

Report of the Status of the National Ground-Water Monitoring Network (Presented to ACWI in July 2011)

- Bob Schreiber, CDM
- Non-Federal Co-Chair
- Bill Cunningham, USGS
 - Federal Co-Chair
- Summary
- R. Copeland – FDEP
 - (August 2011)



National Ground-Water Monitoring Network (NGWMN)

- Office of Management and Budget (OMB)
 - (White House)
- Water Information Coordination Program (WICP)
- Advisory Committee on Water Information (ACWI)
- Sub-Committee on Ground Water (SOGW)
 - Began in 2006
 - National Ground-Water Monitoring Network

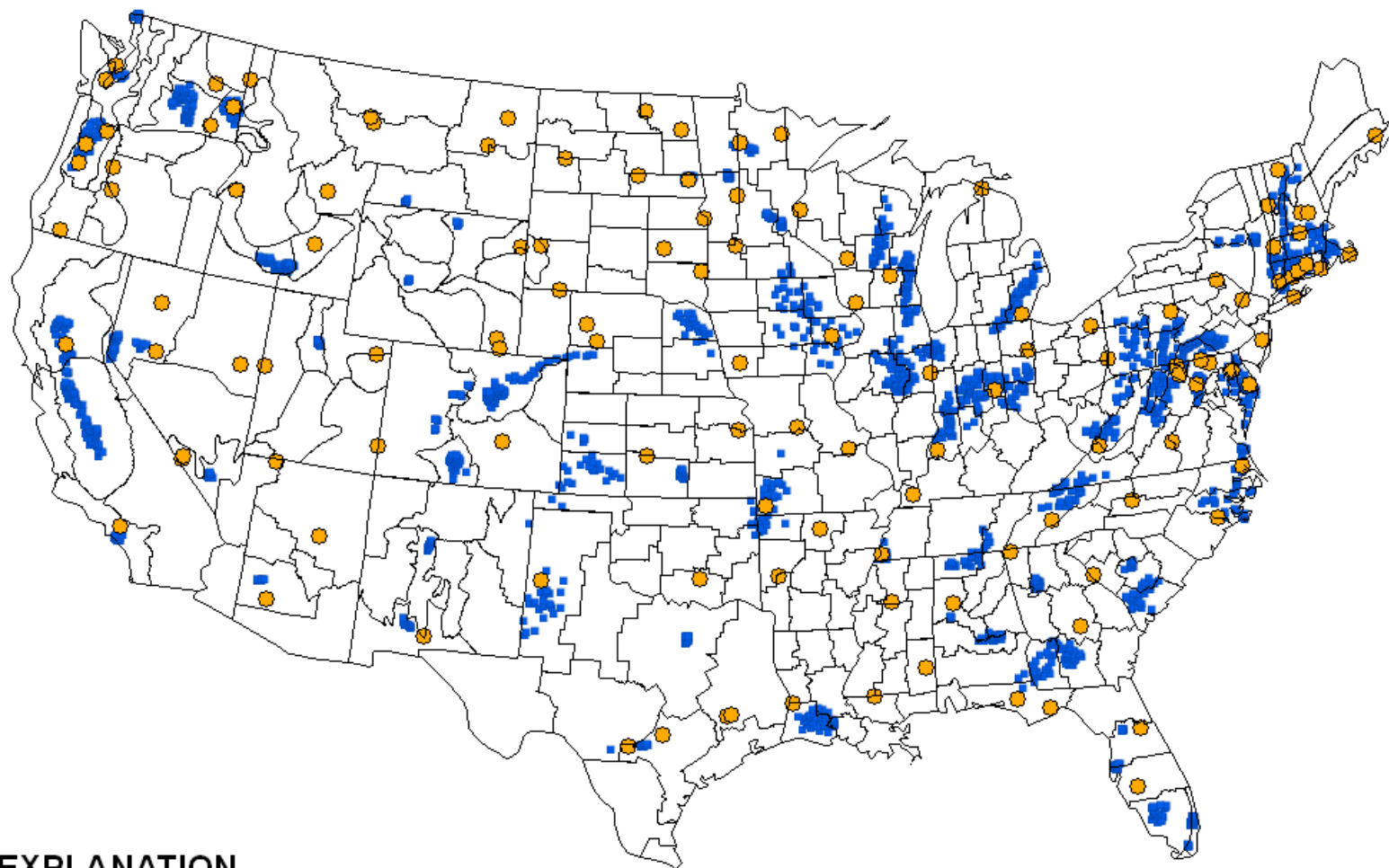
Sub-Committee on GW (SOGW)

