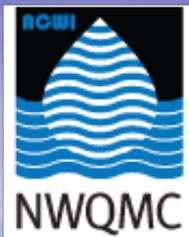


National Water Quality Monitoring Council

Provides a national forum for coordination of consistent and scientifically defensible methods and strategies to improve water quality monitoring, assessment and reporting. Promotes partnerships to foster collaboration, advance the science, and improve management within all elements of the water quality monitoring community





NATIONAL WATER QUALITY MONITORING COUNCIL

Working Together for Clean Water

8th National Monitoring Conference

Water: One Resource – Shared Effort – Common Future

Portland Oregon, April 30 – May 4, 2012

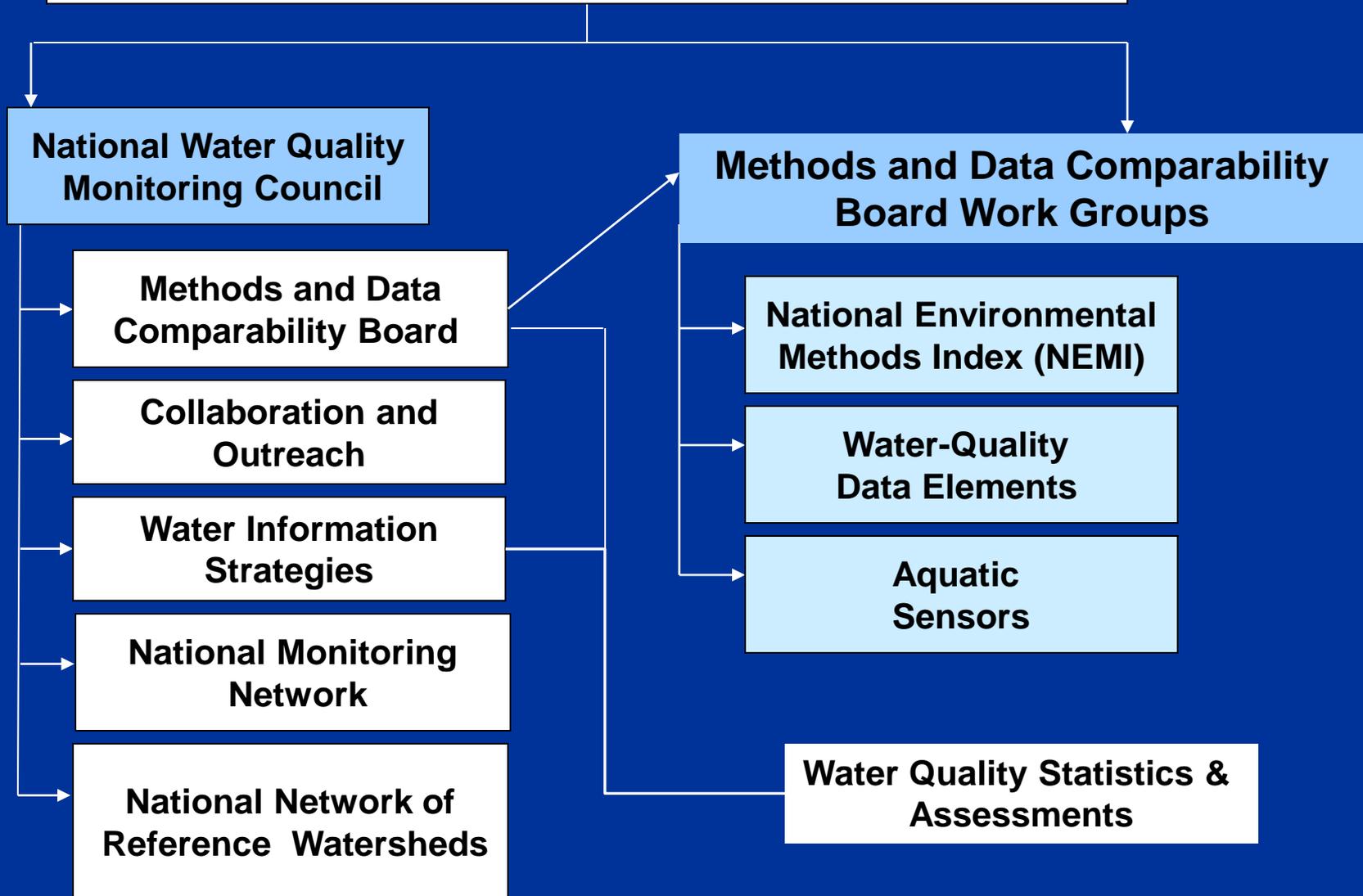




8 th National Monitoring Conference		Attendee Breakdown	
Total Attendees	1053	Not including field trip only	
	Number	% of Total	
Federal	359	34%	
State/Provincial	174	17%	
Local/Regional	90	9%	
Tribal	60	6%	
NGO	94	9%	
Private/Commercial	172	16%	
Academic	104	10%	
	Number	% of Federal	
USGS	243	68%	
EPA	70	19%	
National Park Service	8	2%	
US Forest Service	6	2%	
NOAA	4	1%	



Work Groups Reporting 2012





NATIONAL WATER QUALITY MONITORING COUNCIL

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Collaboration and Outreach

A “Bridge Day” on Friday was designed to integrate the 8th National Monitoring Conference and the 2012 River Rally. It included a panel on case studies, workshops, concurrent sessions, and a whole conference regional breakout session.



Collaboration and Outreach

- We held a half-day session on State/Regional/Tribal water monitor councils.
- For the first time we held a “Fluid 5K Run” that raised funds for travel scholarships for the 2014 conference.
- Contributions from YSI supported more than 30 volunteer coordinators to travel and attend the conference.



NATIONAL WATER QUALITY MONITORING COUNCIL

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Selected Outcomes of the 8th National Monitoring Conference

- A session on activities and plans of the Council was designed to provide an overview of what the Council does.
- The new integrated Water Quality Portal was launched at the Conference. The launch included a news release, email blast, sessions on the Portal, and live demonstrations of the Portal.



NATIONAL WATER QUALITY MONITORING COUNCIL

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Selected Outcomes of the 8th National Monitoring Conference

- EPA NARS Program held a national meeting in conjunction with the conference. It provided an excellent opportunity to hold numerous sessions and workshops on NARS, as well as hold a key planning meeting for a large regional integration synoptic assessment that will be conducted in the Midwest in 2013.



8th National Monitoring Conference

- The conference afforded an excellent opportunity to launch a prototype of “Statistical NEMI”. Several demos were held and it was highlighted during the Council session.
- Had several opportunities to highlight the Council’s plans to implement the National Network of Reference Watersheds. Two sessions addressed the issue of reference conditions.



