



Friends of the Everglades



## **Blue-Green Algae Task Force Recommendations Implementation Progress Report**

In January 2019, Governor Ron DeSantis signed Executive Order 19-12 creating the Blue-Green Algae Task Force (BGATF) charged with expediting progress toward reducing the adverse impacts of toxic blue-green algae blooms. In October 2019, the Task Force issued an initial [consensus document](#) outlining recommendations to make progress toward that goal. As we approach the three-year anniversary of the issuance of those recommendations, ecological conditions in Florida have not improved and, in many cases, they have worsened. Lack of meaningful water quality protections have resulted in persistent harmful algal blooms, a record number of manatee deaths, and an overall decline in water quality statewide. During the summer of 2022, as algal blooms continued to plague waterways across the state, a coalition of environmental organizations representing Floridians across the state came together to review the BGATF recommendations and provide an update on their implementation. This document serves as a progress report to outline which of the BGATF recommendations have and have not been implemented by legislative and state agency actions during the last three years.

## Basin Management Action Plans (BMAPs)

A Basin Management Action Plan (BMAP) is a framework for water quality restoration that contains projects and strategies to reduce pollutant loadings and restore a polluted waterbody to a healthy state. The steps in the BMAP development process are to identify and quantify pollutant sources, allocate responsibilities for reducing pollutant loadings, develop strategies and projects to accomplish the reductions, establish a monitoring program to measure progress, determine an implementation schedule, and identify financial resources to fund the necessary actions. BMAPs are designed to achieve healthy water quality within 20 years, but as BMAPs approach the end of their first decade, it has become clear that few will come close to achieving that objective.

<b>BGATF Recommendation</b>	<b>Has the BGATF recommendation been fully implemented?</b>	<b>Analysis</b>
<p><b>BMAP Projects Strategy Improvement</b>                      “To accelerate progress toward achieving restoration targets in BMAP areas, the Blue-Green Algae Task Force recommends a more strategic approach to project selection, implementation and monitoring.”</p>	<p><b>No</b></p>	<p>Accelerating progress towards achieving BMAP restoration targets (i.e., Total Maximum Daily Loads) requires funding directed toward projects that address the largest pollution sources in the most cost-effective way possible. Currently, funding has primarily been allocated toward less cost-effective wastewater infrastructure projects, even in areas where agriculture is the dominant pollution source.</p> <p>According to the 2021 Statewide Annual Report (STAR) prepared by the Florida Department of Environmental Protection, “completed” BMAP projects have only reduced one pound of nitrogen per year for every \$1,911 spent, while projects that are “underway” reduce one pound of nitrogen per year for every \$3,781 spent.</p>
<p><b>Runoff Storage &amp; Treatment Infrastructure</b>                      “With regard specifically to the Lake Okeechobee, Caloosahatchee Estuary and St. Lucie River and Estuary BMAP areas, the task force acknowledges regional storage and treatment infrastructure is urgently needed to manage flows to reduce</p>	<p><b>No</b></p>	<p>Additional water storage around Lake Okeechobee is currently under construction, including the Everglades Agricultural Area (EAA) Reservoir, Aquifer Storage and Recover (ASR) wells north of the lake as part of the Lake Okeechobee Watershed Restoration Project (including the C-43 and C-44 reservoirs and other infrastructure). However, most of these projects were already underway when the task force issued its consensus document in 2019. Comparably little new infrastructure has been proposed, let alone funded, to accelerate progress towards storage and treatment goals.</p>

