



Status of Salinity Network Workgroup

June 14, 2012

[Rick Copeland (FDEP)]

Salinity Network (SalNet)

- The SalNet Workgroup, or the SNW
- Under the umbrella of the Florida Water Resource Monitoring Council (FWRMC)
- Audience
 - General Public
 - Policy Makers
 - Scientists
- Network of Existing Networks
- “Success is in our ability to cooperate”

SNW

- Predominantly GW
- But committed to Working Closely with Surface-Water Monitoring Programs
- Considers GW/SW interactions if applicable

Participating Organizations

- NFWFMD
- SRWMD
- SJRWMD
- SWFWMD
- SFWMD
- USGS
- FL DACS
- Ala Co
- Palm Beach Co
- LAKEWATCH
- FDEP – WMS
- FDEP – GWP
- FDEP – FGS
- US Army Corp
- Miami-Dade
- M-D Sewer/H2O
- Escambia Co

Current On-Going Action Items

1. Compile GW Site Info for the Catalog
2. Develop a Framework Document for the SalNet
3. Develop Indices for **GWL** and GWQ

1. GW Monitoring Catalog Sites

- Ground-Water data
 - GWL (All and by Aq. System)
 - GWQ (All and by Aq. System)
 - Later break down by aquifers?
- **Currently on hold**, until we receive further instructions from FWRMC

2. Framework Document (EPA – 10 Steps)

- **Program Strategy**
- **Monitoring Objectives**
- Monitoring Design
- Indicators
- Quality Assurance
- Data Management
- Data Analysis and Assessment
- Reporting
- Programmatic Evaluation
- General Support and Infrastructure Planning

Mission (Abridged)

- The mission...is to assist in the management, protection, preservation, and restoration of Florida's ground-water and surface-water resources, facilitated by the Council and the monitoring entities of the state...
- Emphasis is on the monitoring of ground-water levels, saline analytes, and surface water and spring flow, as they pertain to the encroachment of saline water into Florida's freshwater resources.

Objectives (Abridged)

- Monitor the quantity and quality of Florida's fresh water resources as related to saltwater encroachment.
- Encourage GW & SW monitoring programs to participate in Council activities
- Assist in developing methods for the easy transfer of relevant data as necessary.
- Encourage the timely reporting of the status and trends for saline analytes, GW levels, and surface water and spring flows.
- Develop and use indices and ...to evaluate the status and trends of saline encroachment.

Current Priorities

- Develop a GWL Index (High)
- Develop a GW Quality Index (High, on hold until August SNW meeting)
- Use Volunteer data if applicable (Moderate)
- Management/Transfer of Pertinent GW Data as needed (High)

May 2012 SNW Meeting

- To report on the status and trends regarding saltwater encroachment
- However, suggested **remedies** are **beyond the scope of the SNW**

May 2012

- **Co-Chair (Dave DeWitt – SWFWMD)**
- SNW encourages the use of wells with long-term Period of Records (PORs), but not restrict use to wells with long-term PORs

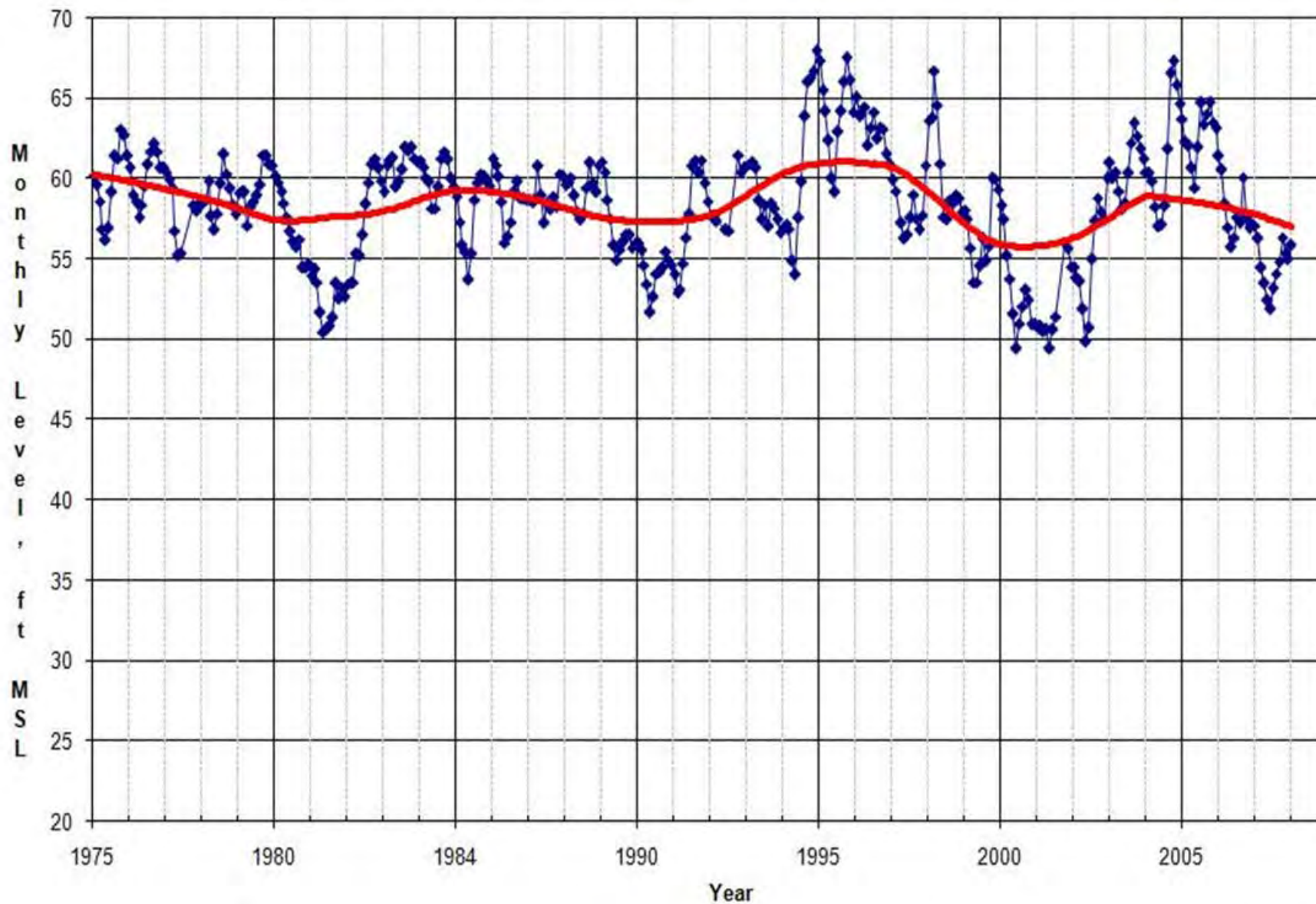
Discussed Use of Volunteer Monitoring Data

