunting on the refuge have not adversely affected water resources. **Proposed Action:** Recreational fishing potentially could cause negative impacts to fish populations if it occurs at unsustainably high levels or is not managed properly. Potential impacts to water resources from 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). Recreational fishing may also lead to the introduction of non-native fish that may negatively affect

	native fish, wildlife, or vegetation. In general, anglers tend to target older and larger fish, which tend to have greater reproductive capacity. Their selective removal may reduce the populations overall reproductive success. Catch and release fishing can also have impacts on individual fish, including injury and immediate or delayed mortality. The likelihood of mortality depends on the type of fishing gear used, where the fish was hooked, how the fish is handled, angler experience, and environmental conditions. Fish caught and released with non-lethal injuries could also be exposed to parasites, or bacterial or fungal infections. Handling fish is stressful for the animals, which may lead to changes in physiology and behavior (Lewin et al. 2006). Since fishing generally removes individuals from a population, high harvest levels can lead to reduced population sizes and the loss of genetic diversity. The loss of genetic diversity can ultimately reduce a population's fitness, resilience, and ability to adapt to environmental changes and stressors. 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 the increased fishing opportunity will affect the refuge's fish population as a whole. The states strive to ensure maintenance of healthy and diverse fish species populations. Anglers must abide by the State's seasons, catch limits, and regulations, which were designed to protect the State's fish populations. The refuge's fishing pressure is projected to be light and sustainable.
Wetlands	**No Action:** Hunters are permitted to walk on lands throughout designated hunting areas without restriction. Migratory bird hunters are permitted to place blinds on refuge, but must remove them daily, minimizing impacts to vegetation. As bird hunting occurs in the fall and early winter, impacts to vegetation are negligible and short-term. No impacts to any wetlands habitats have been observed by refuge staff. **Proposed Action:** Additional lands would be open to hunting and fishing under the proposed action, but impacts to wetlands from increased foot traffic is expected to be negligible and short-term.

Table C-2. Affected Visitor Use and Experience and Anticipated Impacts of the Proposed Action and Any Alternatives

VISITOR USE AND EXPERIENCE	
Affected Resource	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
The refuge is open to all priority public uses (hunting, fishing, wildlife observation, wildlife photography, environmental education and environmental interpretation) on lands where found compatible. About 60,000 people visit the Massachusetts portion of the refuge each year: 2,500 hunters; and 1,000 anglers, among other users. About 1,000 people visit the Connecticut portion of the refuge each year: 200 hunters; and 35 anglers, among other users.	**No Action:** Currently the refuge is open to the Big 6 wildlife-dependent uses through short term pre-acquisition CDs where uses have historically taken place before the refuge acquired the land. The lands that are open to hunting and fishing follow State seasons and regulations. There have been very few conflicts among user groups that have involved hunting or fishing. Non-hunting refuge visitors were concerned about personal safety, and refuge staff made sure all safety zones were posted, clearly delineated, and increased outreach to all users. **Proposed Action:** We expect slightly more users because of the increased opportunities for hunting and fishing on the refuge. We do not expect to see an increase in the number of conflicts among user groups. The new lands that are being opened have little infrastructure and users will be dispersed throughout large areas. If conflicts arise among user groups mitigation efforts can be implanted to ensure the proposed action will not have significant impacts to other user groups.

Table C-3. Affected Cultural Resources and Anticipated Impacts of the Proposed Action and Any Alternatives

CULTURAL RESOURCES	
Affected Resource	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
	No Action: No adverse impacts would occur under this alternative. **Proposed Action:** Section 106 of the National Historic Preservation Act of 1966, as amended, requires the Service to evaluate the effects of any of its actions on cultural resources (historic, architectural and archeological properties) that are listed or eligible for listing in the National Register of Historic Places (NRHP). It is believed the proposed action would not likely affect any cultural resources found on the refuge's Divisions or Units. We expect that the ethical behavior of users and Service regulations would deter those individuals utilizing refuge land during the hunting season to remove or disturb any cultural resources. Therefore, there will be no adverse impacts.

Table C-4. Affected Refuge Management and Operations and Anticipated Impacts of the Proposed Action and Any Alternatives

REFUGE MANAGEMENT & OPERATIONS	
Affected Resource	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
Land Use The refuge currently owns few roads, occupied buildings, trails, and infrastructure. Areas with occupied buildings and public roads are protected by State regulations. Refuge lands are also adjacent to, and crisscrossed with, well-traveled roads owned by local	**Current Action:** Hunters and anglers currently use refuge infrastructure, such as parking areas, to gain access to refuge lands. The impacts to refuge infrastructure are short-term and negligible. **Proposed Action:** The proposed action would open new areas of the refuge to hunting and fishing and these users would use existing infrastructure to access the refuge. The number of hunters and anglers using these areas is expected to be low, and we do not expect any conflicts among user

<table>
<tr><td>municipalities and counties. Hunters using upland areas of the refuge often park along public road shoulders to access hunt sites.</td><td>groups, crowding, or over-use of the refuge's infrastructure. While increased hunters are possible throughout the refuge, impacts to local public roads are expected to be negligible.</td></tr>
<tr><td>Administration
There are currently 7 full time employee positions that oversee this portion of the refuge. Biological, visitor services, and maintenance staff work together to ensure the refuge's hunt/fish program is safe, successful, and biologically sound.</td><td>No Action: Annual operating costs to administer the MA and CT portion of the refuge's current program, including infrastructure, signs, staff time is approximately $10,000.

