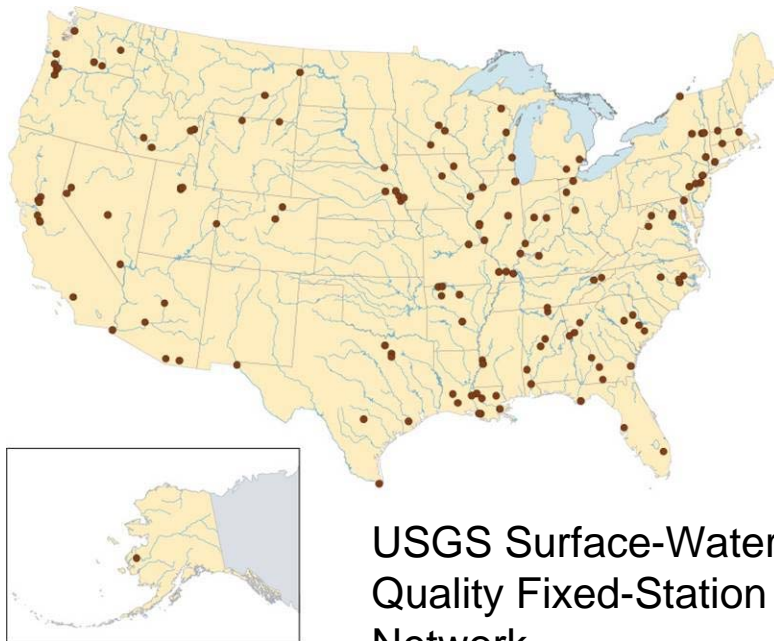




USGS Water-Quality Monitoring

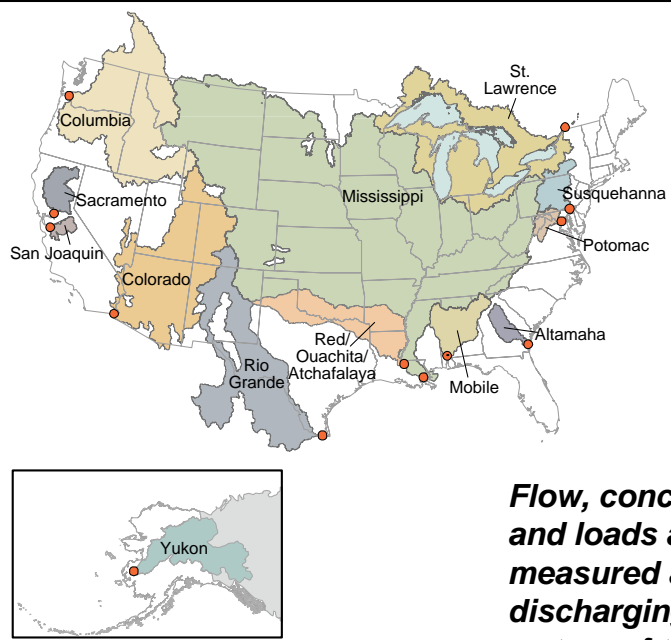
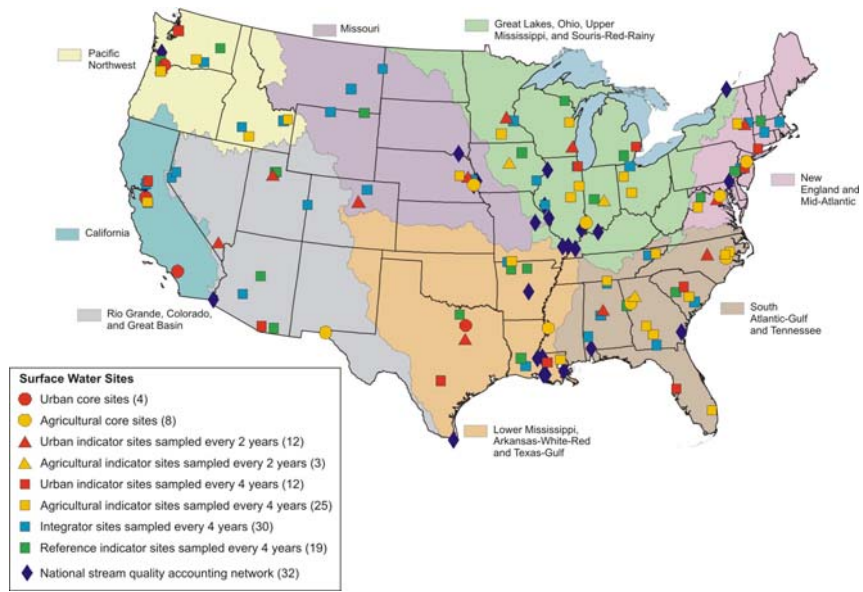
ORRAP Ocean Observing Panel
February 18, 2009

