

**bold italicized text is used to indicate items requiring attention before next meeting*

Florida Water Resources Monitoring Council (FWRMC)
Public Meeting of Statewide Council – June 13-14, 2012

Wednesday, June 13, 2012 (1:00pm – 5:00pm)

Attendees (X indicates present; * indicates guest attending as a representative for a Council member):

Agency	Primary Members	In Person	Webinar
DACS	Chris Brooks		
DOH	Bob Vincent		
FWC	Amber Whittle		X
DEP	Kate Muldoon		
NWFWMD	Nick Wooten		X
SRWMD	Megan Wetherington		X
SJRWMD	Aiša Cerić	X	
SWFWMD	Roberta Starks		X
SFWMD	Linda Crean		
USEPA	Dave Melgaard		X
NOAA	Cathy Tortorici		
USGS	Rafael Rodriguez		
FLERA-NW (Escambia Co.)	Keith Wilkins		
FLERA-SR (Alachua Co.)	Chris Bird		
FLERA-SJ (City of Jacksonville)	Vince Seibold		
FLERA-SW (Manatee Co.)	Rob Brown		
FLERA-S (Miami - Dade)	Susan Markley		X
Vol. Monitoring Programs (FL LAKEWATCH)	Mark Hoyer	X	
Agency	Alternate Members	In Person	Webinar
DACS	Kal Knickerbocker		
DOH	Charlie Donahue	X	
FWC	Paul Carlson		
DEP	Rick Copeland	X	
NWFWMD	Graham Lewis		
SRWMD	Louis Mantini		
SJRWMD	Steven Richter	X	
SFWMD	Julianne LaRock		X
USGS	David Sumner		
FLERA-SJ (Volusia Co.)	Michelle Leigh		
FLERA-SW (Pinellas Co.)	Kelli Levy		
FLERA-S (Palm Beach Co.)	Rob Robbins		
Agency	Council Chair	In Person	Webinar
DEP	Gail Sloane	X	
Agency	Council Liaison	In Person	Webinar
DEP	Stephanie Sunderman	X	X

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Agency	Guests	In Person	Webinar
USGS	Marian Berndt		X*
US Army Corps of Engineers	Susan Kemp	X	
DEP	Anita Nash		X
DEP	Katie Petrinec	X	
SWFWMD	Carol Kraft		X
SWFWMD	Granville Kinsman		X
Palm Beach Co.	Eddie Gibson		X
FLERA-SJ (City of Jacksonville)	Betsy Deuerling	X*	
University of West FL	Barbara Albrecht	X	
University of West FL	Alexander Maestre		X
University of South FL	Jim Griffin		X
University of South FL	Bridgette Froeschke		X
University of South FL	Jan Allyn		X
Anfield Consulting	Lee Killinger		X

Introduction

Gail Sloane (GS) welcomed everyone to the meeting and indicated that the meeting would focus on continuing discussions of progress on action items and current monitoring efforts throughout the state. Specific topics to be covered on Wednesday afternoon include presentations on current monitoring efforts from several agencies and a discussion of the Monitoring Catalog Workgroup's efforts.

GS announced that Steve Richter (SR) the alternate member from SJRWMD is retiring soon, and presented him with a certificate of appreciation for his dedication and service to the FWRMC.

St. Johns River Water Management District

Aiša Cerić (AC) presented information about current monitoring activities at the St Johns River Water Management District (SJRWMD)

(Presentation slides can be found in the 2012 archive section of the FWRMC website.)

- SJRWMD covers over 12,000 square miles in the northeast part of FL and includes portions of 18 counties
- Headquarters in Palatka, and Service Centers located in Jacksonville, Maitland, and Palm Bay
- Mission is "to ensure the sustainable use and protection of water resources for the benefit of the people of the District and the state of FL". Core missions include 1) water supply, 2) flood protection, 3) water quality & natural systems protection improvement, and 4) organizational effectiveness
- Primary tasks include resource monitoring, assessment, and mapping, conducting research and restoration projects, managing public lands, issuing permits, and sharing information with the public and other agencies
- AC works the Bureau of Water Resource Information (WRI) in the Division of Water Resources, which is responsible for delivering science and engineering to accomplish the District's mission
- WRI is organized into 4 sections: Hydro-meteorological Monitoring, Environmental Monitoring, Laboratory, and Data Management and QA/QC
- WRI Hydro-meteorological Monitoring Section
 - o Operates > 1,500 hydro-meteorological meteorological monitoring stations, and processes data from ~200 additional sites collected by other agencies
 - o Rainfall at telemetry stations and gauge-adjusted radar rainfall
 - o Water level of lakes, streams/rivers, springs, groundwater (GW)
 - o Discharge of streams/rivers and springs
- WRI Environmental Monitoring Section
 - o Sampling of water quality (WQ), sediments, and benthos

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- o On-site assessment of stream habitat, stream condition index, and lake vegetation index
- o Biological surveying of vegetation, fish, birds, other wildlife
- WRI Laboratory Section (located in Palatka)
 - o NELAC certified lab processes > 4,000 samples and >140,000 analytes annually
 - o Analytical expertise in nutrients, metals, and solids with many automated instruments
- WRI Data Management and QA/QC Section
 - o Manages all data collection and uses QA procedures to verify that all data stored in SJRWMD databases, published in reports, and made available to the public are defensible.
 - o Hydstra database used to store hydro-meteorological data (time series data)
 - o Oracle database used to store WQ and sediment data (SJRWMD Environmental Database)
 - o SJRWMD Biological Database used to store biological data
- Current Monitoring Efforts
 - o Surface Water (SW) Level Network - trend monitoring network of ~386 stations
 - Most stations are automated and upload results directly to SJRWMD Hydstra every 15 min
 - Data available on SJRWMD website, where it can be used to produce a variety of reports (e.g. monthly average, monthly maximum, monthly minimum lake level at a specific station)
 - o Discharge Network of 168 stations
 - Produce monthly report on conditions of basins within the District
 - o GW Level Network - trend monitoring network of ~710 wells
 - Many are automated, with data transferred directly into SJRWMD Hydstra
 - Information available includes monthly average, monthly maximum, monthly minimum water level at a specific well
 - Produce monthly maps of water level condition across the District, which may be used to inform decisions to implement water shortage actions
 - o GW WQ Network - trend network of ~334 wells and 20 springs
 - GW WQ data are not currently available online, but springs data are
 - o SW WQ Network - trend network of ~350 stations
 - Samples are manually collected
 - Environmental Database allows users to provide a variety of graphs displaying WQ results
 - Produce Annual SW WQ Status and Trends Report (includes median value of analyte for most recent 5 years, and trend of analyte concentration for most recent 10 years)
 - o SW Status Network (part of DEP's statewide Status Network)
 - Probabilistic sampling design, with 10 samples collected for each resource (large lakes, small lakes, rivers, and streams) annually
 - Annual statewide report produced by DEP
 - o Rain Gauge Network of ~97 stations, with additional stations planned (per request of GW modelers) near interior boundaries of the District
 - 83 stations used for adjusting radar rainfall, 14 used for independent validation of radar rainfall
 - Reports include 24 month cumulative rainfall departure for 3 regions of SJRWMD
 - o NexRad Daily Rainfall Pixels
 - Monthly reports/graphics include cumulative rainfall and rainfall departure from average.
- Example report using multiple data sources: compare recent map of District-wide cumulative rainfall to recent changes in map of District-wide GW levels

Questions / Discussion:

Barbara Albrecht (BA) asked if the Laboratory analyzes samples for clients other than SJRWMD. AC and SR indicated that the SJRWMD lab has recently analyzed samples from SRWMD, as part of a WMD cooperation effort, but the lab does not accept samples from the public. BA asked if all of the WMDs had NELAC certified labs. SR indicated that only SJRWMD, SWFWMD, and SFWMD have their own NELAC certified labs.