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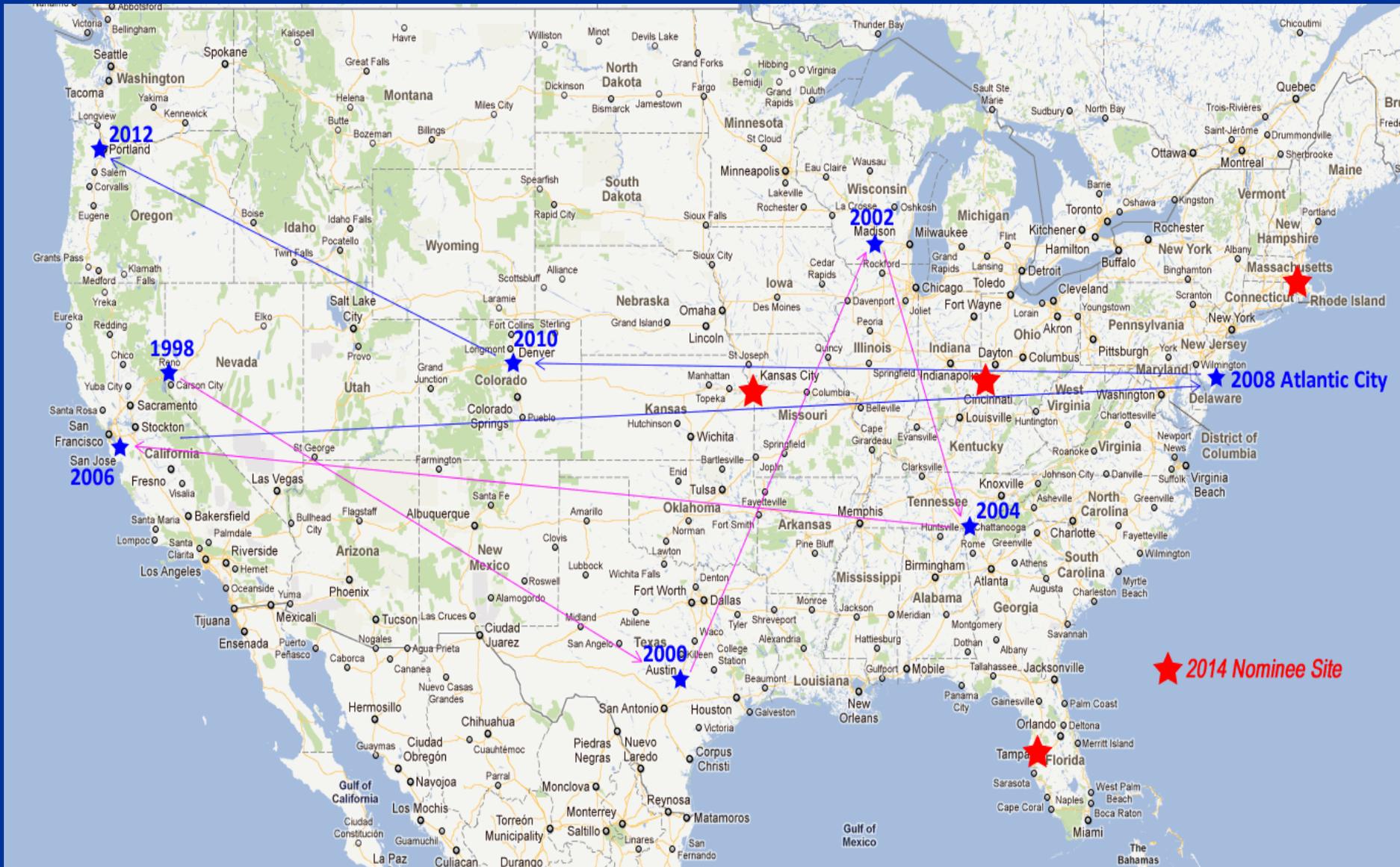
National Monitoring Network

- The Network was highlighted in a panel session chaired by Bernice Smith of EPA, and in the Council session. Project chiefs of the 3 current and 2 new demonstration studies met during the conference to share insights on lessons learned. Several sessions highlighted the NMN and coastal water-quality programs.



NATIONAL WATER QUALITY MONITORING COUNCIL

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New Representatives

- Andy Fayram (WI DNR)
- Shaun McKinney (NRCS)
- Martha Clark Mettler (ACWA)
- Dave Neils (NH DES)
- Jeff Thomas (ORSANCO)



NATIONAL WATER QUALITY MONITORING COUNCIL

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Water Information Strategies Workgroup

- Coordination of water-quality sampling during flood events
- Water-Quality Indices
- Paper on integration of monitoring programs



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Water-Quality Indices

- Compilation of indices meant to summarize the various indices being used.
- Includes chemical, physical, microbiological, biological, eutrophic condition, sediment quality, and overall condition indices.

