

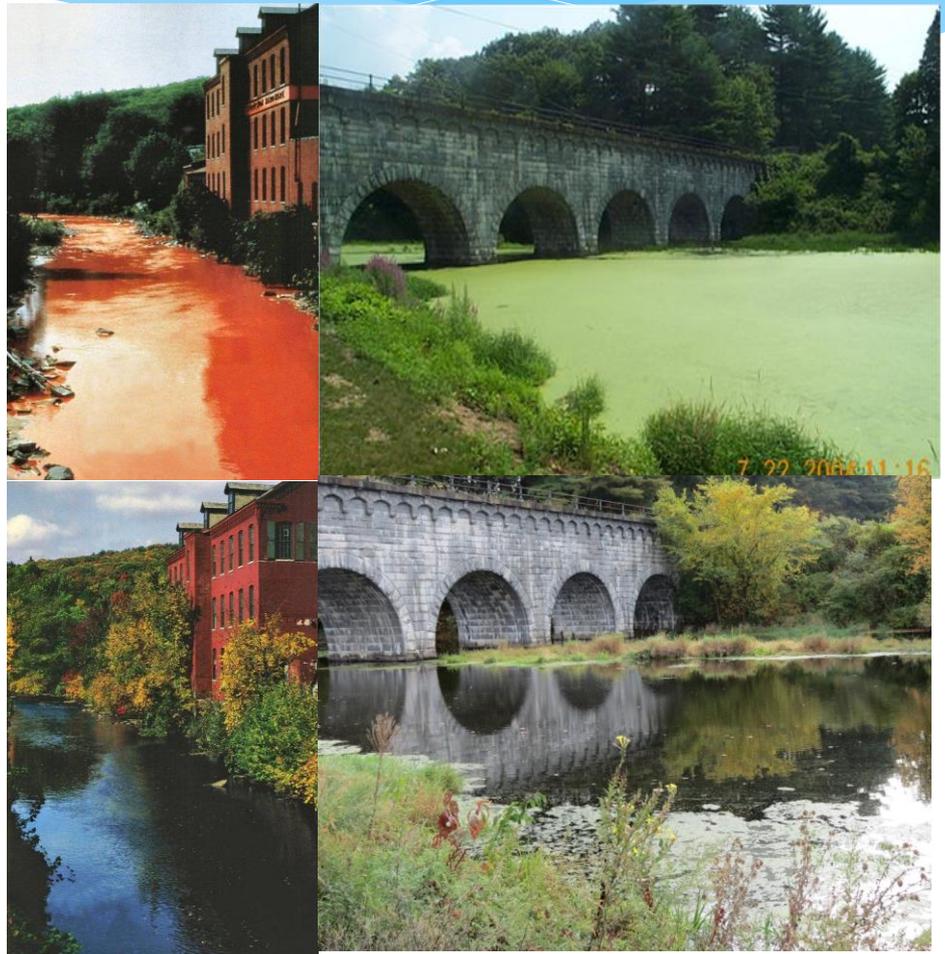
Setting the Stage for Creating 10-Year Vision for Watershed Planning in Massachusetts

*Clean Water Act Vision Workshop: Watershed Planning Program
November 9, 2016*

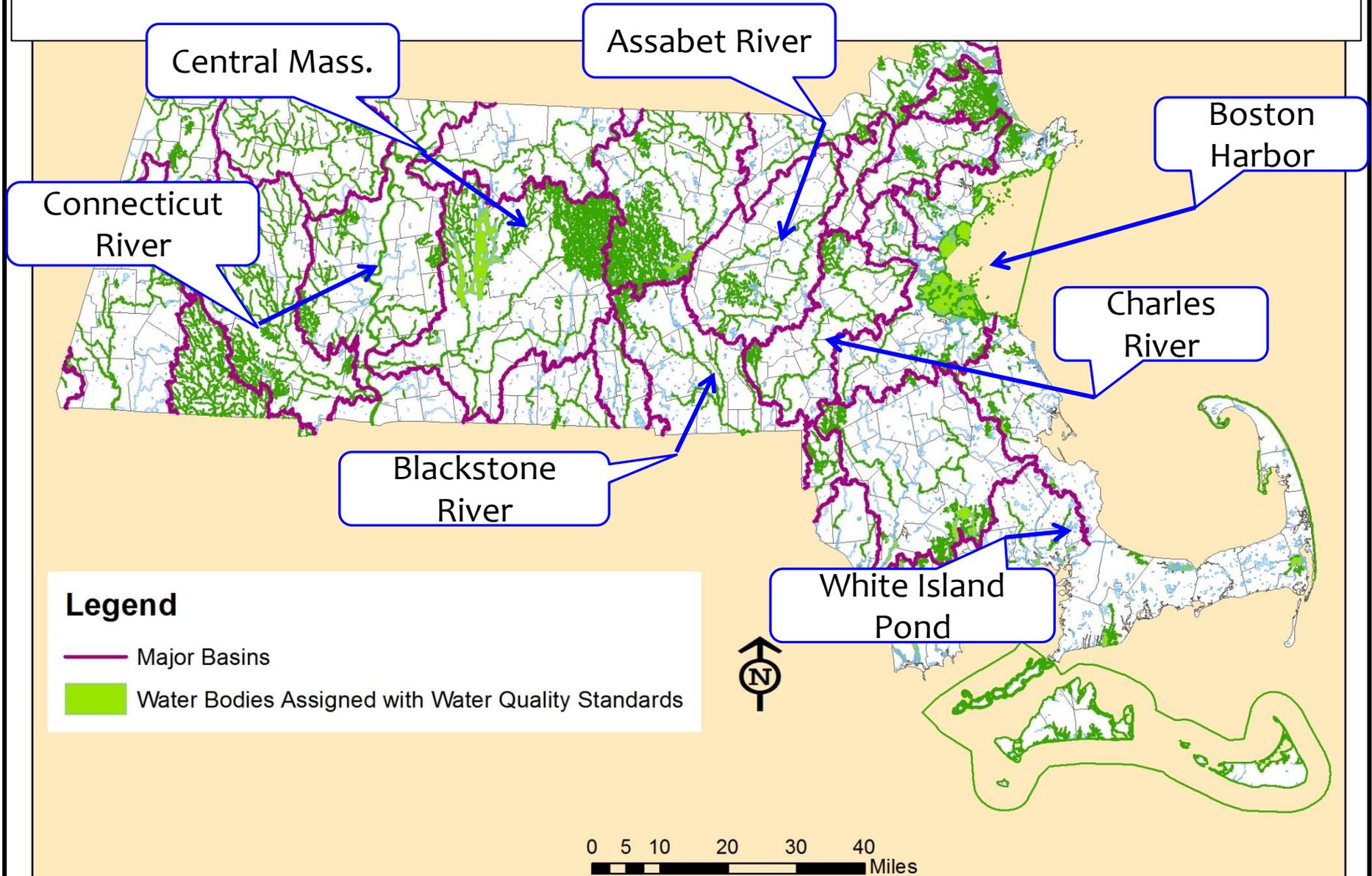
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Bureau of Water Resources
Division of Watershed Management
Watershed Planning Program
Worcester, MA

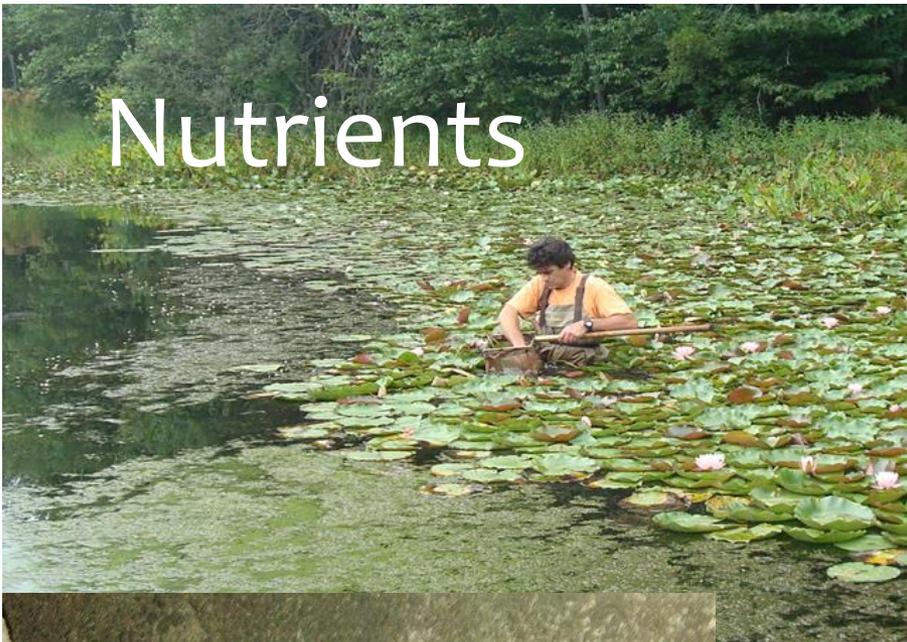
Water Quality Planning for the Next 10 Years

- Federal CWA turns 50 in 2022
- Where have we been?
- Where are we going?