BA asked what actions are taken when WQ monitoring results indicate potential problems, such as elevated concentrations of nutrients. AC indicated that the District will take action, such as conducting a restoration project, in response to evidence of a serious problem.

Mark Hoyer (MH) asked about the status of a volunteer monitoring project in SJRWMD called WAV. AC indicated that the volunteer program was organized through the Communications Department, and may have undergone

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some changes during the recent District-wide reorganizational efforts. AC and SR added that the program involved working with local governments to organize volunteer monitoring networks, and was mostly focused on lakes.

Susan Kemp (SK) asked for more information about the planned expansion of the Rain Gauge Network and potential to leverage existing Rain Gauges from other agencies conducting monitoring near the SJRWMD border. AC indicated that SJRWMD is contacting other agencies that conduct monitoring in those areas. Existing stations in SRWMD and SWFWMD may be able to be used, but new stations will likely need to be installed near the Georgia border, where there are few existing stations.

MH asked if the GW level data are analyzed at SJRWMD, and if there have been efforts to coordinate data collection and analysis with counties. AC indicated that the analyses presented were all conducted by SJRWMD staff, and that several counties are working to coordinate their efforts with the WMD. AC added that all SJRWMD data is available online at <http://floridaswater.com/toolsGISdata/>.

FL Department of Environmental Protection, Watershed Monitoring Section

Gail Sloane (GS) presented information about current monitoring activities in the FL Department of Environmental Protection (DEP), Watershed Monitoring Section (WMS)

(Presentation slides can be found in the 2012 archive section of the FWRMC website.)

- Statewide WQ Monitoring Networks established in the mid 1990s
- Report on Condition of SW and GW Resources annually, with larger report every two years.
- SW Trend Monitoring Network (54 rivers, 21 streams, 1 spring run)
 - o Sampling sites located at lower end of watersheds, and near state line on major rivers entering FL
 - o Collect flow data at or near sampling sites when available
 - o Collect standard WQ analytes at all sites monthly and Stream Condition Index (SCI) annually for select sites.
 - o Recently added tracers (sucralose, boron, and nitrogen and oxygen stable isotope ratios).
- GW Trend Network (22 confined aquifer wells, 25 unconfined aquifer wells, 2 spring vents)
 - o Collect standard WQ analytes at all sites monthly or quarterly
- Status Monitoring Network (probabilistic sampling design)
 - o Objectives are to characterize statewide water resource conditions and determine percentage of each resource that meets standards or designated use
 - o Generalized Random Tessellation Stratified Design
 - State divided into 6 zones
 - 90 samples (10 per zone) collected per SW resource (small lakes, large lakes, rivers, streams)
 - 75 samples (15 per zone in three zones, 30 in one zone, none in remaining two zones) collected for canals
 - 120 samples (20 per zone) collected per GW resource (confined aquifers, unconfined aquifers)
 - o Collect standard nutrients, water chemistry, and biology (Enterococci and fecal coliform) at all sites
 - o Collect sucralose and boron as tracers at all sites
 - o Collect sediments, Trophic State Index, and Lake Vegetation Index at all large and small lake sites
 - o Collect metals and biology (total and fecal coliforms) at all GW sites
 - o All samples for each resource collected at same time of year (~2 month window). Previous studies indicated no effect of seasonality with regard to the number of samples exceeding WQ thresholds.
- Data reported in Integrated Report (http://www.dep.state.fl.us/water/docs/2012_integrated_report.pdf), and uses include DEP nutrient criteria development, biocriteria development, and supplying data for TMDLs.

Questions / Discussion:

BA asked what the results of the sucralose sampling were. GS showed additional slides illustrating sucralose detections in Status Network canal sites, Trend Network river sites (35 of 53 sites had sucralose detections), Trend Network stream sites (13 of 21 sites had sucralose detections), Trend Network spring sites, and Trend Network GW sites (1 of 49 sites had sucralose detection). GS added that there is no threshold for sucralose, but its presence may be an indicator that other substances of concern may be present, as well.

MH asked if there are plans to develop a standard for *E. coli* in SW. ***GS indicated that she would forward the question to the appropriate contact at DEP.*** GS added that total coliform was removed from SW because

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there is no longer an existing standard. Similarly, total and fecal coliforms are measured in GW because standards exist. Susan Markley (SM) added that DOH beach monitoring collects *Enterococcus*, and related guidelines may be in development. EPA is also in the process of revising guidelines for *Enterococcus*.

SR asked what other emerging substances of concern will be added in future sampling efforts. GS indicated that the WMS section is working with USGS to determine the next set of indicators which will likely include pharmaceuticals.

Guana Tolomato Matanzas Research Reserve Monitoring

Katie Petrinec (KP) presented information about the System-Wide Monitoring Program (SWMP) in the Guana Tolomato Matanzas (GTM) National Estuarine Research Reserve (NERR)

(Presentation slides can be found in the 2012 archive section of the FWRMC website.)

- SWMP is a long-term standardized monitoring program established by NOAA, conducted at each NERR. Monitoring components include: water quality and weather, biological monitoring, & land use / land change.
- SWMP goal is to establish a system-wide monitoring program that measures short –term variability and long-term change in estuaries, provide information on Reserve conditions, and gain a better understanding of how human activities and natural events can change coastal ecosystems
- SWMP core element implementation required at all NERRs uses standardized protocols, and optional elective elements can be included to address local, regional or national issues.
- GTM NERR SWMP program contains both core and elective elements
- GTM NERR – 4 SWMP WQ stations and 1 weather station
 - o Pine Island (established 2001) – low impact area in Tolomato River
 - o San Sebastian (established 2002) – high impact area near St. Augustine inlet
 - o Fort Matanzas (established 2001) – medium impact area near Matanzas inlet
 - o Pellicer Creek (established 2002) – low impact site in state park, only site with near real-time data transmitted via satellite telemetry
- YSI 6600 EDS data sondes measure temperature, salinity, specific conductivity, dissolved oxygen, pH, depth, turbidity. Vexar mesh over guard, anti-fouling tape, and ram rod cleaning tool for deployment tubes used to minimize biofouling.
- SWMP standardized calibration log / procedures and field log used.
- Data downloaded from sondes using Ecowatch software.
- SWMP Centralized Data Management Office (CDMO) – NOAA funded information management team
 - o Information Management Team: provides QA/QC tools, technical support, and training workshops; manages and hosts NERRs data website (www.nerrsdata.org)
 - o Data Management Committee (NERR Managers, research Coordinators, Education Coordinators, SWMP Technicians, NOAA and State CZM Programs) create SWMP and QA/QC protocols
 - o CDMO data submission required one week after retrieval.
 - o Data files undergoes automated primary QA/QC.
 - o NERR staff perform secondary QA/QC process (Use Excel macros to analyze, graph, code and flag data quarterly. Use CDMO checklist to review data and submit logs annually).
 - o CDMO performs tertiary QA/QC process (review data with NERR staff and grade NERR for compliance) and post final data status on NERRs data website

Questions / Discussion:

SR asked how the calibration data is integrated with the actual data. KP indicated that the post-calibration data is used in the secondary QA/QC process to flag data, and the initial calibration data is used to inform the technicians when a probe needs maintenance before it can be deployed.

SR asked how the copper fouling tape is deployed. KP indicated that it is an adhesive tape that is stuck onto the body of the probe, but does not touch the sensor surface.

BA asked if equipment is removed during Tropical Storm events. KP indicated that equipment is not removed because capturing data during such events is part of the project goals.

