

LOWER ST. JOHNS TECHNICAL ADVISORY COMMITTEE (TAC)
MEETING SUMMARY
Host: Florida Department of Environmental Protection
FDEP NE District Offices
August 22, 2007

Participants

Khalid Al-Nahdy, FDEP
Tiffany Busby, Wildwood Consulting
Derek Busby, Wildwood Consulting
Dean Campbell, SJRWMD
Patrick Campbell, Citizen
Ed Cordova, JEA
Dean Dobberfuhr, SJRWMD
George Getsinger, NOAA/NMFS
John Hendrickson, SJRWMD
Nam Huynh, COJ
Debbie Kristiansen, St. Johns County
Lynn Lisenby, UNF
Melissa M. Long, FDEP
Jeff Martin, DEP
Mark Middlebrook, The Middlebrook Co. for St. Johns River Alliance
April Moore, UNF Environmental Center
Dana Morton, COJ/EQD
Kraig McLane, SJRWMD
John Nooney, Citizen
Mike Null, City of Green Cove Springs
Patrick O'Connor, FDEP
Nicole Robinson, DEP/CAMA – NE FL Aquatic Preserves
Geoffrey Sample, SJRWMD
Vince Seibold, COJ
Steve Thomas, City of Green Cove Springs
Pat Welch, UNF

Welcome and Introductions

Tiffany Busby made introductory comments and provided regrets from Jim Maher who had other, unavoidable, commitments and was unable to attend.

Ms. Busby asked for comments on the minutes from the past meeting. None were provided and the minutes were approved.

Presentation - *Coastal Ocean Observing System-New Programs and Changing Funding Structures*

Dr. Pat Welsh provided a presentation describing the current state of the international, national and regional coastal ocean observing system and the changing landscape regarding its organization and political support. As a result of the U.S. Commission on Ocean Policy Report of 2004 the Administration issued the Ocean Action Plan. Dr. Welsh reported that the plan developed strategies and policies and established strong partnerships to further the ocean observing system. Funding and strong organizational leadership has been lacking however to coordinate efforts among the numerous agencies, states and countries involved in coastal ocean monitoring.

Florida, while having a significant number of ocean researchers, has suffered from being located in the gap between regional (Southeastern and Gulf coast) observance systems. As a result, it has also suffered in obtaining federal assistance. The Florida Coastal Ocean Observance Consortium is actively working to increase the recognition of Florida research priorities within Florida, the Southeast and the nation. TAC members were encouraged to let their concerns regarding ocean coastal monitoring be known to the Florida Oceans and Coastal Resource Council (FOCRC) who establishes statewide ocean monitoring priorities for funding. The University of North Florida is represented on the South East Coastal Ocean Observing Regional Association (SECOORA) and Florida Coastal Ocean Observing System Consortium (FLCOOS Consortium).

Presentation - *Invertebrate Community Patterns Associated with Land Use-Influenced Changes in Organic Matter Loading in Tributaries of the Lower St. Johns River*

Dean Dobberfuhl, St. Johns River Water Management District, made this presentation. He had previously provided this presentation to the Florida Lake Management Society in June. Mr. Dobberfuhl reported on long-term work to determine the effects of development on the headwaters of various tributaries to the Lower St Johns River (LSJR). The work explores impacts to invertebrate communities and how those impacts are propagated. This is important for various reasons including potential impacts to invertebrate consumers such as fish.

Twenty fairly small watersheds were chosen for this study. The intent was to have each watershed be relatively homogenous in its development pattern. Intensive macroinvertebrate collections were conducted at seven (7) sites with less frequent (quarterly) sampling occurring at others. In particular potential impacts due to changes in impervious surface area and hydrology were explored relative to water quality changes, changes in labile Carbon and resulting changes to invertebrate functional feeding groups

Findings:

- Observed water quality changes associated with increased impervious surface coverage including:
 - Dissolved Organic Carbon trends down;
 - Total Organic Carbon trends down;
 - Course organic matter – not much change;
 - Benthic organic matter – little change; and
 - Labile Organic Carbon (available for uptake) – increases with increase in impervious surface.
- Observed changes to invertebrate groups:
 - Different functional feeding groups (i.e. collectors, filterers and scrapers) were found to be in relative balance in undeveloped watersheds.
 - As development increases there were observed increases in Dissolved Organic Matter and Fine Particulate Organic Matter.
 - There appeared to be no relationship between changes in impervious surface area and total invertebrate density or total biomass but the different functional feeding groups exhibited significant differences in both biomass and densities between sites. These differences were not consistent however.
 - Site grouping relationships, according to riparian development and canopy cover, was relatively clear with biomass but not so with functional feeding group density.
 - Collector feeders were the only feeding guild that responded to increased biomass as they are fine organic feeders.

- Collector guild biomass increases with labile Carbon. Other guilds did not respond to labile C increases and there appeared to be no relationship with benthic organic matter.
- Labile Dissolved Organic Matter appeared to be a determinant factor in invertebrate densities and composition. Particulate Carbon did not exhibit such a relationship.
- Role of Hydrology:
 - Hydrology was determined to be a controlling factor in invertebrate densities and composition
 - Organic inputs need to reside in streams long enough for invertebrates to act upon them. As stream discharges increase the material available to invertebrates decreases.

