

# Northeast Region Strategic Plan

*2017-2021*



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# Regional Leadership Message



*We are excited to present the Northeast Region Partners for Fish and Wildlife Program Strategic Plan 2017-2021. This program continues to play an integral role with the on-the-ground delivery of our Northeast Region priorities.*

**Supporting our Workforce:**

*Supporting our staff is the first priority. This document provides certainty that our workforce will continue to receive the tools to learn and grow through training and development.*

**Connecting People to Nature:**

*We will inspire the next generation of conservation professionals and environmental stewards with objectives that implement the Schoolyard Habitat Program and Urban Youth Conservation Program.*

**Strategic Conservation:**

*Our watersheds are the foundation of Northeast Region landscapes. This plan highlights how conservation targets are complemented with landscape conservation design information. This is important since we need to ensure efficiency and sustainability in meeting our conservation objectives.*

*This plan represents input from a wide array of partners within the Northeast Region. Without them, delivering our conservation goals would be nearly impossible. We enthusiastically look forward to working with you as we implement this plan, which is fundamental to our mission.*

A handwritten signature in blue ink, consisting of several loops and a long horizontal stroke extending to the right.

Wendi Weber  
Regional Director  
Northeast Region  
U.S. Fish and Wildlife Service

## **Mission**

*Our mission is to work with others to achieve habitat restoration on private lands, through financial and technical assistance, to conserve species and their habitats for the continuing benefit of the American people.*

## **Vision**

*The Partners for Fish and Wildlife Program will be a recognized leader in achieving fish and wildlife conservation on private lands for the benefit current and future generations.*

## About this Document

This is the third version of the initial Strategic Plan (2006-2010) for the Partners for Fish and Wildlife Program (PFW Program) and reflects experience gained over the past 10 years. The original **Five Goals** for the PFW Program remain relevant and will continue to guide the PFW program policies, management, and project delivery. The strategic plan was developed cooperatively by U.S. Fish and Wildlife Service headquarters, regional, and field office staffs and, most importantly, in collaboration with partners.

### **Goal 1: Conserve Habitat**

The PFW Program conserves priority habitats to increase and maintain federal trust species populations.

### **Goal 2: Broaden and Strengthen Partnerships**

The PFW Program accomplishes work through voluntary partnerships on private lands.

### **Goal 3: Improve Information Sharing and Communication**

The PFW Program shares information with our partners, stakeholders, potential future partners, decision makers, and others to protect, resolve, restore and enhance Trust Resources.

### **Goal 4: Enhance Our Workforce**

PFW Program staff is our most important resource. Maintaining and supporting this staff is the key to the success in achieving on the ground results for Trust Resources.

### **Goal 5: Increase Accountability**

The PFW Program evaluates and reports on the effectiveness, efficiency, and fiscal fidelity of our habitat conservation actions to ensure the integrity and accountability of the program.

### **Partners for Fish and Wildlife Program Policy for Project Priorities: <https://www.fws.gov/policy/640fw1.html>**

*National Wildlife Refuge System. The purpose of a proposed project on private lands will complement activities on National Wildlife Refuge System lands or contribute to the resolution of problems on refuges that are caused by off-refuge land use practices. Examples include: enhancing the quality of water that enters a refuge, facilitating wildlife dispersal, and establishing corridors between refuges and other protected habitats. High priority status will be afforded to the initial restoration of habitats on lands with Farm Service Agency (FSA) conservation easements or that FSA has transferred in fee title to the Service, when the purpose of the conservation instrument is to restore the ecological integrity of the site for the benefit of Federal trust species.*

**The Northeast PFW Program staff works closely with Refuge staff to implement Comprehensive Conservation Plans (CCP) and Landscape Protection Plans (LPP). The PFW Program will strive to complement Refuge plans and priorities wherever possible.**

*Species at risk. The proposed project must improve habitat for migratory bird species of management concern; anadromous fish of special concern to the Service; endangered, threatened, or candidate species or species proposed for listing; and/or other declining species.*

**The Northeast PFW Program staff works proactively with private landowners to conserve habitat for at risk species. This work is important to species recovery and prevents future listing under the Endangered Species Act (ESA).**

# Introduction

## Regional Overview

The Service’s Northeast Region encompasses 13 states from Maine to Virginia. About 70 million people, nearly a quarter of the nation’s population lives within this area where the Service’s nearly 1,000 employees work in the regional headquarters, field offices, national wildlife refuges or fish hatcheries. Many of these 132 facilities are open to visitors and can provide exciting opportunities for wildlife dependent education, recreation and interpretation.

## Conservation Challenges

- **Aquatic Connectivity:** Over 10,000 dams currently block or impede species migration routes and prevent full life history expression.
- **Early Successional Habitat:** Natural processes that sustain habitats have been compromised due to increases in population and infrastructure.
- **Climate Change:** Increased coastal erosion and salt water intrusion continues to threaten beaches, islands and salt marsh habitat.
- **Population:** The Northeast Region is one of the most densely populated areas of the U.S. It represents 7 percent of the U.S. land base yet contains 25 percent of the nation’s population.

## Leading future conservation actions

Outside of planning target metrics such as wetland acres restored or barriers removed, PFW Program biologists are leading conservation through technical assistance, planning and monitoring support. Our staff is recognized as the face of the Service at many tables and works to empower landowners, communities and others. Many successful landscape initiatives to restore habitat have been championed by PFW Program biologists. As we further refine our landscape priorities, we must ensure that we have this capacity in priority areas.

## Summary of 2012-2016 Accomplishments

The Northeast PFW Program exceeded nearly all of the planning targets set in the 2012-2016 Strategic Plan. Regional PFW Program biologists provided project planning, design, permitting, implementation, monitoring and outreach for **1,449** project accomplishments. These project accomplishments contain all of the habitat outcomes below. For example, one project accomplishment may conserve several acres for miles of habitat. The PFW Program leveraged **\$52,009,776** for private lands conservation. For every project dollar spent, the program attracted an additional \$5 dollars. This number includes share from all programs within the Service. All numbers in this report were generated in our Habitat Information Tracking System (HabITS).

2012-2016 Partners for Fish and Wildlife Accomplishments		
Conservation Action	Planning Target	Actual Accomplishments
Aquatic Connectivity <b>Barriers Removed</b>	<b>61</b>	<b>73</b>
Aquatic Connectivity <b>Miles Reopened</b>	<b>253</b>	<b>444</b>
Aquatic Connectivity <b>Acres Reopened</b>	<b>1,550</b>	<b>10,384</b>
Wetland Habitat <b>Acres Restored</b>	<b>8,297</b>	<b>11,456</b>
Upland Habitat <b>Acres Restored</b>	<b>12,690</b>	<b>18,698</b>
Stream Channel, Riparian and Shoreline <b>Miles Restored</b>	<b>323</b>	<b>208</b>

# Cross-Program Collaboration

PFW Program staff work closely with other programs within the Service to prioritize, plan, and implement conservation actions.

## Ecological Services Program

- ESA Species Recovery Plans: The PFW Program provides expertise and assistance in developing Recovery Plans.
- We work with partners to implement recovery actions called for in ESA Recovery Plans, for species such as the Threatened bog turtle.
- We work with partners to implement conservation actions to preclude listing, for species such as the New England cottontail and other priority at risk species.
- We help support the Natural Resources Damage Assessment and Restoration Program.
- We help with restoration and planning support through Federal Energy Regulatory Commission processes.
- We work with diverse partners to conserve at-risk species by providing technical expertise.

## National Wildlife Refuge System

- The PFW Program works synergistically with Refuges and adjacent landowners to restore habitats together thus increasing conservation effectiveness.
- The PFW Program has built strong partnerships with landowners adjacent to Refuges, which can be used to support refuge priorities.
- Our staff often provides support for monitoring species and habitats and help with determining project effectiveness.
- Our projects are frequently targeted to improve water quality in the watershed that is upstream of the Refuges, thus improving habitat on Refuges.
- Our expertise may help the Refuge when setting priorities and developing Plans.

## Migratory Bird Program

- Our offices work closely with Atlantic Coast Joint Venture and its partners to design application packages and implement projects.
- We are involved in the Atlantic Flyway Shorebird Initiative and the salt marsh conservation business planning effort and the marine birds collaborative.
- Our offices frequently partner to develop North American Wetland Conservation Grant applications.
- Our offices provide support for coastal monitoring and research related to offshore wind development.

## Fisheries and Aquatic Conservation Program

- We work with partners to apply and implement priorities of the National Fish Habitat Partnership.
- Our offices often lead and facilitate teams of partners to implement the National Fish Passage Program.
- We often work with partners to reopen fish passage blocked by poorly designed culverts and other restrictions to fish passage.

## Science Applications Program

- We work with four Landscape Conservation Cooperatives (LCC) North Atlantic Landscape Conservation Cooperative, Appalachian Landscape Conservation Cooperative, Upper Midwest and Great Lakes Landscape Conservation Cooperative, and South Atlantic Landscape Conservation Cooperative to facilitate and develop sub-regional Landscape Conservation Design (LCD) products.
- We provide support to efforts like the North Atlantic Aquatic Connectivity Collaborative – an LCC collaborative framework for assessing and upgrading the hundreds of thousands of outdated road-stream crossings across the region that represent barriers to

aquatic connectivity and pose flooding risks to communities.

### **Wildlife and Sport Fish Restoration (WSFR)**

- We frequently work with our partners to develop grant applications to the Coastal Wetland Grant Program.
- We share information on PFW Program priorities with WSFR program staff who serve as an important link between service priorities and state priorities.
- We provide technical assistance to partners that are eligible to receive grants administered by the WSFR program. Examples of technical assistance include identifying on the ground priority areas for acquisition, restoration, sharing species-habitat models, preparing maps, identifying species benefits and assisting with grant preparation.
- We collaborate with state partners who receive technical guidance grants for fish and wildlife conservation work on private lands.

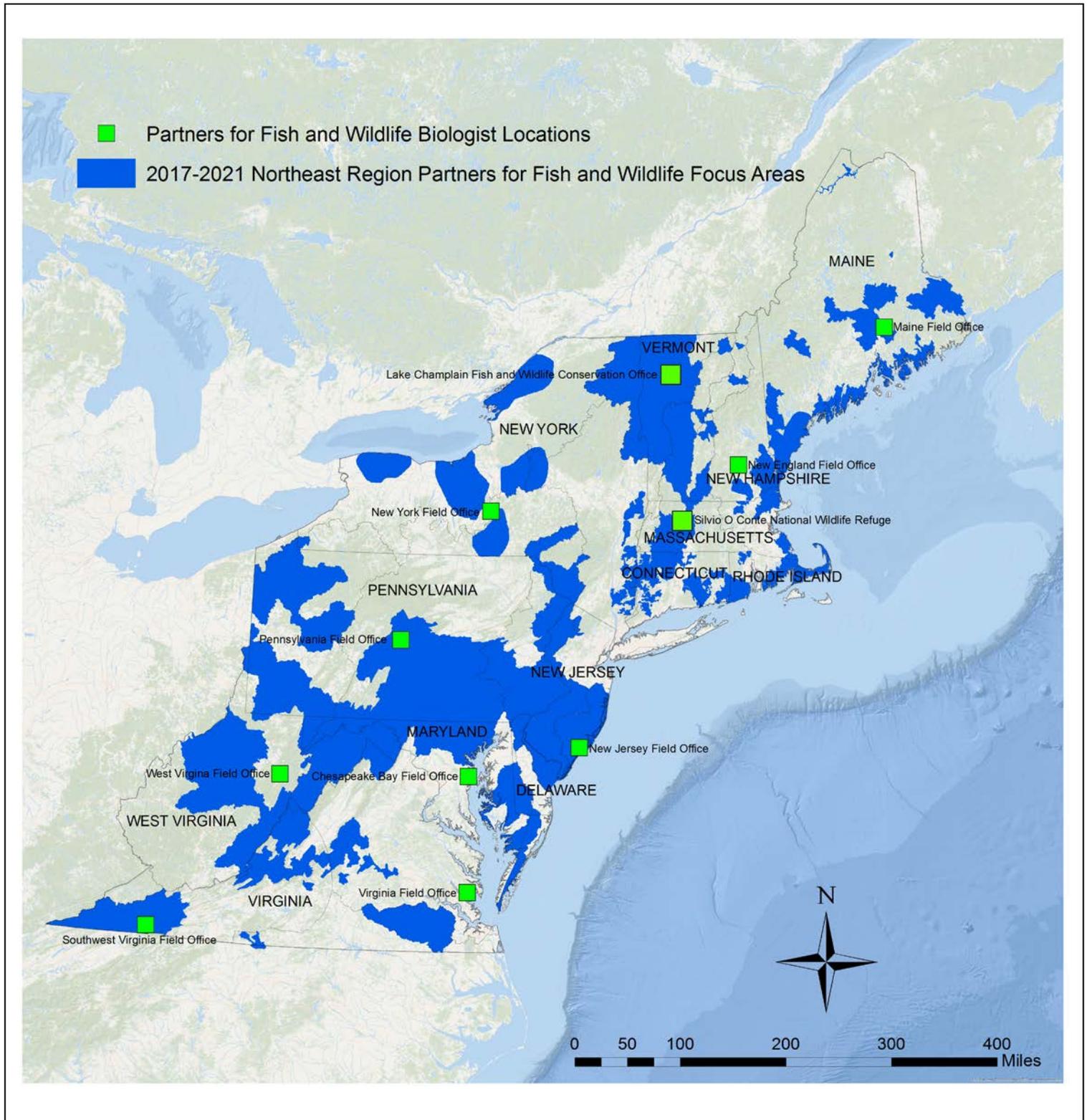
### **External Affairs**

- We help with outreach events, blog posts and social media updates.
- We coordinate visits with elected officials and staff.



# Goal One: Conserve Habitat

## Overview map of field offices and focus areas



## Northeast Watersheds

In 2000, the Service developed a national ecoregional classification system based on U.S. Geological Survey's Hydrologic Unit Map. These ecoregions are essentially large watersheds. Healthy watershed processes create and maintain habitats for many species. We will strive to restore these processes thus sustaining important habitats for multiple species.

### Ecoregions of the Northeast

1. Connecticut River and Long Island Sound
2. Delaware River and Delmarva Coast
3. Great Lakes
4. Gulf of Maine Rivers
5. Hudson River
6. Lake Champlain
7. Ohio River
8. Susquehanna River and Chesapeake Bay
9. Roanoke/Tar/Neuse/Cape Fear Rivers
10. Southern Appalachian

### Focus Area Selection Process

The majority of our work occurs within our focus areas. Our focus areas were developed based on the following factors:

### Northeast Regional Priorities

In January of 2016, The Regional Director produced the Northeast Region Priorities: Guiding Our Investments 2016 and Beyond.

"Watersheds are the foundation of the Northeast Region landscapes. Our history, economics, recreation, as well as fish and wildlife all depend on rivers, streams, wetlands, and our extensive coast. Much of our strategic conservation over the next 10 years should emphasize creating sustainable watersheds to support northeast fish and wildlife."

The Guiding our Investments document highlights four major priorities that we will be implementing with this plan.

- Landscape Conservation
- Aquatic Connectivity
- At-Risk Species
- Coastal Resilience

### Landscape Conservation

For over 10 years, the Service has been working with partners from all 13 northeastern states to agree on regional landscape conservation priorities. This collaborative has begun to roll out the following decision support tools that will help us communicate and refine our conservation priorities. The PFW Program is using these tools to compliment local knowledge and our work with landowners. The following pages summarize our strategic approach and highlights Landscape Conservation Design (LCD) tools we're using to improve our conservation planning and delivery outcomes.

### Field Knowledge, Expertise and Partnerships

No one knows the habitats better than our field staff and partners. Local habitat knowledge, experience and expertise are strengths of the PFW Program. Our staff has accumulated many years of experience that has led to trusting relationships, critical for implementing our priorities.

Key partnerships and leveraging were also significant factor when defining these areas.

Lastly, these areas have many willing landowners and there is much potential to expand and improve our conservation work with them.

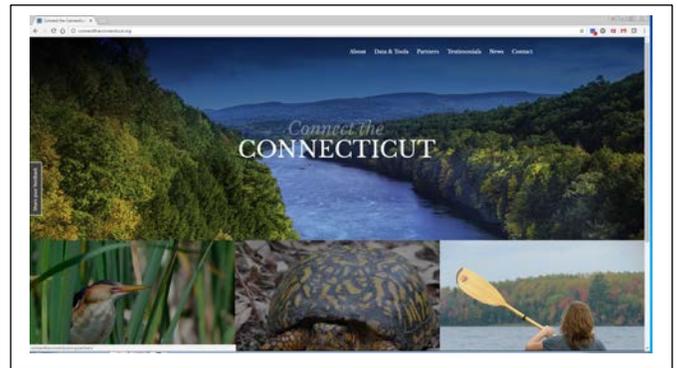


## How the PFW Program is implementing Strategic Habitat Conservation

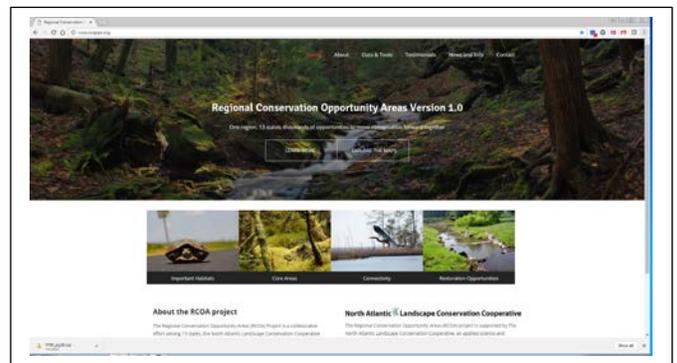


- **Biological planning.** The PFW Program works with partners to establish shared conservation and biological objectives and identify limiting factors affecting our shared conservation goals.
- **Assumption-driven research.** The PFW Program uses evidence-based assumptions to conduct conservation planning and refine future conservation actions.
- **Conservation design.** The PFW Program provides tools and resources that can influence habitat conservation, and improve the planning and delivery of habitat improvement and protection projects.
- **Program delivery.** The PFW Program works with a diversity of partners to implement strategic, landscape-scaled, habitat conservation.
- **Outcome-based monitoring.** The PFW Program evaluates the effectiveness of conservation actions in reaching specific ecological/biological objectives, which improves future conservation planning and delivery.

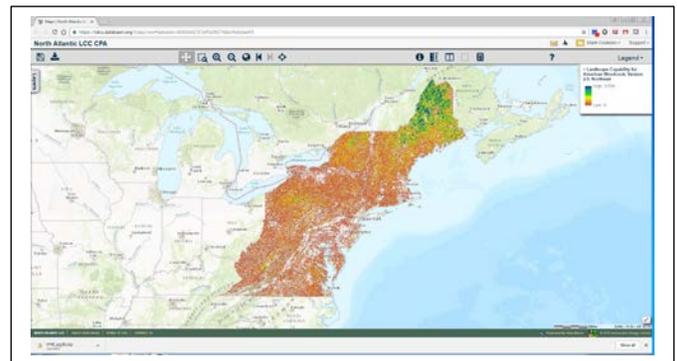
## Complementing our focus areas with Landscape Conservation Design Tools



Connect the Connecticut



Regional Conservation Opportunity Areas



Conservation Planning Atlas, Databasin

# Partners for Fish and Wildlife Program Five Year Conservation Targets

These targets were established by PFW Program biologists. They are estimates and will require additional funding sources to complete. These targets assume a flat program budget for the next five years.

## **Aquatic Connectivity: Barriers Removed**

Number of structures removed to provide unobstructed aquatic organism passage. Usually these are dams and road culverts.

## **Aquatic Connectivity: Miles Reopened**

Miles of stream connected or re-opened after a barrier is removed.

## **Aquatic Connectivity: Acres Reopened**

Acres of wetted surface area connected or re-opened after a barrier is removed.

## **Stream Channel, Riparian and Shoreline: Miles Restored**

Miles of stream, shoreline, or riparian zone restored.

## **Wetland Habitat: Acres Restored**

Acres of wetland restored or enhanced.

