



Monponsett Pond Watershed: We All Have A Stake in It.

Stakeholders' Kick-Off

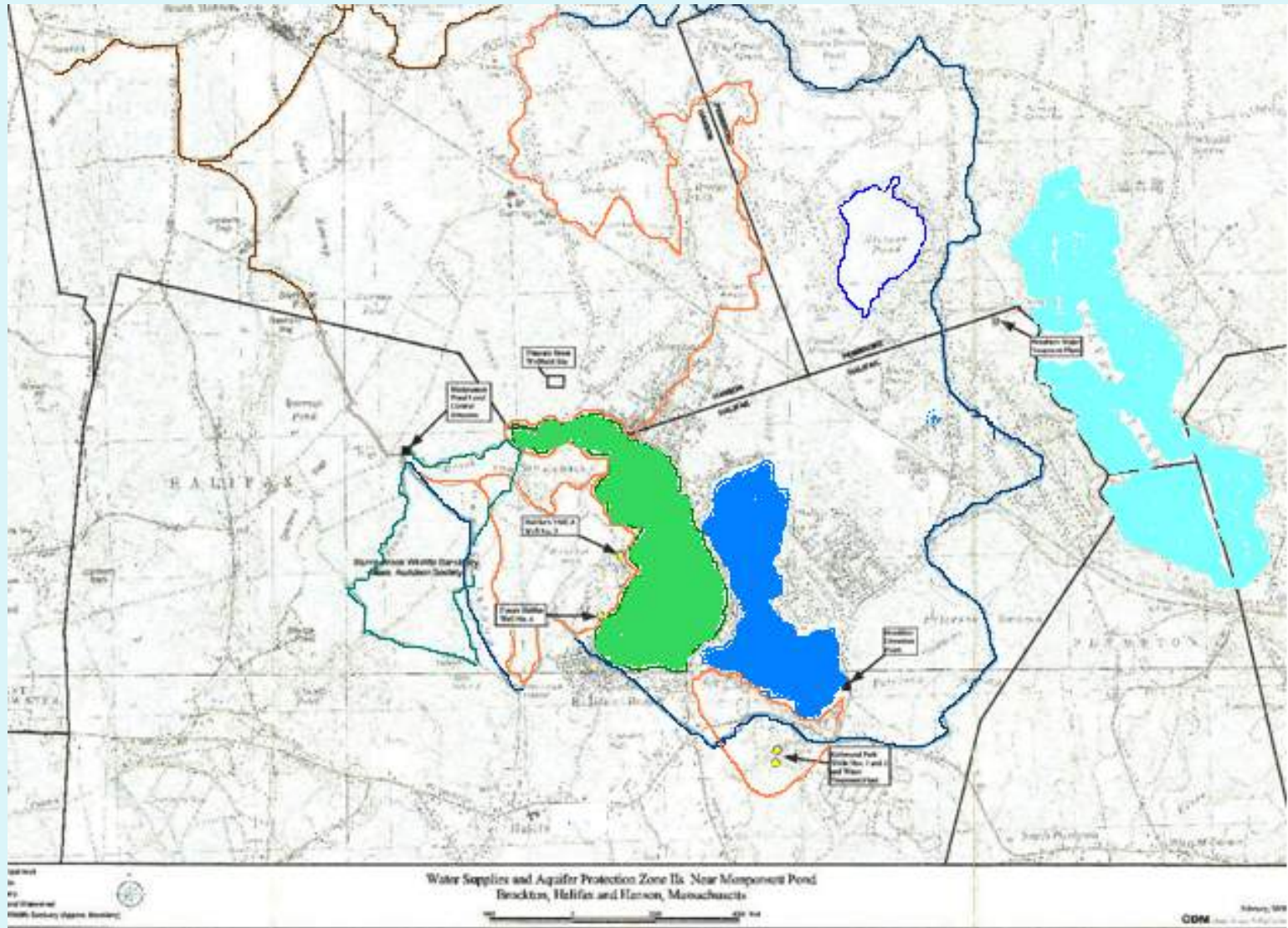
Meeting

March 15, 2012

Welcome Stakeholders!

- Halifax residents
- Hanson residents
- Pembroke residents
- Boards of Health, Boards of Selectmen, Water Commissions
 - Halifax
 - Hanson
 - Pembroke
- Brockton Water Commission
- Cape Cod Cranberry Growers Association
- Local Cranberry bog owners
- MA DEP
- MA Division of Fisheries & Wildlife
- Other interested participants