Is Water Quality Improving In Massachusetts?





Nutrients



Impervious Cover



Bacteria



Storm water



CAUTION

Water which looks like the picture below may contain algae capable of producing toxins that can be dangerous to humans and pets.

- People and pets should avoid contact in areas of algae concentration
- Do not swallow water
- Rinse off after contact



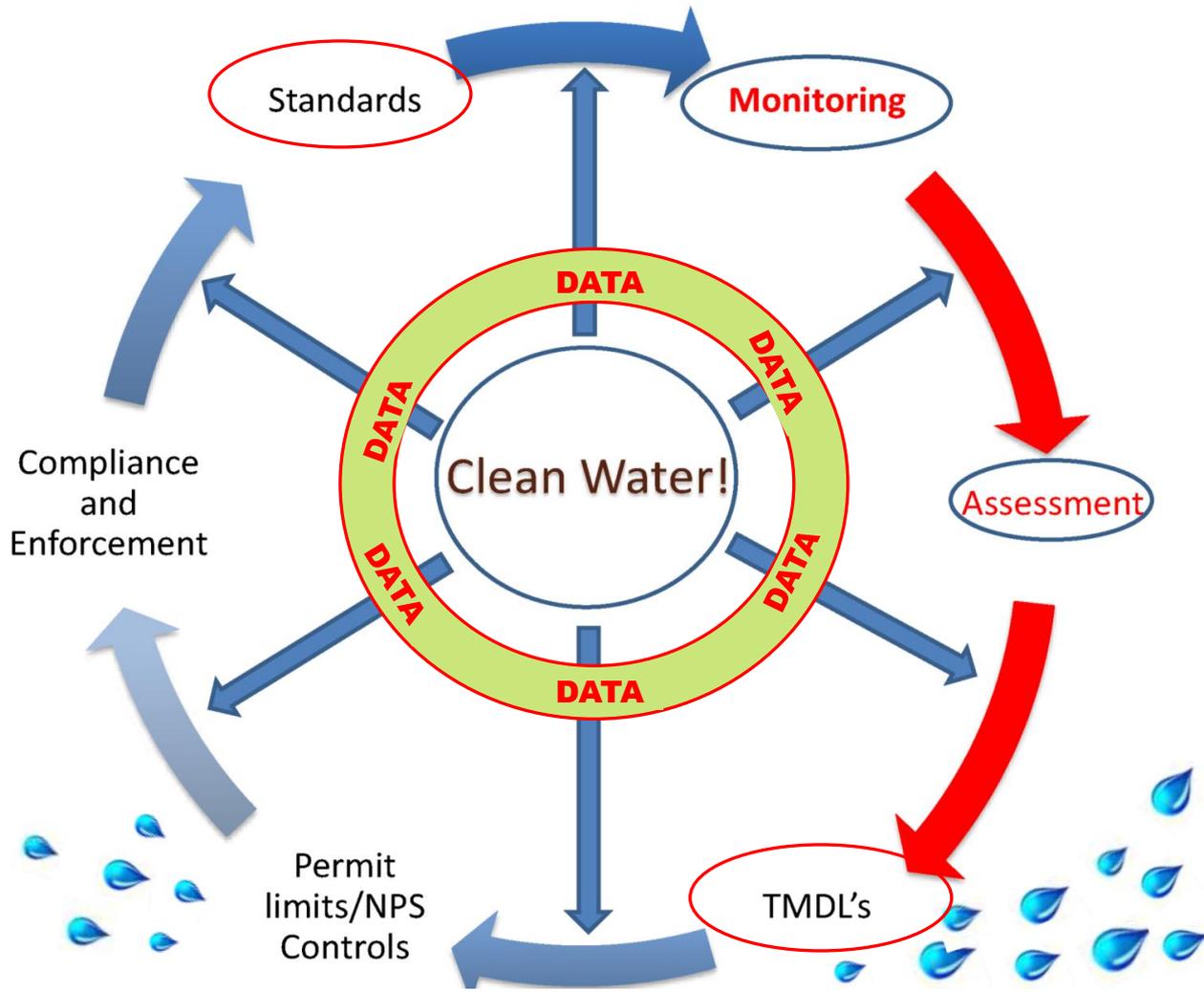
Blue-green algae, or cyanobacteria, appear as green paint spread on the water or as green dots, blobs or mats.

For further information call:

MA DCR at 617-626-1395 or MDPH at 617-624-5757



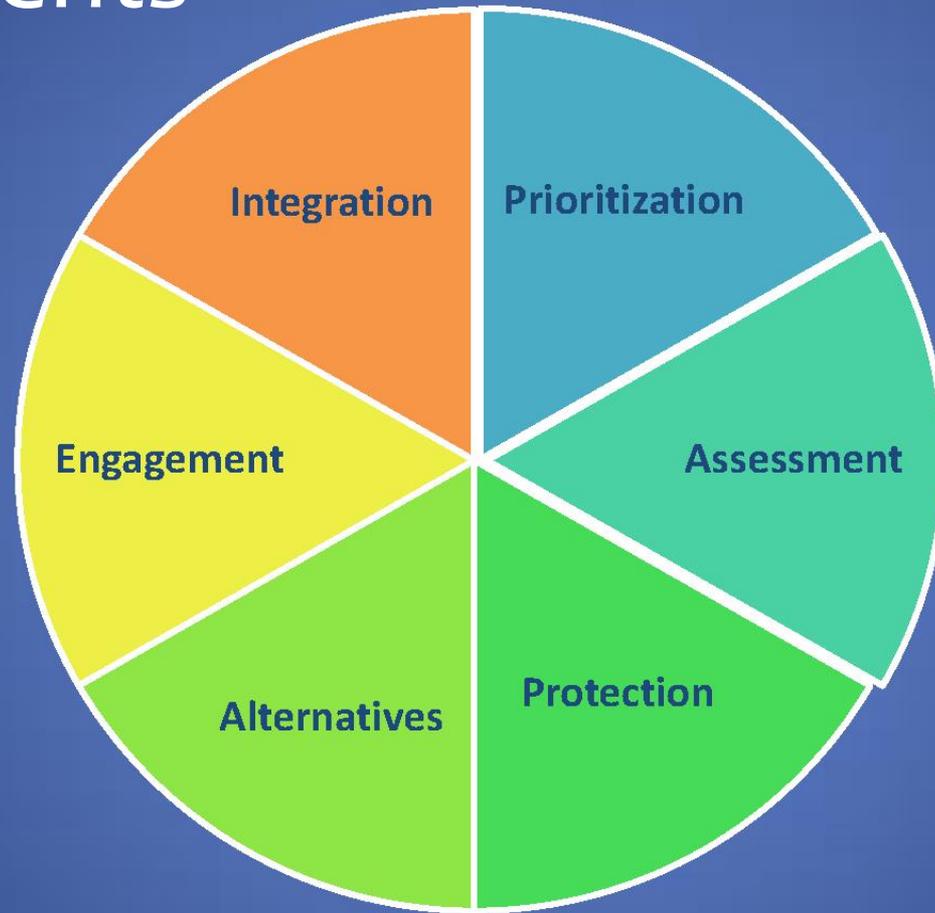
MassDEP Watershed Planning Program



- 1970-80's-
Municipal/industrial-
BOD/TSS/DO
- 1980's-Toxics
- 1990's-Stormwater
- 2000's-NPS, Septic,
Ag, Sediment, IC,
habitat alterations