## **Upland Habitat: Acres Restored**

Acres of upland restored or enhanced.

## Summary of Targets 2017-2021

<b>Geographic Region</b>	<b>Aquatic Connectivity Barriers Removed</b>	<b>Aquatic Connectivity Miles Reopened</b>	<b>Aquatic Connectivity Acres Reopened</b>	<b>Stream channel, riparian and shoreline Miles Restored</b>	<b>Wetland Habitat Acres Restored</b>	<b>Upland Habitat Acres Restored</b>
<b>Gulf of Maine Rivers</b>						
Maine Field Office	10	100	2,000	11	150	110
New England Field Office	7	33	200	3	0	40
<b>Total</b>	<b>17</b>	<b>133</b>	<b>2,200</b>	<b>14</b>	<b>150</b>	<b>150</b>
<b>Connecticut River and Long Island Sound</b>						
New England Field Office	17	78	749	4	230	315
Silvio O. Conte National Wildlife Refuge	10	25	*	7	20	35
Lake Champlain Fish and Wildlife Conservation Office	15	60	*	24	40	40
<b>Total</b>	<b>42</b>	<b>163</b>	<b>749</b>	<b>35</b>	<b>290</b>	<b>390</b>
<b>Delaware River and Delmarva Coast</b>						

New Jersey Field Office	2	10	*	2	100	100
Pennsylvania Field Office	2	10	*	10	45	100
<b>Total</b>	<b>4</b>	<b>20</b>	<b>0</b>	<b>12</b>	<b>145</b>	<b>200</b>
<b>Susquehanna River and Chesapeake Bay</b>						
Pennsylvania Field Office	8	50	*	50	500	750
New York Field Office	5	30	*	0	0	0
Chesapeake Bay Field Office	3	15	*	0	2,160	1,000
West Virginia Field Office	5	10	*	10	0	0
Virginia Field Office	0	0	*	1	0	8
<b>Total</b>	<b>21</b>	<b>105</b>	<b>0</b>	<b>61</b>	<b>2,660</b>	<b>1,758</b>
<b>Great Lakes</b>						
New York Field Office	5	32	*	0	400	400
<b>Total</b>	<b>5</b>	<b>32</b>	<b>*</b>	<b>0</b>	<b>400</b>	<b>400</b>
<b>Lake Champlain</b>						
Lake Champlain Fish and Wildlife Conservation Office	30	400	*	4	1000	250
New York Field Office	3	18	*	5	0	0
<b>Total</b>	<b>33</b>	<b>418</b>	<b>*</b>	<b>9</b>	<b>1,000</b>	<b>250</b>
<b>Hudson River</b>						
New York Field Office	2	10	*	0	0	0
New Jersey Field Office	5	25	*	1	50	25
New England Field Office	0	0	*	0	0	25
<b>Total</b>	<b>7</b>	<b>35</b>	<b>0</b>	<b>1</b>	<b>50</b>	<b>50</b>
<b>Ohio River Valley</b>						
West Virginia Field Office	3	629	*	10	8	1,000
Pennsylvania Field Office	2	25	*	10	80	500
<b>Total</b>	<b>5</b>	<b>654</b>	<b>0</b>	<b>20</b>	<b>88</b>	<b>1,500</b>
<b>Southern Appalachian</b>						
Virginia Field Office	2	100	*	2	1	5
<b>Roanoke/Tar/Neuse/Cape Fear Rivers</b>						
Virginia Field Office	2	18	*	2	3,783	100
<b>Grand Total</b>	<b>138</b>	<b>1,678</b>	<b>2,949</b>	<b>153</b>	<b>8,412</b>	<b>4,748</b>
	<b>Barriers Removed</b>	<b>Miles Reopened</b>	<b>Acres Reopened</b>	<b>Stream Miles Restored</b>	<b>Wetland Acres Restored</b>	<b>Upland Acres Restored</b>

\*Habitat gain is expected but not measured

# Working with partners to conserve at-risk species

## Conservation Opportunity Species

There are six priority species in the Northeast that are considered Conservation Opportunity species. For the next five years, we'll work with our partners, providing technical assistance and conservation implementation for these species, in an effort to preclude the need to list them under the ESA.

- Peaks of Otter salamander
- Northern Virginia well amphipod
- Chesapeake logperch
- Wood turtle
- Spotted turtle
- Frosted elfin butterfly



Peaks of otter salamander / Virginia Herpetological Society

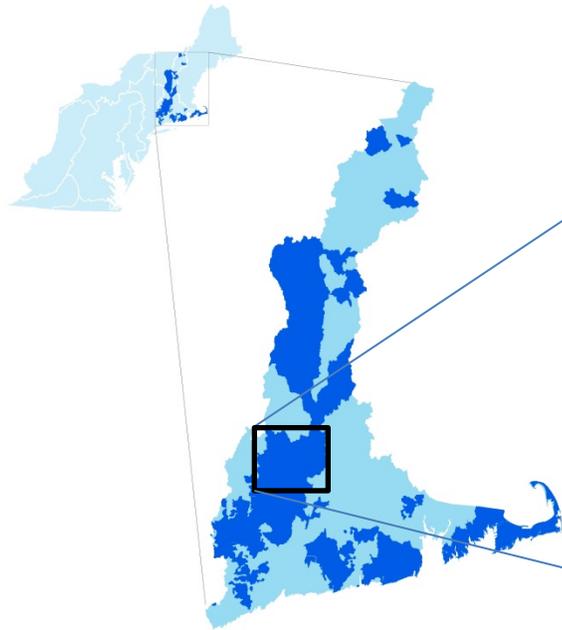


Chesapeake logperch / Maryland Biodiversity Project

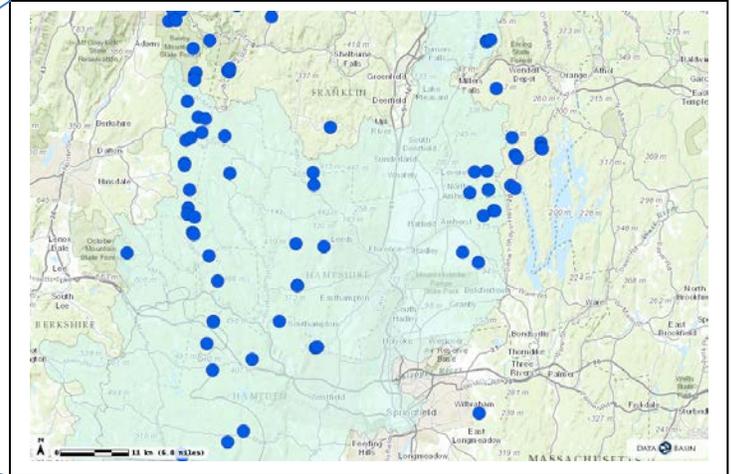


Frosted elfin butterfly / Massachusetts Butterfly Club

# Connecticut River and Long Island Sound



■ Connecticut River and Long Island Sound Focus Area  
■ Connecticut River and Long Island Sound Region



Aquatic connectivity projects from the **Connect the Connecticut** project. NALCC Databasin 2016

## Introduction and Overview

**The Connecticut River/Long Island Sound Area** encompasses the entire Connecticut River watershed, including major tributaries in Connecticut, Massachusetts, New Hampshire and Vermont that historically supported American shad, blueback herring, alewife, Atlantic salmon, and American eel. With increasing development, habitat quality and quantity in these watersheds has declined. Habitat enhancement priorities will target restoring aquatic connectivity at selected tributaries to increase access to suitable spawning and rearing habitat, working with urban communities to foster a sense of place in nature through schoolyard habitat and pollinator improvements, and focus on early successional habitats such as grasslands and young forests that have been lost during the last century due to a decline in agricultural land use, forest maturation, and an increase in urban and residential development.

**The Cape Cod - Buzzards Bay Focus Area** is a matrix of important trust resource habitats including tidal wetlands, freshwater wetlands, coastal rivers and streams, pitch pine/scrub oak communities, and dune and sandplain habitats of southeastern Massachusetts Rivers

and streams within the Focus Area provide critical spawning and rearing habitat for diadromous fish. Impacts to these habitats include tidal wetland filling and restrictions to tidal flow, construction of barriers to the passage of diadromous fish, conversion of freshwater wetlands to commercial cranberry bogs, suppression of natural wildfire, and the introduction of non-native invasive plants. Habitat enhancement priorities will target both estuarine and freshwater wetlands and rivers to address these impacts. Early successional habitats such as grassland/forb habitat, attractive to the monarch butterfly and other pollinators as well as young forest have been lost during the last century due to a decline in agricultural land use, forest maturation, and an increase in urban and residential development.

**The Pawcatuck – Wood River Focus Area** encompasses the Wood River and Pawcatuck River watersheds, South County Coastal Ponds/Wetlands, and Block Island of coastal Connecticut and Rhode Island. This area contains important salt marshes, native grasslands, shrublands, and riverine habitats. Existing fishways and removal of dams on the mainstem of the Pawcatuck River have facilitated restoration of diadromous species such as

American shad, blueback herring, alewife and American eel to the mainstem portions of the watershed. Early successional habitats such as grassland/forb habitat, attractive to the monarch butterfly and other pollinators as well as young forest have been lost during the last century

due to a decline in agricultural land use, forest maturation, and an increase in urban and residential development. Habitat enhancement priorities will target coastal wetlands, near coastal uplands, and tidal and freshwater river.

## 2017-2021 Connecticut River and Long Island Sound Five Year Targets

Field Office	Aquatic Connectivity Barriers Removed	Aquatic Connectivity Miles Reopened	Aquatic Connectivity Acres Reopened	Stream channel, riparian and shoreline Miles Restored	Wetland Habitat Acres Restored	Upland Habitat Acres Restored
New England Field Office	17	78	749	4	230	315
Silvio O. Conte National Fish and Wildlife Refuge	10	25	*	7	20	35
Lake Champlain Fish and Wildlife Conservation Office	15	60	*	24	40	40
<b>Totals</b>	<b>42</b>	<b>163</b>	<b>749</b>	<b>35</b>	<b>290</b>	<b>390</b>

\* Expected habitat gain not estimated

## Focal Species, Plans and Strategies

Focal Species	Applicable Plans and Partners	Key Strategies / Conservation Actions
<b>alewife</b> <i>Alosa pseudoharengus</i> <b>blueback herring</b> <i>Alosa aestivalis</i> <b>American eel</b> <i>Anguilla rostrata</i> <b>Eastern brook trout</b> <i>Salvelinus fontinalis</i> <b>Atlantic sturgeon</b> <i>Acipenser oxyrinchus</i> <b>shortnose sturgeon</b> <i>Acipenser brevirostrum</i>	<ul style="list-style-type: none"> <li>Atlantic States Marine Fisheries Commission Interstate Fishery Management Plan for Shad and River Herring</li> <li>Fisheries and Aquatic Conservation Strategic Plan</li> <li>Eastern Brook Trout Joint Venture</li> <li>State Wildlife Action Plans: Vermont, New Hampshire, Massachusetts and Connecticut</li> <li>Silvio O. Conte National Fish and Wildlife Refuge CCP and LPP</li> <li>Eastern Massachusetts National Wildlife Refuge Complex CCP's and LPP's</li> <li>Shortnose Sturgeon Recovery Plan, 1998</li> </ul>	Restore aquatic connectivity
<b>New England cottontail</b> <i>Sylvilagus transitionalis</i> <b>American woodcock</b> <i>Scolopax minor</i> <b>prairie warbler</b> <i>Setophaga discolor</i> <b>blue-winged warbler</b> <i>Vermivora cyanoptera</i>	<ul style="list-style-type: none"> <li>New England Cottontail Conservation Strategy, 2012</li> <li>North American Bird Conservation Initiative, BCR 30 Plan;</li> <li>Partners In Flight Landbird Conservation Plan, 2016</li> <li>Natural Resources Conservation Service, Working Lands for Wildlife Program in addition to other cost share programs</li> </ul>	Restore & enhance early successional habitat

	<ul style="list-style-type: none"> <li>• Great Thicket National Wildlife Refuge CCP and LPP</li> <li>• Silvio O. Conte National Fish and Wildlife Refuge CCP and LPP</li> <li>•</li> </ul>	
<b>monarch butterfly</b> ( <i>Danaus plexippus</i> ) and other pollinator species (e.g. <i>Bombus</i> sp.)	<ul style="list-style-type: none"> <li>• Monarch Conservation Implementation Plan, Monarch Joint Venture, 2016.</li> </ul>	Restore & enhance pollinator habitats
<b>saltmarsh sparrow</b> <i>Ammodramus caudacutus</i>  <b>American black duck</b> <i>Anas rubripes</i>	<ul style="list-style-type: none"> <li>• SHARP; USFWS BCC; NH SWAP;</li> <li>• NALCC Development and Operations Plan</li> <li>• Work with states on priority acquisition through Coastal Wetland Grant Program</li> <li>• Natural Resources Conservation Service, Working Lands for Wildlife Initiative and other cost share programs</li> <li>• Eastern Massachusetts National Wildlife Refuge Complex CCP's and LPP's</li> <li>• Parker River National Wildlife Refuge CCP and LPP</li> </ul>	Restore tidal salt marsh and wetlands
<b>Blanding's turtle</b> <i>Emydoidea blandingii</i> <b>wood turtle</b> <i>Glyptemys insculpta</i> <b>spotted turtle</b> <i>Clemmys guttata</i>	<ul style="list-style-type: none"> <li>• Natural Resources Conservation Service, Working Lands for Wildlife Initiative and other cost share programs</li> <li>• Conservation Opportunity Species, USFWS 2017</li> <li>• Silvio O. Conte National Fish and Wildlife Refuge CCP and LPP</li> </ul>	Restore & enhance early successional habitat in riparian and wetland areas

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## ***Our Partners include:***

*Private Landowners*

*Friends of the Silvio O. Conte National Wildlife*

*Refuge*

*The Trustees of Reservations*

*Massachusetts Audubon*

*Audubon Society of Rhode Island*

*New Hampshire Audubon*

*The Nature Conservancy*

*American Rivers*

*Trout Unlimited*

*The Association to Preserve Cape Cod*

*Connecticut River Watershed Council*

*White River Partnership*

*Essex County Natural Resources Conservation*

*District*

*Caledonia County Natural Resources Conservation*

*District*

*White River Natural Resources Conservation District*

*National Oceanic Atmospheric Administration*

*Natural Resources Conservation Service*

*U.S. Forest Service*

*Massachusetts Department of Fish and Game*

*Vermont Fish and Wildlife*

*New Hampshire Fish and Game*

*Connecticut Department of Energy & Environmental*

*Protection*

*Mashpee Wampanoag Tribe*

*Narragansett Tribe*

*New Hampshire Department of Environmental*

*Services*

*Vermont Department of Environmental Conservation*

*Broad array of Town and Municipal governments*

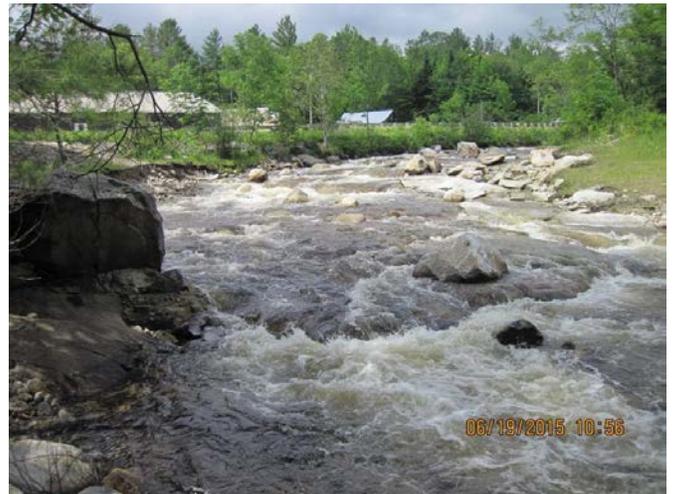
*Atlantic Coast Joint Venture*

*North Atlantic Landscape Conservation Cooperative*

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Restoring Aquatic Connectivity – Photo Before / USFWS

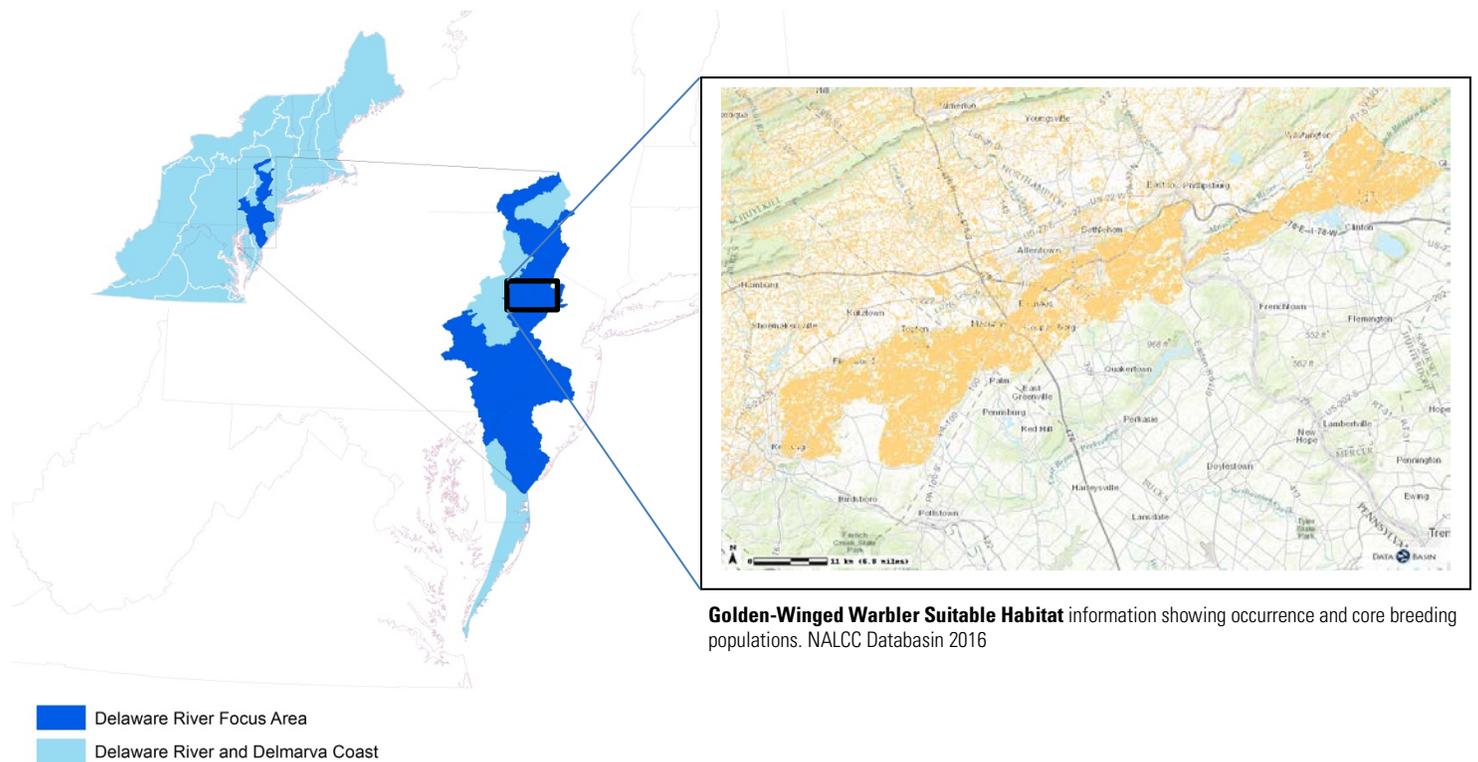


Restoring Aquatic Connectivity – Photo After / USFWS



Restoring Early Successional Habitat with fire / USFWS

# Delaware River and Delmarva Coast



## Introduction and Overview

The Upper Delaware is home to the Cherry Valley National Wildlife Refuge, which supports sizable and healthy populations of the federally listed, threatened bog turtle, and has the largest concentrations of bald eagles and ospreys in Pennsylvania. Over 85 percent of the streams in this area have extirpated or declining eastern brook trout populations. Freshwater mussels are a vital species for ecosystem function in the Upper Delaware River. These are also some of the most imperiled animals in North America. The federally endangered dwarf wedgemussel is found in this focus area, and its preferred habitat tends to be away from the main channel. The area lies within the Atlantic Coast Joint Venture' Delaware River Basin Focus Area.