- Prepared a framework document for ground-water monitoring and collaboration
 - Framework Document
 - A design document (what, where, why, how, when)
 - Monitor Quantity and Quality
- Assist in assessments of the quantity of ground-water reserves, as constrained by quality
- To provide a status of the Nation's ground-water resource, how it has changed over time (Status and Trends)

Features of NGWMN

- “Network-of-Networks”
 - Incorporates wells in existing federal, regional, state, tribal, and local monitoring programs.
 - Not intended to replace existing regional, state, and local monitoring systems
 - Not intended to address localized issues

Climate Response Network and NAWQA Shallow Monitoring Wells



EXPLANATION

-  NOAA climate divisions
-  CRN network FY07
-  NAWQA shallow GW monitoring sites (lus network)

Regional Monitoring Network

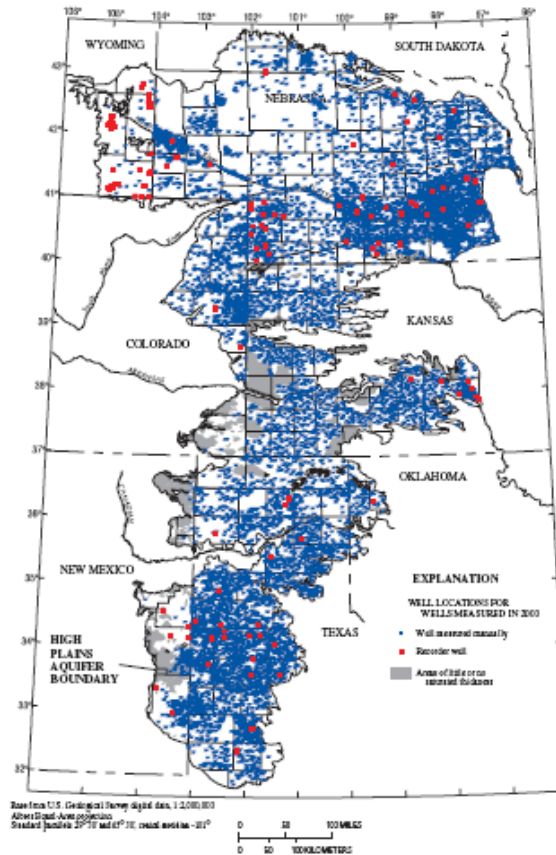
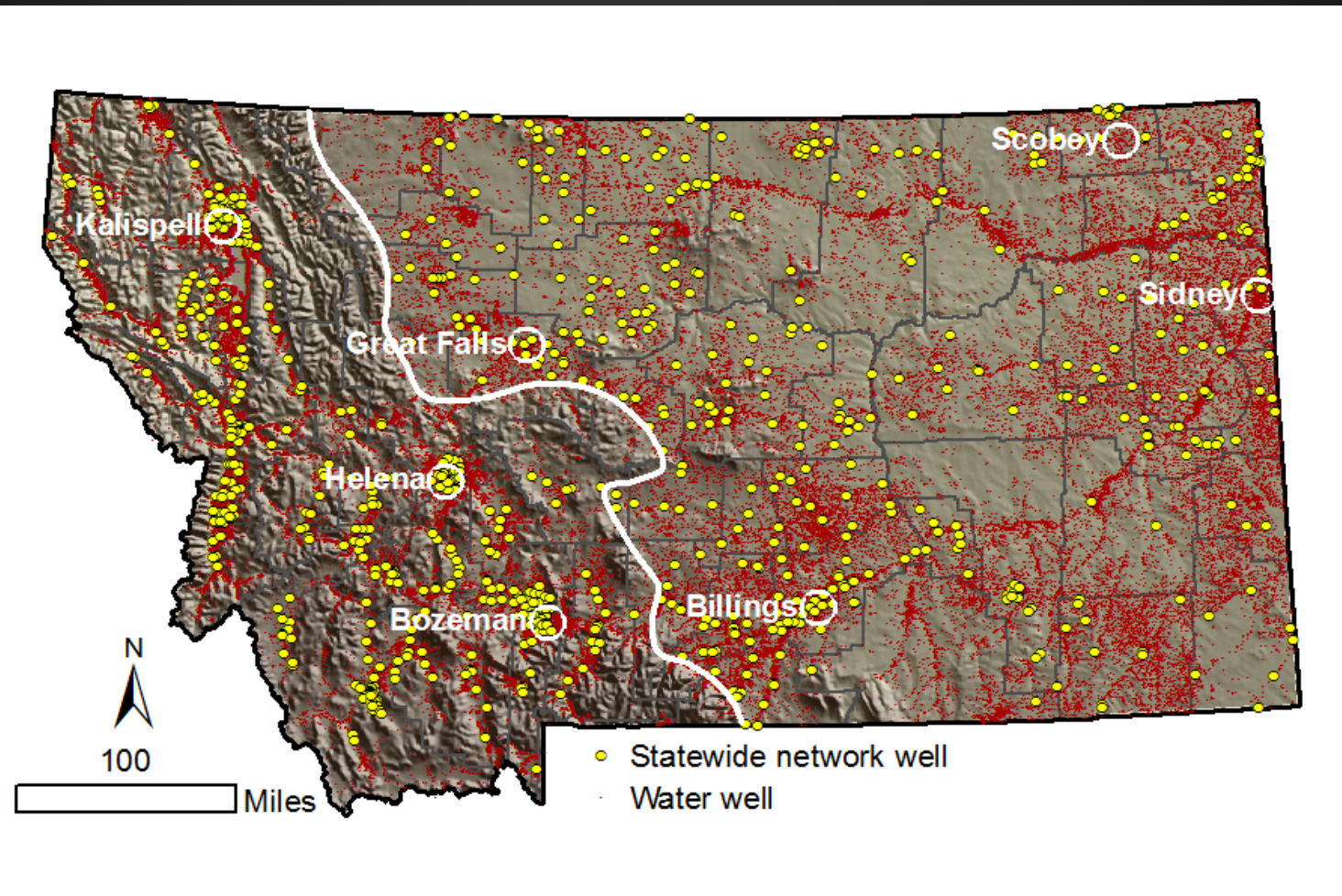