<p>damaging freshwater discharges to the northern estuaries, and also to achieve Total Maximum Daily Loads (TMDLs) as well as established Numeric Nutrient Criteria (NNC). Accordingly, the task force recommends that siting, design, and funding of this infrastructure be a priority.”</p>		
<p><b>Incorporate Growth Projections</b>  “The task force recognizes that rapidly changing demographics, alterations in land use and altered hydrology obfuscate the BMAP process. Nevertheless, projections of such changes should be incorporated, where possible, into the BMAP process to identify projects/actions that could compromise or enhance ongoing restoration efforts. Such projections could be used also to inform future land use planning and permitting.”</p>	<p><b>No</b></p>	<p>Nearly 1,000 people move to Florida each day, and more people often means more pollution. If BMAPs do not account for the growth in pollution loading from increased population and more intensive agricultural operations, then they are based on outdated information and destined to fail. SB 1522/HB 1225 (2021) would have required these updates, but the Legislature chose not to pass the bill.</p>
<p><b>Acknowledge Downstream Reduction Needs</b>  “BMAPs should acknowledge the nutrient reductions needed to be protective of downstream water bodies.”</p>	<p><b>No</b></p>	<p>The BMAP for the Middle St. Johns River Basin identifies upstream sources as the major source of nutrient loading to the basin (96.4% of Total Nitrogen and 95% of Total Phosphorus). Therefore, reductions from upstream sources are necessary to achieve water quality standards in the Middle Basin. However, no BMAP exists for the Upper St. Johns River basin, meaning the BMAP for the Middle and Lower St. Johns River Basins are destined to fail.</p>
<p><b>Legacy Nutrient Loading Consideration</b>  “Legacy nutrients, as indicated previously, are a concern in the</p>	<p><b>No</b></p>	<p>The Lake Okeechobee, Caloosahatchee and St. Lucie River and Estuary BMAPs were all updated in January of 2020. These BMAPs acknowledge the issue of legacy nutrients, but projects for muck removal or dredging have not been prioritized, funded, or implemented.</p>

<p>South Florida landscape, and the task force recommends that their contribution to loading figure prominently in the Lake Okeechobee, Caloosahatchee and St. Lucie River and Estuary BMAPs. The task [force] further recommends that projects with the demonstrated potential to expedite legacy nutrient removal merit special attention and be designated as priority projects.”</p>		
<p><b>Spatially-focused Suites of Projects</b>  “... the task force recommends spatially focused suites of projects in areas likely to yield maximum pollutant reduction be identified and prioritized in all BMAP areas.”</p>	<p><b>No</b></p>	<p>Recent projects have not demonstrated an efficient return on investment regarding money spent versus nutrient reduction achieved. According to the 2021 Statewide Annual Report (STAR) prepared by the Florida Department of Environmental Protection, the cost to remove one pound of nitrogen from “completed” BMAP projects can range from \$1,911 to \$3,781. In contrast, agricultural cost-share projects are estimated to reduce one pound of nitrogen per year for every \$16.67 spent. This is not a scalable or sustainable return on investment.</p>
<p><b>Projects Monitoring and Modeling</b>  “Integrated monitoring and modeling of implemented BMAP projects should be conducted to ensure that projects are working as expected.”</p>	<p><b>No</b></p>	<p>SB 1522/HB 1225 (2021) and SB 832/ HB 561 (2022) would have required comprehensive monitoring for projects with a total cost exceeding \$1 million, but the Legislature failed to pass these bills. Moreover, in a 2021 BMAP report, FDEP claimed that “most projects...cannot be monitored directly or practically because their impacts are too diffuse or cannot be teased apart from the effect of other projects and activities...Even for projects that can be monitored directly, the results are not representative of water quality in the impaired system being restored,” but monitoring is critical to the success of the BMAP regulatory program, and this could be accomplished if the Department adequately funded it.</p>

## Agriculture and Best Management Practices (BMPs)

In watersheds where agriculture is a predominant land use, agriculture is also often a dominant source of both phosphorus and nitrogen loading. Agricultural Best Management Practices (BMPs) are practical measures that producers can take to reduce the amount of fertilizers, animal waste, and other pollutants entering our water resources. BMPs are required in areas with a BMAP, but voluntary everywhere else. BMPs are purported to improve water quality while maintaining agricultural production, but the effectiveness of these tools in protecting water quality is unverified.