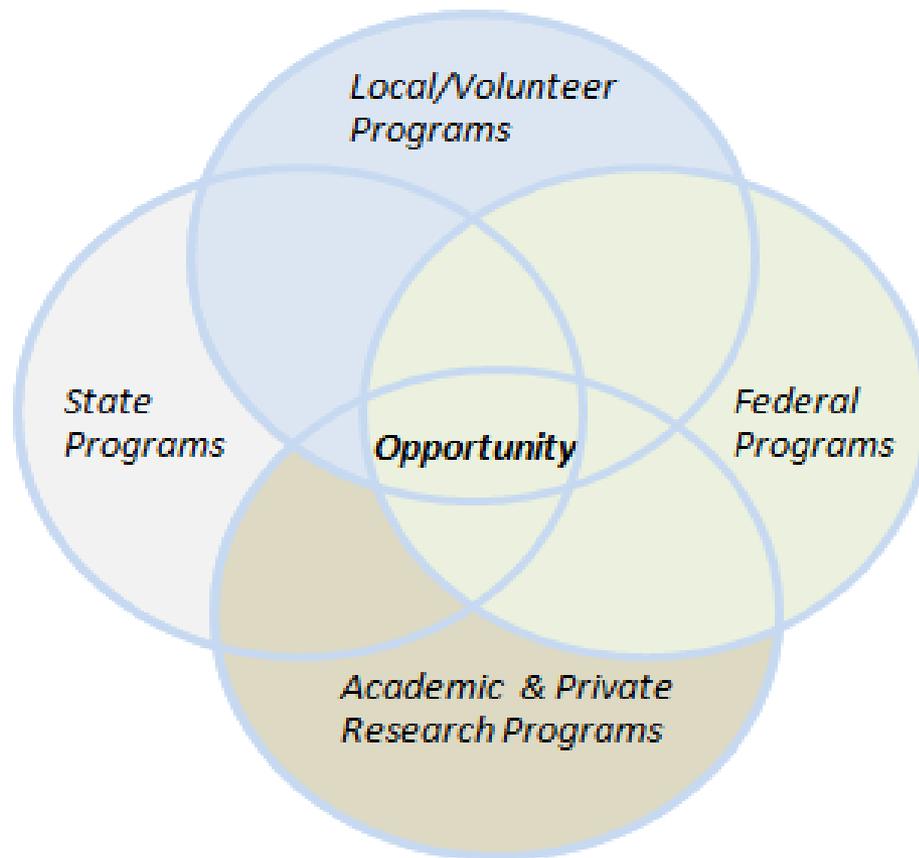


NWQMC

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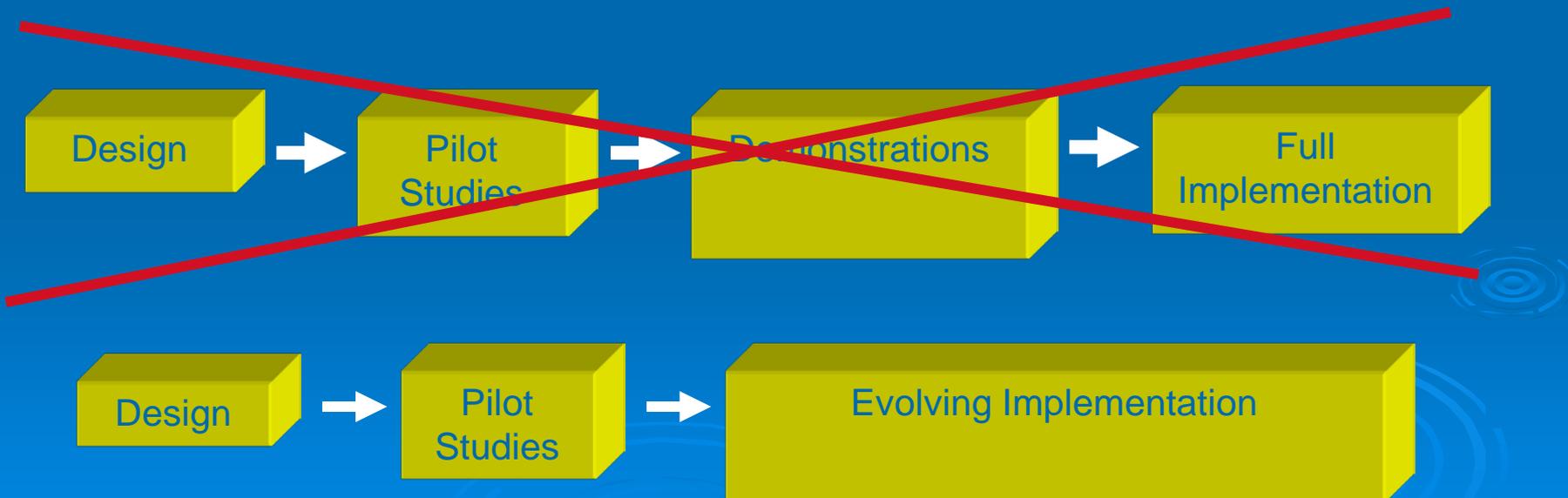
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INTEGRATING MONITORING PROGRAMS



