NMN: 8:45 – 10:00

- To gain insight on: (1) current Regional estuarine, coastal and offshore marine resource condition monitoring , (2) freshwater monitoring data that links flux and loads of constituents from uplands to estuarine, coastal, marine waters, and (3) an approach for inventorying current coastal monitoring.

  Gulf Monitoring Network Design presentation (Steve Wolfe)

- Linking nutrient flux information to estuarine waters and eutrophication (Suzanne Bricker)

- Developing an updated inventory of freshwater NMN monitoring sites for linkage to coastal monitoring

NMN: 10:15 – 11:30

- Finalize a strategy for completing a NWQM Network Communications Plan for public release by April 30, 2013.
-
  - Identify target audience for communication plan
  - Prepare an updated 2-page glossy briefing sheet
    Prepare updated web pages
    Develop updated PowerPoint briefing material
  - Conduct Council-sponsored webinars
    NFRA / Regional IOOS associations / IOOS Z-GRAM / monthly IOOS conference calls
  - Briefing opportunities and contacts

NMN: steps after today

- Next conference call—early December/January:

➢ Reach agreement on what can be realistically achievable over the next two years and establish a FY 13-14 work plan by February, 2013

NATIONAL WATER QUALITY MONITORING COUNCIL

Working Together for Clean Water

NWQMC

Dennis	Apeti	Dennis.apeti@noaa.gov
Suzanne	Bricker	Suzanne.Bricker@noaa.gov
Jawed	Hameedi	Jawed.hameedi@noaa.gov
Rob	Magnien	Rob.magnien@noaa.gov
Rob	Ragsdale	Rob.ragsdale@noaa.gov
Juli	Trtang	Juli.trtang@noaa.gov
Michael	McDonald	Mcdonald.michael@epa.gov
Bernice	Smith	Smith.bernicel@epa.gov
Ellen	Tarquinio	tarquinio.ellen@epa.gov
Denise	Argue	dmargue@usgs.gov
Kathy	Conn	Kconn@usgs.gov
Norm	Grannemann	nggranne@usgs.gov

Michelle	Moorman	mmoorman@usgs.gov
Donna	Myers	dnmyers@usgs.gov
Charlie	Peters	capeters@usgs.gov
Dan	Sullivan	djsulliv@usgs.gov
Mike	Yurewicz	mcyurewi@usgs.gov
Whitney	Broussard	wbroussard@eng.us.edu
Jane	Caffrey	jcaffrey@uwf.edu
Mike	Eberle	mbeberle@fs.fed.us
John	Hummer	jhummer@glc.org
Richard	Kemnitz	rkemnitz@blm.gov
Gary	Kohlhepp	kohlheppg@michigan.gov
Alexander	Maestre	amaestre@eng.ua.edu
Carol	Maloy	Carol.Maloy@ecy.wa.gov
Cliff	McCreedy	Cliff.McCreedy@nps.gov

NWQMC

NATIONAL WATER QUALITY MONITORING COUNCIL

Working Together for Clean Water

Leslie	McGeorge	Leslie.mcgeorge@dep.state.nj.us
Jan	Newton	newton@apl.washington.edu
Rachel	Noble	rtnoble@email.unc.edu
Alan	Peck	kpeck@blm.gov
Charlie	Peters	capeters@usgs.gov
Jeff	Rupert	Jeff.rupert@fws.gov
Gail	Sloane	Gail.sloane@dep.state.fl.us
Paul	Stacey	Paul.Stacey@wildlife.nh.gov
Rick	Swanson	Richard.swanson@wdc.usda.gov

National Water Quality Monitoring Network for U.S. Coastal Waters and their Tributaries

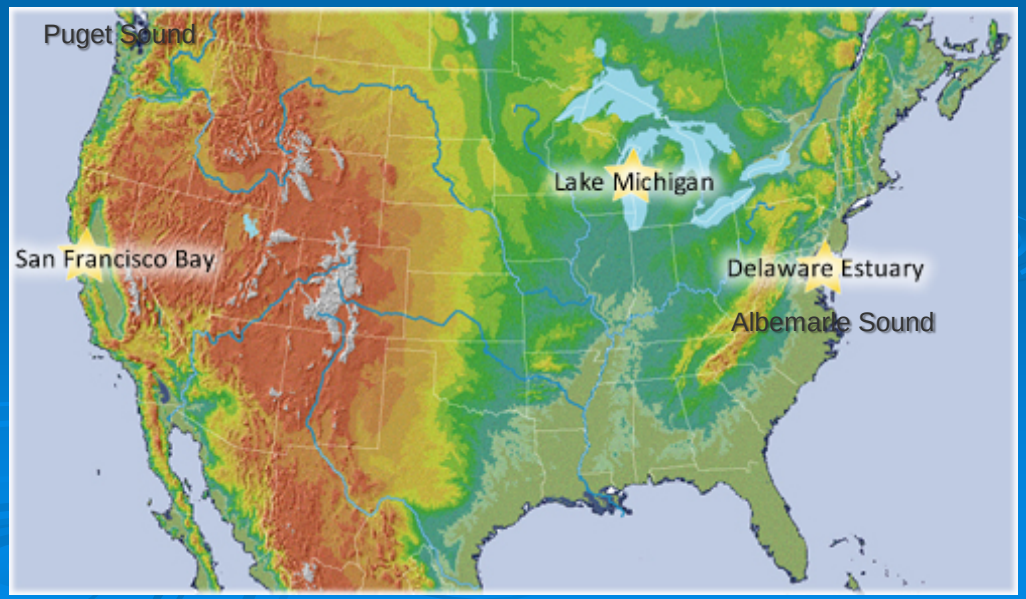
- Integrated land-to-sea assessments:
  - San Francisco Bay, Lake Michigan, Delaware Estuary, Puget Sound, Albemarle Sound
  - Monitoring:
    - Traditional techniques
    - Real-time, continuous with sensors
    - autonomous underwater vehicles (AUVs)

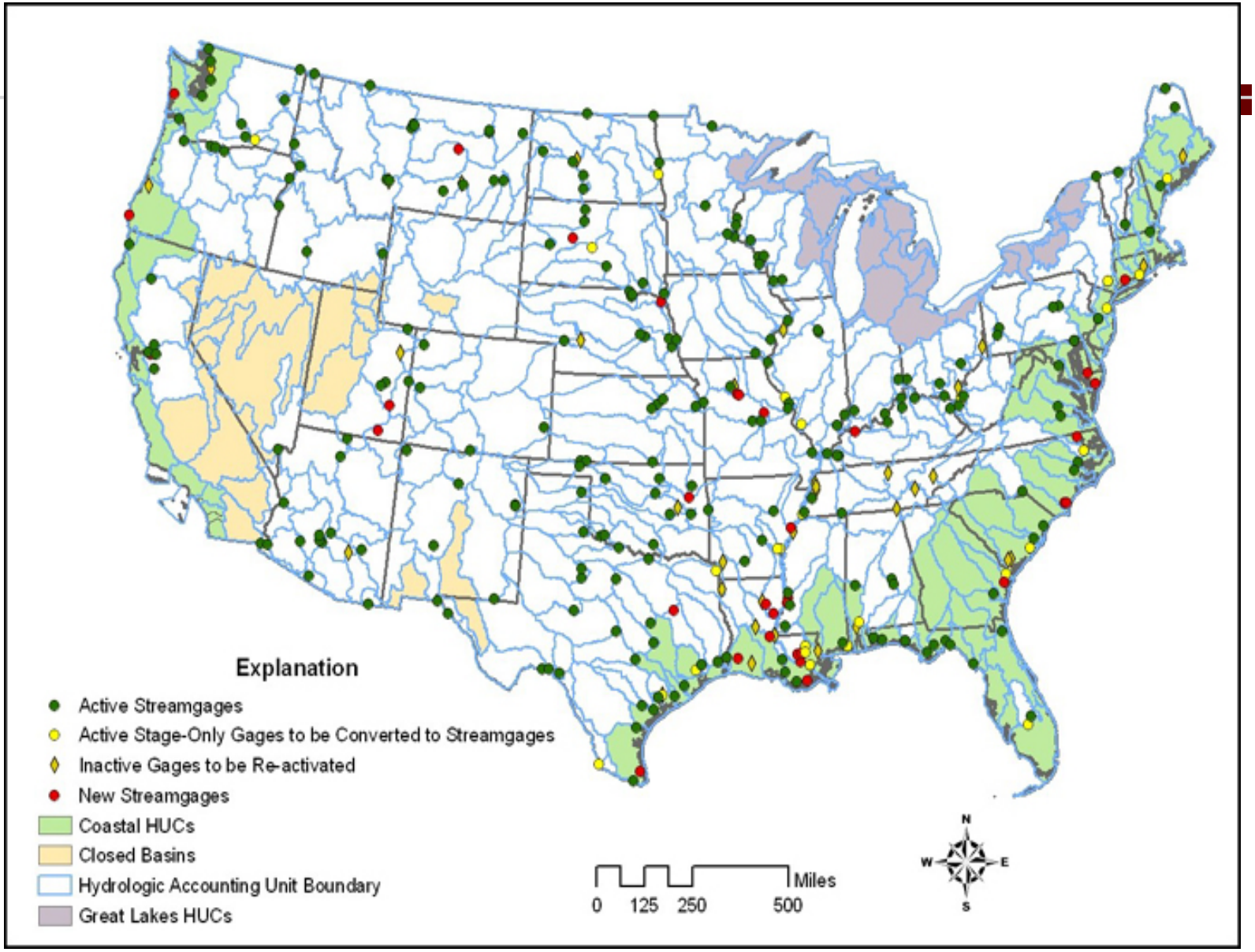
The Network is a continuum of observations in:

- Estuaries, Coastal Beaches and Nearshore
- Offshore and Exclusive Economic Zone
- Great Lakes

With flow and flux from:

- Rivers (Hydrologic Unit Code 6)
- Coastal Streams
- Atmosphere
- Groundwater
- Wetlands