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Suwannee River Water Management District

Megan Wetherington (MW) presented information about current hydrologic monitoring activities at the Suwannee River Water Management District (SRWMD)

(Presentation slides can be found in the 2012 archive section of the FWRMC website.)

- Current monitoring efforts
 - o Rain Gage Network – 35 automated gages transmit data hourly to National Weather Service, Southeast Forecast center, and Radar Rainfall Network contractor (shared resource with other WMDs)
 - o GW Network - 275 wells, most in upper Floridan aquifer (UFA), 14 in surficial aquifer system (SAS), 13 in intermediate aquifer system (IAS); 180 either sampled manually monthly or provide continuous data, remainder sampled annually
 - o GW Trend Network – 65 sites in UFA (mostly in developed and agricultural areas) sampled quarterly
 - o SW WQ Network – 28 springs, 38 rivers, and 5 lakes sampled quarterly; analyses done by contracted lab; flow data collected during spring sampling
 - o SW Levels and Discharge Network – over 80 SW sites (30 sites cooperatively funded by USGS or DEP or GA EPD)
 - o Observer Network – citizens living on lakes send monthly reports
- Reporting
 - o Monthly water resource condition reports (e.g. percentile rank maps for GW salinity, monthly maps of record water levels, current river flow compared to historic data)
 - o Hydrologic data used during flooding response and forecasting (SRWMD acts as information portal for community and provides automated flood phone line)
 - o Hydrologic data used for recreational support (e.g. paddling conditions and river water levels)
- Using technology to do more with fewer staff
 - o 5 staff positions lost through attrition during last year
 - o Major equipment upgrade last fall – replaced 70 punch-tape recorders with loggers and modems and are adding sensors and loggers to monthly wells, if possible. Cost savings of data loggers compared to manual sampling should be realized in less than 4 years.
 - o Improved data quality from automated loggers.
 - Hydstra software and subscription based web application automates data entry and display (data entry is now paperless and is near real-time).
 - Technicians review station status every morning and service loggers every 4 months. Program manager assures data web display is working properly 7 days per week.
 - o Public webpage for data display built using Hydstra and other existing software. SRWMD receives far fewer data request calls since website launched.

Questions / Discussion:

AC asked if SRWMD had currently implemented a water shortage. MW indicated that the water shortage was implemented on 6/13 (and is the first water shortage ever implemented in the WMD). SWFWMD drought condition matrix is being used internally to inform decisions. Improvements in upper parts of basin have been seen after recent rain events, but GW levels have not reacted.

Rick Copeland (RC) asked how frequently percentile rank maps are created. MW indicated that they are typically produced once per month.

Monitoring Catalog Workgroup Update and Discussion

Stephanie Sunderman (SS) presented information that Kate Muldoon (KM) had prepared on the Monitoring Catalog Workgroup's activities

(Presentation slides can be found in the 2012 archive section of the FWRMC website.)

- Focus of Monitoring Catalog Workgroup's recent efforts has been on gathering information on existing catalogs and data portals, which could serve as potential collaborators for the Monitoring Catalog project.
- List of existing online catalogs and data portals (with links and brief descriptions) that the Workgroup has discussed are posted on the FWRMC website, on the "Monitoring Resources" subpage (http://www.dep.state.fl.us/water/monitoring/council/monitoring_resources.htm). The intent of posting this information is to acknowledge these existing data sharing efforts and increase awareness and use of these tools by the monitoring community.

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- The FWRMC [action plan](#) identifies the need for a statewide Catalog of Monitoring Programs for: aiding in aligning freshwater and coastal monitoring efforts, serving as a starting point for assessing metadata/data comparability, minimizing duplication of efforts, leveraging resources between different monitoring programs, and aligning SW and GW monitoring efforts.
- Monitoring Catalog Workgroup has reviewed 18 web-based interactive catalogs and atlases, assessing three major criteria: user interface (ease of navigation, etc.), ability to search metadata for program / project level information, and availability for data providers to upload and update their own information.
- Review identified three existing efforts as potential collaborators for the Monitoring Catalog effort.
 - o Gulf of Mexico Alliance (GOMA) / South Atlantic Alliance (SAA) efforts
 - o Water Atlas (University of South FL, USF)
 - o DEP Map Direct
- During May 2012, KM sent a preliminary statement of needs document to the three potential collaborators, inviting them to compose a pre-proposal that would aid the Workgroup in gathering information about several logistical items that would need to be addressed if the FWRMC were to pursue a collaborative project.
 - o Design and infrastructure of the collaborative project (What parts of the application would need to be developed, what existing information could be leveraged?)
 - o Server location for Monitoring Catalog's database
 - o Cost of development and maintenance
 - o Schedule for development and maintenance
 - o Availability of on-site assistance, or need to devote additional staff resources to monitoring station information QA, etc.
- Received two responses - from GOMA Catalog of Monitoring Programs (University of Miami , UM) and USF Water Atlas

Response	GOMA Catalog of Monitoring Programs (UM)	USF Water Atlas
Cost	\$60,339 year 1 development & maintenance (includes server cost); \$23,399 year 2 maintenance; \$24,773 year 3 maintenance	\$47,547 for design, development, and first year of implementation / maintenance; \$25,000 per year thereafter for maintenance
Timeline	1 year development	6 months Beta; 6 months evaluation & finalization
Portability / Server Locations	Server would be at UM; system could probably be designed to be portable	Server would be at USF
Funding for database administration / QA staff included?	Yes, but only during initial loading of data into the Catalog	Yes; in addition, a tool will be developed to allow the data provider to run site matches for new sites and to assist in site matching where needed.
Additional Information	Server cost \$4,000 + \$220/yr. hosting fees (included in above costs)	
Comments	Costed out as separate system from GOMA catalog; costs may be less depending upon alignment of FWRMC MC features with those of GOMA MC	Maintenance costs are based on assumed saving from the use of previously developed Water Atlas applications and the fact that the Water Atlas has mapped about 45% of the state of Florida water resources and data sites.

- Recommendations for Monitoring Catalog Workgroup's next steps
 1. Workgroup and Statewide FWRMC review pre-proposal information
 2. Workgroup addresses additional questions or issues that arise and holds additional teleconferences / webinars with representatives from GOMA Catalog of Monitoring Programs and USF Water Atlas
 3. Workgroup meets (teleconferences) to develop a formal recommendation for how to proceed with the Monitoring Catalog effort, and presents recommendation to the statewide FWRMC
 4. Statewide FWRMC accepts recommendation or requests that Workgroup conduct additional research
- Once a recommendation has been accepted, DEP can contract with the university affiliated with the existing project, and Monitoring Catalog workgroup can continue information gathering process and meet to discuss specific elements of the project (metadata elements to be included, etc)

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- DEP WMS has been identified as a potential source of funding for Monitoring Catalog development in 2012-2013.

Questions / Discussion:

GS reminded Council and Workgroup members that the Monitoring Catalog workgroup is looking for a Co-Chair, and asked that anyone interested in filling that role contact SS or GS for more information.

SR asked when the potential funding would become available. GS indicated that having the type of information contained in the Monitoring Catalog available is of interest to DEP, so GS has requested funding for Monitoring Catalog development through an EPA106 supplemental grant that would start in October 2012.

MH added that it is important to make sure that all entities involved understand that the goal of the Monitoring Catalog is to store metadata information on monitoring efforts (who, what, where, when, why, how), but not the actual monitoring data. GS agreed, and indicated that the Monitoring Catalog could contain links to data providers' websites, where the actual data could be accessed.