Proposed Action: The proposed action would open additional refuge lands to hunting and fishing. Staff costs are expected to increase as the number of opportunities to hunt and fish increase. The total estimated costs to implement the proposed action is $53,000.

<table>
<tr><td>Maintenance Workers</td><td>$10,000</td></tr>
<tr><td>Refuge Managers</td><td>$10,000</td></tr>
<tr><td>Visitor Services Manager</td><td>$ 5,000</td></tr>
<tr><td>Supplies/Brochures*</td><td>$ 5,000</td></tr>
<tr><td>Kiosks Signs*</td><td>$10,000</td></tr>
<tr><td>Trail/parking lot maintenance</td><td>$ 5,000</td></tr>
<tr><td>Total to implement (hunt)</td><td>$ 45,000</td></tr>
<tr><td>Supplies/Brochures</td><td>$1,000</td></tr>
<tr><td>Monitoring Resource Impacts</td><td>$1,000</td></tr>
<tr><td>Signage (Parking, etc.)</td><td>$1,000</td></tr>
<tr><td>Law Enforcement</td><td>$ 5,000</td></tr>
<tr><td>Total to implement (fish)</td><td>$ 8,000</td></tr>
<tr><td>TOTAL (hunting and fishing)</td><td>$ 53,000</td></tr>
<tr><td>*Not an annual cost</td><td></td></tr>
</table>
</td></tr>
</table>

Table C-5. Affected Socioeconomics and Anticipated Impacts of the Proposed Action and Any Alternatives

SOCIOECONOMICS	
Affected Environment	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
Local and regional economies The refuge has 11 Units/Divisions scattered throughout the Massachusetts section of the Connecticut River watershed, and 4 more in Connecticut. Some are located just outside of Massachusetts' second largest city (Springfield), with a population of 154,700 and Connecticut's capital of Hartford, with a population of 123,400. Other Units/Divisions are in rural hill towns with populations in the 100s. Some units are surrounded by residential and commercial development and others dominated by agriculture and forestry. Some of the Divisions/Units have a high visitation of local and destination based visits with many visitors spending money in the local area.	**No Action:** The current program has a minor, long-term beneficial impact to the local economy. **Proposed Action:** While hunting visitation may increase due to increased opportunities, hunting only accounts for a fraction of expenditures related to the refuge. Therefore, additional economic impact is expected to be negligible under this action.
ENVIRONMENTAL JUSTICE	
Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires all Federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately	The Service has not identified any potential high and adverse environmental or human health impacts from this proposed action or any of the alternatives. The Service has identified no minority or low-income communities within the impact area. Minority or low income communities will not be disproportionately affected by any impacts from this proposed action or any of the alternatives.

high or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities.	
INDIAN TRUST RESOURCES	
Some refuge lands in western Massachusetts were formerly occupied by Pocumtuck and Norwottuck Native American Tribes, and in Connecticut were formerly occupied by Mohegan Native American Tribes.	There are no Indian Trust Resources on the refuge and this action would not impact any Indian Trust Resources.

Cumulative Impact Analysis:

Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7).

For more information on the national cumulative impacts of the Service's hunting and fishing program on the National Wildlife Refuge System, see "U.S. Fish and Wildlife Service, Cumulative Impacts Report *2019-2020 National Wildlife Refuge and National Fish Hatchery Proposed Hunting and Sport Fishing Openings* (2019)".

Table C-6. Anticipated Cumulative Impacts of the Proposed Action and Any Alternatives

Other Past, Present, and Reasonably Foreseeable Activity Impacting Affected Environment	**Descriptions of Anticipated Cumulative Impacts**
Hunting/Fishing Hunting and fishing occurs on public and private lands that are found adjacent to several Units/Division of the refuge. Hunting and fishing is part if the culture in the Connecticut River valley. The refuge currently runs fishing events to try to connect people with nature and the outdoors.	The Service considers hunting to be an important tool for wildlife management. Hunting gives resource managers an effective means to control populations of some species that might otherwise exceed the carrying capacity of their habitat and threaten the well-being of habitats (composition, structure, and function) and other wildlife species, and in some instances, threaten human health and safety. A lack of hunting on the refuge lands diminishes the refuge's ability to manage wildlife populations, and by extension, MassWildlife's and Connecticut DEEP's ability to manage populations. Likewise, an increase in deer densities may

