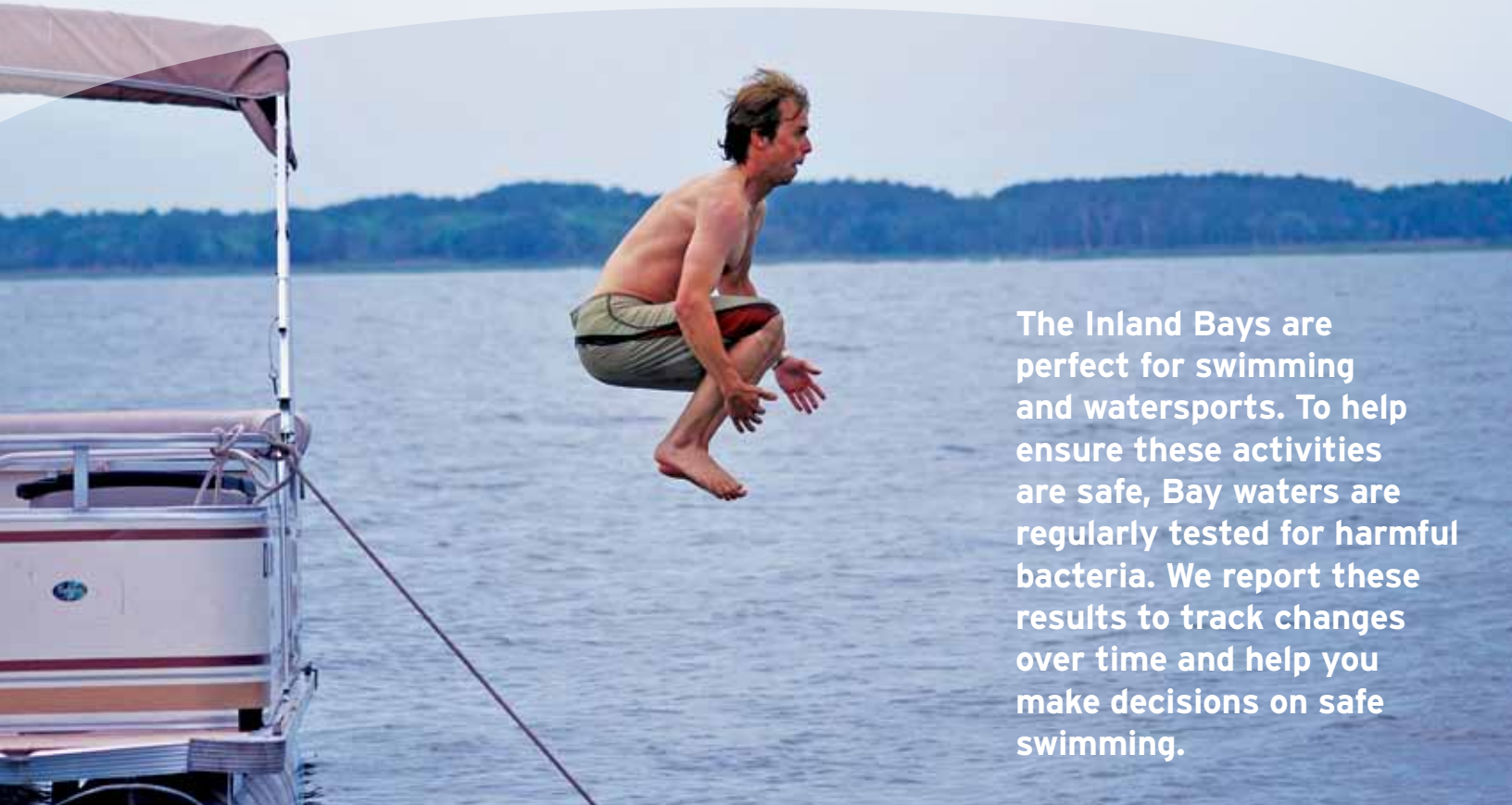


Recreational Water Quality of the Delaware Inland Bays

SECOND EDITION (YEARS 2004 TO 2009)



The Inland Bays are perfect for swimming and watersports. To help ensure these activities are safe, Bay waters are regularly tested for harmful bacteria. We report these results to track changes over time and help you make decisions on safe swimming.

The University of Delaware Citizen Monitoring Program and the Delaware Department of Natural Resources & Environmental Control test waters for levels of *Enterococcus*, a type of bacteria that can indicate the presence of other harmful bacteria and pathogens. A safe swimming standard of 104 colonies of *Enterococci* per 100 milliliters of marine water is used to advise waterusers.

Data collected from 2004 to 2009 show the percentage of samples that exceed the safe swimming standard for waters of the open bays, residential canals and marinas, and tributaries, and for over 30 individual sites.



the results

The well flushed waters of the **OPEN BAYS**, like this beach at Pot-Nets, occasionally exceeded swimming standards (13% of the time).



