

**Lakes Harney and Monroe, Middle St. Johns River, and Smith Canal
Basin Management Action Plan (BMAP) and the
Lake Jesup BMAP Annual Meeting
April 28, 2021
Via Teams at 9:00 am**

Meeting Summary

ATTENDEES

Crystal Anderson, Citizen	Alyse Howell, Volusia County
Evelyn Becerra, DEP	Nicole Hughes, Citizen
Marcelo J. Blanco, FDOH	Mitchell Katz, Orange County
Julie Bortles, Orange County	Charles LeGros, DEP
Stacy Burke, Citizen	Esteban Lopez, E Sciences
Derek Busby, SJRWMD	Celeste Lyon, Wood
Tiffany Busby, Wildwood Consulting	Sean Maroney, Volusia County
Lauren Campbell, DEP	Sarah Menz, DEP
Tom Carey, Volusia County	Jessica Mostyn, DEP
Angela Chelette, FDACS	Ed Northey, FDOT
Carolin Ciarlariello, DEP	Kevin O'Donnell, DEP
Jennifer Claypool, DEP	Daniel O'Hanlon, City of Deltona
Kevin Coyne, DEP	Nicolas Pisarello, ATM
Susan Davis, SJRWMD	Robert Potts, E Sciences
Leicester Dudley, City of Orange City	Benjamin Ralys, DEP
Kathryn E Slayton, City of Orlando	Kate Rogers, E Sciences
Yesenia Escribano, FDACS	Mark D. Sees, City of Orlando
Allison Fetigan, FDOT	Kathryn E Slayton, City of Orlando
Rolland Fulton, SJRWMD	Jennifer Thera, FDACS
David Hamstra, Pegasus Engineering	Mark Tomczyk, Woolpert
Kenneth Hayman, DEP	Diana M. Turner, DEP
Janet Hearn, ATM	Pamela Way, SJRWMD
Cori Hermle, FDACS	Curt Williams, Florida Farm Bureau
Maira Homann, DEP	Kelly Young, Volusia County
Kelsi Horton, Upham Inc	

OPENING REMARKS

Tiffany Busby welcomed everyone and reviewed the meeting functions in Teams. Maira Homann, DEP Basin Coordinator for both BMAPs, reviewed the meeting agenda.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) UPDATES

Kevin Coyne provided an update on the Clean Waterways Act (also known as Senate Bill 712). He also noted that DEP has a statewide Stormwater Rule Technical Advisory Committee (TAC) which is meeting regularly. The next Stormwater Rule TAC meeting is this afternoon. Kevin Coyne noted that DEP is figuring out what the Clean Waterways Act legislation means for the stakeholders and for BMAP reporting. A few reporting pieces have already been addressed, but

there are others still being worked on. DEP may be reaching out to individual stakeholders for additional information. Moira added that to meet the Clean Waterways Act requirements, some information must be added to the existing BMAPs by 2025. So, for older BMAPs, DEP is developing a plan and schedule to address those requirements.

BMAP ANNUAL PROGRESS UPDATES FOR HARNEY-MONROE

Moira Homann noted that the statutes require a BMAP update to the Florida Legislature by July 1 each year. Currently, the 2019 calendar year information is posted. The 2020 information will be posted by July 1st. Moira thanked everyone with BMAP projects for providing updates for 2020, including more details on certain types of information. The project data are being used for multiple purposes, including mapping the project locations.

Moira noted that older BMAPs will need to be updated, including new land use information and additional updates based on the new statutory requirements. Moira reviewed the changes in project status that were reported in 2020. There are now a total of 73 completed projects. Five new projects were added in 2020 and one project was completed. New projects included stormwater structural projects and more public education (a new fertilizer ordinance). There are 112 projects overall.

Moira showed a graph of the total nitrogen (TN) and total phosphorus (TP) reductions achieved over time. The graph shows reductions from 2012 to 2020 as well as the total reductions required by the total maximum daily loads (TMDLs). Moira noted that the reductions are on track to achieve the TN target and have met the TP target.

