

Notes from the Quarterly Meeting of the Everglades Technical Oversight Committee (TOC)

October 18, 2016

South Florida Water Management District
3301 Gun Club Road, West Palm Beach, FL 33406

TOC Representatives:

Julianne LaRock, TOC Chair, SFWMD	Mark Shafer, USACE
John Barkett, Special Master (<i>by phone</i>)	Donatto Surratt, ENP
Frank Powell, FDEP	Yongshan Wan, Refuge

Note: *This meeting was recorded by a court reporter and copies are available for purchase. For more information, contact Florida Court Reporting (561-689-0999). Handouts and presentations are available on the TOC website (www.sfwmd.gov/toc). A video of the meeting is available online at <http://sfwmd.ig2.com/Citizens/Media.aspx>.*

10:00 a.m. **1. TOC Opening Business** – Julianne LaRock, SFWMD

1A. Welcome, Announcements, and Identification of Phone Participants

Julianne LaRock called the meeting to order and welcomed attendees. Phone participants introduced themselves.

1B. Agenda Modifications and Documents Available on the TOC Website

Julianne LaRock reviewed the agenda and the list of files recently posted on the TOC website or sent by email, noted that a document has been posted to address a question from the last TOC meeting about the potential influence of MDL on Refuge total phosphorus trend analyses, and that a presentation given by Stuart Van Horn at the last TOC meeting has been updated with corrections and reposted online. There were no requests for changes to the agenda.

1C. Approval of Meeting Summary for July 19, 2016

The TOC did not request any changes and approved finalizing the draft meeting summary for July 19, 2016.

Associated Online Documents:

- [Final Agenda for October 18, 2016](#)
- [Potential Influence of MDL on Refuge TP Trend Analyses, Feb. 1999 – Mar. 2016](#)
- [Status of Long Term Trends for the Arthur R. Marshall Loxahatchee National Wildlife Refuge and Everglades National Park TP Compliance \(Revised Presentation\)](#)
- [Draft Meeting Summary for July 19, 2016](#)

10:15 a.m. **2. Second Quarter 2016 Settlement Agreement Report** – Jonathan Madden, SFWMD

Jonathan Madden presented results for the second quarter of 2016 (April–June), including provisional results for tracking Shark River Slough. At the last TOC meeting, the representatives voted that the provisional Shark River Slough information that appears in the presentations be added to the summary table in future quarterly Settlement Agreement

Reports. Jonathan noted that the District was unable to add the extra material in this quarter's report.

Refuge geometric mean TP values for April–June 2016 were below the long-term levels. Provisional Refuge calculations for July–September 2016 also have geometric mean TP values below the long-term levels. The number of sites collected each month varies based on water levels (i.e., when water levels were too shallow, sampling was not possible at every site).

For Shark River Slough, there was a large volume of flow earlier in 2016 due to high water levels. This resulted in low long-term limits for the 12-month periods ending in April, May, and June 2016. In spite of this, interim flow-weighted mean TP values for Shark River Slough were below the long-term limits for each period, and the percent of events greater than 10 ppb was below the guideline for the three periods. Provisional flows from the S-355B temporary pump (monitored by the District) from March 12 to May 13, 2016 (16.6 kac-ft), and provisional flows through gate openings at S-355A and S-355B (monitored by the USACE) from March 1 to 11, 2016 (370 ac-ft), have not yet been incorporated into these results.

According to the provisional data, the total flow volume that occurred during the first nine months of WY2016 (ending in June 2016) for Shark River Slough exceeded the volume required to set the limit at the lowest level of 7.6 ppb, so it is expected that the limit will remain at this value through the end of the water year. In response to a question from Donatto Surratt, Jonathan explained that the District does not do a three-month look ahead for Shark River Slough because the provisional flow data does not become available to process in time for the TOC meetings.

Flow-weighted mean TP values for Taylor Slough and coastal basins for the 12-month periods ending in April, May, and June 2016 were below the long-term limit for each period, and there were no sampling events greater than 10 ppb during these periods.