2009 Recommendation to ACWI

- ACWI adopt the implementation of the National Monitoring Network as a policy goal
 - Espouse “Evolving Implementation”



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)

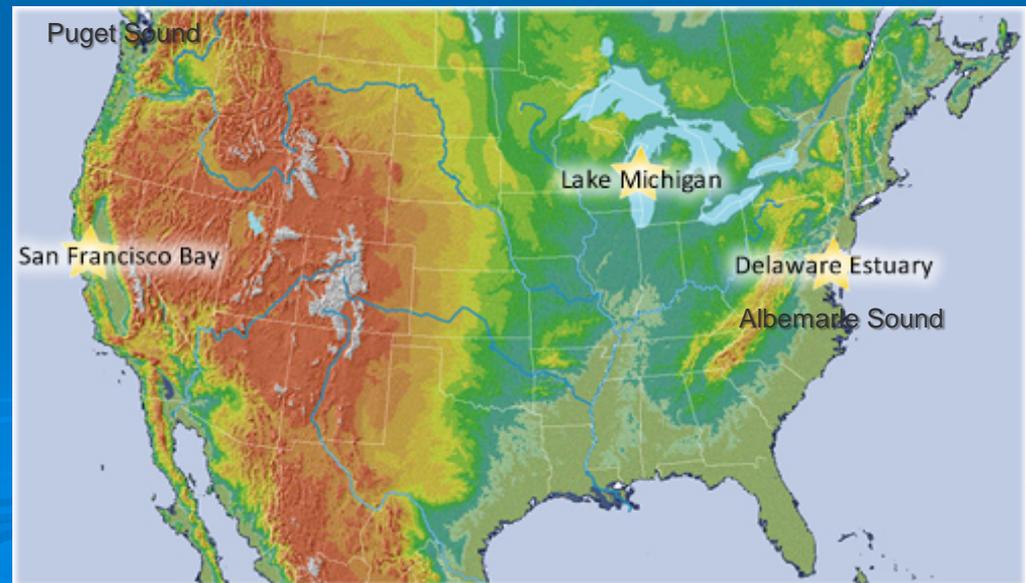


The Network is a continuum of observations in:

- 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





NATIONAL WATER QUALITY MONITORING COUNCIL

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Draft National Ocean Policy Implementation Plan

National Ocean Council



An America whose stewardship ensures that the ocean, our coasts, and the Great Lakes are healthy and resilient, safe and productive, and understood and treasured so as to promote the well-being, prosperity, and security of present and future generations.