David Hamstra asked if the 5-year milestones on the TN and TP progress charts were correct. Moira and Tiffany confirmed that the 5-year milestones were 50 % of the total reductions required and were correct.

Moira reviewed information about project funding and DEP grants.

ASSESSMENT UPDATES FOR HARNEY-MONROE

Kevin O'Donnell is the environmental administrator for the Watershed Assessment Section. Kevin O'Donnell used PowerPoint slides to provide an update on the Group 2 waters, including the Middle Basin. The list of waters that were newly designated as impaired are listed on the DEP website and Kevin O'Donnell provided a link. The primary data providers were reviewed. There were no additions to the verified list in 2020. There were a few previous cycle additions.

One the west side there is the Deforest Lake Outlet (waterbody identification [WBID] 2952). The waterbody name has been changed to "Lockhart-Smith Canal." This canal flows into Smith Canal. This WBID was monitored by Seminole County from 1997 to 2007. The canal will have additional bacteria and nutrient data collection performed in 2022. DEP is reviewing whether the canal still meets the criteria as a stream for assessment.

Kevin O'Donnell also reviewed WBID 2973 (Cow Creek) that DEP sampled in 2017, 2018, and 2019. In 2018, Cow Creek failed the Lake Vegetation Survey (LVS) but passed the Rapid Periphyton Survey (RPS). Chlorophyll-a is less than 3.2 micrograms per liter (ug/L) in Cow Creek.

Kevin O'Donnell also reported that DEP audited their own contract laboratories. As a result, some samples were marked as "unusable" including some *Escherichia coli* (*E. coli*) data were flagged. Based on the audit, there were Impaired Waters Rule (IWR) data excluded from the verified period from May 2009 to February 2019. Kevin O'Donnell provided a [link to the DEP contract lab audit results](#).

Kevin O'Donnell also reviewed the need for Watershed Information Network (WIN) data uploads. DEP would like any applicable local water quality data to be uploaded to WIN by June 15th. The WIN coordinator is Tommy Adams (tommy.adams@floridadep.gov). The next IWR data extraction is planned for early July 2021 to produce IWR Run 62.

DEP is implementing a statewide biennial assessment, replacing the assessment of one group per year. Stay tuned for draft lists for public review in summer 2021. Next week (May 5th) is a workshop on the triennial review of water quality standards. The strategic monitoring plans for 2021 are also posted. The IWR Run 60 access database and the DEP Geospatial Data Portal are also available online.

Kevin O'Donnell noted that Ken Weaver now supervises the Total Maximum Daily Load (TMDL) Program and the Water Quality Evaluation Program. Kevin O'Donnell also provided additional contacts in his section.

LOOKING INTO THE FUTURE

Moirá reviewed the plans for the Upper St. Johns and plans for a restoration strategy for the upstream basin to the Middle St. Johns River. DEP is also collaborating with St. Johns River Water Management District (SJRWMD) on modeling the Upper Basin. There are some low dissolved oxygen areas that may be the result of natural causes, so those impairments need to be handled appropriately. DEP is evaluating all the planning options. DEP also plans to reach out to the stakeholders that need to be involved.

SJRWMD UPDATES

Pam Way (SJRWMD) noted that with funding from SJRWMD and DEP, there is a large effort to evaluate biosolids in the Upper St. Johns River, starting with a diagnostic/field scale review of biosolids applications as well as a watershed effort looking at how legacy phosphorus (P) in soils moves into surface waters. Phase 2 then follows with a feasibility study of what technologies can be used. Phase 3 looks at the wastewater treatment facilities (WWTF) to help mitigate and change the P content in the biosolids. The whole effort has a 7-year timeline.

Cori Hermle (FDACS) noted that this is a multi-year project and asked who the project manager after Pam will be retires. Pam responded that new staff are being hired to backfill those who are retiring.

Rolland (Rolly) Fulton (SJRWMD) noted that the water quality assessment is limited to the SJRWMD stations in the lakes and the main stem of the St. Johns River, not tributaries. Data on total phosphorus (TP), total nitrogen (TN), chlorophyll-a, and Secchi transparency will be presented. Algal biovolume data are no longer being

collected, so last year's update for biovolume analysis has not changed.