Associated Online Documents:

- [Settlement Agreement Report, Second Quarter 2016 \(April–June 2016\)](#)
- [Settlement Agreement Report, Second Quarter 2016 Presentation](#)
- [Quality Assessment Report for Water Quality Monitoring, Second Quarter 2016](#)
- [Refuge TP Compliance Table, Updated through Second Quarter 2016](#)
- [Provisional Shark River Slough TP Tracking Report, Second Quarter 2016](#)

10:40 a.m. **3. Monitoring Logistics Updates** – Julianne LaRock, SFWMD

Julianne LaRock provided an update on upcoming activities that may interfere with water quality monitoring. At S-140 there is a construction project scheduled to start next month and to continue until April 2017. During this time, it will not be possible to conduct normal water quality sampling there. Beginning in roughly April 2017, the S-151 structure will be inoperative and will be replaced. Routine monitoring may be interrupted until construction is completed.

10:41 a.m. **4. ARM Loxahatchee NWR Enhanced Water Quality Monitoring Program: Water Quality Status and Trends**– Donatto Surratt, ENP

Donatto Surratt presented an overview of the Refuge's Enhanced Water Quality Monitoring Program, focusing on total phosphorus, dissolved oxygen, sulfate, and conductivity as ecological indicators. The purpose of the network was to characterize and quantify hydrologic

and water quality responses to canal and marsh water interactions, and to provide management recommendations aimed at reducing canal water intrusion and resulting ecologic impacts. The project was originally funded by Congress, and later became funded by the Park's Critical Ecosystem Science Initiative. Donatto discussed monitoring sites, including those along transects, and looked at spatial patterns and temporal trends for total phosphorus, dissolved oxygen, sulfate, and conductivity, within the Refuge. STA and canal annual TP concentration trends were found to decline by between 2 to 4 ppb per year. Historically, dissolved oxygen (DO) levels in the Refuge are low. DO values in the interior marsh tended to have values greater than the DO Site Specific Alternative Criterion (DO SSAC), while values in the perimeter marsh tended to be below the DO SSAC. DO downstream of STA-1W shows a downward (worsening) trend in relation to the DO SSAC. This may be attributed to the dense vegetation and associated buildup of decomposing biomass on the floor of the water column in this area. Conversely, DO downstream of STA-1E shows an increasing (improving) trend, despite being densely vegetated. Sulfate and conductivity trend results are mixed spatially across the Refuge. Donatto referred the audience to a future publication he will generate with Rebekah Gible, which will likely include more detailed conclusions. Complete details are included in the presentation, linked to below.

Julianne LaRock, Garth Redfield (SFWMD), and Frank Powell complimented Donatto on the excellent analysis and presentation, and indicated that they are pleased that results appear to indicate generally improving trends for phosphorus, which agrees with FDEP's TP rule and data trends observed by the District. Garth supported highlighting positive findings and pointed out phosphorus loading reductions and specifically large reductions in ortho-phosphorus concentrations from the STAs (not included in the presentation). Frank Powell said that it would be nice to see the monitoring continued to see the effects of the various enhancements being added as part of Restoration Strategies. John Barkett asked why some areas show increasing trends for total phosphorus and Donatto indicated he needs to do more validation of the data before he can address the question.

Associated Online Documents:

- [ARM Loxahatchee NWR Enhanced Water Quality Monitoring Program: Water Quality Status and Trends Presentation](#)

11:10 a.m. 5. Update on Appendix A Sub-team – Stuart Van Horn, SFWMD

Stuart Van Horn gave a recap of Appendix A sub-team meetings on January 20 and July 13. On January 20, the sub-team met to review a methodology proposal and information related to incorporating S-356 into the existing Settlement Agreement calculation for Shark River Slough. On July 13, the sub-team met to review modeling output data developed for S-356 to test the methodology proposal.