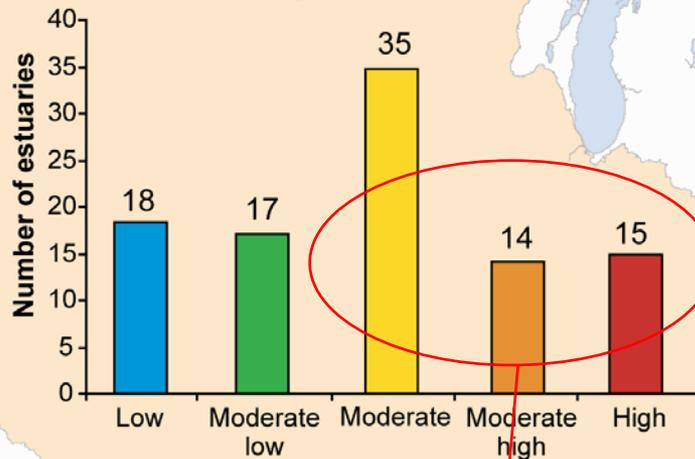
Elements of an Action Plan

- Inventory current monitoring
- Implement a communication plan
- Implement elements of the Network design
- Increase collaboration across agencies

Overall Eutrophic Condition

<http://www.eutro.us>
<http://www.eutro.org/register>

Combined indicator:
Chl,
macroalgae,
DO,
seagrass,
HAB



0 200 400 Kilometers
0 100 200 Miles



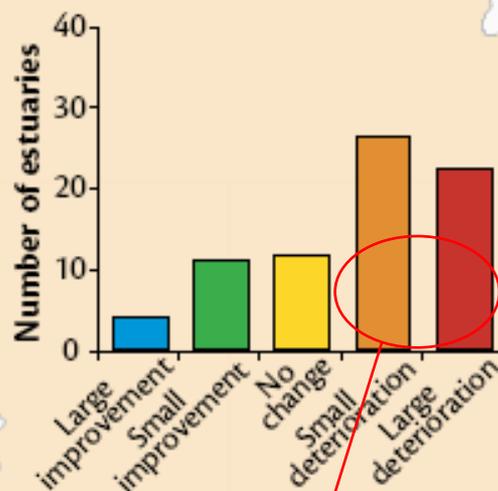
65% of assessed systems M to H eutrophication, same in early 1990s

Future Outlook

<http://www.eutro.us>
<http://www.eutro.org/register>

What will happen next?

