



## Introduction and General Description

The Partners for Fish and Wildlife Program was initiated in Virginia in 1989. Early restoration efforts concentrated on non-tidal wetland habitats in the coastal plain and stream restoration in the mountains of southwest Virginia. The number of forested wetlands, especially seasonal wetlands, in the coastal plain have declined due to intense development pressure. Many wetlands converted to agricultural use were only marginally valuable for crop production. Many private landowners are willing to restore these areas for fish and wildlife with technical and financial assistance from the Partners Program. The Partners Program also assists landowners with riparian (streamside) habitats to improve the fish and wildlife habitat, water quality and aesthetics of their lands and streams.

The U.S. Fish and Wildlife Service is particularly interested in restoring stream health to benefit aquatic threatened and endangered species. Therefore the Partners Program has focused on the karst topography in the southern Appalachian region of southwest Virginia, which has a globally rare assemblage of federally listed fish and mussel species.

In recent years, the Partners for Fish and Wildlife Program in

# VIRGINIA



**Federally listed freshwater mussels.**

Virginia has expanded its wetland restoration efforts to include tidal marsh restoration along the Chesapeake Bay and coastal Eastern Shore. Stream restoration efforts have been expanded to include recovery activities for the federally endangered Roanoke logperch (a small fish) in the Roanoke River watershed and for the James River spiny mussel in the upper James River watershed.

## Habitats of Special Concern

### *Forested Wetlands*

Virginia has lost 42 percent of its original wetlands since the 1780s. Substantial wetland losses continue to occur. During the 1980s in the Chesapeake Bay drainage, the greatest loss of forested wetlands was in Virginia. Between 1982 and 1989, Virginia lost more than 17,800 acres of wetlands in the Chesapeake Bay watershed, primarily due to conversion for agriculture and urban-related development. About 64 percent of Virginia's existing freshwater wetlands (mostly forested) are located in the coastal plain. Of these, 8 percent have been ditched, impairing many of their natural functions.

## Virginia Objectives

- , **Restoration of historic habitat conditions, targeting wetlands and streams.**
- , **Recovery of habitat for threatened and endangered species.**
- , **Consideration of landscape setting to maximize benefits.**
- , **Creation of large blocks of habitat to link refugia and offset development pressure, especially in coastal areas.**
- , **Work with landowners for "win-win" partnerships that foster pride in good stewardship of the land.**

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## ***Endangered Species***

Virginia habitats support 66 threatened and endangered species, the highest concentration on the Atlantic Coast. The Upper Tennessee River Basin of southwest Virginia is considered a globally rare ecosystem with an unusually high species diversity, including 27 species of federally listed fish and mussels.

In Virginia, summer concentration areas of bald eagles (federally listed as threatened) contain more individual birds than any other site east of the Mississippi River.

## ***Migratory Birds***

The Eastern Shore of Virginia, Maryland and Delaware is a critical area for migratory shorebirds, waterfowl and songbirds. The Partners for Fish and Wildlife Program is helping establish vegetative corridors between blocks of high quality habitat to provide improved food and cover resources for migrating birds.

## **Threats**

Many of the threats to healthy ecosystems in Virginia are the same threats found in other geographic areas. Agriculture has historically been the primary cause of wetland losses. Poor land management on farms results in soil loss, degraded water quality and impaired fish and wildlife habitat.

In the coastal plain, development

pressure is great. Rapid, large-scale development in northern and southeast Virginia have resulted in a large loss of wetland acres, stream channel erosion, and serious impacts to water quality in our streams, rivers, and bays. Increased sedimentation has eliminated large areas of submerged aquatic vegetation in the Chesapeake and Back Bay watersheds, reducing their value for fish and wildlife.

In the mountains, coal mining activities and poor silvicultural and agricultural practices impair water quality and reduce ecosystem stability.

