

Salinity Network Workgroup Webinar/Meeting

November 8, 2017

Chair: Rick Copeland (FL DEP)

Agenda

- **Welcome and introduction to Balmoral Group (RC)**
- **Balmoral Group – Role with the FWRMC (DD)**
- **Roll Call (DD)**
- **Status of SNW's Four Priority Issues (RC)**
- **GWL PRI – Status and Modifications (DD, RC)**
- **Watershed Information Network (WIN) (DM)**
- **Discussion (DD)**
- **Adjournment and announcement of next meeting (DD)**

RC: Rick Copeland (DEP)

DD: Dan Dourte (Balmoral Group)

DM: Denise Miller (DEP)

Balmoral Group

Role with the FWRMC (DD)

- www.balmoralgroup.us
- Dan Dourte, Ph.D.
 - Agricultural Engineer/Hydrologist

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407-629-2185 x 113

SNW Meeting/Webinar

- **Meeting Objectives**

- Understand current progress and data issues related to SNW products
- Identify how to resolve data/IT and management issues to ensure adequate data availability

- **Roll Call**

Status of SNW's Four Primary Issues (RC)

1. Periodic Production of a Groundwater Level (GWL) Percentile Ranking Index (PRI) for the Upper Floridan Aquifer (UFA)

- Since last November, most SNW efforts related to this issue

2. Development of Coastal Salinity Monitoring Network

Wells have been selected, most monitoring has begun

3. Development of a Salinity GW Quality Index

On hold

4. Consideration of Revision of Sampling Protocols of Wells for the Purpose of Monitoring the Fresh-water/Salt-water interface

On hold

GWL Percentile Ranking Index Status and Modifications (RC)

- **How will GWL PRI maps be used?**

Note as GWLs decline, potential for encroachment increases

Two of SNW Goals:

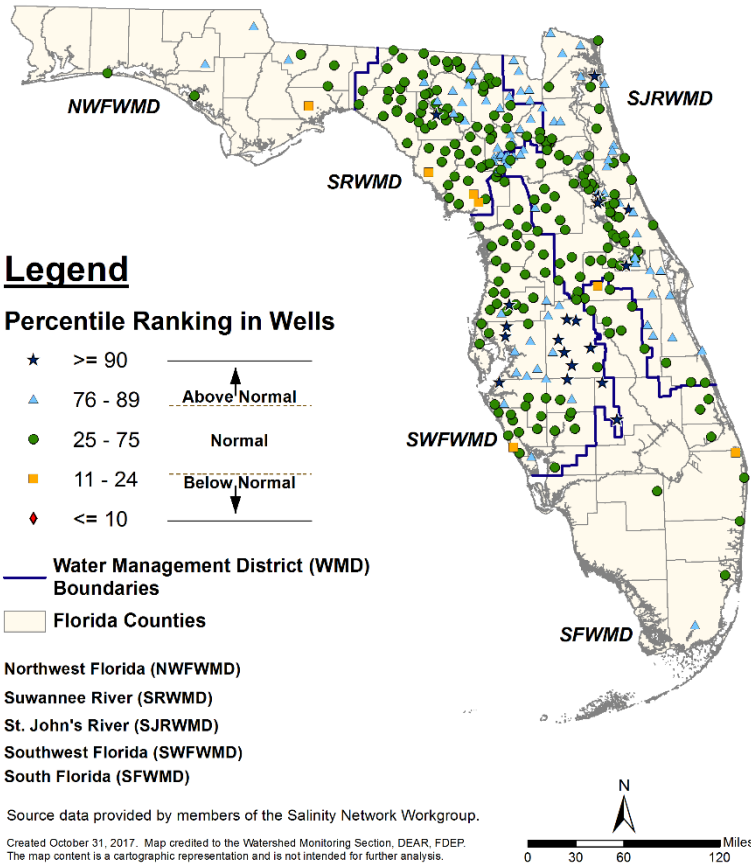
- ...to provide scientifically defensible data and information on chemical, physical, and biological characteristics of water that can be used by state's water policy-makers, the scientific community, and the public
- ...to better understand the status and trends regarding the encroachment of saline water into Florida's freshwater resources

GWL Percentile Ranking Index Status and Modifications (RC)

