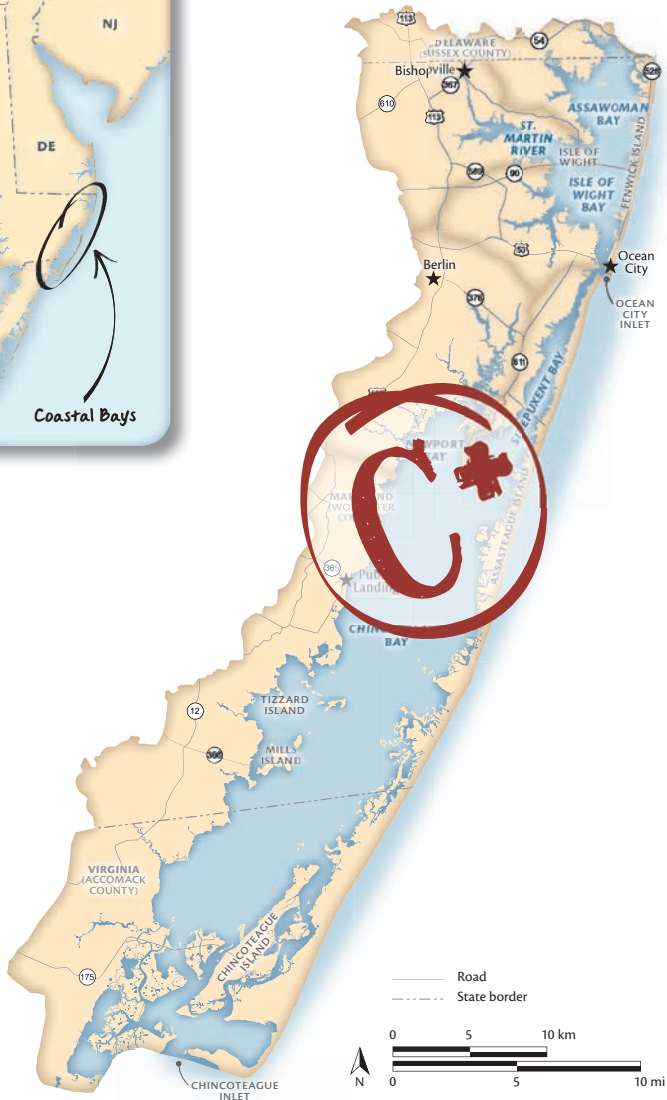


Coastal Bays REPORT CARD 2008



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

2008 at a glance

Coastal Bays' health ranged from poor to good among reporting regions

Although the overall score for the Coastal Bays was a C+, there were distinct differences among reporting regions. For instance, western tributaries such as St. Martin River and Newport Bay had the lowest grades, whereas the northern regions had moderate grades. The southern regions, including Chincoteague Bay, had the highest grades.

Seagrass acreage up slightly

The abundance of underwater seagrasses in the Coastal Bays increased by 17% last year, from 9,319 acres in 2007 to 10,916 acres in 2008. While this increase is a good sign that the downward trend observed in recent years may have stopped, it is still one of the lowest acreages seen in over a decade and only 57% of the peak acreage observed in 2001.

Water quality indicators ranged from poor to very good among regions

Scores of individual water quality indicators showed distinct separation among the reporting regions and ranked similar to the final health index grades. Accordingly, the two mainland tributaries of St. Martin River and Newport Bay ranked the lowest of all regions, suggesting that the aquatic health of the Coastal Bays is strongly affected by nutrient loading from upland areas. Despite the moderate to good health scores in the other regions and an increase in seagrass area—which is likely due in part to lower than average rainfall in 2008—recent increasing trends in nutrient concentrations indicate that development in the watershed poses a serious threat to the health of this ecosystem.

Clam density in Isle of Wight Bay reaches 15-year high

Hard clam survey data from 2008 showed that clam recruitment in 2006 was extremely successful such that small clams (31–50 mm) made up 30–40% of the populations in Assawoman and Isle of Wight Bay, respectively. This boosted the total clam population in Isle of Wight Bay to the highest seen in the 15-year monitoring program. Populations in the other bays have remained stable.

Indicators used in the report card

The aim of this report card is to provide a transparent, timely, and geographically detailed assessment of 2008 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/2008.