Monponsett Pond Watershed



Aerial Photos of Monponsett Pond



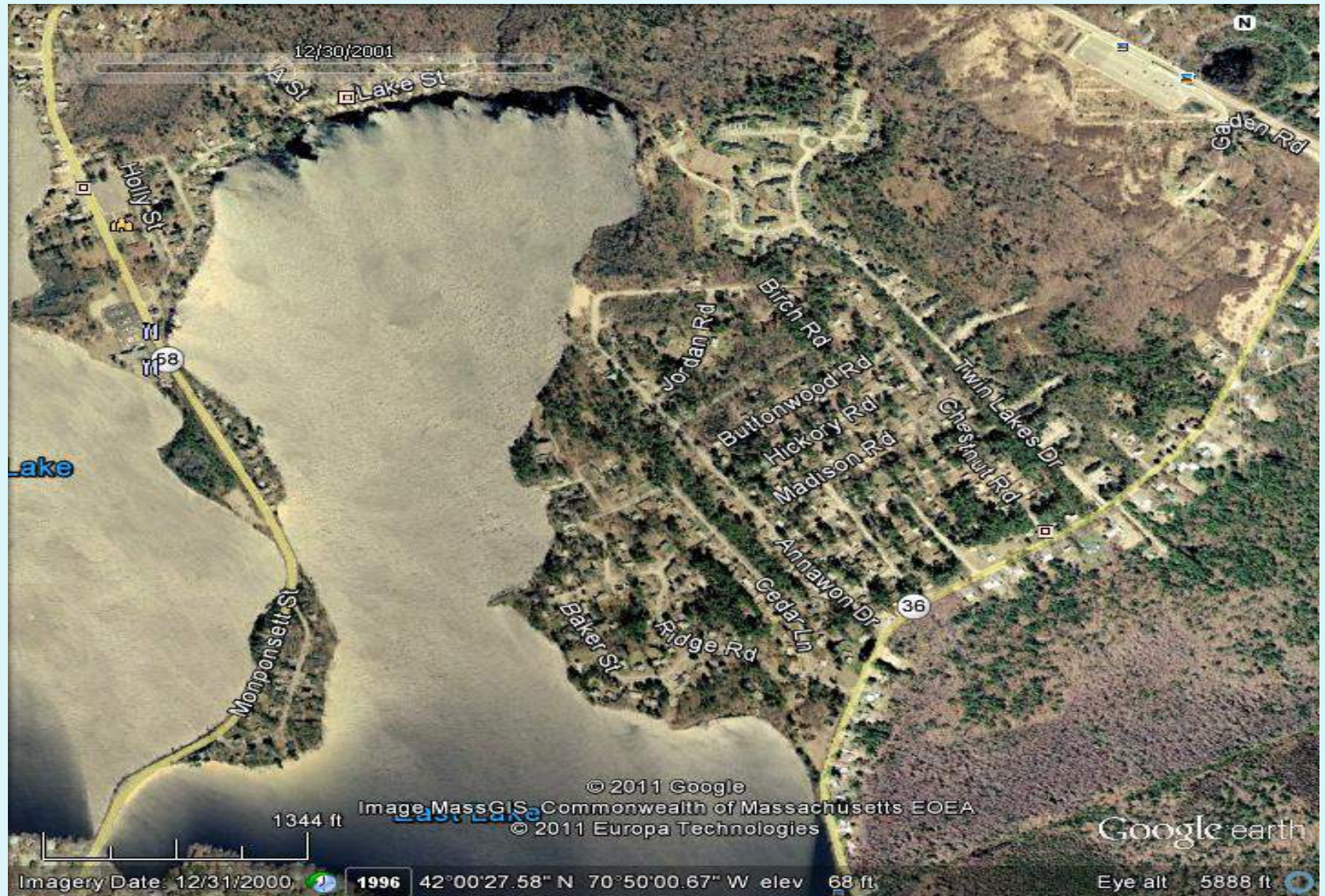
Aerial Photos of Monponsett Pond



Aerial Photos of Monponsett Pond



Aerial Photos of Monponsett Pond



Aerial Photos of Contributory Waters To Monponsett Pond



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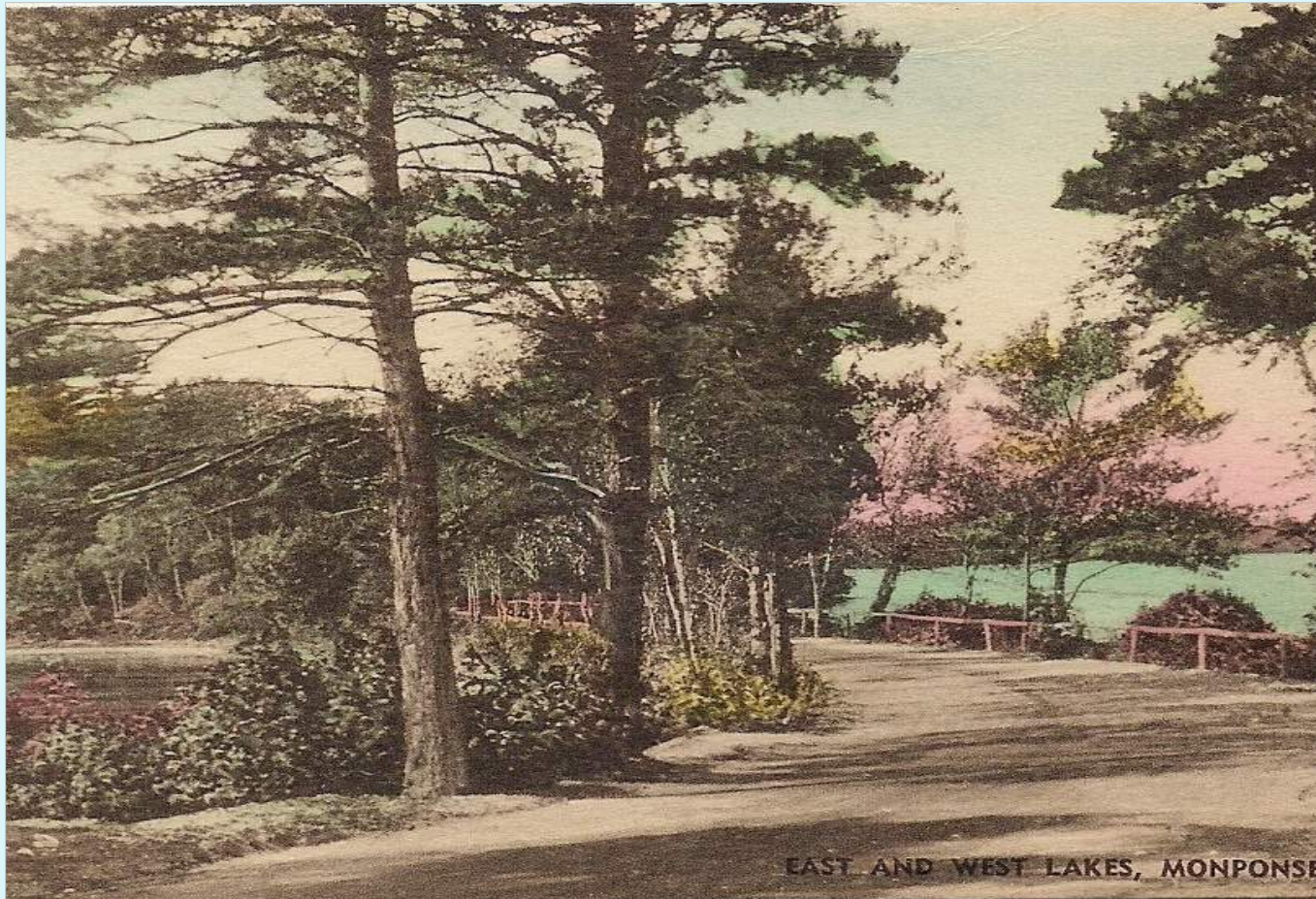
Aerial Photos of Contributory Waters To Monponsett Pond



