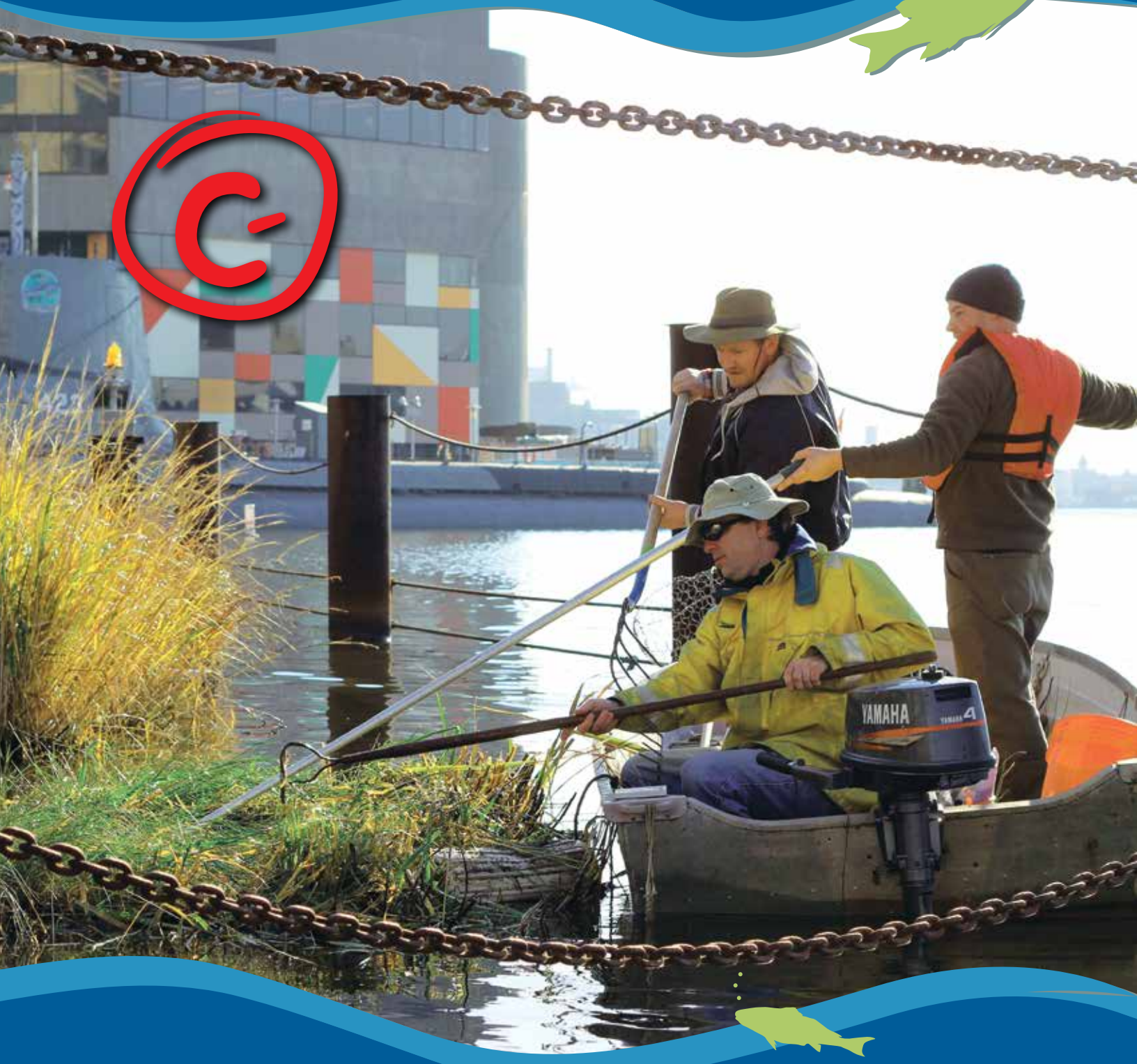
Baltimore's Annual

Healthy Harbor Report Card 2012



Baltimore Harbor met water quality standards 40% of the time.

Happy Birthday to the Floating Wetlands!

The Healthy Harbor Floating Wetlands, located near the World Trade Center in Baltimore's Inner Harbor, are now removing pollution from the water and providing habitat for the fish, crabs, and birds that live in the Harbor for their second year.

