Coastal Bays
REPORT CARD
2010

PA

NJ

MD

DC

DE

VA

Coastal Bays

113
DELAWARE
(SUSSEX COUNTY)
54
Bishopville ★
567
610
113
589
90
ST. MARTIN RIVER
ASSAWOMAN BAY
ISLE OF WIGHT
528
FENWICK ISLAND
ISLE OF WIGHT BAY
Berlin ★
550
Ocean City ★
378
OCEAN CITY INLET
611
SINEPUXENT BAY
113
C
'PORT BAY
MARYLAND (WORCESTER COUNTY)
ASSATEAGUE ISLAND
365
Public Landing ★
CHINCOTEAGUE BAY
NEEDS IMPROVEMENT
12
TIZZARD ISLAND
366
MILLS ISLAND
VIRGINIA (ACCOMACK COUNTY)
175
CHINCOTEAGUE ISLAND
CHINCOTEAGUE INLET

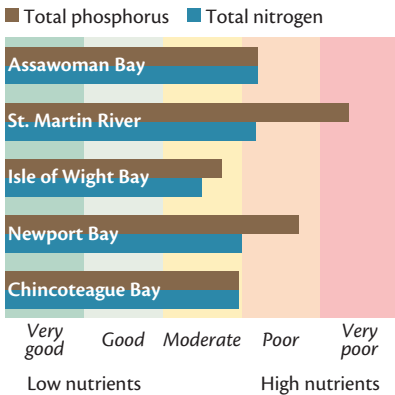Road
State border

0   5   10 km
N
0   5   10 mi

This scientifically rigorous report card is to inform you of the relative health of the Coastal Bays. After reviewing the report card, see more details and register online at *www.eco-check.org* to receive updates and future report cards.

Causes and effects of degraded water quality

These stories and data provide additional insights into the processes, conditions, threats, and resources in the Coastal Bays, but these indicators were not used as part of the Coastal Bays report card grade.

Non-tidal nutrients

Nutrients follow the path of rainfall and groundwater into streams that ultimately empty into the bays, and so are indicators of inputs to the Coastal Bays from land-based activities. The results below from more than 50 freshwater streams in the Coastal Bays watershed show that streams leading to the Coastal Bays have relatively high nutrient levels which can create ecosystem imbalances. Phosphorus levels in the creeks leading into St. Martin River and Newport Bay are especially high.

Total phosphorus ■ Total nitrogen

Assawoman Bay

St. Martin River

Isle of Wight Bay

Newport Bay

Chincoteague Bay

| Very good | Good | Moderate | Poor | Very poor |

Low nutrients — High nutrients

Summer flounder

Summer flounder along the coast use Maryland's Coastal Bays as nursery habitat, so good water quality is important to seeing summer flounder in Maryland's Coastal Bays. Fish surveys have been conducted annually since 1989 as part of the Maryland Department of Natural Resources Coastal Bays Fisheries Investigation. Summer flounder appear in the surveys in all sizes but mostly as juveniles, so the survey is best used as an index of juvenile fish for this species. The results below show the percentage of trawls where summer flounder were captured in the surveys. In 2010, the summer flounder catch was near the average of all catches since 1989. This indicates that summer flounder are using Maryland's Coastal Bays as nursery habitat much like they have for the past 21 years.

■ Annual
— Long-term average

% of stations
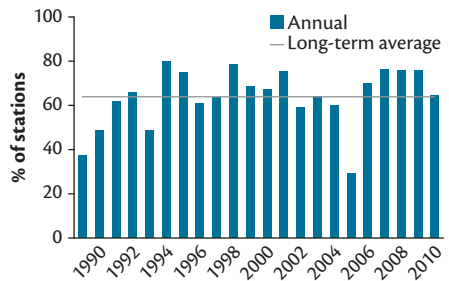
Indicators used in the report card

The aim of this report card is to provide a transparent, timely, and geographically detailed assessment of 2010 Coastal Bays' health. Coastal Bays health is defined as the progress of four water quality indicators (TN, TP, chl-*a*, DO) and two biotic indicators (seagrass, hard clams) toward scientifically derived ecological thresholds or goals. The six indicators are combined into one overarching Coastal Bays Health Index, which is presented as the report card score. Detailed methods available at *www.eco-check.org/reportcard/mcb/2010*.