Monponsett Pond's Glory Days



Monponsett Pond's Glory Days



Monponsett Ponds used to be a vacation destination!

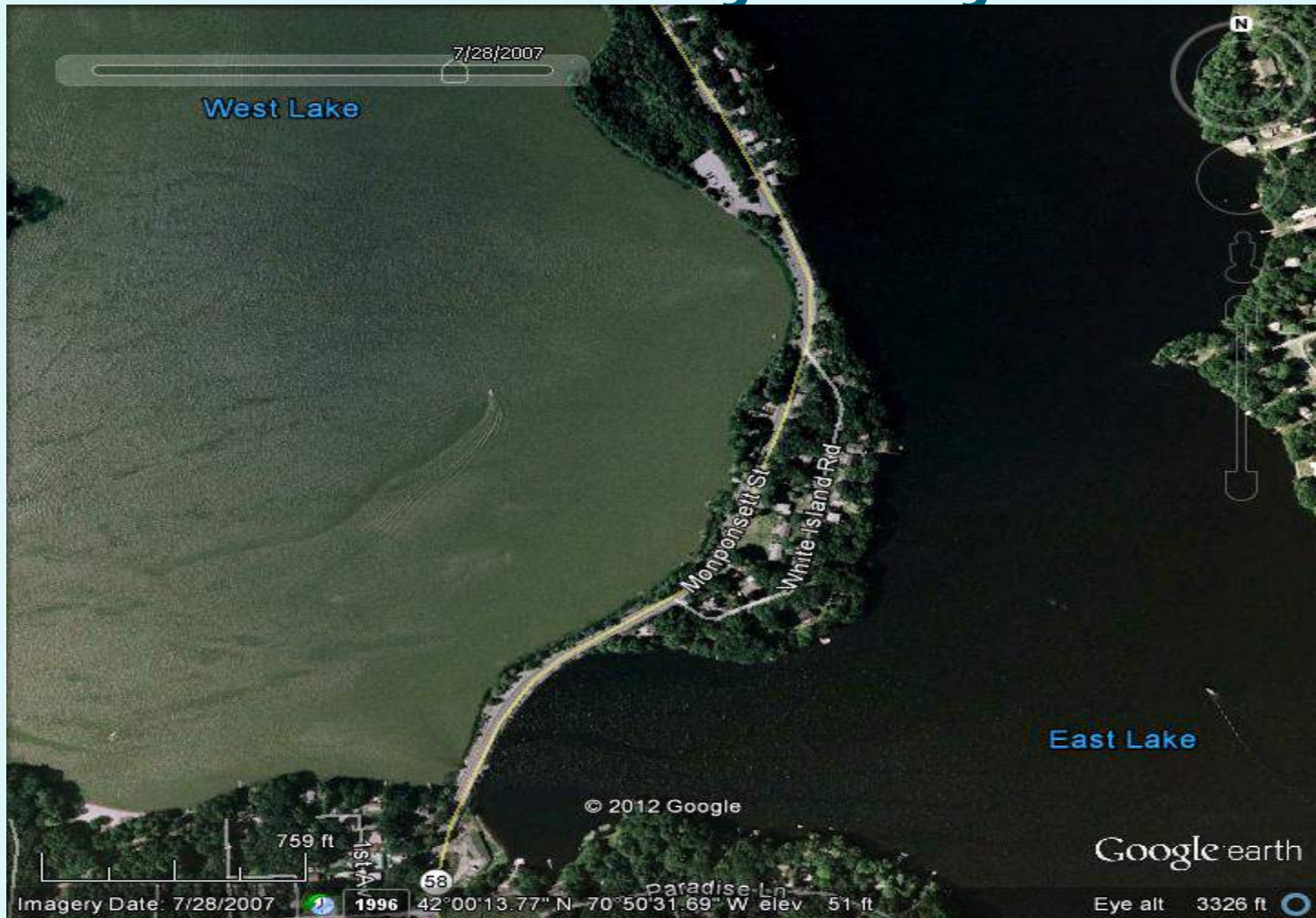
Monponsett Pond's Glory Days



Monponsett Pond's Glory Days



Monponsett Pond's Not So Glory Days



Monponsett Pond's Not So Glory Days



Monponsett Pond's Not So Glory Days



(That is the Halifax Health Agent's boot in West Monponsett Pond.)



This is a NASA problem.