Roberta Starks (RS) asked if coordinating the Monitoring Catalog effort with the Water Information Network (WIN, the STORET replacement) is still a possibility. GS indicated that it can still be considered. However, the timeline for developing WIN is much longer (~5 years) than the timeline that DEP would like to see the Monitoring Catalog developed in (~1 year). Furthermore, WIN is focused on the actual data collected at the stations while the Monitoring Catalog is focused on the metadata about the stations and monitoring programs. The Monitoring Catalog can include information about all stations included in WIN while also including information about stations and programs that do not participate in WIN (e.g. ocean observing, federal programs, universities, etc.).

RS asked what the timeframe is for providing comments on the information gathered through the Monitoring Catalog pre-proposals, and indicated that understanding how the Monitoring Catalog effort will proceed is helpful for planning how participating agencies' resources will be utilized. ***SS suggested that Workgroup members prepare their comments for discussion during the next Monitoring Catalog Workgroup webinar meeting, anticipated for August 2012.***

SK suggested that the Monitoring Catalog pre-proposal narrative include an estimate of the resources that will be required of the data providers to load their information into the database. Jim Griffin (JG) indicated that the resources required may vary, depending on the structure of the information to be entered. Potential solutions include using online forms, batch uploading tools, or other technological solutions. However, some effort by the data providers will be required to extract the desired metadata elements if they are currently only contained in text documents (scopes of work, etc.). Julianne LaRock (JL) added that some agencies are currently experiencing difficulties finding enough staff resources to properly upload information to STORET, so it may be difficult to locate additional resources to maintain information in the Monitoring Catalog, as well. GS indicated that it is understood that the Monitoring Catalog will not be completely populated in the first several months of operation, and indicated that further discussion will be needed of possible methods / solutions to the issues that may be encountered due to limited data provider resources. GS added that providing the links to other existing Monitoring Catalogs may help to bridge that information gap by providing other options for locating monitoring information in areas that may not be initially available through the Monitoring Catalog.

MH suggested that limiting the amount of metadata information that data providers will be asked to enter into the Monitoring Catalog will be helpful in reducing the amount of resources required by the data providers and the Catalog database administrators. Susan Markley (SM) added that many resources are required to design the database and make the final list of information to be included. However, even with an ideal database structure, many data providers will not have the time / resources to enter their information, or they will enter their information once and never have enough time again to update it.

SM added concern that the information contained in the Monitoring Catalog may be used for unintended purposes or misinterpreted, if the purposes of the monitoring are not clearly communicated in the Monitoring Catalog. Decision makers may have the perception that there is a lot of duplication and inefficiency with regard to monitoring, and if they see many monitoring stations on the map, they may not understand that the number of stations alone is not an indicator of adequate monitoring coverage for specific purposes.

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SR asked JG what size database corresponds to the time and cost estimates in the pre-proposal. JG indicated that the pre-proposal was prepared estimating that the database would be similar in size to the STORET database and that data to be entered would already be in a compatible electronic format.

Anita Nash (AN) agreed with previous comments, that it can be difficult to keep information updated. GS indicated that efforts will need to be made to encourage data providers to update their information, and added that even the first iteration of the database will be valuable because it will provide users with information from many different programs, many of which may not be well known outside of their local area. JG added that developing a mechanism for maintaining data online reduces the amount of resources needed over time. After the initial information is entered, a relatively small amount of time is required to keep it updated because the information that has been entered will not need to be completely reentered. RS added concern that it may be difficult to find adequate resources to devote to uploading information into the Monitoring Catalog because there are already several similar (though not identical in scope) efforts that require reformatting and exporting data and station information. JG indicated that technological solutions can be developed to eliminate the need to enter the same information into multiple databases, and RS reiterated concern that finding resources to create those solutions may be difficult.

RS suggested that the Monitoring Catalog Workgroup meet to discuss more of the details of the database structure (e.g. how will the purpose / objective information be stored – drop down menus vs. free text). ***GS asked SS to send the document describing the database structure for the GOMA Catalog of Monitoring Programs to the Workgroup***, to use as a starting point for discussion.

Discussion: FWRMC Surface Water Trend Monitoring Information Gathering

GS indicated that there is an interest from upper management in gathering information on existing SW trend monitoring networks.

GS asked if the FWRMC would be interested in pursuing this effort as a separate workgroup to address this task now, or if they would like to wait until the Monitoring Catalog effort is underway, and use the Catalog to gather this information.

SR and AC suggested waiting to use the Monitoring catalog to gather this information, and others agreed. MH suggested that this task could be accomplished by looking at information in the period of record and sampling frequency fields of the Monitoring Catalog. SR also suggested adding a field to the Monitoring Catalog where data providers could indicate that a station is a trend monitoring station.

Questions / Comments / Open Member Dialog

MH asked for an update on the status of WIN, and RS asked how DEP will be collecting data providers' input for WIN development. GS indicated the contractors have been hired, as part of the WIN initiative, to aid in determining what information exists and what the database needs will be. Information from current STORET providers is still being entered into FL STORET, which is then uploaded to EPA WQX (Water Quality Exchange).

GS indicated that she will invite the STORET coordinator to a future meeting to give an update on WIN. MH expressed interest in discussing the data entry / upload process for WIN, and suggested that it be designed to include an online interface that spreadsheets could be uploaded into. SR expressed interest in discussing the definitions of valid values for fields in WIN, and suggested that the IDM that was developed by the first FWRMC and the FL Oceans and Coastal Council be used as a starting point. AN indicated that the WIN information gathering effort is estimated to take approximately one year, after which they will produce a document which will be sent out for public comment. ***AN suggested that GS and SS send her contact information for the Council members, so that they could be added to the notification list.***

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Thursday, June 14, 2012 (8:30am – 12:00pm)

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Agency	Guests	In Person	Webinar
USGS	Marian Berndt		X*
US Army Corps of Engineers	Susan Kemp	X	
DEP	Denise Miller		X
DEP	Anita Nash		X
DEP	Steve Wolfe		X
SJRWMD	Tom Mirti	X	
SJRWMD	Tom Bartol	X	
SWFWMD	Catherine Wolden		X
Palm Beach Co.	Eddie Gibson		X
City of Jacksonville	Betsy Deuerling	X*	
University of West FL	Barbara Albrecht	X	
University of West FL	Alexander Maestre		X
Anfield Consulting	Lee Killinger		X
SING	Rhonda Roff		X

Introduction

Gail Sloane (GS) welcomed everyone to the meeting, and indicated that specific topics to be covered on Thursday morning include presentations on current monitoring efforts from several agencies and collaborative groups, an update on the Salinity Network Workgroup's activities, and discussion of the Coastal Monitoring Network and Regional Council planning efforts.

Central Florida Water Initiative

Tom Bartol (TB) presented information about the Central FL Water Initiative (CFWI)

(Presentation slides can be found in the 2012 archive section of the FWRMC website.)