TN Total nitrogen   **TP** Total phosphorus

The Coastal Bays report card

C

Overall, the Coastal Bays received a grade of C, which declined slightly from a C+ in 2009. Scores for total nitrogen in Isle of Wight, Sinepuxent, and Chincoteague Bays were good to excellent, and were moderate to poor elsewhere. Total phosphorus was mostly moderate to poor, except Sinepuxent Bay which was good. Dissolved oxygen scores were generally moderate with the exception of Newport Bay, which was poor. Chlorophyll *a* was good to excellent in all regions of the Coastal Bays. Seagrass and hard clam scores were moderate to very poor, except for seagrasses in Sinepuxent Bay which were good. This assessment is a snapshot in time. It represents the status of water quality, seagrasses, and clams in 2010.
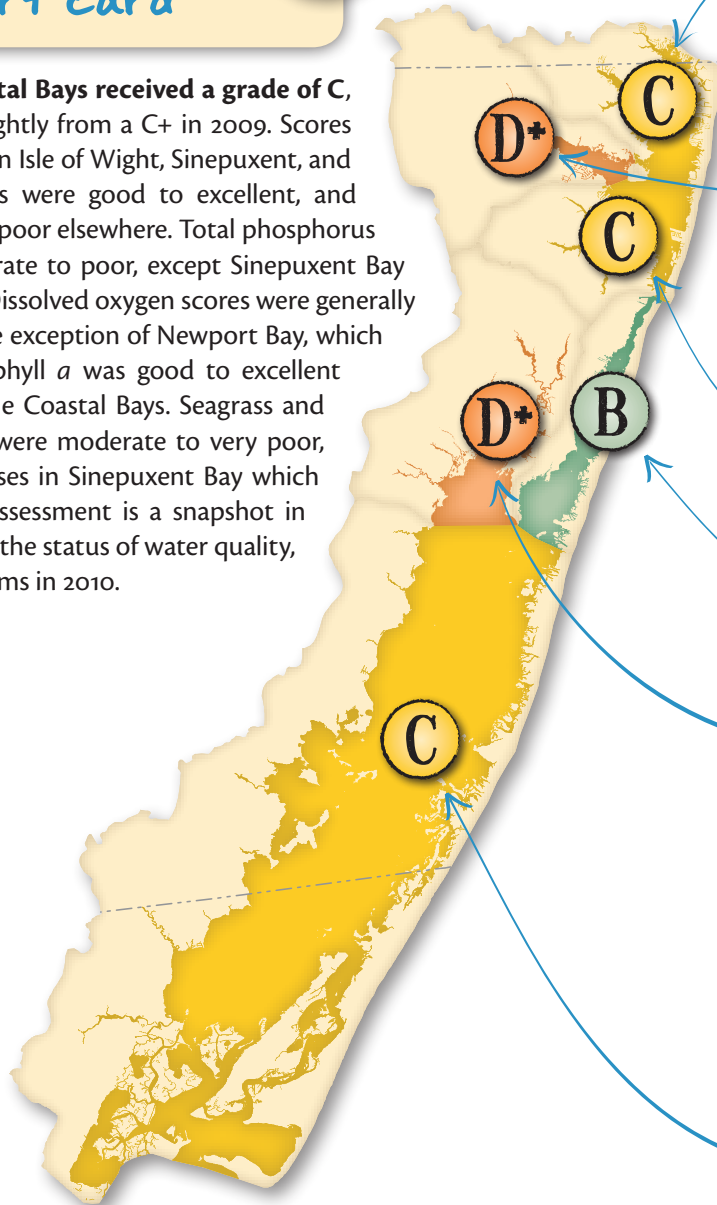
Assawoman Bay received a grade of C. Along with Chincoteague Bay, this region received the second-highest grade. This region saw improvements in seagrasses, hard clams, and nitrogen but declines in phosphorus. Chlorophyll also declined but remained very good in this region, with other water quality attaining moderate condition. The grade of this region declined slightly from a C+ in 2009.

C

St. Martin River received a D+ grade. St. Martin River had lower scores for phosphorus, chlorophyll, and seagrasses than any other region. This region received the worst grade of any reporting region in 2010, with all indicators scoring poor or very poor except chlorophyll, which was good. The grade of this region stayed the same as in 2009.

D+

Isle of Wight Bay received a grade of C. Hard clams declined from good in 2009 to moderate in 2010. Chlorophyll was very good and nitrogen was good, with the remaining indicators scoring as moderate or poor. The grade of this region declined slightly from a C+ in 2009.

C

Sinepuxent Bay received a B grade. Sinepuxent Bay again received the highest grade of all the regions, yet it comprises only about 5% of the area of the Coastal Bays system and therefore had a small impact on the overall grade. Nutrients, chlorophyll, and seagrasses scored higher in this region than any other, oxygen was moderate and clams were poor. The grade of this region stayed the same as in 2009.

