LOWER ST. JOHNS RIVER TECHNICAL ADVISORY COMMITTEE (TAC) MEETING
Wind Mitigation Resource and Conservation Building - St. Johns County Agricultural Center
3111 Agricultural Center Drive, St. Augustine, FL 32092
December 8, 2010

Participants

Shauna Allen, NPS	Chuck Jacoby, SJRWMD
Khalid Al-Nahdy, FDEP	Danny Johns, Blue Sky Farms
Dave Briglio, MACTEC	Palmer Kinser, SJRWMD
Robert Burks, SJRWMD	Pam Livingston Way, SJRWMD
Derek Busby, SJRWMD	Lori McCloud, SJRWMD
Tiffany Busby, Wildwood Consulting	Dana Morton, COJ
Dean Campbell, SJRWMD	George Myers, FDEP/CAMA
Stuart Chalk, UNF	Marcy Policastro, Wildwood Consulting
Betsy Deuerling, COJ	Richard Powell, USACE
John Hendrickson, SJRWMD	Angelo Speno, Putnam County
John Higman, SJRWMD	Paul Stodola, USACE
Mike Hollingsworth, USACE	Gary Weise, COJ
Don Jacobovitz, Putnam County	Pat Welsh, UNF

Welcome and Introductions

Tiffany Busby welcomed everyone to the Lower St. Johns River (LSJR) Technical Advisory Committee (TAC) meeting. She thanked the St. Johns County Agricultural Center for letting the TAC use their meeting room. The participants introduced themselves and the entity they represent.

Vegetation Changes Along a Gradient of Salinity in the Ortega River of Northeast Florida

Palmer Kinser noted that as sea level rises and river discharge declines, salinity may increase[1] in the lower reach of coastal rivers. This will lead to a transition to more saline types of vegetation. The purpose of this study was to document vegetation changes, identify specific breakpoints (boundaries) of vegetation change, determine what other factors change, relate soil salinity changes to surface water salinity, and determine what might happen in the future. To accomplish these objectives, multiple methods were used in the Ortega River, which was the one area that had a good gradient of vegetation extending from freshwater to saltwater. They used aerial imaging, measured vegetation in plots, measured soil salinity in several ways, and sent out soil samples for analysis. Salinity was measured in the surface water and in bore holes in the marsh, and they used a saturation method to extract the salt from the soil matrix to relate it back to the soil probe salinity.

In the first phase of the study, they sampled soils across the LSJR Basin to gain a general understanding of the salinities in the basin. They also used information on river salinities from the hydrodynamic model, and they found that the constriction in the river helps to buffer changes in salinity. For the second phase of the study in the Ortega River, there were 17 sample points along both sides of the river. They also examined old aerial photographs to determine what changes in vegetation have occurred from the past.

At Site 1, which was a freshwater swamp and the furthest upstream site, the canopy heights ranged from about 90 to 100 feet tall with a variety of species. Downstream, Site 5 was still a freshwater swamp but there are signs of some salinity. The canopy heights were similar although there were some plants not present at this site, which were found at Site 1. Site 8 was a tidal freshwater swamp, and the canopy was

[1] After the meeting, SJRWMD staff noted that changes in salinity could be due to sea level rise, river dredging, and decreases in wastewater discharges.

a little shorter with a lot of downed timber. They did find a marsh clam and some saltiness in the soil at this site. Site 11 was a lower tidal swamp, where the trees were even smaller and younger. There was a lot of salt at this site, which caused the trees to die back from the top. Site 15 was an intermediate marsh with a few scattered, small trees, which were not found near the river. Site 17 was a sand cord grass marsh and the furthest downstream site.

