Office of Environmental Accountability and Transparency (OEAT)

Sara C. Davis, Director

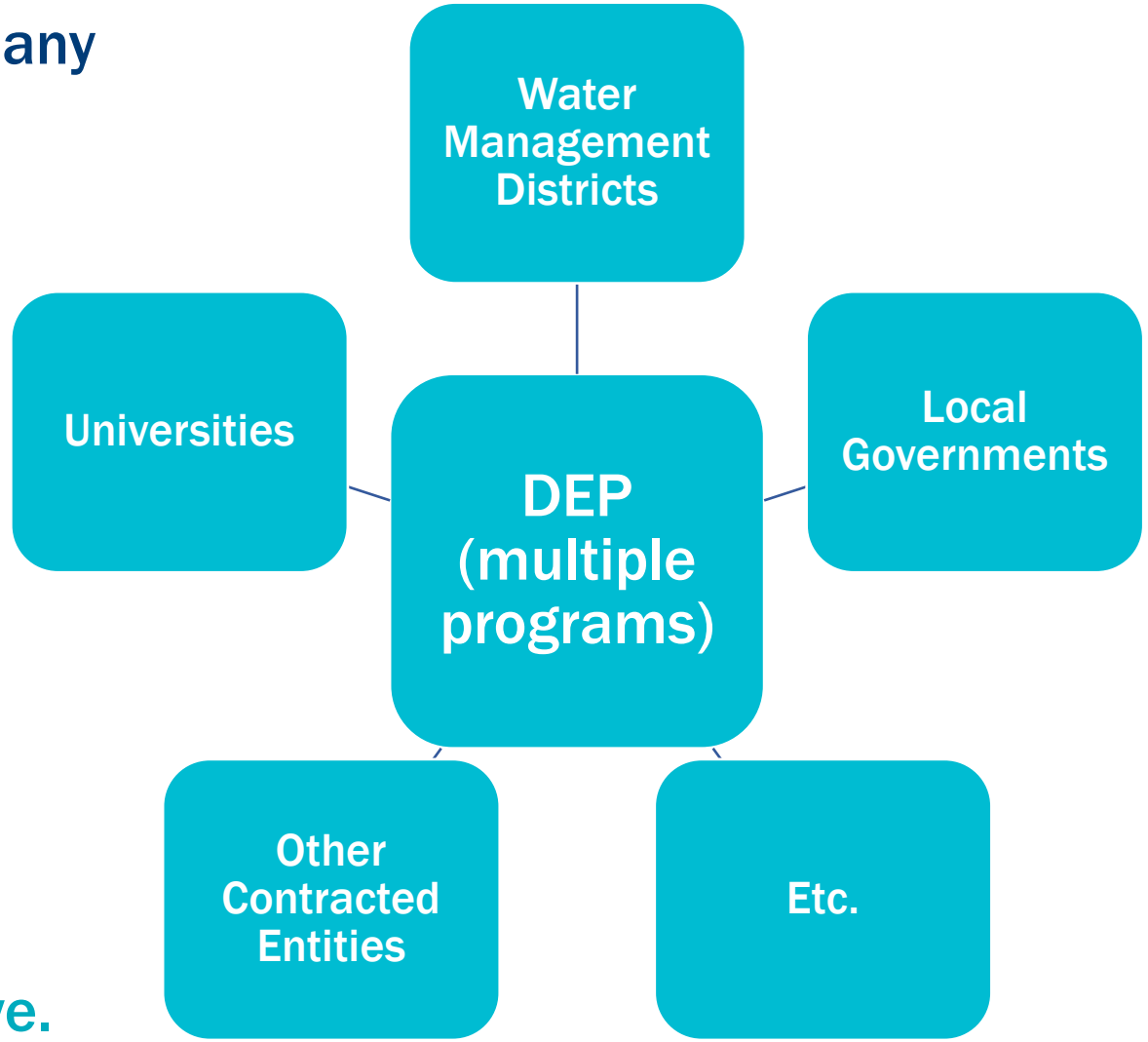
Feb.10, 2022

Blue-Green Algae Task Force Meeting

COMPREHENSIVE MONITORING STRATEGY

IMPROVING OUR UNDERSTANDING OF THE CHALLENGES WE FACE

- Monitoring and studies are conducted by many entities for various purposes.
- Multiple programs within DEP
  - Environmental Assessment and Restoration.
    - Strategic monitoring plan.
    - Algal bloom response.
  - Aquatic preserves/national estuarine research reserves.
  - Regulatory programs.
- Purpose of some monitoring and studies is exploratory, investigative, novel or innovative.