- CFWI started new collaborative process ~1-2 years ago
- Concerns over water availability led to increased collaboration among WMDs (SJRWMD, SWFWMD, and SFWMD). Previously, WMDs each had different tools for consumptive use permitting, etc.
 - o Central FL Coordination Area (CFCA) was formed, and produced an action plan that led to coordination in regulatory, modeling / predictive tools, and planning.
 - o Action plan's short term phase rules limited GW withdrawals to 2013 demands (rule sunsets 12/31/2012)
 - o Action plan's long term phase includes long-term assessments, regulation, and comprehensive water supply plan
 - o As deadline approached, CFCA technical tools were still under development, so CFCA was suspended and new process (CFWI) was formed
- CFWI Guiding Principles
 - o Identify sustainable quantities of GW for water supply without causing unacceptable harm to water resources.
 - o Develop strategies to meet water demands that are in excess of sustainable yield of traditional GW sources.
 - o Establish consistent rules and regulations for the three WMDs to implement CFWI results.
- Collaborative themes: single model or methodology, uniform definition of harm, one reference condition, one consistent process, one regional water supply plan (RWSP).
- CFWI governance group is steering committee composed of one representative each from utilities, SJRWMD governing board, SWFWMD governing board, SFWMD governing board, DEP, and DACS. Additional committees created for management oversight, and technical oversight.
- Technical collaborative teams (include representatives from WMDs, DEP, DACS, utilities, consultants):

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1. Hydrologic analysis
 - WMDs contracted with USGS to develop a new transient GW flow model (area modeled goes well beyond CFCA boundaries) – 2 years of development, anticipated unveiling in late June 2012
 - Model calibration and scenario development
 - Assessing statistical trends in hydrologic data
 - Quantifying factors affecting GW and lake levels
2. Environmental measures
 - Evaluate conditions of wetlands in CFWI (coordinate three WMDs' methods for assessing harm)
 - Develop options for quantitatively relating changes in hydrology to changes in wetlands (changes related to withdrawal vs. drought)
3. Minimum flows and levels (MFLs) / reservations
 - Develop standard methodology for MFLs / reservations (evaluate methodologies instead of just choosing method that produces lowest value)
 - Develop guidelines for implementing MFLs / reservations in permitting, planning, and water shortage determinations.
4. Data, monitoring and investigations
5. GW availability - uses information produced by teams 1-3
6. RWSP – uses information from all other teams, identifies resource issues and provides options for meeting demands regardless of ability to meet demands with current resources
- Schedule:
 - o CFWI technical work - 2011 to 2012
 - o Estimate of Groundwater Availability - Aug 2012
 - o Management and Policy Options - Dec 2012
 - o Draft RWSP - Dec 2012
 - o Implementation - Dec 2013
- CFWI may serve as starting point for statewide collaborative efforts.
- RWSP development will include public outreach through public meetings, technical methods workshops, web postings (<http://www.cfwewater.com>) of meetings / progress / etc.

Questions / Discussion:

GS asked if the methodologies developed will be used in other parts of the WMDs, outside of the CFCA. TB indicated that the goal is to develop methods that would be able to be used throughout the WMDs, in areas with similar (e.g. non-estuarine) resources.

GS asked what the definition of harm will be. TB indicated that developing the definition is not complete, but it will relate changes in hydrology and a threshold associated with structure and function of the ecosystem, and give several examples. GS asked if WQ will be included. TB indicated that WQ will be considered, especially chloride and salinity guidelines. GS asked if the demands considered are only for public supply. TB indicated that projections are 50-75% public supply, ~20% agriculture, and a small amount of individual supply. Agricultural supply demands are more seasonal, climate driven, and spread out, while public supply is constant, even, and more concentrated. Public supply demand in the CFCA is estimated to increase ~50% by 2025 or 2030. RC asked if models include pumpage. TB indicated that models include very detailed water use data (only estimated value is domestic self supply).

MH asked if restrictions will include fluctuations in wet and dry periods, such as multi-decadal oscillations. TB indicated that MFLs and consumptive use permitting generally tries to tease out effects of climate, etc. using long term (40-50 yr) simulations. However, the period of record considered by models is updated with most recent data, which may result in more strict regulations because recent data is from a drier period.

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RC asked why SAS was not included in the model. TB indicated that the model includes many layers, but GW supply in this area is better related to the UFA. Spring discharge and lake levels are also better related to the UFA in these areas. Certain wetland systems may be better related to the SAS.

BA asked what is being done to address increased runoff and resulting WQ and biological changes with increased development from predicted population growth. TB indicated that the water supply program does not directly address WQ changes, but acknowledged that monitoring efforts will be necessary to ensure that WQ changes are documented and addressed.

National Water-Quality Assessment Program

Marian Berndt (MB) presented information about the National Water-Quality Assessment Program (NAWQA)

- NAWQA program started in 1991. Goals were to determine status of WQ in Nation's SW and GW, identify trends in WQ, and understand major natural and human factors that control WQ.
- Program has operated for over 20 years, and goals have evolved. Current goals are to:
 - o Assess current status of WQ in Nation's freshwater (FW) resources, and identify how WQ is changing over time.
 - o Understand causes and evaluate how human activities and natural factors (especially land use and climate change) affect WQ.
 - o Assess effects of contaminants, excessive nutrients, sediment, and streamflow alteration on aquatic ecosystems.
 - o Predict effects of human activities, climate change, and management strategies on WQ and ecosystem condition.
- Program operates continuously on decade-long cycles (Cycle 1 = 1991-2001, Cycle 2 = 2002-2012, Cycle 3 = 2013-2023).
- Program uses consistent sampling and analytical methods throughout the Nation. All analyses done at USGS lab in Denver.
- Targeted sampling design based on land use and water use.
- Sampling conducted at multiple scales (local, regional, and national)
- Studies are multidisciplinary and include GW and SW hydrology, chemistry, and ecology
- GW samples analyzed for field parameters (pH, temperature, dissolved oxygen, and specific conductance), major ions, trace elements, dissolved organic carbon, radon, nutrients (nitrate, ammonia, and orthophosphate), 85 volatile organic compounds, and 83 pesticides.
- From 1994–2011, NAWQA sampled ~500 wells in southeast (FL, southern GA and AL) in UFA, SAS, and Biscayne aquifer
 - o Sampled wells at various depths: many shallow monitoring wells in agricultural and urban land use areas, domestic wells, and public supply wells
 - o Sampled over 200 wells in Biscayne aquifer and SAS (180 agricultural and urban land use monitoring wells, 30 domestic wells, 45 public supply wells). Several monitoring wells were sampled twice, with an interval of at least 10 years.
 - o Sampled over 200 wells in UFA from 2002-2012 (150 domestic wells, 30 urban land use monitoring wells, 30 public supply wells)
- NAWQA Cycle 3 (2013-2023) planned GW studies are receptor based.
 - o Human health: Cycle 3 will focus on GW depth zones used for public supply because 42% of US drinking waters are obtained from GW, of which 82% is public supply and 18% is domestic supply.
 - UFA ranks 3rd in Nation for public supply use, and sampling is planned for 80 UFA public supply wells in 2014.
 - Plans to sample 40 Biscayne aquifer public supply wells in 2014.
 - Plans to sample 40-80 SAS public supply wells in eastern and southern FL from 2016-2017.
 - o Aquatic ecosystem conditions: Cycle 3 will focus on contaminant loading to streams (especially nitrate) because studies have shown that over 60 years of contaminant loading is stored in GW
- NAWQA publications on UFA
 - o Public supply wells by Metz and others, 2006 (SIR 2006-5267)
 - o Geochemical study at Tampa public supply well by Katz and others, 2008 (SIR 2007-5139)
 - o Modeling study at Tampa public supply well by Crandall and others, 2009 (SIR 2008-5231)
 - o Water quality in domestic wells by Berndt and Crandall, 2009 (SIR 2009-5147)

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- o Comparison of Upper Floridan and Biscayne aquifers to other carbonate aquifers by Lindsey, Berndt, Katz, et al, 2009 (SIR 2008-5240)
- More information on NAWQA available at <http://water.usgs.gov/nawqa/>
- NAWQA data available at <http://infotrek.er.usgs.gov/apex/f?p=NAWQA:HOME:0>
- Public supply well data not stored on public databases but is available to other federal, state, or local agencies by contacting dblum@usgs.gov or mberndt@usgs.gov

Questions / Discussion:

RC asked what the process is for identifying trends in GW WQ. MB indicated that the major reports have been comparing median values for analytes at groups of wells sampled at 10 year intervals.

