



Salinity Network Workgroup Webinar/Meeting

Salinity Network - A Network of Networks

(Wednesday, November 4, 2015)

Chair: Rick Copeland (DEP)

Agenda

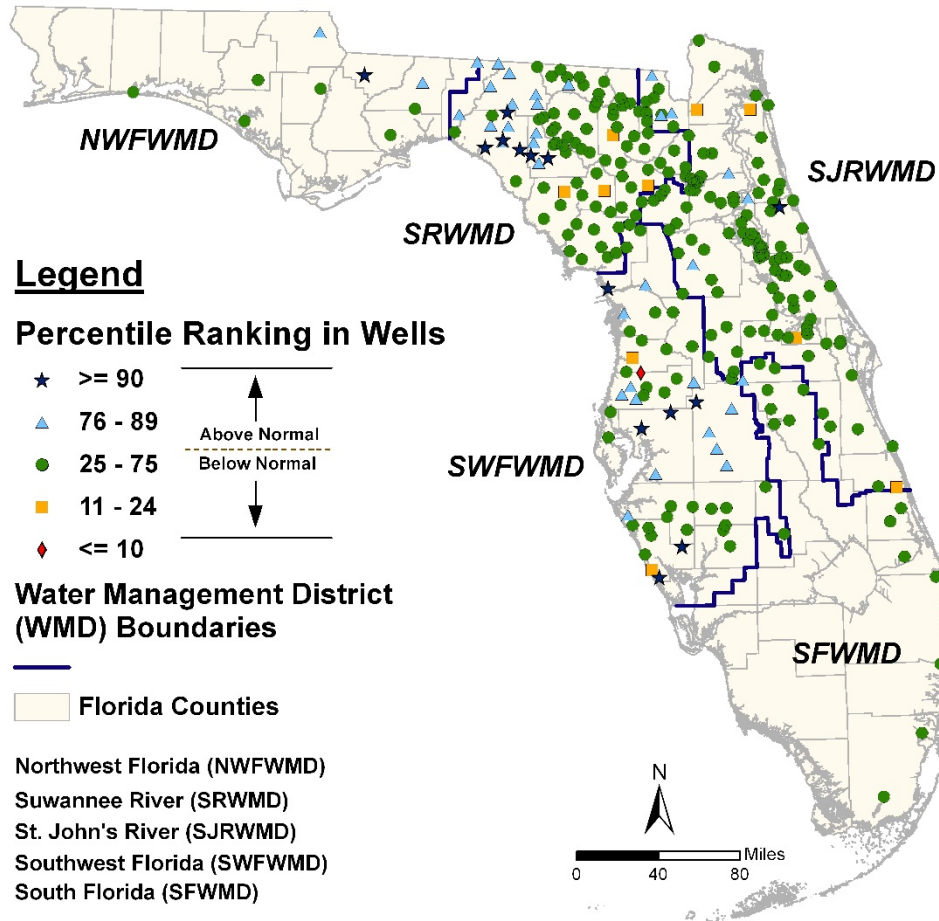
- Introduction
- GWL Percentile Ranking (PR) Pilot Project Completion (**RC**)
- Status GWL PR Maps (May 2015, September 2015) (**RC**)
- Establishment of Coastal Salinity Monitoring Network (**RC**)
- Salinity GWQ Index Discussions (**Delayed**)
- Sampling Protocols near SW / FW interface (**Delayed**)
- Adjourn
 - Next SNW Meeting (Tentatively)
 - **Wed., May 2, 2016 from 1:00 -3:00 PM**

GWL Percentile Ranking Index Pilot Study (Background)

- Upper Floridan aquifer (UFA)
 - GWLs Declined (1991-2011)
 - Concentrations of saline indicators ↑ (1991-2011)
 - SNW - GWL Percentile Ranking Index
 - Because ↓ GWLs, ↑ potential for saltwater encroachment

SNW - GWL Percentile Ranking Index Pilot Study Status

- Decided on a Percentile Ranking (PR)
- Pilot Study – Generate a PR Map
 - **Spring 2010:** Upper Floridan aquifer (UFA)
 - **Purpose**
 - To overcome (internal, external) obstacles
 - To reach consensus
 - GWL PR Index can be used for a variety of aquifers, at various scales, and for different times
 - Periodically produce GWL up-to-date maps