This area covers portions of the Pocono Mountains, tributary watersheds in adjacent New York and New Jersey, and the aforementioned Cherry Creek Valley. Much of this area is forested, but it is also recognized as one of the most biologically diverse regions in North America. The Upper Delaware also includes the National Park Service's Delaware Water Gap Recreation Area, and much of the waterway is a designated Wild and Scenic River. The biggest restoration challenge in this region is identifying

projects in an area with high development pressure due in large part to commuters from the New York City area, and the area includes Pennsylvania's fastest growing counties - Pike and Monroe. As the area has developed, small farms and forests have disappeared, and the area's water quantity and quality have suffered.

The lower portion of the Delaware River watershed (i.e. the Delaware Bay and estuaries) is a rural residential and agricultural landscape. It contains essential habitat for the federally threatened red knot as well as populations of the federally threatened bog turtle. The marshes support salt marsh sparrows and are an important area for American black duck. State-listed grassland dependent birds thrive in this agricultural landscape. Bald eagles nest in almost every riparian corridor and the area supports a dense population of wintering bald eagles. The Delaware Bay is an internationally recognized treasure: it is a Ramsar recognized Wetland of International Importance; is home to the Cape May and Supawna Meadows National Wildlife Refuges; and contains the 122-mile Bayshore Heritage Byway on the New Jersey side.

## 2017-2021 Delaware River and Delmarva Coast Five Year Targets

Field Office	Aquatic Connectivity Barriers Removed	Aquatic Connectivity Miles Reopened	Aquatic Connectivity Acres Reopened	Stream channel, riparian and shoreline Miles Restored	Wetland Habitat Acres Restored	Upland Habitat Acres Restored
	New Jersey Field Office	2	10	*	2	100
Pennsylvania Field Office	2	10	*	10	45	100
<b>Totals</b>	<b>4</b>	<b>20</b>	<b>*</b>	<b>12</b>	<b>145</b>	<b>200</b>

\* Expected habitat gain not estimated

## Focal Species, Plans and Strategies

Focal Species	Applicable Plans and Partners	Key Strategies/Conservation Actions
<b>American woodcock</b> <i>Scolopax minor</i>	<ul style="list-style-type: none"> <li>• Kelley, James, Scot Williamson and Thomas R. Cooper, eds. 2008. American Woodcock Conservation Plan: A Summary of and Recommendations for Woodcock Conservation in North America. A Wildlife Management Institute Publication February 2008.</li> <li>• Palmer B. 2008. The American Woodcock. 3pp. Pennsylvania Game Commission. 2005. Pennsylvania's Wildlife Action Plan. Version 1.0a. Updated May 2008. <a href="http://www.pgc.pa.gov/Wildlife/WildlifeActionPlan/Documents/SWAP-CHAPTER-1-apx14a-birds.pdf">http://www.pgc.pa.gov/Wildlife/WildlifeActionPlan/Documents/SWAP-CHAPTER-1-apx14a-birds.pdf</a></li> </ul>	<ul style="list-style-type: none"> <li>• Work with partners (WMI, RGS, Woodcock Limited, Mellon Foundation, PGC) to identify and secure funding for young forest restoration</li> <li>• Restore a minimum of 50 acres of targeted habitat annually</li> <li>• Work with our partners at WMI, IUP, and RGS to develop best management practices for use by landowners and industry</li> <li>• Work with the timber industry to encourage early-successional habitat restoration</li> <li>• Work to deliver USDA-funded (WHIP, WRP, CREP etc.) projects that benefit American woodcock</li> </ul>
<b>bog turtle</b> <i>Clemmys muhlenbergii</i>	<ul style="list-style-type: none"> <li>• U.S. Fish and Wildlife Service. 2001. Bog Turtle (<i>Clemmys muhlenbergii</i>), Northern Population, Recovery Plan. Hadley, Massachusetts. 103 pp</li> <li>• Natural Resources Conservation Service, Working Lands for Wildlife Program in addition to other cost share programs</li> </ul>	<ul style="list-style-type: none"> <li>• Work with landowners and other partners to identify and fund bog turtle restoration projects</li> <li>• Restore a minimum 2 acres of bog turtle habitat per year on known sites in the Delaware watershed</li> </ul>
<b>Eastern brook trout</b> <i>Salvelinus fontinalis</i>	<ul style="list-style-type: none"> <li>• Eastern Brook Trout Joint Venture Conservation Strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Work with partners to assess new areas of existing and potential brook trout habitat</li> <li>• Work with partners to restore fish passage (target 1 project in 5 years)</li> </ul>

Focal Species	Applicable Plans and Partners	Key Strategies/Conservation Actions
		<ul style="list-style-type: none"> <li>Continue extensive in-stream and riparian habitat restorations throughout Delaware and find partners to pay for it</li> </ul>
<b>golden-winged warbler</b> <i>Vermivora chrysoptera</i>	<ul style="list-style-type: none"> <li>Rosenberg, K.V. and B. Robertson. 2003. Partners In Flight Landbird Conservation Plan: Physiographic Area 17: Northern Ridge and Valley. Version 1.1: October 2003.</li> <li>Larkin, J. 2008. Golden-winged Warbler Conservation Initiative-Pennsylvania, 2008 Annual Report (May 1 – July 10, 2008). Indiana University of Pennsylvania. August 2008.</li> <li>Natural Resources Conservation Service, Working Lands for Wildlife Program in addition to other cost share programs</li> </ul>	<ul style="list-style-type: none"> <li>Work with our partners to restore a minimum of 50 acres of suitable habitat annually to support 10 pairs of Golden-winged Warblers – estimated annual cost \$25,000</li> <li>Work with our partners at WMI, IUP, and RGS to develop best management practices for use by landowners and industry</li> <li>Work with the timber industry to encourage early-successional habitat restoration</li> <li>Work to deliver USDA-funded projects that benefit Golden-winged Warbler and others in the habitat suite</li> <li>Work with our partners to implement habitat projects that promote segregation between Golden-winged Warblers and Blue-winged Warblers</li> </ul>
<b>Indiana bat</b> <i>Myotis sodalis</i>	<ul style="list-style-type: none"> <li>U.S. Fish and Wildlife Service (USFWS). 2007. Indiana Bat (<i>Myotis sodalis</i>) Draft Recovery Plan: First Revision. U.S. Fish and Wildlife Service, Fort Snelling, MN. 258 pp.</li> </ul>	<ul style="list-style-type: none"> <li>Work with partners to identify habitat restoration projects especially at hibernacula</li> <li>Work with partners to obtain funding and continue restoration efforts - target 1 more cave gate projects in the next 5 years</li> </ul>
<b>dwarf wedgemussel</b> <i>Alasmidonta heterodon</i>	<ul style="list-style-type: none"> <li>U.S. Fish and Wildlife Service. 1993. Dwarf Wedge Mussel (<i>Alasmidonta heterodon</i>) Recovery Plan. Hadley, Massachusetts. 52 pp.</li> </ul>	<ul style="list-style-type: none"> <li>Continue natural stream channel designed restoration projects to ensure clean water and to reconnect headwaters</li> </ul>
<b>American eel</b> <i>Anguilla rostrata</i> <b>herring</b> <i>Alosa</i> spp. <b>American shad</b> <i>Alosa sapidissima</i> <b>Atlantic and shortnose sturgeon</b> <i>Acipenser</i> spp.	<ul style="list-style-type: none"> <li>Atlantic States Marine Fisheries Commission Interstate Fishery Management Plan for Shad and River Herring</li> <li>Fisheries and Aquatic Conservation Strategic Plan</li> <li>Shortnose Sturgeon Recovery Plan, 1998</li> </ul>	<ul style="list-style-type: none"> <li>Remove barriers to spawning and rearing habitat (dams, weirs, perched culverts, etc.)</li> <li>Continue natural stream channel designed restoration projects to ensure clean water and to reconnect headwaters</li> </ul>
<b>Salt-marsh sparrow</b> <i>Ammodramus caudacutus</i>	<ul style="list-style-type: none"> <li>Eastern Saltmarsh Bird Business Plan (in draft)</li> <li>Saltmarsh Sparrow Pre-Candidate Assessment (in progress)</li> </ul>	<ul style="list-style-type: none"> <li>Implement techniques that mitigate the effects of sea-level rise on habitat loss</li> </ul>
<b>Red knot</b> <i>Calidris canutus</i>	<ul style="list-style-type: none"> <li>Horseshoe Crab Fishery Management Plan</li> <li>Atlantic Flyway Shorebird Initiative: A Business Plan,</li> <li>New Jersey Wildlife Action Plan</li> </ul>	<ul style="list-style-type: none"> <li>Restore beach stop-over habitat to ensure suitable spawning habitat for horseshoe crabs</li> </ul>

Focal Species	Applicable Plans and Partners	Key Strategies/Conservation Actions
		<ul style="list-style-type: none"> <li>• Implement techniques that restore intertidal habitat and protect beach habitat (oyster reefs, living shorelines, etc.)</li> </ul>

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### ***Our Partners include:***

- Private landowners*
  - Foundation for California University of Pennsylvania*
  - Habitat Forever*
  - Ruffed Grouse Society*
  - Woodcock Limited*
  - The Nature Conservancy*
  - Pennsylvania Fish and Boat Commission*
  - Pennsylvania Game Commission*
  - Mid-Atlantic Center for Herpetology and Conservation*
  - AquaTerra*
  - New Jersey Audubon Society*
  - Natural Lands Trust*
  - Conserve Wildlife Foundation of New Jersey*
  - The William Penn Foundation*
  - The American Littoral Society*
  - South Jersey Quail Project*
  - Natural Resources Conservation Service*
  - New Jersey Department of Environmental Protection*
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### **Focus Area Habitat Types**

- In-stream and riparian habitat throughout farmlands in the Delaware drainage.
- Headwater streams (reconnecting by removing dams and barriers) to benefit brook trout, dwarf wedgemussel and diadromous fish.
- Native young-forest habitat restoration in bottomlands, riparian and upland areas for American woodcock and golden-winged warblers.
- Native young-forest and scrub shrub wet pastures for bog turtles and American woodcock.
- Delaware Bay beaches, essential stop-over habitat for red knot.
- Salt marsh and estuaries, important for American black duck and salt marsh sparrow.

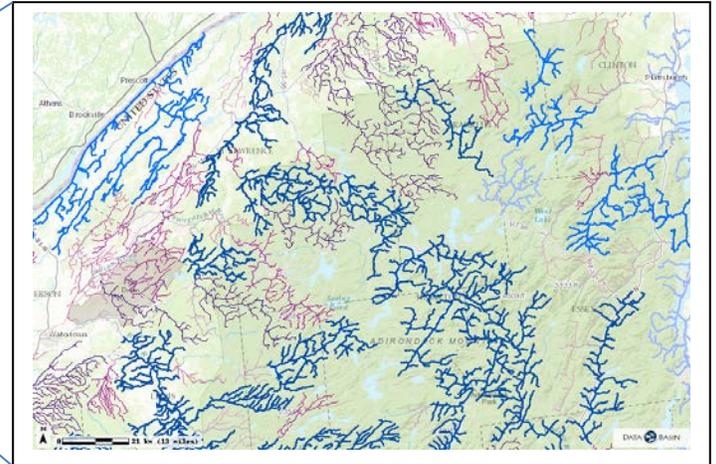
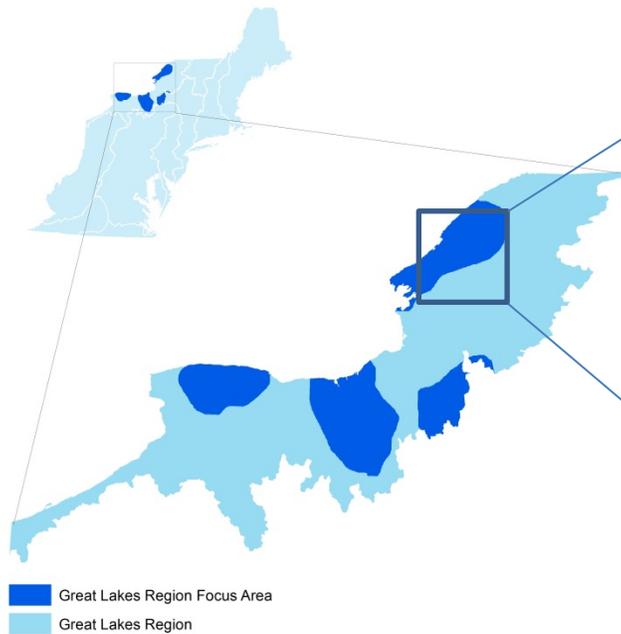


Golden winged warbler / USFWS



Saltmarsh / USFWS

# Great Lakes



**Freshwater Resilience** map showing systems that will maintain functional integrity in response to climate change.

## Introduction and Overview

The **Great Lakes** Region is located adjacent to the shores of Lake Erie and Lake Ontario in western Pennsylvania, and western and north-central New York. The overall boundary is largely demarcated by the Great Lakes watershed that drains immediately into Lake Erie, Lake Ontario or the St. Lawrence River. The Region contains the Lake Erie/Ontario Lake Plain and Ontario Lowlands with a local relief of 20-300 feet, the Cattaraugus Hills with a local relief of 200-500 feet, and the eastern portion of the Tug Hill Plateau with a local relief of 30-300 feet. Overall, elevation ranges within the focal area are 250-900 feet in the Lake Plains and up to 1,800-2,000 feet in the hills and plateaus. The Region is characterized by its association with the glacial and lacustrine landforms associated with the Great Lakes including beach ridges, moraines, and extensive areas of drumlin formation. Additionally, strong seasonal effects associated with the Great Lakes include altered growing season lengths and abundant snowfalls during the winter.

The Great Lakes Basin is the largest surface freshwater system on earth and contains 84 percent of the freshwater in North America. More than 30 million people live within the basin representing 10 percent of the U.S. and 20 percent of the Canadian population. Approximately 1,950,000 people live within this area, concentrated primarily in the

Buffalo and Rochester metropolitan areas, with other concentrations in smaller cities such as Lockport, Batavia, and Oswego. Land uses are divergent as two of the largest urban centers in New York are found in this area, but there are also extensive areas of forestland across the region and dairy and farmland in the Lake Plains, the most notable of the latter being the extensive fruit and specialty crops associated with the near-shore climate.

This focal area was selected because it contains significant aquatic, wetland, and lakeshore habitats as well as significant waterways. There are currently five Federally-listed species and nine identified species of concern within the focal area. Iroquois National Wildlife Refuge is located within the focal area, which includes one of seven state-listed Bird Conservation Areas within the focal area boundary. The focal area is important for migratory, stop-over, and breeding habitat for waterfowl, shorebirds, waterbirds, raptors, and passerines. The Region is within Bird Conservation Region 13 (Lower Great Lakes/St. Lawrence Plain) and Partners in Flight Physiographic Region 15 (Lower Great Lakes Plain). Significant shoreline areas support populations of common tern as well as critical habitat for piping plover, although the latter currently does not breed in this focal area. Successional and grassland habitats contain populations of bobolink and woodcock. Although not as heavily forested as other parts of New York, forests in this focal area and their associated foraging areas

provide habitat for Indiana bat, cerulean warbler, and broad winged hawk. The lakes and almost 28,000 miles of streams support remnant populations of the once widespread lake sturgeon and brook trout populations. Most notably, the Region's extensive wetland habitats contain populations of bog turtle, massasauga rattlesnake, Houghton's goldenrod, American black duck, and bald eagle.

Partners are working collaboratively to restore stream habitat and connectivity for native fish as well as upland habitat for insect pollinators, including monarch butterfly, and wetland habitat for migratory birds. The Service works with national and local NGOs, County Soil and Water Conservation Districts, municipalities and private landowners to deliver ecological restoration projects.

## 2017-2021 Great Lakes Five Year Targets

Field Office	Aquatic Connectivity Barriers Removed	Aquatic Connectivity Miles Reopened	Aquatic Connectivity Acres Reopened	Stream channel, riparian and shoreline Miles Restored	Wetland Habitat Acres Restored	Upland Habitat Acres Restored
New York Field Office	5	32	*	0	400	400
<b>Totals</b>	<b>5</b>	<b>32</b>	<b>*</b>	<b>0</b>	<b>400</b>	<b>400</b>

\* Expected habitat gain not estimated

## Focal Species, Plans and Strategies

Focal Species	Applicable Plans and Partners	Key Strategies/Conservation Actions
<b>brook trout</b> <i>Salvelinus fontinalis</i> <b>northern pike</b> <i>Esox lucius</i> <b>walleye</b> <i>Sander vitreus</i> <b>muskellunge</b> <i>Esox masquinongy</i>	<ul style="list-style-type: none"> <li>• Eastern Brook Trout Joint Venture Conservation Strategies</li> <li>• Iroquois National Wildlife Refuge CCP and LPP</li> <li>• Montezuma National Wildlife Refuge CCP and LPP</li> </ul>	<ul style="list-style-type: none"> <li>• Restore stream connectivity</li> </ul>
<b>American black duck</b> <i>Anas rubripes</i>	<ul style="list-style-type: none"> <li>• Atlantic Coast Joint Venture Waterfowl Management Plan (BCR 13)</li> <li>• Iroquois National Wildlife Refuge CCP and LPP</li> <li>• Montezuma National Wildlife Refuge CCP and LPP</li> </ul>	<ul style="list-style-type: none"> <li>• Restore and enhance riparian and wetland habitat</li> </ul>
<b>monarch butterfly</b> <i>Danaus plexippus</i> <b>frosted elfin butterfly</b> <i>Callophrys irus</i>	<ul style="list-style-type: none"> <li>• Monarch Joint Venture July 2009-May 2014 – Monarch JV 2014</li> <li>• North American Monarch Conservation Plan – Commission for Environmental Cooperation 2008</li> <li>• Conservation Status and Ecology of the Monarch Butterfly in the United States – Jepsen et al., 2015</li> <li>• USFWS Conservation Opportunity Species</li> <li>• Iroquois National Wildlife Refuge CCP and LPP</li> <li>• Montezuma National Wildlife Refuge CCP and LPP</li> </ul>	<ul style="list-style-type: none"> <li>• Restore &amp; enhance pollinator habitats and protect existing breeding areas</li> <li>• Restore early successional habitats and protect refugia patches</li> </ul>

**Blanding's turtle**  
*Emydoidea blandingii*

**wood turtle**  
*Glyptemys insculpta*

**spotted turtle**  
*Clemmys guttata*

- Natural Resources Conservation Service, Working Lands for Wildlife Program in addition to other cost share programs
- USFWS Conservation Opportunity Species
- Iroquois National Wildlife Refuge CCP and LPP
- Montezuma National Wildlife Refuge CCP and LPP

- Restore early successional habitats with prescribed burning
- Restore stream channel complexity and biological function
- Restore and enhance riparian and wetland habitat

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### ***Our Partners include:***

*Private Landowners*  
*County Soil and Water Conservation Districts*  
*New York State Department of Environmental Conservation*  
*Ducks Unlimited*  
*The Nature Conservancy*  
*Trout Unlimited*  
*The Wetland Trust*  
*Natural Resources Conservation Service*  
*USFWS Natural Resources Damage Assessment Program*  
*USFWS Refuges Program*  
*USFWS Fisheries Program*

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### **Focus Area Habitat Types**

- In-stream and riparian habitat throughout the Great Lakes Basin
- Headwater streams (reconnecting by removing dams and barriers)
- Native early successional habitat restoration for insect pollinators
- Wetland Habitat (restoring and enhancing)