SK asked how much coordination is being done with other agencies that have already developed GW forecasting models in FL, when developing NAWQA forecasting models. MB indicated that the NAWQA forecasting models will only be developed for four locations, none of which are in FL.

SR asked how many monitoring wells are drilled by NAWQA program. MB indicated that most monitoring wells were drilled by USGS contractors, but some SWFWMD monitoring wells were also used.

SM indicated that there is ongoing collaboration with USGS FL Water Science Center, WMDs, and local agencies in Miami-Dade, and encouraged MB to consider revisiting public supply wells in Miami-Dade (last sampled by NAWQA in 1998), and to incorporate existing monitoring wells from that area into the NAWQA network. MB agreed that it would be beneficial to look into how existing resources could be used in the Miami-Dade area, but indicated that there are no current plans to expand studies in that area.

Salinity Network Workgroup Update

Rick Copeland (RC) gave an update on the Salinity Network Workgroup's (SNW) Activities.

(Presentation slides can be found in the 2012 archive section of FWRMC website. For a more information on recent Salinity Network Workgroup meetings, please see the archived materials from the meetings on 5/2/2012.)

- SNW has met three times, and will meet again in August 2012
- RC is Chair of SNW and Dave DeWitt (SWFWMD) is Co-Chair
- SNW is a network of existing monitoring networks, and cooperation is necessary for success. Participating organizations include: 5 WMDs, USGS, USACE, DACS, DEP, Alachua Co., Palm Beach Co., Escambia Co., Miami-Dade Co., and LAKEWATCH.
- SNW will focus on GW monitoring, but is committed to working closely with SW monitoring programs and considering GW/SW interactions if applicable
- Current actions item 1: Compile GW site information for the monitoring catalog.
 - o Effort is currently on hold until FWRMC provides further guidance on Monitoring Catalog effort.
 - o Have compiled information on wells with GW levels and GW WQ information, by aquifer system. Would like to break down further, by aquifers.
- Current action item 2: Develop a framework document for the SNW.
 - o Will use EPA 10 steps document (<http://water.epa.gov/type/watersheds/monitoring/statemonitoring.cfm>) as a guide.
 - o Draft 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.
 - o Draft 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. (However, suggested remedies regarding saltwater encroachments are beyond the scope of the SNW)
 - Develop and use indices and ...to evaluate the status and trends of saline encroachment

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- Current action item 3: Develop indices for GW levels and GW WQ
 - o GW level index discussed at May 2012 meeting
 - o GW WQ index will be discussed at August 2012 meeting
- May 2012 meeting summary:
 - o SNW will encourage use of wells with long-term period of records (PORs), but not restrict network to use only wells with long-term PORs
 - o Discussed use of volunteer monitoring data (increases public buy in and public recognition of GW and salinity issues, potential cost savings and increased monitoring coverage, volunteers must be trained and data must be validated with proper QA to be comparable to other organizations' data
 - LAKEWATCH will commence a volunteer GW level pilot study (AquiferWatch) in Sept. 2012
 - o Chose percentile rank index (PRI) as GW level index
 - 3 WMDs already use it
 - Must clarify to reader that PRIs represent status, not trends.
 - Individual values on statewide map may be questionable due to regional variation in hydrogeology
 - Must clarify to readers that methods used for statewide map may be slightly different than those used by WMDs.
 - Regional and statewide maps will need to be hydrostratigraphically consistent among WMDs or other boundaries.
 - Need to identify common POR for wells on a map.
 - Need to discuss ways to address well clusters and different monitoring frequencies among wells (quarterly to continuous)
 - o Pilot study proposed (to test methodology and data sharing) - generate a draft statewide PRI map for the UFA for May-June 2010 (will correspond to potentiometric map produced by USGS).
 - In the future, may periodically produce side-by-side potentiometric maps and PRI maps.
 - Need to determine POR to be used for all included wells. Candidates include 1998-2011, 1992-2011, and 2007-2011 (will be decided by August 2012).

Questions / Discussion:

SM expressed concern about the lack of UFA wells in south FL, and stated that she has provided links to data from many wells in the Biscayne aquifer to RC. UFA well data has not been provided because that aquifer is not critical for water management issues in south FL, and a statewide PRI map of UFA may not be helpful to inform south FL management issues. South FL will need to have another map focusing on the Biscayne aquifer. SK expressed concern that producing UFA PRI maps with no data in south FL give readers the wrong impression that there is no monitoring being conducted in south FL. It is important to clearly explain why there are no UFA wells shown, and offer an alternative product that would be useful for evaluating south FL conditions.

RC indicated that he did not expect to receive data for many UFA wells in south FL for the reasons stated by SM, and indicated that the statewide UFA map was proposed as the pilot study, and that PRI maps of other aquifers would follow, if SNW participants are satisfied with the pilot study product.

Tom Mirti (TM) expressed concern about using a POR as short as those proposed and suggested including wells with longer PORs on the map. RC clarified that wells with longer-term PORs would still be included in the analyses, but the POR of data used would be limited to the range that is common to all wells being included.

Gulf of Mexico Alliance Monitoring Network

Steve Wolfe (Steve W.) gave an update on development of the Gulf of Mexico Monitoring Network
(Presentation slides can be found in the 2012 archive section of the FWRMC website.)

- The Gulf of Mexico Alliance (GOMA) and several other regional entities are currently developing a Gulf of Mexico (GOM) Monitoring Network.
- Several recent reports have recognized importance of monitoring in GOM.
 - o Mabus Report "America's Gulf Coast": Long-term restoration and recovery beyond the oil spill
 - o Gulf Coast Ecosystem Restoration Task Force (GCERTF), GOM Regional Ecosystem Restoration Strategy
 - o GOMA: Governor's Action Plan
- Potential funding sources for GOM monitoring
 - o Clean Water Act Fines (RESTORE Act or settlement)

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- o Natural Resource Damage Assessment (NRDA) restoration funding
- o GOM Research Initiative (GOMRI) (\$500,000 from BP)
- o Annual appropriations