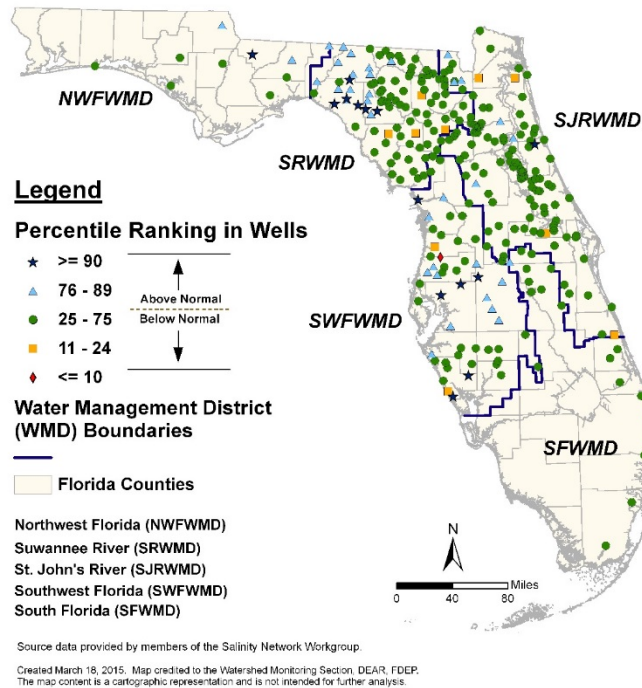


Source data provided by members of the Salinity Network Workgroup.

Created March 18, 2015. Map credited to the Watershed Monitoring Section, DEAR, FDEP.
 The map content is a cartographic representation and is not intended for further analysis.

Groundwater level conditions in the Upper Floridan aquifer in Florida in percentile ranks, May 2010.

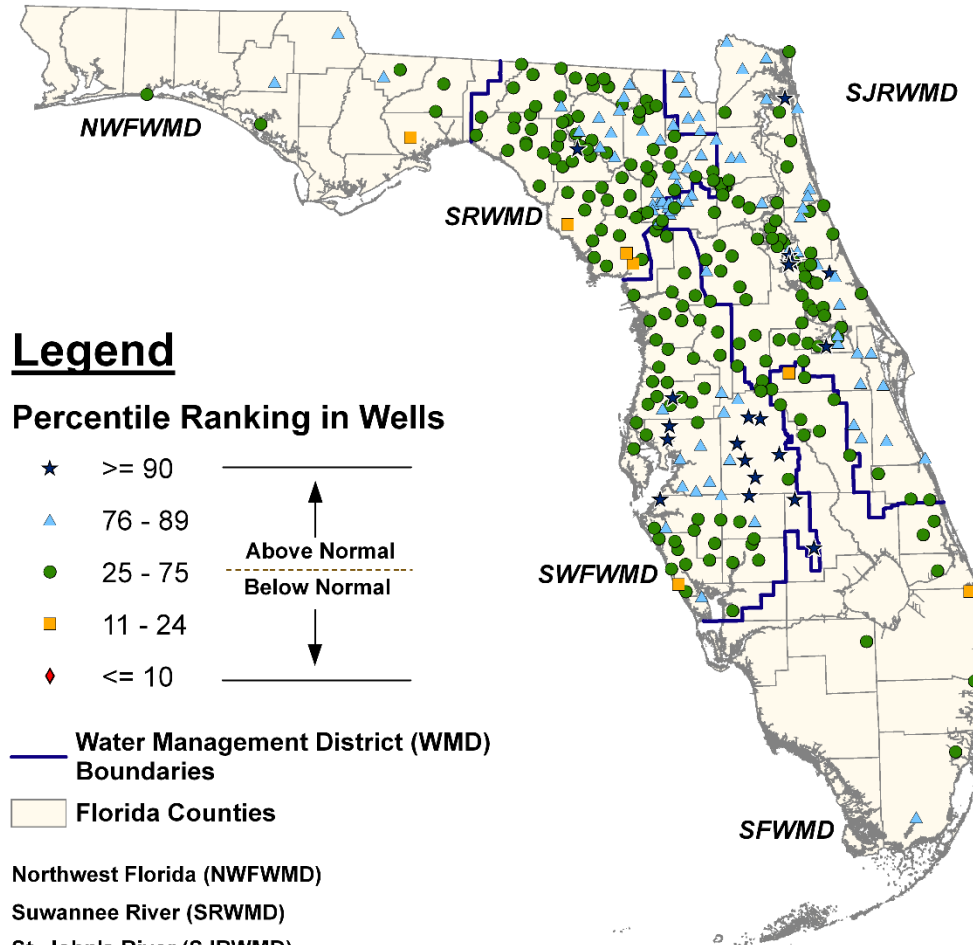
Side-by-Side with UFA “Pot” map (For now, on hold)



Groundwater level conditions in the Upper Floridan aquifer in Florida in percentile ranks, May 2010.