protect, enhance and restore water quality

Vision Elements



Engagement

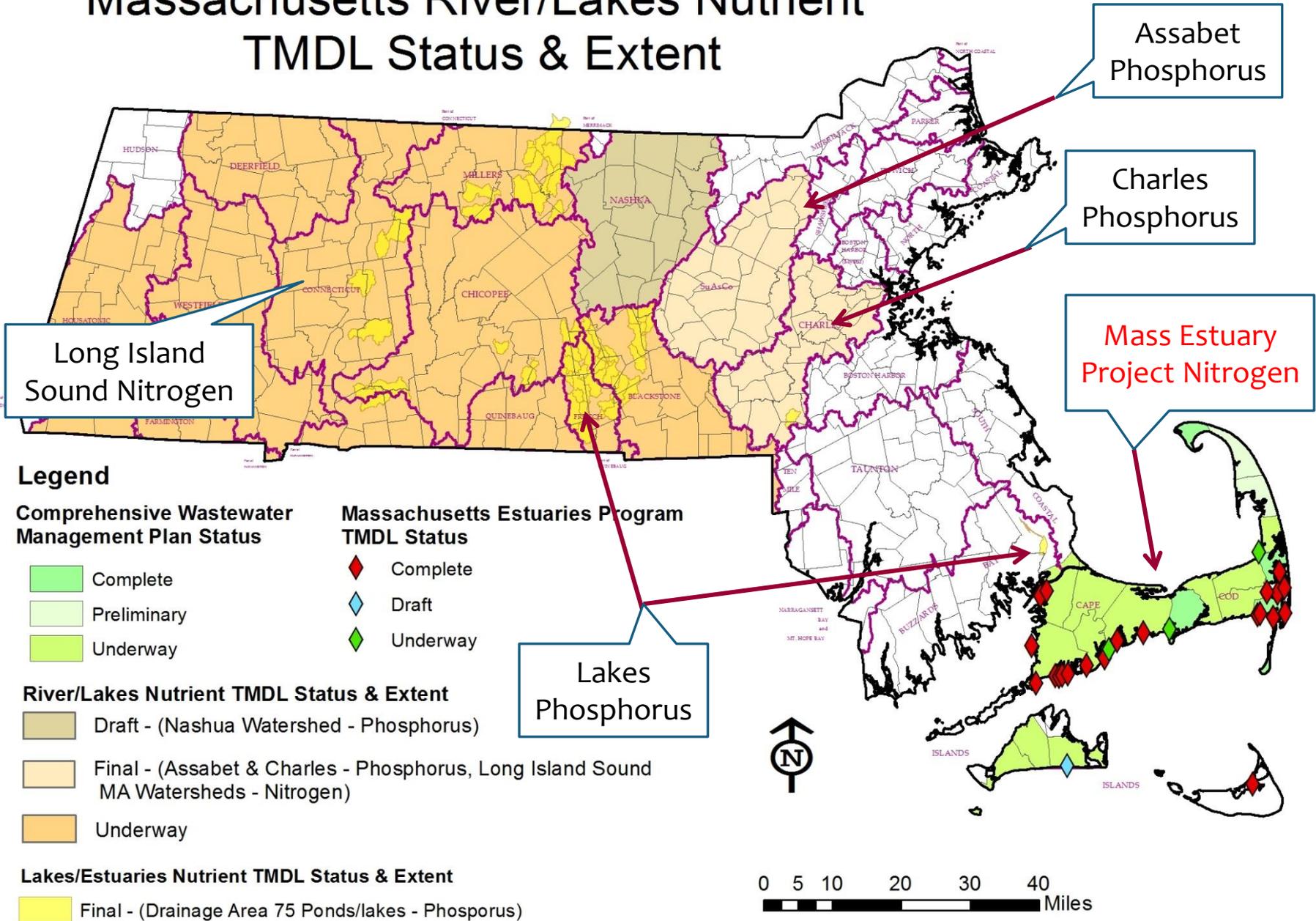
- * Work collaboratively
- * Enhance partnerships
- * Communication: Inclusive & transparent
- * Alignment of common priorities
- * Feedback opportunities
- * Who is doing What? Where?



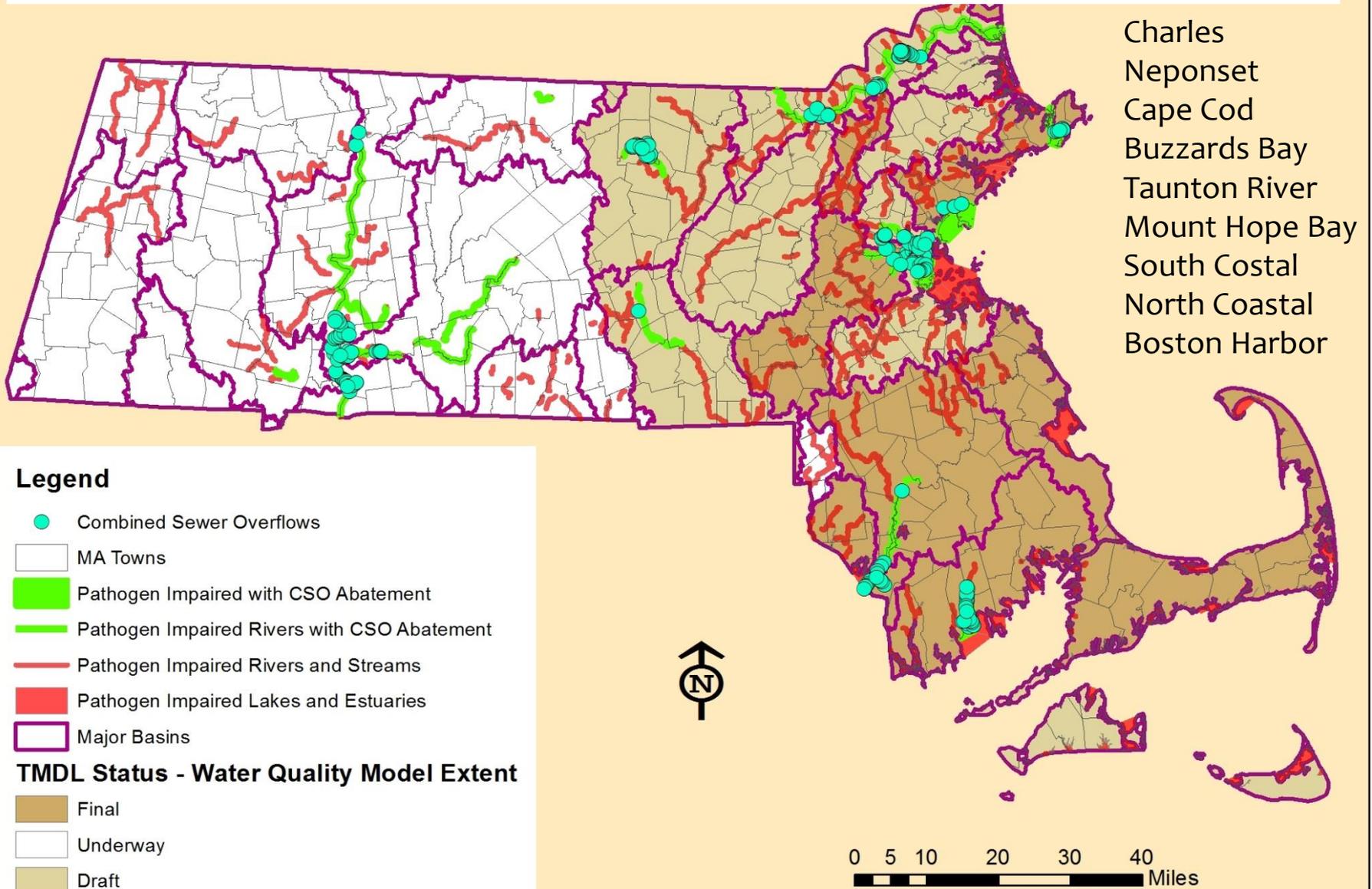
Prioritization

- * Systematically prioritize TMDL development
- * Integrated reports include priority waters for restoration and protection
- * Focus resources to achieve results
- * May be developed at different scales
- * Potential for stakeholder driven activities

Massachusetts River/Lakes Nutrient TMDL Status & Extent

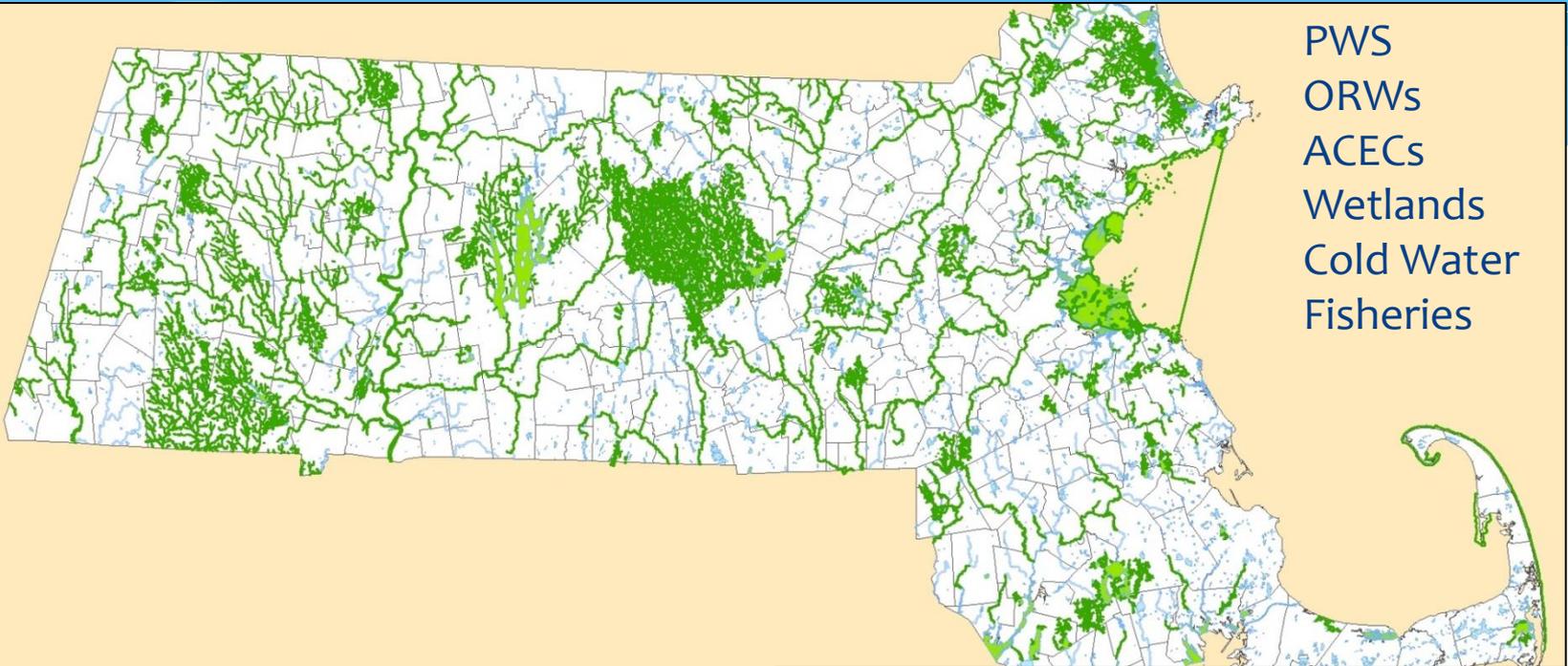


Pathogen Impaired Water Bodies and Bacteria TMDL Status



Protection

PWS
ORWs
ACECs
Wetlands
Cold Water
Fisheries



Legend

 Water Bodies Assigned with Water Quality Standards

- * Prevention is more cost effective than clean-up
- * Maintain high quality waters & existing uses