TN Total nitrogen

TP Total phosphorus

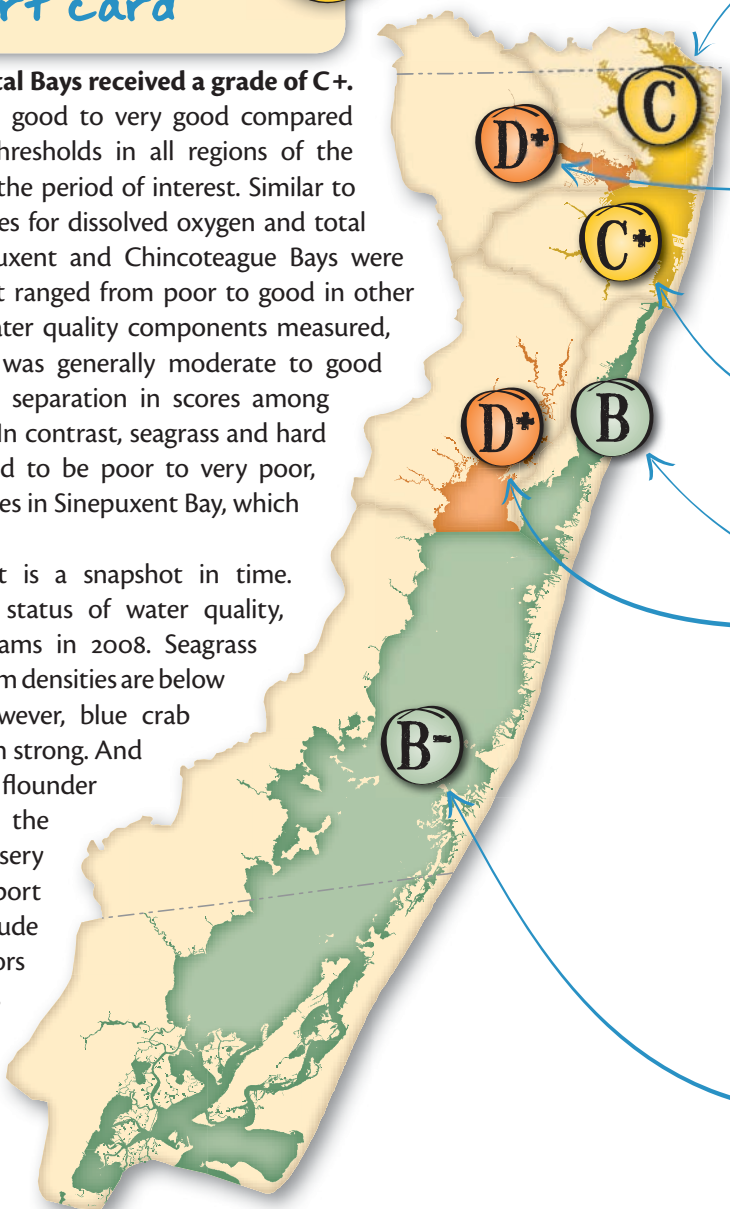
The Coastal Bays report card

C+

Overall, the Coastal Bays received a grade of **C+**. Chlorophyll *a* was good to very good compared to health-based thresholds in all regions of the Coastal Bays over the period of interest. Similar to chlorophyll *a*, scores for dissolved oxygen and total nitrogen in Sinepuxent and Chincoteague Bays were also very good, yet ranged from poor to good in other regions. Of the water quality components measured, total phosphorus was generally moderate to good and had the least separation in scores among reporting regions. In contrast, seagrass and hard clam scores tended to be poor 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 2008. Seagrass abundance and clam densities are below historic levels; however, blue crab populations remain strong. And fish like summer flounder continue to use the Coastal Bays as nursery habitat. Future report cards can include additional indicators such as brown tide, blue crabs, and fisheries.

Coastal Bays Health Index



Assawoman Bay received a grade of **C**. This region had moderate water quality related to dissolved oxygen and nutrients, yet had good chlorophyll *a*. Hard clam and seagrasses were very poor to poor in this region, which resulted in a moderate grade overall.

St. Martin River received a **D+** grade. The worst grade of any reporting region in 2008 was a result of poor scores for every indicator measured except chlorophyll *a*, which was good. This region had scores of poor to very poor for dissolved oxygen, total nitrogen, and seagrasses, which were lower scores than any other region for these indicators.