At each of the sites along the Ortega River, they measured soil salinity and plotted the conductivity values versus the river kilometer. They also looked at the distribution of vegetation along the river and found a strong gradient. Using these data they determined breakpoints in soil conductivity for different plant communities. Tiffany asked why some of the land was so undeveloped and if these were public conservation lands or private lands. Palmer responded that he does not think the riparian areas are public conservation lands. However, much of the area was wet or periodically wet, and therefore not desirable for development. Palmer noted that they also looked at other parameters compared to salinity and they found that carbon, calcium, nitrogen, aluminum, phosphorus, iron, zinc, manganese, and copper all decreased as salinity increased. Sulfur, pH, potassium, magnesium, and bulk density increased as salinity increased. They also saw changes in soil texture and chemistry, more light in the environment, and changes in microrelief, which is affected by trees. The next step in the study is to take the salinity breakpoints for the basin and compare them to the Ortega River salinities.

Pat Welsh asked if they looked at the effects of specific events on salinity. Palmer responded that they did not look at specific events but there are mechanistic models that could be used for this purpose. He has seen real life events where a saltwater influx kills off the current species and then saltwater species take over. Richard Powell asked if there is a report with the study results. Palmer responded that all they currently have is the presentation but the results will be put into a report form, first for the alternative water supply study. Richard asked if they will model how saltwater changes affect the system. Palmer responded that the SJRWMD has already modeled how the river will behave under different water withdrawal scenarios. They are also looking at different scenarios of sea level rise and channel dredging. Richard asked if the SJRWMD is trying to measure the impacts on all species. Palmer responded that yes they are trying to do this but some of the analysis will be done through regression models instead of more sophisticated models. SJRWMD will start presenting the results of the alternative water supply study next week to obtain feedback from different groups at the SJRWMD.

John Hendrickson asked if they could determine what salinity was historically versus what it is now from the aerial photographs they studied. Palmer responded that should be able to do this within about 0.5 parts per thousand (ppt). Dana Morton asked if salinity is increasing or decreasing. Palmer responded that the lower part of the Ortega River is getting more saline, likely because of sea level rise and channel dredging, and the upper part is getting fresher, likely from stormwater runoff. John Higman asked if there are any influences because of changes in tide. Palmer responded that the normal tidal range in most of the system is about 1.5 feet, which does not have much of an effect. John Higman asked what laboratory method was used for the metals extraction. Palmer responded that samples were sent to a lab for this analysis and he believed that light acid extraction was used but could verify the method.

Pat asked if there is a transition of about 1-1.5 ppt of sulfur in the soils where the vegetation becomes a saltwater marsh flat. Palmer responded that there is a point of transition but he does not know the exact number for where this occurs. Part of the problem is that when things change, they change quickly. Dana asked if they did any water chemistry analysis for the water in the bore holes. Palmer responded that they only analyzed conductivity in the bore holes. Dave Briglio asked if the salinity gradient could be used to determine changes in vegetation due to improvements in stormwater runoff management. Palmer responded that this analysis could probably be done but this study was focused on annual average parameters instead of events.

Discussion of Coordination for Agency Response to Environmental Events

Dean Campbell stated that the TAC was formed in response to the original Surface Water Improvement and Management (SWIM) Plan that identified a lack of interagency coordination. Using the TAC as a forum for the agencies to provide updates and exchange information has been successful. This was seen in the response coordination to the recent environmental events on the river including the algal bloom, fish kill, and foam. All of these events were highly visible with a lot of public interest. Dean stated that he recently received a question from his boss, Ed Lowe, about whether the SJRWMD is monitoring the right parameters to understand these events. Dean responded to Ed including a synopsis of the discussions at the last TAC meeting and how the agencies worked together to respond to each of the events. However, Dean noted that he was not sure if the samples were being collected at the right frequency and for the right parameters. Several years ago, the Florida Department of Health (FDOH) held a meeting of the Harmful Algal Bloom Task Force, with the goal to create a response plan. The report is available on the Florida Fish and Wildlife Conservation Commission (FWC) website and the link will be posted to the TAC website. This report includes tables that describe individual events and the role of each agency.

