

Green Lawns Lead to Unhealthy “Greening” of Maine’s Casco Bay

Stormwater carries toxic pesticides and fertilizers from lawns downstream to Casco Bay

When it rains in Maine, dangerous chemicals are running off the ground and into the clamflats and beaches of Casco Bay. Volunteers and staff from Friends of Casco Bay (FOCB), a non-profit marine stewardship organization, are sampling the drains and waterways that lead to the Bay. They’ve found high concentrations of nitrogen and phosphorus in water samples taken after storms. These nutrients, once they enter the Bay, can contribute to an explosion of nuisance algae and deplete dissolved oxygen in the water.



Friends of Casco Bay is working to protect coastal areas from the effects of nitrogen loading. This mudflat in Pleasantdale Cove is smothered in a sea of green algae, which proliferates when pollution levels in the water rise.

Where the waters of the Bay should be blue, and its beaches and mudflats brown, volunteers are now seeing a sea of green instead. Nitrogen pollution has led to visible growth of slimy green algae smothering clamflats, as well as contributing to red tides, fish kills, and marine mammal deaths. Fertilizers from lawn application are a primary source of nitrogen and phosphorus. Sewer discharges and smoke-stack emissions also contribute to the problem.

“The health of Maine depends on the health of our marine waters,” states Will Everitt, development director for Friends of Casco Bay. “Casco Bay has some of the largest clam and lobster landings in the State. It also has the busiest oil port on the East Coast, and its watershed is home to one-quarter of the State’s population.”

The organization is collecting extensive data on nitrogen, dissolved oxygen, pH, and chlorophyll levels at more than 50 sites around the Bay. This Nitrogen Pollution Initiative is funded

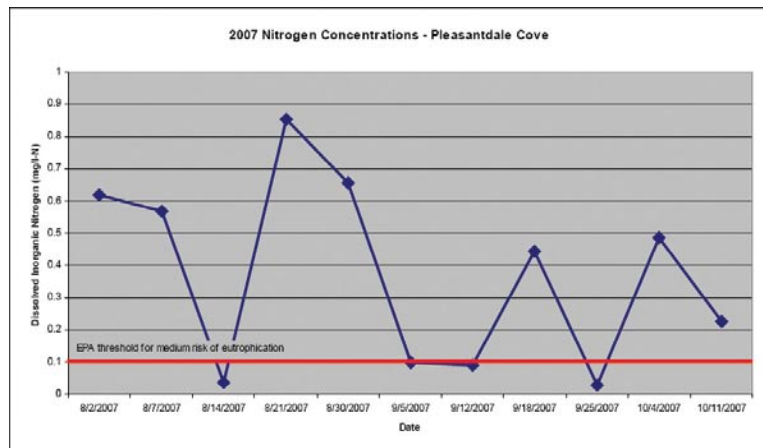
in part by a \$10,000 “Minding the Planet” grant from the YSI Foundation, and FOCB is using YSI data sondes to take the measurements of changing water quality.

The baseline data is being added to a historic Health Index which visually maps Casco Bay with markers for areas of good, fair, and poor quality water.

FOCB is working with local citizens to find ways to reduce nutrient discharge into Casco Bay. Its outreach programs include ecological landscaping seminars and handouts explaining the effects of fertilizers and pesticides on the watershed and providing suggestions for alternative lawn care practices.

To further address nutrient pollution, Friends of Casco Bay is:

- Keeping pressure on municipalities to remove combined sewer overflows (CSOs), which mix stormwater with raw sewage. Both stormwater and sewage contain nitrogen.
- Making sure large passenger ships comply with Casco Bay’s newly designated No Discharge Zone, which prohibits discharging treated and non-treated sewage into the Bay.
- Supporting the implementation of legislation passed in 2007 to establish nutrient standards for Maine’s coastal waters.



This chart shows the sharp increase in nitrogen in Pleasantdale Cove. The levels are well above the EPA’s threshold for risk (red line). Lawn fertilizers and stormwater runoff contribute to the elevated levels.

The overall goal is to stop the “rise of slime” that is threatening Maine’s coastal areas. While nutrients are necessary to support living organisms, what people need to realize is that “too much of a good thing is a problem for the Bay,” notes Everitt. “We have an opportunity to stop the effects of nutrient pollution before it becomes irreversible.”

Further information

Friends of Casco Bay is a non-profit marine stewardship organization in South Portland, Maine, founded to improve and protect the environmental health of Casco Bay.

YSI Incorporated is a US-based company that designs sensor instrumentation and real-time monitoring systems for professionals who protect natural resources and aquatic life. The YSI Foundation, the philanthropic arm of YSI, launched a grant program in 2006 to support environmental projects aimed at protecting and restoring water resources and natural habitats.

To celebrate its 60th anniversary, the company is sponsoring a special \$60,000 Minding the Planet grant in 2008 for watershed protection.



YSI's CEO Rick Omlor, far left, visited Friends of Casco Bay to award the grant. Recipients from left to right: Mike Doan, Research Associate; Will Everitt, Development Director; Cathy Ramsdell, Executive Director; Peter Milholland, Citizen Stewards Coordinator; and Joe Payne, Casco Baykeeper.