Every time it rains, stormwater carries pollutants from lawns, roads, and other urban surfaces into storm drains, which flow directly into our streams and Harbor. To help clean up these pollutants, Waterfront Partnership installed the current array of 56 floating islands at the water's edge. Wetlands are one of nature's most efficient tools for cleaning polluted water. As the wetland plants grow, they remove nutrient pollution and store it in their leaves while adding life-giving oxygen to the water. At the same time, their roots support a habitat for microorganisms that feed on pollution. This amazing, multi-tasking machine runs on nothing but sunlight.

Because few natural wetlands exist along the Harbor's urban shorelines, the Healthy Harbor wetlands are designed to float on the water. Inside the islands are bundles of plastic bottles—litter that was collected from the Harbor and up-cycled—that allow them to float.

A study conducted by the National Aquarium shows that the wetlands absorb nutrient pollution at rates similar to other well-established man-made wetland systems used to improve water quality. In addition to nutrient uptake by plants, the islands themselves also act as substrate for the accumulation of dark false mussels and other invertebrates capable of filtering nutrients and sediment from the water column. At the end of the growing season, the wetlands are harvested and plant matter is composted so that it can later be used as fertilizer.

The Healthy Harbor Floating Wetlands were designed by Biohabitats, constructed by students at the Living Classrooms Foundation, and funded by a generous grant from the Abell Foundation.

What's growing in the wetlands?

- Smooth Cordgrass *(Spartina alterniflora)*
- Saltmeadow hay *(Spartina patens)*
- Marsh hibiscus *(Hibiscus moscheutos)*

The maintenance crew from Biohabitats harvest wetland vegetation from the floating wetlands at the end of the growing season.

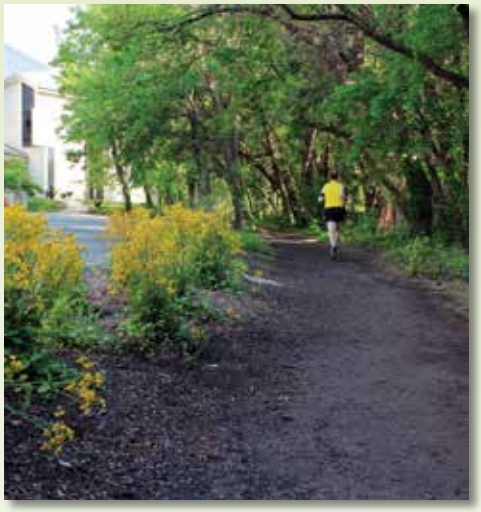
A Great Blue Heron visits the floating wetlands for a moment of rest (and maybe a quick snack!).

Bolton Street Synagogue Stony Run Path Restoration

In spring 2012 THE ASSOCIATED: Jewish Community Federation of Baltimore, in partnership with Blue Water Baltimore and Bolton Street Synagogue, received funding from the Chesapeake Bay Trust and the Roland Park Community Foundation to remove 5,000 square feet of asphalt from the synagogue parking lot. The asphalt, along with 1,500 square feet of invasive plants, was replaced with a continuation of the Stony Run Path and lined with native landscaping.

This project followed a multi-million dollar stream restoration effort funded by Baltimore City and supported the community and stream improvement goals of the Greater Roland Park Master Plan.

Work crews begin the process of asphalt removal from the Bolton Street Synagogue parking lot.



The finished Stony Run Path is now a great place to jog, walk your dog, or take a relaxing stroll.

Besides providing an essential addition to the path and enhancing the beauty of the Stony Run stream corridor, this project will prevent 125,000 gallons of stormwater runoff from polluting the Stony Run each year. The new construction will instead allow for natural filtration and percolation of rainfall and snowmelt. The new section of the Stony Run Path will simultaneously increase recreational opportunities for the community and improve water quality in the stream, which flows into Baltimore Harbor and the Chesapeake Bay.