BGATF Recommendation	Has the BGATF recommendation been fully implemented?	Analysis
<p><b>Actions to Increase BMP Enrollment</b>                      “The task force recommends funding and action to increase BMP enrollment in all BMAP areas to ensure that the maximum environmental benefit is achieved.”</p>	<p><b>Yes</b></p>	<p>When the Florida Department of Agriculture and Consumer Services (FDACS) identifies agricultural parcels that are required to have BMPs in place but are found not to be enrolled, FDACS refers them to FDEP for enforcement. More than 69% of the unenrolled agricultural parcels identified by FDACS have been brought into compliance, representing more than 83% of the total acres. The majority of parcels that are still out of compliance are small parcels (under 10 acres). No parcels over 100 acres are out of compliance.</p>
<p><b>BMP Implementation Record Keeping</b>                      “However, enrollment in [and] of itself does not ensure compliance. It is critical that all agricultural producers enrolled in BMP programs maintain accurate records, as articulated in the various BMP manuals, to demonstrate that they are implementing BMPs and that those records be verified and</p>	<p><b>Yes</b></p>	<p>FDACS’s Implementation Verification rule (F.A.C. 5M-1.008) was updated in fall 2021 to require FDACS conduct a site visit every two years to verify the proper implementation of all applicable BMPs and to collect relevant records including nutrient source and application records.</p>

made available to the appropriate authorities for analysis and review.”		
<p><b>Verification of BMP Effectiveness Based on Data</b>  “The task force recommends that the effectiveness of BMPs be supported by adequate data to justify the presumption of compliance with water quality standards granted upon enrollment and implementation.”</p>	<b>No</b>	There is considerable debate about the effectiveness of BMPs in protecting water quality. Even if BMPs are implemented, and records are kept, there is no guarantee of water quality protection if the effectiveness of those BMPs is not being verified. Agricultural property owners are given a choice between enrolling in BMPs or a water quality monitoring program, but, to date, none have chosen the water quality monitoring program.
<p><b>Notices of BMP Input and Load Reduction</b>  “[T]he task force recommends that each Notice of Intent (NOI) to adopt BMPs be accompanied by an estimate of input reduction and load reduction associated with adopting these practices.”</p>	<b>No</b>	To enroll in a BMP, property owners must submit a Notice of Intent (NOI) to adopt BMPs to FDACS (Form 04002). This form has not been updated to include estimates of input reduction and load reduction associated with adopting applicable BMPs.
<p><b>Review and Revision of BMP Manuals</b>  “The task force recommends that existing BMP manuals be subject to regular review and revision to achieve a greater environmental benefit; improved water quality, in particular.”</p>	<b>No</b>	Agricultural BMPs are outlined in manuals developed by FDACS and adopted by reference in the Florida Administrative code. FDACS updates existing BMP manuals and considers development of new manuals periodically as new and updated research becomes available, but there is no formal timeline for this process. Some BMP manuals (for cow/calf and sod) have not been updated since 2008. In addition to not formalizing the timeline for regular review and revision of these practices, the current rate of review should be accelerated and seek to include updates in advanced technologies as they become viable for inclusion.
<p><b>Add Advanced Technologies to BMP Manuals</b>  “Advanced technologies that reduce leaching and runoff of nutrients and the subsequent delivery of those</p>	<b>No</b>	Advanced technologies are being developed but have not been included in BMP Manuals.

<p>nutrients to groundwater or adjacent surface waters should be incorporated into revised and updated BMP manuals as appropriate.”</p>		
<p><b>Accelerate FDACS Updates of BMP Manuals</b>          “The current effort by the Florida Department of Agriculture and Consumer Services (FDACS) to update BMP manuals should be accelerated.”</p>	<p><b>No</b></p>	<p>The most recent BMP manual update was in 2016 (poultry). Several manuals have not been updated since 2008. None have been updated since the recommendations of the Task Force.</p>

**Human Waste - Onsite Sewage Treatment and Disposal Systems (OSTDS)**

Florida has over 2.6 million Onsite Sewage Treatment and Disposal Systems (OSTDS/ “septic systems”), many of which were designed and installed long before modern water quality regulations. Since septic systems are not regularly inspected, failing and improperly sited systems can contribute nutrient and fecal bacteria pollution to nearby waterways.

In 2020, the Florida Legislature passed Senate Bill 712 which directed DEP to create an OSTDS Technical Advisory Committee (TAC) that was charged with developing and providing recommendations for reducing nutrient pollution from OSTDSs to the governor and Legislature by January 1, 2022, and to adopt revised regulations by July 1, 2022. The TAC met six times from August of 2021 through November of 2021. The TAC issued recommendations in December of 2021, but no updates have been made to the regulations as of July 2022.