Explanation
Active Streamgages
Active Stage-Only Gages to be Converted to Streamgages
Inactive Gages to be Re-activated
New Streamgages
Coastal HUCs
Closed Basins
Hydrologic Accounting Unit Boundary
Great Lakes HUCs
0 125 250 500
Miles
N
W
E
S

NATIONAL WATER QUALITY MONITORING COUNCIL

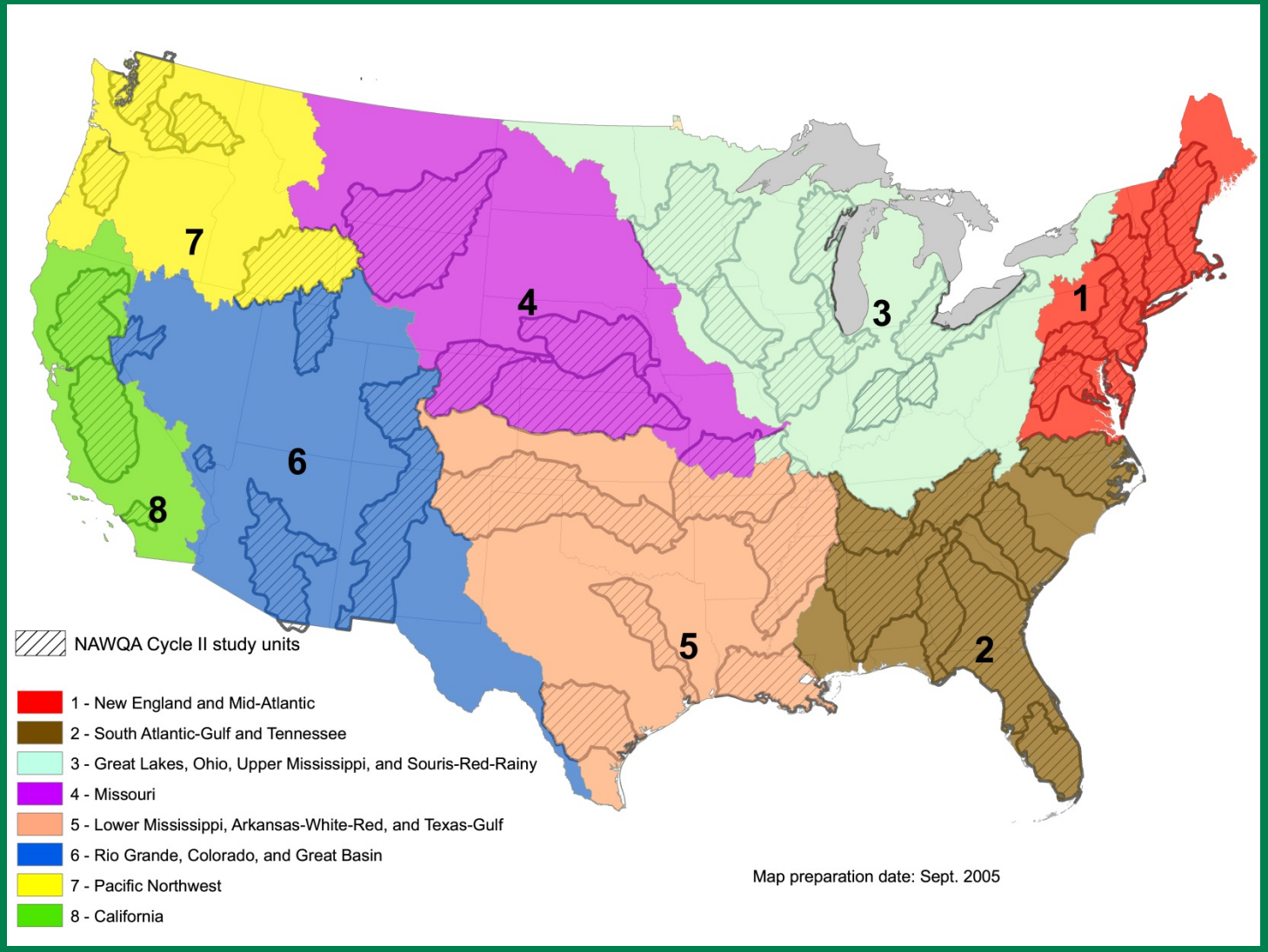
Working Together for Clean Water

NWQMC

Scientific Assessment of Hypoxia in U.S. Coastal Waters August 2010

A consistent, systematic, and comprehensive nationwide approach for estimating nutrient loads to coastal waters from all upland sources (fluvial, diffuse, point source, atmospheric) would be a very valuable tool to support science and management related to hypoxia in U.S. coastal waters.

Regional SPARROW Models

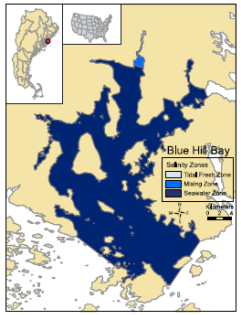


USGS

Blue Hill Bay

SUMMARY

Blue Hill Bay, predominantly seawater, is characterized by low or no problem symptom expression ratings for all indicators. The bay is periodically affected by offshore Alexandrium blooms, likely a product of coastal upwelling of nutrients.



Influencing Factors

Any level nitrogen input and low to moderate susceptibility (good ability to dilute and flush nutrients).

Eutrophic Conditions ***

Level of expression of eutrophic conditions is minimal.

Future Outlook

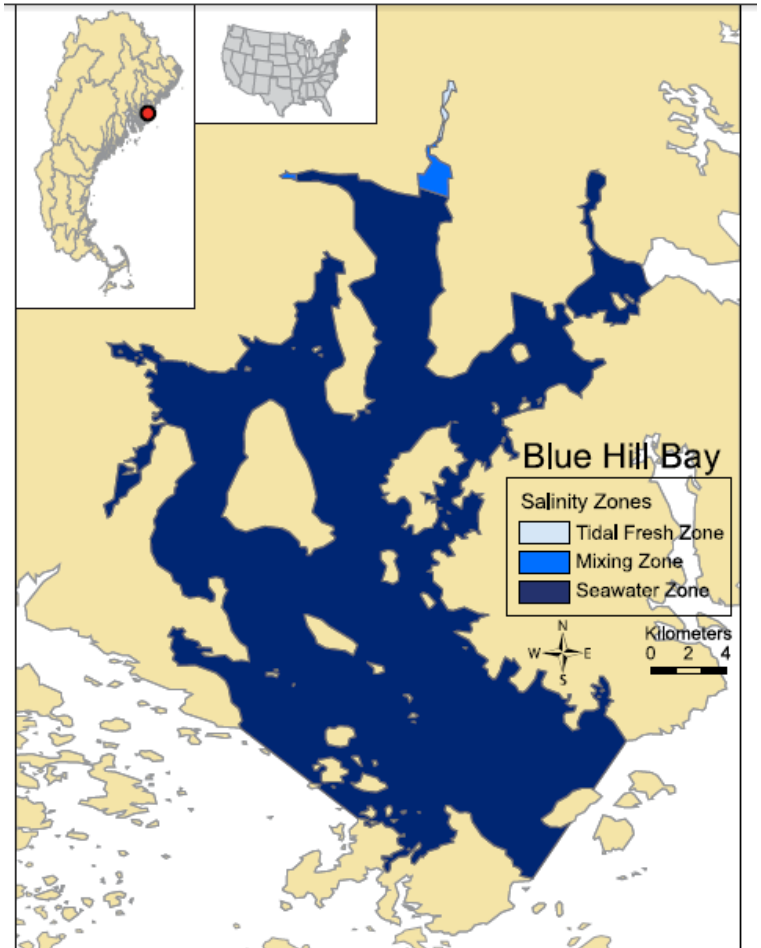
Nutrient related symptoms observed in the estuary are likely to worsen only minimally.

ASSETS Rating

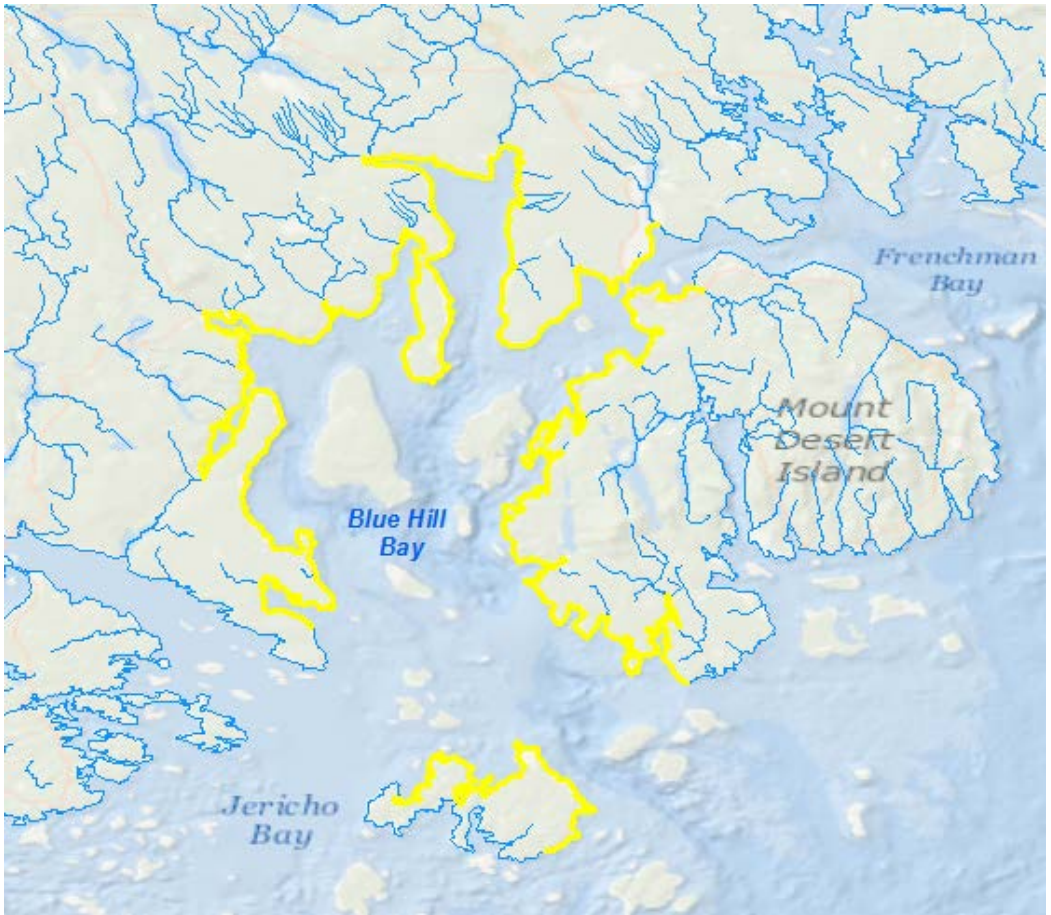
Assessment of Estuarine Trophic Status based on the three factors evaluated in NEEA.