Rolly showed a map for the stations used for the analysis. Rolly noted that for most stations, they have TP data starting on or before 2002. The TP data are shown in two 5-year data ranges of 2002 to 2007 and 2016 to 2020, as well as the TMDL target. Rolly showed a similar chart for TN concentrations. The TN target is 1.18 milligrams per liter (mg/L) TN. Rolly reviewed chlorophyll-a concentrations and Secchi transparency.

Rolly noted that there is an annual water quality status and trends report compiled for the entire SJRWMD. The trends cover the period of 2005 to 2019. Rolly provided a table that showed the trends in TP, TN, chlorophyll-a, and Secchi transparency. Rolly noted that the increasing trends in chlorophyll-a in Jesup are undesirable while the increasing trends for Secchi are desirable.

Rolly provided charts that showed Secchi depth and water level. Rolly noted that in the 1980s and 1990s, the Secchi depths were higher in Lake Monroe than we are currently observing. Rolly also showed the TP trends over time and the water level. In the Center Lake Monroe site, there is not a trend, but the TP values are higher than the TMDL target. The positive relationship with water levels may indicate that incoming flows from the Upper St. Johns River and tributaries may be importing phosphorus to Monroe. There are decreasing chlorophyll-a concentrations in the Center Lake Monroe site. The TN concentrations are negatively related to water levels. This may be that higher flows wash out algae faster than they are able to grow. Rolly provided his email address at SJRWMD (rfulton@sjrwmd.com) and after his retirement (after May 6, 2021) at rsfulton3@msn.com.

Mark Sees asked about the numeric nutrient criteria (NNC) and when those standards will be applied to the wastewater treatment facilities (WWTFs). Kevin O'Donnell noted that when the WWTF permit renewal occurs is when the applicable criteria are applied.

AGRICULTURE UPDATES

Corinne (Cori) Hermle with the Florida Department of Agriculture and Consumer Services (FDACS) provided an overview of the framework for managing TMDLs, BMAPs, which DEP manages, and agricultural BMPs, for which FDACS enrolls the local growers.

Cori explained what agricultural (ag) best management practices (BMPs) are and that they do receive an initial effectiveness review by DEP. The benefits of BMPs include increased efficiencies in nutrients, irrigation, and water management. Cori also reviewed the FDACS role in BMP implementation, including support for cost-share BMPs.

Cori reviewed the highlights for the Harney Monroe BMAP. About 48 % of the ag acres are enrolled. Cori also showed a comparison of the BMAP area and the Florida Statewide Agricultural Irrigation Demand database. This database shows about 26,000 acres of agriculture in the Harney-Monroe BMAP area. Cori showed that about 39 % of the ag acres may be ineligible for enrollment. Reasons for unenrollable acres include that they are state lands, or the parcel code or owner is unlikely ag. It could also be that there are timber lands cannot be enrolled in ag BMPs but could be enrolled by the Florida Forest Service in the forestry BMP

program. Cori also showed the parcel sizes of unenrolled areas. Larger parcels are easier for FDACS to enroll than small parcels. If the unenrollable acres are excluded from the total acres, the total enrollment is closer to 60 % enrolled in Harney-Monroe.

FDACS also reviews the ag lands and reports any observed land use changes that take lands out of ag and into another kind of land use (e.g., residential, solar farm, commercial, etc.). Cori reviewed the implementation verification process. This process was required by 2016 changes to Florida Statutes with additional provisions added in 2020 (in Senate Bill 712). Cori reviewed the new requirements for FDACS in the Clean Waterways Act (Senate Bill 712).

Cori noted that FDACS has a solicitation out now for research proposals. These results will inform future efforts. Project proposals received by May 28th will be included in the new legislative budget request by proposals will be accepted through August 1. FDACS is working with the University of Florida-Institute of Food and Agricultural Sciences (UF-IFAS) on producer outreach. FDACS is considering creating a series of videos to support producer outreach.