Monitoring & Assessment

- * **We need to figure out how to manage the increase in data from a variety of sources**
 - * Optimize usability of non-DEP monitoring data (QAPP)
 - * Opportunity for partnership
- * **Improve sharing of MassDEP information:**
 - * Water quality data
 - * Annual monitoring summaries
 - * Guidance on assessment methods
 - * What is known about the condition of waters – Integrated Report

Water Quality Data Sources

Massachusetts State Agencies

- MassDEP- Drinking Water Program
- MassDEP- Wetlands and Waterways Program
- MassDEP- - Watershed Planning and Permitting programs
- MassDEP- - Massachusetts Estuaries Project (MEP)
- MassDEP- - Wastewater Management Program
- Office of Coastal Zone Management (CZM)
- Department of Conservation and Recreation (DCR)
- Department of Fish and Game - Division of Marine Fisheries
- **Department of Fish and Game - Division of Fisheries and Wildlife**
- Department of Public Health (DPH)
- Massachusetts Water Resources Authority (MWRA)
- MassGIS land use, impervious cover

Federal Agencies

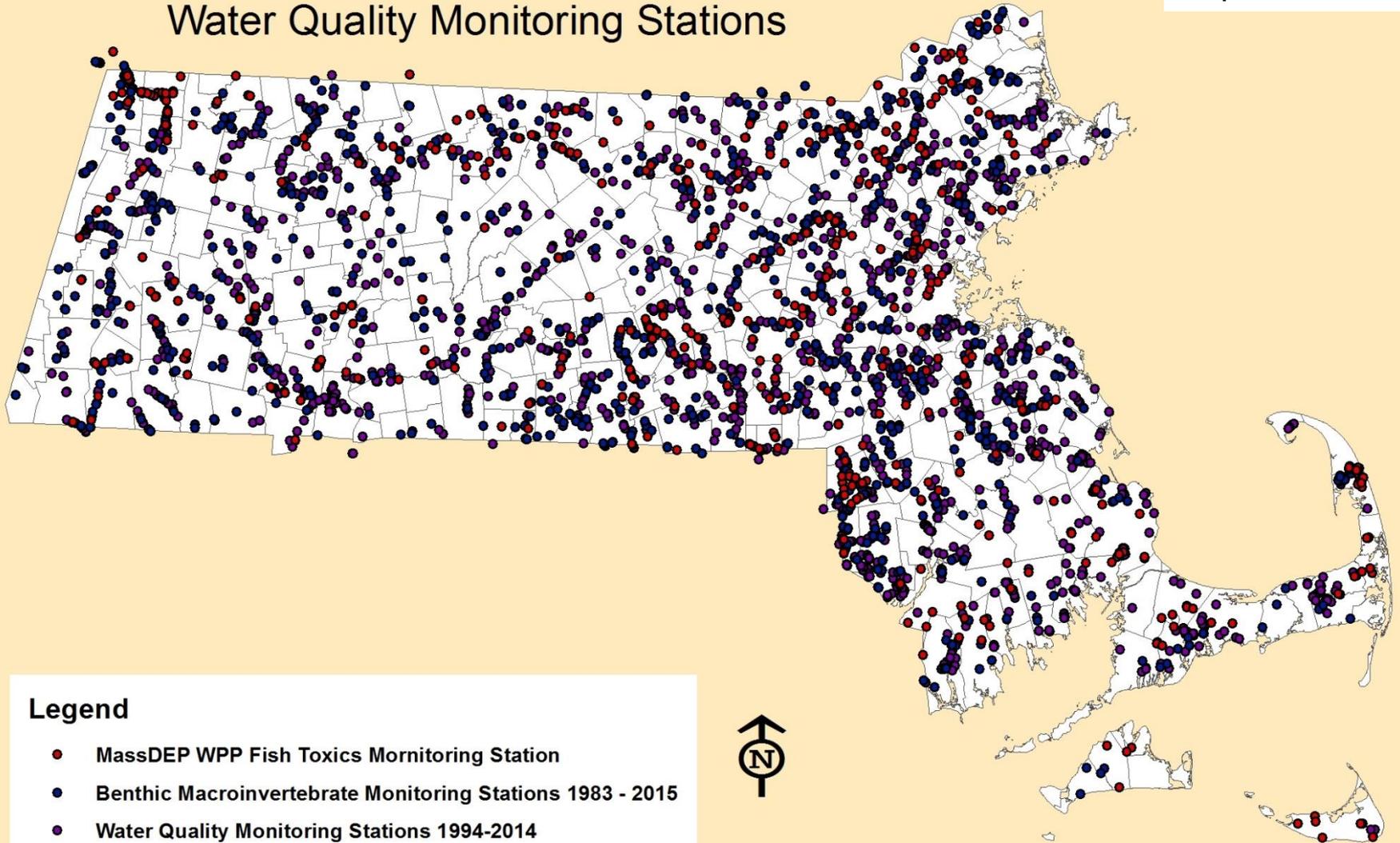
- U.S. Geological Survey
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Army Corps of Engineers
- National Oceanographic and Atmospheric Administration

Other Sources

- Massachusetts Water Resources Research Center
- Colleges, Universities & academic institutions
- Watershed and lake associations
- Citizen monitoring programs
- Municipal Conservation Commissions
- NPDES Permit Monitoring Requirements
- Municipal Facilities Plans
- Environmental consultants

MassDEP WPP Fish Toxics, Benthic Macroinvertebrate and Water Quality Monitoring Stations