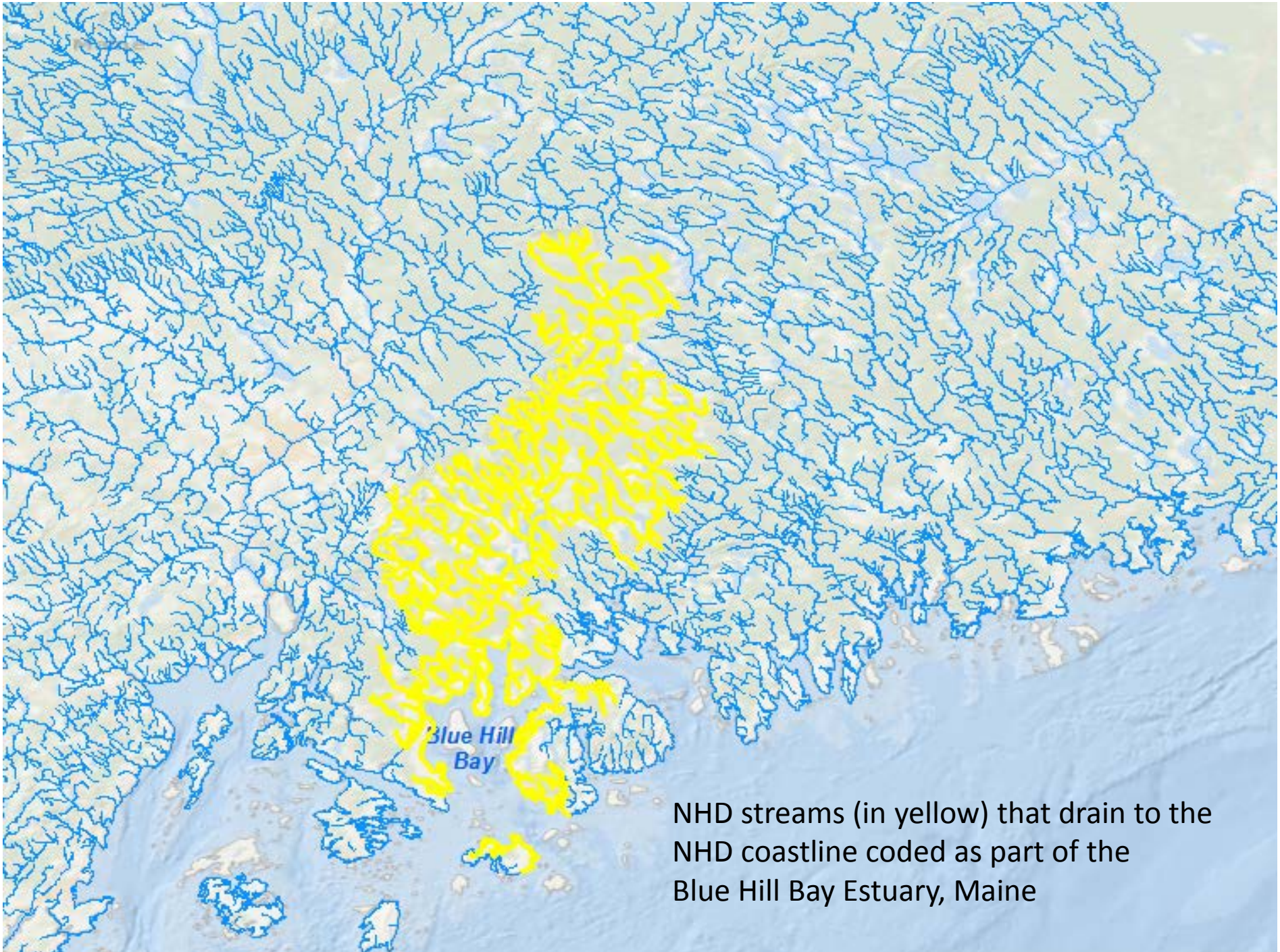
Influence/eutro/future	Unknown	Low	Mod Low	Moderate	Mod High	High
ASSETS	Unknown	High	Good	Moderate	Poor	Bad

Reliability and Confidence				
?	*	**	***
Unknown	Low	Moderate	High

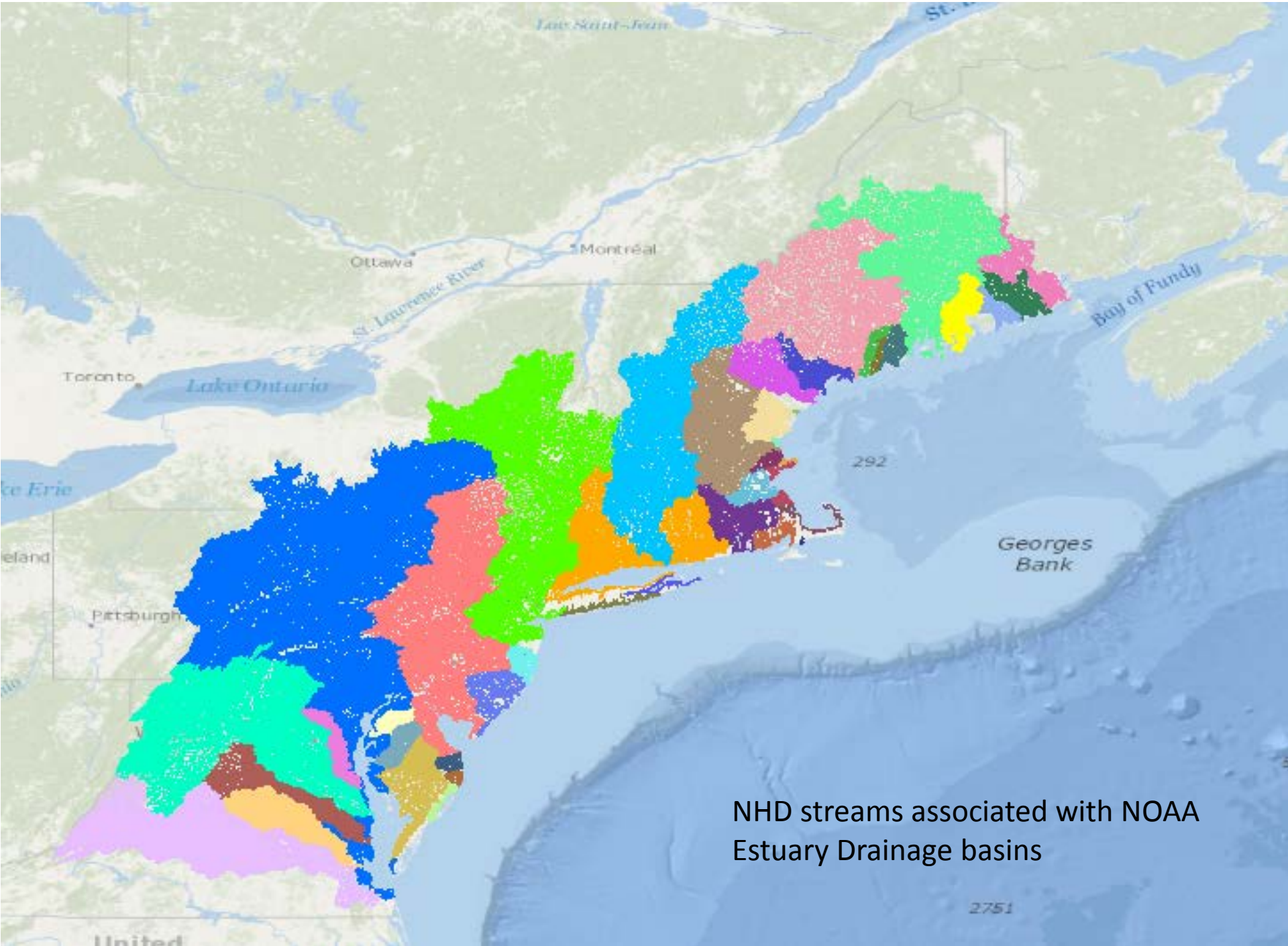


Coastline segments in NHDPlus are manually selected (highlighted yellow below) to best represent the estuary delineation from the NOAA summary PDF map.