- Public buy-in
- Public recognition of GWL and salinity issues
- Increase data coverage (potential \$\$ savings)
- LAKEWATCH to commence an AquiferWatch pilot study in September
- Volunteers must be trained
- Volunteer data must be validated with proper QA and be comparable to other organizations' data

GW Level Index

- Index is useful for conveying information to the public regarding GW levels.
- The chosen GWL index is a Percentile Rank Index (PRI)
- (3 WMDs and USGS already use variations of it)

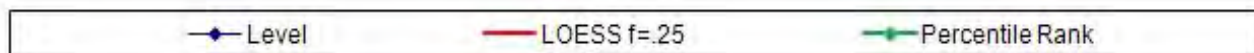
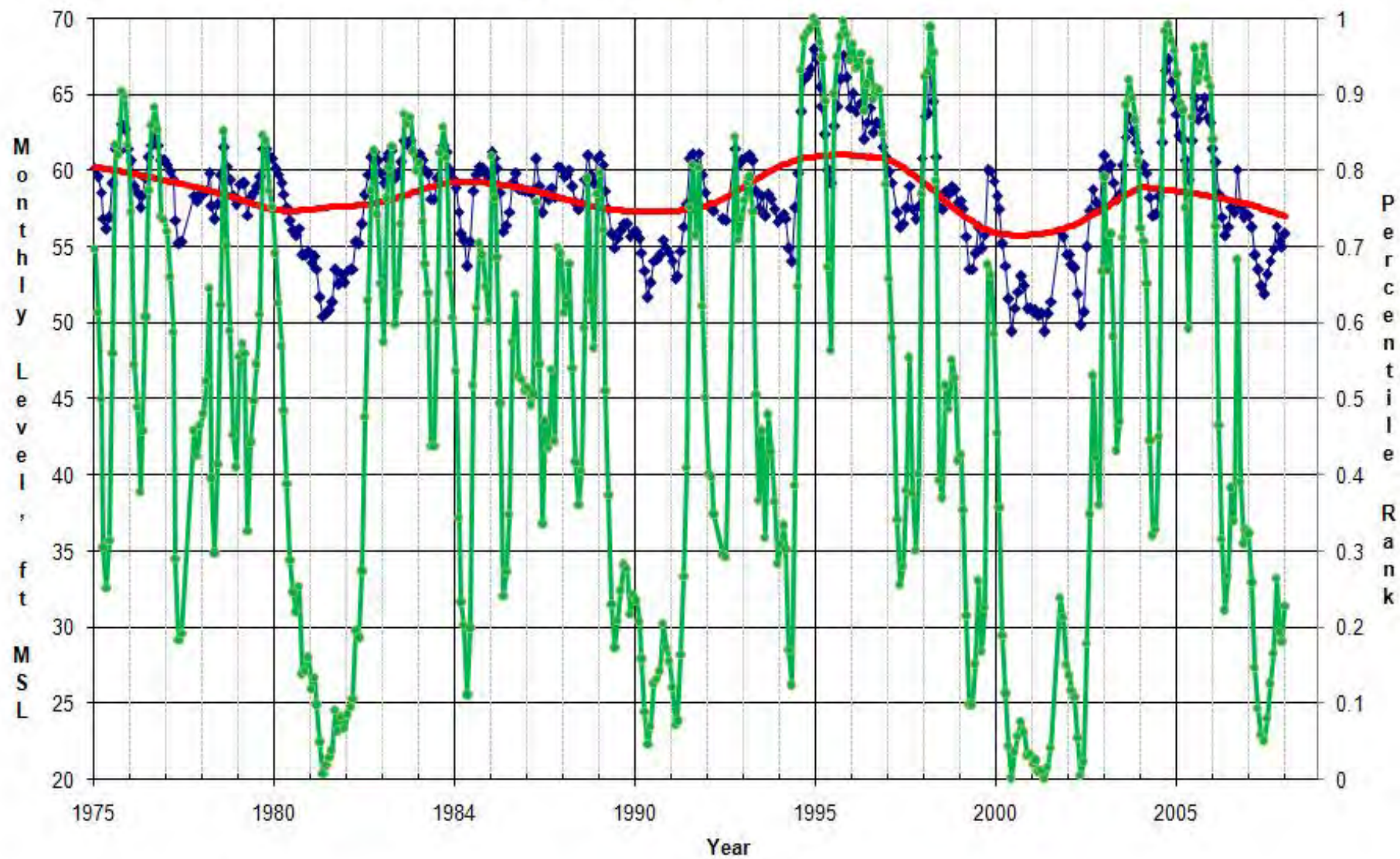
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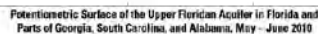