2012 Water Quality Index

Water Quality

- A 80% to 100%
- B 60% to <80%
- C 40% to <60%
- D 20% to <40%
- F 0% to <20%

Map Legend

- Parks
- Underground Waterway

Indicator of Health: 2012 Grade

Chlorophyll *a*	D-
Dissolved Oxygen	C-
Water Clarity	D+
Total Nitrogen	C-
Total Phosphorus	C+

Overall Baltimore Harbor Grade ..... C-

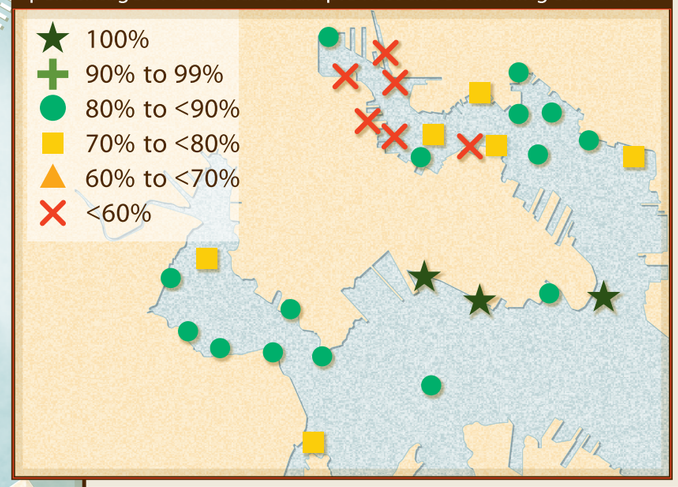
Inner Harbor Region	C-
Middle Branch Region	D+
Mainstem Patapsco Region	D+

Middle Branch and Mainstem Patapsco regions are divided at the Hanover Street Bridge

Bacteria (Enterococci) Scores

percentage of time water sample met the swimming standard

- ★ 100%
- ✚ 90% to 99%
- ● 80% to <90%
- ■ 70% to <80%
- ▲ 60% to <70%
- ✕ <60%



Jones Falls
Inner Harbor Basin
Harford Run
Harris Creek
Fells Point
Federal Hill
Inner Harbor
Downtown Sailing Center
NORTHWEST BRANCH
Canton Waterfront Park
Patterson Park
Oriole Park at Camden Yards
Carroll's Branch
M&T Bank Stadium
Chatsworth Run
Watershed 263
Ridgley's Cove
Gwynns Falls
Riverside Park
Swann Park
Latrobe Park
Fort McHenry
MIDDLE BRANCH
Baltimore Rowing Club
Middle Branch Park
Ferry Bar
MAINSTEM PATAPSCO RIVER
Masonville Cove
Masonville Cove Environmental Education Center
Cherry Hill Park
Patapsco River
BALTIMORE ST
LOMBARD ST
PRATT ST
CONWAY ST
EASTERN AVE
FLEET ST
ALICEANNA ST
FORT AVE
OSTEND ST
HAMBURG ST
BAYARD ST
RUSSELL ST
WATERVIEW AVE
CHERRY HILL RD
FRANKFURST AVE
PATAPSCO AVE
FORT McHENRY TUNNEL (TOLL ROAD)
HARBOR TUNNEL THROUGHWAY (TOLL ROAD)
HARBOR TUNNEL
BOSTON AVE
O'DONNELL ST
S CLINTON ST
0 .5 1mi.
1 mile = 5280 feet

What do the water quality indicators mean?

Chlorophyll *a* tells us if there is too much algae in the water. Too much algae makes it hard for fish to see in the water and can lead to low dissolved oxygen, conditions which can harm organisms living in the Harbor's waters.

Dissolved oxygen is important for all the organisms that live in the Harbor. Fish, shellfish, and other organisms need oxygen to breathe and thrive in the Harbor.

Water clarity is important for fish and for plants in the water. The water should be clear so that fish can see and find their prey. In addition, underwater plants need light to grow.

Total nitrogen and **total phosphorus** are nutrients that tell us how much stormwater pollution is coming from the land. Some common sources of nutrient pollution are fertilizers, urban runoff, and the burning of fossil fuels.

Bacteria is a human health indicator rather than an ecological indicator. Bacteria indicators help us determine the risk of getting sick if someone comes into contact with water in Baltimore's Harbor and streams. Some common sources of bacteria are pet waste, sewage overflows, and broken sewer pipes.

2012 Baltimore Harbor water health

The overall 2012 water quality score for Baltimore Harbor is a C-, which means the Harbor met water quality standards only 40% of the time. Though the Harbor experienced some severe water quality events in the spring, dry weather throughout much of the year resulted in fewer pollutants being carried into the Harbor by the rain.