<b>BGATF Recommendation</b>	<b>Has the BGATF recommendation been fully implemented?</b>	<b>Analysis</b>
<p><b>Regulatory Oversight of Septic Systems</b>                      “The task force recommends broader regulatory oversight of onsite sewage treatment and disposal systems to ensure that those systems function properly, protect the environment against nutrient pollution and are protective of human health.”</p>	<p><b>No</b></p>	<p>SB 712 transferred oversight of septic systems from the Department of Health (DOH) to DEP, but regulatory oversight has not expanded under this new oversight and the regulatory program is still operating under the same under-protective rules.</p>
<p><b>Updated Septic Regulations</b>                      “The Department of Environmental Protection should develop a comprehensive regulatory program to ensure that onsite sewage</p>	<p><b>No</b></p>	<p>The OSTDS TAC issued recommendations in December of 2021, but those recommendations did not include more protective setback regulations or require inspections for existing systems. SB 712 required updates to be made by July 1, 2022, but FDEP has requested an extension through October 2022. To date, no changes to the rule have been adopted.</p>



<p>treatment and disposal systems, where appropriate, are sized, designed, constructed, installed, operated and maintained to prevent nutrient pollution, reduce environmental impact and preserve human health.”</p>		
<p><b>Inspecting and Monitoring OSTDSs</b>  “The task force recommends the development and implementation of a septic system inspection and monitoring program with the goal of identifying improperly functioning and/or failing systems so that corrective action can be taken to reduce nutrient pollution, negative environmental impacts and preserve human health.”</p>	<p><b>No</b></p>	<p>In 2021, HB 1225/ SB 1522 would have required recurring inspections of OSTDSs every 5 years and an enforcement mechanism to address failing systems, but those bills died in committee. During the 2022 legislative session, SB 832/ HB 561 would have also required regular inspections, but those bills were not passed by the Legislature.</p>
<p><b>Broader adoption of 1-acre septic rule</b>  “Current regulations prohibit permitting of new septic systems on lots of 1 acre or less in a priority focus area within an Outstanding Florida Spring watershed unless the system includes enhanced treatment. The task force recommends broader adoption of this rule to protect other vulnerable areas across the state.”</p>	<p><b>No</b></p>	<p>This recommendation was not incorporated into the OSTDS TAC’s recommendation document nor included in the proposed draft rules.</p>
<p><b>Accelerate Septic-to-Sewer Conversion</b></p>	<p><b>No</b></p>	<p>Recent funding allocations are not adequate to address the scale of the problem. In addition to other piecemeal appropriations and funding sources,</p>

<p>“The task force further recommends legislation and funding to accelerate cost-effective septic to sewer programs with the aim of reducing nutrient pollution that leads to harmful algal blooms.”</p>		<p>the state funded the Wastewater Grant Program at \$114 million dollars for Fiscal Year 2021-22.</p> <p>According to the 2021 Annual Assessment of Florida’s Water Resources and Conservation Lands created by the Florida Office of Economic and Demographic Research, an estimated \$6.338 billion dollars was needed for infrastructure updates to decentralized wastewater treatment systems for FY 19-20. Meanwhile, additional septic systems continue to be installed across Florida.</p>
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<p style="text-align: center;"><b>Human Waste - Sanitary Sewer Overflows</b></p>		
<p>One of the leading causes of nutrient and fecal bacteria pollution in Florida is failing wastewater treatment facilities. Aging infrastructure and old equipment can be exacerbated by user-error and heavy rainfall events leading to raw or partially treated sewage spilled into local waterways. These events are called sanitary sewer overflows (SSOs).</p>		
<p><b>BGATF Recommendation</b></p>	<p><b>Has the BGATF recommendation been fully implemented?</b></p>	<p><b>Analysis</b></p>
<p><b>Efforts to Minimize SSO Occurrence</b></p> <p>“The task force recommends that every effort should be made to minimize the occurrence of SSOs and their potential negative environmental and health impacts.”</p>	<p><b>No</b></p>	<p>In 2020, SB 712 directed public utilities to submit reports outlining their expenditures on pollution mitigation and prevention and directed DEP to adopt rules to implement this. HB 1091 also increased penalties for SSOs. Increased reporting requirements and fines might serve as a slight deterrent against SSOs, but increased enforcement and adequate funding are still needed.</p> <p>According to the 2021 Annual Assessment of Florida’s Water Resources and Conservation Lands created by the Florida Office of Economic and Demographic Research, an estimated \$20 billion dollars was needed for infrastructure repairs and upgrades to wastewater treatment systems for FY 19-20.</p>
<p><b>Power Back-up for Lift Stations</b></p>	<p><b>No</b></p>	<p>SB 712 (2020) directed all sewage disposal facilities to have a power outage</p>