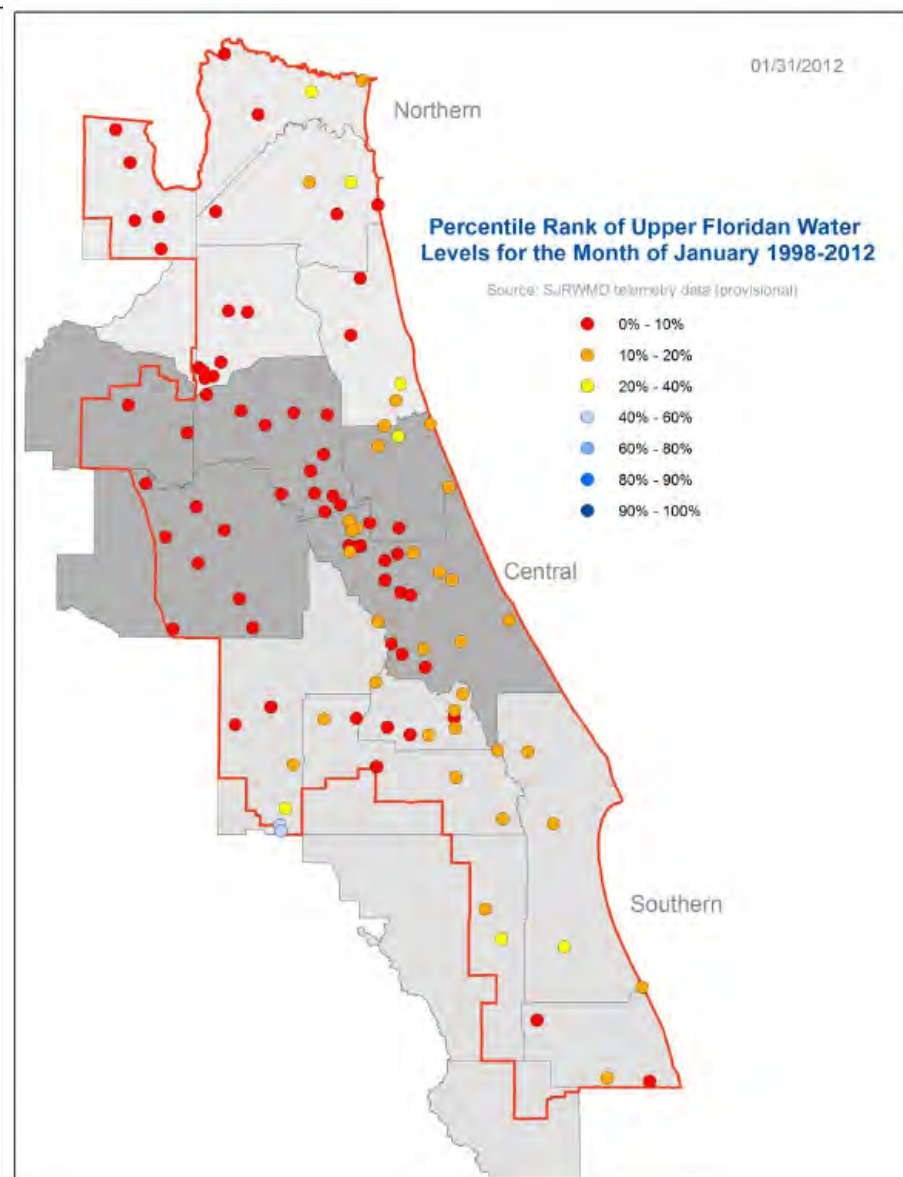
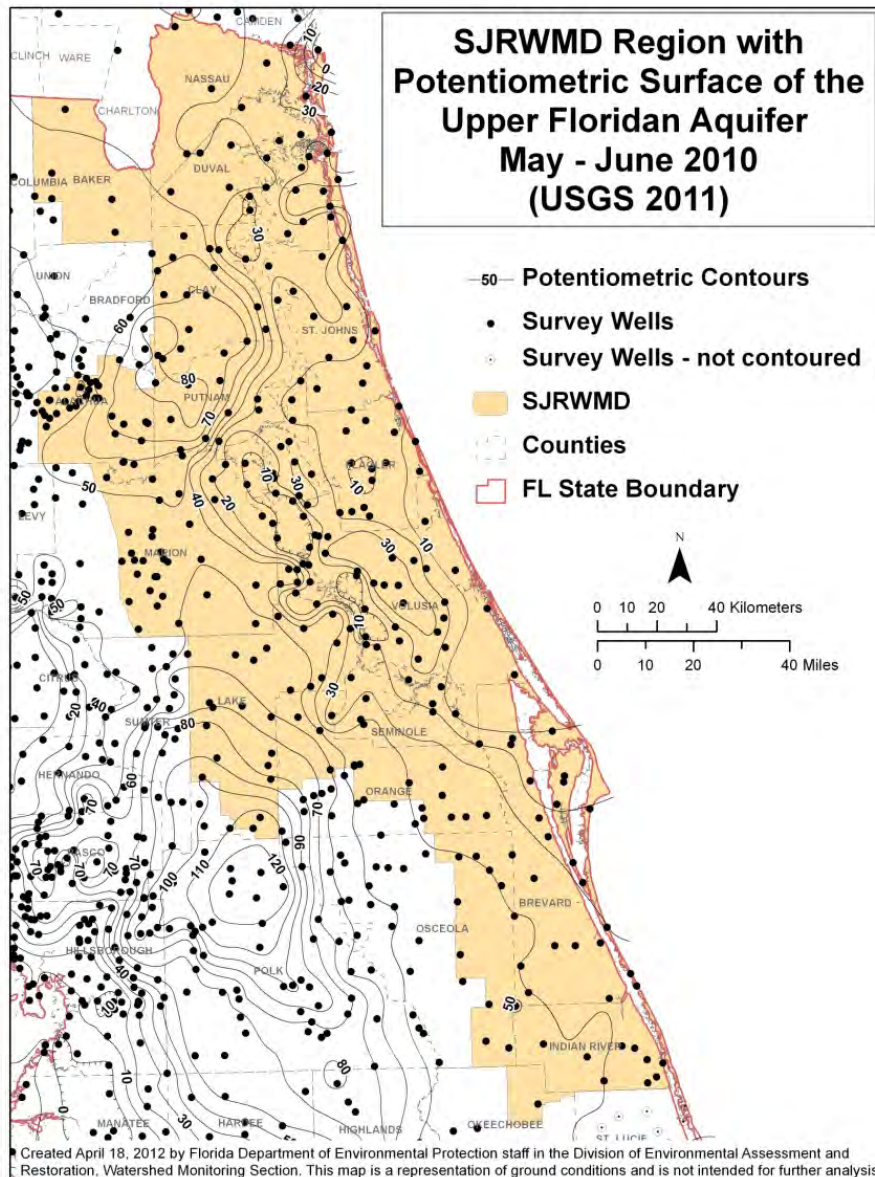
—◆— Level

— LOESS f=.25

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Selected PRI Issues

- The PRIs represent the status; they are not trends. Readers need to be aware.
- Because of regional variations in hydrogeology, the value of any one station on a statewide map may be questionable.