Figure 11. Well locations for wells screened in the High Plains aquifer and measured in the year 2000.

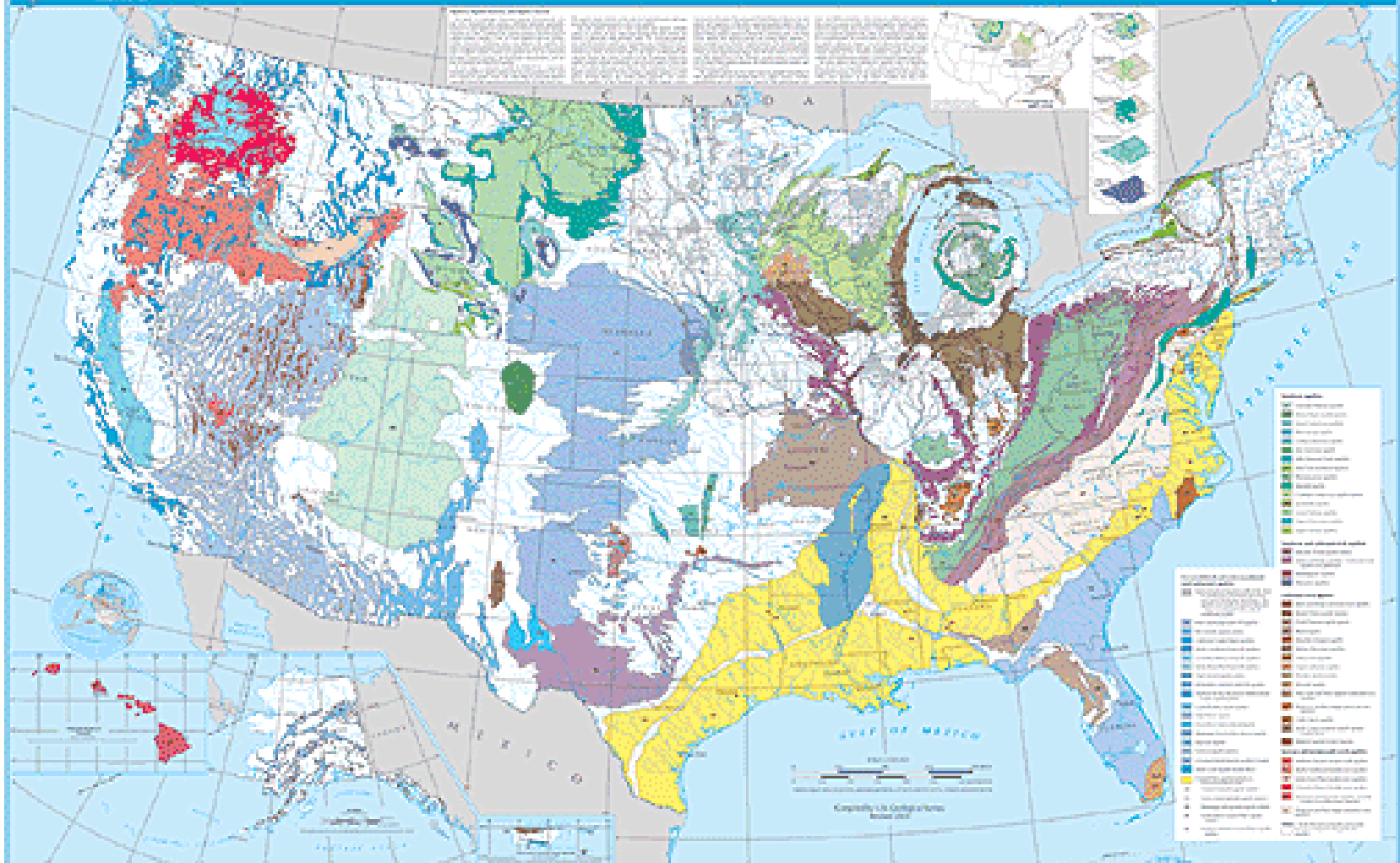
Montana's Monitoring Network



NGWMN

- What is to be monitored?
 - “Principal Aquifers of the US” (USGS)
 - “Significant” aquifers identified in *USGS Ground-Water Atlases*
 - Other “significant” aquifers identified by states, and tribes

