



FLORIDA DEPARTMENT OF Environmental Protection

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Blue-Green Algae Task Force Staff Minutes

June 4, 2024
11 a.m.

**UF/IFAS North Florida Research and Education Center — Suwannee Valley
and Go-To Webinar**

General subject matter considered: The Blue-Green Algae Task Force (task force) convened to discuss agricultural Best Management Practices (BMPs). Presentations were provided on BMP research conducted by the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) and the implementation and outreach efforts for agricultural BMPs in Florida. The task force provided input on current and future research, as well as recommendations related to agricultural BMPs, outreach, regional projects and cost-share programs.

Attendee Name	Title	Status
Dr. Mark Rains	Facilitator	Present
Dr. Evelyn Gaiser	Member	Present
Dr. Michael Parsons	Member	Present
Dr. Valerie Paul	Member	Virtual
Dr. James Sullivan	Member	Present

1. Dr. Rains, Chief Science Officer for the Florida Department of Environmental Protection (DEP), provided opening remarks, called roll and facilitated the meeting.
2. Dr. Rains provided an overview of the agenda. He explained the task force's longstanding interest in agricultural BMPs, beginning in 2019 with their earliest meetings and recommendations in their [Consensus Document](#). The task force has expressed interest during several of the past meetings in discussing the research that underlies agricultural BMPs. Dr. Rains noted the background material provided to the members before the meeting and described the private tours of several ongoing research projects conducted at the UF/IFAS North

Florida Research and Education Center — Suwannee Valley (NFREC), which took place earlier in the morning.

3. West Gregory, Director of the Office of Agricultural Water Policy (OAWP) at the Florida Department of Agriculture and Consumer Services (FDACS), presented on agricultural BMP implementation in Florida, including BMP manuals, enrollment and verification. Gregory also described the OAWP responsibilities and goals, BMP development, scientific and technical research, and regional projects.
4. Task force members asked questions to clarify points of the presentation and participated in points of discussion, including:
 - a. How FDACS evaluates changing perceptions of BMPs and the BMP program by farmers and various environmental organizations, and the impact that might be having on BMP adoption.
 - b. Comment on how the lengthy manuals might hinder enrollment. Suggestion to organize the manuals so that the most pertinent information is upfront.
 - c. Suggestion to allow producers to evaluate the BMP program and manuals. Suggested customization of a BMP plan for each agricultural operation to make the process easier to understand and implement.
 - d. The annual cost-share program budget.
 - e. Agencies that OAWP works with.
 - f. How OAWP decides which regional projects to implement and where to implement them.
 - g. The public awareness of agricultural BMP requirements in Basin Management Action Plan (BMAP) areas and their effects on enrollment.
 - h. Actions that OAWP takes to engage agricultural producers and keep them informed about the latest BMP research and related matters.
5. Dr. Michael Dukes, UF/IFAS Associate Dean of Extension and Director Center for Land Use Efficiency, presented UF/IFAS research on BMPs. He described the research and education funding sources and research on the following: fertilizer rate, nitrogen BMPs for carrots, potato BMPs, soil moisture sensors for irrigation management and precision application of fertilizer on row crops. He also described the Florida Stakeholder Engagement Program (STEP), ongoing work including UF/IFAS nutrient management, the precision agriculture and artificial intelligence project, the Floridan Aquifer Collaborative Engagement for Sustainability project, and future research and extension needs.
6. Task force members asked questions to clarify points of the presentation and participated in points of discussion, including:
 - a. Whether there has been research from an economic point of view.

- b. Regarding the STEP model: Whether the external costs of managing nutrients on the landscape that have come from excess losses from agricultural production were built into the competitive model and what those different economic outcomes might look like.
 - c. Research questions to narrow down the uncertainties in estimating the costs of cleaning up nitrogen in a waterbody from a field. Suggestion for DEP and FDACS to estimate the downstream costs of cleanup and ways to minimize nutrients getting downstream into the watersheds in a cost-efficient way.
 - d. Suggestion to utilize artificial intelligence (AI) in additional research projects.
7. A broader discussion was held by the task force on agricultural BMPs and research. Dr. Rains and task force members discussed the following:
- a. Legislation
 - i. Section [403.067\(7\)\(b\)\(2\)\(g\)](#), Florida Statutes, states:
“A nonpoint source discharger included in a basin management action plan must demonstrate compliance with the pollutant reductions established under subsection (6) by implementing the appropriate best management practices established pursuant to paragraph (c) or conducting water quality monitoring prescribed by the department or a water management district.”
Question about why the “or” is in the statute, as an “and” might ensure that the adoption of BMPs has more than a presumptive compliance effect. Nearly all, if not all, landowners choose to implement BMPs rather than conduct water quality monitoring. Comment that the “or” in this rule seems to be preventing assessment of water quality in conjunction with more widespread implementation of different kinds of BMPs. Perhaps both BMPs and water quality monitoring would be more beneficial.
 - b. Effectiveness of BMPs
 - i. Request for examples of where the widespread adoption of BMPs within a region or BMAP have resulted in a water quality improvement that then allowed for more widespread adoption.
 - ii. The need to know the actual nutrient BMP reductions, not just the assumed reductions, to determine whether water quality targets can be met using just BMPs.
 - c. BMP manuals
 - i. Suggestion for more frequent amendments or additions to the BMPs that could be adaptive to science advancements once proven effective and adding that information into the BMP manuals. Alternatively, add this information online or as instructional videos. The importance of ensuring there is an avenue for new, effective BMP research to be distributed and implemented.

