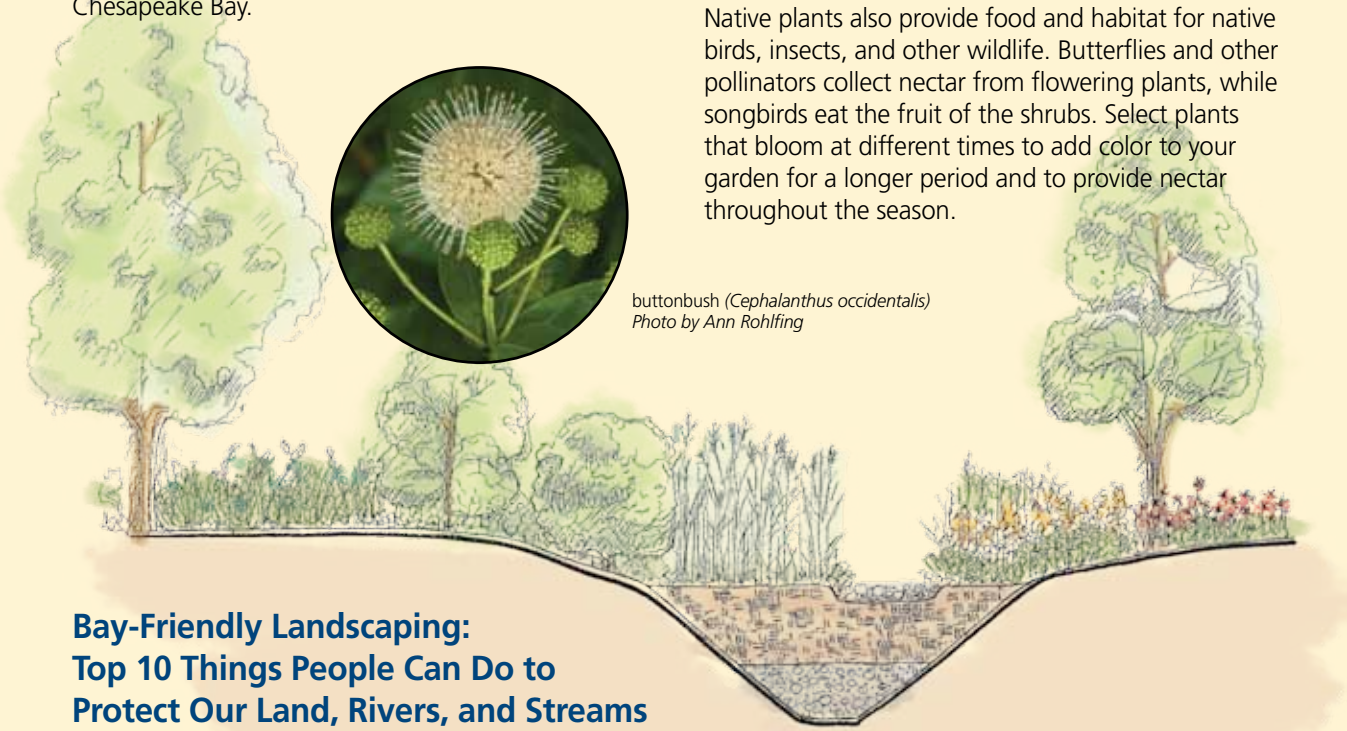


What is a rain garden?

Rain gardens or “bioretention systems” are beautiful landscaping features that help manage stormwater. These natural gardens, using native plants, help improve water quality, provide habitat for birds and other wildlife, and beautify yards.