Conclusions:

- Developed watersheds result in Carbon inputs shifting toward labile forms of Dissolved Organic Matter which favors collectors and filterers. Fewer scrapers.
- Development of watersheds shifts organic carbon to more labile forms.
- Invertebrate food webs respond by increasing collector/filterers and away from scrapers.
- Hydrology helps to structure the community by reducing CPOM
- Other watershed features are also likely to be important in structuring in stream the food webs e.g. retention ponds are a huge source of organic materials and release these materials in “slugs” that could have impacts.

Questions and Answers:

Q: Do vegetative buffer zones affect impacts?

A: We are looking at that now with University of North Florida (UNF). But data in this project are too coarse to take a guess at that.

Q: How will this study fit in with regulatory (TMDL) efforts?

A: This work stemmed from regulatory questions regarding how development affects detrital export. This work may, potentially, provide a clearer picture of sustainable levels of development. That is litter processing rates may actually be increasing with development. Is this sustainable? Are there negative aspects to this? These questions need exploration. Note: The comment was made that this information could be useful to local governments where people don't see an impact unless fish kills are observed. It would also appear that this work could affect future stormwater system design criteria.

Q: Would these results be affected by more rainfall?

A: We are not sure, but the time period of the study did span some of both drought and rainy seasons.

Q: See any such responses elsewhere, e.g. Chesapeake Bay?

A: The results seem to be very site-specific. Other areas with similar work don't necessarily show the same results.

LSJ Network Report on Freshwater Resources 2005

Ms. Busby provided a handout indicating the status of the freshwater sampling network report for the LSJR provided by Cindy Cosper (FDEP) who could not attend. Ms. Busby announced that Ms. Cosper had announced her retirement and had provided a letter to the committee.

Project Prioritization 2007-2008

Kraig McLane summarized the legislative funding request. The current project list emphasizes point source projects to meet TMDL nutrient reduction goals. In the future, the focus may shift back to non-point projects as point source projects are completed. The first two projects on the list contain the majority of the effort. Some non-point projects that were previously on the list were actually removed from this year's request because they had been funded elsewhere but, in general, the priorities remained essentially the same as last year's request.

The question was asked whether this was all legislative funding or whether it included any *ad valorem* funds.

A: This request is primarily legislative funding.

Highlights:

The LSJR has received approximately \$22M in legislative funding over the past two years. This year's request contains additional funding for tributary assessments to support future for septic tank retrofits.

John Hendrickson moved to support the legislative funding request as presented. Dana Morton seconded and the motion was approved unanimously.

Dana Morton commented that the majority of the request was for capital improvements but some "science" work was included. Mr. McLane noted that septic tank conversion funding may go up to \$12M.

Vince Seibold noted that a \$12M worth of science-related requests would be reviewed by the Tributary Assessment Team (TAT). These include a request for support of thermal imagery to identify illicit connections and that there is also a USGS study being funded regarding sampling of tributaries based on TAT suggestions. He also noted that WSEA received \$319 study funding of nutrient contributions from septic tanks to tributaries. The City of Jacksonville also has received funding from USGS to conduct a pre/post sampling study of an area where failing septic tanks were removed and sewer was installed.

John Hendrickson suggested that when the results of this work begin to be made available it might be an appropriate time to consider conducting a symposium to present the results. Based on discussion of when results might become available it might be one to two years before enough would be available for a symposium.

Lunch Break

TAC Input on Lower St. Johns SWIM Document (Lake George Section)

Ms. Busby introduced the topic by explaining that Lake George was now being included in the LSJR SWIM Plan. She asked the group to review the document and provide comments, in particular she asked for feedback on the following:

- 1) Additional/other background information that might be available
- 2) Additional references that need to be included.
- 3) Significant past projects that need to be included.
- 4) Feedback on future projects.
- 5) General corrections/comments.

Erich Marzolf, John Hendrickson, and Mary Brabham were identified as other resources for information. Others mentioned were:

- US Forest Service (they manage significant acreage on the west side of the river);
- Navy - Bombing Range;

Fish and Wildlife Conservation Commission (FWCC)-Eustis; and
Joe Henkle weed control (FDEP)-Lake City .

John Hendrickson mentioned that the St. Johns River WMD was considering an active nutrient removal project. Assessment shows aquatic spraying might be the most cost effective approach.

Dean Campbell suggested that the basin boundaries need to be decided upon and utilized consistently within the report.

TAC Meeting Rotation and Co-Chairs

Ms. Busby reminded the group that the Chairmanship of the committee has typically rotated in the past and that it is about time to do so again. She suggested that this should probably occur at one of the next two meetings. She also mentioned that the committee has always been open to moving the location of the meetings around the basin so if someone would like to host a meeting in their area please let her know.