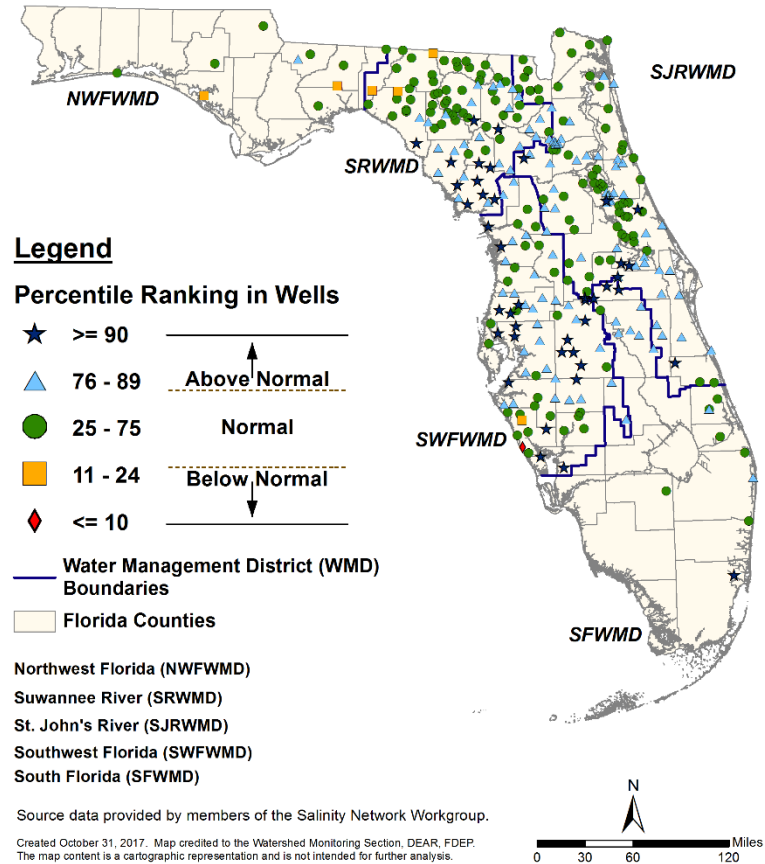
- Periodically create **composite** statewide PRI maps, along with explanatory text
- Pilot study for UFA for May 2010
 - Completed in late 2014
- Commence (2015) production twice/year
 - May (LOW GWLs) and September (HIGH GWLs)

Draft PRI maps: May and September 2015

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



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



There are several major issues with the PRI

- For PR maps
 - Possibly decrease density of wells in SR, SJ, & SW
- PRI map is composite
- Methodologies among entities are inconsistent
- Wells have inconsistent Periods of Record (PORs)

Inconsistent Methodologies:

(Relatively minor issues)

(1) **Equation: PRI can vary depending on equation used**

- Denominator is either n or $n-1$
- As n increases, difference in the corresponding PRI decreases

(2) **The representative monthly value (x) we want to rank is inconsistent among, but consistent within, agencies (E.G. median of month, mean of 27 of month...)**

- Each agency has defined its **representative value** of (x). As long it does not change, the effect on the statewide GWL PRI map is minimal

(3) **POR is inconsistent among agencies**

- As PORs increases in length, the probability of catching the max and min values of (x) increases. If no new wells added, in the long term, the effect of having a non-standardized POR is minimized regarding the statewide GWL PRI map. However, if new wells are added with short PORs, this will remain an important issue

Inconsistent Methodologies: (Major Issue)

- **Array: Data Set Against Which Value x is Ranked**
 - A. X against all similar monthly representative values for the entire period of record
 - B. X against all similar monthly representative values during the same month (or same week of month), or season

Example: Percentile Rank of Median GWL for September 2015 (SFWMD)

Station	Vrs All GWL	Vrs Sept GWL
BF-6	69.6	38.6
G-3061	93.1	69.4
L2-PW2	75.6	34.4
MF-52	74.9	36.0
ORF-19	98.1	88.4
ORF-32	92.6	83.4
OSF-102	88.8	79.2
OSF-22	84.8	61.8
OSF-62	82.3	59.7

Data Set against which value (x) is ranked:

- (A) All similar values for the entire period of record
- (B) All similar values for the same month (or same week of month), or season.