Pixie A. Hamilton, Co-Chair of the NWQMC

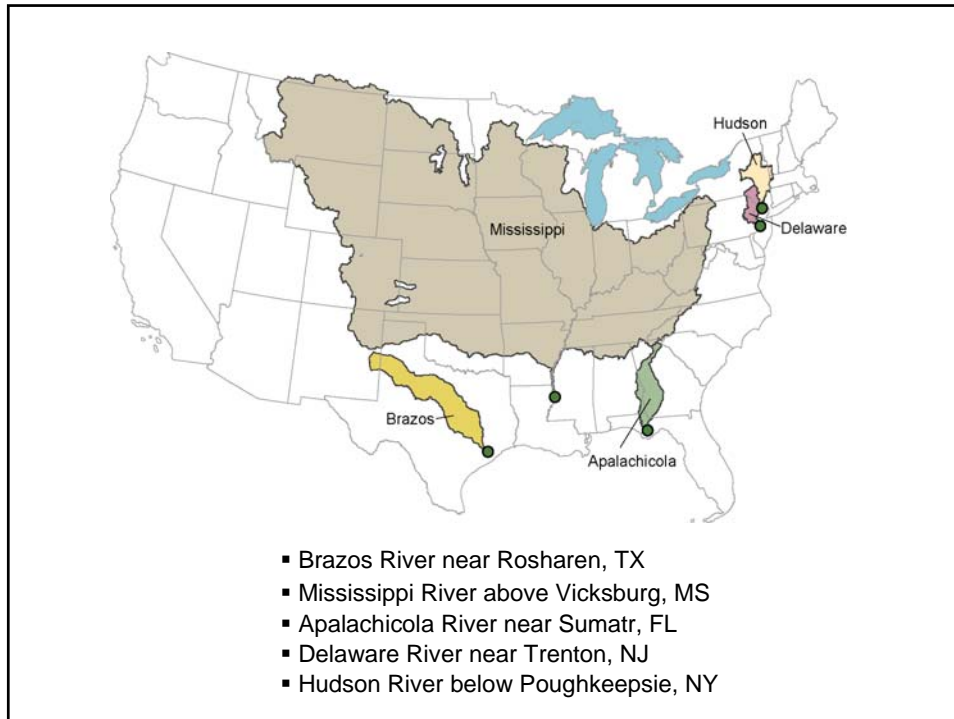


USGS Surface-Water
Quality Fixed-Station
Network

National Water Quality Assessment Program



Flow, concentrations, and loads are measured at 13 sites discharging to coastal waters of the U.S.



Water Quality Network Objectives

- **Assess concentrations and loads of nitrogen, phosphorus, carbon, silica, dissolved solids, selected pesticides, and suspended sediment to coastal waters of the U.S.**
- **Describe changes in concentrations and loads through time**
- **Determine water-quality links to basin characteristics, natural and human sources, and land activities at national and regional scales**



- **pH**
- **Water Temperature**
- **Dissolved Oxygen**
- **Specific Conductance**
- **Turbidity**