WHAT IS THE OFFICE OF ENVIRONMENTAL ACCOUNTABILITY AND TRANSPARENCY?

Created by Governor DeSantis in 2019 through Executive Order (EO) 19-12

Charged with ensuring key water quality objectives are clearly communicated to the public

Under Chief Science Officer, Dr. Mark Rains

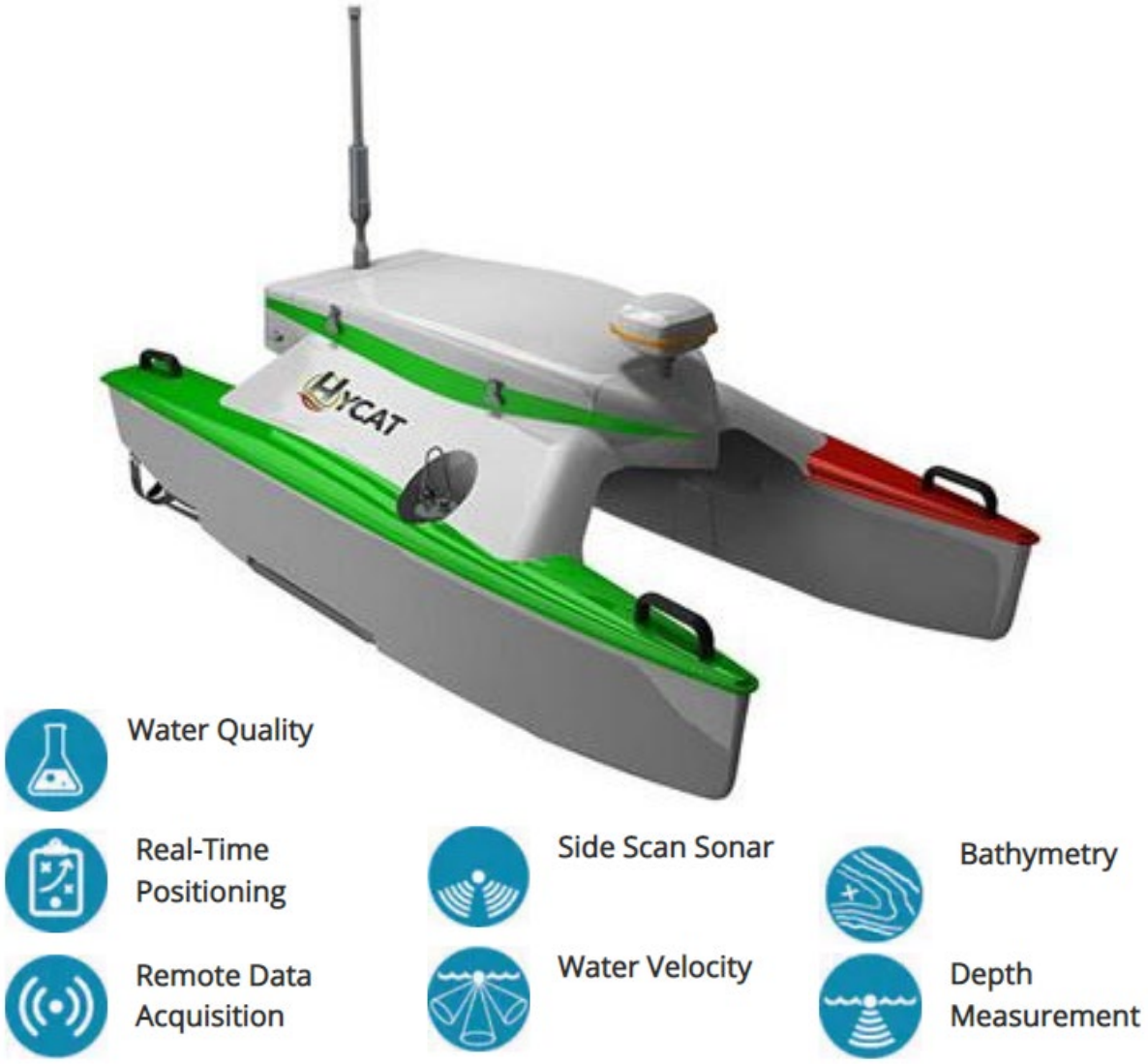
Leads agency priorities - integration of science and policy