N = Noticeable

A = Aroma

S = Severe

A = All of Us Are Affected

N= Noticeable



A= Aroma

- It smells so badly at times that the Fire Dept. responds to calls of gas odors
- When you drive on Route 58 it smells
- Sitting in a boat, the smell is very strong
- Back yard BBQs are not enjoyable when the pond stinks

S= Severe

- Beaches are closed. = loss of recreation & lowered property values
- Water quality problem for Brockton
- Potential for health effects for people and pets.
- Toxic during certain stages of its growth

S= Severe (continued)

Toxic Effects of Cyanobacteria

Microcystis



- Limited exposure to the Microcystis can cause skin irritation, or gastrointestinal discomfort if ingested.
- This type of cyanobacteria creates hepatotoxins, which in extreme cases of high exposure, target the liver and could cause tumors.

Anabaena



- These blooms have the ability to produce hepatotoxins and neurotoxins.
- The neurotoxins are very dangerous because they are able to block transmissions in the brain.

A = All of Us Are Affected

- **Monponsett Pond Watershed Description**
- 528 Acres, including parts of Halifax, Hanson and Pembroke. It is in the Taunton River Watershed.
- Consists of two basins: east and west. The eastern basin is 246 Acres and the western basin is 282 Acres.
- The average depth of Monponsett Pond is 7' with 13' being the maximum.
- Land use within the watershed is residential with highly productive cranberry bogs in various locations. There are areas of undeveloped land consisting of mostly wetlands.
- Hundreds of families live on & near the Monponsett Ponds
- State Boat Ramp is on the West Monponsett Pond



This is a NASA problem.

NASA PROBLEM



BUT IT CAN BE FIXED

Algae: What Causes It?

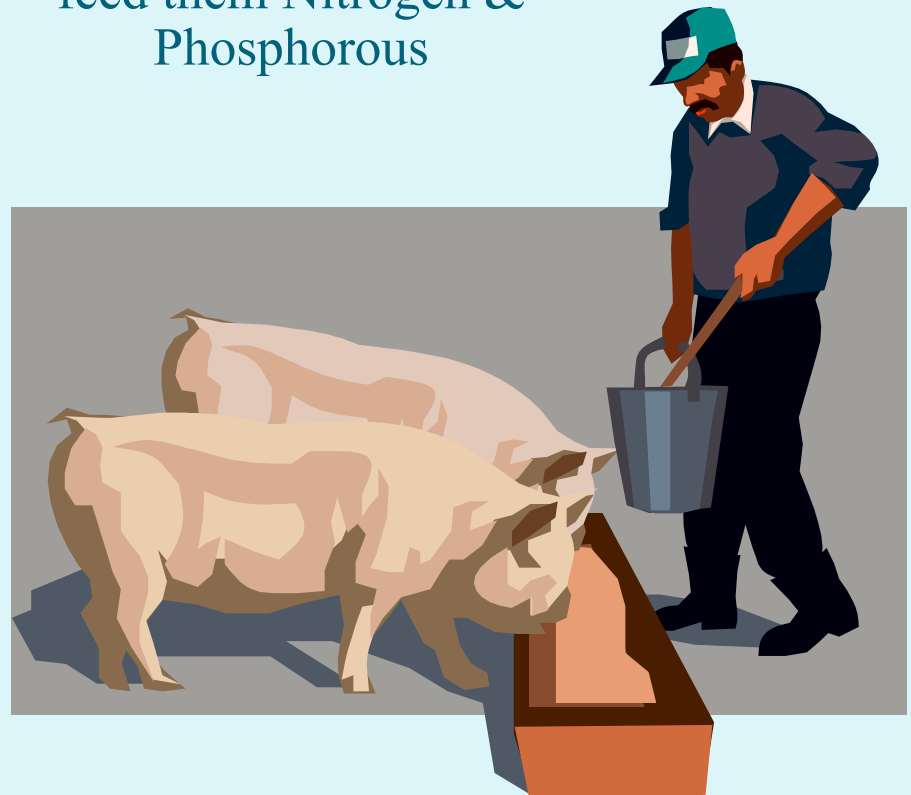
- Fresh water algae is in the family of cyanobacteria or blue-green algae.
- It is naturally occurring...in small amounts.
- In order to “bloom”, it needs food and.....
- Because it makes chlorophyll, (that’s why it’s green!) it needs sunshine.