PRINCIPAL AQUIFERS

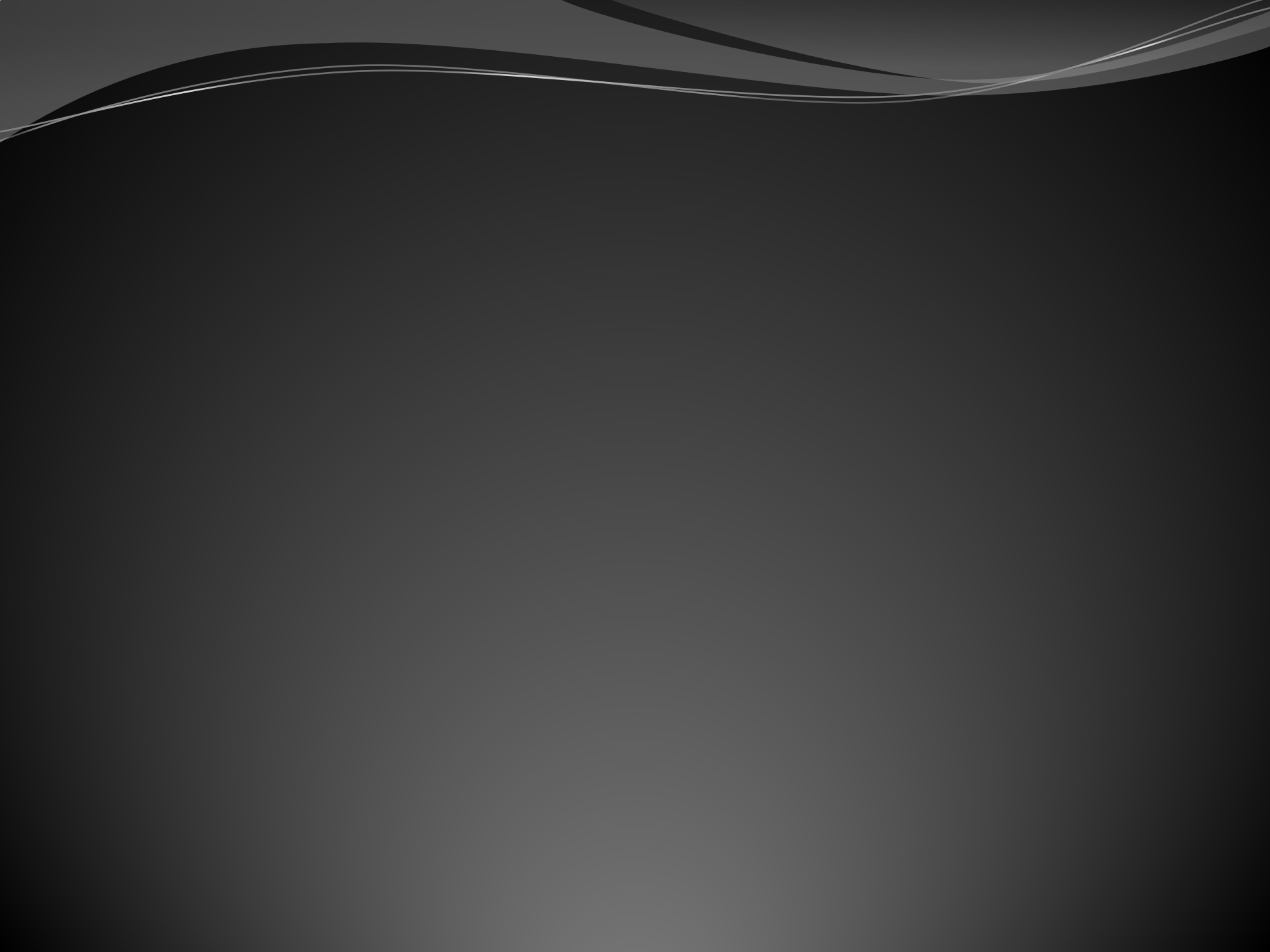


Goals and Objectives

- Provide information on a national to statewide scale
- Define the status and trends for GW
- Identify potential problem areas
- Answer (report on) resource questions of regional or national importance...

Initiate Pilot Projects

- Some States experienced, Some States No Experience
 - Test concepts by working together
- Revise Framework Document if necessary
 - Current Status - Framework Document is being revised
- Framework Document
 - http://acwi.gov/sogw/pubs/tr/sogw_tr1_Framework



Florida Water Resource Monitoring Council

- Proposal for a Salinity Network