FDACS is working on BMP Manual Revisions, including the Cow/Calf and Sod manuals. There are nine adopted manuals, along with the Imperiled Species Manual. They are working on a Diversified Operations Manual (previously called the small farms manual) and a Hemp Manual.

Cori noted that the FDACS annual report for 2020 will be posted by July 1.

Derek asked about the state lands and how they determine if there is ag on state lands that need enrollment. Cori responded that FDACS gets updated information on leased lands at least once per year from each water management district. For cities or counties, they must get in touch with FDACS directly, if their public lands are leased to ag producers so FDACS can include those areas as enrollable lands.

LOCAL GOVERNMENT UPDATES

Project Updates –None.

Monitoring Updates

Moirra reported that when she sends out the meeting presentations, she will also include the monitoring network tables in the email. Moirra asked the monitoring entities to review that information and provide any updates/changes to the monitoring network. The new legislation has prompted DEP to check in with the local entities on monitoring efforts.

NEXT STEPS FOR HARNEY-MONROE

This part of the meeting ended at 10:45 am.

LAKE JESUP PORTION OF THE MEETING BEGAN AT 10:45 AM.

DEP UPDATES FOR LAKE JESUP

BMAP Annual Progress Updates for Lake Jesup

Moira noted that there were 17 new projects in the Lake Jesup Basin reported for the 2020 reporting cycle. She reviewed the kinds of projects that were added to the BMAP list including structural projects, a fertilizer ordinance, and other nonstructural projects. Also, an in-waterbody alum injection system was added. Some projects are beneficial but ineligible for credit (e.g., studies).

There are 172 projects in total on the Lake Jesup BMAP list. Moira showed the total reductions achieved for TN and for TP. The same process applies where the projects prior to the starting year of the graph are represented by the first-year reductions. Moira noted there are specific allocations for entities. Please contact Moira if you would like your entity-specific numbers compared in detail.

Moira stated that all the BMAPs will need to be updated to meet the requirements of the Clean Waterways Act. This BMAP is more updated in terms of land use but will still require some amendments. Stay tuned for that schedule from DEP.

Pam Way asked if the total project reductions shown include in-lake reductions. Moira responded that there are some in-waterbody projects on the list such as alum treatment and muck removal, but none of the in-waterbody projects are in Lake Jesup itself.

Assessment Updates for Lake Jesup

Kevin O'Donnell noted that the Lake Jesup basin covers two counties – Orange and Seminole. Kevin O'Donnell reviewed the primary data providers. The Lakewatch data are only used for the planning list and not for verification of impairment. There were a few waterbodies added in 2020 to the verified list. Most of the additions were for bacteria. WBID 2984 will be removed because of the laboratory audit.

Kevin O'Donnell reviewed the previous cycle additions to the verified list. In May 2004 (Cycle 1) WBID 2985 is being reviewed for the dissolved oxygen impairment. Kevin O'Donnell reviewed the laboratory audit information. DEP has backtracked and excluded some data from the IWR data. More labs than the Gainesville laboratory were affected; the [full audit report is available online](#).

DEP requires uploads of the recent water quality data collected by June 15th and external bioassessment data by the same date. Kevin noted that the triennial review workshop is next week. The IWR Run 60 is currently available online. Kevin O'Donnell also reviewed the contacts for his program, include Ken Weaver who supervised the TMDL and assessment sections.

Robert Potts has if DEP has a list of waterbodies or WBIDs that were impacted by the audit. Kevin responded that they do have a list; Kevin will provide the list to Moira to share with Robert Potts and others interested. Julie Bortles asked if there was an issue with a provider's *E. coli* data, would they have been contacted by now. Kevin O'Donnell responded that only the labs that run DEP data were audited, not local entity labs. The DEP contract labs have been contacted about the audit results.