Benthic = 946
FishTox = 428
WQ = 2618



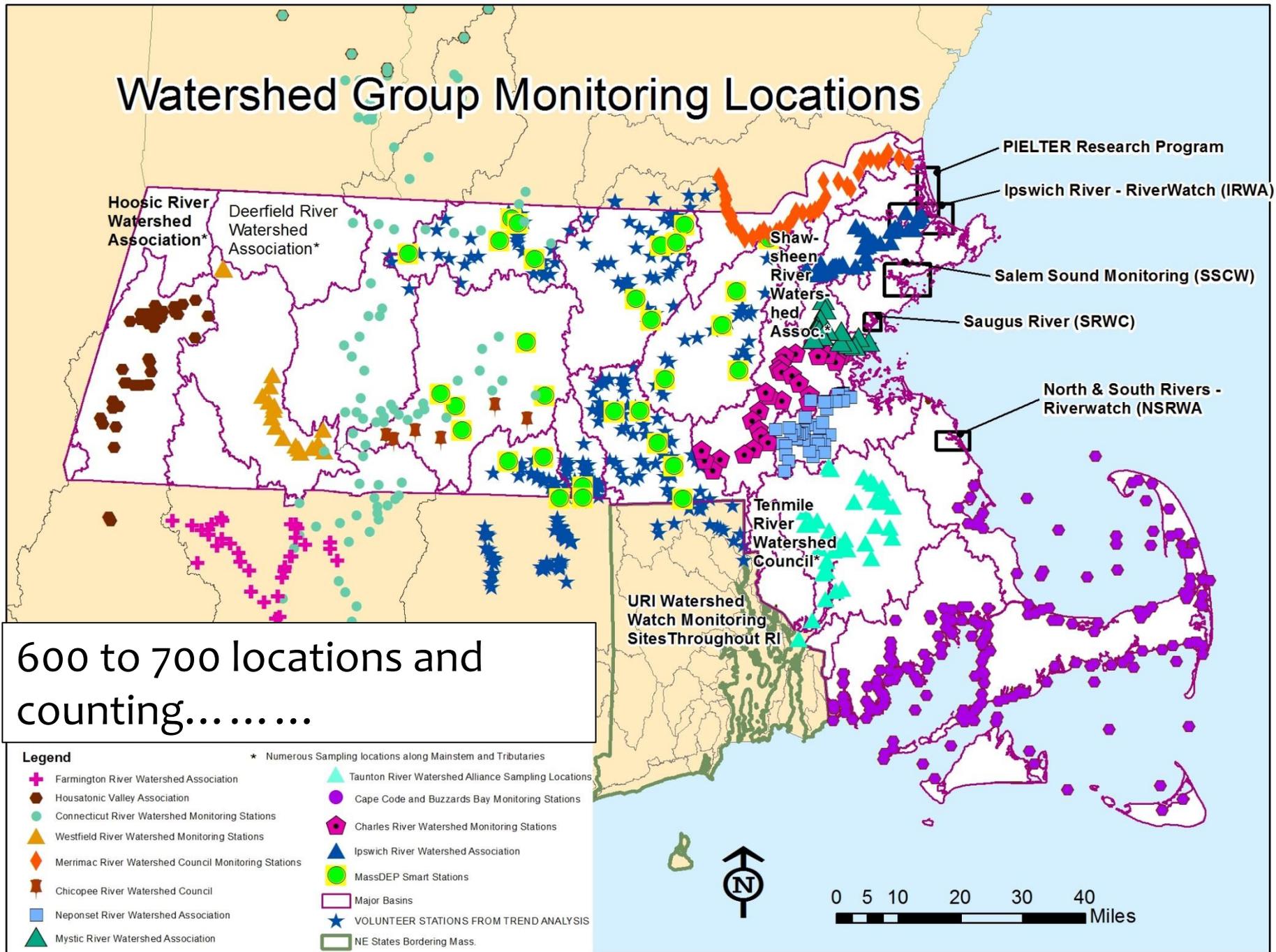
Legend

- MassDEP WPP Fish Toxics Monitoring Station
- Benthic Macroinvertebrate Monitoring Stations 1983 - 2015
- Water Quality Monitoring Stations 1994-2014



0 5 10 20 30 40
Miles

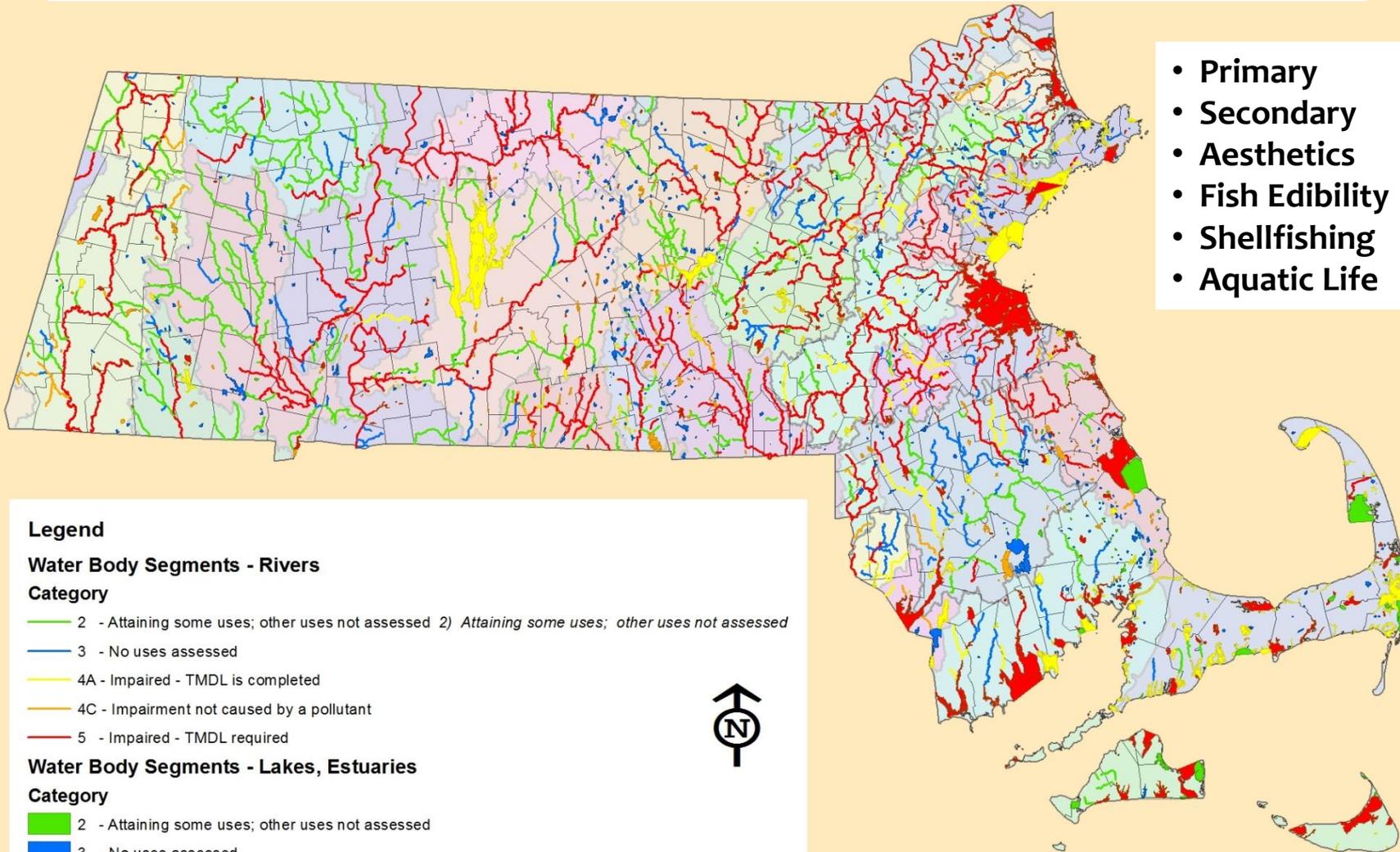
Watershed Group Monitoring Locations



600 to 700 locations and counting.....

Massachusetts Integrated List of Waters

- Primary
- Secondary
- Aesthetics
- Fish Edibility
- Shellfishing
- Aquatic Life



Legend

Water Body Segments - Rivers

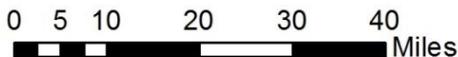
Category

- 2 - Attaining some uses; other uses not assessed 2) *Attaining some uses; other uses not assessed*
- 3 - No uses assessed
- 4A - Impaired - TMDL is completed
- 4C - Impairment not caused by a pollutant
- 5 - Impaired - TMDL required

Water Body Segments - Lakes, Estuaries

Category

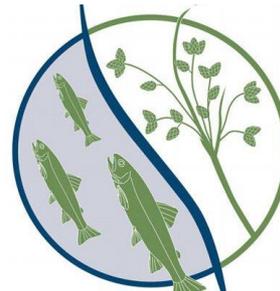
- 2 - Attaining some uses; other uses not assessed
- 3 - No uses assessed
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- 5 - Impaired - TMDL required



Alternatives

- * Plans designed to meet WQS
- * Direct to implementation
- * Do not replace TMDLs
- * Need to track

If we know where alternative plans are in place we can focus on other areas in need of attention