B

Newport Bay received a grade of D+. Newport Bay received the second-lowest grade of all the reporting regions. Water quality declined, while there were slight improvements in hard clams and seagrasses. The grade of this region stayed the same as in 2009.

D+

Chincoteague Bay received a C grade. Chincoteague Bay (together with Assawoman Bay) received the second-highest score of all the regions. Seagrasses and oxygen improved slightly, while all other indicators declined. This region received the lowest score for hard clams which may be a result of recurring brown tides. The grade of this region declined from a B- in 2009.

C

Coastal Bays Health Index

Grade	Range	Description
A	80–100%	very good
B	60–80%	good
C	40–60%	moderate
D	20–40%	poor
F	0–20%	very poor

Chlorophyll a   O₂ Dissolved oxygen   Seagrasses   Hard clams

Gold stars for partnerships

Without the assistance of our friends, students, partners, and visitors, the Maryland Coastal Bays Program would not be able to accomplish so much.

- ⭐ **Worcester County** remains committed to sound land use practices that preserve sensitive areas and prime agricultural lands while steering new development towards existing infrastructure. Easements for nearly 300 acres were added to the Coastal Bays Rural Legacy Area in 2010.
- ⭐ **The Town of Berlin** broke ground on its state-of-the-art wastewater treatment plant and purchased property for spray irrigating the treated effluent. This will remove the discharge point from Hudson Branch, which empties into Newport Bay.
- ⭐ **Assateague Island National Seashore** opened its new 10,000-sq-ft visitors center with expanded exhibits about the island's natural resources and cultural heritage. New aquaria and a larger auditorium provide visitors with a wealth of information about the seashore.
- ⭐ **The Town of Ocean City** has institutionalized a program to assist homeowners and businesses with reducing nutrient and sediment loading into the bays through grants for pervious pavers, rain barrels, and marsh and dune plantings.
- ⭐ **The Maryland Department of Natural Resources** has been working with resource experts, fishermen, The Nature Conservancy, and the Maryland Energy Administration to compile data and information about habitats, human uses, and resources along the Atlantic coast. Ocean planning tools have been developed to promote economic development and resource protection and reduce conflict among user groups.
- ⭐ **Maryland Coastal Bays Volunteers** dedicated over 3,000 hours collecting samples to monitor our waterways, picking up over two tons of trash, assembling rain barrels, banding pelicans, monitoring horseshoe crabs, maintaining natural buffers, planting grass and trees, and working on our Citizens Advisory Committee to engage the community in preserving our Coastal Bays.

Northern diamondback terrapin

MARYLAND COASTAL BAYS PROGRAM

Connecting with nature enhances our well-being and inspires us to remember our place in the world.

ROMAN JESIEN

Public and private partnership built this bridge over Hudson Branch. Residents no longer need to use trash and debris as stepping stones to visit friends and neighbors.

ROMAN JESIEN

Shoreline restoration can accomplish both protection from storms and erosion while allowing access for terrapins, horseshoe crabs, and other marine animals.

Your homework: What you can do

- Plant a rain garden (*www.co.worcester.md.us*).
- Install a rain barrel (*www.epa.gov*).
- Use a programmable thermostat.
- Buy energy-efficient light bulbs.
- Plant a tree (*www.trees.maryland.gov*).
- Hold a neighborhood clean-up.
- Reuse, renew, recycle.
- Donate unwanted items.
- Use reusable cloth shopping bags instead of plastic bags when you shop.
- Become a Maryland Coastal Bays Program member (*www.mdcoastalbays.org*).
- Work with government and community groups on restoration projects and programs.
- Be a watchdog.
- Convince business owners to use best management practices.

SANDI SMITH

Berlin Intermediate School sixth-grade students do their homework in 2011 by decorating rain barrels as a service learning project to support Grow Berlin Green efforts.

The Maryland Coastal Bays Program

Part of the National Estuary Program, the Maryland Coastal Bays Program is a non-profit partnership between the towns of Ocean City and Berlin, the National Park Service, Worcester County, the U.S. Environmental Protection Agency, and the Maryland Departments of Natural Resources, Agriculture, Environment, & Planning.

One of only 28 such programs nationwide, the goal of the Maryland Coastal Bays Program is to protect and enhance the watershed, which includes Ocean City, Ocean Pines and Berlin, and Assateague Island National Seashore. The 175-square mile watershed is home to the treasured resources of St. Martin River, Newport Bay, Assawoman Bay, Isle of Wight Bay, Sinepuxent Bay, and Chincoteague Bay.

Acknowledgements

www.ian.umces.edu

www.eco-check.org

mdcoastalbays.org

www.nps.gov

www.dnr.state.md.us
www.vims.edu