Selected PRI Issues

- Some entities use their own PRI methods. If a statewide PRI map is generated, it may be slightly different from the analogous PRI map produced by a WMD
- For a statewide map, verbiage must make this clear to its readers.

Selected PRI Issues

- Regional and statewide maps will need to be hydrostratigraphically consistent among WMDs or other boundaries.
- All caveats must be adequately described.

Selected PRI Issues

- How will the GW level index (the PRI) be related back to salinity?
- GW chemistry (saline indicators) are to be addressed at the next SNW meeting in August.

Selected PRI Issues (Variable Scales)

- 1. Same PORs needed for wells on map
- 2. Well clusters may confuse the reader
- 3. A common PRI method needs to be applied for statewide maps
- 4. Lowest frequency is quarterly; highest is continuous

Pilot Study

- “...drought began in October 2010.... the drought is far from over — and the conditions that caused it aren’t going away anytime soon. Billions have been lost and it ain’t over yet”
(From NPR affiliate in Texas)
- Drought is a factor that initiated SNW
- FL in, or in near, drought conditions since 1998
- SNW can assist policy makers by supplying unbiased data, information, and maps

U.S. Drought Monitor

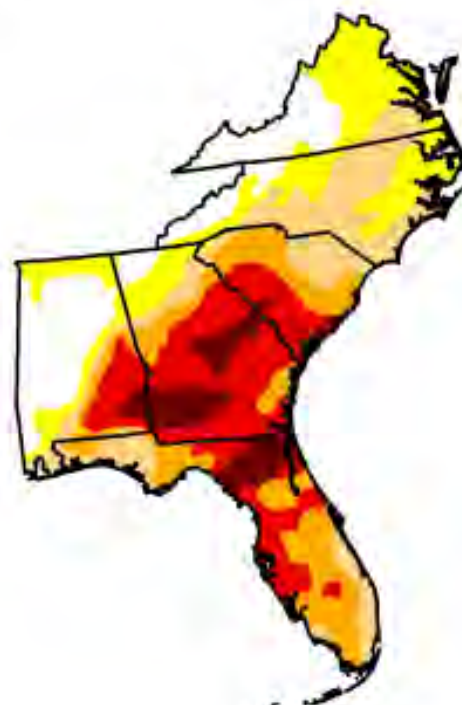
Southeast

April 17, 2012
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	17.04	82.96	63.56	43.54	27.65	7.14
Last Week (04/10/2012 map)	17.84	82.16	63.41	39.97	25.35	5.29
3 Months Ago (01/17/2012 map)	28.63	71.37	52.85	33.73	23.65	1.50
Start of Calendar Year (12/27/2011 map)	40.38	59.62	43.05	28.62	18.71	0.00
Start of Water Year (09/27/2011 map)	42.24	57.76	41.82	31.77	23.48	0.00
One Year Ago (04/12/2011 map)	30.65	69.35	48.75	15.15	4.60	0.00

Intensity:



The Drought Monitor focuses on broad-scale conditions.
Local conditions may vary. See accompanying text summary
for forecast statements.

<http://droughtmonitor.unl.edu>



Released Thursday, April 19, 2012

Anthony Artusa, Climate Prediction Center/NCEP/NWS/NOAA

Pilot Study

- Generate a draft statewide PRI map for the Upper FL aquifer (UFA) for May/June 2010
- Work out issues
- For now, only deal with statewide PRI map
- In **future** possibly periodically produces side-by-side pot map and PR map

Pilot Study

- We need a consistent POR that all included wells (e.g. 1998-2011, or 1992-2011)
 - Min # of WL measurements needed for POR
 - We need to determine a subset of wells to use (same POR)
 - POR issue to be worked out by August