6 of 7 agencies are either using (A) or can “live with” A
7th agency now uses (B) because it is needed for internal use and the agency has been using (B) for a long time

Since June, Participating Entities

- Most SNW entities have agreed to send all pertinent PRI data to DEP in prescribed format
- Most can “live with” a production of PRI maps, using both methods (A and B)
 - However, SNW cannot currently produce Method B in the NFWWMD because their wells have insufficient data

Thus

- WMDs will send data to DEP
- DEP will generate PRI maps (and associated text)
- Text will elaborate on differences of both methods
- WMDs and Ala Co will review maps
- Finally, DEP will publish them on web page

Regarding Prescribed Format

- Since GWL PRI data are to be sent to DEP, data need to be stored in the new DEP Watershed Information Network (WIN) database
- Storage of CSMN data (e.g. Na, Cl, SO₄, TDS, SC) also important for future development of SNW products
- WIN has certain well information requirements
- These requirements, in turn, generated computer-related and management-related questions

GWL PRI Format: What was requested

- Vertical Datum: (NGVD 29 or NGVD 88)
- Horizontal Datum:
- For each well, need county location and GWL PRI from beginning of POR. Really need rep. mo. value

Example				
	Well id1	Well id2	Well id3	...
County	Taylor	Taylor	Dixie	...
Mo/Yr	GWL PRI	GWL PRI	GWL PRI	...
Jan 2004	.	23.11	14.78	...
Feb 2004	53.17	21.37	.	...
March 2004	57.67	19.38	13.51	...
.April 2004	52.52	22.54	16.35.	
.	.	.	.	
.	.	.	.	
.	.	.	.	

Watershed Information Network (WIN)

- DEP Watershed Services
 - Denise Miller
 - Justin Nelson
 - Tommy Adams

WIN

- WIN application:
 - <http://prodenv.dep.state.fl.us/DearWin>
- WIN Minimum Data Quality Standards (MDQS):
 - <http://publicfiles.dep.state.fl.us/DEAR/WIN>
- Web Interface to WIN developed for Internet Explorer per DEP IT requirements
 - Future upgrade to also work with Google Chrome per DEP IT requirements

WIN and SNW

- **Register your organization in WIN**
 - Completed already for most organizations in SNW
- Follow WIN MDQS and SNW data requirements to **upload the following to WIN:**
- **Project data**
 - Several SNW organizations have uploaded project descriptions to WIN, just not specific to SNW
- **Monitoring Locations** (including Visual Verification)
 - Several SNW organizations have uploaded ground water monitoring location data to WIN
- **Activity and Results data** (e.g., GWL, water chemistry data)

SNW Data Requirements

- **Vertical Datum = Land Surface Elevation Datum** in WIN Monitoring Locations setup
 - Land Surface Elevation (value), Method and Datum
 - Datum of NAVD88 or NGVD29 in WIN SVL
 - Note that WIN will allow upload of Monitoring Locations without these data elements, but they are needed for SNW
- **Horizontal Datum= Org Method and Org Datum** in WIN Monitoring Location setup
 - Org Method and Org Datum are required by WIN MDQS
- **County** – County is populated by WIN based on Monitoring location coordinates. It is not enterable by the data loader.
- **GWL in ft** = a new analyte will need to be added to the WIN Standard Value List (SVL) of ~GWL in ft above MSL (Monthly Representative Value) with units of ft.

WIN Data Requirements

- Org, Project, Monitoring Locations and Activity & Results (A&R) data meet WIN MDQS
- To appropriately describe the GWL data:
 - **Result Value Type Name** of “Calculated” should be used
 - A method describing each method of calculation of the GWL must be submitted to DEP for review and approval. Once approved, methods will be added to the WIN SVL and become available for use.
 - Modification of FS 2200 may be the easiest approach

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WIN Contacts for SNW Organizations

- Justin Nelson, WIN Coordinator for Northeast, Northwest & Southeast District Areas, including:

Alachua County
NFWWMD
SFWMD

SJRWMD
SRWMD

- Tommy Adams, WIN Coordinator for Central & South District Areas and Statewide Organizations, including:

SWFWMD

Discussion

- What are the management, staffing and timing issues related to provision of data?
- What are the IT issues related to provision of data?
- How do we get to solutions?

Summary

- Action Items
- Questions

Next SNW Meeting

Wednesday, May 9, 2018 1:00-3:00 pm ?

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