NATIONAL WATER QUALITY MONITORING COUNCIL

Working Together for Clean Water

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

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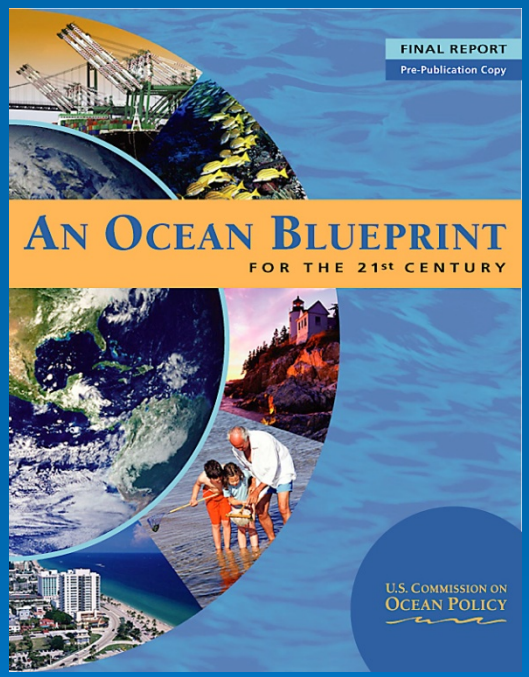
Panel Discussion

March 10, 2009

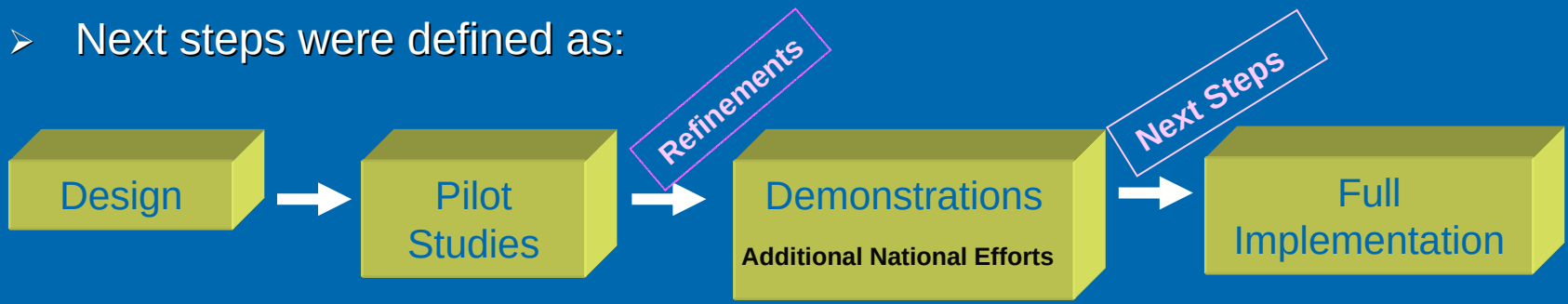
National Water Quality Monitoring Network for U.S. Coastal Waters and Their Tributaries



- The Network was recommended by the U.S. Commission on Ocean Policy
- ACWI Charged by the:
  - CEQ, NSTC, SWAQ, and JSOST
  - To design a national Network which:
    - Integrates biological, chemical, and physical characteristics of water resources
    - Links uplands to the coastal ocean
- Original Design Report: *A National Water Quality Monitoring Network for U.S. Coastal Waters and their Tributaries*, 2006

Progress in Monitoring

- ACWI approved the Network design and presented it to CEQ and the other requesting organizations on April 2006.
- Next steps were defined as:



- At CEQ request, ACWI undertook three pilot studies in 2007 to examine the concepts and components of the design through a gap analysis.
  - San Francisco Bay
  - Delaware Bay
  - Lake Michigan
- Pilot Studies and Network refinements were reported to ACWI in Jan. 2008.

Results of Pilot Studies
(Gap Analysis)

- Management issues are similar and represent important issues across the Nation, including nutrient loading to estuaries and toxic algae.
- Data integration and management improvements are needed to optimize the use of available monitoring data.
- Monitoring gaps in all Pilots related to adequate number of representative sites, sampling frequency, and additional analytes.
- Local expertise is paramount in the implementation of any Network design and its relevance to addressing management of water resources.