Blanding's turtle / USFWS



Juvenile wood turtle / USFWS

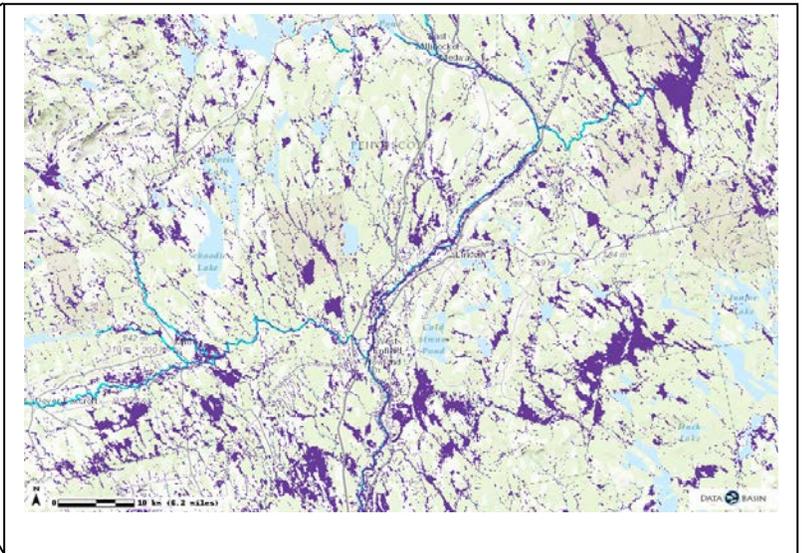
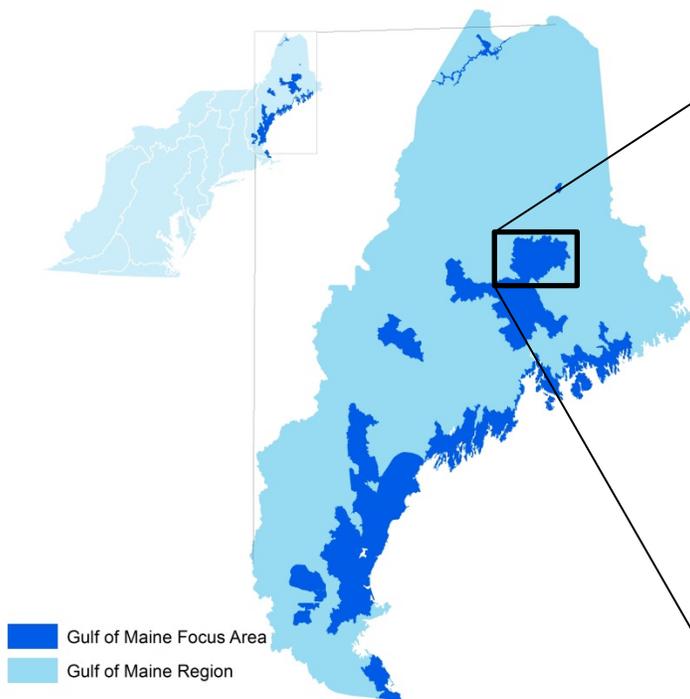


Removing undersized culvert / Carl Schwartz USFWS



Undersized culvert replaced with bridge / USFWS

# Gulf of Maine Rivers



**Important Habitats for Terrestrial and Aquatic Species.** Habitats that will sustain diversity for multiple species. NALCC Databasin 2016

## Introduction and Overview

The **Gulf of Maine Region Rivers Region** encompasses several major river systems including the Penobscot, Kennebec, Androscoggin, Merrimack, Saco, Narraguagus, Machias, and Saint Croix Rivers. These rivers provide spawning and juvenile habitat for important migratory fish including Atlantic salmon, alewife, blueback herring and American eel.

The coastal plains of Maine, New Hampshire and northern Massachusetts, including the "Great Marsh" coastal watershed and wetland complex of New Hampshire and Massachusetts, and the Great Bay estuary of New Hampshire encompasses coastal wetland and near-coastal upland habitats that provide important breeding, foraging, migration and wintering habitat for a number of rare and at-risk migratory birds that utilize migration routes along the North Atlantic.

Stressors to these habitats include tidal wetland filling and restrictions to tidal flow, construction of barriers to the passage of diadromous fish, introduction of non-native invasive plants, and the agricultural clearing of the original oak-pine forest with subsequent farm abandonment and a

reversion to a second-growth forest. Early successional habitats such as grasslands and young forests have been lost during the last century due to a decline in agricultural land use, forest maturation, and an increase in urban and residential development. These impacts have led to fragmentation of terrestrial and aquatic habitats and degradation of water quality.

Habitat enhancement priorities will target restoration of coastal wetlands, removal of barriers from tidal and freshwater rivers, restoration of pollinator habitats, and management of early successional forest habitat.

This region hosts exceptional biodiversity due to a number of factors, including diverse geographic and geologic features located in a transition zone between boreal and temperate habitats and species assemblages. At 33,315 square miles, the State of Maine is nearly as large as the rest of the New England states combined. Maine is over 90 percent forested (17.7 million acres) and is the most extensively forested State in the United States. Over 94 percent of the State's forest lands (16.7 million acres) are privately owned. The largest tracts of undeveloped

forestland in the eastern United States are found in the western, northern, and eastern areas of the State.

Maine also contains some of the most significant grassland, barrens, and agricultural lands in the Northeast. The State covers a wide range of latitude (320 miles north to south), with natural communities and plants characteristic of southern Appalachia found in the south transitioning to boreal communities in the north and subarctic communities at the highest elevations. Its glacial history produces a landscape with thousands of

thousands of lakes and ponds and an abundance of freshwater wetlands. This geographic setting produces a large diversity of ecosystems that supports a multitude of fish and wildlife, some of which, like the New England cottontail and small whorled pogonia, meet their northern range limit in central or southern Maine, while others, such as the Canada lynx and Atlantic salmon, are restricted to northern Maine.

## 2017-2021 Gulf of Maine Rivers Five Year Targets

Field Office	Aquatic Connectivity Barriers Removed	Aquatic Connectivity Miles Reopened	Aquatic Connectivity Acres Reopened	Stream channel, riparian and shoreline Miles Restored	Wetland Habitat Acres Restored	Upland Habitat Acres Restored
	Maine Field Office	10	100	2,000	11	150
New England Field Office	7	33	200	3	0	40
<b>Totals</b>	<b>17</b>	<b>133</b>	<b>2,200</b>	<b>14</b>	<b>150</b>	<b>150</b>

## Focal Species, Plans and Strategies

Focal Species	Applicable Plans and Partners	Key Strategies/Conservation Actions
<b>American eel</b> <i>Anguilla rostrata</i> <b>herring</b> <i>Alosa spp.</i> <b>American shad</b> <i>Alosa sapidissima</i> <b>Atlantic and shortnose sturgeon</b> <i>Acipenser spp.</i>	<ul style="list-style-type: none"> <li>USFWS Fisheries and Aquatic Conservation Strategic Plan</li> <li>Atlantic States Marine Fisheries Commission Interstate Fishery Management Plan for Shad and River Herring; Maine State Wildlife Action Plan</li> <li>New Hampshire State Wildlife Action Plan</li> <li>Great Bay National Wildlife Refuge CCP</li> <li>Shortnose Sturgeon Recovery Plan</li> </ul>	<ul style="list-style-type: none"> <li>Restore stream connectivity</li> </ul>
<b>New England cottontail</b> <i>Sylvilagus transitionalis</i> <b>American woodcock</b> <i>Scolopax minor</i> <b>prairie warbler</b> <i>Setophaga discolor</i> <b>blue-winged warbler</b> <i>Vermivora cyanoptera</i>	<ul style="list-style-type: none"> <li>New England Cottontail Conservation Strategy,</li> <li>Maine State Wildlife Action Plan</li> <li>New Hampshire State Wildlife Action Plan</li> <li>NABCI-BCR 30;</li> <li>Partners in Flight 2016 Landbird Conservation Plan</li> <li>Natural Resources Conservation Service, Working Lands for Wildlife program and other cost share programs.</li> </ul>	<ul style="list-style-type: none"> <li>Restore &amp; enhance early successional habitat</li> </ul>
<b>monarch butterfly</b> <i>Danaus plexippus</i>	<ul style="list-style-type: none"> <li>Monarch Joint Venture</li> </ul>	<ul style="list-style-type: none"> <li>Restore &amp; enhance pollinator habitat</li> </ul>



<p><b>salt-marsh sparrow</b> <i>Ammodramus caudacutus</i></p> <p><b>American black duck</b> <i>Anas rubripes</i></p>	<ul style="list-style-type: none"> <li>• Saltmarsh Habitat and Avian Research Program</li> <li>• USFWS BCC;</li> <li>• Maine State Wildlife Action Plan</li> <li>• New Hampshire State Wildlife Action Plan</li> <li>• Rachel Carson National Fish and Wildlife Refuge Comprehensive Conservation Plan</li> <li>• North Atlantic LCC Development and Operations Plan</li> <li>• Maine Department of Inland Fisheries and Wildlife 2015.</li> <li>• Maine Dept. of Inland Fisheries and Wildlife, Augusta, ME.</li> </ul>	<ul style="list-style-type: none"> <li>• Restore salt marsh</li> </ul>
<p><b>Eastern brook trout</b> <i>Salvelinus fontinalis</i></p>	<ul style="list-style-type: none"> <li>• USFWS Fisheries and Aquatic Conservation Strategic Plan</li> <li>• Eastern Brook Trout Joint Venture</li> <li>• Maine State Wildlife Action Plan</li> <li>• New Hampshire State Wildlife Action Plan</li> <li>• Rachel Carson National Fish and Wildlife Refuge Comprehensive Conservation Plan.</li> </ul>	<ul style="list-style-type: none"> <li>• Restore stream connectivity by removing dams, culverts and other obstructions</li> </ul>
<p><b>Blanding's turtle</b> <i>Emydoidea blandingii</i></p> <p><b>wood turtle</b> <i>Glyptemys insculpta</i></p> <p><b>spotted turtle</b> <i>Clemmys guttata</i></p>	<ul style="list-style-type: none"> <li>• Natural Resources Conservation Service, Working Lands for Wildlife Program in addition to other cost share programs</li> <li>• USFWS Conservation Opportunity Species</li> </ul>	<ul style="list-style-type: none"> <li>• Restore early successional habitats with prescribed burning</li> <li>• Restore stream channel complexity and biological function</li> <li>• Restore and enhance riparian and wetland habitat</li> </ul>

***Our Partners include:***

- The Trustees of Reservations*
- Massachusetts Audubon*
- New Hampshire Audubon*
- The Nature Conservancy*
- American Rivers*
- Trout Unlimited*
- Private landowners*
- Massachusetts Department of Fish and Game*
- New Hampshire Fish and Game*
- New Hampshire Department of Environmental Services*
- National Oceanic Atmospheric Administration*
- Natural Resources Conservation Service*
- Broad array of Town and Municipal governments*

**Focus Area Habitat Types**

- Tidal salt marsh wetlands
- Freshwater wetlands
- Coastal rivers and streams
- Pitch pine/scrub oak communities



Project partners / USFWS



American woodcock / USFWS



Eastern brook trout / USFWS



American woodcock / USFWS



Atlantic salmon / USFWS

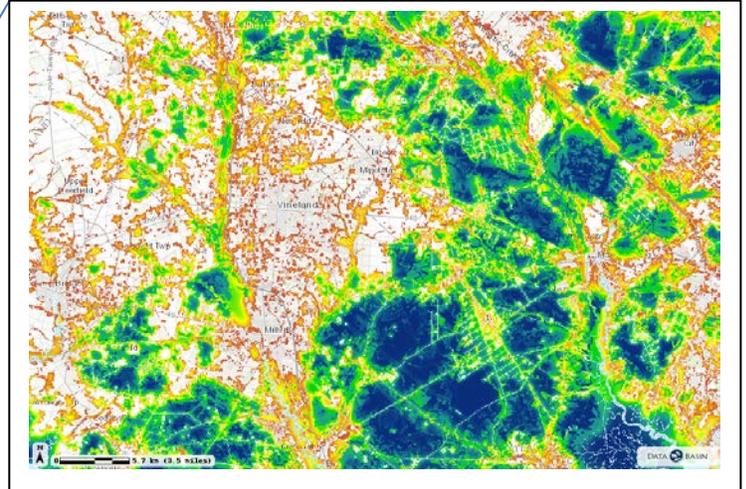
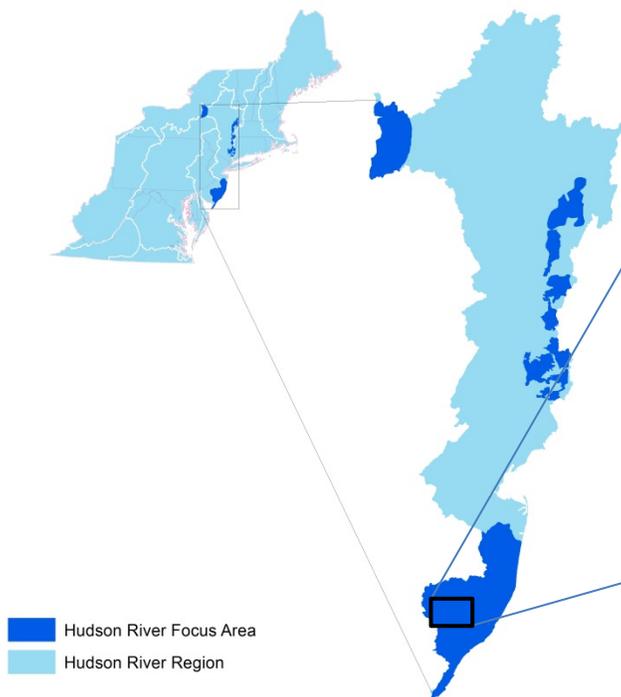


Fish passage project under construction / USFWS



American eel / USFWS

# Hudson River



**Index of Ecological Integrity**, highlighting areas that sustain important ecological functions. NALCC Databasin 2016

## Introduction and Overview

The **Hudson River** stretches from the Adirondack Mountains to the Battery in Manhattan and is one of the largest watersheds in the eastern United States. More than 8,000,000 people live within this corridor, and it has historically been and is currently one of the major transportation and commercial centers in the country. All of, or portions of, seven New York counties are included within the Hudson River watershed including Albany, Rensselaer, Schenectady, Saratoga, Washington, Warren, and Essex counties. Approximately 800,000 people live within this focal area, concentrated primarily in the Capital District cities of Albany, Schenectady, and Troy as well as in Saratoga Springs and Glens Falls. Land uses are predominantly urban and industrial near the major population centers with associated suburban areas transitioning to agricultural corn and hay production for the dairy industry in the Hudson River Valley. Forest predominates in the surrounding mountains.

This focal area was selected because it contains significant habitats for trust resource and endangered species.

There are currently three Federally-listed species and five

identified species of concern within the focal area. There has been a net loss of 2.3 million acres of early-successional habitats since the 1970s, resulting in declines in bird species dependent upon this habitat type. This area still retains agricultural lands important to these birds, such as American woodcock and field sparrow. New England cottontail and golden-winged warbler also depends upon these early successional habitats. The Upper Hudson River area includes sand plains from glacial Lake Albany that provide habitat for the Karner blue butterfly. Forests, forested wetlands, and the variety of other habitats are also important habitats for Indiana bat and the State-listed Blanding's turtle. Over 7,000 miles of streams also support remnant populations of once widespread brook trout populations.

The lower portion of the Hudson covers the Atlantic side of the New Jersey shore. This area is highly developed with many shore communities distributed along the coast, yet there are still many intact areas that support federal trust resources. Piping plover breeds on the Atlantic coast beaches where seabeach amaranth can be found as well. This area contains part of the Pinelands National Reserve as

well as Edwin B. Forsythe and Cape May National Wildlife Refuges. Diadromous fish spawn and rear young in the

rivers and estuaries of this focus area.

## 2017-2021 Hudson River Five Year Targets

Field Office	Aquatic Connectivity Barriers Removed	Aquatic Connectivity Miles Reopened	Aquatic Connectivity Acres Reopened	Stream channel, riparian and shoreline Miles Restored	Wetland Habitat Acres Restored	Upland Habitat Acres Restored
New York Field Office	2	10	*	0	0	0
New Jersey Field Office	5	25	*	0	25	25
New England Field Office	0	0	*	0	0	25
<b>Totals</b>	<b>7</b>	<b>35</b>	<b>*</b>	<b>0</b>	<b>25</b>	<b>75</b>

\* Expected habitat gain not estimated

## Focal Species, Plans and Strategies

Focal Species	Applicable Plans and Partners	Key Strategies/Conservation Actions
<b>New England cottontail</b> <i>Sylvilagus transitionalis</i>	New England Cottontail Conservation Strategy Natural Resources Conservation Service, Working Lands for Wildlife program and other cost share programs.	<ul style="list-style-type: none"> <li>Restore and enhance early successional habitat</li> </ul>
<b>brook trout</b> <i>Salvelinus fontinalis</i>	Eastern Brook Trout Joint Venture Conservation Strategies	<ul style="list-style-type: none"> <li>Restore stream connectivity</li> </ul>
<b>golden-winged warbler</b> <i>Vermivora chrysoptera</i>	Rosenberg, K.V. and B. Robertson. 2003. Partners In Flight Landbird Conservation Plan: Physiographic Area 17: Northern Ridge and Valley. Version 1.1: October 2003. Larkin, J. 2008. Golden-winged Warbler Conservation Initiative-Pennsylvania, 2008 Annual Report (May 1 – July 10, 2008). Indiana University of Pennsylvania. August 2008. Natural Resources Conservation Service, Working Lands for Wildlife program and other cost share programs.	<ul style="list-style-type: none"> <li>Work with our partners to restore a minimum of 25 acres of suitable habitat.</li> <li>Work with our partners to promote best management practices for use by landowners and industry</li> <li>Work with the timber industry to encourage early-successional habitat restoration</li> <li>Work to deliver USDA-funded projects that benefit golden-winged Warbler and others in the habitat suite</li> </ul>
<b>dwarf wedgemussel</b> <i>Alasmidonta heterodon</i>	U.S. Fish and Wildlife Service. 1993. Dwarf Wedge Mussel ( <i>Alasmidonta heterodon</i> ) Recovery Plan. Hadley, Massachusetts. 52 pp.	<ul style="list-style-type: none"> <li>Continue natural stream channel designed restoration projects to ensure clean water and to reconnect headwaters</li> </ul>

Diadromous fish: <b>American eel</b> <i>Anguilla rostrata</i> <b>herring</b> <i>Alosa</i> spp. <b>American shad</b> <i>Alosa sapidissima</i>	Atlantic Coast Diadromous Fish Habitat: A Review of Utilization, Threats, Recommendations for Conservation and Research Needs. Atlantic States Marine Fisheries Commission, 2009.	<ul style="list-style-type: none"> <li>Remove barriers to spawning and rearing habitat (dams, weirs, perched culverts, etc.)</li> <li>Continue natural stream channel designed restoration projects to ensure clean water and to reconnect headwaters</li> </ul>
<b>seabeach amaranth</b> <i>Amaranthus pumilus</i>	New Jersey Wildlife Action Plan	<ul style="list-style-type: none"> <li>Control non-native invasive plants that displace suitable habitat.</li> </ul>
<b>pipin plover</b> <i>Charadrius melodus</i>	Piping Plover Recovery Plan New Jersey Wildlife Action Plan	<ul style="list-style-type: none"> <li>Restore beach nesting habitat</li> <li>Initiate predator control</li> </ul>
<b>American black duck</b> <i>Anas rubripes</i>	Natural Resources Conservation Service, Working Lands for Wildlife program and other cost share programs.	<ul style="list-style-type: none"> <li>Restore salt marsh habitats</li> </ul>

- Focus Area Habitat Types**
- Stream and riparian: diadromous fish and dwarf wedgemussel (aquatic connectivity)
  - Forested wetlands: bog turtle
  - Young forest: golden-winged warbler
  - Beach habitat: piping plover and seabeach amaranth
  - Salt Marsh: American black duck

## Our Partners include:

- Private Landowners*  
*County Soil and Water Conservation Districts*  
*New York State Department of Environmental Conservation*  
*The Nature Conservancy*  
*Trout Unlimited*  
*The Wetland Trust*  
*New Jersey Audubon Society*  
*Wallkill River Watershed Management Group*  
*Musconetcong Watershed Association*  
*The Nature Conservancy*  
*American Littoral Society*  
*Conserve Wildlife Foundation of New Jersey*  
*The Wetlands Institute*  
*State University of New York - Environmental Science and Forestry*  
*Natural Resources Conservation Service*  
*New Jersey Department of Environmental Protection*