MassDER



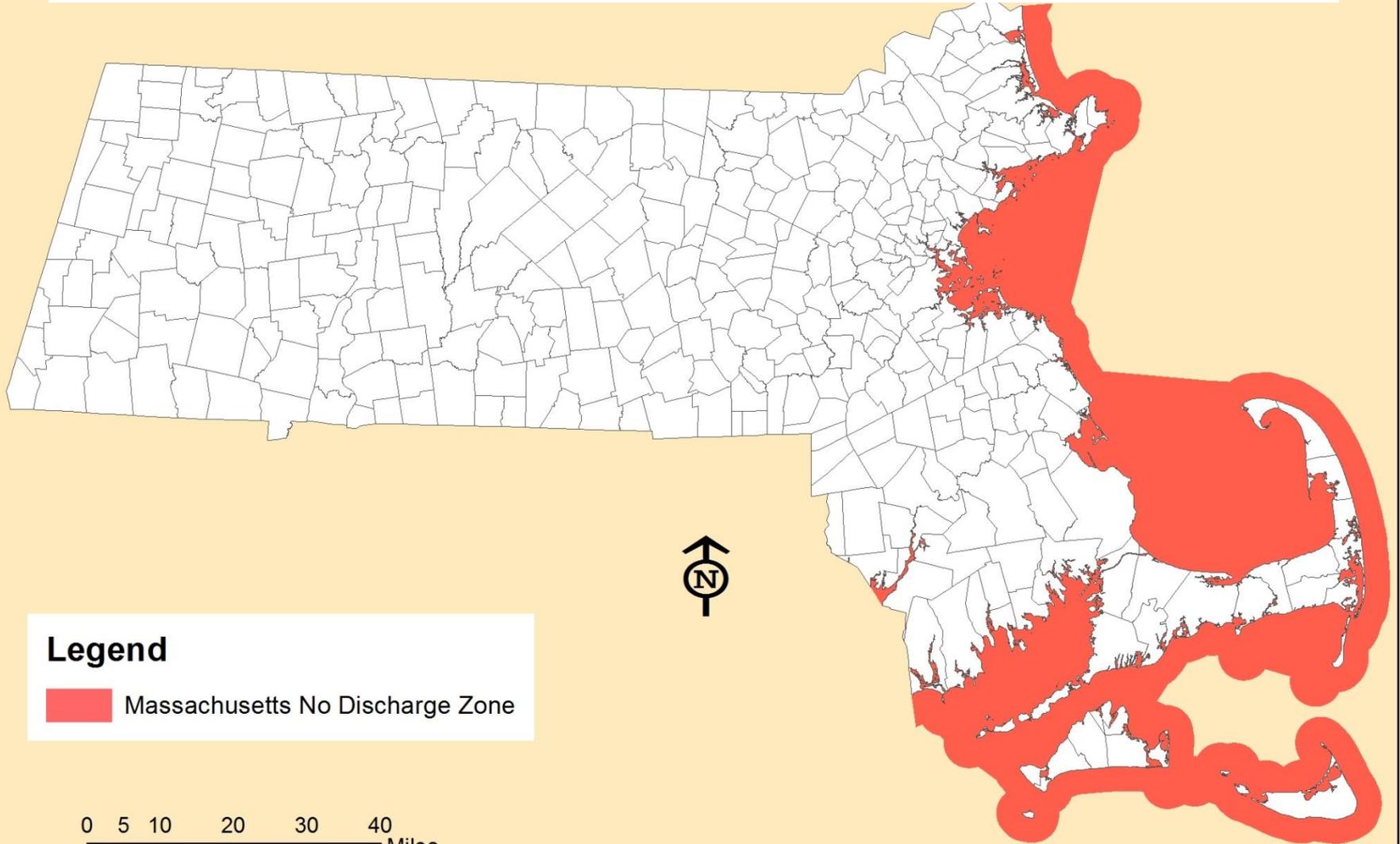
Long Term Control Plans for CSOs

Integration

- * Opportunity to re-think how we work together
- * Breakdown silos (e.g., SDWA, CAA, NPS)
- * State Agencies (DEP, DCR, DPH, Fish & Game, DAR)
- * Federal (EPA, USGS, DMF)
- * Non-profit (Watershed Organizations, Estuary Programs, Colleges & Universities)



Statewide regulations: 314 CMR 3, 314 CMR 4, 314 CMR 5, 310 CMR 10, 310 CMR 15, No discharge zones, Phosphorus detergent ban