Algae's Requirements

The sun

Nitrogen & Phosphorous are the food

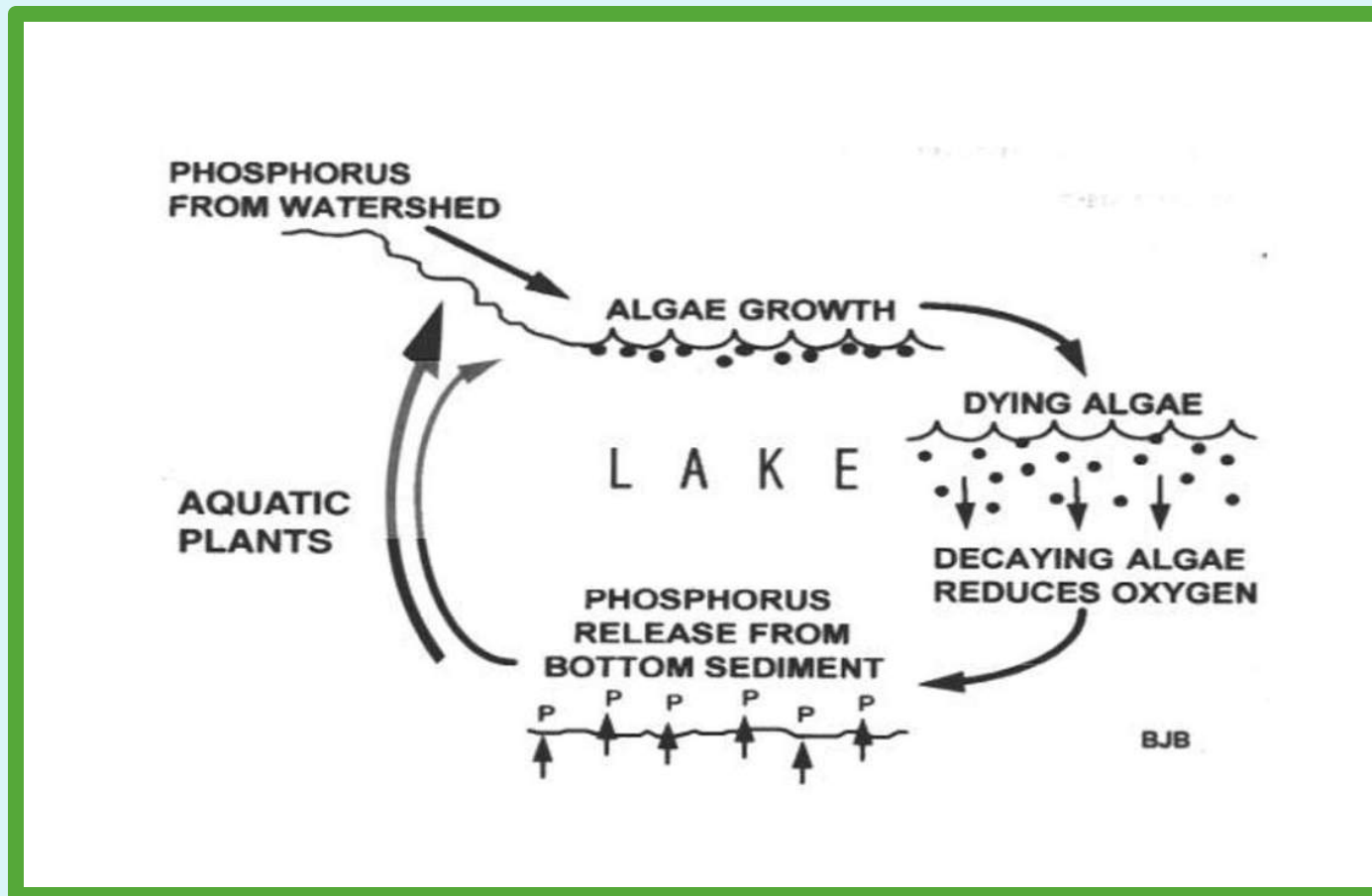
Algae are like pigs & humans
feed them Nitrogen &
Phosphorous



Algae feeds on lots of stuff.

- Fertilizers
 - Agriculture, such as cranberry bogs
 - Livestock: feed and/or manure
 - Run-off from farms & lawns
- Sewage: old systems in groundwater
- Stormwater run-off from street drains

The Phosphorous Cycle



What goes around, comes around!

Monponsett Nutrients?

- ✓ Cranberry bogs
- ✓ Farm Fields
- ✓ Old septic systems
- ✓ Improperly Maintained New Title 5 Systems

Monponsett Nutrients?

- ✓ Improperly Maintained Innovative/ Alternative Advanced Treatment Systems
- ✓ Fertilized Green Lawns
- ✓ Nutrients From Upstream Sources

THE CLEAN WATER ACT

The Federal Water Pollution Control Act of 1948 was the first major U.S. law to address water pollution.

Growing public awareness and concern for controlling water pollution led to sweeping amendments in 1972.

As amended in 1977, the law became commonly known as the Clean Water Act (CWA).

THE CLEAN WATER ACT

The 1977 amendments:

- Established the basic structure for regulating pollutants discharges into the waters of the United States.
- Gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry.
- Maintained existing requirements **to set water quality standards for all contaminants in surface waters.**
- Made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions.
- Funded the construction of sewage treatment plants under the construction grants program.
- Recognized the need for planning to address the critical problems posed by nonpoint source pollution.

Monponsett Ponds on DEP's Radar Screen for a long time

Massachusetts Year 2010 Integrated List of Waters

*Final Listing of the Condition of Massachusetts' Waters Pursuant to
Sections 305(b), 314 and 303(d) of the Clean Water Act*

Featuring new water quality assessments for the Chicopee, French, Quinebaug and
Nashua watersheds and the Narragansett Bay and Mount Hope Bay Coastal
Drainage Areas



Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Richard K. Sullivan, Jr., Secretary
Massachusetts Department of Environmental Protection
Kenneth L. Kimmell, Commissioner
Bureau of Resource Protection
Ann Lowery, Acting Assistant Commissioner

Monponsett Ponds on DEP's Radar Screen for a long time

Massachusetts 2010 Integrated List of Waters Among Others Requiring a TMDL:

Monponsett Pond, MA62119, [West Basin] Halifax/Hanson 283
acres –Nutrients

- Non-native aquatic plants
- Excess Algal Growth
- Secchi Disk Transparency = Turbidity
- Phosphorous (Total)
- Mercury in fish tissue

Monponsett Pond, MA 62218, [East Basin]