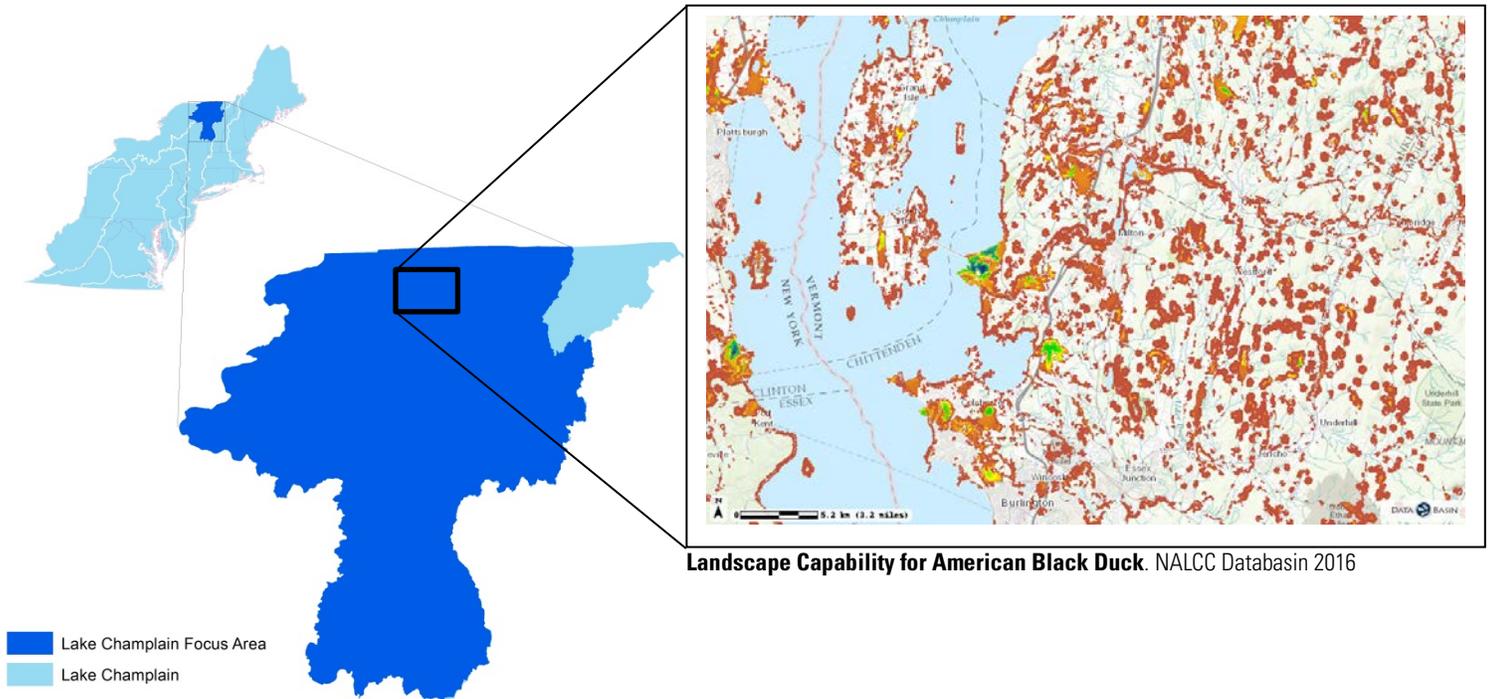


Golden winged warbler / USFWS



Alewife monitoring / USFWS

# Lake Champlain



## Introduction and Overview

The gentle topography and rich soils of the **Lake Champlain** Valley support numerous natural community types. The Missisquoi, Lamoille, Great Chazy, and Otter Creek Watersheds hold the greatest wetland resources in the Lake Champlain region. Specific wetland habitat types include open water/riverine wetlands, emergent marsh, scrub/shrub wetlands, and forested wetlands (swamps and riparian communities). Missisquoi National Wildlife Refuge is located on the northern end of the Champlain Valley and supports the largest area of connected wetlands in the basin. The Missisquoi delta was named a RAMSAR wetland of international importance in 2015. The diverse wetlands of the Lake

Champlain Valley provide foraging, breeding, nesting, and brood rearing habitat for a host of wetland dependent migratory birds.

The rivers and streams of the Lake Champlain Valley are critical to the health of the Lake Champlain ecosystem. The Ausable, Winooski, Saranac, and Poultney Rivers and their tributaries support spawning/rearing habitats for numerous interjurisdictional fish species. The floodplain and riparian habitat along the rivers and streams is also provides important habitat for numerous species of migratory birds.

## 2017-2021 Lake Champlain Five Year Targets

Field Office	Aquatic Connectivity Barriers Removed	Aquatic Connectivity Miles Reopened	Aquatic Connectivity Acres Reopened	Stream channel, riparian and shoreline Miles Restored	Wetland Habitat Acres Restored	Upland Habitat Acres Restored
	Lake Champlain Fish and Wildlife Conservation Office	30	400	*	4	1,000
New York Field Office	3	18	*	5	0	0
<b>Totals</b>	<b>33</b>	<b>418</b>	<b>*</b>	<b>9</b>	<b>1,000</b>	<b>250</b>

\* Expected habitat gain not estimated

## Focal Species, Plans and Strategies

Focal Species	Applicable Plans and Partners	Key Strategies/Conservation Actions
<b>American black duck</b> Anas rubripes	Vermont Fish and Wildlife Department - Wildlife Action Plan <a href="http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706">http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706</a> Atlantic Coast Joint Venture Waterfowl Management Plan (BCR 13) <a href="http://acjv.org/planning/waterfowl-implementation-plan/">http://acjv.org/planning/waterfowl-implementation-plan/</a> Partners in Flight - St. Lawrence Plain (BCR 13) <a href="http://www.partnersinflight.org/bcps/plan/pl_18_10.pdf">http://www.partnersinflight.org/bcps/plan/pl_18_10.pdf</a>	Restore and enhance riparian and wetland habitat  Restore hydrologic function to emergent wetlands
<b>golden-winged warbler</b> Vermivora chrysoptera	Vermont Fish and Wildlife Department - Wildlife Action Plan <a href="http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706">http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706</a> Missisquoi NWR –Comprehensive Conservation Plan (final) <a href="http://www.fws.gov/refuge/Missisquoi/what_we_do/finalccp.html">www.fws.gov/refuge/Missisquoi/what_we_do/finalccp.html</a> Natural Resources Conservation Service, Working Lands for Wildlife Program in addition to other cost share programs	Restore, manage, and enhance young forest habitat
<b>pied-billed grebe</b> Podilymbus podiceps	Vermont Fish and Wildlife Department - Wildlife Action Plan <a href="http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706">http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706</a> Missisquoi NWR –Comprehensive Conservation Plan (final) <a href="http://www.fws.gov/refuge/Missisquoi/what_we_do/finalccp.html">www.fws.gov/refuge/Missisquoi/what_we_do/finalccp.html</a> Upper Mississippi Valley / Great Lakes Waterbird Conservation Plan (BCR 13) <a href="http://www.waterbirdconservation.org/pdfs/regional/UMVGL_Waterbird_Conservation_Plan_No_Attachments_Final.pdf">http://www.waterbirdconservation.org/pdfs/regional/UMVGL_Waterbird_Conservation_Plan_No_Attachments_Final.pdf</a>	Restore hydrologic function to emergent wetlands
<b>American bittern</b> Botaurus lentiginosus	Vermont Fish and Wildlife Department - Wildlife Action Plan <a href="http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706">http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706</a> Missisquoi NWR –Comprehensive Conservation Plan (final) <a href="http://www.fws.gov/refuge/Missisquoi/what_we_do/finalccp.html">www.fws.gov/refuge/Missisquoi/what_we_do/finalccp.html</a>	Restore hydrologic function to emergent wetlands

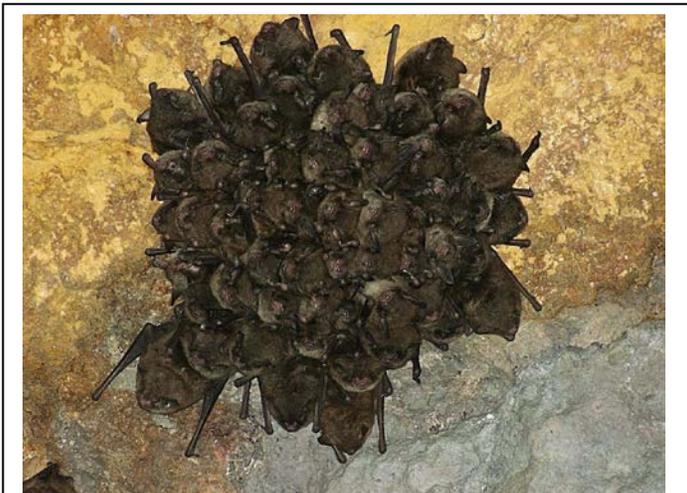
	Upper Mississippi Valley / Great Lakes Waterbird Conservation Plan (BCR 13) <a href="http://www.waterbirdconservation.org/pdfs/regional/UMVGL_Waterbird_Conservation_Plan_No_Attachments_Final.pdf">http://www.waterbirdconservation.org/pdfs/regional/UMVGL_Waterbird_Conservation_Plan_No_Attachments_Final.pdf</a>	
<b>monarch butterfly</b> <i>Danaus plexippus</i>	Monarch Joint Venture Vermont Fish and Wildlife Department - Wildlife Action Plan <a href="http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706">http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706</a>	Restore and enhance pollinator habitats
<b>rusty patched bumble bee</b> <i>Bombus affinis</i>	Vermont Fish and Wildlife Department - Wildlife Action Plan <a href="http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706">http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706</a>	Restore and enhance pollinator habitats and young forest habitat
<b>Indiana bat</b> <i>Myotis sodalis</i>	Vermont Fish and Wildlife Department - Wildlife Action Plan <a href="http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706">http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706</a> Missisquoi NWR –Comprehensive Conservation Plan (final) <a href="http://www.fws.gov/refuge/Missisquoi/what_we_do/finalccp.html">www.fws.gov/refuge/Missisquoi/what_we_do/finalccp.html</a>	Restore and enhance riparian and wetland habitat
<b>lake sturgeon</b> <i>Acipenser fulvescens</i>	Vermont Fish and Wildlife Department - Wildlife Action Plan <a href="http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706">http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706</a> Strategic Plan for Lake Champlain Fisheries <a href="http://www.dec.ny.gov/docs/regions_pdf/09lcfishplan.pdf">http://www.dec.ny.gov/docs/regions_pdf/09lcfishplan.pdf</a>	Restore aquatic connectivity the Lake Champlain tributaries
<b>landlocked Atlantic salmon</b> <i>Salmo salar</i>	Vermont Fish and Wildlife Department - Wildlife Action Plan <a href="http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706">http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706</a> Strategic Plan for Lake Champlain Fisheries <a href="http://www.dec.ny.gov/docs/regions_pdf/09lcfishplan.pdf">http://www.dec.ny.gov/docs/regions_pdf/09lcfishplan.pdf</a>	Restore aquatic connectivity the Lake Champlain tributaries
<b>brook trout</b> <i>Salvelinus fontinalis</i>	Vermont Fish and Wildlife Department - Wildlife Action Plan <a href="http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706">http://www.vtfishandwildlife.com/cms/One.aspx?portalId=73163&amp;pageId=480706</a> Eastern Brook Trout Joint Venture – Road Map to Restoration <a href="http://www.easternbrooktrout.org/docs/EBTJV_RoadmapToRestoration_FINAL.pdf">http://www.easternbrooktrout.org/docs/EBTJV_RoadmapToRestoration_FINAL.pdf</a>	Restore aquatic connectivity the Lake Champlain tributaries
<b>Blanding's turtle</b> <i>Emydoidea blandingii</i> <b>wood turtle</b> <i>Glyptemys insculpta</i> <b>spotted turtle</b> <i>Clemmys guttata</i>	Natural Resources Conservation Service, Working Lands for Wildlife Program in addition to other cost share programs USFWS Conservation Opportunity Species	Restore early successional habitats with prescribed burning Restore stream channel complexity and biological function Restore and enhance riparian and wetland habitat



American black duck / USFWS

### **Focus Area Habitat Types**

- Acadian low-elevation spruce-fir-hardwood
- Laurentian-Acadian Alkaline Conifer-Hardwood Swamp
- Laurentian-Acadian Floodplain Forest
- Laurentian-Acadian Freshwater Marsh
- Laurentian-Acadian Northern Hardwood Forest
- Laurentian-Acadian Pine-Hemlock-Hardwood Forest
- Laurentian-Acadian Wet Meadow-Shrub Swamp
- North-Central Appalachian Acidic Swamp
- North-Central Interior Wet Flatwoods
- Northern Appalachian-Acadian Conifer-Hardwood Acidic Swamp



Indiana bat / USFWS

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## ***Our Partners include:***

*Private Landowners*

*Ausable River Association*

*Trout Unlimited*

*Essex County Highway*

*Essex County Soil and Water*

*Town of Jay*

*New York State Department of Environmental Conservation*

*New York Department of State*

*New York State Department of Transportation*

*Friends of the Winooski River*

*Friends of the Mad River*

*Friends of Northern Lake Champlain*

*Missisquoi River Basin Association*

*Winooski Conservation District*

*Audubon Vermont*

*The Nature Conservancy*

*Northwest Regional Planning Commission*

*Lamoille County Natural Resources Conservation District*

*Franklin County Natural Resources Conservation District*

*Otter Creek Natural Resources Conservation District*

*Rutland County Natural Resources Conservation District*

*Wildlife Management Institute*

*Lake Champlain Basin Program*

*Natural Resources Conservation Service*

*Farm Service Agency*

*Vermont Agency of Agriculture*

*U.S. Forest Service*

*Vermont Fish and Wildlife Department*

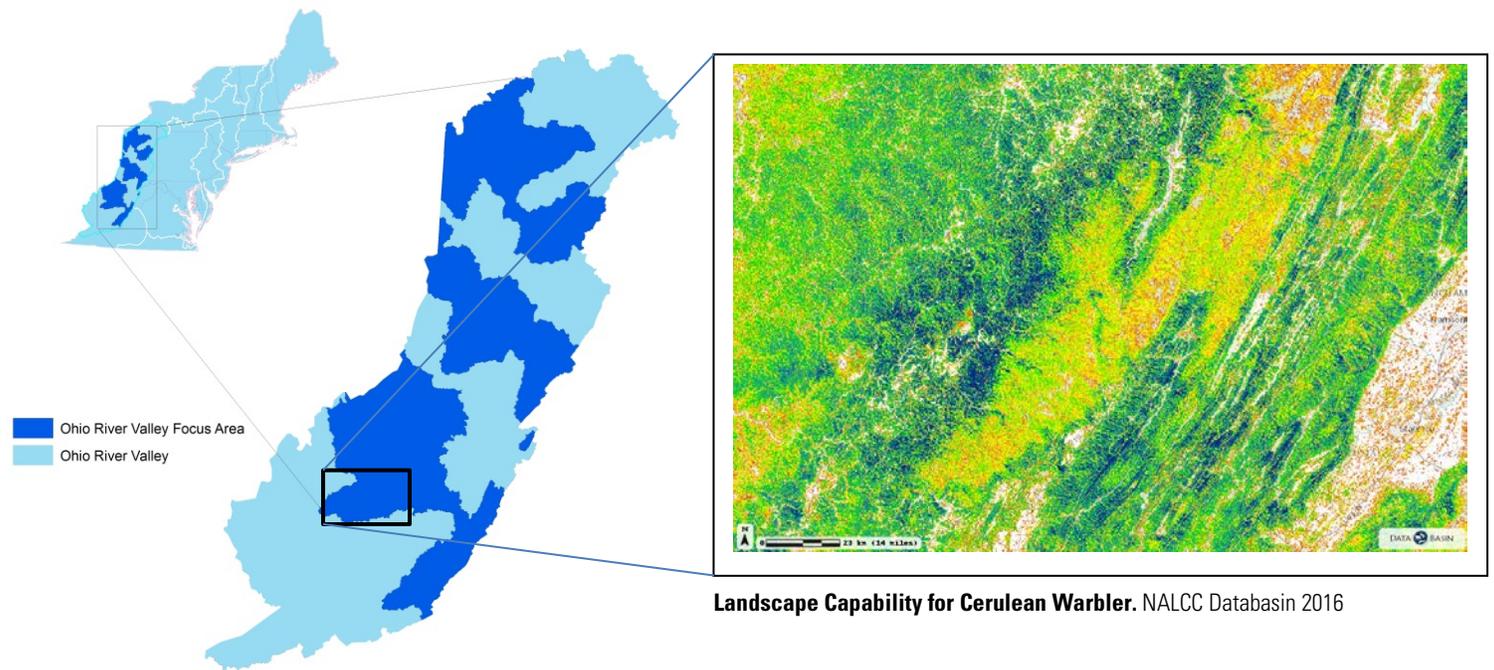
*Vermont Department of Environmental Conservation*

*New York Department of Environmental Conservation*

*Broad array of Town and Municipal governments*

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# Ohio River Valley



Landscape Capability for Cerulean Warbler. NALCC Databasin 2016

## Introduction and Overview

The Ohio River Valley crosses three regions of the Fish and Wildlife Service and includes a portion of 11 states from New York to Kentucky. The Ohio, the ecosystem's primary river, is formed by the confluence of the Allegheny and Monongahela rivers at Pittsburgh, Pennsylvania. The Ohio flows 981 miles in a southwesterly direction, joining the Mississippi River at Cairo, Illinois. A broad range of topography is present, including high Appalachian Mountains, lower foothills, and floodplains. The vegetative cover in the upper reaches is conifer, while the lower reaches are deciduous and the floodplains mostly mature bottomland forests. Row crop agriculture is present in the floodplains.

Numerous Service trust resources are in the ecosystem, including many federally listed plants, mussels, crayfish, fish, birds and mammals, waterfowl, other migratory water birds, and neotropical migratory land birds. Much of the region's economic activity (agriculture, lumbering, mining, and recreation) is based on the watershed's natural resources. Resources of the area are threatened by land conversion, poor land use, physical alteration of the area's rivers and streams, surface mining, acid mine drainage, destruction of wetland habitats, and discharges of pollutants.

Partners within the north eastern portion of the Ohio River Valley, in West Virginia and Pennsylvania, are working collaboratively to restore stream habitat and connectivity for native fish and crayfish as well as listed freshwater mussels such as the pink mucket, sheepsnose, clubshell, fanshell, snuffbox, and spectaclecase. A major partnership has formed around the West Fork River, a tributary to the Monongahela River in north central West Virginia. In 2016, three dams were removed on the West Fork River providing 491 miles of connectivity and restoring over 12 miles of instream habitat for federally listed mussels. The National Park Service is assisting the local community with increasing recreational use of the river by designating a new Water Trail. Momentum is building to continue restoration efforts on the West Fork River. Partners plan to remove at least three more dams in the next five years to further restore habitat. Additionally, a unique partnership between the Service, the United States Department of Agriculture's Natural Resource Conservation Service, and Trout Unlimited offers installation and cost share assistance to private landowners for riparian livestock fencing. Removing livestock from waterways reduces sedimentation and contaminants in the stream restoring habitat for federal trust species.