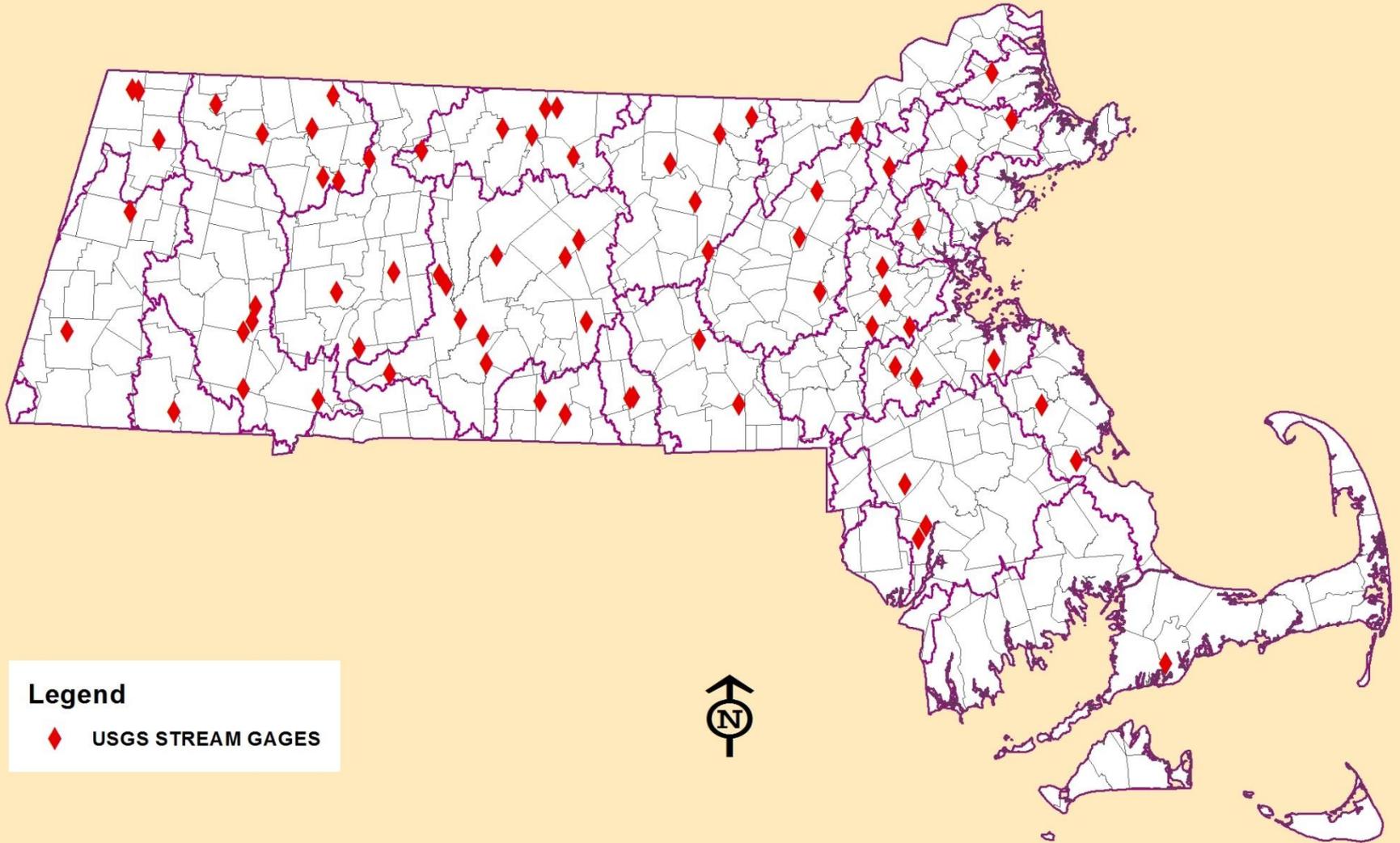


Legend

Massachusetts No Discharge Zone

0 5 10 20 30 40 Miles

USGS Stream Gaging Stations



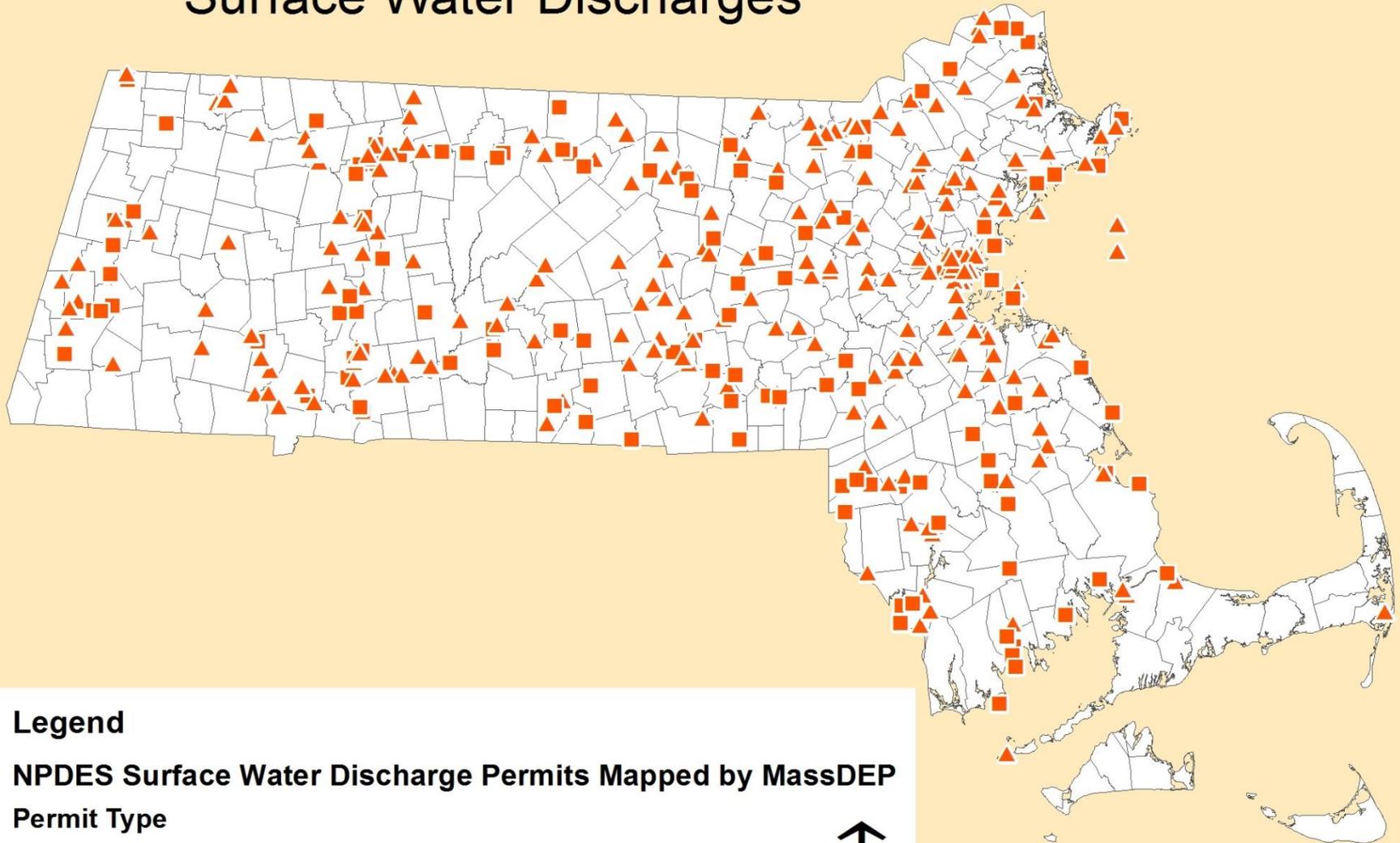
Legend

◆ USGS STREAM GAGES



0 5 10 20 30 40 Miles

Massachusetts 314 CMR 3 Surface Water Discharges



Legend

NPDES Surface Water Discharge Permits Mapped by MassDEP

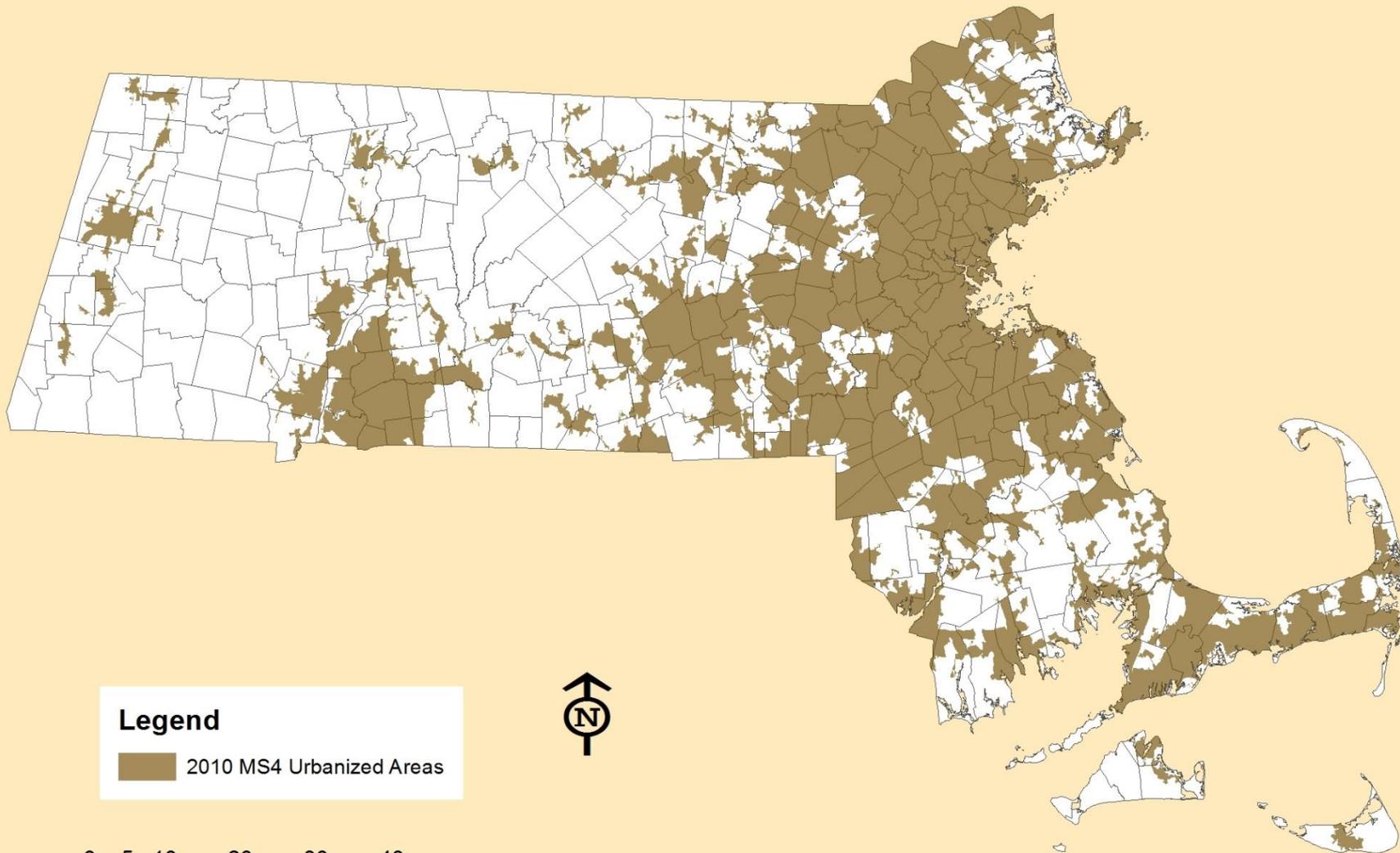
Permit Type

- ▲ MINOR
- MAJOR



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Miles

MS4 Urbanized Areas in Massachusetts



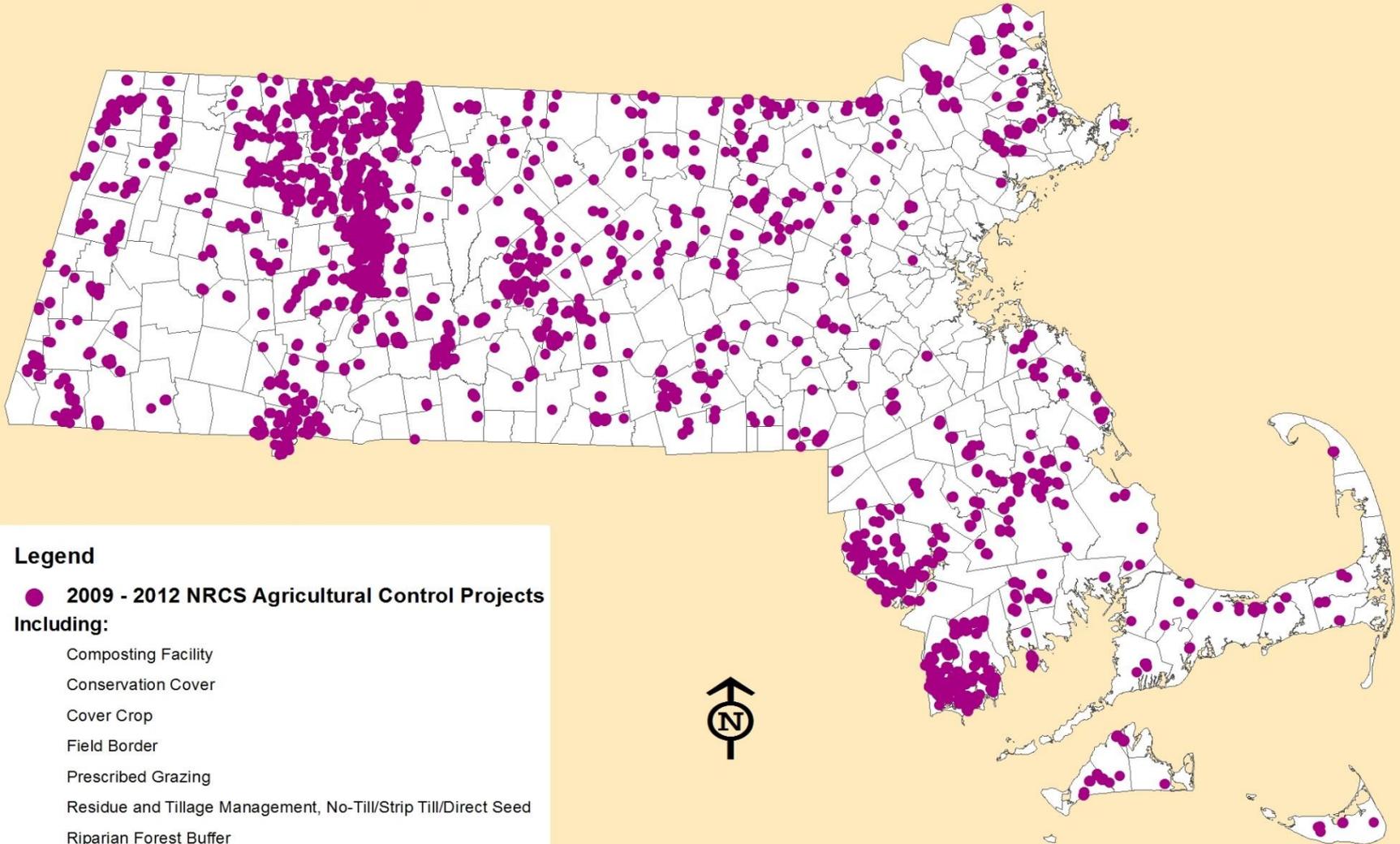
Legend

 2010 MS4 Urbanized Areas



0 5 10 20 30 40 Miles

Natural Resources Conservation Service (NRCS) Agricultural Control Projects in Massachusetts, 2009-2012