Dean asked the TAC members what additional information should be collected and what could be done to improve interagency coordination and response to future environmental events. Pat stated that he agrees that the cooperation among agencies has been phenomenal, and he thanked the TAC for their help educating him on different issues throughout the years. He noted that his main concern is that the river is really flat all the way to Lake Monroe, which can allow salinity to be pushed far up the river. In the past there were several continuous monitoring sites and there are currently only one or two stations. It would be helpful to have some continuous monitoring stations for basic parameters and key indicators. Pat also noted that the University of North Florida (UNF) and Jacksonville University (JU) are working on methods to track different strains of fecal coliform bacteria in the creeks. Dean added that similar work is being done to develop probes for phytoplankton. Continuous monitoring also has a lot of potential, but it is a battle every year to find the funding for the stations. The station at Buckman has been really helpful to provide information in real time. Dean suggested that if the agencies could provide information on how these stations would be useful to them, it would help in obtaining the funding to create and maintain the stations.

Dana stated that there would be a benefit to having a clearinghouse of agency resources, which would be a resource independent of individuals, in case anyone leaves. It would also be useful to have a way to let everyone know when someone is responding to event or out in the field sampling during an event. A Google calendar or similar tool would be helpful to share information so that the response team knows about activities before it is in the newspapers. Dean suggested preparing an email distribution list to notify people of responses during environmental events. This might be easier than a separate calendar that people would have to remember to update. Dana also noted that the U.S. Environmental Protection Agency (EPA) has a coordinator, Frank Baker, for this area. He will be coming to Jacksonville next week to collect fish samples in Hogan Creek and Long Branch to check for fish consumption parameters. EPA will use the City of Jacksonville (COJ) laboratories and FDOH will be involved in case an advisory is needed.

Tiffany stated that it may be best to figure out an easy way to send information from the field to people back at the office so they can send out the notice to the distribution list. This would be easier than having to send response notices from the field. Dean suggested reconvening this discussion at the next TAC meeting. He requested that each agency review their monitoring programs, methodologies, frequency, and parameters and provide an update at the March meeting. Lori McCloud noted that the Water Quality Atlas used to include a lot of this information and it may be helpful to generate the Atlas again and then determine what the data gaps are. John Hendrickson noted that it would be helpful to send an email to the TAC about this request for information at the next meeting since all agencies were not in attendance at the

meeting. Stuart Chalk stated that he would be willing to offer his time to help with this effort. Pam Livingston Way asked if the presentations at the next meeting would be about all monitoring or just monitoring for environmental events. Dean responded that the meeting discussion should just be for event monitoring but it would be useful to hear about all efforts, at another meeting, for a discussion on the Water Quality Atlas. Khalid Al-Nahdy stated that the Florida Department of Environmental Protection (FDEP) plans their routine sampling events for the entire year. During an event, they rely on the professional relationships and it would help to formalize what resources are available. There was additional discussion that it would be useful to have someone compile information on the events and the response timeline to help with a comparison from season to season over the years.

Technical Updates and Announcements

St. Johns River Alliance

Tiffany stated that the Alliance Board meeting will be held on December 13th in the Putnam County Board Room. Dean noted that he will attend as part of a request to designate the entire St. Johns River as a formal paddling trail. Putnam County has an active group that was successful in getting the portion of the river in the county, as well as the tributaries, designated by the Office of Greenways and Trails. The next step is to have the entire river designated, formally identify segments as trails, and determine launch sites. The hope is to obtain resources similar to what was done for the Suwannee River trails.

Don Jacobovitz stated that the first real trail recently opened in Putnam County from the Clay County line to County Road 315. Other trails are also being worked on throughout the county.