	negatively affect forest regeneration and plant diversity, resulting in degradation of habitat for woodcock, nesting songbirds, and the wide array of other migratory birds that use early successional forests. Overabundant deer populations on refuge lands may have significant detrimental impacts to forest conditions on adjacent lands as well. Heavy browsing by refuge deer could influence forest regeneration and plant diversity on neighboring properties. *Migratory Birds*- Waterfowl populations throughout the United States are managed through an administrative process known as flyways. The Conte Refuge is located in the Atlantic Flyway. In North America, the process for establishing waterfowl hunting regulations is conducted annually. In addition, public hearings are held and the proposed regulations are published in the Federal Register to allow public comment. Annual waterfowl assessments are based upon the distribution, abundance, and flight corridors of migratory birds. An Annual Waterfowl Population Status Report is produced each year and includes the most current breeding population and production information available for waterfowl in North America (USFWS 2017a). An Annual Adaptive Harvest Management Report (AHM) provides the most current data, analyses, and decisionmaking protocols (USFWS 2017b). These reports are intended to aid the development of waterfowl harvest regulations in the United States for each hunting season. Hunting on the refuge will not add significantly to cumulative impacts of migratory waterfowl management on local, regional, or Atlantic Flyway waterfowl populations, as the percentage likely to be taken on the refuge, though 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 processes. Several points support this conclusion: 1) the proportion of the national waterfowl harvest that occurs on National Wildlife Refuges is only 6 percent (US DOI 2009); 2) there are no waterfowl populations that exist wholly and exclusively on national wildlife refuges; 3) annual hunting regulations within the United States are established at levels consistent with the current population status; 4) refuges

	cannot permit more liberal seasons than provided for in Federal frameworks; and 5) refuges purchased with funds derived from the Federal Duck Stamp must limit hunting to 40 percent of the available area. *Resident Wildlife*– Refuges, including Silvio O. Conte NFWR, conduct hunting programs within the framework of State regulations. Hunting frameworks and take limits are set by the State. The proposed refuge hunting program rules will follow hunting regulations set by the Commonwealth of Massachusetts or the State of Connecticut with some changes. The refuge coordinates with the two states about the hunting and fishing programs. Wildlife management of populations is important to ensure the health of the ecosystem, and the refuge's hunting/fishing program provides minor, additional beneficial impacts to the cumulative impacts of wildlife management in the State.
Development and Population Increase Massachusetts is the 14th most populated state in the United States, with a current population of about 6,859,000. Connecticut is the 29th most populated state, and is currently at 3,588,683. Population growth will continue stress the ecosystems of the Connecticut River valley, both through direct loss of remaining habitats, and indirectly through fragmentation and degradation of the valley's remaining parcels of wildlife habitat. Refuges and other tracts of habitats will become even more important as repositories of biodiversity.	Because the refuge uses an adaptive management approach for its hunt program, reviewing the hunt program annually and revising annually (if necessary), the Service's hunting program can be adjusted to ensure that it does not contribute further to the cumulative impacts of population growth and development on non-game and game species.
Use of Lead Ammunition/Tackle Lead ammunition is permitted in Massachusetts and Connecticut, and on the refuge for all hunts, except migratory birds.	The refuge receives approximately 3,500 hunting visits each year for all seasons. Use of the refuge could increase about 10 percent, which would increase the addition of lead shot to the local landscape due to big game and small game hunting. This could result in localized accumulations of lead in some portions of the refuge, including small wooded wetlands. This accumulation of lead could incur negative impacts if it

	is consumed by wildlife, but the likelihood of that resulting in poisoning is low. The refuge will encourage voluntary use of non-lead ammunition and tackle when hunting and/or fishing on the refuge.
Climate Change Warming, whether it results from anthropogenic or natural sources, is expected to affect a variety of natural processes and associated resources. However, the complexity of ecological systems means that there is a tremendous amount of uncertainty about the impact climate change will actually have. In particular, the localized effects of climate change are still a matter of much debate.	The refuge would use an adaptive management approach for its hunt program, reviewing the hunt program annually and revising annually (if necessary), the Service's hunt program can be adjusted to ensure that it does not contribute further to the cumulative impacts of climate change on migratory wildlife.

Monitoring

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

Summary of Analysis

This EA provides sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

No Action: 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 new access sites to refuge lands for other users. This alternative has the least short-term impacts to physical and biological resources; however, long-term impacts on habitat quality would be moderately adverse. In addition, this alternative would reduce our actions as mandated under the Refuge System Administration Act and Secretarial Order 3356.

Proposed Action: This alternative is the Service's proposed action because it offers the best opportunity for public hunting and fishing that would result in a minimal impact on physical and biological resources, while meeting the Service's mandates under the Refuge System Administration Act and Secretarial Order 3356. The Service believes that hunting and fishing on

the refuge will not have a significant impact on local or regional wildlife populations because the percentage likely to be harvested on the refuge, though possibly additive to existing hunting takes, would be a tiny fraction of the estimated populations. Additional hunting would not add more than slightly to the cumulative impacts to wildlife from hunting at the local or regional levels, and would only result in minor, negative impacts to wildlife populations.

