



A RESOURCE GUIDE

CHESAPEAKE BAY ESTUARY PROGRAM

The U. S. Fish and Wildlife Service (USFWS) created its Chesapeake Bay Estuary Program to participate in the multi-agency effort to restore Chesapeake Bay. The Service plays a lead role among Bay partners in promoting citizen awareness of the living resources in the Chesapeake Bay ecosystem and fostering individual responsibility and stewardship of the Bay's resources.

To fulfill these goals, the Chesapeake Bay Estuary Program has developed information concerning the Bay. Much of this information is designed to be used by teachers and students but is available for anyone wanting to learn more about the Bay. This guide describes the outreach and education materials available from the Chesapeake Bay Estuary Program.

Blue Crab: Discusses the blue crab's life history, its economic and ecological importance to Chesapeake Bay, and the effects of the deteriorating Bay on this resource.



FACT SHEETS

A Chesapeake Bay Primer: Describes the components of the Chesapeake Bay ecosystem, including its fish and wildlife inhabitants. Explains the problems facing the Bay, including declining habitat and pollution by nutrients and toxic chemicals.

Alewife and Blueback Herring: Summarizes their life history, reasons for their decline and steps taken to restore these migratory fishes.

Bald Eagle: Summarizes the bald eagle's life history, the causes of its decline, recovery efforts and what the future holds for our national symbol.

Black Duck: Discusses the black duck's life history and its role in the Chesapeake Bay ecosystem. Examines the marked decrease in its population and current conservation efforts.

Canada Goose: Summarizes the life history of the Canada goose, its use of the Bay in the winter, population declines and how citizens can help the Canada goose remain a familiar sight throughout the Chesapeake Bay watershed.

Canvasback: Provides an in-depth look into the history of the canvasback duck on Chesapeake Bay. Shows how the loss of food sources and quality habitat has affected the population.

Chesapeake Wetlands: Describes the different types of wetlands, their environmental, economic, and recreational benefits, and gives tips on what private citizens can do to protect them.

The Fish and Wildlife Service: Describes the mission of the U.S. Fish and Wildlife Service and its role in restoring wildlife and habitats of Chesapeake Bay.

Great Blue Heron: Describes the great blue heron's life history, nesting habits and abundance throughout the Chesapeake Bay watershed.

Nutrient Pollution: Looks at the problem of excess nutrients, nutrient sources and their effects on fish and wildlife. Also describes corrective measures and actions private citizens can take to reduce this problem.

Osprey: Highlights the recovery of the Chesapeake's familiar "fish hawks," detailing their migration, nesting habits and coexistence with human development.

Peregrine Falcon: Details the life history of the peregrine and the role humans have played both in its decline and its restoration. Describes the ongoing recovery of this endangered raptor.

Shad: Portrays the migratory American shad's life history and its importance to Chesapeake Bay. Also describes actions taken to restore this valuable resource along the entire Atlantic coast.

Shadows of the Past: Describes how overharvesting, habitat destruction and pollution have contributed to the extinction of many

Striped Bass Tagging: Describes the tagging and monitoring system biologists use to study striped bass and how citizens can help in the effort.

Where Have All the Grasses Gone?: Discusses the importance of submerged aquatic vegetation (SAV) in the Bay, factors contributing to its decline and programs designed to bring restore the grasses.

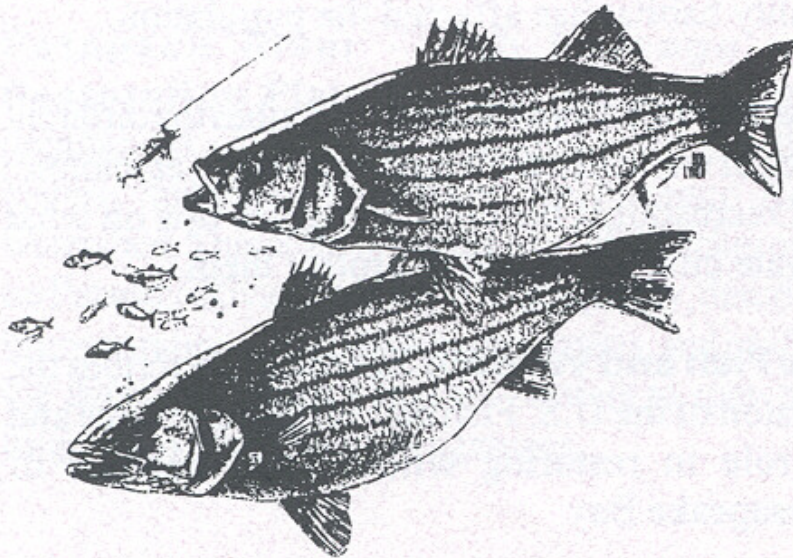
POSTERS AND BROCHURES

Chesapeake Bay Wetlands Poster: This large, black-and-white poster map illustrates the general extent and distribution of major wetland complexes and deepwater habitats in the Chesapeake Bay area. Estuarine intertidal flats, estuarine emergent wetlands, deepwater habitats, palustrine emergent wetlands, palustrine scrub-shrub wetlands and palustrine forested wetlands are included. Pub. by USFWS.