A smaller group of sub-team members met on August 9, and Donatto presented an in-depth spreadsheet demonstration of the modeling output data and methodology test. The District requested and received the spreadsheets on September 28, and District staff have been looking at them to come to a better understanding of the mechanics. It is expected that it will take a little while to get through it, and District modeling staff have been engaged to assist in the effort. The District shared the spreadsheets with FDEP yesterday, will get together with FDEP in the next few weeks to discuss and share initial insights, and ultimately will get back to the federal team with additional comments and further work to engage in to continue the

process. The issue of S-356 poses a unique circumstance as a new inflow point that we have not been confronted with before. Dealing with the seepage component is a big challenge.

Yongshan asked what the next steps are for the sub-team. Stuart responded that the District team and FDEP will evaluate what they currently have and then to develop a list of items, questions, or suggestions that might improve the product, including the issues of variability and uncertainty. The team will need to evaluate whether to continue on the same path, and if the proposed methodology is feasible, to reach a point of consensus on how the TOC will determine future compliance with the new inflow point.

Mark Shafer indicated that the focus should be on getting better information on seepage flows, potentially including additional monitoring, and that he does not think the modeling is going to provide such information. Mark asked why there is a focus on using models to predict impacts of incorporating S-356 into the Settlement Agreement equation when we know that we have to incorporate it regardless of the outcome of that modeling effort. Stuart responded that precedents in the TOC process have continuously improved datasets and the accuracy of how the methodology has been implemented to utilize precise values for both the calculation of the annual Limit and the flow weighted mean of inflows. He cited examples of past TOC decisions to exclude information based on extremely strict criteria. Therefore, a full assessment from the perspective of questions related to required monitoring effort, uncertainty, precision, and precedent issues are needed to ensure accurate data collection and compliance calculation. Donatto commented that he does not understand how the model data will give any better certainty on those items, and that the monitoring station needed has been identified as L31N mile zero. Mark stated that the uncertainty with S-356 is associated with the flow values from seepage, not the other items. Juli mentioned that, in regards to monitoring uncertainties, there may eventually be an instance where District monitoring staff are not be able to do everything the TOC decides has to happen on a given day, and asked if that is something the TOC needs to discuss with the principals. Mark feels that questions like this should be the focus of the sub-team, rather than looking at the modeling data. Stuart pointed out that the seepage issue is not the only question or uncertainty, that having a longer data set would help, and that the modeling data set presents an opportunity to test the mechanics to see how it is going to work. Stuart indicated the District would like to continue looking at the data and having the discussion to help answer questions of how to conduct the monitoring in accordance with requirements, what the precedents and uncertainties are, and how to incorporate into the existing equation, with the ultimate goal of being able to produce consistent and reliable, defensible results.

Stuart expressed hope that at the next meeting, the sub-team could have a full vetting of what the District has found along with FDEP to determine if it is sufficient at that point to conclude that the uncertainty and precedents have been dealt with and that it will be possible to put monitoring in place that will yield high quality information. Donatto said that these topics were in the proposed agenda for the next sub-team meeting. Frank Powell confirmed that the FDEP received spreadsheets from the District and will be evaluating them and following up with their principal. Stuart noted that the District will meet with FDEP within the next few weeks and will work together to determine the next sub-team meeting date.

11:40 a.m. **6. Public Comment**

Drew Martin commented that he is pleased to see the progress in water quality in the Refuge based on Donatto's presentation, expressed concern about the possibility of the Refuge lease

being changed, recommended that more focus be given to finding ways to increase flows to the Park and Florida Bay, thanked the TOC for the opportunity to speak, and congratulated the TOC for their work.

11:45 a.m. **(Not on Agenda) TOC Closing Business** – Julianne LaRock, SFWMD

The next quarterly meeting was scheduled for January 24. The need for special meetings was not anticipated before then.

[Note: The next quarterly meeting date has been rescheduled for January 31, 2017].

Julianne LaRock adjourned the meeting.

DRAFT