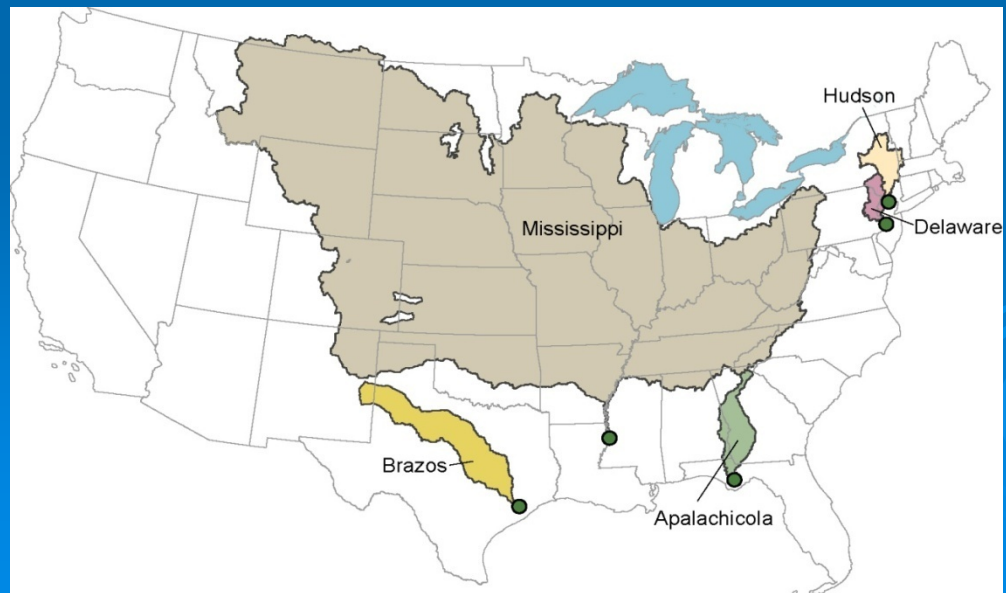
Results of Pilot Studies
(Gap Analysis)

- The Network can effectively include and integrate wetlands monitoring with tributary and estuary monitoring.
- Refinements to the Network:
  - Nutrient parameters and detection limits
  - Suggested contaminants (total of 243 with assumed flexibility)
  - Coastal wetlands monitoring strategy
  - Parameters and ancillary data needed for biological assessments
  - Atmospheric contributions (monitoring or modeling)
  - Ground water
- Annual estimated costs for full implementation of the refined Network (for individual estuaries and tributaries) ranges from $5-7 million. Estimated costs for Lake Michigan are higher ($12 million).

Progress in Monitoring

Status of Network and Accomplishments
Pilot Demonstration Phase

- **NASQAN:** 5 stations added to the USGS National Monitoring Network, following protocols used for monitoring large rivers and the quality of water at the terminus of large watersheds
  - 31 NASQAN river stations in USGS Surface-Water Network, routine monitoring
  - 113 NAWQA stations for status and trends at smaller rivers and streams
- Continued resources are needed to maintain the 5 stations and ensure water-quality sample collection continues beyond fiscal year 2009.



Progress in Monitoring

Status and Accomplishments
Pilot Demonstration Phase

- Additional monitoring initiated by USGS (2008-09) to fill gaps needed to address water-quality issues:
  - **Delaware Bay:** nutrient and carbon monitoring and assessment added to current USGS tidal stations and estuary boat run sites; real-time monitoring (T, SC, pH, DO, and turbidity) added to selected river and estuary sites.
  - **Lake Michigan:** 3 new monitoring sites added; nutrient monitoring was enhanced at 17 existing USGS sites; toxicity testing conducted at selected stations using SPMDs.
  - **San Francisco Bay**: real-time monitoring for suspended-sediment; nutrient and toxic algae monitoring enhanced at selected sites.
  - The enhanced work is supported through fiscal year 2009. Continued funding is needed to continue the monitoring and complete the assessments.

Progress in Monitoring

Status of Network and Other Accomplishments

- **Joint Web Services:** Water-quality data from USGS NWIS and in EPA STORET is produced in a common format. Continued resources needed to maintain and update the online services and capabilities beyond fiscal year 2009.
- **Additional Data Elements**: At ACWI's request, the Methods Board has added to ACWI's list of recommended data.
- **National Aquatic Resource Surveys:** These EPA/State surveys provide "snapshot" assessments of water quality in estuaries, lakes, streams, and rivers.
- **The State of the Nation's Ecosystems:** Heinz center report released in 2008. To fill environmental data gaps: collaboration, national set of indicators, and monitoring.

Future Directions

National Monitoring Network

- **National Ground Water Monitoring Network:**
  - May embrace certain concepts and components of the National Network; link with a Pilot study
- **National Environmental Status and Trends** (NEST):
  - Indicators for the Nation's water
- **Water Data Portal** (WQX):
  - Extend and enhance USGS and EPA web services capabilities
- **Wetlands Assessment:**
  - Wetland surveys are being designed for the year 2011
- **Advancing Sensors:**
  - The Methods Board's Sensor Workgroup
- **Regional Ocean Observing Associations:**
  - Increasingly active
- **Global Earth Observation System of Systems** (GEOSS):
  - Increasingly recognized

Next Steps
Linking Inland to Ocean
Collaboration & Coordination w/ NOAA
Network Design and Implementation

- Involve the IOOS ***Regional Associations*** in managing and monitoring
- Consistent data management plan
- IOOS plans for monitoring offshore compartments