During the spring of 2012 the Harbor experienced a rapid growth of algae, called an algae bloom, followed by a large fish kill. The algae bloom was most likely caused by a mild winter and warmer-than-normal water temperatures in April and May. These conditions, coupled with nutrients from sewage spills and breaks, led to the bloom. The algae bloom did not kill fish directly but sucked all the oxygen, which fish and other organisms need to breathe, out of the water. When the oxygen was gone, the fish died. In early June a sewage spill further degraded water quality and spread a foul smell throughout downtown Baltimore.

The summer of 2012 was extremely hot with very little rain. In some ways this was good because there was little pollution being carried into the Harbor by stormwater running off of streets and other hard urban surfaces. While two significant rain events occurred in fall of 2012 (including Hurricane Sandy), there did not appear to be any corresponding problems, such as fish kills, in the Harbor. While nutrients may have washed into the Harbor during the fall, the water temperatures and sunlight were low enough that no algae blooms occurred and dissolved oxygen levels remained high.

Baltimore students help keep their neighborhoods and streams trash free

This spring students from second through ninth grades at five Baltimore City public schools participated in the Clean Water Schools and Communities Project to reduce the amount of litter in Baltimore's streets and streams. At stormwater classes and Trash Talk trainings conducted by Blue Water Baltimore and the Baltimore Office of Sustainability, student Green Teams learned how the pollution on our streets is transported by storm drains into Baltimore Harbor and the Chesapeake Bay. Students then discussed how to engage their peers in conversations about littering. One student said, "It feels good to share [what I've learned] with my friends and my family … people might not even think about litter unless you say something."

Green Teams created assemblies, songs, posters, and litter pledges to spread the message about littering. They also carried out environmental projects, including water quality testing and rain barrel installation. Youth artists from 901 Arts, a community-based youth arts center, helped Green Team students paint crabs, starfish, and other Bay creatures on 10 storm drains around their schools. The schools themselves organized Community Clean-up days and put up banners to remind their neighbors that clean, healthy neighborhoods lead to a clean, healthy Harbor and Bay. In the words of one Green Team student, "It's really easy to clean up litter and it makes a difference!"

Clean Water Schools

- John Eager Howard Elementary
- Cecil Elementary
- Highlandtown #237 Elementary/Middle
- Southwest Baltimore Charter
- Baltimore Talent Development High

Students from the Highlandtown #237 Green Team educate their classmates about the impact littering has on life in the Chesapeake Bay.

Students at John Eager Howard Elementary in Baltimore's Reservoir Hill neighborhood show off their crab pose over a storm drain mural they designed and painted.

What is the Healthy Harbor Report Card?

Healthy Harbor is a partnership of area businesses, nonprofits, and local government who have come together with a goal of making Baltimore Harbor swimmable and fishable. The Healthy Harbor Report Card is a tool to help us communicate this goal and track our progress.

This report card is the product of a partnership between Waterfront Partnership of Baltimore and Blue Water Baltimore, two local nonprofits working to make Baltimore's streams and Harbor clean, safe and accessible to everyone. EcoCheck, publishers of the Chesapeake Bay Report Card, provided scientific expertise and data analysis. For more information please visit **HealthyHarborBaltimore.org** and **BlueWaterBaltimore.org**

Waterfront Partnership of Baltimore, Inc. | Blue Water Baltimore | ecocheck

2012 Trash reduction actions

- ▲ 9,989 tons of litter collected from street sweeping, a 39% increase from 2011. (source: Baltimore City)
- ▲ 96,625 miles of streets swept, a 30% increase from 2011. (source: Baltimore City)
- ▲ 26,757 tons of recycling collected compared to 26,329 tons in 2011. (source: Baltimore City)
- ▲ 289 storm drains painted by 322 volunteers in 25 neighborhoods compared to 18 storm drain murals painted in 2011. (source: BlueWater Baltimore, Patterson Park Audubon Center)
- ▼ 129 vacant lots adopted for community gardens and neighborhood beautification through Power in Dirt's Adopt-a-Lot program, down from 294 in 2011. (source: Baltimore City)

2012 Bacteria reduction actions

- ★ Baltimore City's CitiStat office partnered with members of the Healthy Harbor Initiative to create WatershedStat. This public/private partnership is cleaning up sources of bacterial contamination and trash at some of Baltimore's most polluted stormwater outfalls.
- ★ Blue Water Baltimore continues to monitor bacteria levels at 30 sampling stations throughout Baltimore Harbor and, in 2013, began monitoring bacteria levels at 30 stations in Baltimore City and Baltimore County streams. Harbor bacteria results are available at http://bacteria.bluewaterbaltimore.org.