Wetlands-Fragile Treasure Poster: A pastel-colored poster depicting a few common wetland plants and wildlife species. Pub. by USFWS and EPA.

have contributed to the extinction of many Chesapeake Bay plants and animals. Also briefly summarizes how refuges help to protect many species and examines what may be in store for the fish and wildlife of the future.

Striped Bass: Describes the biological life history and economic significance of striped bass, as well as its alarming decline. Explains how various federal, state and private agencies are working together to restore this valuable finfish.



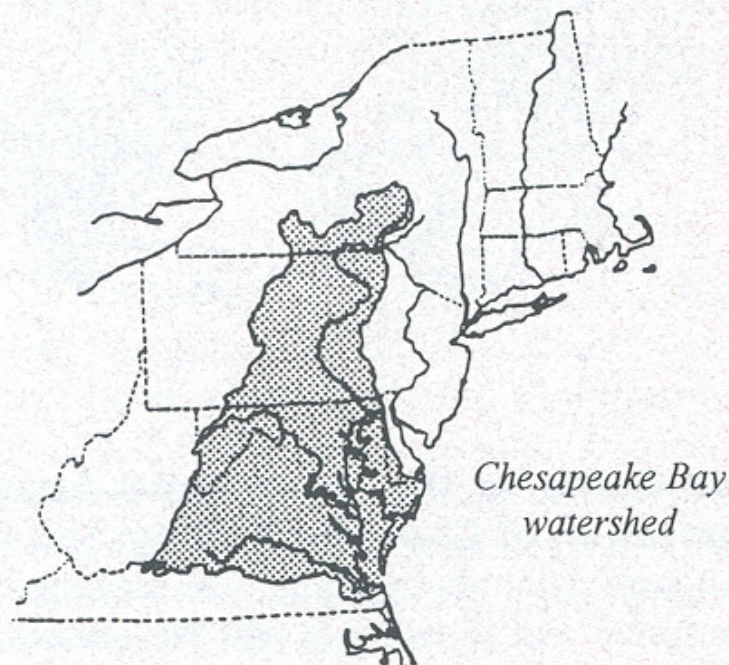
The U.S. Fish and Wildlife Service: A fold-out brochure using vivid photographs and text to portray the many roles the U.S. Fish and Wildlife Service plays in protecting our natural resources. Covers career options in wildlife law enforcement, research and habitat conservation. Pub. by USFWS.

American Wetlands: An illustrated flyer highlighting the ecological, economic and recreational benefits provided by our nation's wetlands. Pub. by joint agencies.

Waterfowl for the Future - The North American Waterfowl Management Plan: This brochure looks at the innovative international partnership initiated by Canada and the United States to conserve the continent's waterfowl. It describes population and habitat goals, and gives suggestions on how the public can help protect waterfowl. Pub. by USFWS.

EDUCATIONAL MATERIALS

Watershed Activity Kit: Stewardship of Chesapeake Bay begins with a good understanding and appreciation of its watershed. A large poster and smaller student maps illustrate the immense network of rivers and streams that make up the Chesapeake watershed. The companion teacher guide contains hands-on activities designed to introduce students to this intricate land-water interface. Developed for Grades 6-9. Pub. by USFWS. (Quantities limited to 1 poster, 1 guide and 10 students maps per class.)



Chesapeake Bay Reading Series: A new series of readers written by teachers and biologists targeting elementary students. Each reader includes narrative and expository text about fish and wildlife issues of Chesapeake Bay.

Waterfowl: *Is it Too Late?* Children in the story discover the beauty and variety of waterfowl found on Chesapeake Bay. They learn about the importance of habitat conservation and restoration. ***A Bird of a Different Color.*** An expository section on the brilliantly feathered wood duck. Written for 2nd to 3rd grade reading level. Pub. by USFWS. (Quantities limited to 30 copies per grade.)

Migratory Fish: *Fish Have Rights, Too!* A story about Stanley Striped Bass, Sharon Shad and friends and the difficulties they face reaching their spawning grounds. ***Fish Ladders.*** An expository section about how people are helping migratory fish by installing fish ladders. Written for 2nd to 3rd grade reading level. Pub. by USFWS. (Quantities limited to 30 copies per grade.)

Endangered Species of the Chesapeake Bay

The Changing Chesapeake: A reader and activity book discussing the natural and cultural history of the Bay. Emphasizes changes in Chesapeake Bay ecosystem, animals and plants, and the surrounding land during the last 15,000 years. Designed to provide readily usable lessons for teachers of grades 4-6. Pub. by USFWS and National Aquarium in Baltimore. (Limited quantities.)

