UD Citizen Monitoring Program Enhancing Local Monitoring

Joe Farrell

Program Manager

Citizen Monitoring Program

Sea Grant Delaware

University of Delaware

Water Quality Monitoring

Delaware Situation:

Water quality is key to healthy coastal economy ($627M in coastal tourism)

Coastal population increased by 60% in last decade

All watersheds in state identified as “impaired” and developing Pollution Control Strategies

Citizen Monitoring Programs

- Inland Bays (1991)
- Phytoplankton (HAB) Monitoring (2001)
- Bacteria Monitoring (2003)
- Broadkill River (2004)

Program Objectives

To collect verifiable water quality data to support public policy decisions

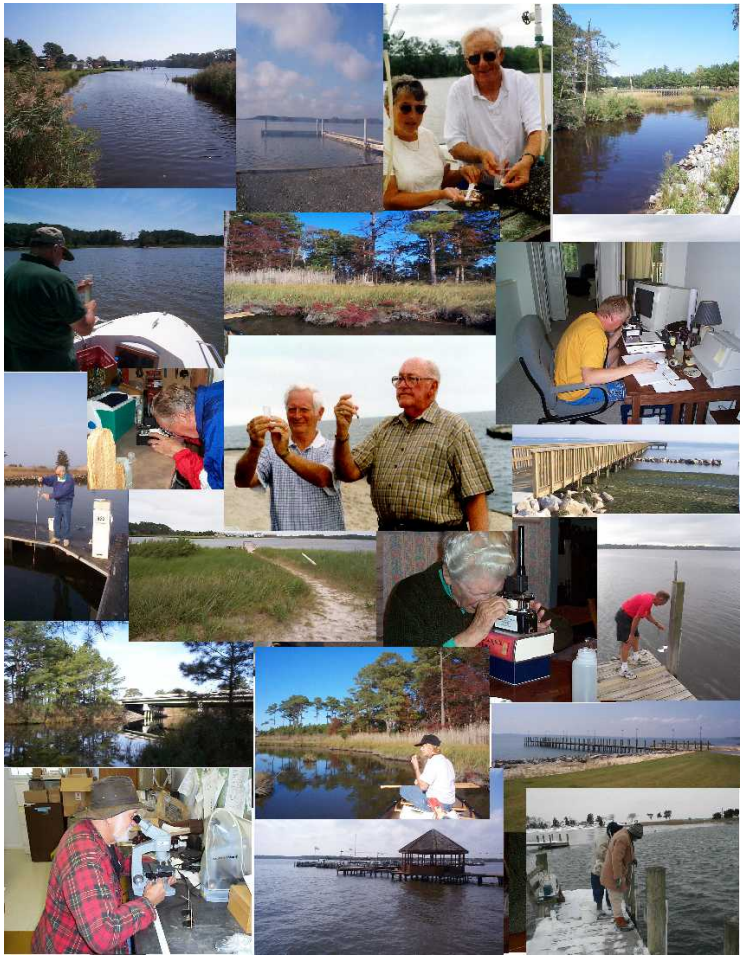
To increase public participation and support for the protection Delaware's water resources