- Planning for monitoring needs to precede funding, or funds may be directed elsewhere.
- Opportunity exists to develop a holistic monitoring plan, build on existing efforts, and coordinate efforts of GOMA/GOMRI, GCERTF, NRDA, Hypoxia Task Force, federal, state, and local governments, and non-governmental organizations (NGOs).
- GOMA process (to address issues that five GOM states agree are of importance):
 1. Develop Monitoring Framework.
 - Monitoring systems are designed to address specific questions, and the scale of those questions drives the scale of the monitoring system required. Therefore, GOM Monitoring Framework is organized around the scale of monitoring required.
 - Four tier monitoring framework:
 - Tier 1 – to address questions requiring Gulf-wide monitoring
 - Tier 2 - to address questions requiring regional monitoring (any scale that falls between those specified by Tier 1 and Tier 3)
 - Tier 3 – to address questions requiring monitoring at the scale of an estuary or similar-sized coastal segment
 - Tier 4 – to address questions about site-specific problems (not in scope of GOMA)
 - Naming convention used for Tiers may change to correspond to that used by upland nutrient monitoring
 2. Identify priority monitoring issues.
 - WQ Team Leads from five Gulf states identified draft GOMA Monitoring Priorities following a Nov. 2011 GOMA workshop focused on GOM monitoring needs.
 - Use the existing GOMA interagency structure to coordinate funding and monitoring.
 - Long-term monitoring to support nutrient management and reduction efforts.
 - Long-term monitoring to support GOMA WQ human-health priorities: coastal pathogens, harmful algal blooms (HABs), and mercury in fish.
 - Draft priorities vetted through the five State governments before being finalized.
 - GOMA priorities align well with WQ monitoring goals laid out in the recommendations to the President from the GCERTF.
 3. Identify most important questions for issues.
 - GOMA Nutrients Team will finalize nutrients questions at GOMA All-Hands Meeting in June 2012
 - HABs Workgroup, Mercury Workgroup, and Pathogens Workgroup of GOMA WQ Team will identify questions related HABs, mercury in seafood, and coastal pathogens, respectively
 4. Design monitoring to answer those questions.
 - WQ Team will first host workshop to design monitoring system to address highest priority issue, nutrients. Then add monitoring necessary to address other priority issues by sequentially expanding upon nutrient design.
 - Separate design required for each Tier (GOMA will focus on Tiers 1-3)
 - Workshop scheduled for August 2012 to create nutrient system designs for the three tiers
 5. Compare needed monitoring to existing.
 - GOMA Catalog of Monitoring Programs is presently under construction. Catalog is GIS-based application containing information on who monitors what, using which methods, and exactly where in the GOM that monitoring is taking place. Catalog roll out anticipated for late June 2012, and population with existing monitoring programs anticipated by late Sept. 2012.
 - Nutrient-monitoring design will be overlaid on Catalog's information about existing stations, to identify gaps in monitoring coverages (sites), and gaps in types of monitoring needed to address nutrient-monitoring questions. Results of this exercise will be discussed at workshop scheduled for Sept. 2012.
 6. Develop plan to fill gaps and provide integration, including incorporating “foundational monitoring”.
 - Once nutrient-monitoring plan is developed, will need to develop implementation plan to guide monitoring network build out, to include other priority issues and foundational monitoring. GOMA has collaborations and partnerships in place to accomplish this task, and details of plan will depend in part on the funding mechanisms available at the time.

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- Plan for foundational monitoring (scope of monitoring that we are committed to continue even during budget slumps) will be addressed at GOMA All-Hands meeting in June 2012. Suggestions include:
 - Monitor the most commonly needed parameters at most commonly needed tier or at all tiers. (Poll workgroups and/or stakeholders for list of parameters useful to them, and design program to monitor most frequently listed parameters.)
 - Address the most common questions at the most common tier or at all tiers. (Poll workgroups and/or stakeholders for list of questions they are trying to answer, identify commonality in the questions, and design program to provide data to answer most frequently asked questions.)
 - Address the most important questions at the most important tier or at all tiers. (Poll workgroups and/or stakeholders for list of most important questions, rank questions to identify highest priority, and design program to provide data to answer highest ranking questions.)

7. Implement.

Questions / Discussion:

RC asked what process would be used to rank the questions in terms of importance. Steve W. indicated that a process would need to be developed to identify issues that all five states agreed were important. Suggestions received at the National Water Quality Monitoring Conference included identifying the most common questions among those identified as important.

SK asked for clarification on the overall objective of the GOM monitoring program. Steve W. indicated that GOMA's goal is to establish long-term monitoring to support the States' needs. GCERTF's goal includes this plus understanding if individual restoration projects from the oil spill are successful in the GOM and upstream. Portions of the oil spill penalty funding are for GOM restoration (not specific to the oil spill), while other portions of the funding are for restoration to address oil spill caused problems. GS added that GOMA's objective goes beyond the oil spill, and is geared towards the larger picture and long-term monitoring.

SK asked if the implementation of the plan will include writing in a way for monitoring to provide feedback on the success of the restoration efforts, so that those efforts can make corrective changes when needed. Steve W. indicated that the degree to which adaptive management will be included in the design depends on the questions to be answered by the plans, which have not been identified yet. The individual feedback loops mentioned will also be specific to smaller projects, while the GOM Monitoring Plan will focus on the long-term monitoring of the system. SK added that system-wide monitoring could still pick up signals that provide feedback on how successful specific restoration projects have been. Steve W. indicated that those considerations are expected to be included, but will be addressed later in the plan development process. GS added that as the plan develops GOMA will need to increase communication with entities conducting smaller-scale monitoring to establish the feedback between restoration projects and system-wide monitoring.

SK asked if coordination is occurring with larger ecosystem restoration entities that have monitoring already associated with them, in an effort to minimize duplication of effort. Steve W. indicated that GOMA Teams have members from those organizations that facilitate sharing information from those existing efforts.

Discussion: FWRMC Coastal Monitoring Network Effort

Gail Sloane (GS) presented preliminary information compiled from FWRMC participants about current FL coastal water monitoring efforts

(Presentation slides can be found in the 2012 archive section of the FWRMC website.)

- DACS – statewide marine monitoring network focused on protection of public health for consumers of molluscan shellfish by monitoring estuarine waters for fecal coliform and physical / chemical properties.
- DACS – event specific monitoring of HABs in estuarine waters and their associated marine biotoxins in shellfish, and polycyclic aromatic hydrocarbon (PAH) presence in areas associated with oil spills or oil resuspension
- DOH – Healthy Beaches Initiative (human health protection for recreation) conducts biweekly sampling for enterococci at 246 beaches during bathing season and 144 southern beaches year-round. Advisory data sent directly to EPA for beach advisory postings, and DEP uses data for impaired waters rule.
- FWC (FWRI) – multiple initiatives including:
 - o 5 year rotation for EPA's National Coastal Condition Assessment (WQ, biology, habitat)
 - o NASA remotely sensed optical WQ in Suwannee Estuary to determine seagrass loss and gains

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- o Seagrass integrated mapping and monitoring (SIMM) to determine statewide WQ and seagrass cover
- o South FL Fisheries Habitat Assessment (FHAP, WQ and seagrass community dynamic relationships)
- o Coral monitoring in FL Keys and Dry Tortugas (condition and extent of coral communities)
- o HAB monitoring (provide data in support of DACS shellfish harvesting areas)
- o MARVIN (MERHAB Autonomous Research Vessel for IN-situ sampling for WQ, algae, currents, meteorology, nitrate, and urea in Sarasota Bay)
- o Fisheries monitoring (multiple objectives including documenting changes in the biological condition of FL estuaries)
- DEP – multiple initiatives including:
 - o Estuarine Numeric Nutrient Criteria (NNC) (regional WQ monitoring with concurrent fish sampling and community based biological assessments to develop and validate NNC in FL estuaries)
 - o Ocean Acidification (pH and physical / chemical constituents to address TMDL challenges)
 - o Mercury (multi-agency effort to determine sources and possible strategies to reduce mercury in fisheries statewide)
 - o Trend Monitoring (statewide WQ trends and determining loading from watershed basins)
 - o Coastal and Aquatic Areas (aquatic preserves monitoring)
- NFWFMD – bi-monthly sample collection at eight near shore sites for nutrients and standard WQ analyses
- Choctawhatchee Basin Alliance (volunteer) – over 100 sampling areas monitored monthly for nutrients, chlorophyll, and standard WQ parameters
- St. Andrew Bay Resource Management Association Baywatch (volunteer) – WQ and seagrass monitoring
- SRWMD – coastal monitoring sampling for WQ at two sites in Suwannee estuary and one in Steinhatchee Sound; continuous stage and flow data, and salinity / conductivity / temperature measured at one gauge
- SWFWMD – multiple initiatives
 - o Project Coast WQ Monitoring (status and trends in WQ of nearshore waters and tidal rivers adjacent to Springs Coast and Pasco Co.)
 - o Kings Bay WQ Monitoring (quarterly WQ and water clarity measurements at fixed location sites in Kings Bay to assess trends)
 - o Coastal Rivers WQ Monitoring (long-term monitoring for SW WQ in Homosassa, Chassahowitzka, and Weeki Wachee spring-fed river systems, used to evaluate changes in aquatic systems and assist in developing restoration strategies)
 - o Charlotte Harbor WQ Monitoring (long-term monitoring using random sampling design to document WQ conditions within estuary for planning and management of habitat restoration and WQ improvement projects)
- SFWMD – WQ, hydrological, sediment / sediment toxicity monitoring; Everglades monitoring
- Sarasota Co. – monthly sampling for HABs and standard WQ parameters including nutrients

GS presented a brief overview of regions used for developing numeric nutrient standards for estuaries

(Presentation slides can be found in the 2012 archive section of the FWRMC website.)