List of Preparers

U.S. Fish and Wildlife Service, Silvio O. Conte National Fish and Wildlife Staff
Andrew French - Project Leader
Dean Rhine - Refuge Manager
David Sagan - Wildlife Biologist

U.S. Fish and Wildlife Service, Northeast Regional Office Staff
Thomas Bonetti – Senior Planner
Graham Taylor – Refuge Supervisor, North Zone
Noah Kahn – Assistant Refuge Supervisor
Ava Smith – Assistant Planner
Austin Rizzo – Assistant Planner

State Coordination

Extensive coordination and consultation occurred in advance of the development of the hunting and fishing program as a part of the CCP process, which was completed in December of 2016. Prior to completion of the CCP, hunting and fishing were allowed where they had traditionally occurred before coming under the stewardship by the Service as a part of a National Wildlife Refuge. During this public process, there was considerable interest and support for these public use opportunities, especially by the State. Regional Office staff met with the MassWildlife State Director and his staff in January 2018 to discuss hunting and fishing on refuges within Massachusetts. Each state was a member of the CCP Core Planning team.

Tribal Consultation

Tribal consultation to expand hunting and fishing occurred during the development of the CCP that was completed in 2017. Refuge staff continues to coordinate with federally recognized Tribal governments in areas of mutual interest, including hunting and fishing opportunities.

Federally recognized tribes that we will be coordinating with include: Stockbridge-Munsee Band of the Mohican Nation, Narragansett Indian Tribe (Connecticut River Valley), Mashpee Wampanoag Tribe, Wampanoag Tribe of Gay Head (Aquinnah), Mashantucket Pequot Tribal Nation, and Mohegan Tribe of Indians of Connecticut. We will be reaching out to these tribes prior to the release of the draft documents.

Public Outreach

The public was notified of the availability of the Silvio O. Conte NFWR Recreational Hunting and Fishing Plan, EA, and CDs on April 26, 2019 for a 30-day review and public comment period. We informed the public through local venues, the refuge website, and social media. No substantive comments were received during the comment period, and no changes were made to the plan.

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

☐ The Service's action will not result in a significant impact on the quality of the human environment. See the attached **"Finding of No Significant Impact".**

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

Preparer Signature: _____Date:_____

Name/Title/Organization: _____

_____

Reviewer Signature: _____Date:_____

Name/Title: _____

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OTHER APPLICABLE STATUTES, EXECUTIVE ORDERS & 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) Executive Order 13007 – Indian Sacred Sites, 61 Fed. Reg. 26771 (1996)	
Fish & Wildlife Bald and Golden Eagle Protection Act, as amended, 16 U.S.C. 668-668c, 50 CFR 22 Endangered Species Act of 1973, as amended, 16 U.S.C. 1531-1544; 36 CFR Part 13; 50 CFR Parts 10, 17, 23, 81, 217, 222, 225, 402, and 450 Fish and Wildlife Act of 1956, 16 U.S.C. 742 a-m Lacey Act, as amended, 16 U.S.C. 3371 et seq.; 15 CFR Parts 10, 11, 12, 14, 300, and 904 Migratory Bird Treaty Act, as amended, 16 U.S.C. 703-712; 50 CFR Parts 10, 12, 20, and 21 Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds, 66 Fed. Reg. 3853 (2001)	
Natural Resources Clean Air Act, as amended, 42 U.S.C. 7401-7671q; 40 CFR Parts 23, 50, 51, 52, 58, 60, 61, 82, and 93; 48 CFR Part 23 Wilderness Act, 16 U.S.C. 1131 et seq. Wild and Scenic Rivers Act, 16 U.S.C. 1271 et seq. Executive Order 13112 – Invasive Species, 64 Fed. Reg. 6183 (1999)	

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

FINDING OF NO SIGNIFICANT IMPACT

RECREATIONAL HUNTING AND FISHING PLAN
SILVIO O. CONTE NATIONAL FISH AND WILDLIFE REFUGE
Massachusetts and Connecticut

The U.S. Fish and Wildlife Service (Service) proposes to open Silvio O. Conte National Fish and Wildlife Refuge (NFWR, Conte Refuge, or refuge) in Massachusetts and Connecticut to hunting and fishing. An Environmental Assessment (EA) was prepared in compliance with the National Environmental Policy Act (NEPA) to provide decision-making framework that: (1) explores a reasonable range of alternatives to meet project objectives; (2) evaluate potential issues and impacts to the refuge, resources and values; and (3) identifies mitigation measures to lessen the degree or extent of these impacts. The EA evaluated the effects associated with No Action and Proposed Action alternatives.

Selected Action

Proposed Action Alternative
The Service is proposing to open fishing and hunting opportunities for big game, small game and migratory birds in Massachusetts and Connecticut on Silvio O. Conte NFWR in accordance with the refuge's Recreational Hunting and Fishing Plan. The Conte Refuge is proposing all refuge-owned land in the two states be opened for hunting and fishing when found to be compatible, and consistent with Federal, State, and refuge hunting and fishing regulations. Hunting will occur, unless posted closed, for archery, firearms, and muzzleloader. Information sheets and maps for all hunting opportunities will be updated regularly and made available to hunters on the refuge website.