USER OUTREACH – DECISION MAKERS

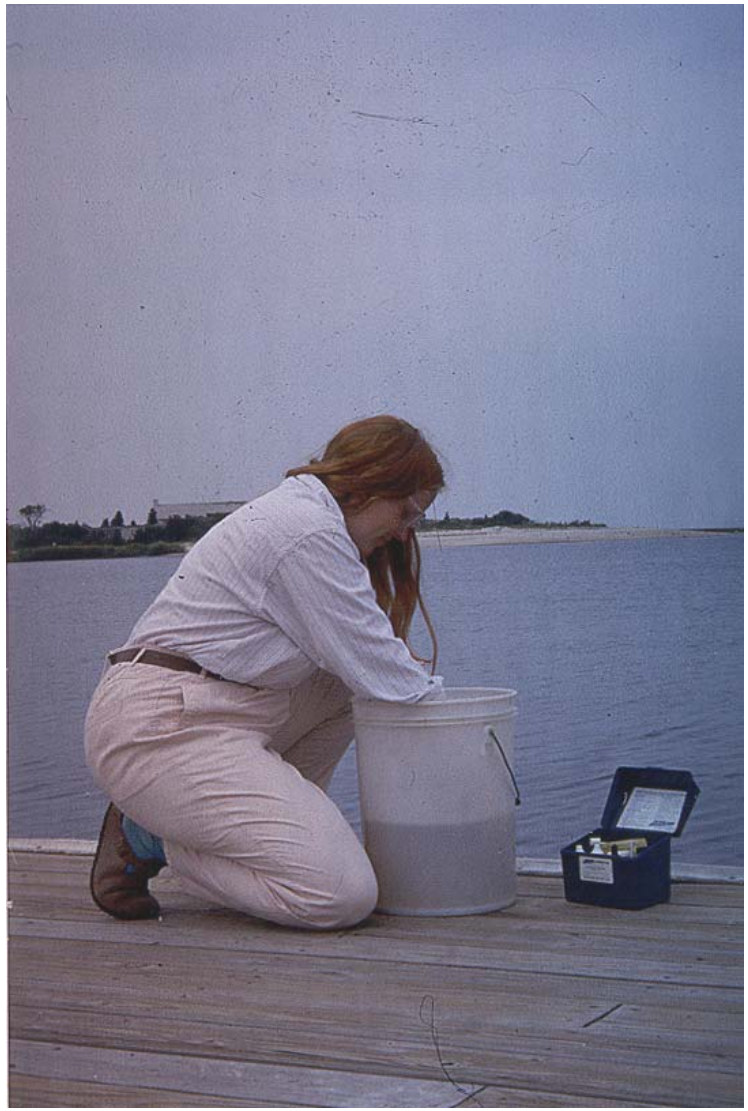
Transfer information to decision makers to "inform" the process.

Data used to provide recreational water and shellfish harvesting advisories; open shellfish beds; support development of TMDL's and 305(b) report; support local land use decisions.

Our Partners



- Citizen volunteers
- Dept. of Natural Resource and Environmental Control
- College of Marine and Earth Studies
- Center for Inland Bays
- National Fish and Wildlife Foundation
- Delaware Estuary Program
- US EPA
- NOAA
- Delaware General Assembly
- Coastal towns
- User groups (Surfriders)



WHAT WE MEASURE

What volunteers measure

- Temperature and salinity
- Secchi and water depth
- Dissolved oxygen
- pH
- Tides
- Rainfall and weather conditions
- Algae survey
- Phytoplankton screening

UD Citizen Monitoring Program Lab

- **Nutrients - Dissolved Inorganic Nitrogen and Phosphorus**
- **Chlorophyll**
- **Total Suspended Solids**
- **Bacteria (Total Enterococcus, Total Coliform and E. coli)**
- **Phytoplankton**

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UNIVERSITY OF DELAWARE

Citizen Monitoring Program

WELCOME!

Since 1991, our dedicated corps of Citizen Monitoring volunteers have been taking water samples on a regular basis throughout Delaware's coastal watershed to measure a broad range of important water quality characteristics. The data they gather provides scientists and resource managers with a clearer picture of the estuary's health and the trend information needed to understand and manage the ecosystem.

We invite you to explore our activities and learn more about what our volunteers are doing to help improve the health of Delaware's water resource. Perhaps you, too, will want to take part in providing the timely and accurate data that complements the state's other monitoring programs.

Join the effort to protect Delaware's water quality.

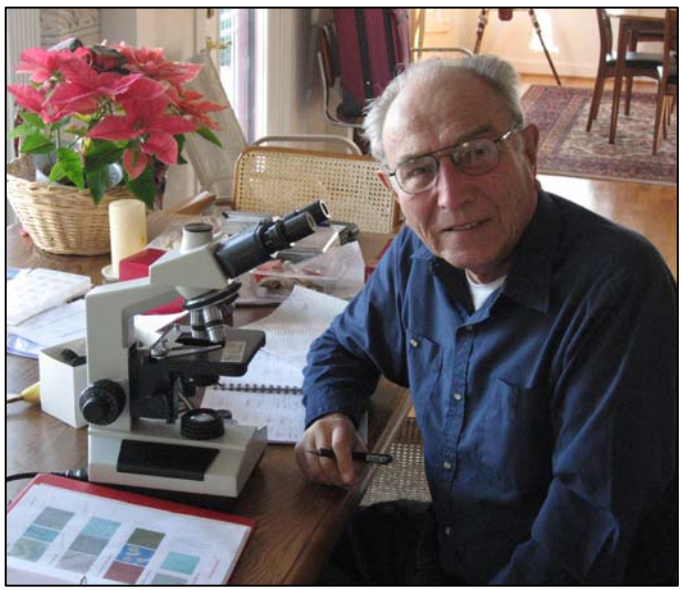
Indian River Inlet

Water Quality Reports »