 - Mostly wells and springs, but can include surface water sites if necessary
 - A “Network of Existing Networks”

Reasons

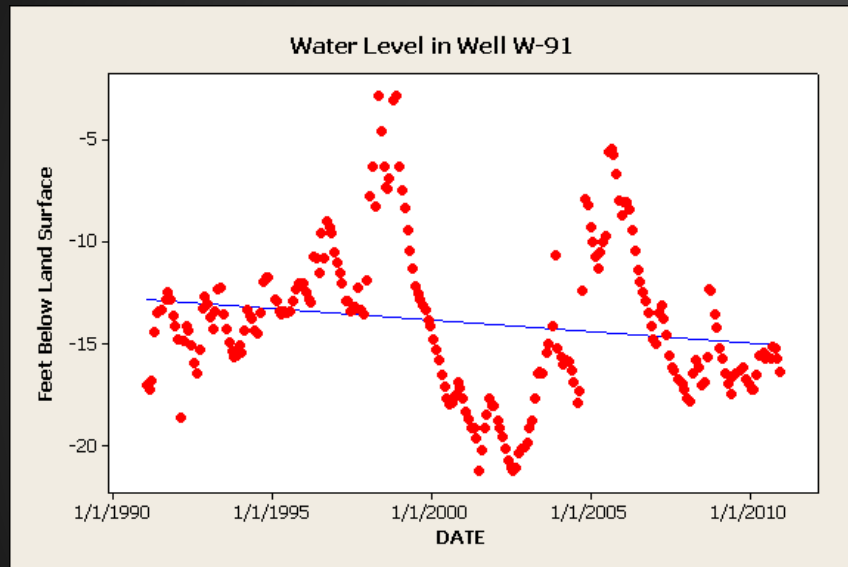
- Williams, L.J., Dausman, A.,D., and Bellino, J.C., 2011,
- **Relation of Aquifer Confinement and Long -Term Groundwater - Level Decline in the Floridan Aquifer System**, Proceedings of the 2011 Georgia Water Resources Conference, April 11-13, University of Ga., Athens, Ga.
- Copeland, R., Doran, N.A., White, A.J., and Upchurch, S.B., 2009, **Regional and Statewide Trends in Florida's Spring and Well Groundwater Quality (1991-2003)**, Florida Geological Survey Bulletin No. 69, Tallahassee, FL, 203 p.