Bay BC's: A multidisciplinary approach to teaching about Chesapeake Bay issues. Includes background material and lesson plans for teachers of grades K-3, with songs, games and stories for students. Pub. by USFWS and National Aquarium in Baltimore. (Limited quantities.)

Chessie-A Chesapeake Bay Story: A reader/coloring book about Chesapeake Bay animals. Written in Dr. Seuss style rhyme. For grades K-2. Pub. by USFWS. (Limited quantities.)

Watershed - An Education Kit: This newly developed education kit provides information to students and educators about the endangered species of Chesapeake Bay. The kit consists of a reader to introduce students to endangered species through narrative story and expository text. Teachers' resources include a guide containing classroom activities about endangered species and a review series containing additional material focusing on endangered species of Chesapeake Bay. (in progress)

Environmental Education Activity Kit: This kit provides an awareness of ecological problems facing estuary systems and the commitment needed to protect them. The packet contains information and activity sheets relating to common environmental issues. The kit is suitable for use by schools, organizations or individuals. For grades K-12 and adults. Pub. by USFWS and EPA.

OTHER PUBLICATIONS

Streamside Forests - the Vital Beneficial Resource: Vividly illustrates the value of forest buffer strips to control nonpoint source pollution, protect water quality and provide habitat corridors. Pub. by USFWS and the University of Maryland, Cooperative Extension Service.

Baybook - A Guide to Reducing Water Pollution at Home: A homeowner guide with useful tips on safe pesticide use, household chemical alternatives, erosion control, septic system maintenance, water conservation and more. Each chapter provides specific suggestions for improving the environmental quality of life in your home, your neighborhood and the Bay. Funded by EPA. (Limited quantities.)

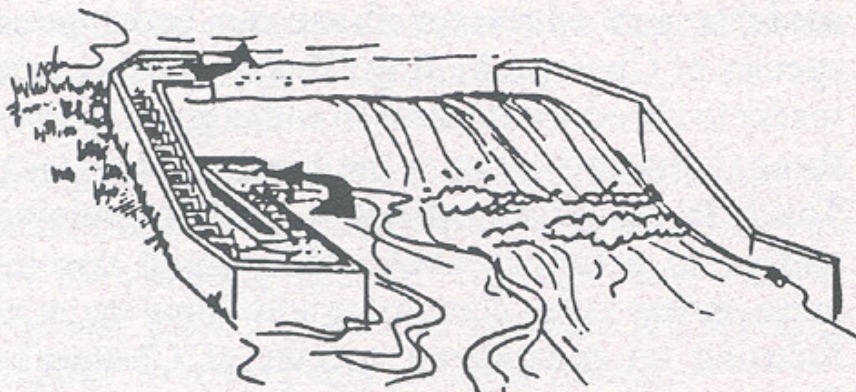
Chesapeake Bay: Passageways for Migratory Fishes: Identifies the problems facing the Bay's migratory fishes, such as shad, herring, striped bass and perch. It describes how dams, culverts and other barriers are one important factor in the decline of these fisheries. The brochure outlines the steps federal, state and local governments are taking to remove or bypass blockages and describes

Fish Restoration and Passage on the James River: Describes efforts to restore shad, herring and other migratory fish to historic spawning grounds in the James River watershed. Restoration actions include improving water quality, restocking and providing fish passage. This booklet profiles the dams and other barriers that prevent fish from reaching spawning grounds and discusses present and future fish passage facilities. Pub. by joint agencies.



Field Guide to the Submerged Aquatic Vegetation of Chesapeake Bay: This field guide uses color photographs, line drawings and descriptive text to bring to life the underwater world of plants known as submerged aquatic

how citizens can get involved. Pub. by USFWS and Chesapeake Bay Foundation.

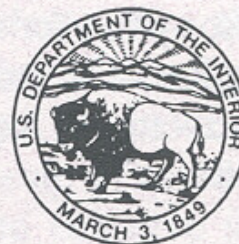


Patapsco River - Fish Passage and Restoration Plan: Describes actions to restore populations of migratory shad and herring to their historic spawning grounds in the Patapsco River watershed. This color brochure provides background on Patapsco River habitat and water quality, describes the restoration and restocking programs, and profiles the dams and culverts that are barriers to spawning migrations. Pub. by joint agencies.

vegetation (SAV) . The publication is an identification tool for natural resource managers and biologists and an educational aid for students, amateur naturalists and the general public. Pub. by USFWS, U.S. Army Corps of Engineers and Maryland Department of Natural Resources.

To obtain publications, send requests to:

U.S. Fish and Wildlife Service
177 Admiral Cochrane Drive
Annapolis, MD 21401
(410) 224-2732; (410) 841-6348



Canada goose © Karen Teramura
Striped bass © Bob Lynch
Fish ladder © Britt Slattery
Submerged aquatic vegetation © Dolly Baker