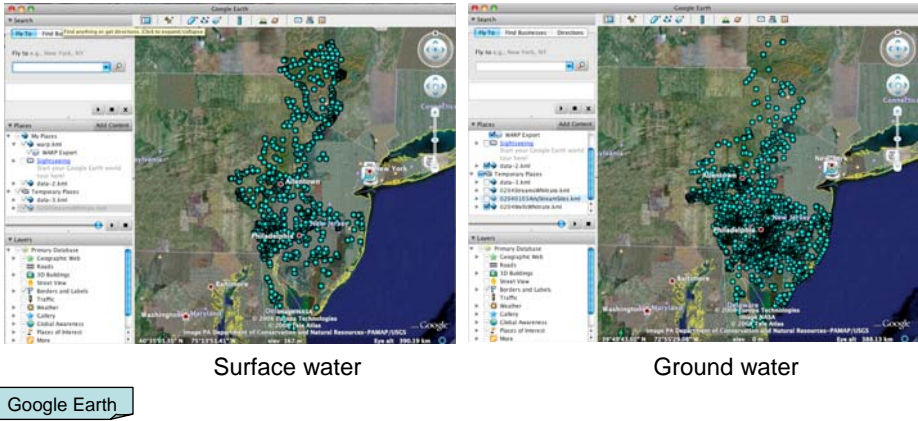
Continuous Water Quality Monitoring

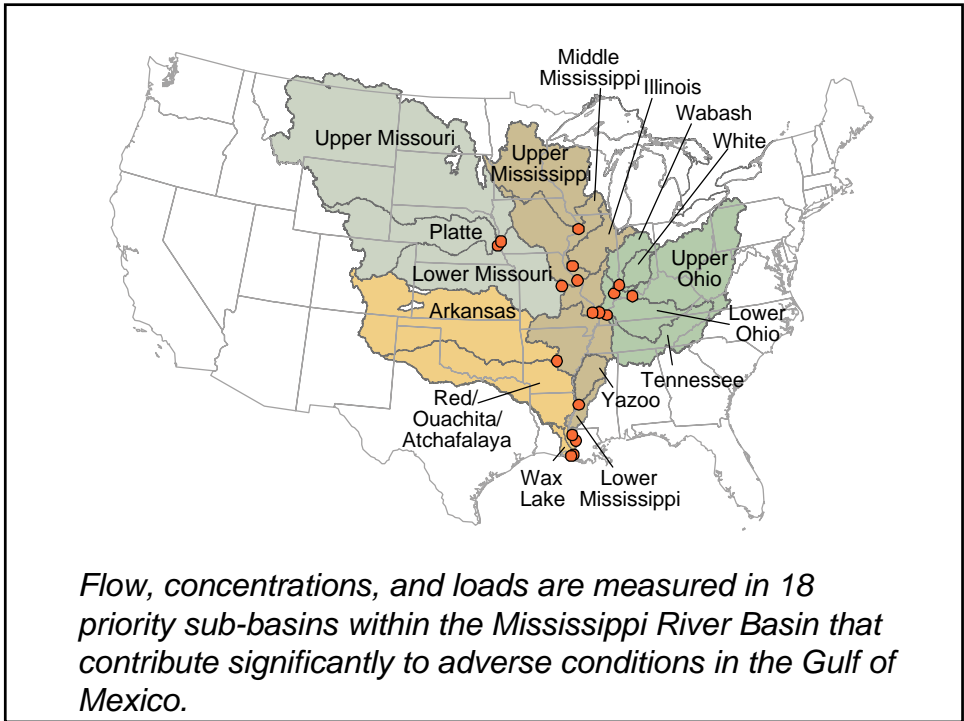
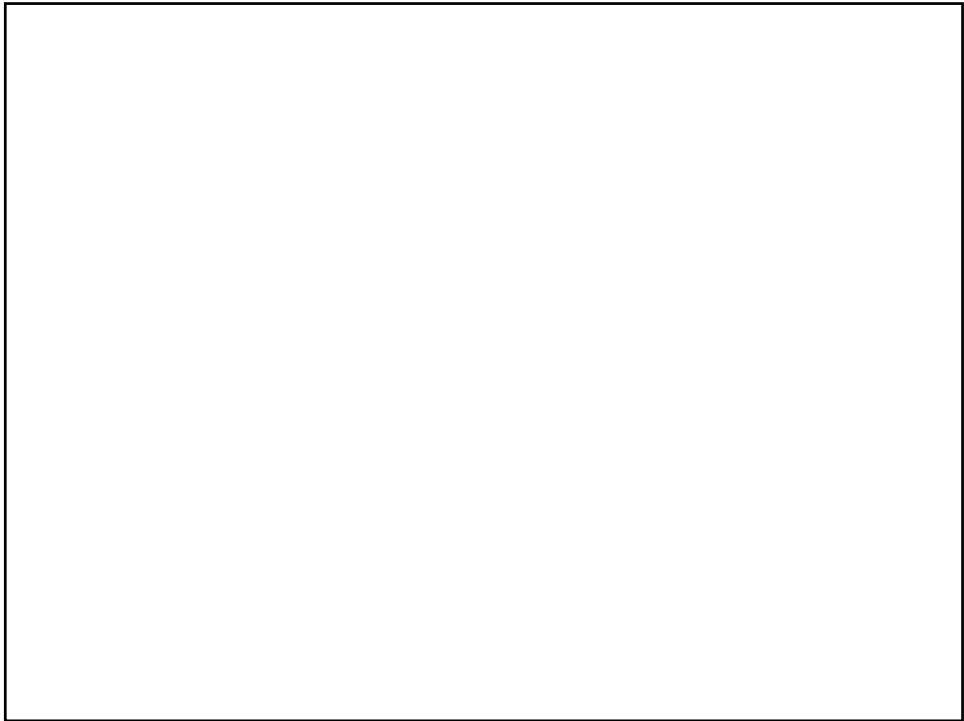
- **Capture seasonal, diurnal, and event-driven fluctuations**
- **Improve load estimates**
- **Quantify uncertainty in load estimates**
- **Provide warnings for water supply and recreation**
- **Improve understanding of hydrology and water quality**
- **More effectively manage resources**
- **Optimize the collection of samples**
- **Reduce sampling and analysis costs**