Reasons

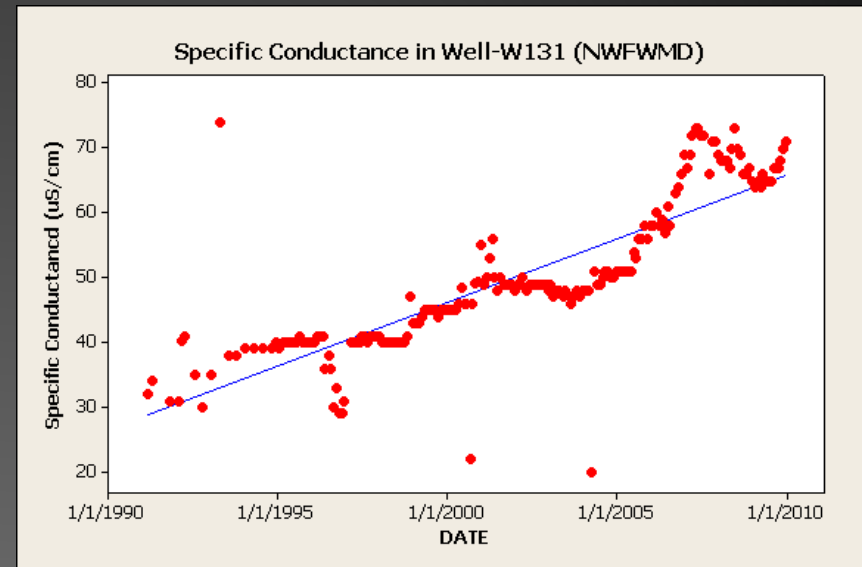
- Since 1998 GW in Florida
 - Levels & spring flows declined
 - Quality degraded
 - e.g. - Na, Cl, SC increased
 - Scale of Problem - Statewide
 - Due to:
 - Decreases in rainfall and recharge
 - Increases in GW abstraction?