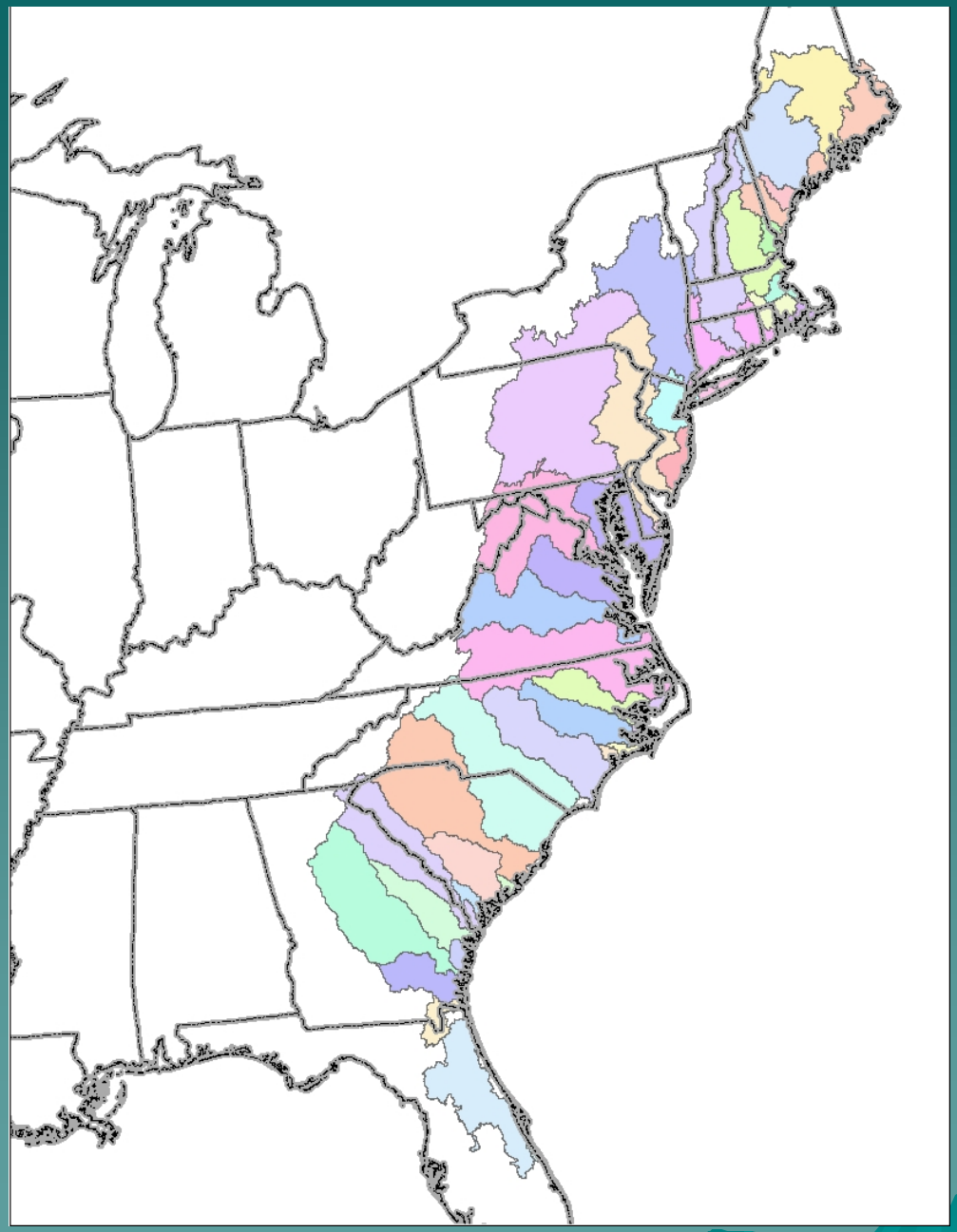




NHD streams (in yellow) that drain to the NHD coastline coded as part of the Blue Hill Bay Estuary, Maine



NHD streams associated with NOAA Estuary Drainage basins



www.epa.gov/research

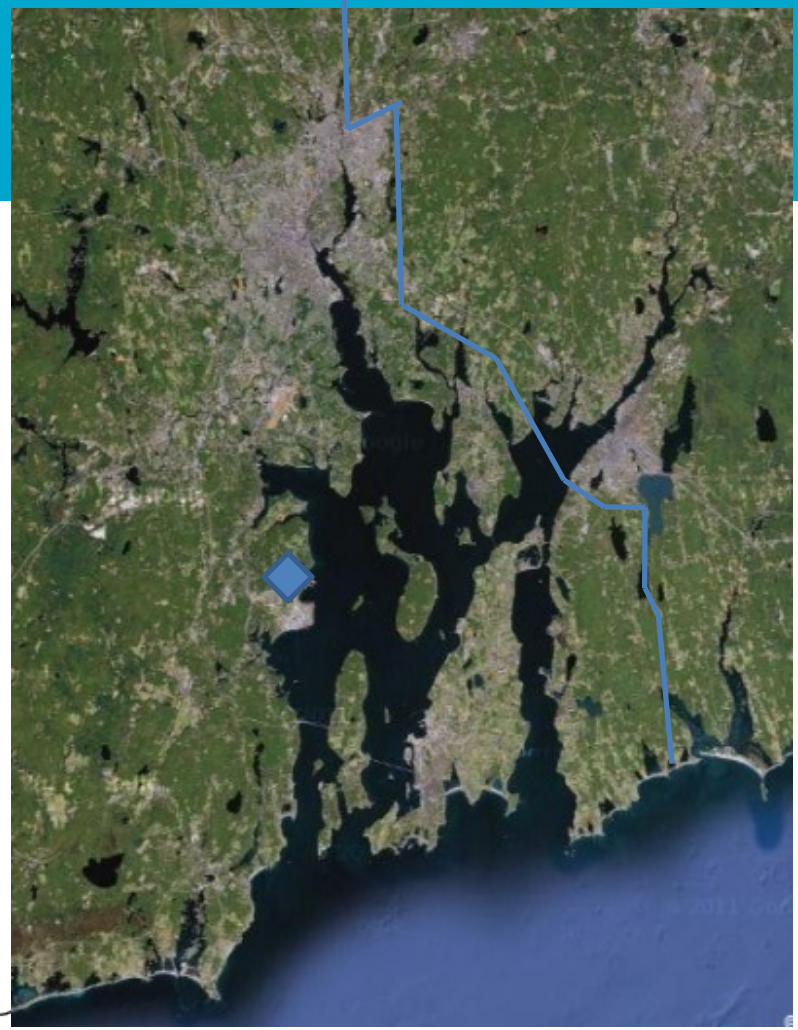
Quantitative Modeling for Nutrients in Narragansett Bay

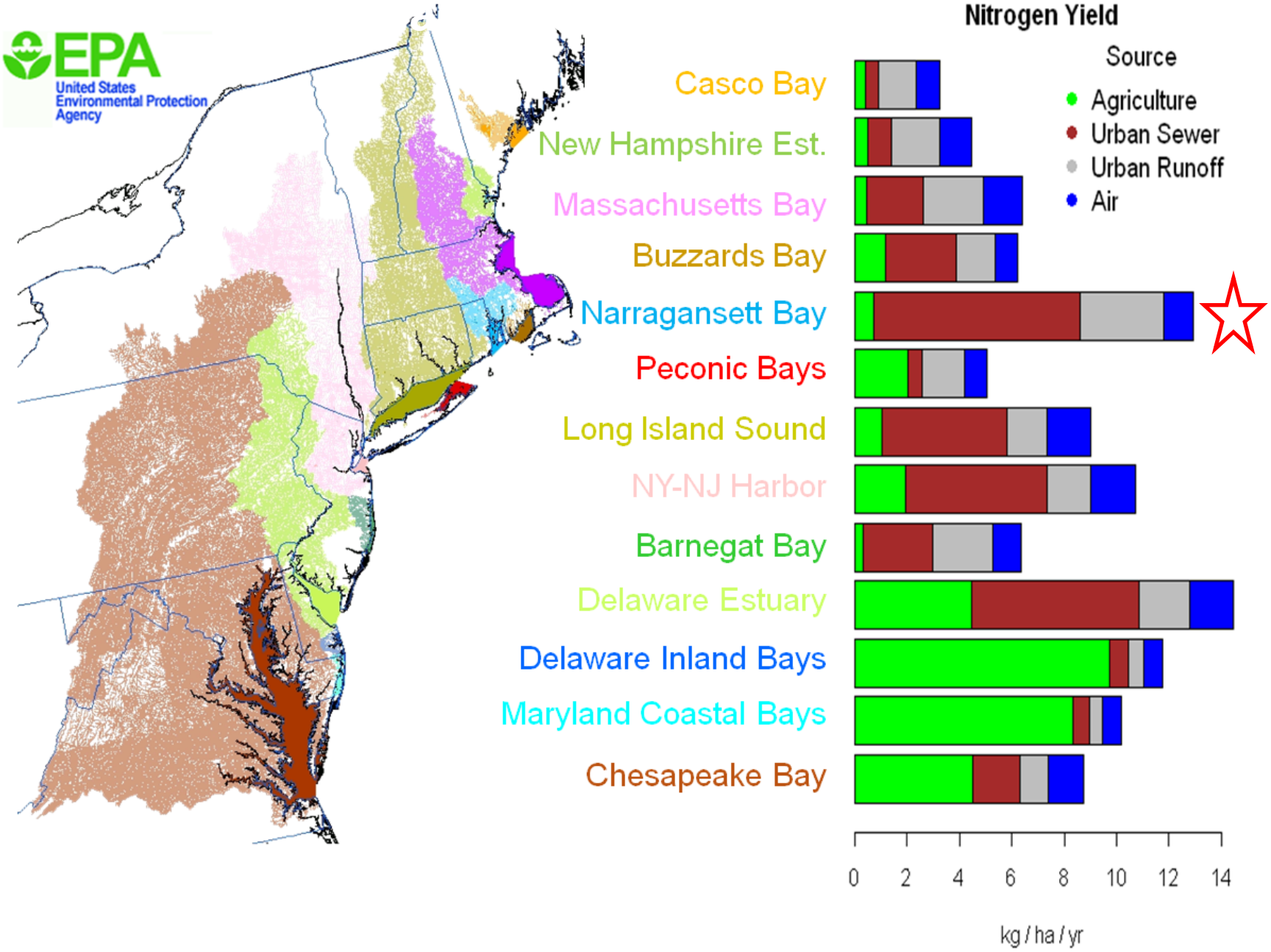
Brenda Rashleigh

U.S. Environmental Protection Agency

Atlantic Ecology Division

Narragansett, Rhode Island

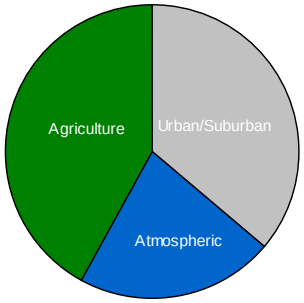




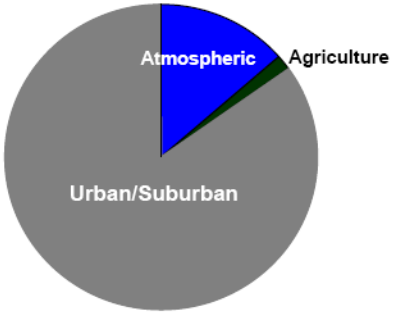
Latimer & Charpentier (2010)

Narragansett Bay CHRP Projects
Oviatt et al. ⟶ Codiga et al.