SJRWMD UPDATES FOR LAKE JESUP

Updates from Derek Busby

Derek Busby (SJRWMD) is in the Bureau of Project Management in the Division of Projects. Derek he is not the project manager for this project called, "The Lake Jesup Water Quality Improvement Project." He explained there are two components—the first is the Channel C project. This would cut a new channel from Lake Jesup to the St. Johns River. The second component is a regional stormwater treatment project. Derek showed a zoomed in map of the channel alignment. Adding this channel could provide some additional flushing and possibly more submerged aquatic vegetation (SAV). The wetland treatment project is located near Chubb Creek on the "Little Cameron Ranch" property. This component of the project is a wetland treatment project that would withdraw water from the lake, pump the water through various cells in a created wetland area (the area is currently pasture), and then discharging back into Lake Jesup. The wetland treatment technology is not new, but it would be beneficial to Lake Jesup.

The wetland treatment project is at 60 % design right now. The SJRWMD is now developing their permit application and the supporting documentation. The SJRWMD has been in contact with the nearby stakeholders, including Seminole County as a potential long-term partner in the project. There are concerns voiced by the Sanford Airport Authority about attracting wading birds. These concerns are being carefully reviewed. Derek added that while the SJRWMD is proceeding with the design, there are currently no construction funds for the project in the budget.

Kevin O'Donnell asked if the project requires an environmental resource permit (ERP). Derek responded that the project does require an ERP. Mark Sees asked how large the wetland treatment area is. Derek said it is about 250 acres and Pam Way confirmed the size. Mitchell Katz asked what the TN and TP reductions are projected to be from the treatment. Pam said that there are estimates based on three different project footprints, and the 250-acre (second) treatment area option was selected. The estimate is based on certain flows from Chubb Creek. Later in the meeting, Derek noted that the nutrient reduction target for the design 23,800 lbs/yr TN and 2,800 lbs/yr TP based on a steady state flow of 27 cubic feet per second (cfs) from Chubb Creek.

Updates from Pam Way

Pam Way (SJRWMD) provided an update on three projects that are underway. The first project was mentioned last year—the Lake Jesup Bench Study that looks at in-lake phosphorus reduction bench study. The contract was Wood, and the project was completed in February 2021. The project evaluated three phosphorus reduction products with two levels of dosing. The results showed the top-ranked technology was ViroPhos that was quite effective. Now, work is underway with DEP to follow up on those results. There will be a mesocosm study on the ViroPhos product to see its effectiveness to reduce flux within the system. The timeline for the mesocosm study is about 2 or 2.5 years. The contract is expected to start by the end of 2021 and the work will begin in spring 2022.

The third project is the Lake Jesup Harmful Algal Bloom (HAB) project (it also has a more technical title that is lengthy). This project is part of the DEP Innovative Technology Program. The SJRWMD is working with the contractor AECOM to evaluate an algal harvesting system. This system uses a barge that goes onto the lake and

harvests algae. The system separates the algae which is disposed of at the Yankee Lake wastewater treatment facility (WWTF) and the cleaner water is returned to the lake. The inflow and outflow will be measured. The project will begin in two to three months and will operate for eight months. The effectiveness will be evaluated for a possible whole lake treatment. The program is looking at the different technologies available to treat sediment flux and to reduce TP.

Mitchell asked if the ViroPhos report is available for review. Mitchell provided his email. Tiffany asked how you spell ViroPhos; it is spelled "ViroPhos." Since there was general interest, Pam will send the ViroPhos report to Moira and Moira will post the report with the meeting materials, so everyone has access to it.

Updates from Rolland Fulton

Roland (Rolly) Fulton (SJRWMD) reviewed the SJRWMD water quality data for Lake Jesup. He showed a map for the station locations used for the analysis. Rolly showed a chart of TP concentrations that compares two time periods to the TMDL. The first time period is 2002 to 2007 and the second time period is 2016 to 2020. The later time period tends to have lower concentrations than the earlier time period. Rolly also reviewed the chlorophyll-a concentrations. The chlorophyll-a concentrations are higher in the later time period in Lake Jesup for all the stations. The Secchi transparency is slightly higher in the later time period.

The SJRWMD produces an annual water quality trends report, and the 2020 report is now available on the district website. Rolly showed a statistical analysis for 2005 to 2019. For the three sites in Lake Jesup there are decreasing TP and TN concentrations for all three sites but increasing trends for chlorophyll-a and transparency. Tiffany asked why we think the chlorophyll-a and Secchi transparency are both up; those are usually the inverse of each other. Rolly agreed the results are incongruous but Secchi is affected by other factors than chlorophyll-a, such as suspended sediments.