- ii. The length of the process to edit the BMP manuals when there is a change to a BMP.
- d. Monitoring and modeling:
 - i. Discussion on the best way monitoring could occur. Research centers like NFREC are good locations to test monitoring and understand the amount of nutrients put on the land that are getting used by crops and how they are spreading below the ground and in the groundwater. Utilizing modeling may be the only way to understand what happens once the water and nutrients leave the field/root zone. Use the research to determine how to reduce leachate. Otherwise, compensate the producers' lost yields as a result of less nutrient application for the ability to restore water quality. With the research that is being done at NFREC to determine nutrient uptake from crops and outputs to groundwater, it is possible to determine what practices are going to be the most effective. Balance economics versus efficiency and the desired environmental result. Use the research to show how producers can run their operations and save money while sustaining a good crop yield.
 - ii. The importance of understanding the efficacy of particular BMPs in different locations, soil types and pathologic conditions. A modeling effort would be useful to understand these things.
 - iii. Within the BMAPs, more groundwater wells have been installed for the purpose of understanding groundwater quality and movement.
 - iv. Discussion on how much the groundwater well data from DEP, water management district and research are analyzed to see where problems lie. How much synthesis is done on the research and literature to inform BMPs.
 - v. Question on whether the state has good target numbers to show that a BMP is working.
- e. Research:
 - i. Research like that at the NFREC seems pretty recent. BMP manuals have not been updated in a while. With new research, the BMPs could adapt and change for the better. Suggestion to integrate the research coming out of these research facilities more often. The state could gather more information by monitoring the groundwater, what is applied to the fields and what is lost from the agricultural practices.
 - ii. Suggestion to obtain a better understanding of an issue and the feasibility of what more can be done.
 - iii. Suggestion to implement new techniques and research in practice at production facilities in addition to the research facilities.
 - iv. Long-term datasets are invaluable. It may take time to determine if something is truly effective.

- v. A better understanding of the drainage below the root zone from a distributed network of piezometer studies at all UF/IFAS research and education centers or equivalents, as well as information from different commodity types and locations, would provide helpful information as to what can be expected from regional studies.
 - vi. Acquiring long-term data from research centers, regional projects and sites could prove invaluable and allow for more informed decisions. They can also help in the state's response to potential effects due to changes in the climate.
- f. FDACS regional projects, cost-share program and outreach:
- i. Hotspots with difficulties meeting total maximum daily loads (TMDLs) could benefit from regional projects addressing nutrient inputs.
 - ii. Clarification of how agricultural regional projects are determined and authorized.
 - iii. Clarification on how FDACS prioritizes research and cost-share programs. Suggestion to increase the funding for cost-share programs so more producers can implement BMPs. Currently, there are some roadblocks, including a financial cap that provides some limitations when it comes to expensive, specialized equipment that might be needed. Increasing the cost-share funds and reducing these roadblocks could lead to a huge payoff.
 - iv. Clarification on FDACS' and UF/IFAS' efforts to enable change amongst producers. UF/IFAS suggested that the biggest return may be when FDACS, county extension agents and conservation technicians go to the farms and work with producers directly. BMP regional specialization would add to UF/IFAS' capacity for outreach and get the technology in practice in the field where it is needed, beyond just on the research plots.
 - v. Suggestion to make the investment in BMP-focused UF/IFAS extension agents now which should lead to more BMP sign up in the future, support water quality improvements and save money in the long run by alleviating downstream impacts.
 - vi. Question about how demonstration projects get funded and how partners are found.
- g. Other suggestions:
- i. Suggestion to develop a pre-determined decision tree with a predictable sequence of steps as a roadmap. The decision tree could detail what knowledge is needed to understand BMP effectiveness, where to test it and the methods to test it, and depending on whether any of those methods work, the decision tree may trigger a regional or stacked approach.
 - ii. Need to determine the "sweet spot" between profit, efficiency and environmental response.

8. The public comment period included the following topics:
 - a. Consider the frequency and periodicity of when loading events happen in the estuaries and receiving waterbodies. In some watersheds around Lake Okeechobee, a large percentage of loading takes place in the top flow events. The time at which the loading events take place is critically important. A combination of BMPs, research, improvements, and regional and subregional projects are needed to meet the TMDLs. Suggestion to continue to find investments and opportunities for regional water quality treatment.
 - b. Consider phosphate mining and its discharge impacts. Consider the mine setbacks from waterbodies.
 - c. Comment that there has been no measurable water quality improvement around Lake Okeechobee despite very high enrollment in BMPs in the basins around the lake for many years. Suggestions for improvements to BMPs. Concern that the BMP manuals will be improved but that many more years will pass without getting the desired results.

Note: during the public comment period, the internet service provider for the facility experienced a regional outage and was unable to restore internet service, so the meeting ended. Attendees were encouraged to email any comments to the department.