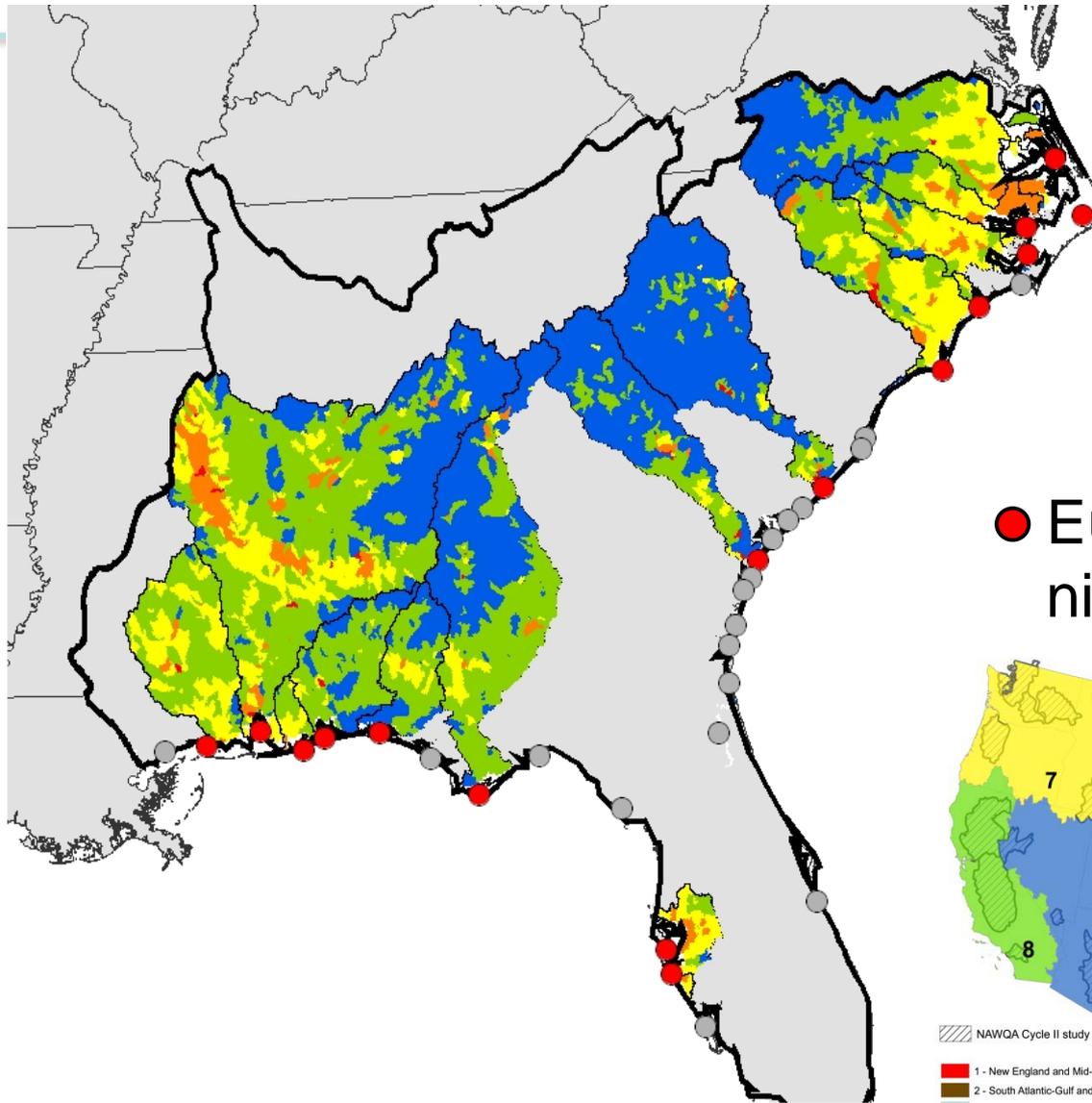
Tells us how can we improve and protect water quality?



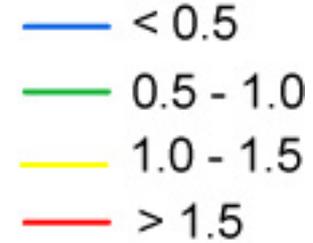
0 200 400 Kilometers
0 100 200 Miles



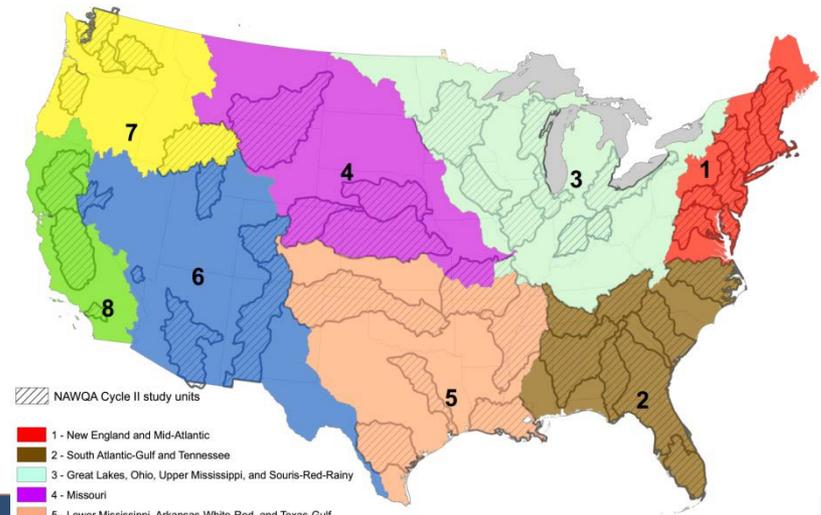
65% (71% in 1990s) assessed systems – worsen
20% (7% in 1990s) assessed systems - improve