Legend

● 2009 - 2012 NRCS Agricultural Control Projects

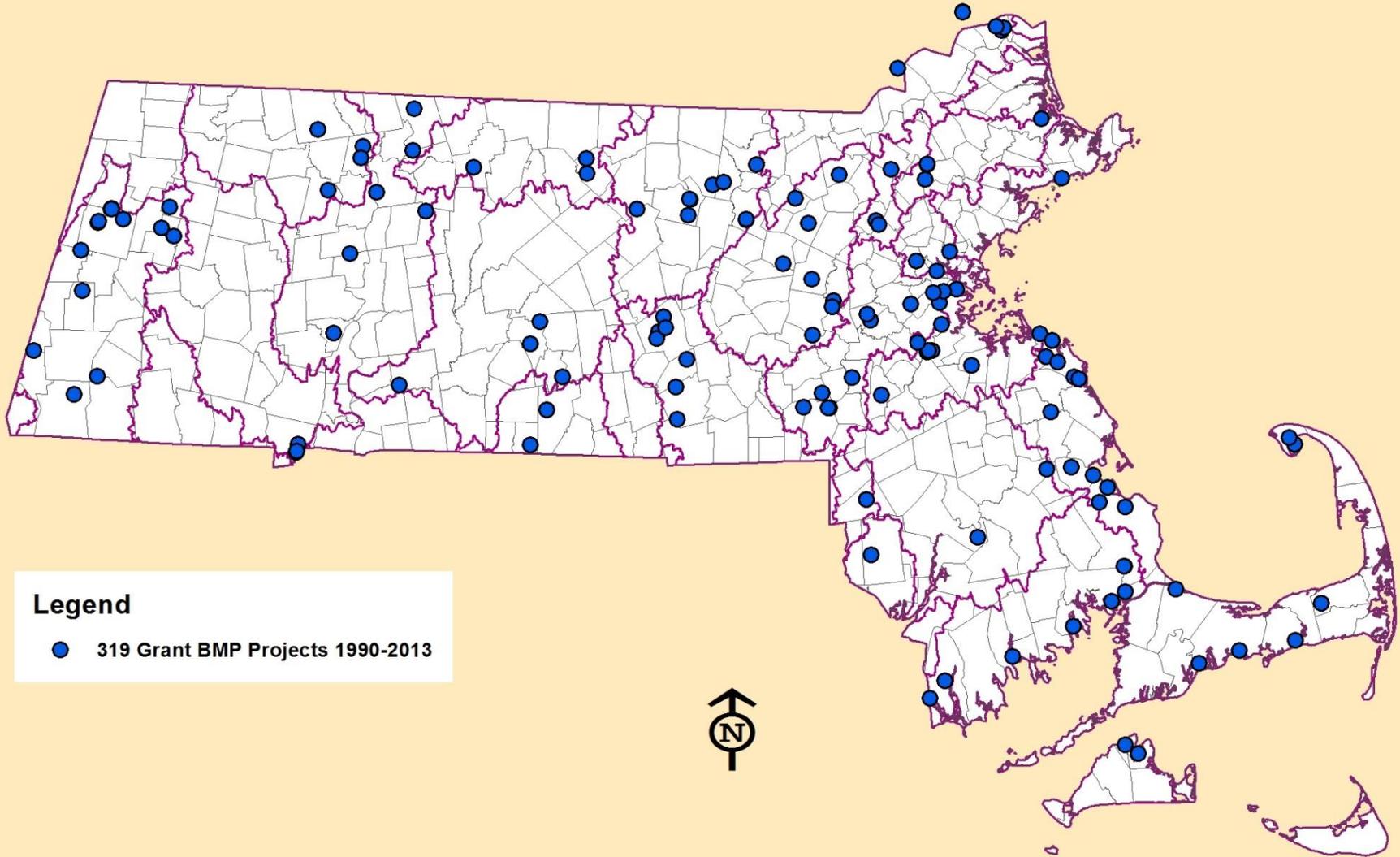
Including:

- Composting Facility
- Conservation Cover
- Cover Crop
- Field Border
- Prescribed Grazing
- Residue and Tillage Management, No-Till/Strip Till/Direct Seed
- Riparian Forest Buffer
- Riparian Herbaceous Cover
- Waste Storage Facility



0 5 10 20 30 40
Miles

MassDEP Approved 319 Grant BMP Projects, 1990-2013

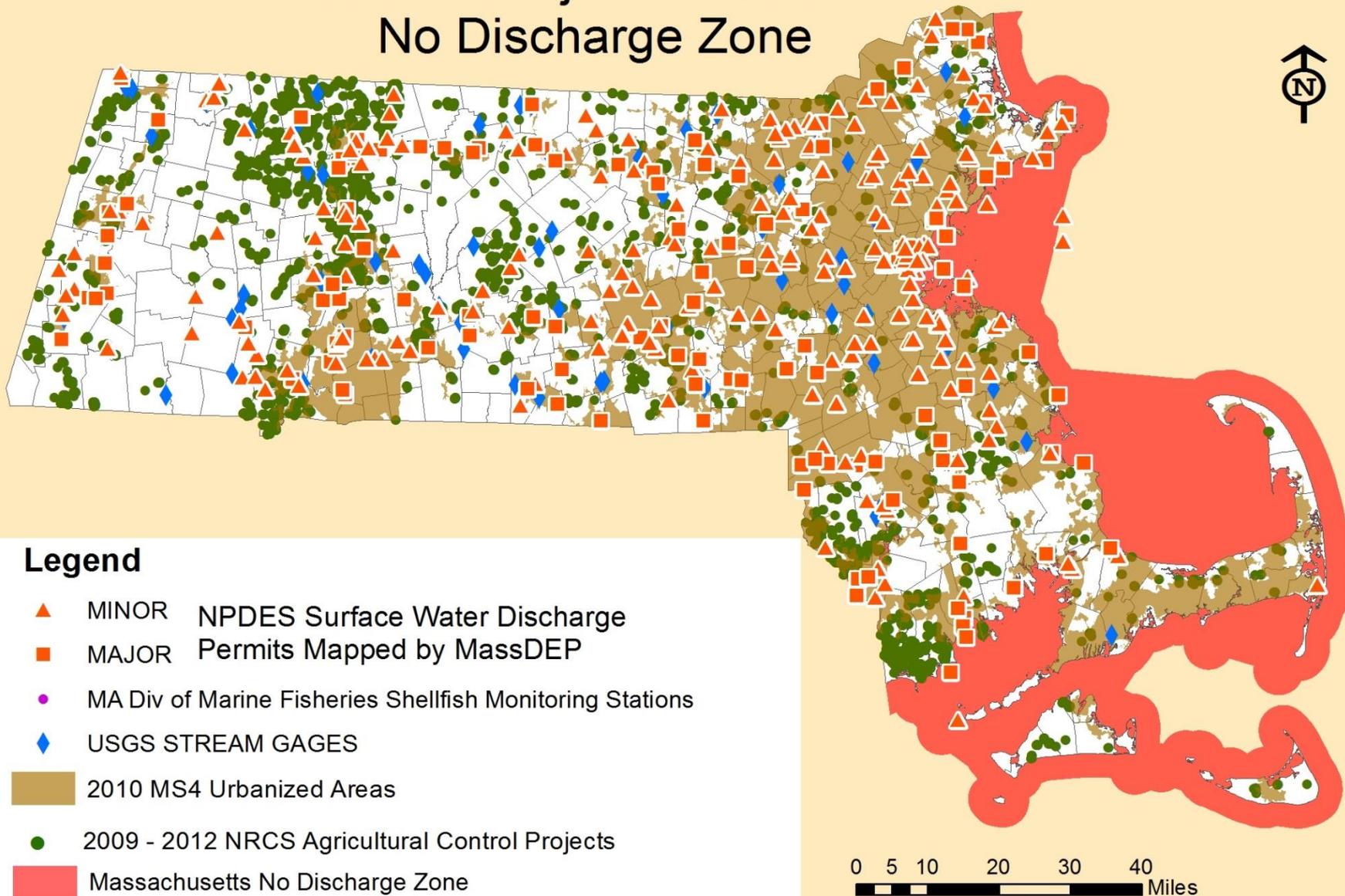


Legend

● 319 Grant BMP Projects 1990-2013

0 5 10 20 30 40
Miles

Surface Discharges, Urbanized Areas, NRCS Projects and the No Discharge Zone



Vision

Challenges & Opportunities

- * Solving Water quality problems expensive
- * Need for science-driven solutions
- * Increasing number of data collectors
- * Tracking implementation
- * Data collection is expensive
- * Understanding effectiveness

- * Need to leverage partnerships & funding, X-program integration
- * Many good tools available to guide prioritization & implementation
- * Technology improves data sharing
- * Use of technology and tools
- * Optimize data usability-QA
- * Align MassDEP and non-DEP monitoring activities