2012 Stormwater reduction actions

- ▲ 270 rain barrels installed compared to 173 in 2011. (source: Blue Water Baltimore)
- ▲ 18 rain gardens installed to capture a total of 1.75 million gallons of stormwater. (source: Blue Water Baltimore)
- ▲ 31 conservation landscaping projects completed totaling 12,874 square feet. (source: Blue Water Baltimore)
- ▲ 395 free home water audits conducted. (source: Blue Water Baltimore)
- ▲ 8,121 trees planted compared to 6,424 in 2011. (source: TreeBaltimore)
- ▼ Zero stream restoration projects completed due to insufficient funding. Prior to 2012 the City completed 13,225 linear feet of cumulative stream restoration projects. (source: Baltimore City)
- ★ 44 downspouts disconnected, redirecting over 330,000 gallons of stormwater away from the storm drain system. (source: Blue Water Baltimore)
- ★ Members of Youthworks, Baltimore City's summer jobs program for youth, provided critical assistance to water over 2,500 trees at 35 locations. (source: Blue Water Baltimore)

The Healthy Harbor Report Card is made possible by the generous support of our sponsors

The Abell Foundation | Critical Areas Commission | Maryland CBTrust.org | Baltimore Office of Sustainability | Middendorf Foundation

The Healthy Harbor Report Card is released annually and provides an opportunity for local companies to support environmental restoration. Sponsors partner with Blue Water Baltimore's mission to foster clean waterways and the Waterfront Partnership of Baltimore's Healthy Harbor initiative for a swimmable and fishable Harbor. For information on sponsoring the Healthy Harbor Report Card, please contact Tina Meyers, the Baltimore Harbor WATERKEEPER, at 410.254.1577 x112 or tmeyers@bluewaterbaltimore.org.

Legislative Update

Recent bills that can reduce littering and clean up our Streams

The 2013 legislative session proved bittersweet for environmental advocates. Although environmentalists successfully defended the stormwater utility legislation that was passed last year, the critical bag and bottle bills were not passed into law. However, the public support these bills garnered will hopefully lead to their passage in 2013.

Maryland Bag Bill (Senate Bill 576/ House Bill 1086)

The purpose of this bill is to reduce the number of plastic shopping bags that litter our streams by enforcing a five-cent fee for single-use plastic and paper carryout bags. However, retailers and the plastic industry blocked this bill. In Washington, DC the implemented bag tax has already significantly reduced the number of bags found in trees and streams. Here in Maryland a bag bill would allow us to make a real difference in the health of our neighborhoods and streams!

Maryland Bottle Bill (House Bill 1085)

The Maryland Bottle Bill would add a refundable deposit on all plastic, glass, and metal beverage containers sold in Maryland. This bill would play an important part in preventing litter in our streets and streams. The ten states that currently have beverage container deposit programs, including Connecticut, Massachusetts, and New York, report much higher recycling rates than Maryland. However, this bill failed in the House since retailers and beverage makers opposed higher prices on their products. Del. Maggie McIntosh, chief sponsor of the measure, said that the House Environmental Matters Committee intends to take a closer look at the proposal in the coming year.

Stormwater Utility Fee (House Bill 987)

In 2012 the Stormwater Utility Fee was successfully signed into law by Governor Martin O'Malley. The law requires Maryland's nine largest counties and Baltimore City to implement a local stormwater fee that will fund a Watershed Protection and Restoration Program. The Watershed Protection and Restoration Program aims to clean up our rivers by preventing contaminated stormwater that runs off our properties from reaching our waterways.

Each jurisdiction is authorized to charge property owners a flat rate fee based on the amount of impervious surface on their property. Local jurisdictions must also give some credit to property owners for measures that reduce the quantity or improve the quality of stormwater discharged from their property and adjust the fee for owners experiencing substantial economic hardship.