Yield delivered to estuary from watershed, kg/yr/ha



● Eutrophic, influenced by nitrogen input



NAWQA Cycle II study units

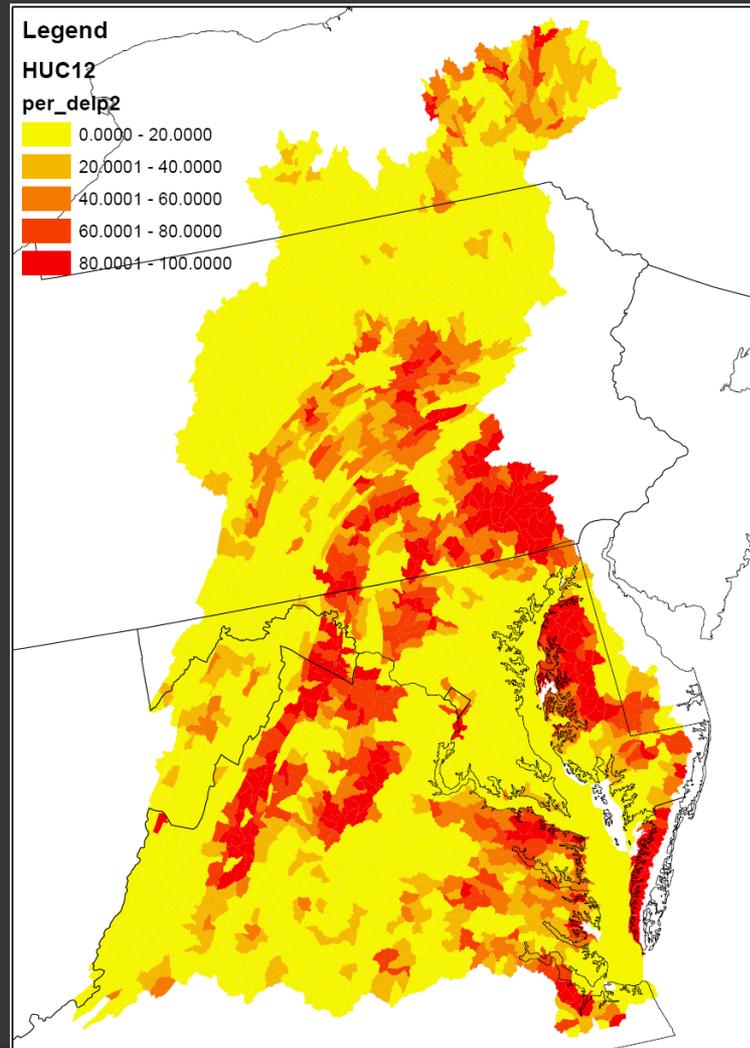
- 1 - New England and Mid-Atlantic
- 2 - South Atlantic-Gulf and Tennessee
- 3 - Great Lakes, Ohio, Upper Mississippi, and Souris-Red-Rainy
- 4 - Missouri
- 5 - Lower Mississippi, Arkansas, White, Red, and Texas-Gulf



Example Restoration Approach

HUC12s in top 25% of TN Delivered Yield from Agriculture

By State



Purpose: Aggregate SPARROW predictions to a scale that is meaningful to the states (HUC-12).

Which HUC-12 watersheds have the highest N yields to the tidal Chesapeake Bay? [Top 25%]

Red areas show HUC-12's with the majority of watershed area being in the top 25% yielding category.