Invasive plant and animal



**The Partners Program has planted 560,000 tree seedlings in Virginia since 2000, thanks in part to financial contributions from private conservation groups. Plants included bald cypress (pictured above) and the globally threatened Atlantic white cedar.**

species are a problem in many habitats. *Phragmites australis* (common reed - a tall exotic

grass) now dominates thousands of acres of coastal marsh. The potential for zebra mussels to invade Virginia stream is a great concern for native freshwater mussels.

## **Conservation Strategies**

The Partners for Fish and Wildlife Program staff in Virginia quickly recognized the value of landscape-level planning. Program funds are targeted to areas with greater wetland losses, listed species concerns, and documented water quality impairments, while helping to achieve the landowners' needs and wishes for their lands. Below are several on-going examples of this approach:

### ***Current Strategies***

, In partnership with The Nature Conservancy and Black Diamond Resource and Development Council, we restored almost 50 miles of riparian habitat in the Upper Tennessee River drainage. These projects have benefitted 17 federally listed mussels and fish that occur there. Riparian restoration averages \$9,000 per mile.

, We joined forces with the Skyline and the Blue Ridge Soil and Water Conservation Districts in the Roanoke River watershed to restore over 12 miles of stream habitat to benefit the endangered Roanoke logperch.

, We signed a cooperative agreement in 1993 with The Nature Conservancy and Virginia Coast Reserve to restore wildlife habitats along the coastal zone of Virginia's Eastern Shore. This included restoring tidal flow in wetlands and upland reforestation to benefit neotropical migratory birds along the coast. Tidal wetland restoration averages \$300 per acre.

**Future Plans**

, A project is pending to restore hydrology and establish Atlantic white cedar and early successional scrub/shrub habitat on 1,000 acres of cropland adjacent to Great Dismal Swamp to benefit black bear and migratory songbirds.

, A large-scale planning project is underway to use aerial photography to identify tidal flow constrictions in Chesapeake Bay tidal marshes. We will locate landowners who want assistance and help them restore the original hydrology, native plant communities and fish habitat on these sites.

, A study has been initiated in southeastern Virginia to determine feasibility of restoring 800-1,000 acres of bald cypress and hardwood wetlands partially converted by a drainage canal in the 1960s. Forested



**Each year in Virginia, about 35 miles of riparian corridors are protected from livestock overgrazing by installing fencing.**

wetland restoration averages \$600 per acre.

**Partners**

We have been extremely successful in forging strong partnerships with other Federal agencies, State agencies, and localities, but our most critical partnering is with private landowners throughout the State.
















**HABITAT RESTORATION PROJECT**  
**TO IMPROVE VIRGINIA'S FISH AND WILDLIFE HABITAT**  
**AND WATER QUALITY**

U.S. Fish and Wildlife Service

For Information Call: (804) 693-6694 ext. 124 or 133

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## Accomplishments

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Accomplishments in the Partners for Fish and Wildlife Program in Virginia have built from 35 acres of wetlands and 2 miles of stream in the first year, to over 1,000 acres of wetlands and 35 miles of stream per year. Bottomland hardwood reforestation is an important component of our wetland restoration efforts. We are currently planting 300,000 trees per year in hydric soils, 2 million planned by 2004 over a four State region.

One of our largest individual projects involved restoring 65 acres of emergent marsh and plugging 6 miles of drainage ditches to restore forested wetlands on 2,600 acres adjacent to the Potomac River, an American Heritage River. The completed project restored the hydrology to forested wetlands inhabited by nesting and roosting bald eagles.

## Future Needs

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- i** Restore 10,000 acres of forested wetlands in the coastal plain.
- i** Restore 3,500 acres of tidal marsh to benefit interjurisdictional fishes, shellfish, and crabs.
- i** Restore 500 miles of riparian habitat in the Upper Tennessee River, Roanoke River, and James River watersheds to improve water quality for the 24 federally listed fish and mussel species that inhabit these rivers, and to enhance the James River bald eagle concentration area.



Site prior to hydrology restoration.



Restoration site after 80 ditch plugs were installed to restore the wetland hydrology.

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## CONTACT

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