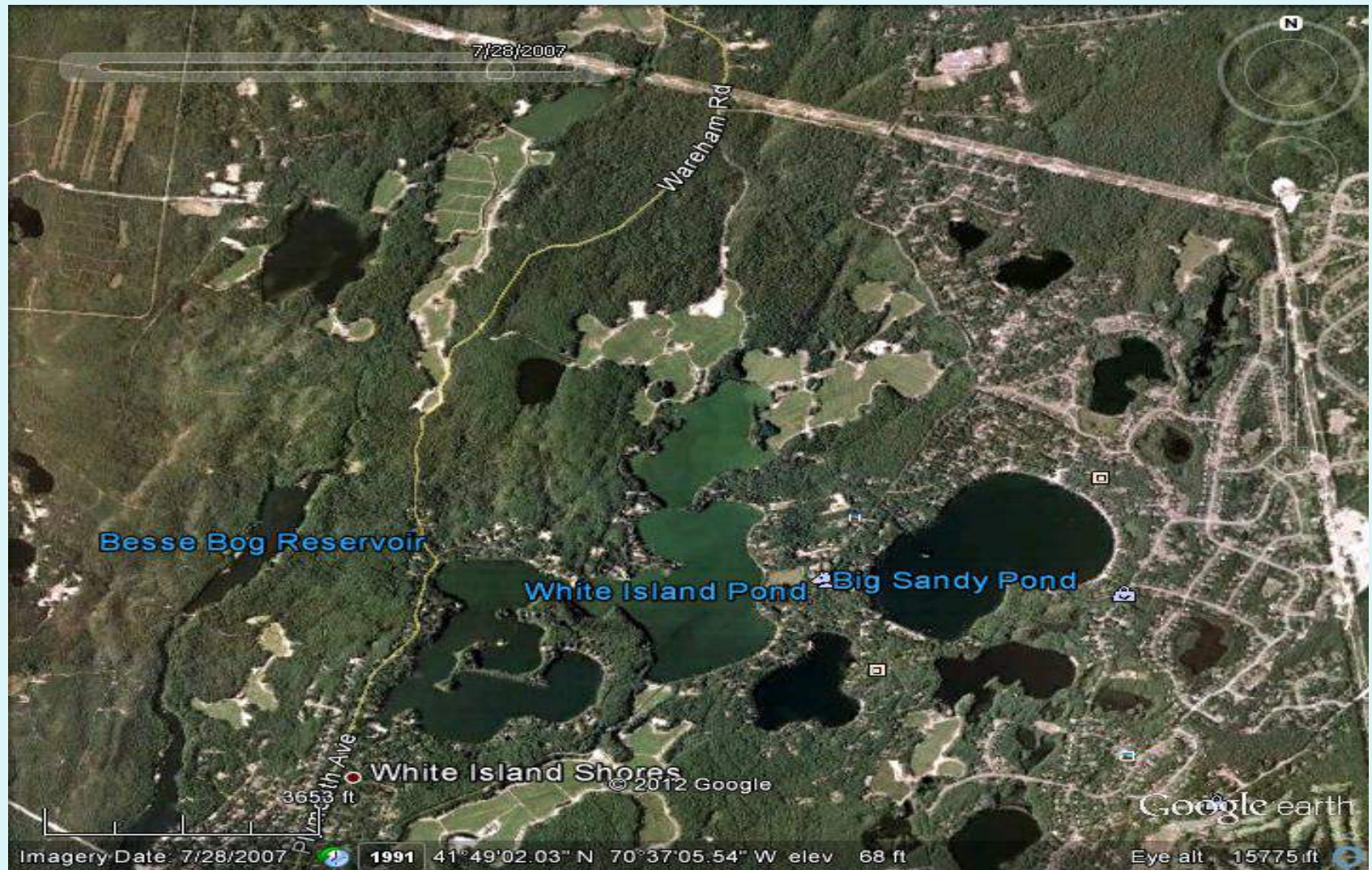
- Non-Native aquatic Plants
- Mercury in fish tissue

What's next ?

DEP will issue TMDL's for the Monponsett Ponds. White Island Pond in Wareham is an example of what we can expect.



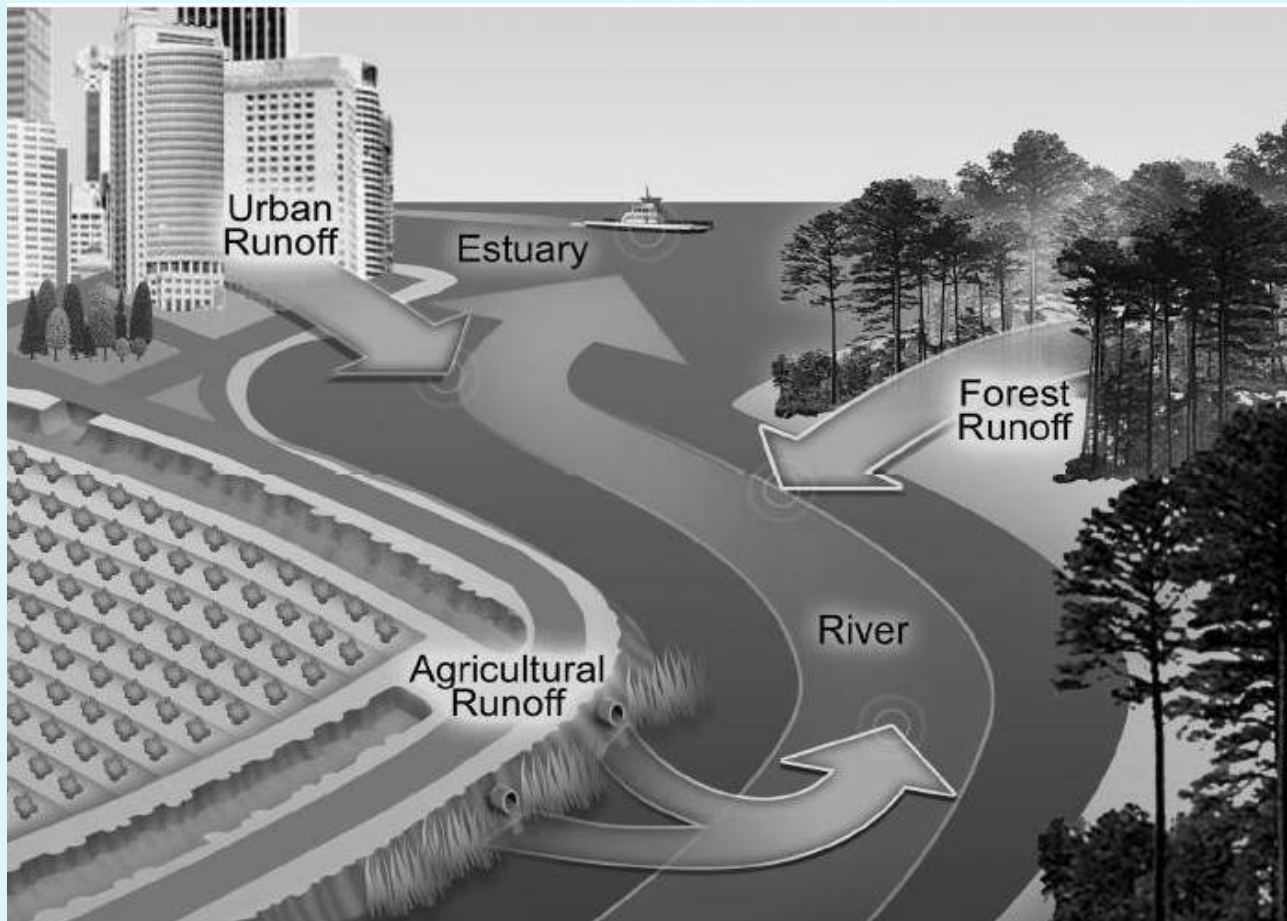
White Island Pond in Wareham is Similar to Our Situation