Regulated sport hunting has been an important management tool and recreational activity at Silvio O. Conte NFWR for over a decade. Hunting pressure on the Massachusetts and Connecticut divisions can be described as moderate to light with a limited number of hunters participating. Based on the mixture of habitat types and staff observations, the most popular hunting is for white-tailed deer, cottontail rabbit, American woodcock, and waterfowl.

The nine refuge units and divisions in Massachusetts, and four in Connecticut, are made up of a diversity of habitat types from mature forest, open water, grasslands, swamps, shrublands, and floodplain forest. This matrix of lands support a variety of species with target species being found in higher densities on some lands. See Table 1 below for the units and divisions that are open to hunting.

Table 1. Silvio O. Conte Divisions and Units Open to Hunting

Division / Unit	Acres Open to Hunting	Acres Closed to Hunting
Massachusetts		
Dead Branch Division	98	
Fort River Division	206	84
Hatfield Unit	20	
Honey Pot Wetlands Unit	21	
Mill River Division	252	
Mt. Toby Unit	29	
Mt. Tom Unit	141	
Third Island Unit	4	January 1 - June 30
Westfield River Division	262	
Fannie Stebbins Unit	0	363
Wissatinnewag Unit	0	21
Total Acres (MA)	***1,033***	***468***
Connecticut		
Deadman's Swamp Unit	31	
Salmon River Division	595	
Whalebone Cove Division	103	45
Roger Tory Peterson Unit	56	
Total Acres (CT)	***785***	***45***
TOTAL	***1,818***	***513***

Recreational fishing would be conducted on, and from the banks of, all water bodies within the boundaries of the Conte Refuge in Massachusetts and Connecticut that are open to fishing, including lakes, ponds, streams, and rivers. At present, this includes reaches on the following rivers: Fort River (Fort River Division), Connecticut River (Third Island Unit, Mill River Division, Mount Tom Unit, Fannie Stebbins Unit, Deadman's Swamp Unit, Salmon River Division, Whalebone Cove Divison), West Branch of the Westfield River (Westfield River Division), Dead Branch (Dead Branch Division), and Salmon River (Salmon River Division). There also are two ponds (Magnolia and Triangle) on the Mill River Division and a pond (Great Pond) on the Hatfield Unit.

The seasons, bag limits, and regulations will be consistent with those set by Massachusetts Division of Fisheries and Wildlife (MassWildlife) and Connecticut Division of Energy and Environmental Protection (DEEP), except where noted. Hunters and anglers would also have to comply with additional refuge-specific regulations, including but not limited to those contained in 50 CFR Chapter 1, subchapter C. These regulations may be modified as conditions change or if refuge expansion continues/occurs. Under this alternative, the species identified within the plan are the only legal species to be hunted and fished on the refuge. Hunting and fishing of all other species is prohibited.

The preferred alternative was selected over the other alternatives because:

The hunting and fishing program, along with all other management programs, relates directly to the overall mission of the Service. Additionally, the National Wildlife Refuge System (Refuge System) Improvement Act of 1997 identifies six priority public uses that are appropriate on national wildlife refuges, including hunting, fishing, wildlife observation, wildlife photography, and environmental interpretation and education.

Development and enhancement of a quality and biologically sound hunting and fishing program will provide the public with a high-quality recreational experience on refuge lands and increase opportunities and access for hunters and anglers, and better align with refuge habitat management objectives.

Other Alternatives Considered and Analyzed

No Action Alternative

New hunting and fishing opportunities would not be created under this alternative, including new access sites to refuge lands for other users. This alternative has the least short-term impacts to physical and biological resources; however, long-term impacts on habitat quality could be adverse. In addition, this alternative would reduce our actions as mandated under the Refuge System Administration Act and Secretarial Order 3356.

Summary of Effects of Selected Action

The Service believes that hunting and fishing on the refuge will not have a significant impact on local or regional wildlife populations because the percentage likely to be harvested on the refuge, though possibly additive to existing hunting takes, would be a tiny fraction of the estimated populations. Additional hunting would not add more than slightly to the cumulative impacts to wildlife from hunting at the local or regional levels, and would only result in minor, negative impacts to wildlife populations.

Measures to mitigate and/or minimize adverse effects have been incorporated into the proposal. These measures include:

- Refuge lands are closed to night hunting and fishing. Hunters are allowed on refuge land 30 minutes before sunrise and 30 minutes after sunset.
- Third Island unit is closed from January 1 through June 30.
- Tree stands, blinds, or other hunting equipment must be removed from the refuge daily.
- No recorded or electronic calls can be used.
- No baiting is allowed on refuge lands.
- We allow the use of dogs when hunting waterfowl and upland game species.

- We prohibit launching of motorboats from the refuge.
- We prohibit the use of reptiles and amphibians as bait.
- Safety zones will be posted in areas of high visitation such as boardwalks and around buildings to reduce the interaction between hunters and other user groups.
- Current hunting and fishing information will be available at the refuge's headquarters and posted on the refuge's website and at on-site kiosks.