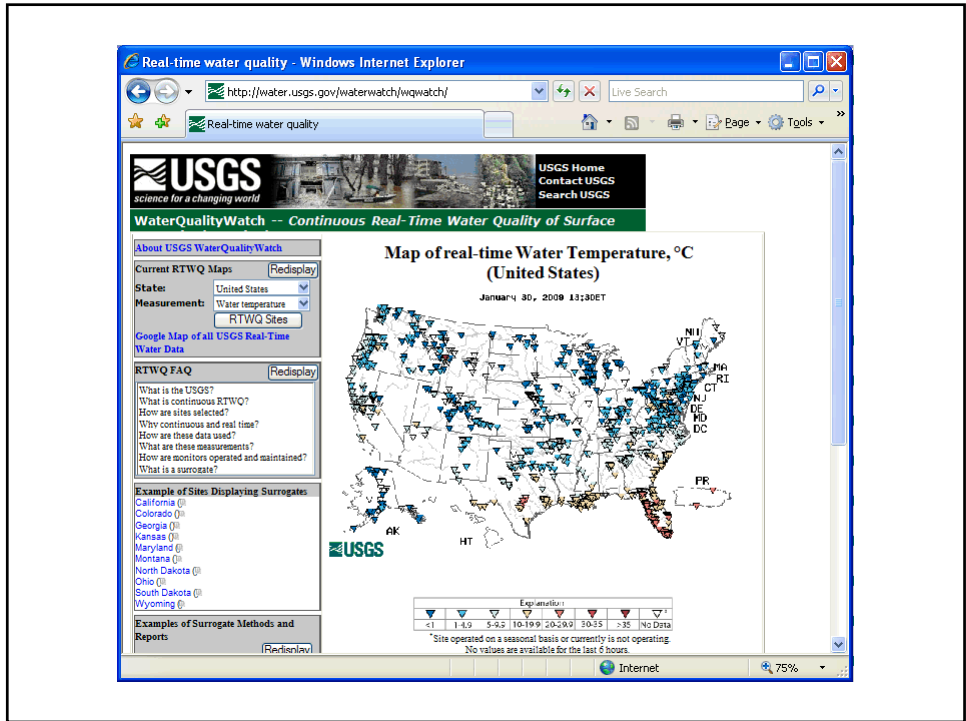
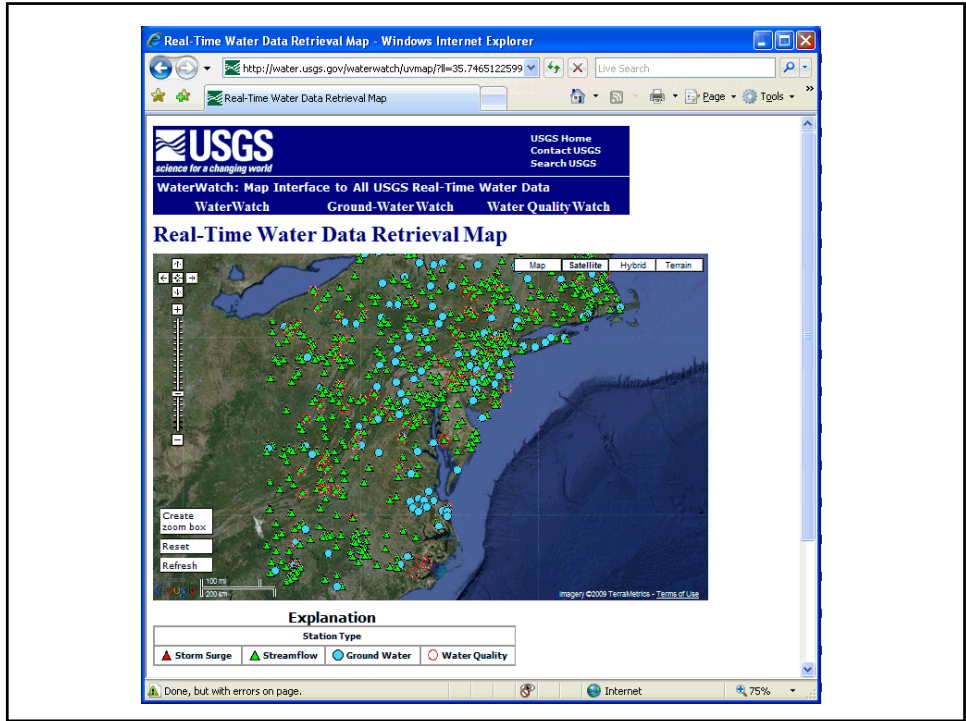