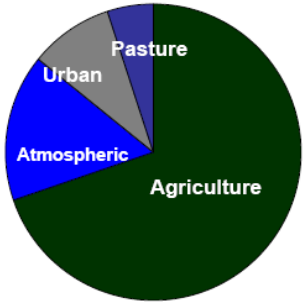
Relative contribution of various nitrogen pollution sources



Chesapeake Bay



Narragansett Bay

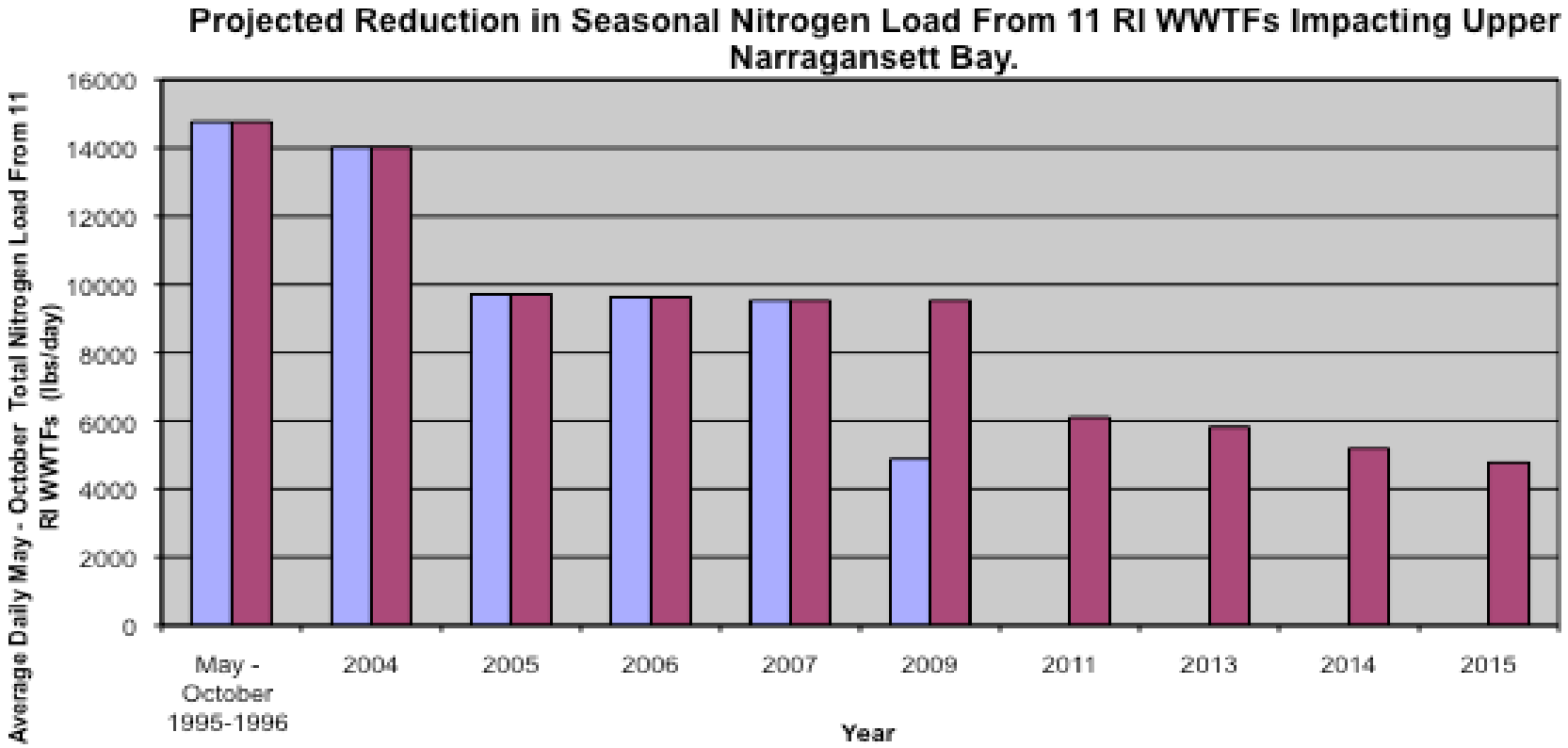


Gulf of Mexico

Oviatt/Codiga:

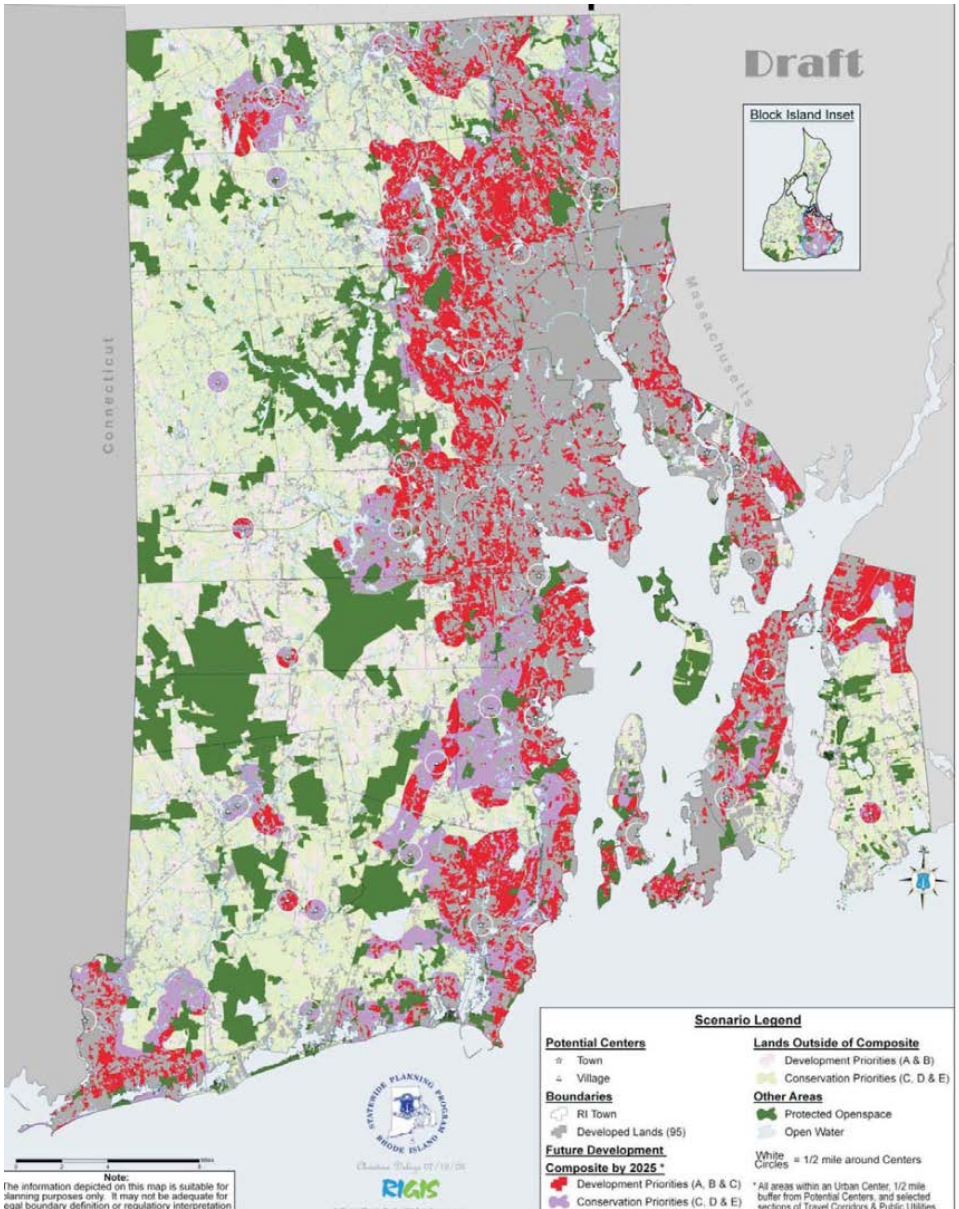
- Model development to advance understanding of causes of hypoxia - role of nutrient loading and circulation processs
- Involvement of management community
- Transition modeling tools to operations

Planned Nutrient Reductions at Wastewater Treatment Facilities



Liberti, 2008

Future Land Use



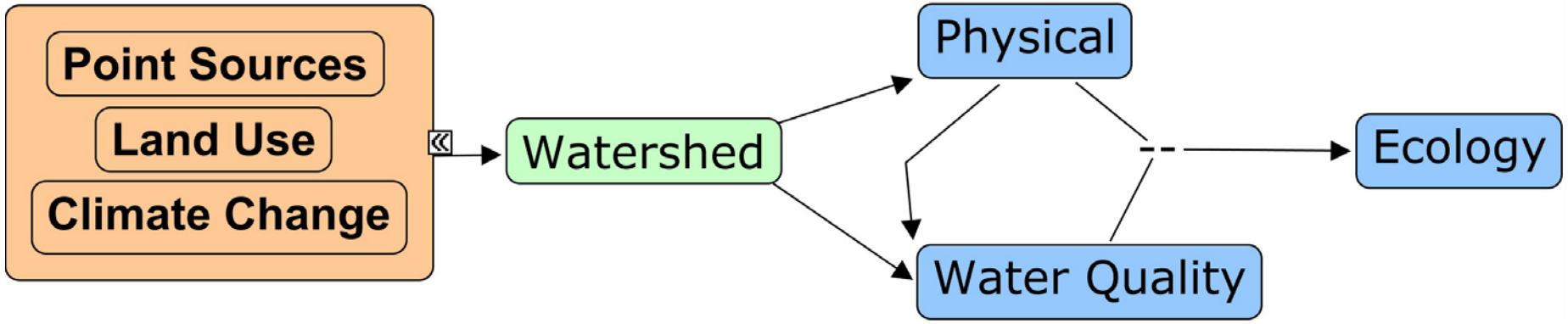
Red = new development

Green = protected open space

Available from State of Rhode Island Statewide Planning Program
http://www.edc.uri.edu/rigis/data/data.aspx?ISO=planningCadastre Landuse2025.zip