Promotes and facilitates agency research initiatives

Public-facing information on priority environmental issues

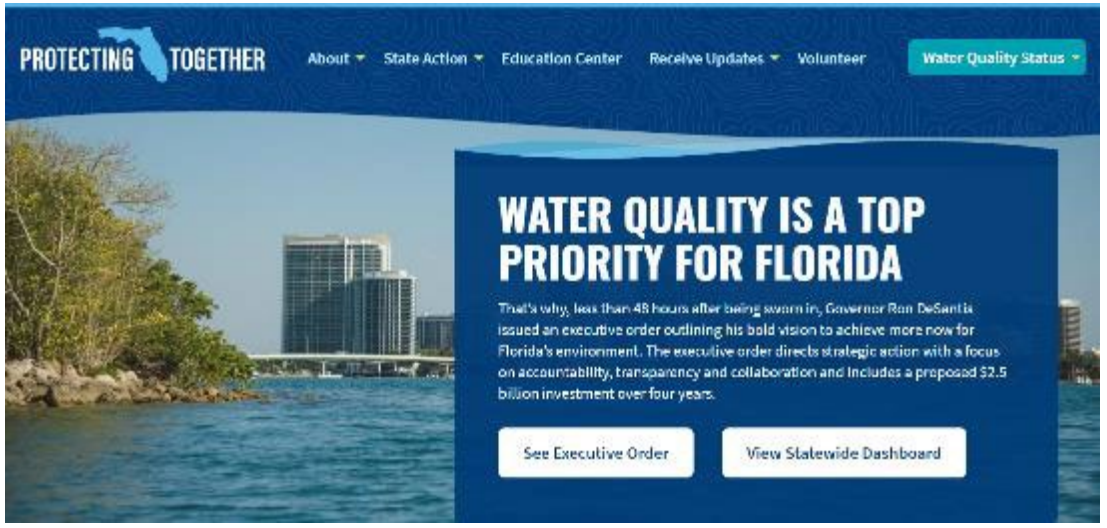
OEAT

KEY FOCUS AREAS

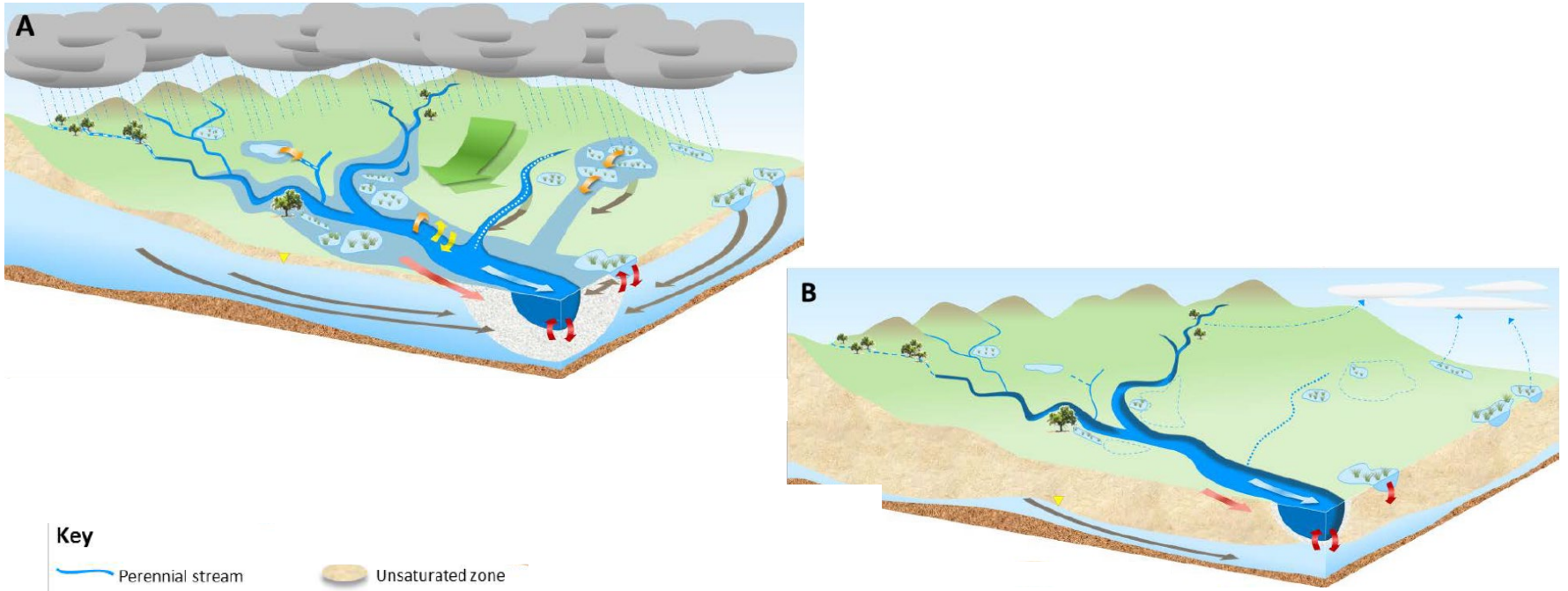


Source: https://www.ysi.com/hycat

- **Enhanced Monitoring.**
- **Water Quality Analytics.**
- **Blue-Green Algae Task Force.**
- **Protecting Florida Together.**
  (https://protectingfloridatogether.gov/)



OEAT
FUTURE INITIATIVES



Source: U.S. EPA. Connectivity of Streams and Wetlands To Downstream Waters: A Review and Synthesis of the Scientific Evidence (Final Report). Figure 1-2

Monitoring and Research Initiatives

Water Quality Data Analytics

Protecting Florida Together Enhancements

QUESTIONS?

Sara C. Davis

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Due to technical difficulties with the audio during this portion of the meeting, a transcript from the presentation is provided here.

Good morning, Task Force Members, Dr. Rains, and meeting participants. I'm Sara Davis, Director of the Office of Environmental Accountability and Transparency or "OEAT." The task force has recommended that the state develop a "comprehensive and adaptive statewide water quality monitoring strategy to assess long-term trends, answer specific questions, and identify or predict harmful algal blooms." One thing we heard during previous meetings was that in order to better understand and overcome the challenges we face we need to commit resources to attaining some of the necessary fundamental knowledge. As Dr. Rains mentioned, today I'm here to provide you with some information on our office and how we can support efforts to close some of these crucial knowledge gaps.

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Last meeting you heard from Lawrence Glenn of the South Florida Water Management District (SFWMD) about the various monitoring led by the district. For the past couple of years OEAT has provided funding to help support that monitoring network and to expand into areas that weren't previously monitored. For example, in the Northern Everglades watersheds, water quality and algal bloom monitoring has been expanded at approximately 170 existing stations and 100 new monitoring stations were added, including