U.S. Army Corps of Engineers

Mike Hollingsworth stated that the Mayport carrier basin deepening project started about two weeks ago. The project is starting with a clam shell excavation in the basin itself, and this work will occur over several months. In April 2011, the hopper dredge will be brought in to start the river deepening. For the Big Fishweir Creek project, the Corps has completed the draft ecosystem restoration feasibility study, which has been sent out for internal technical review. These comments will be incorporated and then sent to headquarters in Atlanta for approval before the study is released to the public. At this time, the study will be brought to the TAC for input. The project will not start for a few years pending approval from Atlanta and receiving funding. In Hogan Creek, the Corps is doing a similar feasibility report, and they recently collected more sediment and soil samples in the potential restoration areas. The Corps is also working on a feasibility study for the Jacksonville Harbor project. They are waiting on more information from the economic analysis to determine the federally recommended depth for the dredging. In the meantime, they are coordinating to learn more about the options for dredging and to cultivate professional relationships. The Jacksonville District was asked by Headquarters to look at less expensive alternatives for the Mile Point project in the area where the Intracoastal Waterway intersects with the river. They are now exploring the option of just removing part of the jetty that creates the hairpin turn, cross flow, and erosion effect. The Corps will conduct 3-D modeling to see how the flows will change and the benefits and impacts of removing the jetty. The larger project is still in the feasibility stage.

Other Member Updates

Dana stated that there are been some personnel changes at COJ. Ron Roberson was the Municipal Separate Storm Sewer System (MS4) Coordinator and he has retired. Tom Mallet has transferred to this position. Justin Levine has moved into the Potential Illicit Connection (PIC) Program, although he will still do the river sampling. Barry Cotter returned to the tributaries sampling program. Dana noted that the Beemats project has just concluded, and the Deer Creek pond is in the drawdown phase to the increase the size of the pond. The Beemats monitoring started at end of June/early of July and they captured samples from seven events. CDM is analyzing the data and the plant samples that were harvested. Once the analyses are completed, COJ will make a decision on whether to employ Beemats in a treatment train as part of the low impact development (LID) initiative. Steve Beeman, who donated the mats, was

disappointed that the roots were trimmed off and he thinks turtles or fish were eating the plants. Turtles were not observed by Dana and his team. Dana also stated that there has been interest in reopening the shellfish beds in Nassau and Duval Counties, COJ received a grant for a new artificial reef, and EPA is working on an environmental justice in COJ that is focused on human health and fish consumption.

Khalid stated that the basin management action plan (BMAP) for Trout River BMAP will be kicked off tomorrow at the Florida Department of Transportation (FDOT) office. Tiffany noted that information is being collected for the annual report for the main stem BMAP and the annual meeting will be held on February 24, 2011. Information is also being collected for the first tributaries fecal coliform BMAP and that annual meeting will be held in March 2011.

Shauna Allen stated she is in the process of determining all the studies that are being conducted in the Timucuan Preserve. One more staff person is needed for natural resources to help get some efforts underway. Shauna noted that she is interested in setting up a fixed water quality station in Fort Caroline, which is a great location if the data can be of use. They are also looking into holding a quarterly science symposium. The first symposium would likely be a cultural exchange and the second would be a natural exchange. Dana suggested it would be good for the Three Rivers Conservation Coalition to meet again, possibly as part of the quarterly meeting.

Dana asked about the Florida State University (FSU) presentation on septic tanks. Tiffany responded that the meeting will be held tomorrow afternoon at 1:30 PM when FSU will describe the model they have created on septic tank effluent migration. Dana stated that TAC members could contact him if they are interested in attending.

Derek Busby stated that a ribbon cutting ceremony was held for the first phase of a reclaimed water project at Naval Air Station (NAS) Jacksonville. The SJRWMD will probably participate in Phase 2, and this funding request will go to the Governing Board for approval at their next meeting. When both phases are complete, the NAS Jacksonville facility will be at zero discharge. The project timeline for Phase 1 is one year. Derek also noted that the SJRWMD did not send forward a Community Budget Issues Request last year because the legislature did not open up this funding and it is the same situation this year. SJRWMD did put together a packet on river needs and priorities to help keep river interests up front.

George Myers noted that Heather McCarthy was recently hired to work as an outreach coordinator.

Next Meeting Date
The next meeting will be held in March 2011 and will be hosted by COJ.

Adjourn
The meeting was adjourned at 12:09 PM.