Rolly showed a chart of the Lake Jesup TP concentrations over time along with the TMDL target and the water level. The two black vertical lines show the time period used for the status and trends report. There are decreasing trends in TP, but the concentrations are above the TMDL. TP concentrations tend to be highest with low water levels. Water quality deteriorates with low water levels, similar to the Upper Ocklawaha lakes. TP can be concentrated, can have more sediment release when water levels are low, and can also have sediments release TP when dried out. This is the opposite relationship as we see for TP in Lake Harney and Lake Monroe.

Rolly reviewed the TN concentrations. The trend is decreasing but the concentrations are above the TMDL. The chlorophyll-a concentrations are increasing. There were high concentrations in 2012 and 2013 but have been lower since then. The concentrations are well above the TMDL target. For Secchi transparency, there is an increasing trend (good trend). The increasing trend in transparency is consistent with the decreasing trend in nutrients but inconsistent with the increasing chlorophyll-a levels.

Rolly noted that there is a seasonality to the data where nutrient concentrations

increase in March and then decrease until July. You would expect the highest concentrations in the summer – you see this in Lake George, Crescent Lake, and Doctors Lake which are further downstream in the St. Johns River Basin. It is unusual to see consistently high concentrations in the spring. A research paper indicates that cyanobacteria might inhibit growth in the summer, but we aren't sure that is the explanation. Someone asked if you looked at color. Rolly responded that he did look at color, but he did not see a relationship that explains the high spring nutrient concentrations.

AGRICULTURE UPDATES

Cori (FDACS) provided the Lake Jesup updates on agriculture in the Lake Jesup Basin. Moira noted that the background information is included in the prior presentation. Cori noted there are about 8,000 acres within the BMAP, and the acres enrolled about 5,731. The majority of the enrolled areas are under the Cow/Calf Manual.

Cori reviewed the FSAID acres in the basin and the likely enrollable acres in Lake Jesup. About 58 % of the remaining acres are unlikely to be enrollable. Cori reviewed the categories and the number of acres that they have classified as unenrollable (e.g., state lands, parcel use code is unlikely ag, timberland, or aerial review).

LOCAL GOVERNMENT UPDATES

Project Updates

None.

Monitoring Updates

Moira will send out a monitoring network table with the follow up information for this email. Please provide feedback on your monitoring stations if you are a monitoring entity.

NEXT STEPS

Moira noted that she will post the presentations and the meeting summary on the DEP site. She will also post the ViroPhos report from Pam Way and the WBIDs from Kevin O'Donnell affected by the laboratory audit.

ADJOURNMENT

The meeting ended at 12:09 pm.

ACTION ITEMS

Moira – Post the meeting presentations, meeting summary, ViroPhos report, and list of waterbodies or WBIDs affected by the laboratory audit after the meeting.

the Clean Waterways Act requirements for existing BMAPs such as Harney-Monroe and Lake Jesup.

DEP – Post the 2020 annual report information by July 1st.

Kevin O'Donnell/DEP Assessment – For WBID 2952, have additional bacteria and nutrient data collection performed in 2022. DEP is also reviewing whether the canal still meets the criteria as a stream for assessment.

Monitoring Entities – Upload any recent water quality or biological assessment data to the Watershed Information Network (WIN) data uploads. June 15th. The WIN coordinator is Tommy Adams (tommy.adams@floridadep.gov). The next IWR data extraction is planned for early July 2021 to produce IWR Run 62.

Moira/DEP-- Continue plans for the Upper St. Johns and plans for a restoration strategy for the upstream basin to the Middle St. Johns River. Continue collaborating with SJRWMD on modeling the Upper Basin.

Allocation Entities-- Please contact Moira if you would like your entity-specific loading/reduction numbers compared in detail.

Moira – Keep stakeholders posted on when the BMAPs will need to be updated/the schedule to meet the requirements of the Clean Waterways Act.