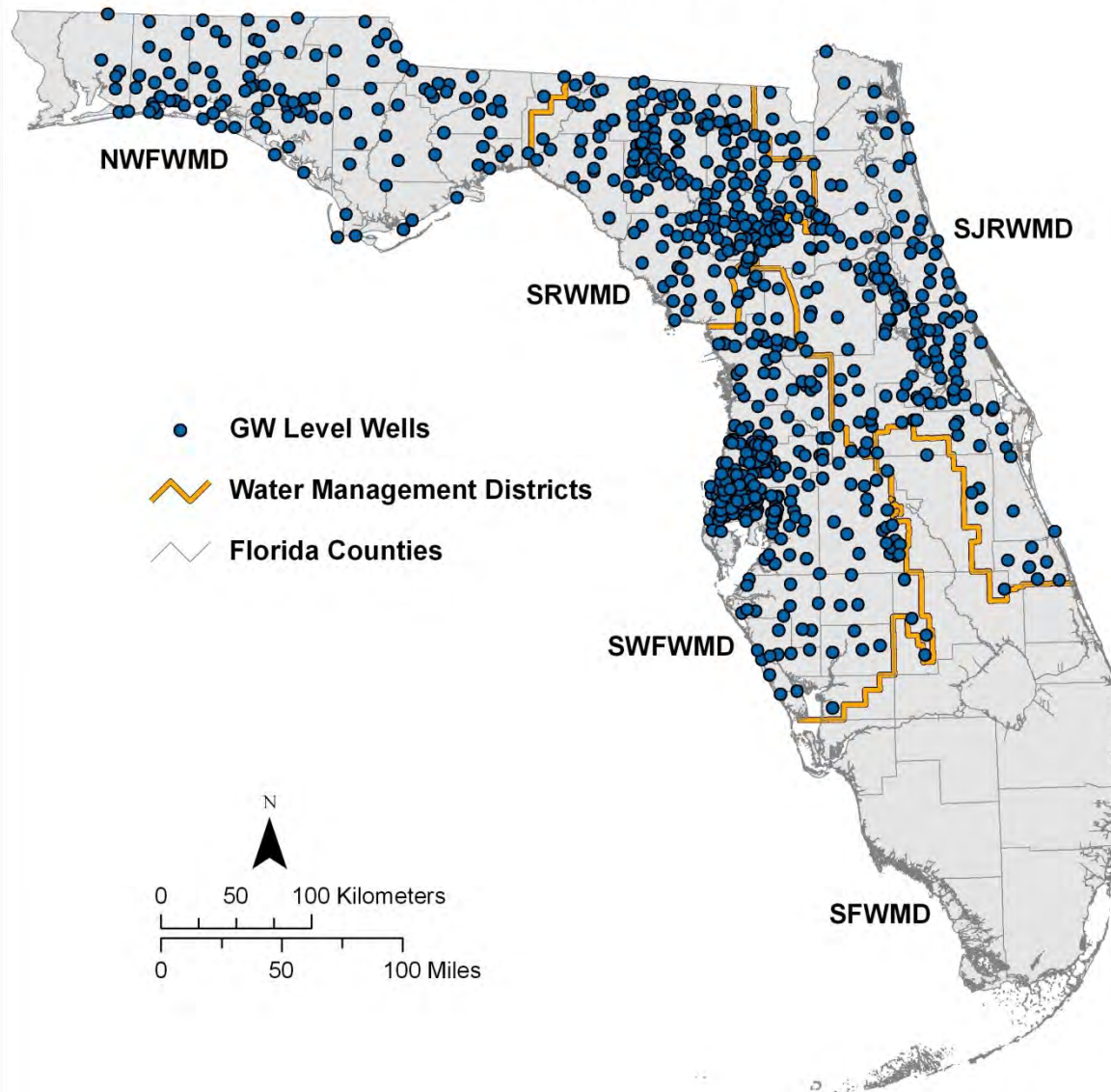
Preliminary Number of Wells - UFA

POR: 1998-2011

- NFWWMD (156)
- SRWM D (189)
- SJRWMD (159)
- SWFWMD (303)
- SFWMD (0)
- USGS (?)
- DACS - (?)
- Ala Co - (45)
- LAKEWATCH (0)
- FDEP -WMS (49)
- FDEP - GWP (0)
- FDEP - FGS (0)
- US Army Corp (?)
- Miami-Dade (0)
- M-D Sew/H2O (0)
- Escambia Co (0)

Total $\approx$ 901

STATEWIDE - UPPER FLORIDAN AQUIFER GROUNDWATER LEVEL REAL PERIOD OF RECORD: 1998 - 2011



Created May 30, 2012 by Florida Department of Environmental Protection staff in the Division of Environmental Assessment and Restoration, Watershed Monitoring Section. This map is a representation of ground conditions and is not intended for further analysis.

Preliminary Number of Wells - UFA

POR: 1992-2011

- NFWWMD (146)
- SRWM D (181)
- SJRWMD (120)
- SWFWMD (227)
- SFWMD (0)
- USGS (?)
- DACS - (?)
- Ala Co - (0)
- LAKEWATCH (0)
- FDEP -WMS (49)
- FDEP - GWP (0)
- FDEP - FGS (0)
- US Army Corp (?)
- Miami-Dade (0)
- M-D Sew/H2O (0)
- Escambia Co (0)