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

- The Service works closely with the states to ensure healthy populations of the species for present and future generations of Americans;
- The action will result in beneficial impacts to the human environment, including the biodiversity and ecological integrity of the refuge, as well as the wildlife-dependent recreational opportunities and socioeconomics of the local economy, with only negligible adverse impacts to the human environment as discussed above;
- The adverse direct and indirect effects of the proposed action on air, water, soil, habitat, wildlife, aesthetic/visual resources, and wilderness values are expected to be minor and short-term. The benefits to long-term ecosystem health that these efforts will accomplish far outweigh any of the short-term adverse impacts discussed in this document;
- Refuge staff will monitor for impacts related to hunting;
- The action, along with proposed mitigation measures, will ensure that there is low danger to the health and safety of refuge staff, visitors, as well as hunters and anglers;
- The action is not in an ecologically sensitive area;
- The action will not impact any threatened or endangered species; or any federally designated critical habitat;
- The action will not impact any cultural or historical resources;
- The action will not impact any wilderness areas;
- There is no scientific controversy over the impacts of this action and the impacts of the proposed action are relatively certain;

- The proposal is not expected to have any significant adverse effects on wetlands and floodplains, pursuant to Executive Orders 11990 and 11988 because hunters and anglers must use established access points that will not be located near sensitive habitats.

The proposal is compatible with the purposes of the refuge and the mission of the Refuge System, and consistent with applicable laws and policies regarding the establishment of hunting or fishing on national wildlife refuges (see the Compatibility Determinations (CD) (Appendix A and Appendix B of the Recreational Hunting and Fishing Plan). Refuge-specific regulations promulgated in conjunction with this action will be finalized through the standard of the *Federal Register*, and published in Title 50 of the Code of Federal Regulations (50 CFR §32.40).

Public Review

The proposal has been thoroughly coordinated with all interested and/or affected parties. Parties contacted include:

- Massachusetts Division of Fisheries and Wildlife
- Connecticut Division of Energy and Environmental Protection

The public was notified of the availability of the Silvio O. Conte NFWR Recreational Hunting and Fishing Plan, EA, and CDs on April 26, 2019 for a 30-day review and public comment period. We informed the public through local venues, the refuge website, and social media. No substantive comments were received during the comment period, and no changes were made to the plan.

Determination

Based upon a review and evaluation of the information contained in the EA as well as other documents and actions of record affiliated with this proposal, the Service has determined that the proposal to implement hunting and fishing on Silvio O. Conte NFWR does not constitute a major Federal action significantly affecting the quality of the human environment under the meaning of section 102 (2)(c) of the NEPA of 1969 (as amended). As such, an environmental impact statement is not required. An EA has been prepared in support of this finding and is available upon request to the U.S. Fish and Wildlife Service, Silvio O. Conte NFWR.

ACTING Sharon Marine
Acting Regional Chief
National Wildlife Refuge System

9/25/19
Date

(SUO) CA/eB, FWS

19-I-2827, due 10/11/19
uploaded 9/12/19

INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM

Originating Person: Dean Rhine
Refuge Manager
Silvio O. Conte NFWR
Telephone Number: (413) 548-8002

Date: March 4, 2019 / revised 9/11/19

I. Region: Northeast, Region 5

II. Service Activity (Program): NWRS, Silvio O. Conte NFWR

III. Pertinent Species and Habitat:

A. List species and/or their critical habitat within the action area:

- Northern Long-eared Bat (*Myotis septentrionalis*)
- Dwarf Wedgemussel (*Alasmidonta heterodon*)
- Puritan Tiger Beetle (*Cicindela puritan*)

B. Proposed species and/or proposed critical habitat within the action area:

None

C. Candidate species within the action area:

None

IV. Geographic area of station name and action:

Opening of Silvio O. Conte NFWR lands in Massachusetts and Connecticut to fishing, big game, small game and migratory bird hunting.

V. Location:

A. Ecoregion Number and Name:

- Adirondack- New England Mixed Forest – Coniferous Forest, Alpine Meadow Province; M212(R.G. Bailey, Ecoregions of the United States, 1995)
- Eastern Broadleaf Forest (Oceanic) Province; 221 (R.G. Bailey, Ecoregions of the United States, 1995)

B. County and State:

Massachusetts

- Hampden, Hampshire, Franklin and Berkshire County

Connecticut

- Middlesex, and New London County

C. Section, township, and range (or latitude and longitude):

Massachusetts

- 42.340694, -72.564923
- 42.301193, -72.61587

- 42.372852, -72.818308
- 42.339314, -73.021929
- 42.323542, -73.068701
- 42.522851, -72.566962
- 42.490472, -72.553032
- 42.250737, -72.638684
- 42.113273, -72.818318

Connecticut

- 41.607902, -72.620470 Cromwell
- 41.505606, -72.495408 Haddam
- 41.419141, -72.420753 Lyme
- 41.346312, -72.334819 Old Lyme

D. Distance (miles) and direction to nearest town:

The refuge in Massachusetts is within the towns of Becket, Chesterfield, Deerfield, Hadley, Holyoke, Longmeadow, Middlefield, Sunderland and Westfield.