Examples of GW Degradation

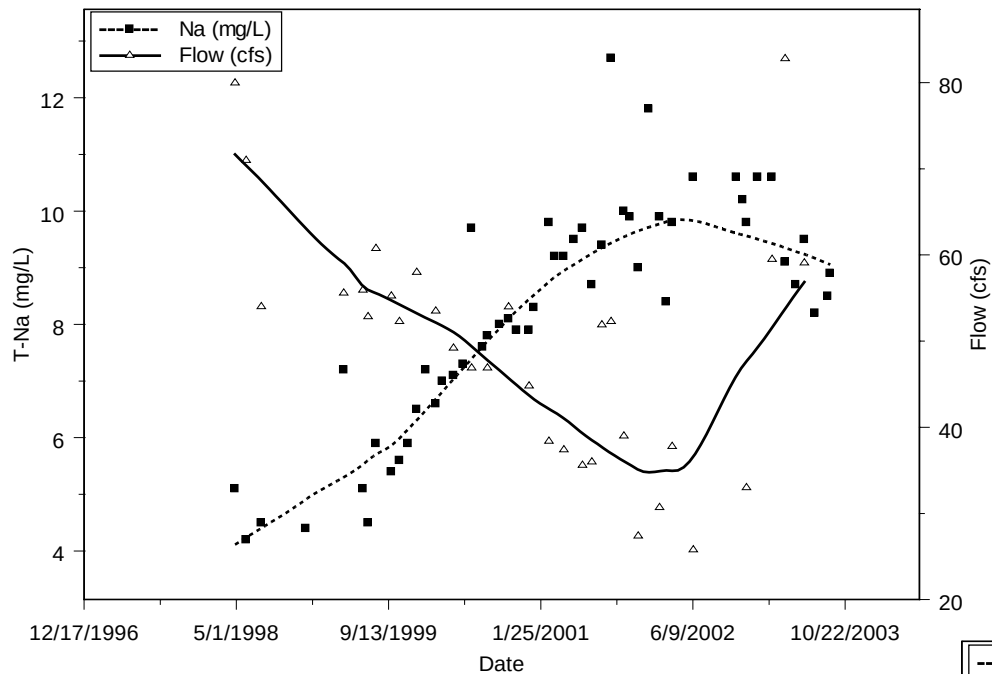
Water Level



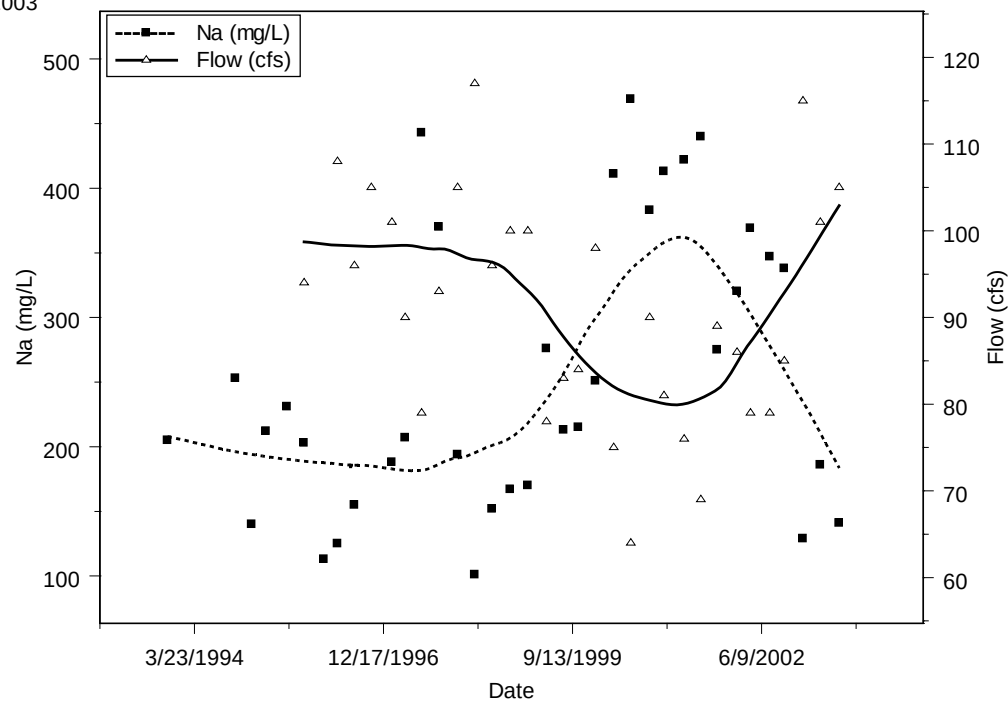
Specific Conductance



Poe Spring Time Sequence A (1991-2003)



Homosassa No. 3 Time Sequence A (1991-2003)



Goals and Objectives of Sal. Net.

- To get GW programs to participate in FWRMC activities and work towards a common goal
- To provides GW data and information on a statewide to local scale
- Define status and trends for Salinity and GW Levels
- Integrate GW results with other water resource reports
- Other issues as needed

Salinity Network

- Wells and Springs
- Existing Trend Sampling Locations
- No new stations required
- Can include surface water stations as needed

Management and Reporting

- Management - Through FWRMC
- Reporting
 - Cooperative effort of all participating entities
 - Regional & local scales – Coordinated by FWRC/Mon. Entities
 - Statewide Efforts – Coordinated by FWRMC/FDEP

Analytes / Indicators

- Field
 - WL, Spring Flow, pH, SC, Temp
- Laboratory
 - Na, Cl, TDS, SO₄, Ca, Mg
- Additional Data (as needed)
 - Rainfall (SE Reg. Climate Center)
 - Air Temp (SE Reg. Climate Center)
 - GW withdrawal (pumpage) data (where available)
 - Evaporation and ET data (where available)

Justification and Action Items

- FS 373.026(5): (paraphrased) Study those areas of the FL where saltwater intrusion is a threat to freshwater and report ...to the WMDs, counties, and the public.
- AI 2: Improve coordinating among monitoring entities
 - AI2-4: Increase integration of Freshwater and Coastal Monitoring
 - AI 2-5: Create/Sustain collaboration among monitoring entities

Questions ?

- If Interested
 - Let your FWRMC representative Know
- or contact:
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 - rick.copeland@dep.state.fl.us