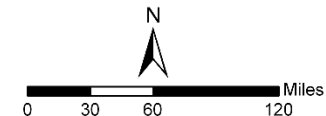
- PR map is composite
 - Inconsistent POR
 - and methodologies
- For PR map
 - Decrease density of wells in SR, SJ, & SW?
 - Over time PORs may become more consistent
 - Over time, change to one standard meth?

DRAFT
Groundwater Levels, in Percentile Ranks
for the Upper Floridan Aquifer
(May 2015)



Source data provided by members of the Salinity Network Workgroup.

Created November 2, 2015. Map credited to the Watershed Monitoring Section, DEAR, FDEP.
The map content is a cartographic representation and is not intended for further analysis.



Draft May 2015 Map

- RC will write up a explanation page
- RC will send draft map & explanation to each participant for comments
- When returned, RC will
 - Incorporate comments
 - Post Map and Explanation
 - Send participants a link
- Begin process for Sept 2015 map

Next GWWL PR Map

- SNW scheduled to produce UFA GWL PR map in Sept, 2015
- For participants, when you have Sept GWL data, convert to PRs and then send RC a file. For all wells:
 - (ID, X, Y, Percentile Rank, and Projection)

Next GWWL PR Map: to RC (September 2015)

Station ID	X	Y	P Rank	XY Projection
1931	350528.15154727	3262230.35562276	34.2	NAD_1983_HARN_UTM_Zone_17N
7901	352682.13213274	3267205.29975524	28.9	
2126	367632.84886480	3297982.33121378	39.4	
2187	366123.31970418	3305317.89323715	40.0	
1622	387397.31402332	3262299.84563387	48.6	
1711	368367.36849727	3282912.57911404	50.0	
2019	352482.95581896	3282660.19957304	38.8	
1736	378841.57335986	3289166.73650820	35.1	
2021	348830.28632854	3282429.57644767	31.5	
2035	355798.46563853	3285215.12047739	43.2	
1667	361752.35036949	3274856.55396967	32.4	
1973	340306.65207774	3274918.18399257	26.3	
1700	360559.36190386	3279955.38702133	36.8	
2178	347514.40752654	3304559.02460107	37.8	
1950	353607.68032385	3270171.47851059	34.2	
1676	363006.52415399	3277535.59730131	59.4	
1991	348486.53872088	3278268.71652058	32.4	
2036	356422.86398782	3285228.15112185	36.8	
1717	363100.80435660	3283604.05222803	54.0	
1712	361018.17125622	3283051.24929602	47.3	
1695	365382.80647964	3279050.76460264	33.3	
2212	361602.26566713	3310885.43386089	48.6	
2075	352409.53715638	3291542.98409105	32.4	