Total $\approx$ 723

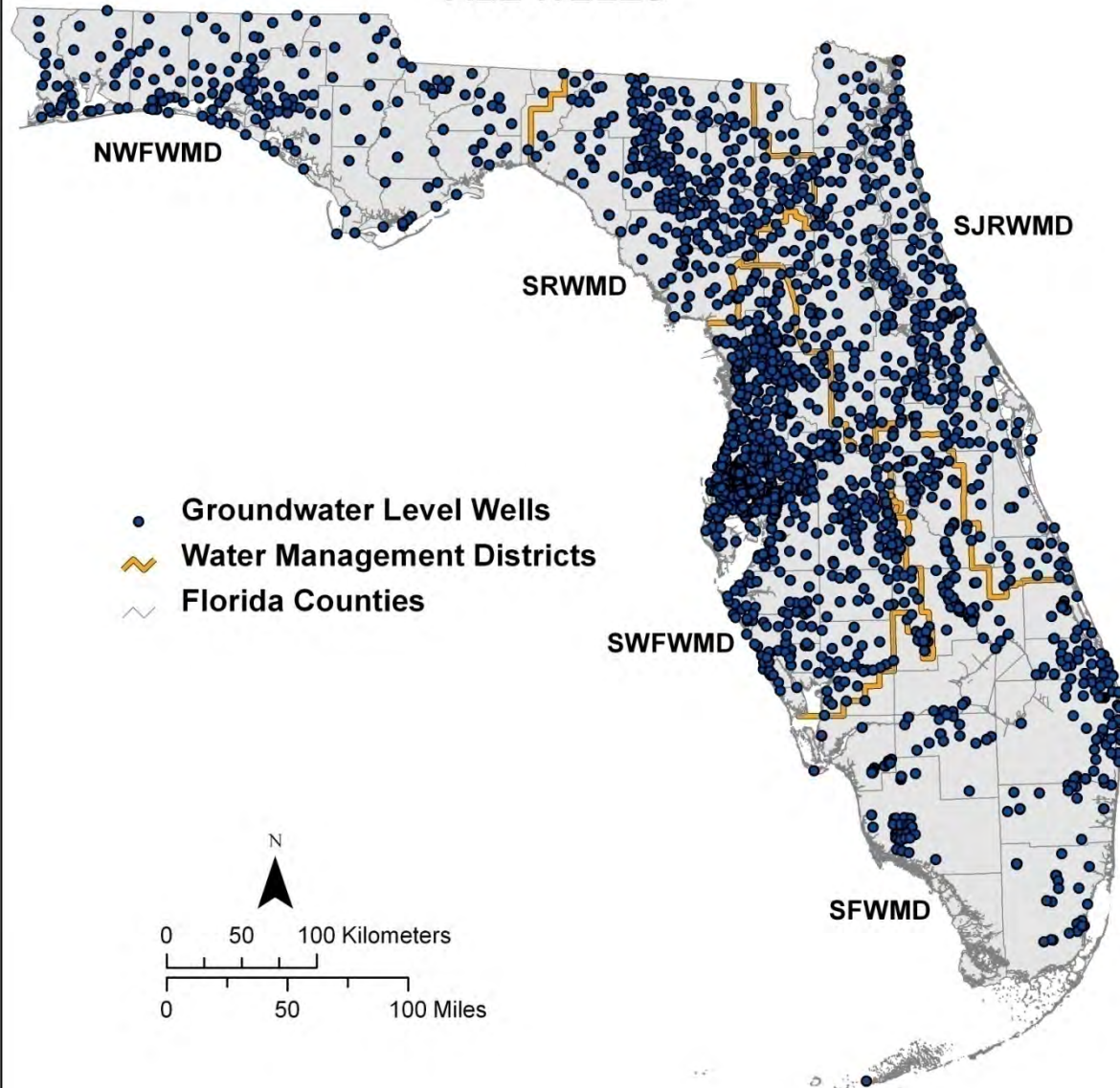


Pilot Study

Once Draft Map is Complete

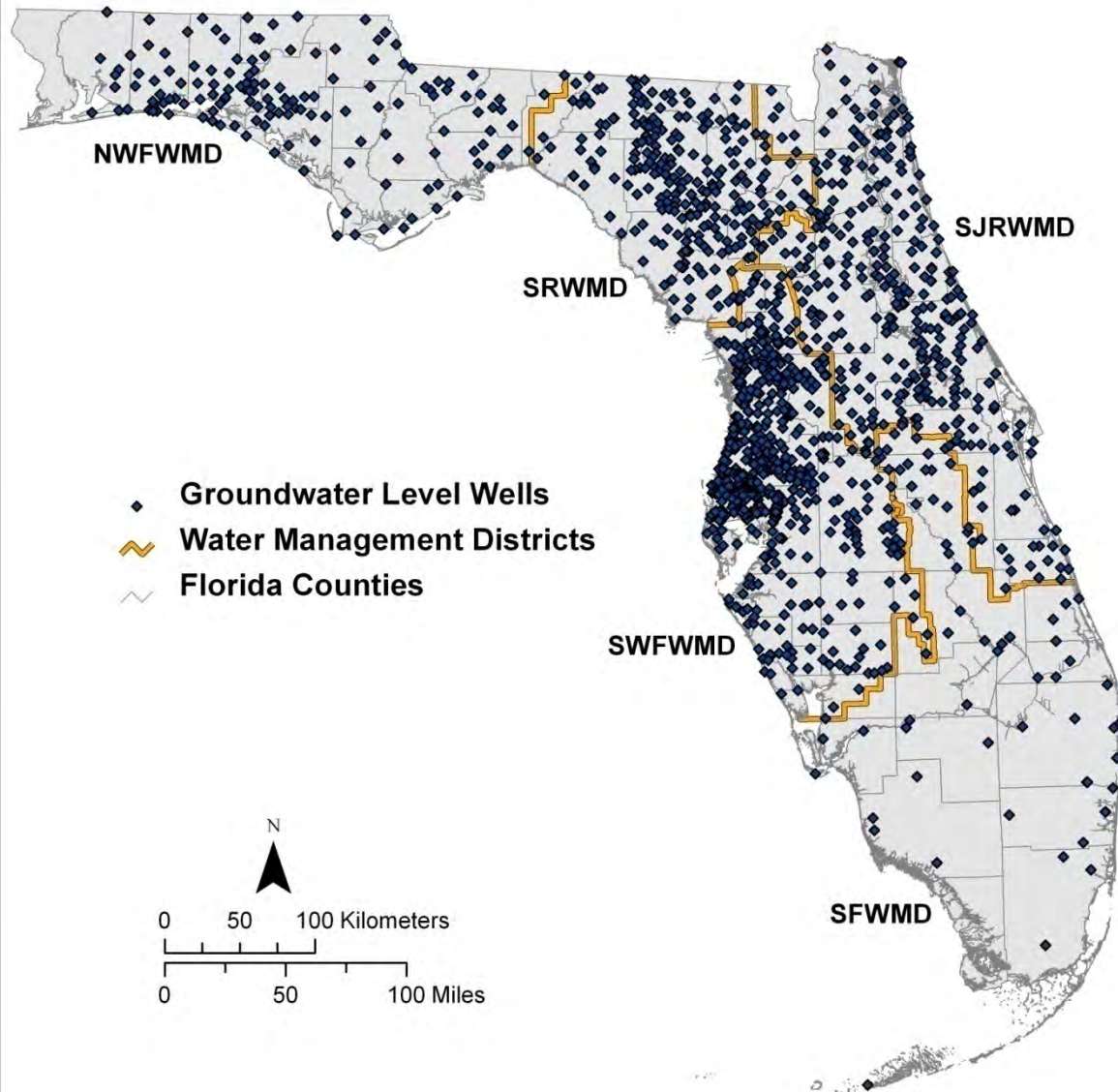
- SNW review and comment on pros/cons
- For WMDs currently using PR maps
 - Compare Draft Statewide map to district maps for the same time period
- Work out “kinks”