bi-weekly algal bloom sampling from May through October. Our office works with all five water management districts to augment their ability to conduct monitoring that addresses status and trends for key water quality parameters. But OEAT has also been involved in monitoring efforts aimed at answering specific questions, addressing unknowns, or allowing for improved design and adaptive management. In a minute

I'll go into more detail about our involvement, but I thought it might help to first set some context for why we are involved in these efforts.

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OEAT was established through Executive Order 19-12 concurrent with the Chief Science Officer position and the Blue-Green Algae Task Force (BGATF), and we are deeply intertwined with both. Our office is responsible for coordinating these meetings and supporting Dr. Rains in his role as the facilitator. We're charged with leading several agency initiatives and priorities and also with supporting enhanced transparency of environmental data. Working closely with Dr. Rains, we lead agency priorities that require management and integration of science and policy, as well as coordination between internal Department of Environmental Protection (DEP) programs and external organizations. We promote and facilitate agency research initiatives intended to address key environmental issues. And we work with subject matter experts to explore data and identify opportunities to take innovative approaches to address these issues. Our office is about organizing, analyzing, and pushing out data to the public to help us better understand the challenges we're facing. Monitoring and research is only a part of what we do. We're about identifying priorities and making sure there are resources available to accomplish those priorities, but we're not a granting organization. We mostly work through our state partners for those resources, but we do reach out to university partners when we know they're working on something that's a priority to the state and they can provide assistance above and beyond what DEP and the water management districts can do at the time. I also think it's important to point out that my office only has four staff. We're small, but mighty.