What will DEP ask of us?

- Control sediments in the ponds and entering the ponds
- Control discharges from bogs and lawns
- Control discharges from septic systems
- Control road/street storm-water discharges

Establish regulations for control of all discharges



Ways to Control Discharges

- Enforce Best Management Practices for cranberry bogs
- Install municipal & neighborhood sewer treatment facilities
- Require nitrate removal by septic systems for all systems in the watershed.
- Require Innovative/Alternative Septic Treatment System for all houses close to water bodies
- Pond sediment remediation with chemical treatments, flushing by lowering the dam and sediment removal
- Install Water Quality Structures for all Municipal and Subdivision street drainage systems.

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Things You Can Do to Protect Your Lake . . .

- Stop feeding the algae!
- Repair failing septic systems close to ponds.
- Use “no phosphate” fertilizers.
- Establish buffer areas at edge of water bodies.

The US Environmental Protection Agency (EPA) model for watershed management includes four major components:

1. Broad stakeholder involvement.

1. From planning to codifying laws, programs will be understood and valued by the public at large.

2. Management strategy based on geographic unit of the watershed.

1. Requires cooperation among multiple jurisdictions.

3. Coordinated management activities.

4. A clear management schedule.

Information missing:

- What arrives from upstream?
- Where is fertilizer run-off?
- How many septic systems are in failure close to ponds?
- How much pollution/nutrients arrive from stormwater?
- What pollutants arrive from upstream/
other towns?

We want clean water back!

We need your help!

Establish a Monponsett Pond Watershed Association

- Establish a Governance Structure
- Establish Committees for:
 - Planning
 - Researching
 - Identifying Sources of Discharges
 - Monitoring
 - Sampling
 - Testing