GROUNDWATER LEVEL ALL WELLS



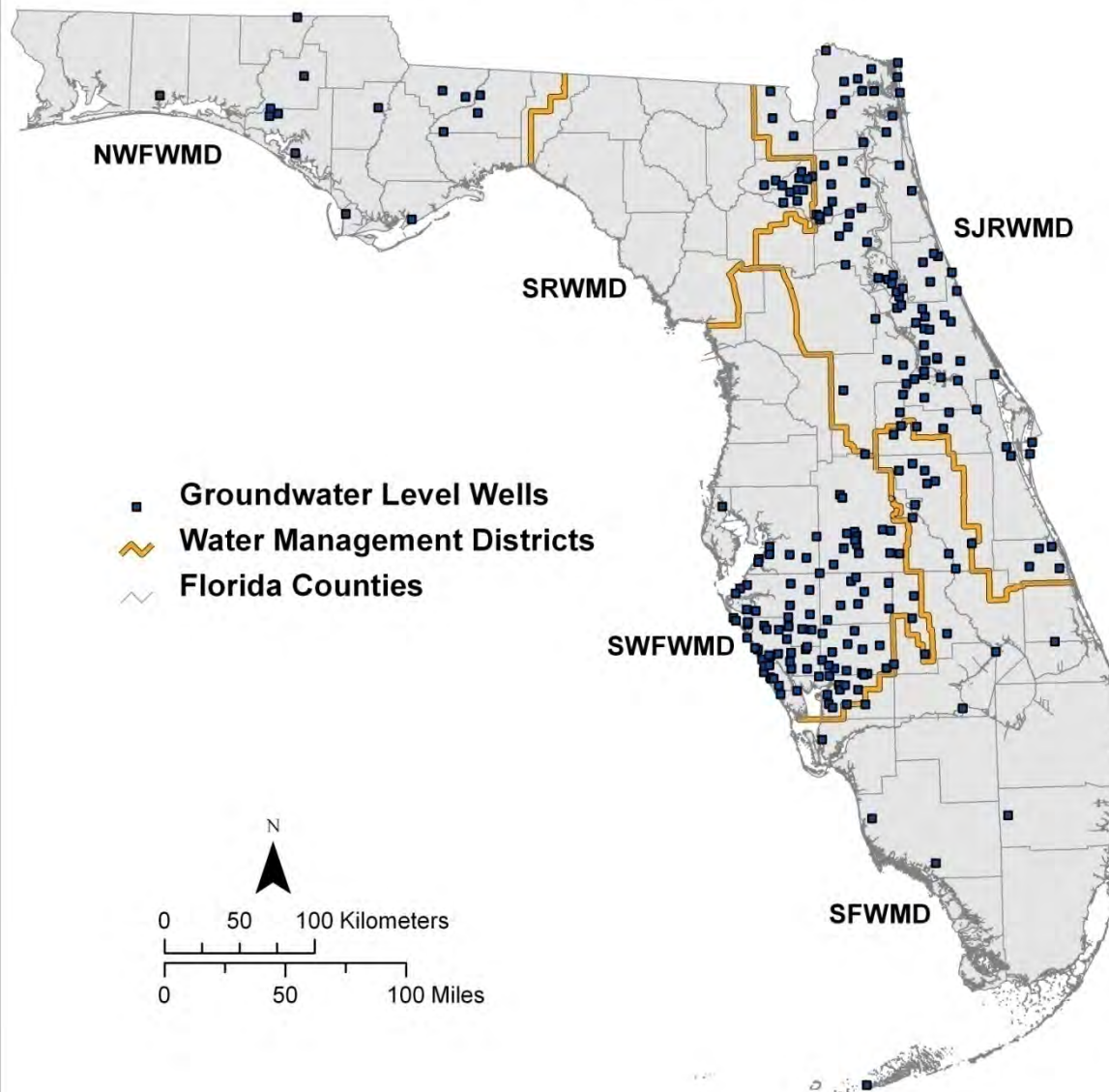
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GROUNDWATER LEVEL FLORIDAN AQUIFER SYSTEM



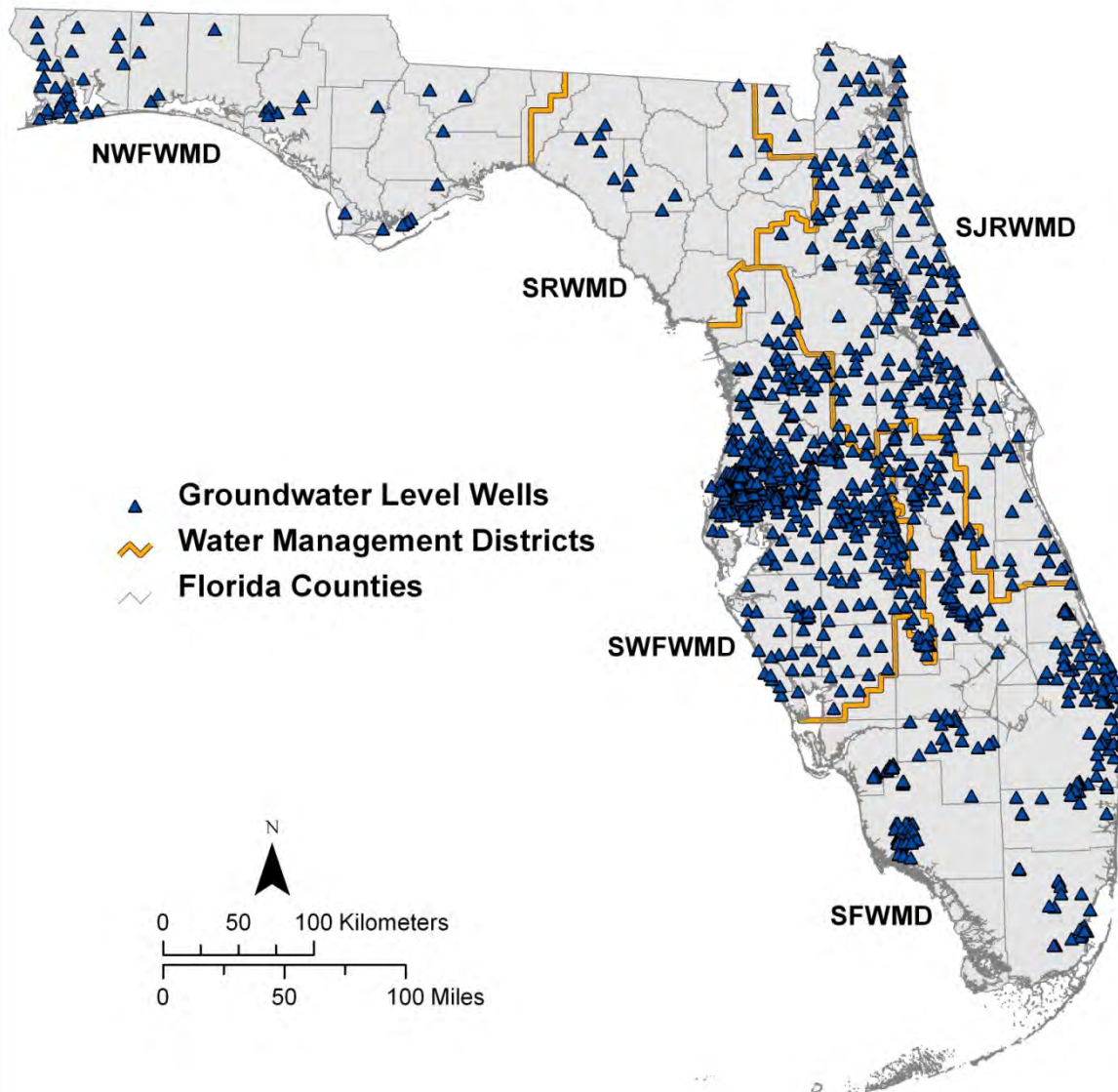
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GROUNDWATER LEVEL INTERMEDIATE AQUIFER SYSTEM