## 2017-2021 Ohio River Valley Five Year Targets

Field Office	Aquatic Connectivity Barriers Removed	Aquatic Connectivity Miles Reopened	Aquatic Connectivity Acres Reopened	Stream channel, riparian and shoreline Miles Restored	Wetland Habitat Acres Restored	Upland Habitat Acres Restored
	West Virginia Field Office	3	629	*	10	8
Pennsylvania Field Office	3	18	*	10	80	500
<b>Totals</b>	<b>6</b>	<b>654</b>	<b>*</b>	<b>20</b>	<b>88</b>	<b>1,500</b>

\* Expected habitat gain not estimated

## Focal Species, Plans and Strategies

Focal Species	Applicable Plans and Partners	Key Strategies/Conservation Actions
<b>clubshell mussel</b> <i>Pleurobema clava</i>	<ul style="list-style-type: none"> <li>Clubshell &amp; Northern Riffleshell Mussel Recovery Plan</li> <li>Ohio River Basin Fish Habitat Partnership Strategic Plan</li> <li>Strategic Plan for the Conservation of Fish and Wildlife Trust Species in the Ohio River Valley Ecosystem</li> </ul>	<ul style="list-style-type: none"> <li>Remove or modify dams and other barriers that prevent aquatic organism movement.</li> <li>Remove or modify 20 dams and other structures that significantly alter natural hydrology.</li> <li>Riparian fencing</li> </ul>
<b>snuffbox mussel</b> <i>Epioblasma triquetra</i>	<ul style="list-style-type: none"> <li>Strategic Plan for the Conservation of Fish and Wildlife Trust Species in the Ohio River Valley Ecosystem</li> <li>Ohio River Valley Ecosystem Mollusk Conservation Plan</li> </ul>	<ul style="list-style-type: none"> <li>Riparian Restoration through fencing &amp; plantings</li> <li>Dam Removal</li> </ul>
<b>diamond darter</b> <i>Crystallaria cincotta</i>	<ul style="list-style-type: none"> <li>Strategic Plan for the Conservation of Fish and Wildlife Trust Species in the Ohio River Valley Ecosystem</li> </ul>	<ul style="list-style-type: none"> <li>Riparian Restoration through Fencing &amp; Plantings</li> </ul>
<b>cerulean warbler</b> <i>Dendroica cerulea</i>	<ul style="list-style-type: none"> <li>USFWS. 2007. A Conservation Action Plan for the Cerulean Warbler (<i>Dendroica cerulea</i>) produced for the USFWS Division of Migratory Bird Management Focal Species Program. Revised version – 30 June 2007</li> <li>Wood et al. 2013. Management guidelines for enhancing</li> </ul>	<ul style="list-style-type: none"> <li>Create canopy gaps and internal forest edges</li> </ul>
<b>monarch butterfly</b> <i>Danaus plexippus</i>	<ul style="list-style-type: none"> <li>Monarch Joint Venture July 2009-May 2014 – Monarch JV 2014</li> <li>North American Monarch Conservation Plan – Commission for Environmental Cooperation 2008</li> <li>Conservation Status and Ecology of the Monarch Butterfly</li> </ul>	<ul style="list-style-type: none"> <li>Enhancement and improved management of milkweed or other nectar sources</li> <li>Protect existing breeding monarch habitat</li> </ul>

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## ***Our Partners include:***

*Private Landowners*

*American Rivers*

*Canaan Valley Institute*

*Trout Unlimited*

*U.S. Forest Service*

*U.S. Department of Agriculture*

*Natural Resources Conservation Service*

*National Park Service*

*West Virginia Division of Agriculture*

*West Virginia Conservation Agency*

*West Virginia Division of Natural Resources*

*West Virginia Department of Environmental*

*Protection Clarksburg Water Board*

*Southwestern Energy*

*Davis & Elkins College*

*All Star Ecology*

*Colcom Foundation*

*Appalachian Forest Heritage Area*

*AmeriCorps*

*Guardians of the West Fork River*

*Town of Jane Lew*

*Town of Worthington*

*Richard King Mellon Foundation*

*Ohio River Basin Fish Habitat Partnership*

*FWS National Fish Passage Program*

*West Virginia Division of Highways*

*Potomac Highlands Cooperative Weed and Pest*

*Management Area*

*Canaan Valley National Wildlife Refuge*

*Ohio River Islands National Wildlife Refuge*

*The Nature Conservancy*

*Volunteers*

*Foundation for California University of Pennsylvania*

*Habitat Forever*

*Wildlife Management Institute*

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Before Dam Removal / USFWS

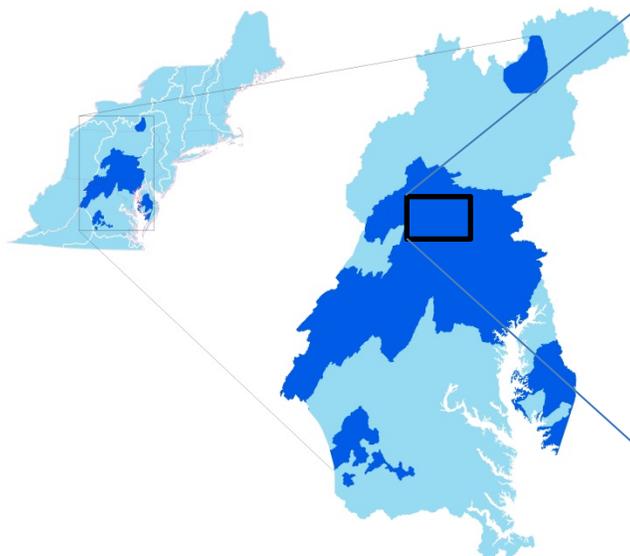


After Dam Removal / USFWS

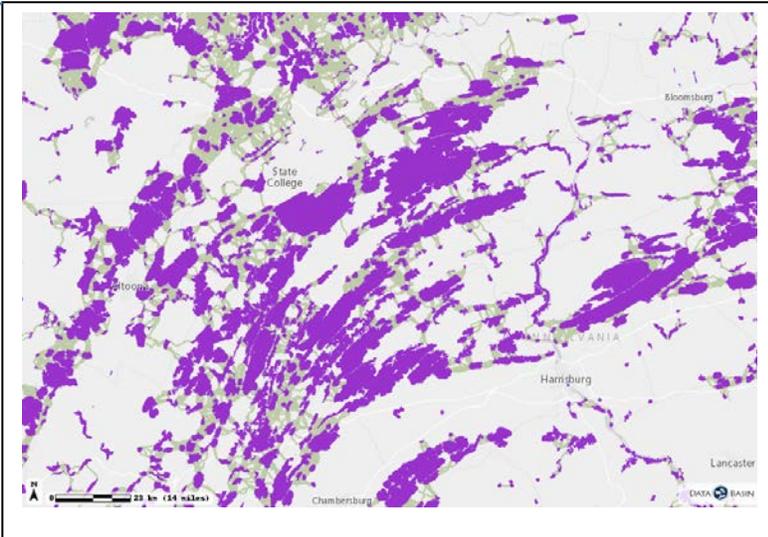


Juvenile mussels / USFWS

# Susquehanna River and Chesapeake Bay



 Susquehanna River and Chesapeake Bay Focus Area  
 Susquehanna River and Chesapeake Bay Region



**Terrestrial Core Connectors** representing resilient ecosystems for plants and animals. NALCC Databasin 2016

## Introduction and Overview

**The Susquehanna River** Basin is the second largest east of the Mississippi. Nearly 4,000,000 people live within the basin, and it provides half of the freshwater input for the entire Chesapeake Bay. The landscape character across the region has transitioned in the last century from predominantly agricultural to predominantly forested with a patchwork of agricultural lands interspersed with urban areas and rural towns. In New York, the Upper Susquehanna Focal Area (USFA) is located in the eastern portion of the Southern Tier and contains approximately 6,260 square miles or 11.5 percent of the state. This focal area is largely demarcated by the watersheds of the Susquehanna and Chemung Rivers. It is located almost entirely within the Glaciated Allegheny Plateau with a local relief of 190-1,000 feet. Overall elevation ranges from 900-2,200 feet. The USFA is characterized by its extensive plateau with glacially-rounded hills and glacially-widened U-shaped valleys.

This focal area was selected because it contains important riverine and forested wetland environments that support a unique set of regionally significant fish, wildlife, and plant resources. There are currently one Federally-listed species

and five identified species of concern within the focal area. The large rivers and high quality tributaries within the focal area support remnant populations of brook trout and eastern hellbender as well as the potential to support renewed spawning grounds for American shad. Vernal pool habitats are present throughout the focal area and they support a variety of wetland species including the Jefferson salamander and northeastern bulrush, Engendered. The matrix of successional habitat present throughout the focal area is also important habitat for woodcock. The USFA is located within Bird Conservation Region 28 (Appalachian Mountains) and Partners in Flight Physiographic Area 24 (Allegheny Plateau).

**Chesapeake Bay** is the largest estuary in the United States. The watershed encompasses 64,000 square miles in parts of six states – Maryland, Virginia, Delaware, District of Columbia, Pennsylvania, New York, and West Virginia. The Chesapeake Bay and its tributaries support more than 2,700 plant and animal species, including threatened and endangered species, waterfowl, raptors, neotropical migratory birds, anadromous fish, and commercially important fish and shellfish. Forested uplands are nesting

and resting habitat for neotropical migratory birds and coastal wetlands provide valuable wintering grounds for waterfowl. The tributaries within the watershed are spawning grounds for anadromous fish species like striped bass, blueback herring, alewife, American shad, hickory shad, and Atlantic sturgeon. Shallow water areas support submerged aquatic vegetation, underwater plants that provide food and cover for waterfowl, blue crabs, and juvenile fish. Commercially valuable shellfish, like oysters and clams, live along the Bay's bottom.

Four centuries of European settlement have impacted local ecosystems in Maryland and Delaware with both states losing more than 50 percent of their original wetlands (1 million acres) and forests. Urban sprawl, land clearing and draining of wetlands for agriculture represents the two largest causes of wetland and forest decline. Aquatic life in streams has been degraded by clearing of land and altering the natural flow of water. Dams, improper placement of culverts in streams, and channelization have all had major

impacts to migratory fish and other aquatic life. Some pesticides used on cropland and in urban settings have been implicated in the decline of pollinators. Less conspicuous impacts include the conversion of diverse mixed hardwood/pine forests to pine plantations. Despite the impacts, Maryland and Delaware, contain diverse wildlife habitats, contain several National Wildlife Refuges and state protected land. This landscape presents great opportunities to work with private landowners, on wetland, forest/riparian buffer restoration and aquatic connectivity. These projects will provide excellent habitat for nesting and migratory birds, pollinators and other wildlife, and open more spawning areas for migratory fish. Secondary yet equally important benefits will be stronger and more resilient natural systems, cleaner water for freshwater streams and estuarine rivers helping keystone species like sea grasses and oysters thrive.

## 2017-2021 Susquehanna River and Chesapeake Bay Five Year Targets

Field Office	Aquatic Connectivity Barriers Removed	Aquatic Connectivity Miles Reopened	Aquatic Connectivity Acres Reopened	Stream channel, riparian and shoreline Miles Restored	Wetland Habitat Acres Restored	Upland Habitat Acres Restored
Pennsylvania Field Office	8	20	*	50	500	750
New York Field Office	5	30	*	0	0	0
Chesapeake Bay Field Office	3	15	*	0	2,160	1,000
West Virginia Field Office	5	35	*	10	0	0
Virginia Field Office	0	0	*	1	0	8
<b>Totals</b>	<b>21</b>	<b>100</b>	<b>*</b>	<b>61</b>	<b>2,660</b>	<b>1,758</b>

\* Expected habitat gain not estimated

### Focus Area Habitat Types

- In-stream and riparian habitat throughout farmlands in the Susquehanna, Upper Potomac, and Potts Creek drainage
- Headwater streams (reconnecting by removing dams and barriers)
- Native young-forest habitat restoration in bottomlands, riparian and upland areas for American woodcock and golden-winged warblers
- Native young-forest and scrub shrub wet pastures for bog turtles and American woodcock
- Nontidal wetlands on the Coastal Plain
- Interior forests on the Coastal Plain
- Grasslands/Early successional throughout state
- Riverine floodplain wetlands on the Coastal Plain
- Coastal Plain streams (barrier removal)
- Riparian forests in the Piedmont

## Focal Species, Plans and Strategies

Focal Species	Applicable Plans and Partners	Key Strategies/Conservation Actions
<p><b>American woodcock</b> <i>Scolopax minor</i></p>	<ul style="list-style-type: none"> <li>• Kelley, James, Scot Williamson and Thomas R. Cooper, eds. 2008. American Woodcock Conservation Plan: A Summary of and Recommendations for Woodcock Conservation in North America. A Wildlife Management Institute Publication February 2008.</li> <li>• Palmer B. 2008. The American Woodcock. 3pp. Pennsylvania Game Commission. 2005. Pennsylvania's Wildlife Action Plan. Version 1.0a. Updated May 2008. <a href="http://www.pgc.pa.gov/Wildlife/WildlifeActionPlan/Documents/SWAP-CHAPTER-1-apx14a-birds.pdf">http://www.pgc.pa.gov/Wildlife/WildlifeActionPlan/Documents/SWAP-CHAPTER-1-apx14a-birds.pdf</a></li> </ul>	<ul style="list-style-type: none"> <li>• Work with partners (WMI, RGS, Woodcock Limited, Mellon Foundation, PGC) to identify and secure funding for young forest restoration.</li> <li>• Work with our partners at WMI, IUP, and RGS to develop best management practices for use by landowners and industry</li> <li>• Work with the timber industry to encourage early-successional habitat restoration</li> <li>• Work to deliver USDA-funded (WHIP, WRP, CREP etc.) projects that benefit American woodcock</li> </ul>
<p><b>bog turtle</b> <i>Clemmys muhlenbergii</i></p>	<ul style="list-style-type: none"> <li>• U.S. Fish and Wildlife Service. 2001. Bog Turtle (<i>Clemmys muhlenbergii</i>), Northern Population, Recovery Plan. Hadley, Massachusetts. 103 pp</li> </ul>	<ul style="list-style-type: none"> <li>• Work with landowners and other partners to identify and fund bog turtle restoration projects</li> <li>• Restore bog turtle habitat on known sites in the Susquehanna watershed</li> </ul>
<p><b>brook trout</b> <i>Salvelinus fontinalis</i></p>	<ul style="list-style-type: none"> <li>• Eastern Brook Trout Joint Venture Conservation Strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Work with partners to assess new areas of existing and potential brook trout habitat</li> <li>• Work with partners to restore fish passage</li> <li>• Continue extensive in-stream and riparian habitat restoration that increases brook trout abundance and production</li> </ul>
<p><b>golden-winged warbler</b> <i>Vermivora chrysoptera</i></p>	<ul style="list-style-type: none"> <li>• Rosenberg, K.V. and B. Robertson. 2003. Partners In Flight Landbird Conservation Plan: Physiographic Area 17: Northern Ridge and Valley. Version 1.1: October 2003.</li> <li>• Larkin, J. 2008. Golden-winged Warbler Conservation Initiative-Pennsylvania, 2008 Annual Report (May 1 – July 10, 2008). Indiana University of Pennsylvania. August 2008.</li> <li>• Natural Resources Conservation Service, Working Lands for Wildlife Program in addition to other cost share programs</li> </ul>	<ul style="list-style-type: none"> <li>• Work with our partners to restore a minimum of 50 acres of suitable habitat annually to support 10 pairs of Golden-winged Warblers – estimated annual cost \$25,000</li> <li>• Work with our partners at WMI, IUP, and RGS to develop best management practices for use by landowners and industry</li> <li>• Work with the timber industry to encourage early-successional habitat restoration</li> <li>• Work to deliver USDA-funded projects that benefit Golden-winged Warbler and others in the habitat suite</li> <li>• Work with our partners to implement habitat projects that promote</li> </ul>

Focal Species	Applicable Plans and Partners	Key Strategies/Conservation Actions
		segregation between Golden-winged Warblers and Blue-winged Warblers
<b>Indiana bat</b> <i>Myotis sodalis</i>	<ul style="list-style-type: none"> <li>U.S. Fish and Wildlife Service (USFWS). 2007. Indiana Bat (<i>Myotis sodalis</i>) Draft Recovery Plan: First Revision. U.S. Fish and Wildlife Service, Fort Snelling, MN. 258 pp.</li> </ul>	<ul style="list-style-type: none"> <li>Work with partners to identify habitat restoration projects especially at hibernacula</li> <li>Work with partners to obtain funding and continue restoration efforts</li> </ul>
<b>American black duck</b> <i>Anas rubripes</i>	<ul style="list-style-type: none"> <li>North American Waterfowl Management Plan</li> <li>USFWS Bird of Management Concern</li> <li>Maryland Wildlife Diversity Conservation Plan</li> </ul>	<ul style="list-style-type: none"> <li>Work with several partners to restore nontidal wetlands and reconnect streams to floodplain forests.</li> <li>Work closely with NRCS, TNC, MD DNR to accomplish this.</li> </ul>
<b>prairie warbler</b> <i>Dendroica discolor</i>	<ul style="list-style-type: none"> <li>Partners in Flight Bird Conservation Plan for the Mid-Atlantic Coastal Plain</li> <li>Maryland Wildlife Diversity Conservation Plan</li> </ul>	<ul style="list-style-type: none"> <li>Work closely with Baltimore Gas and Electric and IVM Partners on management of powerline “right of way” to support habitat for birds that use early successional habitats</li> <li>Work on “right of way” projects plus hold a workshop that could affect additional management</li> </ul>
<b>monarch butterfly</b> <i>Danaus plexippus</i>	<ul style="list-style-type: none"> <li>2016 Monarch Conservation Implementation Plan.</li> <li>2016 Monarch Joint Venture</li> </ul>	<ul style="list-style-type: none"> <li>Incorporate pollinator plantings at all nontidal wetlands projects.</li> <li>Plant grassland projects with enhanced pollinator mixes</li> <li>Work on power line “right of way” projects that manage for pollinators</li> </ul>
<b>alewife</b> <i>Alosa pseudoharengus</i>  <b>blueback herring</b> <i>Alosa aestivalis</i>	<ul style="list-style-type: none"> <li>Atlantic States Marine Fisheries Commission’s Interstate Fisheries Management Program</li> </ul>	<ul style="list-style-type: none"> <li>Improve stream spawning habitat on the Coastal Plain by restoring wetlands and riparian areas in the spawning watersheds.</li> <li>Repair culverts that are blocking upstream migration to spawning habitat.</li> </ul>
<b>American Eel</b> <i>Anguilla rostrata</i>	<ul style="list-style-type: none"> <li>NOAA Fisheries Habitat Enterprise Strategic Plan for fiscal years 2016-2020</li> <li>Atlantic States Marine Fisheries Commission’s Interstate Fisheries Management Program</li> </ul>	<ul style="list-style-type: none"> <li>Restore riparian forest buffers along piedmont streams.</li> </ul>
<b>dwarf wedgemussel</b> <i>Alasmidonta heterodon</i>	<ul style="list-style-type: none"> <li>Maryland Wildlife Diversity Conservation Plan</li> </ul>	<ul style="list-style-type: none"> <li>Complete many agricultural best management practices in the Browns Branch watershed on the Coastal Plain.</li> </ul>
<b>Chesapeake logperch</b> <i>Percina bimaculata</i>	<ul style="list-style-type: none"> <li>Conservation Opportunity Species Implementation Strategy</li> </ul>	<ul style="list-style-type: none"> <li>Restore channel processes that improve water quality, particularly sedimentation.</li> </ul>

Focal Species	Applicable Plans and Partners	Key Strategies/Conservation Actions
<b>James spinymussel</b> <i>Pleurobema collina</i>	<ul style="list-style-type: none"> <li>James Spiny mussel Recovery Plan <a href="https://www.fws.gov/ecos/ajax/docs/recovery_plan/900924b.pdf">https://www.fws.gov/ecos/ajax/docs/recovery_plan/900924b.pdf</a></li> <li>Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> </ul>	<ul style="list-style-type: none"> <li>Restoring fish and fish host passage and habitat through low water crossing and dam removal</li> <li>Restoring riparian habitat</li> <li>Stream restoration through natural channel design techniques</li> </ul>