EPA Narragansett Bay Research

- How will future scenarios (nutrient loading) affect Narragansett Bay ecosystem (high-value endpoints)?
  - Delivery to Bay
  - Effects in Bay



SSWR Project 6.1 Demonstration Project

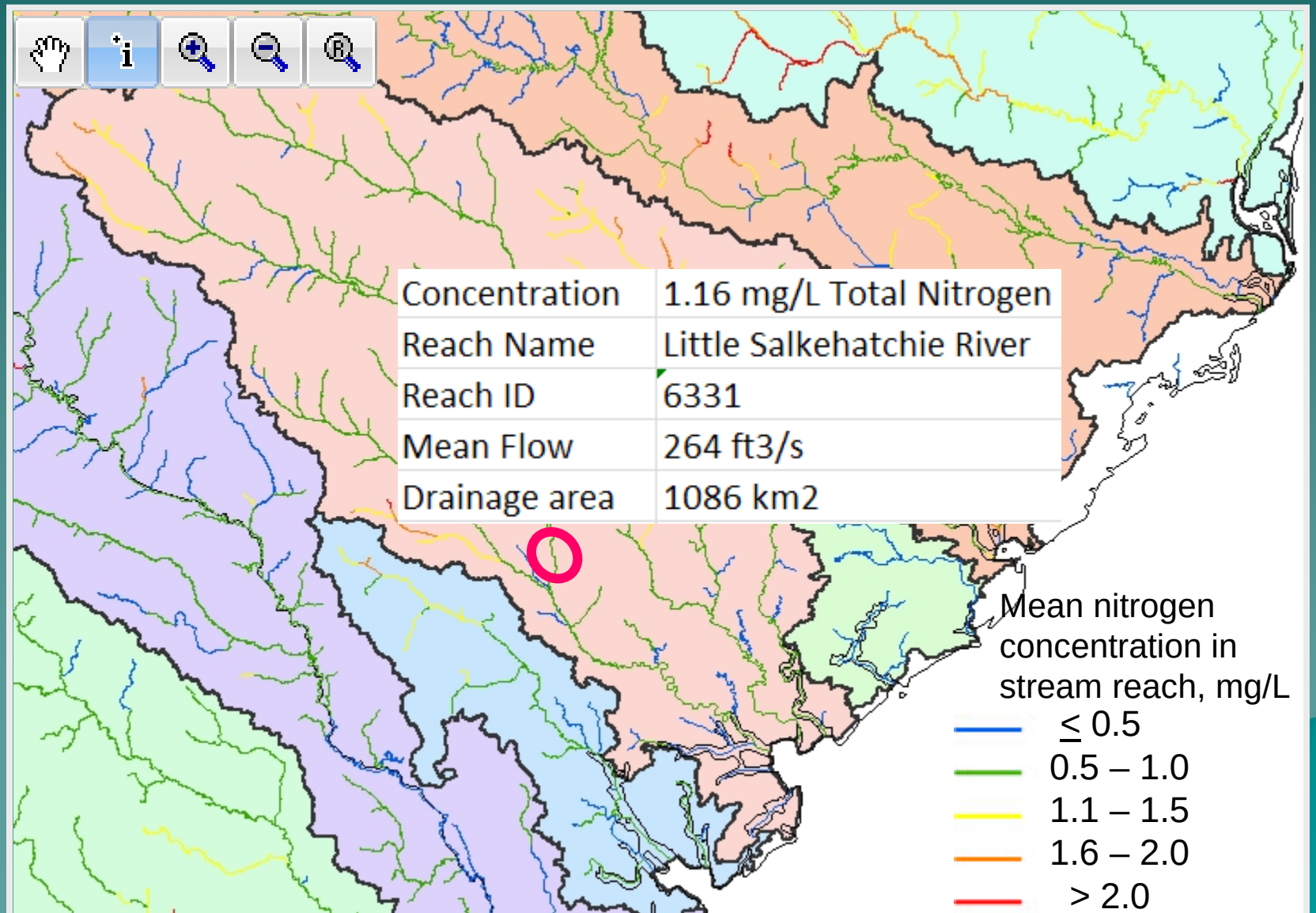
Preliminary example nutrient load reduction scenarios

For reducing riverine nutrient loading to New England estuaries

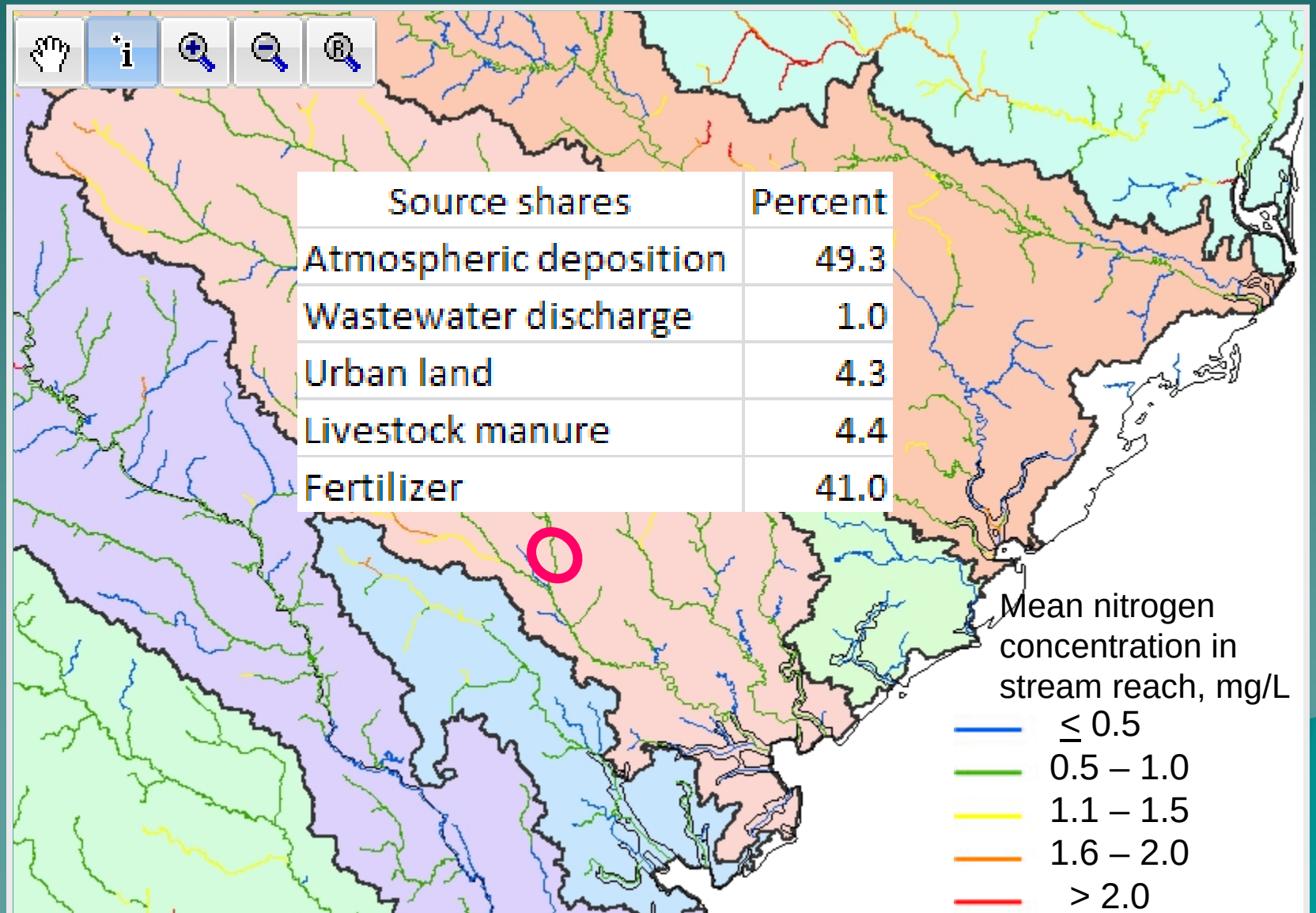
	To Achieve
1. Reduce Air Inputs	→ 10% reduction in Nr
2. Reduce Urban Inputs	→ 10% reduction in Nr & P
3. Reduce Agricultural Inputs	→ 10% reduction in Nr & P

What are the benefits related to lakes ?