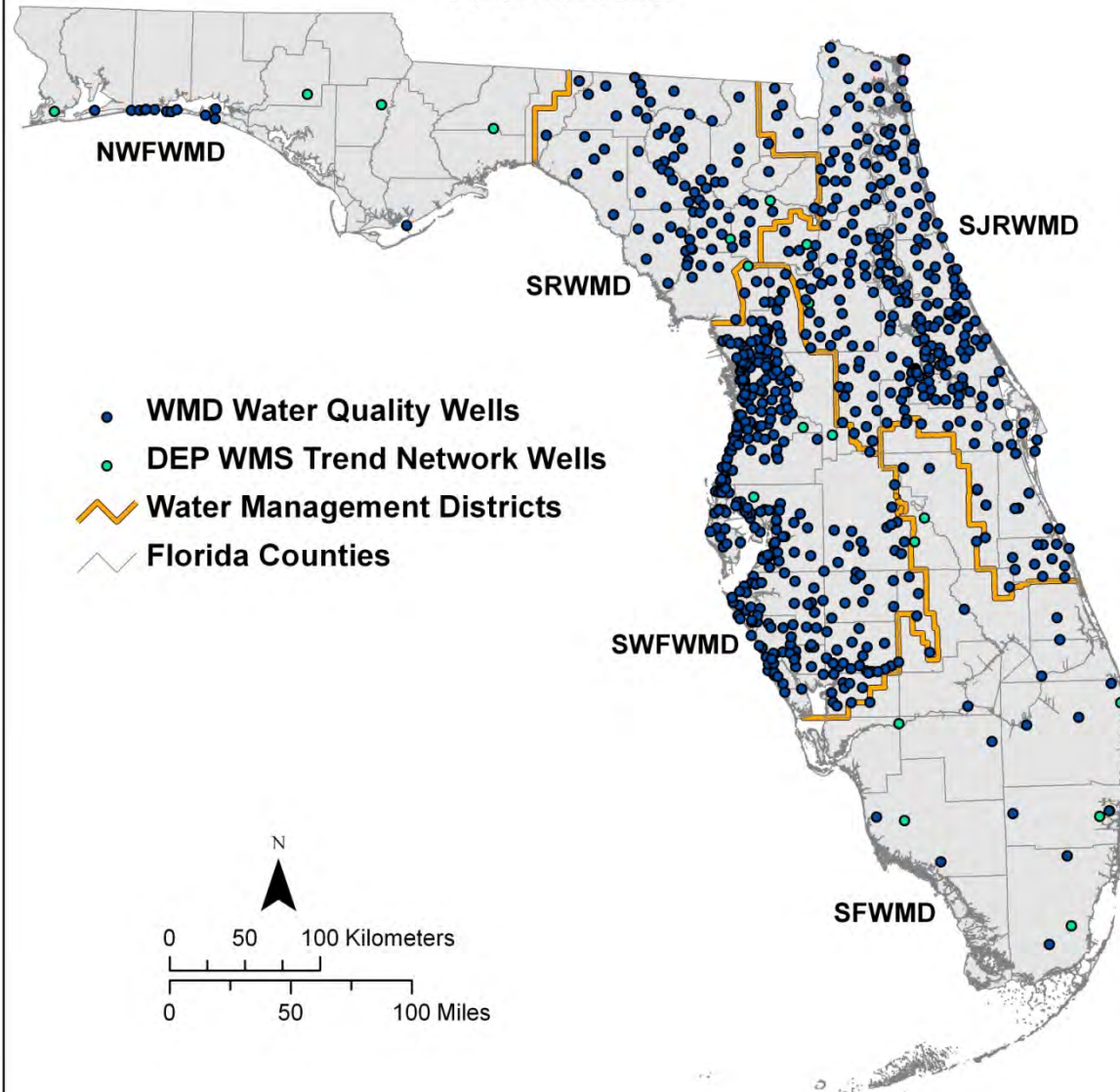
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GROUNDWATER LEVEL SURFICIAL AQUIFER SYSTEM



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WATER QUALITY ALL WELLS



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Closing Remarks

- SNW Wants to be Product Driven
- Network of Existing Networks
- “Success is in our ability to cooperate”
- I want to thank all SNW participants as for giving their time to SNW activities,
- I want to thank the Council for allowing me to relay the progress of the SNW
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