Isle of Wight Bay received a grade of **C+**. Isle of Wight received the third-highest grade of all the reporting regions in 2008. Of the water quality indicators, dissolved oxygen and total phosphorus ranked lower than either chlorophyll *a* or total nitrogen. Scores for both seagrasses and hard clams were poor.

Newport Bay received a grade of **D+**. Because Newport Bay is very influenced by upland runoff, its grade is the same as St. Martin River. All indicators had similar scores to those of St. Martin, with slightly higher grades for dissolved oxygen and seagrasses. Nevertheless, seagrasses in both regions had very poor scores.

Sinepuxent Bay received a **B** grade. This reporting region had the highest grade of any region, yet it makes up only about 5% of the area of the entire Coastal Bays system and therefore had only a small impact on the overall grade. Both water quality and seagrasses scored higher in this region than in any other with dissolved oxygen, total nitrogen, and chlorophyll *a* all in the very good category. In contrast, hard clams had a poor score even though it was the second highest score of any reporting region for this indicator.

Chincoteague Bay received a **B-** grade. This region is by far the largest of the six reporting regions of the Coastal Bays and makes up about 64% of the total area. Because the overall grade for the Coastal Bays is area-weighted, this region had the largest influence. Despite most water quality scores that were generally very good in 2008 (not including total phosphorus, which was moderate), seagrasses and hard clams were poor to very poor, resulting in a somewhat lower grade overall for this reporting region.

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).



ROMAN JESSEN

Students from Buckingham Elementary School in Berlin participate in planting trees at the school.

Our homework: What Maryland Coastal Bays Program is doing

Nutrient Reduction Action Strategy

- Septic system maintenance
- Agricultural Best Management Practices
- Stormwater upgrades
- Walkable, bikeable communities

Restoration

- Living shorelines
- Wetlands and forests

Fundraising

- Triathlon
- Golf tournament

Volunteer programs

- Horseshoe crab monitoring
- Water quality monitoring

Working with experts

- Coastal Fisheries Advisory Committee
- Scientific and Technical Advisory Committee

Grants

- Implementation Grants Program
- Community Stewardship Mini-Grants Program

Education

- Local nature and heritage classes
- Upward Bound

Outreach

- Weekly newspaper columns
- Public speaking engagements



MORGAN KAUMEYER

Athletes from all over the region competed in the MCBP annual Osprey Triathlon in October, 2008.



JIM RAPP

Isabel Emond was one of more than 60 children and adults who took part in the annual Herp Search May 16, 2009.

For extra credit

Become an advocate for the protection of the bays:

- Volunteer for the Maryland Coastal Bays Program.
- Work with government and community groups on restoration projects and programs.
- Attend public hearings.
- Educate your friends.
- Be a watchdog.
- Convince business owners to use best management practices.

Conserve water in your gardens (www.mde.state.md.us):

- Water infrequently, deeply, and thoroughly.
- Water early in the day, especially as the weather warms, to reduce evaporation loss.
- Properly condition your soil.
- Install a drip or other water conserving irrigation system.
- Keep weeds pulled and reduce the likelihood of them returning by mulching.



ANITA FERGLISON

Volunteers recognized Earth Day 2009 by helping with a marsh planting and cleanup at a living shoreline restoration site.

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 and Planning.

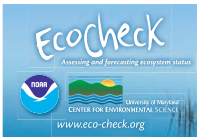
One of only 28 such programs nationwide, the goal of the Maryland Coastal Bays Program is to protect and enhance the watershed, which includes Ocean City, Ocean Pines and Berlin, and Assateague Island National Seashore. The 175-square mile watershed is home to the treasured resources of St. Martin River,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

Acknowledgements

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www.ian.umces.edu



www.eco-check.org



www.cbtrust.org



mdcoastalbays.org



www.nps.gov



www.dnr.state.md.us

www.vims.edu

The data and methods underpinning this report card represent the collective effort of many individuals and organizations working within the Coastal Bays scientific and management community. Detailed methods are available at www.eco-check.org/reportcard/mcb/2008. The following organizations contributed significantly to the development of the report card: Maryland Coastal Bays Program, University of Maryland Center for Environmental Science, National Oceanic and Atmospheric Administration, Maryland Department of Natural Resources, the National Park Service, and Virginia Institute of Marine Science.