**Our Partners include:**

- Private Landowners
- Habitat Forever
- Foundation for California University of Pennsylvania
- Lancaster County Conservation District
- Natural Resources Conservation Service
- Trout Unlimited
- Wildlife for Everyone Endowment Foundation Pennsylvania
- Growing Greener
- Centre County Conservation District,
- National Fish and Wildlife Foundation
- RGS
- Woodcock Limited
- Pennsylvania Game Commission
- Pennsylvania Fish and Boat Commission
- PA Department of Conservation and Natural Resources Mellon Foundation
- Indiana University of Pennsylvania
- Wildlife Management Institute
- The General's Lodge
- Juniata College
- Upper Susquehanna Coalition
- Tioga County Soil and Water Conservation District
- New York State Department of Environmental Conservation
- Potomac Valley Conservation District
- Greenbrier Valley Conservation District
- Chesapeake Bay Foundation
- The Nature Conservancy
- Maryland Forest Service
- Maryland Department of Natural Resources
- Western Maryland and Delmarva Resource Conservation District Office
- Maryland Department of Agriculture
- Chesapeake Bay Program
- Thomas Jefferson Soil and Water Conservation District
- Friends of the Rivers of Virginia
- Virginia Department of Game and Inland Fisheries



Bog Turtle / USFWS

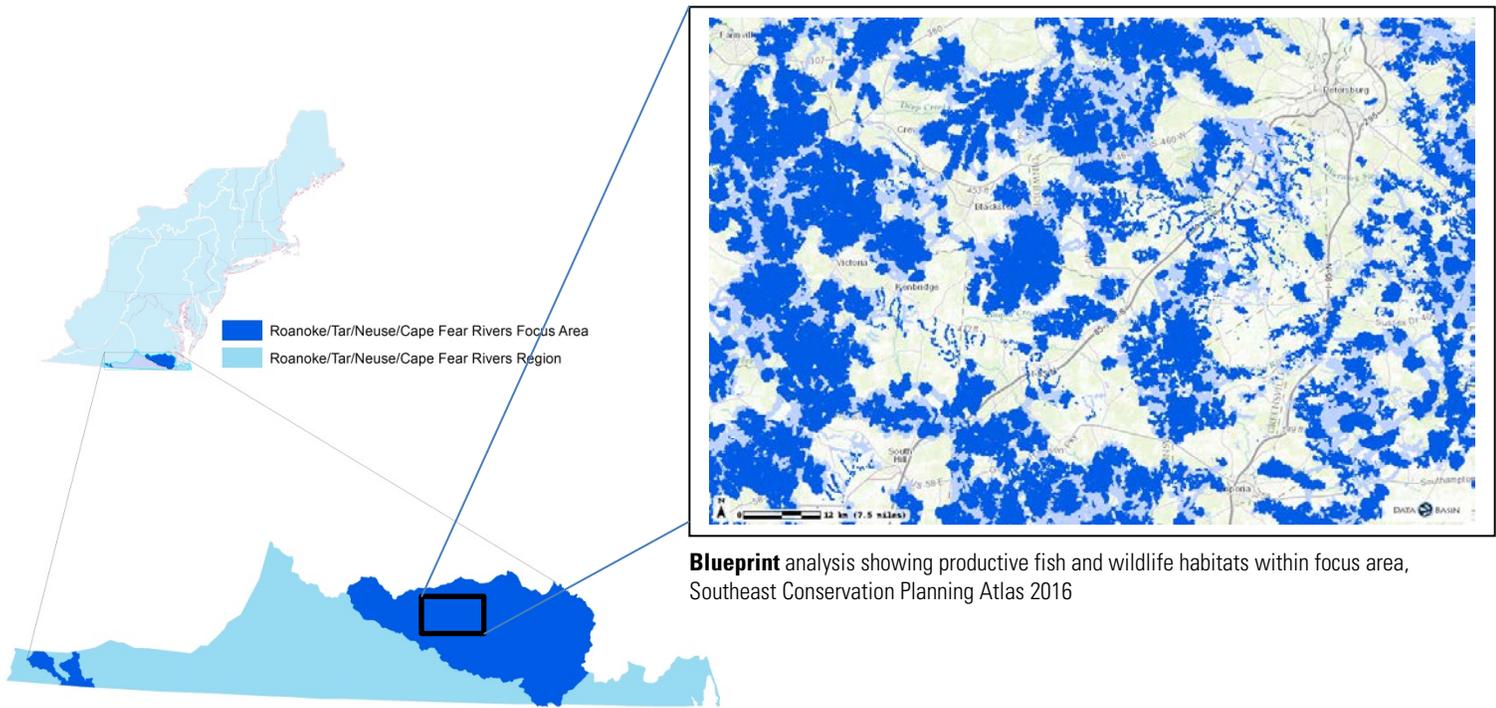


Restoring channel complexity for brook trout / USFWS



Planting native vegetation / USFWS

# Roanoke/Tar/Neuse/Cape Fear Rivers



**Blueprint** analysis showing productive fish and wildlife habitats within focus area, Southeast Conservation Planning Atlas 2016

## Introduction and Overview

The **Roanoke/Tar/Neuse/Cape Fear River Region** drains much of southern Virginia and eastern North Carolina though the Tar, Neuse and Cape Fear River watersheds lie entirely within North Carolina. The Roanoke River originates in the Blue Ridge province, passes through the Virginia Piedmont prior to entering North Carolina and the Coastal Plain. With the exception of a few larger population centers such as the City of Roanoke and smaller towns, the rolling hills and moderate gradients streams and rivers move through a landscape dominated by forested and agricultural land. The Blackwater and Nottoway River watersheds lie almost entirely within Coastal Plain of Virginia, where they meet to form the Chowan River at the North Carolina state line. The area is characterized by relatively flat topography, slow moving streams and rivers in primarily agricultural and forested landscapes. Population growth and urbanization is occurring primarily on the eastern and northern boundaries of the watershed from the Richmond/Petersburg and Hampton Roads areas. Two focal areas are embedded within the region.

## Blackwater and Nottoway Rivers Watershed Priority Area

The watershed is an important headwater to the Albemarle and Pamlico Sounds, is uniquely pristine, and was recently a recognized as the North American Coastal Plain global biodiversity hotspot. This area historically supported longleaf pine dominated ecosystems and their unique community of species, including the red-cockaded woodpecker. We will pursue funding to restore longleaf pine habitat for the red-cockaded woodpecker (*Picoides borealis*) and priority migratory birds in coordination with partners, such as the Virginia Longleaf Pine Cooperators local implementation team (Regional Working Group for America's Longleaf 2009). We will also support projects that restore or enhance habitat and water quality to promote conservation of Atlantic slope mussels including, dwarf wedgemussel (*Alasmidonta heterodon*, and Atlantic pigtoe (*Fusconaia masoni*). The watershed hosts multiple fisheries species of conservation concern and over 80 priority migratory bird species. Roanoke logperch (*Percina rex*) also occurs in the Nottoway River drainage and has been identified as a priority Roanoke logperch recovery area in the species' recovery plan. We will work with our

conservation partners to engage in projects that enhance habitat and water quality such as barrier removal (restore connectivity), implementing agricultural BMPs (e.g., excluding livestock from streams), and stream and riparian restoration.

### Roanoke Loggerhead Priority Area

This priority area encompasses the federally listed endangered species' extant range in Virginia. This area overlaps in part with the Blackwater and Nottoway Rivers Watershed Priority Area and includes the upper Roanoke

River watershed including the Smith, Pigg, North and South Forks and upper mainstem of the Roanoke River. This area of the Roanoke is characterized by numerous large water supply and flood control impoundments and significant sedimentation due to agricultural practices that has resulted significant habitat loss and degradation. Our goal is to recover the species by working with our partners to engage in projects that enhance habitat and water quality such as barrier removal (restore connectivity), implementing agricultural BMPs (e.g., excluding livestock from streams), and stream and riparian restoration.

## 2017-2021 Roanoke/Tar/Neuse/Cape Fear River Five Year Targets

Field Office	Aquatic Connectivity Barriers Removed	Aquatic Connectivity Miles Reopened	Aquatic Connectivity Acres Reopened	Stream channel, riparian and shoreline Miles Restored	Wetland Habitat Acres Restored	Upland Habitat Acres Restored
Virginia Field Office	2	18	*	2.2	3,783	100
<b>Totals</b>	<b>2</b>	<b>18</b>	<b>*</b>	<b>2.2</b>	<b>3,783</b>	<b>100</b>

\* Expected habitat gain not estimated

## Focal Species, Plans and Strategies

Focal Species	Applicable Plans and Partners	Key Strategies/Conservation Actions
<b>red-cockaded woodpecker</b> <i>Picoides borealis</i>	<ul style="list-style-type: none"> <li>Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> <li>Red-cockaded Woodpecker Recovery Plan <a href="https://www.fws.gov/rcwrecovery/files/RecoveryPlan/finalrecoveryplan.pdf">https://www.fws.gov/rcwrecovery/files/RecoveryPlan/finalrecoveryplan.pdf</a></li> <li>Partners in Flight – Mid-Atlantic Coastal Plain (BCR 44) <a href="http://www.partnersinflight.org/bcps/plan/pl_44_10.pdf">http://www.partnersinflight.org/bcps/plan/pl_44_10.pdf</a></li> </ul>	<ul style="list-style-type: none"> <li>Restoring longleaf pine through site preparation and planting.</li> <li>Managing longleaf pine stands through prescribed burning</li> </ul>
<b>Bachman's sparrow</b> <i>Peucaea aestivalis</i>	<ul style="list-style-type: none"> <li>Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> <li>Partners in Flight – Mid-Atlantic Coastal Plain (BCR 44) <a href="http://www.partnersinflight.org/bcps/plan/pl_44_10.pdf">http://www.partnersinflight.org/bcps/plan/pl_44_10.pdf</a></li> </ul>	<ul style="list-style-type: none"> <li>Restoring longleaf pine through site preparation and planting.</li> <li>Managing longleaf pine stands through prescribed burning</li> </ul>
<b>northern bobwhite</b> <i>Colinus virginianus</i>	<ul style="list-style-type: none"> <li>Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> <li>Northern Bobwhite Quail Action Plan for Virginia <a href="http://www.dgif.virginia.gov/wildlife/quail/action-plan/quail-action-plan.pdf">http://www.dgif.virginia.gov/wildlife/quail/action-plan/quail-action-plan.pdf</a></li> </ul>	<ul style="list-style-type: none"> <li>Restoring longleaf pine through site preparation and planting.</li> <li>Managing longleaf pine stands through prescribed burning</li> </ul>

<p><b>American woodcock</b> <i>Scolopax minor</i></p>	<ul style="list-style-type: none"> <li>• Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> <li>• American Woodcock Conservation Plan <a href="http://timberdoodle.org/sites/default/files/woodcockPlan_0.pdf">http://timberdoodle.org/sites/default/files/woodcockPlan_0.pdf</a></li> </ul>	<ul style="list-style-type: none"> <li>• Restoring forested wetlands through the installation of fixed weirs</li> <li>• Maintaining early successional habitat</li> </ul>
<p><b>little blue heron</b> <i>Egretta caerulea</i></p>	<ul style="list-style-type: none"> <li>• Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> <li>• Southeast U.S. Waterbird Conservation Plan <a href="http://www.waterbirdconservation.org/southeast_us.html">http://www.waterbirdconservation.org/southeast_us.html</a></li> </ul>	<ul style="list-style-type: none"> <li>• Restoring longleaf pine through site preparation and planting.</li> <li>• Managing longleaf pine stands through prescribed burning</li> </ul>
<p><b>black duck</b> <i>Anas rubripes</i></p>	<ul style="list-style-type: none"> <li>• Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> <li>• Atlantic Coast Joint Venture Waterfowl Management Plan (BCR 13) <a href="http://acjv.org/planning/waterfowl-implementation-plan/">http://acjv.org/planning/waterfowl-implementation-plan/</a></li> </ul>	<ul style="list-style-type: none"> <li>• Restoring tidal wetlands and coastal resiliency through living shoreline construction</li> </ul>
<p><b>mallard</b> <i>Anas platyrhynchos</i></p>	<ul style="list-style-type: none"> <li>• Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> <li>• Atlantic Coast Joint Venture Waterfowl Management Plan (BCR 13) <a href="http://acjv.org/planning/waterfowl-implementation-plan/">http://acjv.org/planning/waterfowl-implementation-plan/</a></li> </ul>	<ul style="list-style-type: none"> <li>• Restoring tidal wetlands and coastal resiliency through living shoreline construction</li> </ul>
<p><b>monarch butterfly</b> (<i>Danaus plexippus</i>) and other at risk pollinator species</p>	<ul style="list-style-type: none"> <li>• Monarch Conservation Implementation Plan, Monarch Joint Venture, 2017.</li> <li>• North American Monarch Conservation Plan – Commission for Environmental Cooperation, 2008 <a href="http://monarchjointventure.org/images/uploads/documents/5431_Monarch_en.pdf">http://monarchjointventure.org/images/uploads/documents/5431_Monarch_en.pdf</a></li> <li>• Conservation Status and Ecology of the Monarch Butterfly in the United States – Jepsen et al., 2015 <a href="http://www.xerces.org/wp-content/uploads/2015/03/NatureServe-Xerces_monarchs_USFS-final.pdf">http://www.xerces.org/wp-content/uploads/2015/03/NatureServe-Xerces_monarchs_USFS-final.pdf</a></li> <li>• Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> </ul>	<ul style="list-style-type: none"> <li>• Incorporate pollinator habitat into upland habitat restoration where appropriate</li> </ul>
<p><b>Roanoke logperch</b> <i>Percina rex</i></p>	<ul style="list-style-type: none"> <li>• Roanoke logperch (<i>Percina rex</i>) Recovery Plan <a href="http://ecos.fws.gov/docs/recovery_plan/920320a.pdf">http://ecos.fws.gov/docs/recovery_plan/920320a.pdf</a></li> <li>• Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> <li>• National Fish Habitat Action Plan <a href="https://www.fws.gov/fisheries/whatwedo/nfhap/documents/Action_Plan_2nd_Ed_Final.pdf">https://www.fws.gov/fisheries/whatwedo/nfhap/documents/Action_Plan_2nd_Ed_Final.pdf</a></li> </ul>	<ul style="list-style-type: none"> <li>• Restoring fish and fish host passage and habitat through low water crossing and dam removal</li> <li>• Restoring riparian habitat</li> <li>• Stream restoration through natural channel design techniques</li> </ul>

## Our Partners

*Private Landowners*

*The Nature Conservancy*

*Blue Ridge Soil and Water Conservation District*

*Skyline Soil and Water Conservation District*

*Natural Resources Conservation Service*

*Virginia Department of Game and Inland Fisheries*

*Friends of the Rivers of Virginia*

*Virginia Department of Conservation and Recreation*

*Meadowview Biological Station*

*Virginia Department of Forestry*

*Wildlife Foundation of Virginia*

*Back Bay Restoration Foundation*

## Focus Area Habitat Types

- Deciduous forested wetlands
- Emergent tidal wetlands
- Riverine cobble/gravel instream habitat
- Riparian deciduous forested upland
- Longleaf pine forested upland



Dam removal before construction / USFWS



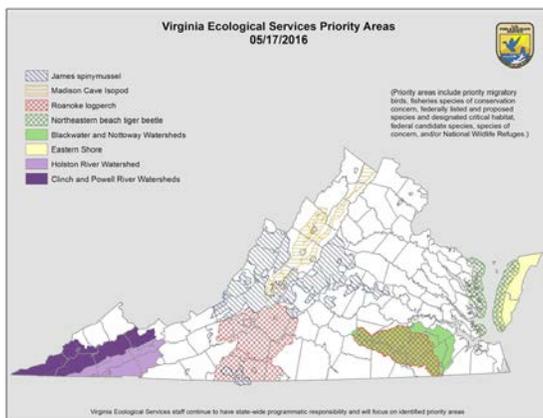
Dam removal after construction / USFWS



Roanoke logperch / USFWS

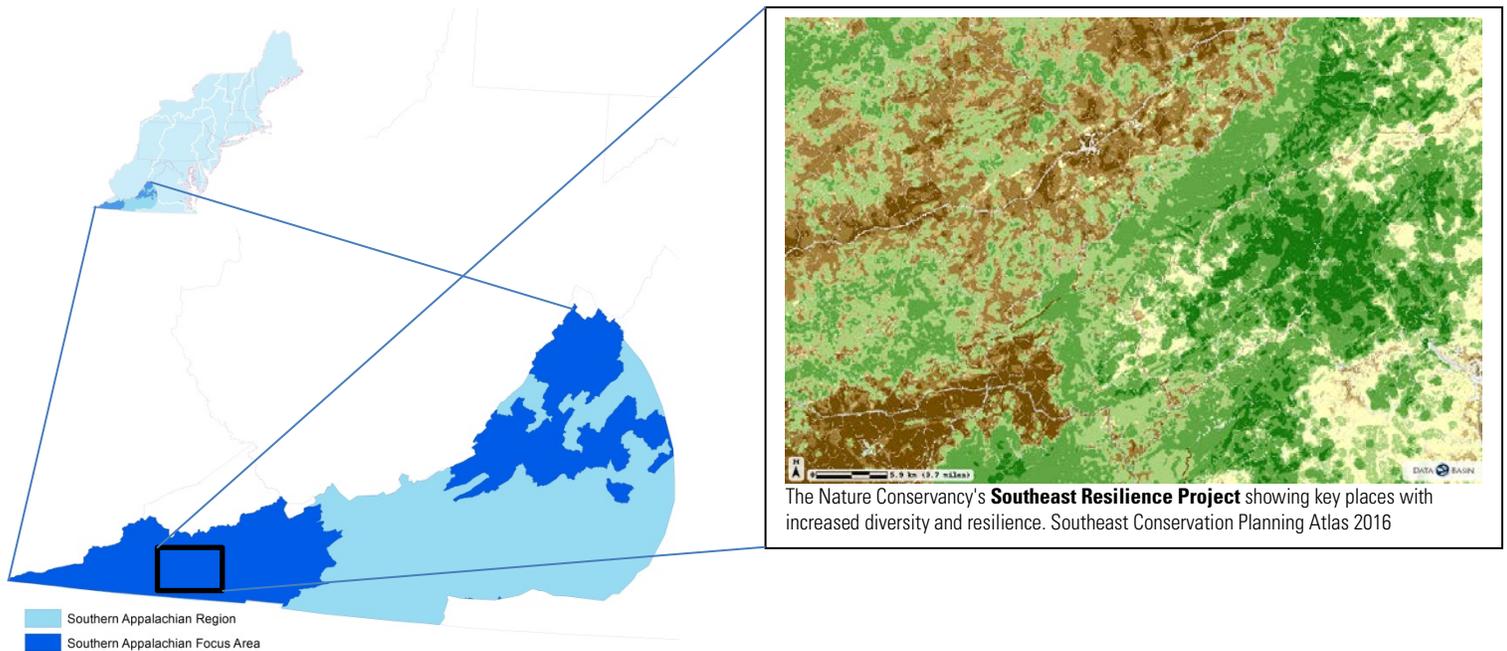


Increased channel complexity / USFWS



Virginia ES Field Office Priority Areas 2016 / USFWS

# Southern Appalachian



## Introduction and Overview

The **Southern Appalachian** ecoregion encompasses three rivers in Virginia: the Clinch, Holston, and Powell rivers. The focal area includes the Allegheny Plateau and the southernmost section of the Valley and Ridge Physiographic Province. The area is characterized by narrow valleys bisected by ridges. Land use is primarily forestry and agriculture, with small towns scattered throughout the valleys. The watershed is host to numerous species of fish, mussel, and other aquatic life species. In fact, according to The Nature Conservancy, the Upper Tennessee River watershed greatly exceeds all other watersheds in the lower 48 states in terms of species richness and diversity! The watershed has 48 imperiled and vulnerable fish and mussel species. This includes 21 federally endangered or threatened species. The area is globally significant and was included in an area designated in 1988 by the United Nations Educational, Scientific and Cultural Organization as the Southern Appalachian Man and the Biosphere Reserve. Our goal is to protect and recover these species and maintain and restore the habitats upon which they depend. The Upper Tennessee River Basin in southwestern Virginia is at the epicenter of one of six areas that The Nature Conservancy, using a "rarity-weighted richness index," has identified as

biodiversity hotspots in the U.S.