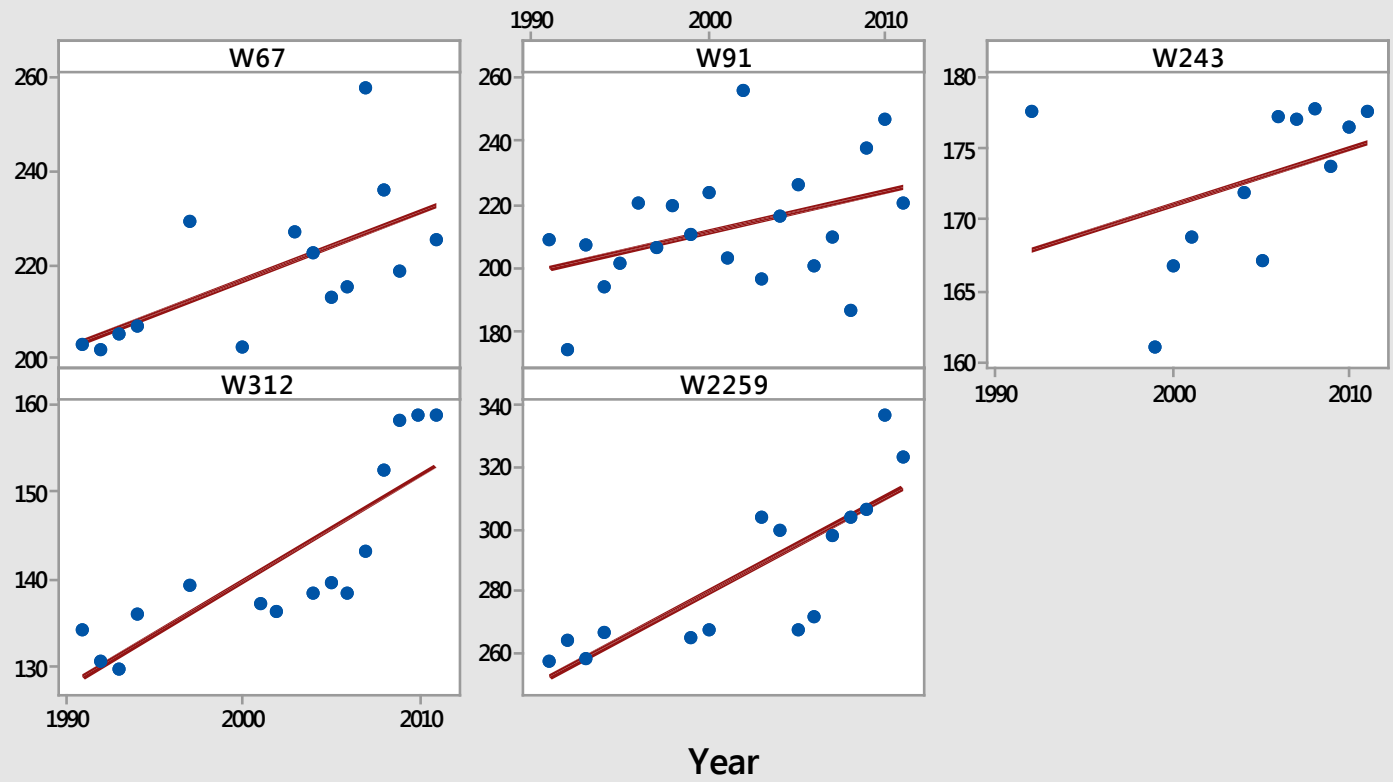
Coastal Salinity Mon. Network

- Not only a Salinity Network, but also a Coastal Salinity Monitoring Network (CSMN)
 - “Rind around the state”
- **Governor’s Office Supports CSN**
- Secretary’s Office supports CSN
- Office of Water Policy supports CSN
- FDEP Coastal Office supports CSN
- A network-of-existing networks
- Add wells in future as needed
- Add surface water sites in future

Index Wells

Annual Median TDS Concentrations in Selected Wells (1991-2011)

TDS (Total Dissolved Solids) in mg/L



Ideas for Development of Coastal SalNet

- At Special meeting of SNW in December 2014, RC was asked to review current available data
- “Let data suggest where to build Coastal SalNet”
- SNW to start with GW and then be open to adding SW sites

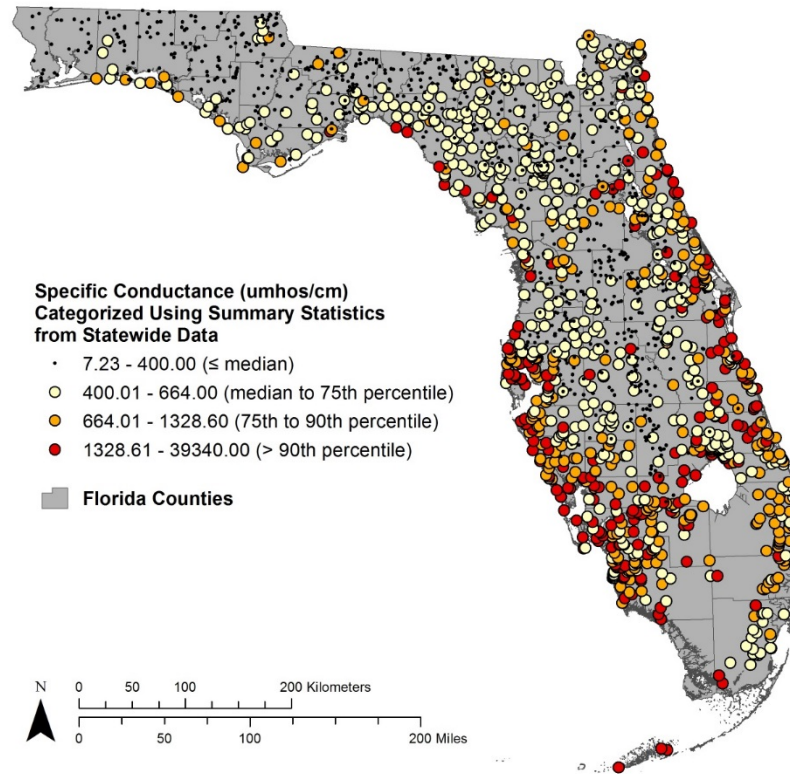
Saline Chemical Concentrations (Major Aquifers)