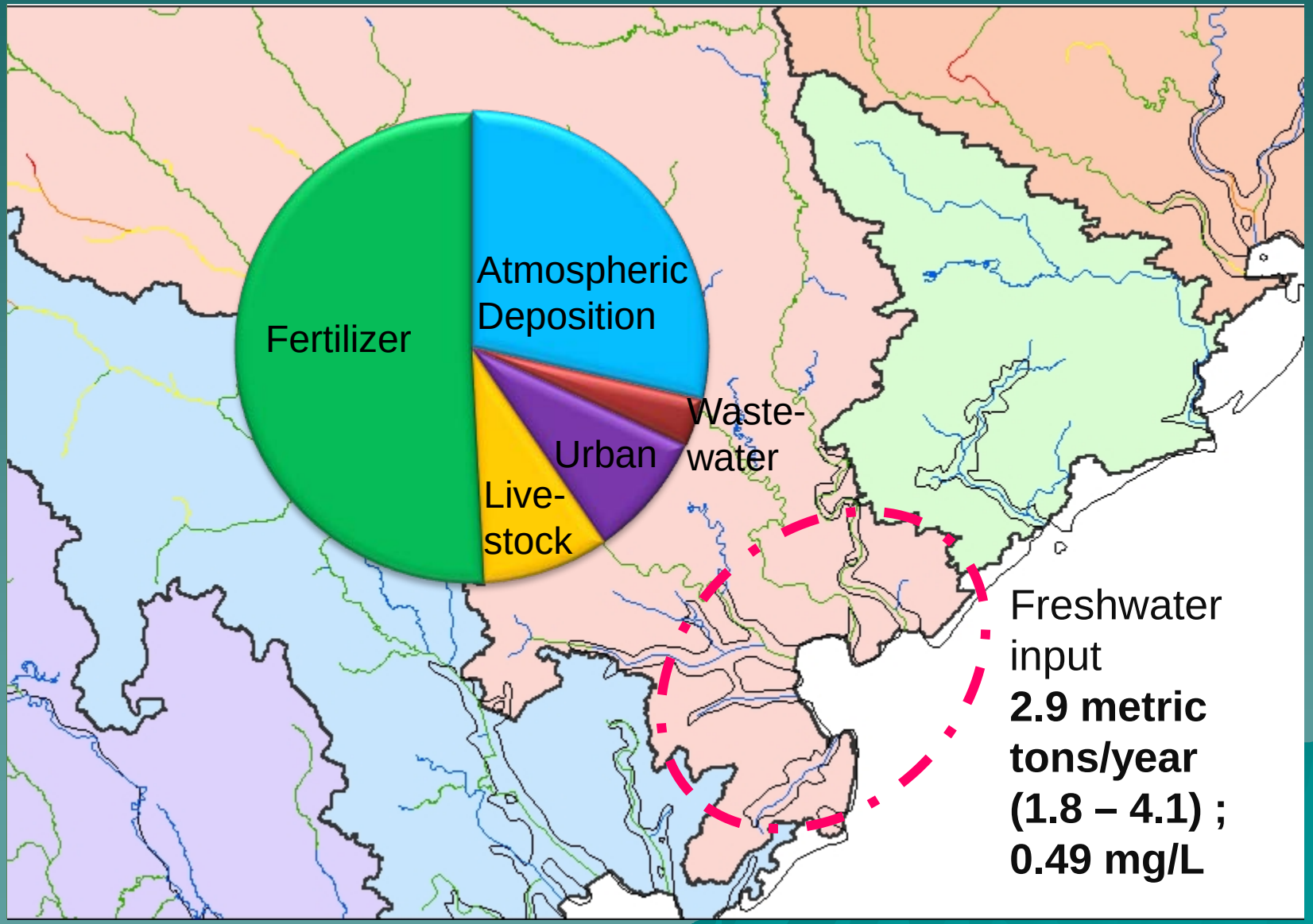
View estimated concentration, load, and source shares for specific reaches



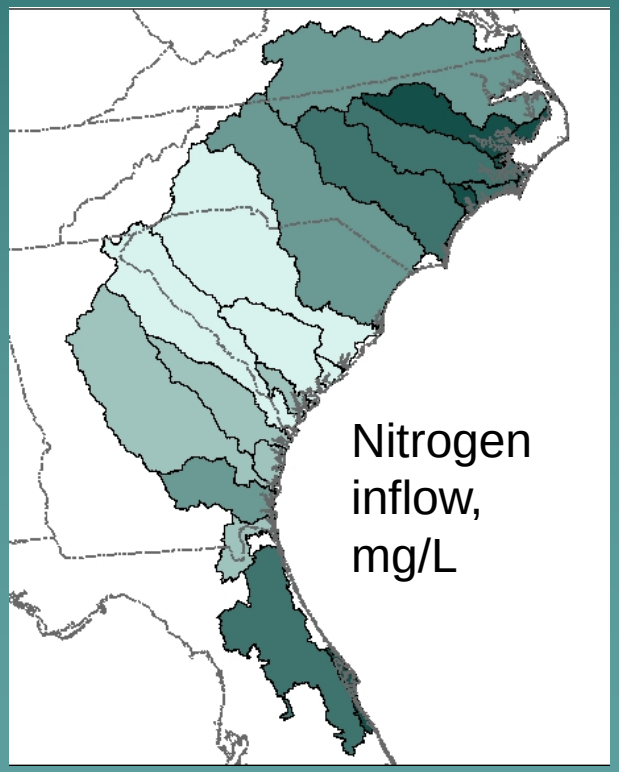
View estimated concentration, load, and source shares for specific reaches

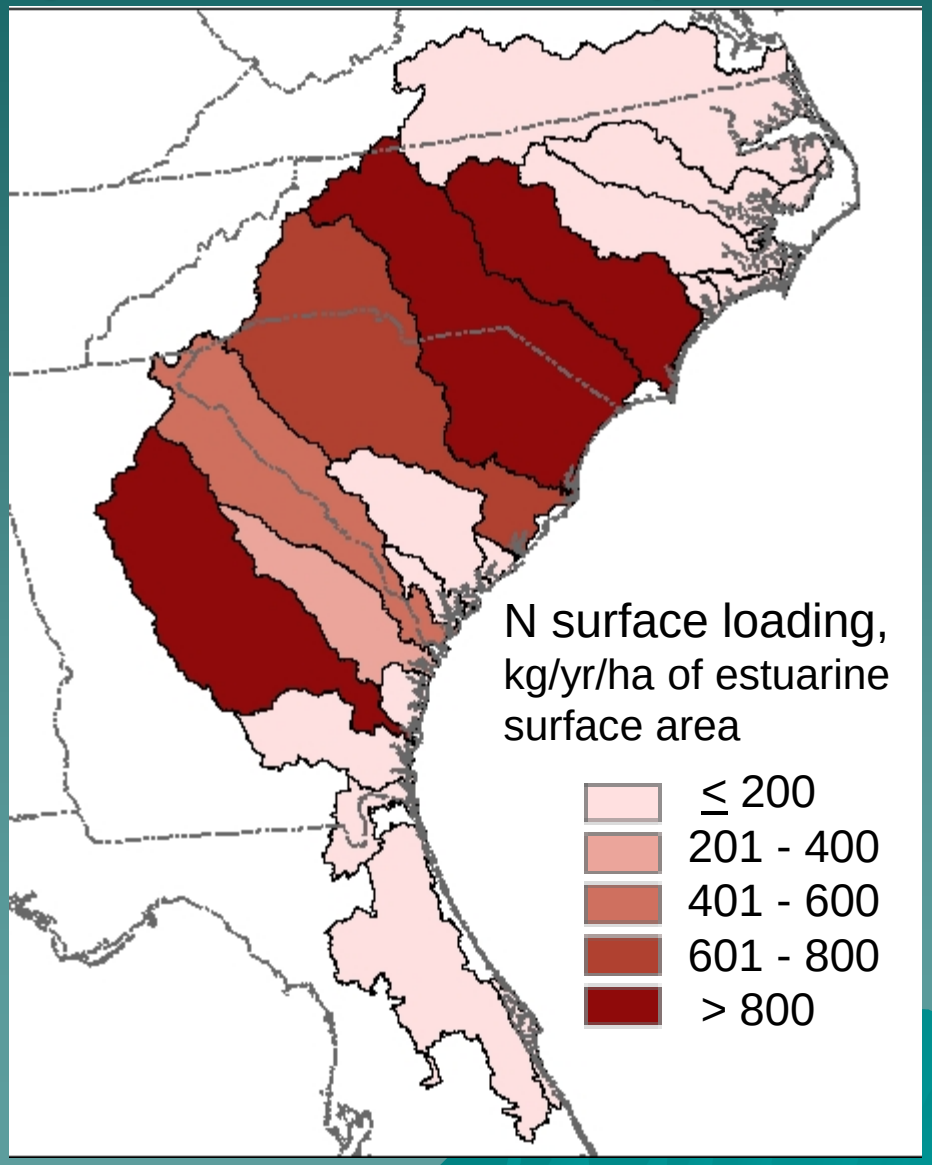


Aggregate load and source shares for a downstream ‘target’ – St. Helena Sound



Loading ‘stress’, 2002 (normalized by estuary surface area)