The refuge in Connecticut is within the towns of Cromwell, Haddam, Lyme, and Old Lyme.

E. Species/habitat occurrence:

Massachusetts

According to the Massachusetts Natural Heritage & Endangered Species Program and utilizing their rare species mapper, Northern Long-eared bats were not observed in the towns with FWS land.

Through survey done by the State of Massachusetts in 2001, Dwarf Wedgemussel have been observed off refuge lands but upstream in the Fort River. The refuge has marginally but suitable habitat downstream from known populations. Surveys have not been completed on refuge lands at this time.

Connecticut

According to Connecticut's Department of Energy and Environmental Protection's Natural Diversity Data Base (NDDB) Northern long-eared bats have no known hibernaculum in the area of refuge lands. Some bats could possibly migrate through the area in Spring and Fall.

Puritan tiger beetle is historically found at the Deadmans Swamp Unit in Cromwell CT, by the US Fish and Wildlife Service.

VI. Description of Proposed Action

The 11 refuge units and divisions in Massachusetts and the 4 divisions and units in Connecticut are made up of a diversity of habitat types from mature forest, open water, grasslands, swamps, shrublands, and floodplain forest. We are proposing to open these lands to hunting and fishing. This matrix of lands support a variety of species with target species being found in higher densities on some lands. The hunt program on refuge lands in Massachusetts and Connecticut will be in accordance with Federal and state regulations, and additional refuge-specific regulations.

We are proposing all refuge lands that are found to be compatible with hunting and fishing to be open to these activates. Hunting was found not to be compatible on some lands where safety zones are present, with deed restrictions that do not allow hunting, or lands with significant cultural resources.

Fishing

Recreational fishing would be conducted on, and from the banks of, all water bodies within the boundaries of the Conte Refuge that are open to fishing, including lakes, ponds, streams, and rivers. At present, this includes reaches on the following rivers:

Massachusetts - Fort River (Fort River Division), Connecticut River (Third Island Unit, Mill River Division, Mount Tom Unit, Fannie Stebbins Unit), West Branch of the Westfield River (Westfield River Division), Dead Branch (Dead Branch Division). There also are two ponds (Magnolia and Triangle) on the Mill River Division and a pond (Great Pond) on the Hatfield Unit.

Connecticut - Connecticut River (Deadmans Swamp Unit, Salmon River Division, Whalebone Cove Division), Salmon River (Salmon River Division.)

Big Game Hunting

White-tailed deer, wild turkey, and black bear hunting is permitted on nine refuge divisions/units in Massachusetts totaling 1,033 acres of the refuge, as conditions exists and following Commonwealth of Massachusetts hunting regulations. Access to refuge lands for hunting is from public roads and adjoining public lands and water.

Big game hunting including white-tailed deer and wild turkey will be hunted according to the State of Connecticut regulations and refuge specific regulations on 785 acres of refuge lands in Connecticut. Access to refuge lands for hunting is from public roads and adjoining public lands and water.

Small Game Hunting *(Upland Game, Furbearer)*

Nine refuge divisions/units totaling 1,033 acres of the refuge in Massachusetts will be open for small game hunting in accordance to Massachusetts state regulations, with the exception of no night hunting or the use of electronic calls. Access to refuge lands for hunting is from public roads and adjoining public lands and water.

Four refuge divisions/units totaling 785 acres of the refuge will be open for small game hunting in accordance to Connecticut state regulations with the exception of no night hunting or the use of electronic calls. Access to refuge lands for hunting is from public roads and adjoining public lands and water.

Migratory Game Bird Hunting

Migratory bird species taken during the migratory game bird hunting season and known to usually occur in and around the refuge include American woodcock (*Scolopax minor*), Canada goose (*Branta canadensis*), and over 10 duck species such as mallard (*Anas platyrhynchos*), wood duck *(Aix sponsa)*, and black duck *(Anas rubripes)*. Access to hunting refuge lands for hunting is from public roads and adjoining public lands and water. Nine refuge divisions/units lands open to migratory bird hunting will be in accordance with Massachusetts migratory bird regulations. Four refuge divisions/units lands open to migratory bird hunting will be in accordance with Connecticut migratory bird regulations.

VII. Determination of Effects

A. Explanation of effects of the action on species and critical habitats in items III. A, B, and C:

The hunt area contains habitat used by the northern long-eared bat for roosting and foraging. This project complies with the Northern long-eared bat 4(d) rule and any incidental take of the NLEB that may occur is not prohibited by the final 4(d) rule. Hunting activities may cause disturbance to roosting bats if roost trees are disturbed or used to erect tree stands. Disturbance to foraging bats is not anticipated as bats are least active during hunting hours which are 1/2 hour before sunrise to 1/2 hour after sunset. There is also limited overlap between hunting seasons and the northern long-eared bats maternity and volant periods. Some hunters might choose to use tree stands for while hunting but hunters generally use healthy trees to secure their stands not dead or dying ones with cavities which are preferred by bats. The majority of hunting seasons fall within the bats spring and fall migratory period or during winter when bats are hibernating and least active on the landscape, further reducing the risk to bat disturbance.