- Data are from DEP Status Monitoring Network
- GW samples between 2000-2014;
- Most wells have only one sample
- If multiple samples, then only one was used
 - Most recent sample with most complete record of analytes
 - > 2000 Wells used in analyses
- Most maps generated by
 - Stephanie Sunderman-Barnes and Andy Woeber (DEP)



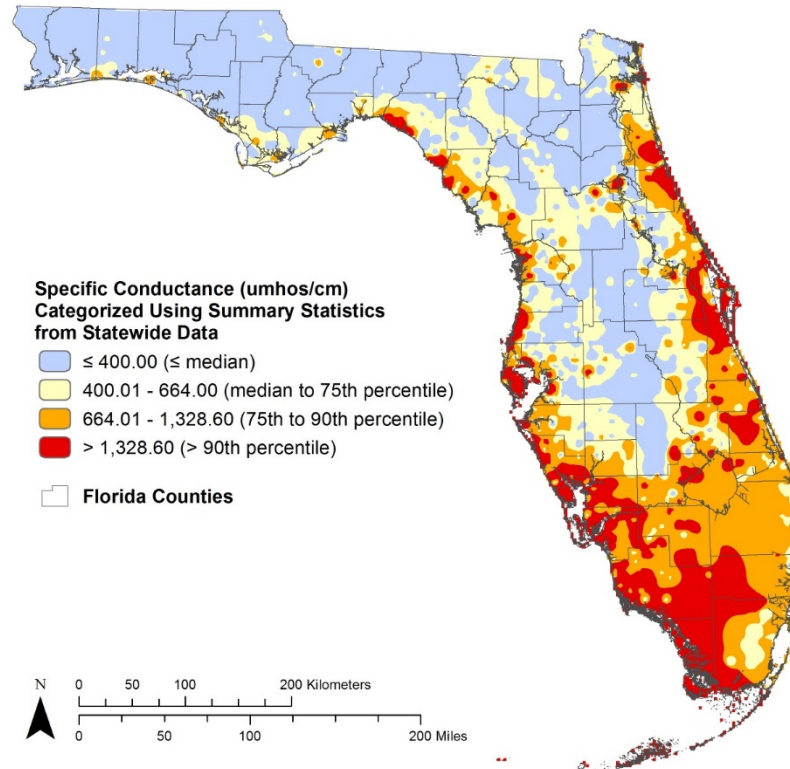
All Aquifers

Specific Conductance in Status Network Wells (All Aquifers)