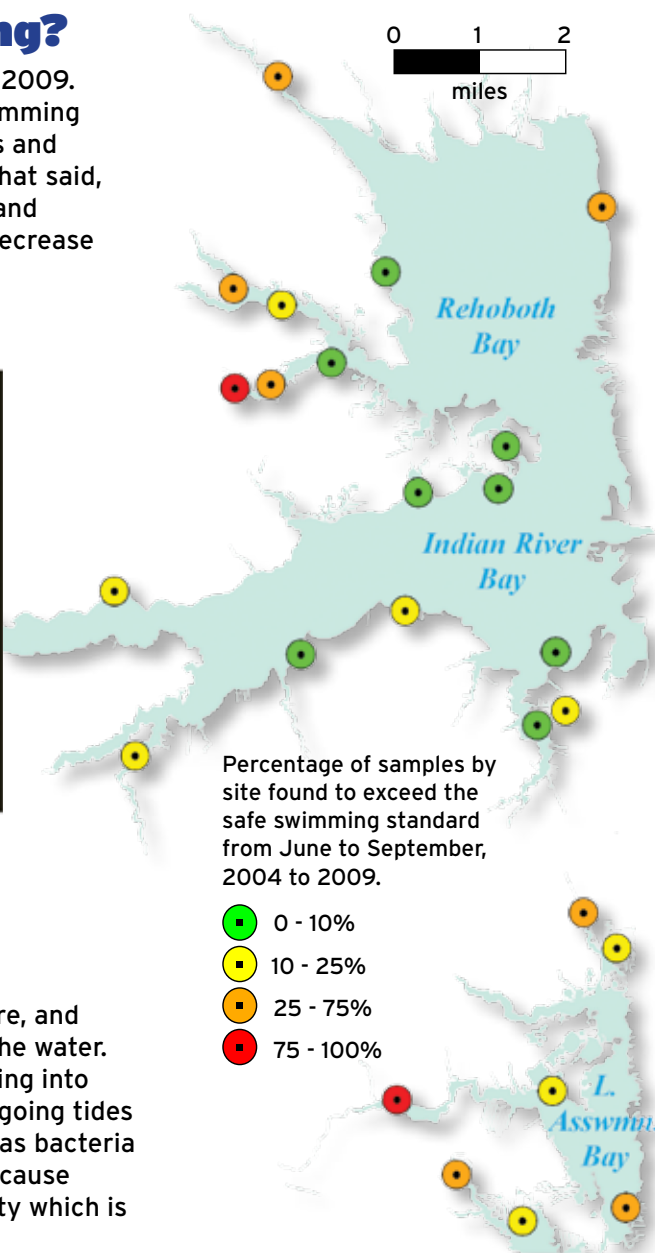
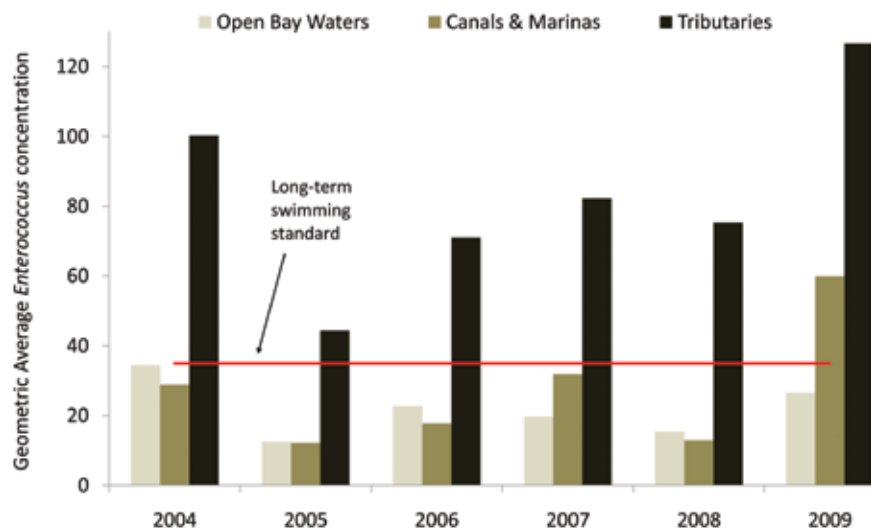
RESIDENTIAL CANALS AND MARINAS such as those in South Bethany had levels of bacteria that occasionally exceeded swimming standards (19% of the time).



TRIBUTARIES like Dirickson Creek, seen from Old Mill Bridge, regularly exceeded the safe swimming standard (43% of the time), sometimes with high levels of indicator bacteria.

is recreational water quality improving?

No significant trends were found in *Enterococcus* levels from 2004 to 2009. However, 2009 had relatively high levels, exceeding the long-term swimming standard of 35 colonies per 100 milliliters of water in Canals & Marinas and Tributaries. More years of data are needed to better pick out trends. That said, many septic systems have recently been converted to central sewers and manure management has improved: actions that scientists hope will decrease bacterial levels.



where do the bacteria come from?

Waterborne bacteria and pathogens can come from multiple sources. Malfunctioning septic systems, waste from pets and waterbirds, manure, and even bottom sediments all can contribute bacteria and pathogens to the water. Impervious surfaces such as roofs and roads prevent water from filtering into the soil and thus speed the delivery of wastes to waters as runoff. Outgoing tides and winds can stir up bacteria attached to sediments, and in some areas bacteria levels are higher after rains. Tributaries have higher bacteria levels because pollution from the land is more concentrated, and the water is less salty which is more hospitable to bacteria.

what can I do to make the inland bays safe for swimming?

- Properly maintain septic systems.
- Clean up after your pet.
- Let the waterbirds find their own food.
- Direct runoff from your home to the soil, instead of the street or canals.
- Properly dispose of boat toilet waste.
- Support legislation that promotes cleanup of pollution sources and limits impervious surface.

Publication produced and peer reviewed by the Inland Bays Scientific & Technical Advisory Committee. Lead author: Chris Bason, CIB. For info on indicator development including data and scientific literature reviews visit www.inlandbays.org.

For frequently updated reports on Inland Bays recreational water quality visit DNREC at <http://apps.dnrec.state.de.us/RecWater/> and the UD Citizen's Monitoring Program at <http://citizen-monitoring.udel.edu/>. Photo credits: Chris Bason, Beau Kroll, Christina Pinkerton.



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