Rain gardens are designed to absorb stormwater runoff on a site. Runoff is produced when water flows off hard surfaces such as rooftops, driveways, and compacted lawns. By slowing the flow of runoff water and allowing it to soak into the soil instead of quickly running off the site, rain gardens can prevent pollutants (such as sediments and nutrients) from entering a nearby stream or river and then the Chesapeake Bay.



buttonbush (*Cephalanthus occidentalis*)
Photo by Ann Rohlifing

Bay-Friendly Landscaping:
Top 10 Things People Can Do to
Protect Our Land, Rivers, and Streams

1. Plant native trees and shrubs to create wildlife habitat that attracts native birds, pollinators, and insects.
2. Divert rainspouts from paved surfaces onto grass or gardens and reduce impervious surface to recharge underground reservoirs and to filter pollutants.
3. Reduce lawn area—lawn chemicals and gas-powered mowers pollute the Bay.
4. Manage yard waste by composting instead of sending it to landfills or into streets and waterways.
5. Use living shoreline techniques to reduce erosion and create important habitat.
6. Minimize the use of chemical fertilizers—use compost to add fertility to the soil and boost the health of plants.
7. Use natural methods instead of pesticides to control insect pests and weeds.
8. Have your septic system pumped every three to five years and consider nitrogen removing technology for your existing or new septic system.
9. Pick up after your pet. Pet waste introduces nitrogen, ammonia, and disease to the Bay.
10. Share this list with your neighbors—working together we can restore the health of the Bay.

Native Plants

Native plants have adapted to thrive in local weather, soils, and ecosystems. Once fully established, natives are hardy enough to thrive in heat, droughts, downpours, and icy conditions that occur in our region. Ornamental native plants are attractive, natural additions to any landscape.

Native plants can be used to stabilize banks and prevent erosion. They also prevent nutrient pollution from reaching the Bay by absorbing nutrients from subsurface water flow. They do not require fertilizer, and even though pests may eat some of their leaves, native plants will bounce back without the use of pesticides.

Native plants also provide food and habitat for native birds, insects, and other wildlife. Butterflies and other pollinators collect nectar from flowering plants, while songbirds eat the fruit of the shrubs. Select plants that bloom at different times to add color to your garden for a longer period and to provide nectar throughout the season.



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ADKINS ARBORETUM

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Pickering Creek Audubon Center
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Chesapeake Wildlife Heritage
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Chesapeake Wildlife Heritage is dedicated to creating, restoring, and protecting wildlife habitat and establishing a more sustainable agriculture through direct action, education, and research in partnership with public and private landowners. CWH provided critical support for each project of the Chesapeake Land Stewardship Initiative.