### Clinch and Powell Rivers Watershed Priority Area

This watershed is an important headwater of the Tennessee River system, harboring more than 35 federally listed threatened and endangered species, the majority of which are freshwater fishes and mussels, and designated critical habitat for more than 5 species. The watershed also hosts multiple fisheries species of conservation concern and 30+ priority migratory bird species. In accordance with the Imperiled Aquatic Species Conservation Strategy for the Upper Tennessee River Basin (Service 2014), the PFW program will continue to partner with conservation organizations, municipalities, and landowners to implement stream restoration and riparian buffer projects in the watershed.

### Holston River Watershed Priority Area

The Virginia portion of this watershed has more than 30 federally listed threatened and endangered species, the majority of which are freshwater fishes and mussels, and designated critical habitat for some of the species. The watershed also hosts several fisheries species of conservation concern and more than 20 priority migratory bird species. This watershed is an important headwater area of the Tennessee River system and is a globally

significant area of biodiversity. Our goal is to protect and recover these imperiled aquatic species and maintain and restore the habitats upon which they depend. In accordance with the Imperiled Aquatic Species Conservation Strategy for the Upper Tennessee River Basin, we will continue efforts to collaborate with Service’s Fish and Aquatic

Conservation Division to remove fish passage barriers in the Middle Fork Holston watershed, and partner with local conservation organizations to implement streambank stabilization and riparian buffers in the Holston River watershed.

## 2017-2021 Southern Appalachian Region Five Year Targets

Field Office	Aquatic Connectivity Barriers Removed	Aquatic Connectivity Miles Reopened	Aquatic Connectivity Acres Reopened	Stream channel, riparian and shoreline Miles Restored	Wetland Habitat Acres Restored	Upland Habitat Acres Restored
Virginia Field Office	2	100	*	2	.5	5
<b>Totals</b>	<b>2</b>	<b>100</b>	<b>*</b>	<b>2</b>	<b>.5</b>	<b>5</b>

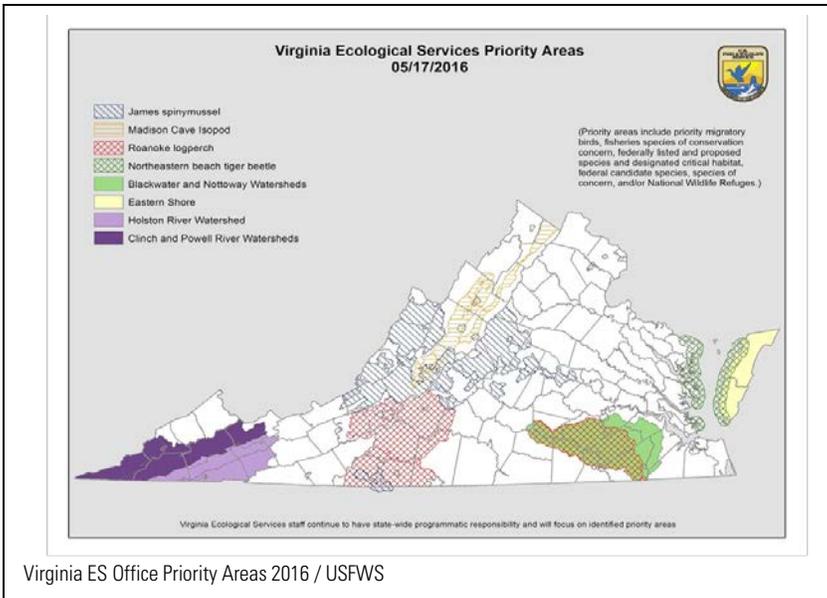
\* Expected habitat gain not estimated

## Focal Species, Plans and Strategies

Focal Species	Applicable Plans and Partners	Key Strategies/Conservation Actions
<b>yellowfin madtom</b> <i>Noturus flavipinnis</i>	<ul style="list-style-type: none"> <li>Imperiled Aquatic Species Conservation Strategy for the Upper Tennessee Basin_ <a href="https://www.fws.gov/northeast/virginiafield/pdf/MISC/2014_UTRB_imperiled_aquatic_strategy.pdf">https://www.fws.gov/northeast/virginiafield/pdf/MISC/2014_UTRB_imperiled_aquatic_strategy.pdf</a></li> <li>Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> <li>Yellowfin Madtom Recovery Plan <a href="https://archive.org/details/recoveryplanell00ashe">https://archive.org/details/recoveryplanell00ashe</a></li> <li>National Fish Habitat Action Plan <a href="https://www.fws.gov/fisheries/whatwedo/nfhap/documents/Action_Plan_2nd_Ed_Final.pdf">https://www.fws.gov/fisheries/whatwedo/nfhap/documents/Action_Plan_2nd_Ed_Final.pdf</a></li> </ul>	<ul style="list-style-type: none"> <li>Restore fish passage and associated habitats</li> <li>Restore riparian habitat</li> <li>Stream restoration through natural channel design techniques</li> </ul>
<b>slender chub</b> <i>Erimystax cahni</i>	<ul style="list-style-type: none"> <li>Imperiled Aquatic Species Conservation Strategy for the Upper Tennessee Basin_ <a href="https://www.fws.gov/northeast/virginiafield/pdf/MISC/2014_UTRB_imperiled_aquatic_strategy.pdf">https://www.fws.gov/northeast/virginiafield/pdf/MISC/2014_UTRB_imperiled_aquatic_strategy.pdf</a></li> <li>Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> <li>Spotfin Chub Recovery Plan <a href="http://ecos.fws.gov/docs/recovery_plan/831121.pdf">http://ecos.fws.gov/docs/recovery_plan/831121.pdf</a></li> <li>National Fish Habitat Action Plan</li> </ul>	<ul style="list-style-type: none"> <li>Restoring fish and fish host passage and habitat through low water crossing and dam removal</li> <li>Restoring riparian habitat</li> <li>Stream restoration through natural channel design techniques</li> </ul>

Focal Species	Applicable Plans and Partners	Key Strategies/Conservation Actions
	<p><a href="https://www.fws.gov/fisheries/whatwedo/nfhap/documents/Action_Plan_2nd_Ed_Final.pdf">https://www.fws.gov/fisheries/whatwedo/nfhap/documents/Action_Plan_2nd_Ed_Final.pdf</a></p>	
<p><b>duskytail darter</b> <i>Etheostoma ercnurum</i></p>	<ul style="list-style-type: none"> <li>Imperiled Aquatic Species Conservation Strategy for the Upper Tennessee Basin <a href="https://www.fws.gov/northeast/virginiafield/pdf/MISC/2014_UTRB_imperiled_aquatic_strategy.pdf">https://www.fws.gov/northeast/virginiafield/pdf/MISC/2014_UTRB_imperiled_aquatic_strategy.pdf</a></li> <li>Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a> National Fish Habitat Action Plan <a href="https://www.fws.gov/fisheries/whatwedo/nfhap/documents/Action_Plan_2nd_Ed_Final.pdf">https://www.fws.gov/fisheries/whatwedo/nfhap/documents/Action_Plan_2nd_Ed_Final.pdf</a></li> </ul>	<ul style="list-style-type: none"> <li>Restoring fish and fish host passage and habitat through low water crossing and dam removal</li> <li>Restoring riparian habitat</li> <li>Stream restoration through natural channel design techniques</li> </ul>
<p><b>rough rabbitsfoot</b> <i>Quadrula cylindrica strigillata</i></p>	<ul style="list-style-type: none"> <li>Imperiled Aquatic Species Conservation Strategy for the Upper Tennessee Basin <a href="https://www.fws.gov/northeast/virginiafield/pdf/MISC/2014_UTRB_imperiled_aquatic_strategy.pdf">https://www.fws.gov/northeast/virginiafield/pdf/MISC/2014_UTRB_imperiled_aquatic_strategy.pdf</a></li> <li>Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> <li>Virginia Freshwater Mussel Restoration Strategy – Upper Tennessee River Basin <a href="http://www.dgif.virginia.gov/awcc/freshwater-mussel-restoration/utrb/virginia-freshwater-mussel-restoration-strategy-UTRB.pdf">http://www.dgif.virginia.gov/awcc/freshwater-mussel-restoration/utrb/virginia-freshwater-mussel-restoration-strategy-UTRB.pdf</a></li> </ul>	<ul style="list-style-type: none"> <li>Restoring fish and fish host passage and habitat through low water crossing and dam removal</li> <li>Restoring riparian habitat</li> <li>Stream restoration through natural channel design techniques</li> </ul>
<p><b>golden riffleshell</b> <i>Epioblasma florentina aureola</i></p>	<ul style="list-style-type: none"> <li>Imperiled Aquatic Species Conservation Strategy for the Upper Tennessee Basin <a href="https://www.fws.gov/northeast/virginiafield/pdf/MISC/2014_UTRB_imperiled_aquatic_strategy.pdf">https://www.fws.gov/northeast/virginiafield/pdf/MISC/2014_UTRB_imperiled_aquatic_strategy.pdf</a></li> <li>Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> <li>Tan Riffleshell Recovery Plan (subspecies in Virginia now considered golden riffleshell) <a href="https://www.fws.gov/ecos/ajax/docs/recovery_plan/tan%20riffleshell%20rp.pdf">https://www.fws.gov/ecos/ajax/docs/recovery_plan/tan%20riffleshell%20rp.pdf</a></li> </ul>	<ul style="list-style-type: none"> <li>Restoring fish and fish host passage and habitat through low water crossing and dam removal</li> <li>Restoring riparian habitat</li> <li>Stream restoration through natural channel design techniques</li> </ul>
<p><b>monarch butterfly</b> Danaus plexippus and other at risk pollinator species</p>	<ul style="list-style-type: none"> <li>Monarch Conservation Implementation Plan, Monarch Joint Venture, 2017. <a href="http://monarchjointventure.org/images/uploads/documents/2017_MJV_Implementation_Plan_FINAL.pdf">http://monarchjointventure.org/images/uploads/documents/2017_MJV_Implementation_Plan_FINAL.pdf</a></li> <li>North American Monarch Conservation Plan – Submission for Environmental Cooperation, 2008 <a href="http://monarchjointventure.org/images/uploads/documents/5431_Monarch_en.pdf">http://monarchjointventure.org/images/uploads/documents/5431_Monarch_en.pdf</a></li> <li>Conservation Status and Ecology of the Monarch</li> </ul>	<ul style="list-style-type: none"> <li>Incorporate pollinator habitat into upland habitat restoration where appropriate</li> </ul>

Focal Species	Applicable Plans and Partners	Key Strategies/Conservation Actions
	<p>terfly in the United States – Jepsen et al., 2015  <a href="http://www.xerces.org/wp-content/uploads/2015/03/NatureServe-Xerces_monarchs_USFS-final.pdf">http://www.xerces.org/wp-content/uploads/2015/03/NatureServe-Xerces_monarchs_USFS-final.pdf</a></p> <ul style="list-style-type: none"> <li>Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> </ul>	
<p><b>Roanoke logperch</b>  <i>Percina rex</i></p>	<ul style="list-style-type: none"> <li>Roanoke logperch (<i>Percina rex</i>) Recovery Plan <a href="http://ecos.fws.gov/docs/recovery_plan/920320a.pdf">http://ecos.fws.gov/docs/recovery_plan/920320a.pdf</a></li> <li>Virginia Department of Game and Inland Fisheries - Wildlife Action Plan <a href="http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf">http://bewildvirginia.org/wildlife-action-plan/pdf/2015-Virginia-Wildlife-Action-Plan.pdf</a></li> <li>National Fish Habitat Action Plan <a href="https://www.fws.gov/fisheries/whatwedo/nfhap/documents/Action_Plan_2nd_Ed_Final.pdf">https://www.fws.gov/fisheries/whatwedo/nfhap/documents/Action_Plan_2nd_Ed_Final.pdf</a></li> </ul>	<ul style="list-style-type: none"> <li>Restoring fish and fish host passage and habitat through low water crossing and dam removal</li> <li>Restoring riparian habitat</li> <li>Stream restoration through natural channel design techniques</li> </ul>



- ### Focus Area Habitat Types
- In-stream riverine habitat in towns, cities and agricultural lands for listed fish and mussels
  - Riparian forest and upland habitat restoration to protect water quality for listed fish and mussels

## Our Partners

*Private Landowners*

*Upper Tennessee River Roundtable*

*The Nature Conservancy*

*Clinch Powell Clean Rivers Initiative*

*Clinch River Valley Initiative*

*Virginia Tech*

*Emory and Henry College*

*Trout Unlimited Mountain Empire Chapter*

*Appalachian Sustainable Development*

*Natural Resources Conservation Service*



# Goal Two: Broaden and Strengthen Partnerships

Conserving our watersheds and wetlands requires a diversity of partnerships that bring a variety of resources to the effort. The PFW Program serves as a catalyst for conservation on private lands. Our partnerships are key to allowing us to connect and engage local communities and pursue goals and objectives beyond our reach, adding synergistically to the time, talents, resources, and support of others.

Our partners include federal, tribal, state and local government agencies, non-governmental organizations, private corporations, foundations, land trusts, and individual landowners. We develop partnerships in priority areas to take advantage of opportunities to conserve habitat on a landscape-scale, and to leverage resources to achieve conservation objectives, efficiently and effectively.



Working with partners / USFWS



Working with private landowners / USFWS

## **Regional Objective: Private Landowner Agreements**

- Demonstrates the complexity and engagement with private landowners across the Northeast.
- Shows that our conservation work is not done alone and significant contributions from the people who live in the Region are essential to delivering our commitment to conservation.
- Helps to inform and engage new partnering efforts that help meet our mission.

**By 2021 the Partners for Fish and Wildlife Program will Broaden and Strengthen 700 Partnerships.**

## **Regional Objective: Maximizing the value of our investment**

- Shows the level of collaboration and commitment of all the partners to strive towards common goals.
- May be shared with partners to show how projects are helping to keep people on-the-land, support viable agriculture and rural communities across the Northeast.
- Demonstrates a wise investment in resources, how we are maximizing the benefit of our funds, creating jobs across multiple states.

**By 2021 Partners for Fish and Wildlife Program dollars will contribute to 20 percent of the total project cost. For every 1 dollar we spend we'll leverage and additional \$4 dollars through partnerships.**

# Goal Three: Improve Information Sharing and Communication



Schoolyard habitat project / USFWS



Outdoor classroom / USFWS

## **Regional Objective: Connecting People with Nature and Urban Wildlife Conservation Program**

- Inspire and help develop the next generation of conservation professional and environmental stewards.
- Provide opportunities for youth to connect with nature and experience and appreciate the importance of the outdoors and green spaces.
- Grow and support our ongoing efforts in the urban areas of the Northeast.

**By 2021 the Partners for Fish and Wildlife Program will implement **10** Schoolyard Habitat/Urban Wildlife Conservation Projects**

## **Regional Objective: Congressional Outreach Activities**

- Share success stories and demonstrate wise use of the funds.
- Increases awareness and showcase landowner storytelling.
- Demonstrate the economic, social, and leveraging capability of the programs.

**By 2021 Partners staff will promote their priority conservation investments by sharing project information through **5** outreach opportunities, which could include media interviews, tours for leadership/local congressional staff/news media, announcements and multimedia.**

## **Regional Objective: Communications Training**

- Will increase our effectiveness at telling our conservation story.
- Improves communication between field offices and Regional office.

**By 2021 Partners staff will **annually** participate in one communications training webinar focused on 1) building and sustaining relationships with news media and congressional staff and 2) identifying and communicating story opportunities.**

# Goal Four: Enhance our Workforce

Our staff is our most important resource. It will be a priority to continue the development of many talented employees who live in work across the Northeast Region.



2016 All Hands Meeting /USFWS

## **Regional Objective: Professional Development and Training**

- Measures individual development and staff capability/capacity and enhances program's workforce.
- Shows commitment to employee Individual Development Plan.
- Ensures that staff are exposed to latest training and recognized as leaders in the professional community.
- Helps Region increase returns on investment.
- Grows leaders within our agency.
- Annual Program meetings allow staff to learn techniques and methods from others within the Region.

**By 2021 the Partners for Fish and Wildlife Program staff will average 80 hours of training and/or professional development annually**

## **Regional Objective: Workforce Planning**

- Aligns conservation needs and priorities with those of its workforce to ensure that we can meet our objectives.
- Shows the gaps between the current and projected workforce needs and identifies strategies to achieve objectives.

**We will annually produce and update Partners for Fish and Wildlife Program workforce plan**



2016 All Hands Meeting / USFWS

*"We want to be part of an empowered, engaged, and supported team. When we are, we know we can accomplish more and have more satisfaction doing so. We will continue to prioritize the development of our workforce. We will promote collaboration and celebrate our successes, and continue providing training, career growth opportunities, and employee development."*

*Northeast Region Priorities: Guiding Our Investments 2016 and Beyond*

# Goal Five: Increase Accountability



Monitoring habitat / USFWS



Monitoring for alewife / USFWS

## **Regional Objective: Annual Accomplishments Report**

- Holds us accountable to tell our story.
- Clearly demonstrates a commitment to communication.

The Partners for Fish and Wildlife Program will produce an **annual** accomplishments report.

## **Regional Objective: Monitoring Project Implementation**

- Empowers staff and partners to be engaged in the success of effort.
- Provides certainty that project was implemented properly.
- Promotes substantial involvement with project.

**100** percent of all Partners for Fish and Wildlife Program projects will be monitored during implementation.

## **Regional Objective: Conservation Effectiveness and Biological Outcomes**

- Shows how fish and wildlife populations are responding to our conservation work.
- Demonstrates a serious commitment to producing a measurable outcome for fish and wildlife on private lands.
- Empowers landowners and promotes citizen science.

**By 2021, increase New England cottontail population levels by 10 percent. To reach this goal, we'll work with private landowners and partners to conserve 4,000 acres of early successional habitat.**

# Conclusion and Next Steps

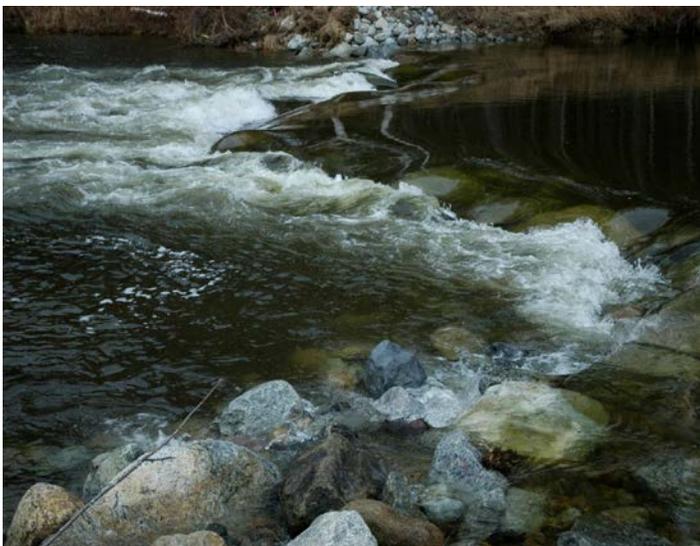
This strategic plan will serve as a blueprint for addressing our Regional Priorities through 2021. We will align program resources to meet local, regional and national goals. As the Partners for Fish and Wildlife Program makes these changes, the Service will be better prepared to meet the challenges of tomorrow.

By implementing this plan we expect to:

- **Increase New England cottontail populations by 10 percent, restoring 4,000 acres of early successional habitat on private lands.**
- **Help conserve key habitats that will prevent the need to list 6 species under the Endangered Species Act.**
- **Increase regional habitat connectivity by removing 138 barriers that block 1,678 miles of river.**
  - Reconnect 654 miles of river to increase clubshell mussel and northern riffleshell mussel populations in the upper Ohio River Valley.

This plan is a living document and will continue to incorporate new information in meeting emerging conservation challenges. Ultimately, this plan will only be successful if we continue to work collaboratively with private landowners, agencies, tribes, states and other stakeholders.

This plan will serve as the foundation for the development and implementation of our Regional priorities. It will also serve as a starting point for developing a regional workforce plan that will enhance our ability to deliver our Regional Priorities. This includes the development of our workforce, training, policies, decision support and priority setting.



Increased channel complexity / USFWS



Dam removal during construction / USFWS