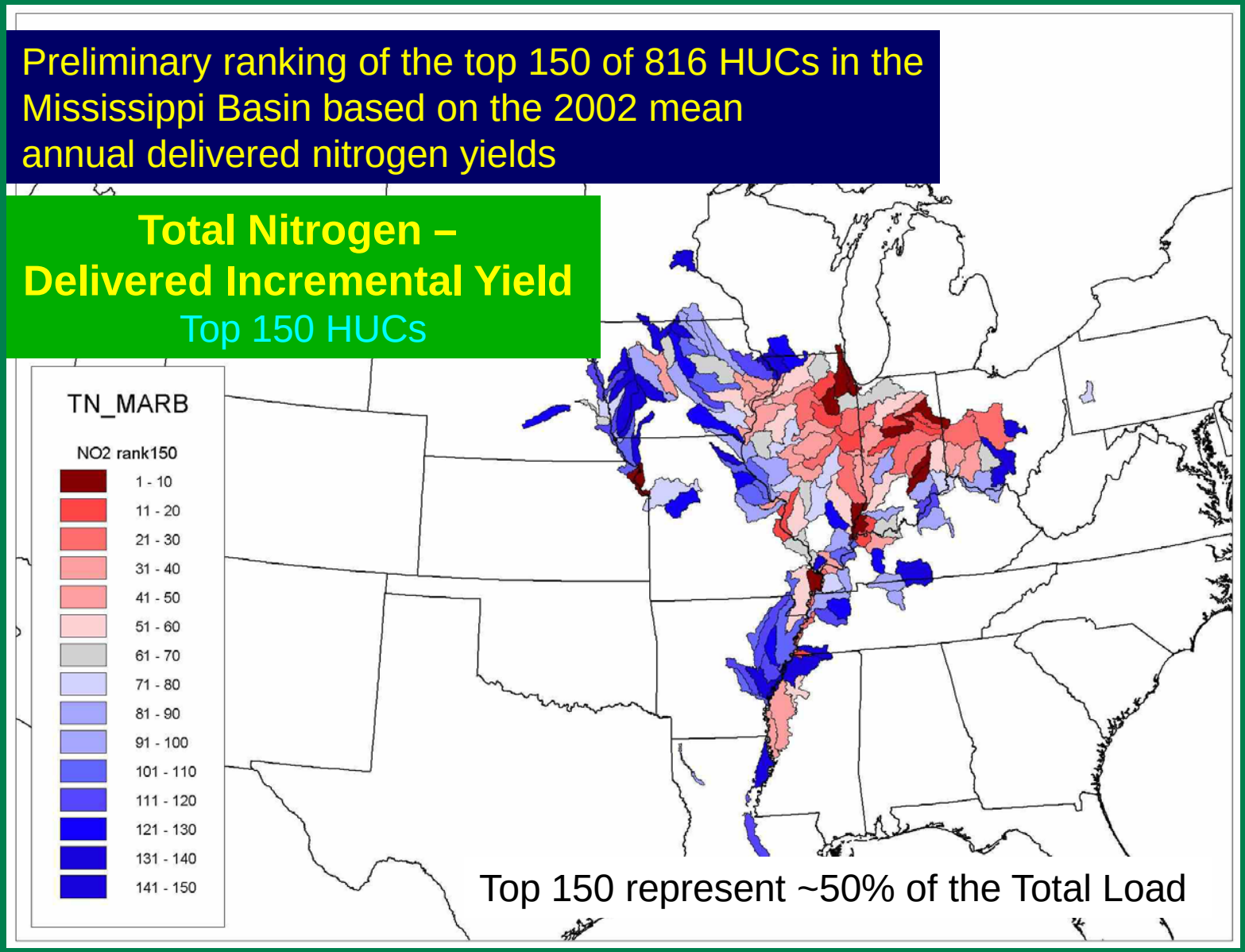




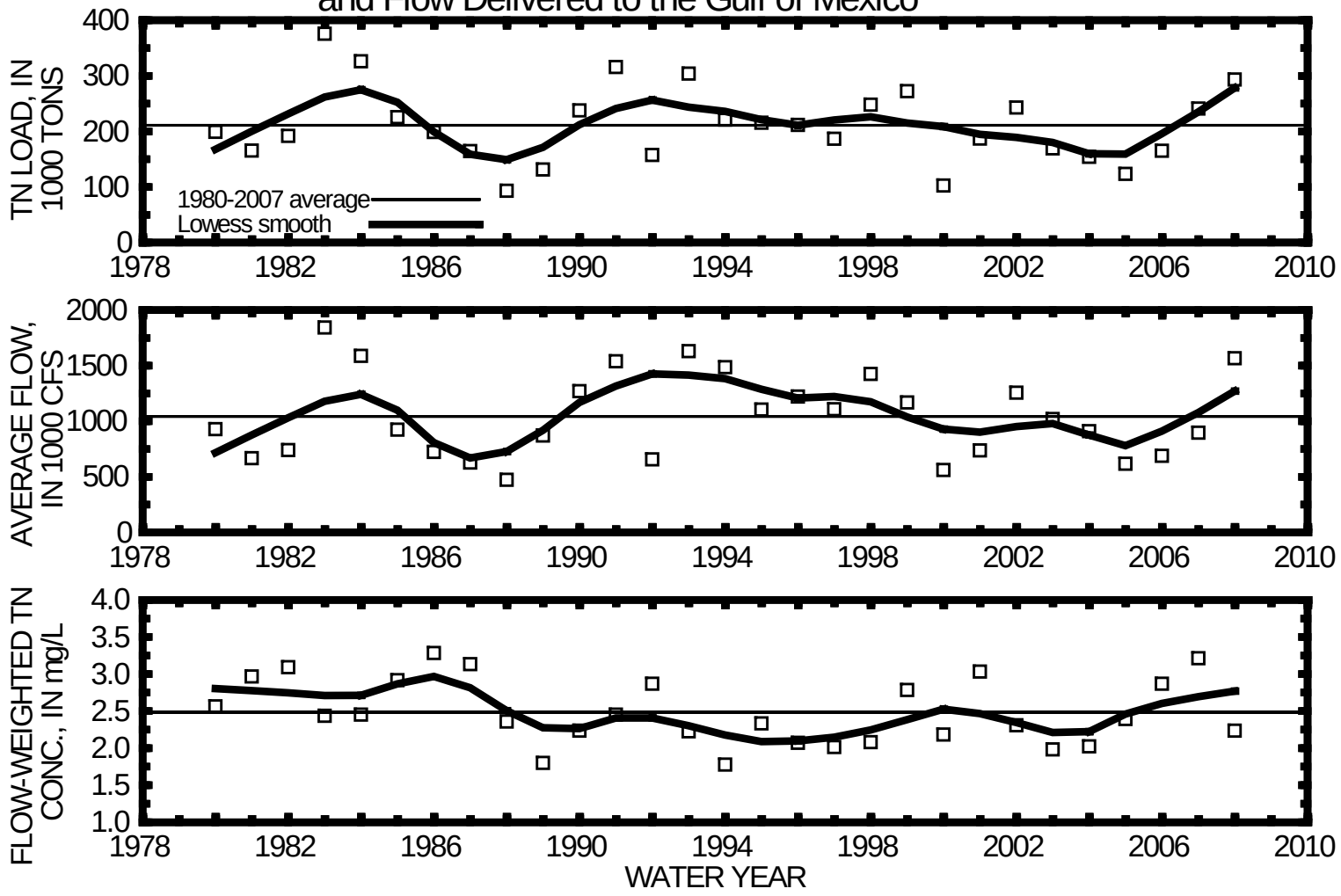
Preliminary ranking of the top 150 of 816 HUCs in the Mississippi Basin based on the 2002 mean annual delivered nitrogen yields

Total Nitrogen – Delivered Incremental Yield

Top 150 HUCs

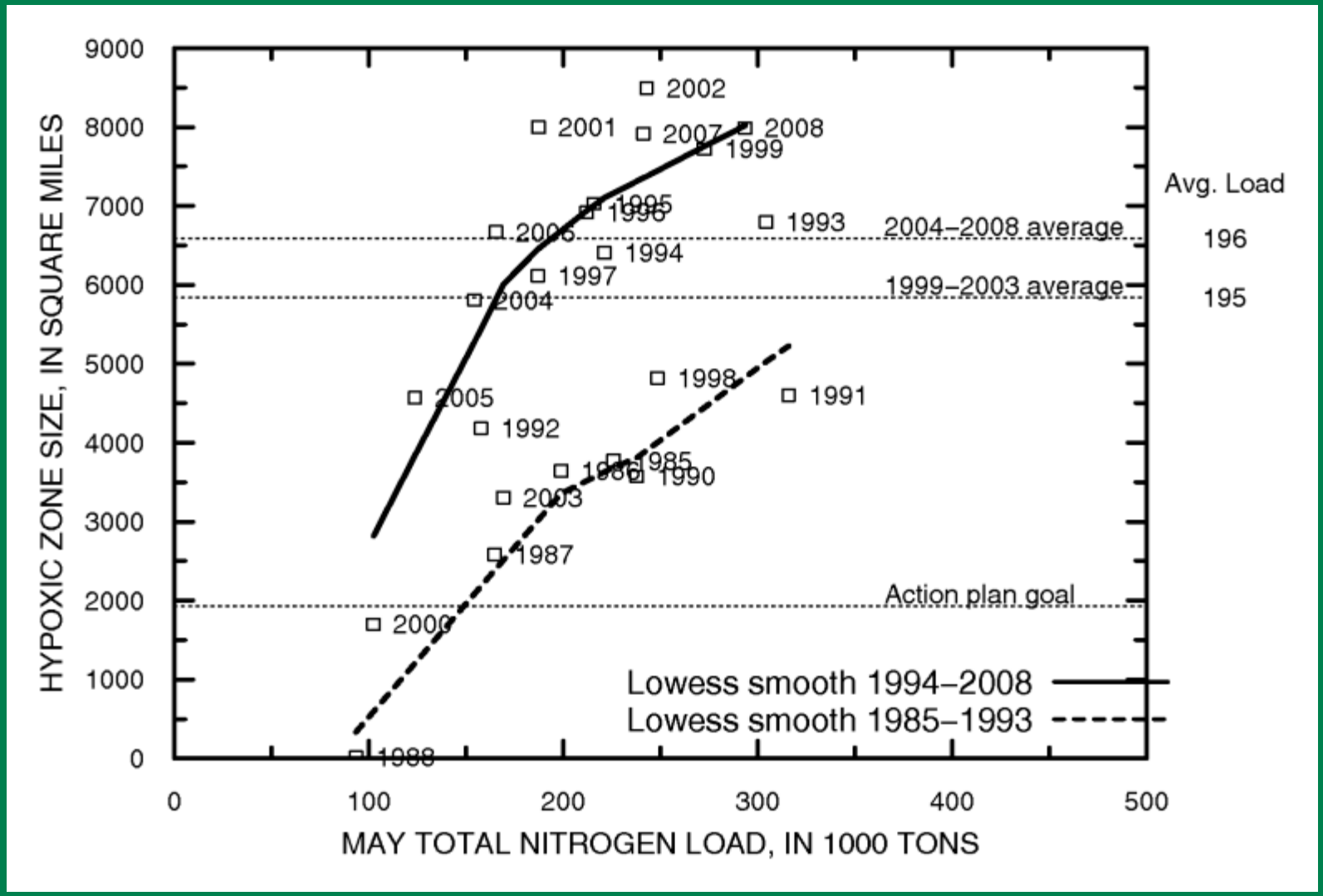


USGS


May Mississippi River Basin Total Nitrogen Load
and Flow Delivered to the Gulf of Mexico
TN LOAD, IN 1000 TONS
400
300
200
100
0
1980-2007 average
Lowess smooth
AVERAGE FLOW, IN 1000 CFS
2000
1500
1000
500
0
FLOW-WEIGHTED TN CONC., IN mg/L
4.0
3.5
3.0
2.5
2.0
1.5
1.0
1978
1982
1986
1990
1994
1998
2002
2006
2010
WATER YEAR

USGS

Relation of Nitrogen Influx and Size of GOM Hypoxic Zone



USGS