New Broadkill River Program »

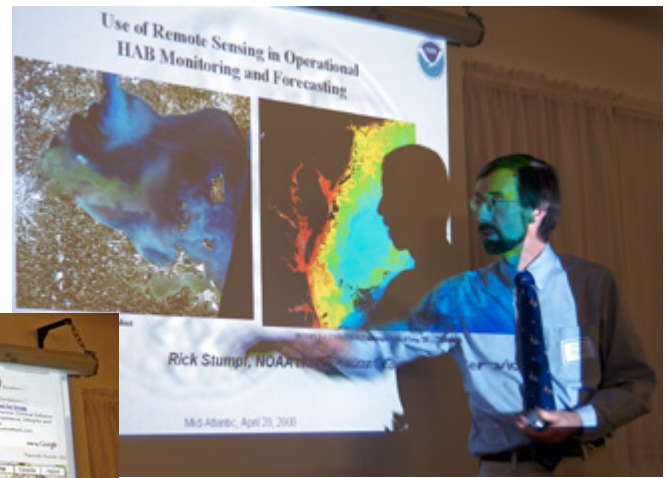
Done Internet

Phytoplankton Monitoring Program



Kobbé's Complete
Opera Book

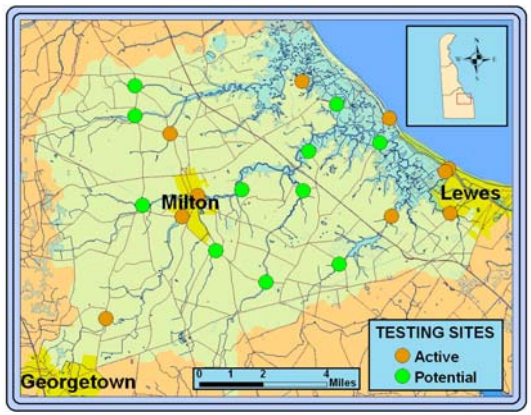
Harmful Algal Blooms (HABs)
in the mid-Atlantic Forum


Use of Remote Sensing in Operational
HAB Monitoring and Forecasting
Rick Stumpf, NOAA
Mid Atlantic, April 28, 2008

Bacteria Monitoring Program

Broadkill River Monitoring Program

Integrating Outreach in Broadkill Watershed



Engaging watershed "cooperators"

Citizen Monitoring Programs

Engaging local government leaders

Delaware NEMO

Engaging the public

Tributary Action Team

Engaging scientists

CMES

APPLIED RESEARCH

The program has responded in a timely way to citizen concerns over water quality issues including:

- **South Bethany Canals Water Quality Study**
- **Clam Reseeding Project**
- **Inland Bays Macro Algae Survey**
- **Lewes-Rehoboth Canal Drifter Study**
- **Holiday Weekend Effect Study**
- **Phytoplankton Monitoring Program**
- **Winter beach bacteria sampling**

The program has contributed to a better understanding of our coastal bays and ocean

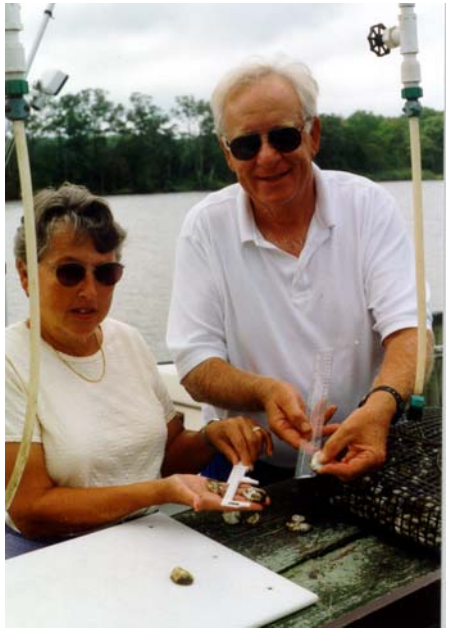
SOUTH BETHANY CANAL STUDY

Youth and Community Outreach

Program Impacts

- Provide data that improves our understanding of water body
- Support public health data needs of state agencies - HAB and bacteria monitoring.
- Enhance credibility of volunteer programs with resource managers and scientists
- Informed citizenry involved in public policy decisions and partners in Sea Grant outreach

EXTENDING OUR REACH



Working Together We Can Accomplish More

Photo credit Jon Cornforth 2007