Learn More About It

www.rainscaping.org
www.baygateways.net
http://athome.audubon.org

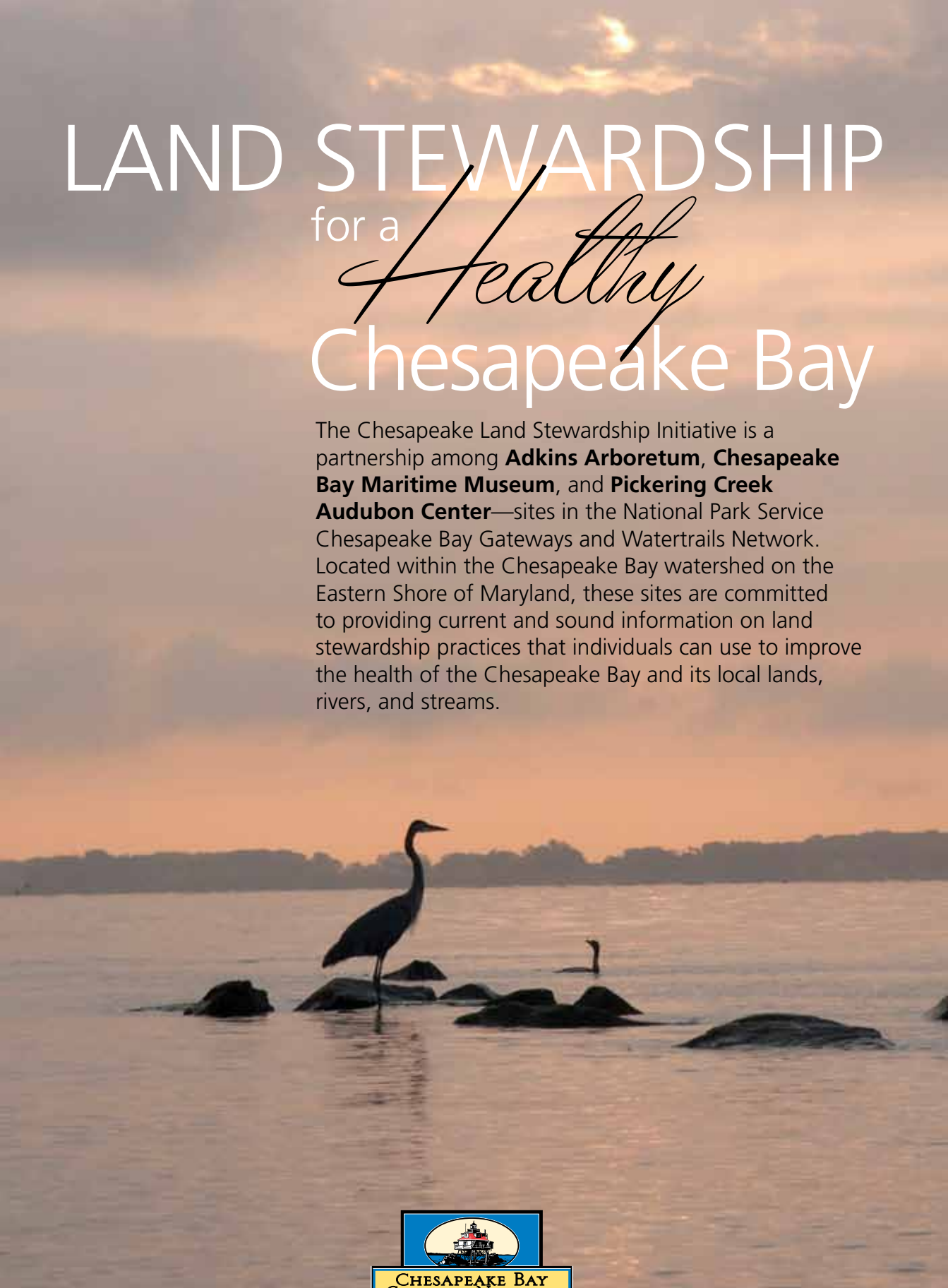
Adkins Arboretum, Chesapeake Bay Maritime Museum, and Pickering Creek Audubon Center, Chesapeake Bay Gateways, are some of your entry points to enjoy and learn about the places and stories of the Chesapeake and its watershed. The 64,000 square mile Bay watershed is a complex ecosystem. Home to more than 16 million people, it has supported human occupation for 13,000 years. The Bay’s natural abundance has fed multitudes, fueled rich economies and nurtured diverse cultures. Explore this and other places in the Gateways Network to experience the Bay’s stories, spirit and mystery. Learn about the Chesapeake Bay restoration effort and how you can contribute. Our well-being and the Bay’s health are interdependent. Visit www.baygateways.net for more information.

This publication is supported in part through assistance from the National Park Service.

Cover photo by Ann Rohlifing

LAND STEWARDSHIP
for a *Healthy*
Chesapeake Bay

The Chesapeake Land Stewardship Initiative is a partnership among **Adkins Arboretum, Chesapeake Bay Maritime Museum, and Pickering Creek Audubon Center**—sites in the National Park Service Chesapeake Bay Gateways and Watertrails Network. Located within the Chesapeake Bay watershed on the Eastern Shore of Maryland, these sites are committed to providing current and sound information on land stewardship practices that individuals can use to improve the health of the Chesapeake Bay and its local lands, rivers, and streams.



LAND STEWARDSHIP

for a *Healthy* Chesapeake Bay

Rainscaping: Beautiful Solutions to Water Pollution

CHESAPEAKE BAY MARITIME MUSEUM (CBMM) is dedicated to telling the stories of the Chesapeake Bay and the people who have shaped their lives around it. Situated on 18 waterfront acres in the historic town of St. Michaels, Maryland, the Museum offers exhibits, demonstrations, boat rides on the Miles River, and annual festivals that celebrate Chesapeake Bay culture, boats, seafood, and history.

The stewardship practice demonstrated is a landscaped channel and pooling area designed to collect rain water. These planted areas—a vegetated swale and a rain garden—slow the flow of water, helping to prevent pollution from running off the land from buildings, roads, and other hard surfaces.