Technical Updates and Announcements

St Johns River Alliance

Mark Middlebrook reported that Ms. Busby had been hired to help with the development of an Alliance business plan. A workshop on the business plan is scheduled for October 9 at Stetson University in DeLand. The current proposal for organization of the Alliance calls for the formation of five committees based on the Heritage River document, i.e. outreach, acquisition, research consortium (e.g. conduct a regular series of symposia), water quality and restoration and administration and finance. An immediate initiative is the creation of a SJR license plate. He reported that the Indian River Lagoon plate raises approximately \$400,000/year. A fee must be filed with the state and a survey with a minimum number of names of drivers indicating their willingness to purchase the plate must be provided. The basic requirements to create a new license plate are: The organization must hire an independent survey company to conduct a survey on Florida registered motor vehicle owners, an application fee of \$60,000, a long-term and short-term marketing plan, financial analyses and the design of the license plate. Currently the anticipated budget for this effort is \$75,000.

Mr. Middlebrook also reported that the American Heritage River Alliance has established the River Congressional Caucus. The caucus has the goal of turning the American Heritage River alliance initiative into a federal program which would increase the probability of obtaining federal funding. He also reported that the Alliance intends to follow up on River Navigator funds that were never used and ultimately hire another director.

Fisheries Data Collection

Mr. Brodie was in the field.

Northeast Florida Utility Managers Meeting

Kraig McLane reported that the group provides input on water supply planning efforts. The St Johns River Water Management District has engaged consultants for a regional water supply planning effort, but that work is in progress so there is not much to share at this time. The group is also participating in the WMD/JEA/CCUA co-funded study of reuse opportunities on west side of river. This study is due in September. After that study is complete a similar effort for the east side of the river (from Arlington to St. Johns County) will kick off.

Fecal Coliform TMDL

Pat O'Connor, Dana Morton and Vince Seibold reported that this effort is on-going. A meeting is scheduled August 30th to talk about the development of the tributaries BMAP. The group has been working with Kraig on the development of the project list but the monitoring group affiliated with the BMAP Working Group has not formally for some time. Jeremy Parish is now taking lead. Eight months of effort are complete with another four months to go. This effort should wrap up in September. Eleven TMDLs are complete for fecal coliforms in the tributaries and 14 are in draft. This is out of 54 TMDLs in the basin. Localized rainfall data are needed, so please let the group know of any data sources they are aware of.

Question: Kraig McLane asked if Doppler data is available.

Answer: Yes, but it really isn't accurate enough for this purpose.

Dana Morton mentioned that JEA has rain gauges at all of their water production facilities. Tom Lund is contact for that information. JEA has 30 such plants so this can be a significant amount of data. He indicated that this may need to be integrated into the tributaries BMAP effort.

Ms. Busby reported on a series of technical reports that are being developed in two phases. Each of the 54 impaired areas (WBIDs) will have its own technical report that describes what is known about fecal coliforms in that watershed. The report will describe potential sources such as septic tanks, wastewater infrastructure and land uses that are likely contributors. The reports will also summarize the monitoring data to date and the location of any known "hot spots." The reports will describe the management actions taken to date and suggest additional management actions to address bacteria loadings. The BMAP Working Group intends to use these reports to provide the base information for the BMAP. The individual entities responsible for loads and infrastructure will then determine what actions and projects should be included in the BMAP to meet the TMDLs.

Lower St Johns Main Stem TMDL

Melissa Long reported that EPA was expected to modify their TMDL and adopt the state's allocation approach before the end of September. Workshops will likely be held during the October/November timeframe with formal adoption of the TMDL following that. The mainstem BMAP is being developed and is hoped to be completed by the end of the year and adopted during the spring of 2008. The fact that EPA is starting their TMDL adoption process will help. Ms. Busby reported that a major component of that plan is the monitoring plan which still requires some fine-tuning. Also a data management section (for which FDEP has the lead) is needed. John Hendrickson stated that the chlorophyll monitoring system is pretty much worked out with Wayne Magley at FDEP. Mr. Magley has been detailed to EPA in Atlanta to assist with the drafting of EPA's TMDL.

Member Updates

Nicole Robinson reported that the CAMA water quality group partners in northern portion of the basin have progressed and are now changing their structure and name. Their new name is "The Three Rivers Conservation Coalition" which they feel better represents the area of interest, i.e. the St. Johns River, Nassau River and the St Marys River. The group will be presenting on their monitoring efforts at the upcoming Estuarine Research Foundation (ERF) meeting in November. They are undertaking a probabilistic survey including the estuarine portion of the Timuquan in 2008. They are trying to increase their efforts to the entire watershed. Mike McManus is working on a response to a request for proposals (RFP) for that. They are also working with Jacksonville University and The Nature Conservancy to conduct oyster reef monitoring as well as historic and current mapping of shellfish leases. The oyster reef project would not go into the St. Marys but would include the St. Johns and Nassau rivers.

Ray Avery reported that he will be retiring within the year and that the University of North Florida (UNF) Environmental Center will be looking for a new Director. April Moore will be taking over administrative duties to allow for a smooth transition.

Next Meeting

The next meeting will likely be in the November – December timeframe. The group indicated that the first week of November should be avoided as the Estuarine Research Foundation (ERF) conference is scheduled for that week.

Adjournment

The meeting adjourned at 2:10 PM.