Puritan tiger beetle is a listed species historically found at the Deadmans Swamp Unit in Cromwell by the US Fish and Wildlife Service. Access to the unit is very difficult from land and very few to any users are expected to fish from shore. Puritan tiger beetles adults may be present at Deadmans Swamp along the river and in sandy riparian areas from June through September. Adult puritan tiger beetles are a flying insect that is very quick and unlikely to be affected by anglers or hunters. Foot traffic could possible disturb foraging and reproductive adults, but disturbance will be insignificant due to the difficulty in accessing the site, limiting the amount of use by the hunting or fishing public. Adults lay eggs in sandy areas in July and August and the eggs hatch into larvae after a short incubation period (~20 days). Puritan tiger beetle larvae create borrows in sandy areas and are predatory on other insects. It takes two years for larvae to pupate into adults. Anglers and hunters are unlikely to hurt or kill larvae because larvae retract into the burrows (which can be up to 12 inches deep) when they feel ground vibrations. Repeated trampling of the burrows by anglers and hunters could cause larvae to expend additional energy clearing the burrows, however, we believe that hunters and anglers will only occasionally use this area, therefore, impacts to Puritan tiger beetles will be insignificant.

There is no known occurrence of Dwarf Wedgemussel on refuge lands but some lands in MA are downstream from a known occurrence. Currently marginal habitat exists on refuge lands for Dwarf Wedgemussel due to surrounding land use but no surveys have been conducted at this time. Fishing may have a negative direct impact on freshwater mussels if anglers step on mussels while wading in the stream. Fishing could have a slight negative indirect effect on freshwater mussels if anglers stir up sediment when wading. Mussels are filter feeders and increased sedimentation could reduce the efficiency of feeding. However, the number of anglers is expected to be very low and unlikely to cause any noticeable decrease in water quality. Anglers fishing from the river bank, or from a non-motorized boat, should have a negligible impact on endangered freshwater mussels.

B. Explanation of actions to be implemented to reduce adverse effects:

Northern long-eared bats and Puritan tiger beetle may occur, but no actions will be taken to reduce effects. Due to the small number of hunters, the small number of northern long-eared bats on the refuge, and the short duration that the two will overlap each year, disturbance is likely to occur on a very rare basis.

Refuge staff will continue to monitor for the presence of threatened or endangered species on the refuge. If they are found on the refuge, the effects of hunting on these species will be evaluated.

VIII. Effect determination and response requested:

A. Listed species/designated critical habitat:

Determination	**Response Requested**
No effect/no adverse modification (species:)	____Concurrence
May affect, but is not likely to adversely affect species/adversely modify critical habitat (species: northern long-eared bat, dwarf wedgemussel, puritan tiger beetle)	_X__Concurrence
May affect, and is likely to adversely affect species/adversely modify critical habitat (species: : _____)	____Formal Consultation

B. Proposed species/proposed critical habitat:

Determination	**Response Requested**
No effect/no adverse modification (species: : _____)	___Concurrence
Is likely to jeopardize proposed species/ Adversely modify proposed critical habitat (species: : _____)	___Conference

C. Candidate species:

Determination	**Response Requested**
No effect (species: : _____)	___Concurrence
Is likely to jeopardize (species: : _____)	___Conference

Andrew C. Farmer
Refuge Manager, Silvio O Conte NFWR

9-11-19
Date

IX. Reviewing Ecological Services Office Evaluation:

A. Concurrence_____ Non-concurrence_____

B. Formal consultation required_____

C. Conference required_____

D. Informal conference required_____

E. Remarks (attach additional pages as needed)_____

Supervisor, New England Field Office

12 Sept 2019

Date

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To:
Consultation Code: 05E1NE00-2019-SLI-2827
Event Code: 05E1NE00-2019-E-07385
Project Name: Conte NFWR Hunting and Fishing Plan

September 10, 2019

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

To Whom It May Concern:

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

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

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2019-SLI-2827

Event Code: 05E1NE00-2019-E-07385

Project Name: Conte NFWR Hunting and Fishing Plan

Project Type: Guidance

Project Description: The Conte Refuge is proposing to open hunting and fishing on its lands in Massachusetts and Connecticut.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.29573525428671N72.63343103145434W

Counties: Hartford, CT | Middlesex, CT | New London, CT | Berkshire, MA | Franklin, MA | Hampden, MA | Hampshire, MA

Endangered Species Act Species

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

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

Mammals

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

Clams

NAME	STATUS
Dwarf Wedgemussel *Alasmidonta heterodon* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/784	Endangered

Insects

NAME	STATUS
Puritan Tiger Beetle *Cicindela puritana* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6073	Threatened

Flowering Plants

NAME	STATUS
Small Whorled Pogonia *Isotria medeoloides*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/1890

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.