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These are some of our key focus areas.

<u>Enhanced Monitoring</u>

Over the past few years, OEAT has provided millions of dollars in funding to support new and innovative monitoring efforts, better enabling us to document, understand, and respond to water quality challenges. These efforts include a combination of strategies including new stations, additional parameters sampled at existing stations, and increased sampling frequency at existing stations. As I mentioned on the earlier slide, enhanced monitoring includes not only augmenting the types of monitoring Mr. Glenn presented last meeting, but also the modernization of our data collection network. We've provided the resources needed for some DEP programs to purchase equipment to explore novel data collection methods. For example, this HyCat autonomous sampling vehicle was recently purchased for one of our National Estuarine Research Reserves. OEAT has also provided funding for the implementation of remote sensing of nitrogen and phosphorus on land and water within the SFWMD, which passively identifies nutrient concentrations by using imagery analyses. This is also something we're exploring through several contracts that focus on things like legacy nutrients, the use of isotopic tracers in nutrient source tracking, and improved efficiency and flexibility in monitoring. Recently, we partnered with state and federal agencies on an effort to organize updates to the bathymetry dataset in the Indian River Lagoon and that work is planned for this year. You're all probably aware that state resilience efforts have been a Governor's priority, and the legislature has been providing funding for various resiliency efforts in the state. To complement that, our office is currently funding targeted monitoring for coastal areas and coral reefs that is aimed at reducing local stressors & restoring environmental conditions to improve reef resilience. We continually collaborate with our office of resilience and coastal protection to identify needs and priorities and help locate resources to implement the work. We have also worked with Dr. Rains and others within the department to identify and initiate applied research to help improve our basic

understanding of how nutrients are getting into the system and how systems are responding. To date, the focus of our monitoring and research has been on understanding the drivers and the responses. These represent the best opportunities for the state to make direct changes to policies and practices. We haven't yet focused on the biology of the organism itself.

Water Quality Analytics

Our office is also undertaking new initiatives to analyze multiple federal, state, and local datasets and to harness the power of big data analytics and machine learning to further enable us to document, understand, and respond to water quality challenges. This includes building a data analytics platform where these datasets can be explored more easily, and that may help inform water quality monitoring plans that target early algal bloom detection. We're exploring notions like machine learning that may improve the efficiency and speed of our data analytics. We're also working with DEP programs and our partners at universities to analyze and interpret some of the many available data that may help us better understand and respond to water quality challenges.

Blue-Green Algae Task Force

As I mentioned, we are involved with the BGATF, and that's really to help support and encourage the dialogue between the Task Force, the state, and Floridians.

Protecting Florida Together

One of our most important focus areas is enhanced transparency of environmental data. Protecting Florida Together was created to serve as a consolidated source of information about Florida's efforts to protect and improve water quality, and it encompasses multi-agency water quality data and initiatives. We are committed to keeping the public informed about statewide restoration efforts and topics related to harmful algal blooms, as well as simple steps that all Floridians can take to help prevent eutrophication and nutrient over-enrichment. This platform provides users

with access to water quality data, including information about nutrients, active restoration projects, and the status of water quality in Florida communities. Last year, we also completed development of a preference center that allows Floridians to sign up for blue-green algae and red tide email notifications, and an education center that provides a one-stop-shop for information on key water quality issues. We continue to work with our many contributing partners on opportunities to improve the user experience on Protecting Florida Together.

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The chemical, physical, and biological connections in systems are complex and often extensive. We know all these things play a contributing role and it's a huge challenge to fully understand all of them. So, we're in a situation where we have to be smart about where we prioritize…and as we think about all those connections, where should our priority be? If that answer isn't immediately clear, what is the appropriate next step? Every year we consider what our priorities should be for the next fiscal year, and how we can support projects that improve our understanding of the water quality challenges we face. And we focus on these three categories that I've discussed today. We're working on several ideas and we've heard several suggestions in previous discussions. Given limited funding, we're always thinking about whether we're pursuing an appropriate strategy to help facilitate research to close some of the crucial knowledge gaps.

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With that, I'd be happy to take any questions.