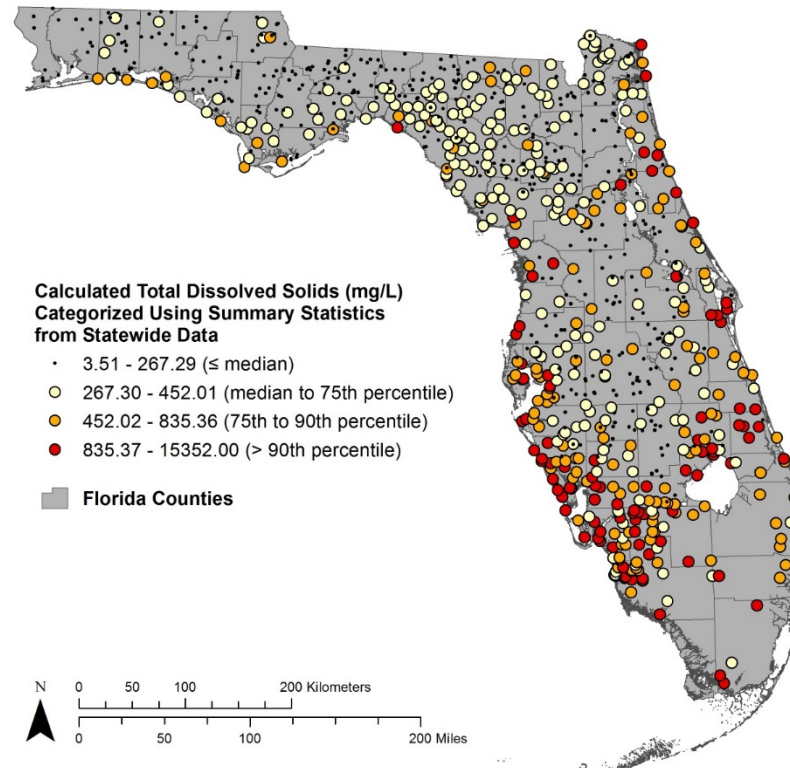
Created May 8, 2015 by Florida Department of Environmental Protection staff in the Division of Environmental Assessment and Restoration. This map is a cartographic representation and is not intended for further analysis.

**Specific Conductance in
Status Network Wells (All Aquifers)
Modeled Using Inverse Distance Weighting**



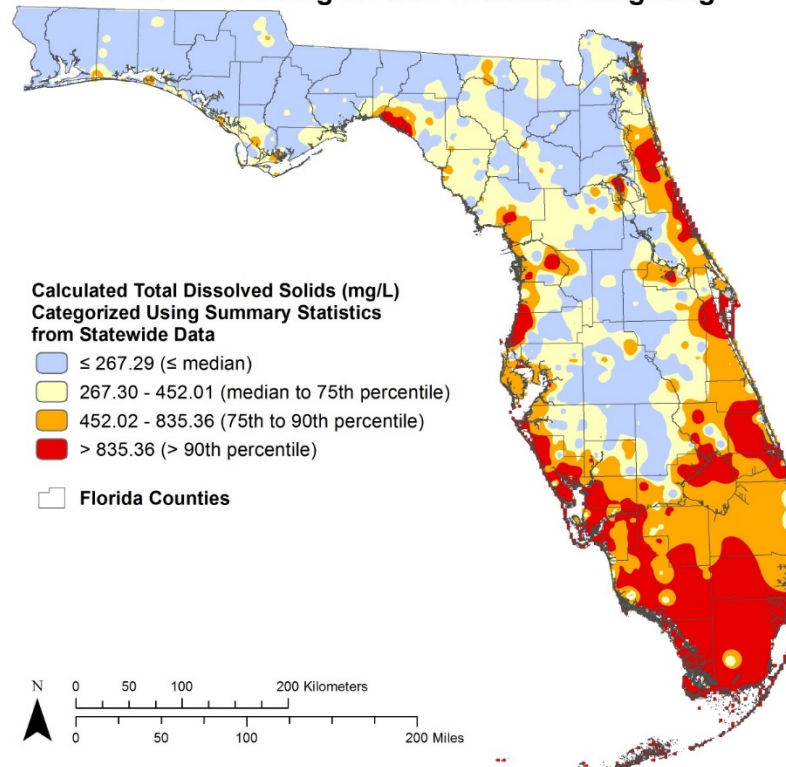
Created May 8, 2015 by Florida Department of Environmental Protection staff in the Division of Environmental Assessment and Restoration. This map is a cartographic representation and is not intended for further analysis.

Calculated Total Dissolved Solids (TDS) in Status Network Wells (All Aquifers)



Created May 8, 2015 by Florida Department of Environmental Protection staff in the Division of Environmental Assessment and Restoration. This map is a cartographic representation and is not intended for further analysis.

**Calculated Total Dissolved Solids (TDS) in
Status Network Wells (All Aquifers)
Modeled Using Inverse Distance Weighting**



Created May 8, 2015 by Florida Department of Environmental Protection staff in the Division of Environmental Assessment and Restoration. This map is a cartographic representation and is not intended for further analysis.

- 
- Also for Cl and SO₄
 - Next, by Aquifer or Aquifer System