FLORIDA DEPARTMENT OF
Environmental Protection

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Blue-Green Algae Task Force Staff Minutes

April 8, 2026
12:30 p.m.
Go-To Webinar

General subject matter considered: The Blue-Green Algae Task Force (task force) convened to discuss actions, outcomes, and advances in science-based decision making, data needs, and monitoring programs. All work presented to the task force was coordinated through the Florida Department of Environmental Protection's (DEP) Office of Environmental Accountability and Transparency. Presentations included projects focused on reducing nutrient loading to waterbodies, anticipating the effects of nutrients in the water, responding to algal blooms, and exploratory research, as well as data and analytics and data delivery at DEP. The task force provided input on the presentations and current and future research, studies, and efforts.

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

1. Dr. Mark Rains, Chief Science Officer for 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 science-based decision making, data needs, and monitoring programs, beginning in 2019 with their recommendations in their Consensus Document. In previous meetings, particularly on December 8, 2021, the task force met to discuss the data needs and monitoring programs component of these recommendations. However, up until now there has not been a meeting specifically to discuss science-based decision making, though it has been infused throughout past meetings. DEP has been working hard to build tools to inform decision making, which will be discussed in this meeting. Presentations will also be given on some of the research DEP has undertaken

along with partners and contractors. The presentations are organized into four primary categories. The first two presentations address reducing nutrient loading to waterbodies. The following two presentations focus on the effects of nutrients in the water, including the prediction of blue-green algal blooms and bloom response through innovative technologies. The next two presentations address exploratory research projects, and the final two presentations focus on data and analytics and data delivery at DEP.

3. Dr. Ming Ye, Professor at Florida State University, presented research that investigated the setback distances of onsite sewage treatment and disposal systems (OSTDS) from the perspective of the delivery of nutrients to groundwater and surface waterbodies. The research focused on determining the appropriate setbacks of OSTDS to be protective of environmental and human health using ArcNLET, a DEP-funded modeling tool.

4. Task force members asked questions to clarify points of the presentation and participated in points of discussion, including:
    a. How the model deals with seasonal changes in the water table.
    b. Variability in the bedrock and whether or not the model considers absorption of nitrate and ammonium in soils and limestone bedrock.
    c. The causes of less ammonium nitrification in certain areas.
    d. Potential data gaps in the model.

5. Dr. Kai Rains, Research Associate Professor at the University of South Florida, presented on the Landscape Assessment of Nutrient Loading to Waterbodies (LANLoad), a geospatial screening tool designed to estimate the relative likelihood that nutrients applied to a given terrestrial location will reach the nearest downgradient surface waterbody. LANLoad can serve as a decision-making tool for practitioners when determining priority areas for septic-to-sewer conversion or other restoration projects.

6. Task force members asked questions to clarify points of the presentation and participated in points of discussion, including:
    a. Clarification of who provided the categorization used in the model and how they were convened.
    b. Comment that Dr. Kai Rains and Dr. Ming Ye could work together on their models to estimate setback distances.
    c. Commending the spatial scale of the project.
    d. Thoughts on the applicability of the project findings to hone in on certain areas for nutrient reduction projects or efforts.

7. Natalie Reynolds, Environmental Engineer at RTI International, and Jonathan Holt, Research Data Scientist at RTI International, presented on the harmful algal bloom (HAB) predictive model developed for DEP by RTI International/SAS. The HAB model predicts when and where HABs might occur in the next seven days on 134 lakes in Florida, with testing indicating it is over 90% accurate.

8. Task force members asked questions to clarify points of the presentation and participated in points of discussion, including:
    a. Question on whether the speakers work with anyone trying to develop a model that is not reliant on satellite imagery, but using environmental data to predict the likelihood of a bloom happening, so that we can get a sense of what is driving the blooms, not just that they are occurring.
    b. Question about whether RTI International has started integrating artificial intelligence techniques into the model.
    c. Elaborating on modeling the threshold values.
    d. How colored dissolved organic matter might interfere with the model predictions.

9. Edward Smith, Director of Water Policy and Ecosystems Restoration at DEP, gave a short refresher on the Innovative Technology Grant Program and highlighted some completed projects.

10. Task force members asked questions to clarify points of the presentation and participated in points of discussion, including:
    a. How the program keeps track of or assesses unintended consequences of these projects, particularly the preventative approaches.
    b. Question on the size of an area from one of the projects described and the scalability of some of the projects.
    c. Whether the Innovative Technology Grant Program is involved in helping municipalities determine the overall cost of applying these technologies more efficiently.
    d. The consideration that was given to potential unintended consequences of the projects.

11. Dr. Austin Fox, Assistant Professor at the Florida Institute of Technology, gave a presentation on enhanced understanding of the impacts of hypoxia. The presentation highlighted a project focused on increasing the understanding of soft-bottom dynamics and connections between biotic and abiotic factors that characterize sediments and habitats in the Indian River Lagoon and contribute to feedback loops that maintain water quality.

12. Task force members asked questions to clarify points of the presentation and participated in points of discussion, including:
    a. Clarification of the definition of hypoxia for this project.
    b. Whether hypoxia was attributable to sediment type, or the explanation for why the researchers saw these changes.
    c. Whether there are free iron measurements before and after the researchers saw changes in phosphate.

13. Dr. Patricia Spellman, Assistant Professor at the University of South Florida, gave a presentation focused on projects to integrate autonomous underwater

robot technology into water resource evaluations for improved research and decision making in karst aquifers.