USGS/EPA Data Exchange

Example: Water-quality sites with nitrate data in the Delaware River Basin (HUC0204) from NWIS & STORET

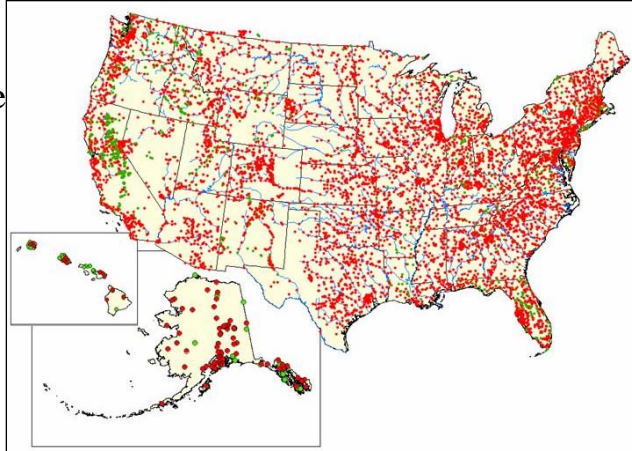






USGS Streamgauge Network

Streamgages
7,400 gages
97 % real-time

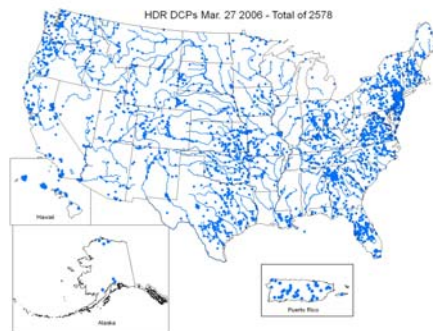


Increasingly Real-time Data

Converting from 4hr to 1hr transmissions



1x per 4 hours



1x per 1 hour

Currently, about > 2000 out of 7000 streamgages transmit hourly.

Networks will continue to build on interagency collaboration

- WaterWatch now available on interagency WaterMonitor.gov!

Insert picture of WaterMonitor.gov homepage here

Monitoring of Water Hazards

- Storm-hardened 120 Gulf-Coast streamgages
- New Wallops Island Backup
- Expanded role in storm-surge monitoring