PLANNING



PLANNING



PLANNING



RESEARCH



RESEARCH



RESEARCH



DISCHARGE SOURCES



DISCHARGE SOURCES



DISCHARGE SOURCES



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WATER MONITORING: SHORELINE



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WATER MONITORING: SHORELINE



MONITORING: BOATING



MONITORING: BOATING



MONITORING: BOATING



MONITORING: BOATING



WATER SAMPLING



WATER SAMPLING



WATER SAMPLING



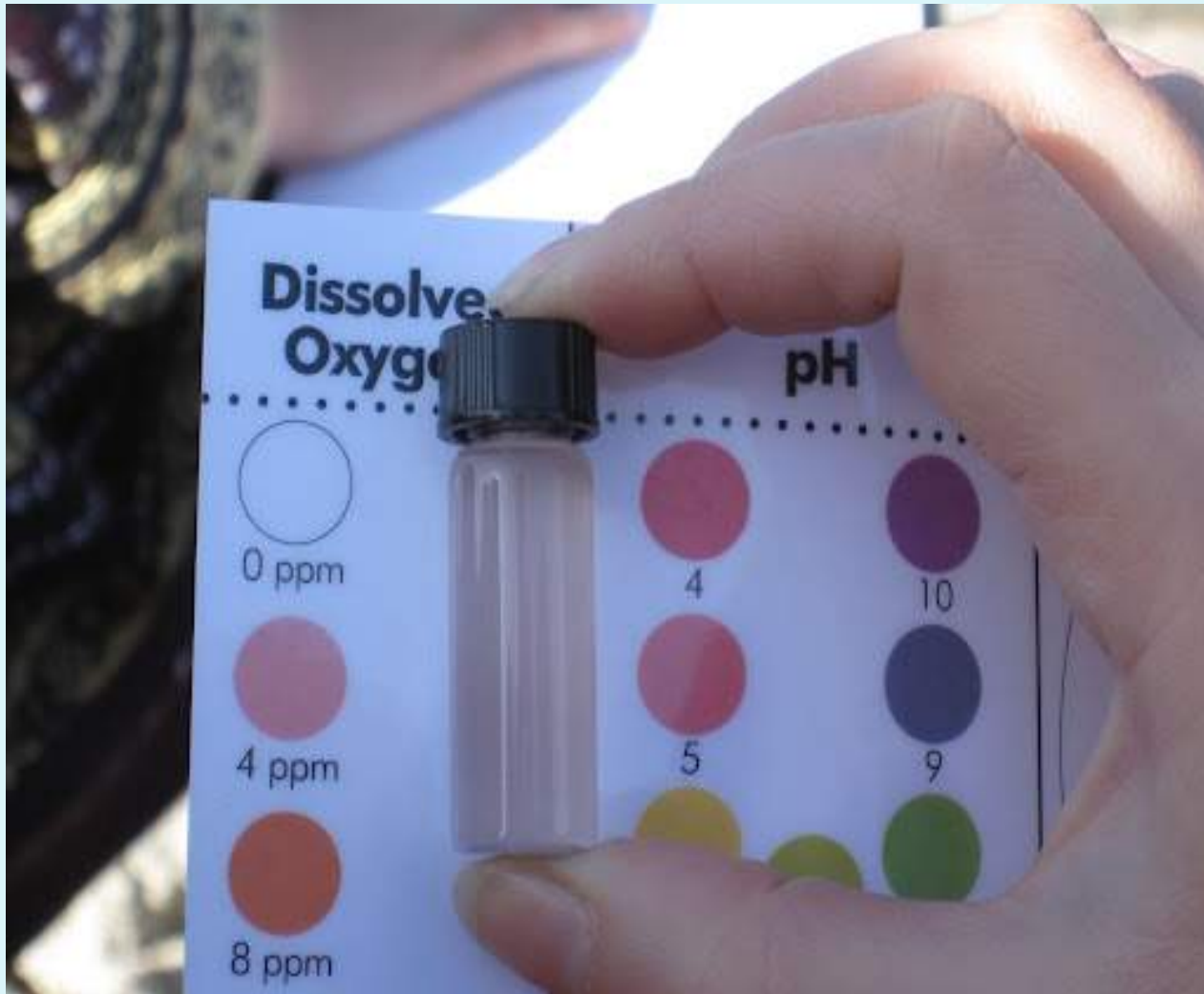
FIELD TESTING



FIELD TESTING



FIELD TESTING



LABORATORY TESTING



LABORATORY TESTING



LABORATORY TESTING



OTHER WATERSHEDS HAVE PAVED THE WAY FOR US

This project was funded by



Massachusetts Executive Office
of Environmental Affairs



South Coastal Watershed Action Plan

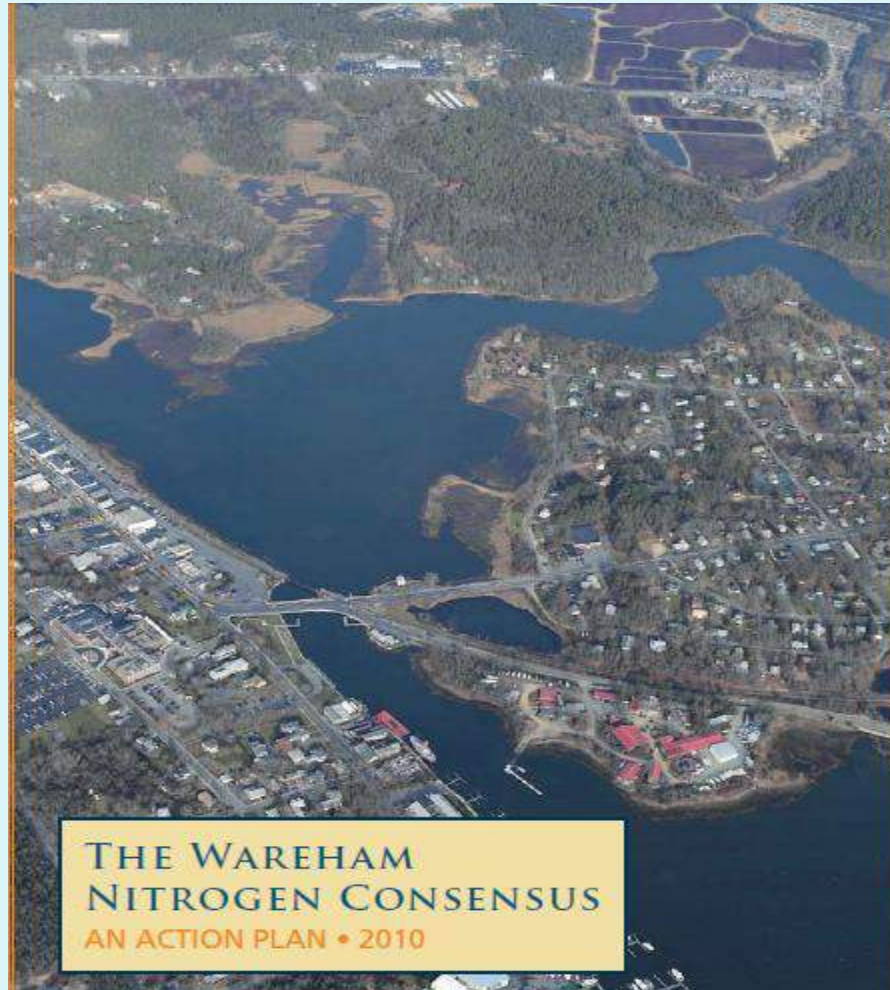
Executive Summary

Prepared by:

[Watershed Action Alliance](http://www.watershedactionalliance.org)



OTHER WATERSHEDS HAVE PAVED THE WAY FOR US



THE WAREHAM
NITROGEN CONSENSUS
AN ACTION PLAN • 2010

1905



m- went to the lake yesterday and
stayed all day - am looking for a letter, love,
M

Dear M.- went to the lake yesterday and
stayed all day. Love, M !



POW!

Protect Our Waters!

Contacts:

- Halifax Board of Health 781 293 6768
 - cdrinan@town.halifax.ma.us
- Town of Halifax website: Look for future links
- Group email: **Sign up to receive updates by leaving your email address with us.
- Mailings: ****For those who don't have computers or email addresses**