14. Task force members asked questions to clarify points of the presentation and participated in points of discussion, including:
    a. Whether the researchers see obvious signs of high ammonium in the caves themselves.
    b. Whether the divers can sample organisms or features, particularly the algae around the cave edges or lighted places, because maybe they are absorbing or sequestering some of the nutrients.

15. Chris Peary, Chief Data and Analytics Officer at DEP, gave a presentation on the Data and Analytics Office at DEP, which was established to create a modern and flexible data and analytics program that both fits DEP's current needs and can grow with DEP's ever-growing needs.

16. Task force members asked questions to clarify points of the presentation and participated in points of discussion, including:
    a. Clarification of the extent of the data that DEP ingests.
    b. Accessing Florida's water quality data is challenging since there are multiple data sources. However, it is important to make the data easily accessible and available.

17. Sara Davis, Director of the Office of Environmental Accountability and Transparency at DEP, presented enhancements and features that have been incorporated into the Protecting Florida Together website. The presentation also highlighted the upcoming Indian River Lagoon Protection Program (IRLPP) dashboard, designed to enable the public to explore restoration efforts under the IRLPP. The presentation included a live demo of the Protecting Florida Together website and a sneak peek of the IRLPP dashboard.

18. Task force members asked questions to clarify points of the presentation and participated in points of discussion, including:
    a. Comment that the Protecting Florida Together website has come a long way and that it is great to constantly enhance the website.

19. A broader discussion was held by the task force on science-based decision making and the presentations. Dr. Rains and task force members discussed the following:
    a. General comments.
        i. These meetings are an important part of communicating the task force's goals, progress and results to the public.
        ii. Since the task force last met on June 4, 2024, new stormwater rules have been established for new stormwater management systems. Comment that we have the tools to improve stormwater. Innovative technologies can help make the rules a reality, and the

new modeling tools we have can help us find out if they are working.

iii. Dr. Fox's presentation demonstrates that legacy nutrients can be larger than the loading that is currently observed. These legacy nutrients may be delaying water quality improvements and must be addressed. While more work and research are needed in this area, innovative technology may hold potential solutions.

iv. Florida has made tremendous progress, and a priority is to continue communicating the work being done to the public. It would be good to get some updates on the outcomes of the updated stormwater rules and stormwater treatment at large scales. An updated stormwater study would be good to see.

v. Today showed good, significant development of tools and resources. The task force is looking forward to seeing their application. It seems that the state is proactively developing the capability to identify target areas for projects. Addressing them is next, and stormwater is a big part of that. The state is setting the stage to address these issues.

vi. Now that some more advanced springs mapping is underway, that needs to be factored into development.

vii. Today we did not hear much about agricultural issues or sewage pipe leaking.

b. One area for opportunity is more thorough organization and interpretation of data to locate knowledge gaps.
    i. Targeted symposiums or working groups focused on various topics are a good way to synthesize information. A good example is the Blue-Green Algae State of the Science Symposium II. These events bring experts together and could feature rotating topics.

c. Another possibility moving forward is preparing mesocosms, physical field sites to study nutrient attenuation where researchers can come test their innovative technologies in a controlled setting.
    i. It is an incredible idea to have established sites where scientists can propose to conduct field research. Fascinating and instructive mesocosm studies are being conducted in the U.S. and in Europe.

d. Other thoughts:
    i. Potential to revamp the project request process to allow for a more targeted, needs-based approach to assess innovative technology. Edward Smith then commented on how the Innovative Technologies Grant Program prioritizes projects annually. Each year, the program considers what they did over the past year and considers the questions that they did not get to answer or what had been passed through the Legislature. They seek out answers and those that have the ideas.
    ii. The task force supports the idea to convene a symposium or a synthesis group looking at innovative technologies and treatment, allowing the state to determine what opportunities exist in certain

spaces where not much is known, helping to focus efforts. This need not be limited to Florida — expertise from outside of the state is welcome.

20. The public comment period included the following topics:
    a. The state stopped publishing the blue-green algae bloom weekly update report that used to be emailed each Friday to subscribers and that information is now provided on ProtectingFloridaTogether.gov and the Water Quality Status Map. Asked DEP to reconsider the weekly updates.
    b. Comment that the original Caloosahatchee Basin Management Action Plan underestimated the loading by an order of magnitude. Any new modeling improvements or emerging technology should come quickly.
    c. Comment highlighting the importance of decision-ready information for science-based decision making, a statewide picture of water quality health, and better alignment between the scale of decisions, the scale of data being collected and the scale of impacts.
    d. The University of Miami is conducting a research study in South Florida called Diversity and Innovation in Screening and Prevention of Exposure over the Long-term to Harmful Algal Blooms. The study focuses on the long-term health effects of people living or working near waterbodies affected by HABs. If interested, email Lauren Smith at lxs1566@miami.edu.
    e. Comment that enforcement is lacking and would have a huge impact.
    f. Comment that it is important to show the public specifically where the nutrient sources are that are contributing to nutrient pollution.
    g. Comment about a system called Diatom Lagoon, which sequesters fluid mud containing high concentrations of legacy nutrients.

21. Task force members contributed a final thought that they would like to revisit some of the activities going on outside of the Blue-Green Algae Task Force, like the Red Tide Task Force and their workshops, and the Florida Red Tide Mitigation and Technology Development Initiative. There might be some valuable synergy between the Innovative Technologies Grant Program and some of the technologies there. Also, a comment that it is encouraging to see all the progress that is being made, but that we do not want to take our foot off the gas.

22. Dr. Rains provided closing remarks.