- Given the diversity of estuaries and site-specific nature of nutrient impacts in estuaries, DEP and local scientists developed estuary-specific nutrient standard, rather than generally applicable standards
- Worked with local scientists, including Estuary Programs and EPA to reach consensus on methods and standards
- Worked with Marine Technical Advisory Committee (MTAC) on basic methodologies
- Adopted nutrient standards for estuaries from Clearwater/Tamps to Miami and the Keys (SW and S FL), and are planning to develop standards for other estuaries in the near future
- All interpretations for estuaries developed by DEP are expressed as annual geometric means, not to be exceeded more than once in a three-year period, apply as average of open water segments, and do not apply to tidal creeks
- Example: Naples Bay, where northern portions of system impacted by drainage, channelization, urban development, and construction of extensive series of dead-end canals. Analysis shows that nutrient and chlorophyll a values in Naples Bay are similar to adjacent minimally disturbed areas. Therefore, as physical restoration progresses, maintaining existing nutrients is appropriate. DEP worked with City and County to reach an agreement and ensure that current standards reflect all data.
- Example: Southern areas, including Florida Bay and Ten Thousand Islands, remain largely undisturbed with over 80% of southern SW coast basin in conservation land (largest undisturbed mangrove forests in the

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state). Nutrients are low and not a stressor (no increasing trends in nutrients or chlorophyll and healthy, well-balanced flora and populations) and EPA agrees that maintaining existing nutrient conditions is protective.

- Subsection 62-302.532(3) includes a schedule (subject to the provisions of Chapter 120, F.S.) for development of interpretations for remaining estuaries
 - o Perdido Bay, Pensacola Bay (including Escambia Bay), St. Andrews Bay, Choctawhatchee Bay, and Apalachicola Bay by June 30, 2013, and remaining estuaries by June 30, 2015

SM commented that FIU stations shown in south FL estuary segmentation have lost original funding source and may not be consistently monitored in the future.

SK commented that there is continuity among current efforts because the same basins are used for NNC and CERP Florida Bay Salinity Performance Measure.

Please email GS (gail.sloane@dep.state.fl.us) if you would like to be added to the email distribution list for NNC public meeting notices.

Discussion: FWRMC Regional Councils – Letters of Invitation / Logistics

GS displayed final draft of Regional Council(s) letter of invitation, to be sent to upper management of organizations that are potential participants. First priority is sending letters to agencies that may be leaders of Regional Councils or assist in planning (WMDs and agencies currently representing FLERA on statewide FWRMC).

NW asked if other state agencies will be included in the Regional Councils. GS indicated that state and federal agencies are welcome to participate in Regional Council meetings.

Action Item – Identify Letter Recipients

- Have contact information (no additional information required) from the following organizations: SJRWMD, SWFWMD, Tampa Bay National Estuary Program (NEP), Charlotte Harbor NEP, Sarasota Bay NEP, Sarasota Co., DEP District Offices
- ***The following people volunteered to identify letter recipients from the organizations that follow their names:***
 - o ***Nick Wooten - NFWFMD, Escambia Co., Leon Co. Environmental Management, City of Tallahassee, and other local and volunteer groups in the Panhandle.***
 - o ***Roberta Starks – Tampa Bay Water, Homosassa River Alliance***
 - o ***Julianne LaRock – SFWMD, Broward Co., Palm Beach Co.***
 - o ***Mark Hoyer – FL Lake Management Society***
 - o ***Gail Sloane - National Estuarine Research Reserves (NERRs).***
 - o ***Barbara Albrecht – St. Andrew Bay Resource Management Association, Bream Fisherman Association***
- ***Please send contact information gathered to SS (stephanie.sunderman@dep.state.fl.us) before August 1, 2012.***
- ***Need to identify letter recipients from the following organizations:***
 - o ***Other major cities and counties, including Lee Co., Alachua Co, Volusia Co. Manatee Co., Pinellas Co., Miami-Dade Co., City of Jacksonville.***
 - o ***SRWMD***
 - o ***National Park Service (NPS)***
 - o ***NOAA National Marine Sanctuary.***
 - o ***Indian River Lagoon NEP***
- ***Please send additional suggestions for letter recipients to SS.***

Questions / Comments / Open Member Dialog

GS reminded FWRMC members that meeting notices and presentations and summaries of past meetings are available on the FWRMC website at <http://www.dep.state.fl.us/water/monitoring/council/index.htm>.

Please contact GS or SS to be added to the email distribution lists for the workgroups (Monitoring Catalog, Salinity Network, Regional Council Planning, and Coastal Monitoring Network).

Meeting Evaluations

What topics / presentations were most useful?

- Current monitoring efforts (4 votes).
- Monitoring catalog (2 votes) - interest in how to get data uploaded with limited resources.
- GOMA
- Salinity Network Workgroup update
- Discussion of CFWI and getting Districts to work together.
- Appreciated learning more about USGS process, especially since receiving notification today from the Water Environment Federation that the 10-year proposed plan is now out for public comment.
- Gail's summary at the end.
- All were great / useful / interesting / informative (5 votes).

What topics/presentations were least useful? Why?

- GOMA – Perception is that the federal/state/local governments are all in this area due to the “big” financial windfall that the spill has afforded the area.
- Monitoring Catalog – We need to examine the list of catalogs better and pick out pluses and minuses.
- Honestly I am having a problem picking something that was least useful!

What topics would you like to see at the next FWRMC meeting?

- Discussion on dissolved oxygen monitoring and criteria (2 votes) – lowering the value for SW. Do we need to get into aquatic plant monitoring because I hear Lake Tohopekaliga is on an impaired list because of Hydrilla coverage?
- Discussion on SCI - dropping the number of species needed to pass and not discerning the difference between sensitive indicators (stoneflies) vs. pollutant tolerant species.
- Monitoring rainfall/evaporation (weather) as a driver for groundwater.
- Monitoring Catalog / WIN - would like to see the beginning of the database. What will the categories be?
- Expectations of stakeholders for Monitoring Catalog deliverables.
- Continue presentations on monitoring programs/networks (2 votes).
- Updates on BP/GOMA funding.
- Advantages of the probabilistic method.
- Advances in the DEP sucralose project.

Meeting at GTM Reserve

- Good (5 votes) / Fair (1 vote)
- Good presentations.

Webinar

- Good (5 votes) / Fair (2 votes)
- Very hard to hear questions/comments from those attending the meeting in person if you were attending via webinar.

Presentation time/format

- Good (11 votes)

Discussion time/format

- Good (10 votes) / Fair (1 vote)

Other comments/suggestions

- Too bad that no money from oil spill devoted to tourism was redirected to WQ monitoring, since this resource is what attracts tourists to our state.
- I think that a lot is accomplished for 8 hours. I do think that if you didn't meet in person, you could meet more frequently for a shorter period of time and that might increase participation.
- I thought it was a good meeting.
- Problem I see is that all agencies' WQ or quantity monitoring are not addressing the growth and how we dredge (land use change) and where we dredge. Will we be monitoring the demise of our greatest resource, namely water, as we allow and encourage more development, agriculture, and other “activities” that impair WQ (SW and GW) and ecosystems (dependant on WQ)?