A living shoreline
Photo courtesy of the Chesapeake Bay Maritime Museum



Construction of the vegetated swale began in August 2010 with applications of herbicide to kill the grasses. In mid-September, the swale was edged, planted, and mulched. Construction of the rain garden followed with excavation of the area, soil distribution, planting, and placement of the oyster shell swale and mulch. Native plants such as river birch (*Betula nigra*), black-eyed Susan (*Rudbeckia hirta*), and switchgrass (*Panicum virgatum*) are planted in these gardens to hold the soil, absorb water, and provide food and habitat for wildlife. The swale and rain garden are part of the museum's "living shoreline," protecting the shore from erosion by adding plants and other natural materials.



Wetlands and Wildlife: An Essential Connection

PICKERING CREEK AUDUBON CENTER is dedicated to community-based conservation of natural resources through environmental education and outreach on the Eastern Shore of the Chesapeake Bay. The Center's 400-acre nature center and working farm is situated on tidal Pickering Creek in Talbot County. The Center's property features a variety of habitats, including mature hardwood forest, fresh and brackish marsh, meadow, tidal and nontidal wetlands, over a mile of shoreline and cropland. The Center has restored over 100 acres of cropland to wildlife habitat over the last ten years while still maintaining its link to the property's farming heritage.

Pickering Creek worked with Chesapeake Wildlife Heritage in 2002 and 2005 to restore wetland habitats at the Center, maximizing benefits for wildlife.



Pickering Creek wetland
Photo by Susanna Scallion

In consultation with Adkins Arboretum, the wetlands were enhanced with buttonbush (*Cephalanthus occidentalis*), a native woody shrub that provides pollinator habitat, cover for broods of native waterfowl, and nesting sites for wetland birds. In addition to the wetland planting, noxious weeds such as Phragmites, Canada thistle, and johnsongrass have been treated aggressively throughout the property to help ensure a balanced and diverse ecosystem.

Restoring wetlands increases habitat for wildlife and improves water quality in the Chesapeake Bay. Wildlife such as ducks, shorebirds, frogs, and even dragonflies need wetland habitat to survive. Wetlands help filter pollutants from surface water, improving water quality in local tributaries and the Chesapeake Bay.

Adding native plants to a wetland attracts pollinators and provides food and cover for many types of wildlife.



Greening the Arboretum

ADKINS ARBORETUM is dedicated to promoting the appreciation and conservation of the region's native plants and is actively engaged in conserving and managing the native meadows, woods, and wetlands that define its 400 acres in Caroline County on Maryland's Eastern Shore. In 2008, the Arboretum launched its Nursery Greening Program, an initiative to implement best management practices at its native plant nursery. Examples of these practices include:

- Rain barrels that collect roof runoff from the potting shed for use as a supplemental water source,
- An irrigation system maintained with updated equipment to enable efficient water distribution to nursery stock,
- Use of compost bins to recycle plant debris and organic waste, and
- A rain garden that collects and slowly releases stormwater and irrigation runoff, removing nutrients and pollutants carried by the water.



ADKINS ARBORETUM

Meadow Magic

Warm season grass meadows are a threatened ecosystem in the Eastern United States. As a result, the species that depend on these habitats are also in decline. Working with Chesapeake Wildlife Heritage, the Arboretum uses cutting and burning techniques to prevent its meadows from evolving into later successional forest. To maintain meadow health and biodiversity, the Arboretum monitors and removes unwanted plant species with physical or herbicide controls.

Native warm season grass meadows provide great wildlife habitat. Unlike lawn grasses, these native grasses grow in clumps, allowing wildlife to move easily through the meadow. The spacing allows wildflowers and other beneficial annual plants to germinate, attracting insects and providing more seed as food for wildlife. The meadows are home to a variety of ground-nesting birds and small mammals that rely on the plants for food and shelter.

The deep root system of warm season grasses aids in preventing soil erosion and improving water quality. The roots reach subsurface water flow and remove excess nutrients before they can reach the bay.



Adkins Arboretum meadow
Photo by Ann Rohlfing