<p>“To alleviate the risk of an SSO due to power failure, the task force recommends that emergency back-up capabilities be identified for all lift stations constructed prior to 2003.”</p>		<p>contingency plan for the utility's collection system and pump stations to “mitigate” the impacts of power outages. DEP has drafted rules to this effect, but they have not yet been adopted.</p>
<p><b>Proactive I&amp;I Reduction Programs</b></p> <p>“The task force recommends that the Department of Environmental Protection pursue a more proactive approach to address I&amp;I (inflow and infiltration) issues to reduce the risk of SSOs and associated water quality degradation.”</p>	<p><b>No</b></p>	<p>In 2020, HB 1091 was passed to “encourage” counties to create an evaluation and rehabilitation program for sanitary sewer lateral lines that connect private properties to a main sewer line.</p> <p>Legislation related to lateral lines SB608/HB303 (2022), and SB 1058/HB 773 (2021) would have authorized counties and municipalities to access damaged or deteriorated sanitary sewer laterals on private property to make repairs, to create a program to evaluate and rehabilitate sanitary sewer laterals on residential and commercial properties, and to use state or local funds allocated for environmental preservation or the protection of water quality for the aforementioned program. These bills died in committee.</p> <p>In 2020, SB 712 also directed DEP to adopt rules to reasonably limit, reduce, and eliminate domestic wastewater systems leakages and inflow and infiltration (I&amp;I). FDEP drafted rules that would require wastewater treatment facilities to develop a “collection system action plan” to mitigate sanitary sewer overflows and underground pipe leaks, but these rules have not been adopted.</p>

## Stormwater Treatment Systems

There are over 76,000 stormwater treatment systems in Florida that were designed and built in an attempt to mitigate pollution from stormwater runoff. Available data suggests a substantial number of stormwater treatment systems throughout the state fail to achieve their presumed performance standards.

Senate Bill 712 (2020) directed FDEP and the water management districts (WMDs) to initiate rulemaking to update stormwater design and operation regulations. No deadlines were set. FDEP convened a Technical Advisory Committee (TAC), which convened 13 times from December 1, 2020, through November 2, 2021. Final recommendations from this TAC were released in March 2022, but to date, no changes have been made to stormwater rules.

BGATF Recommendation	Has the BGATF recommendation been fully implemented?	Analysis
<p><b>Stormwater System Inspection Programs</b>                      “The task force recommends the development and implementation of a stormwater system inspection and monitoring program with the goal of identifying improperly functioning and/or failing systems so that corrective action can be taken to reduce nutrient pollution and other negative environmental impacts.”</p>	<p><b>No</b></p>	<p>The original version of SB 1522 (2021) contained a provision that would have implemented this recommendation, but this provision was deleted from the bill before the bill died in its second committee hearing. HB 1225, which contained the same language also died in committee.</p> <p>In its 2022 recommendations, the stormwater TAC recommended proactive inspections to minimize failures and provide timely repairs. The report also acknowledged the need for representative monitoring to determine treatment efficiency but did not address the failures of the presumption of compliance policy. The TAC also recommended that an Operation and Maintenance Plan be attached to permits so that future facility owners can understand and implement maintenance obligations, that a centralized tracking system be created, and that more frequent inspections of stormwater systems were needed to proactively identify necessary corrective actions and to minimize costly system failures and repairs. Ostensibly, these requirements will only apply to new permits and therefore would not address the tens of thousands of systems that already exist. None of the recommendations have been</p>

		incorporated into rule at this time and there is no deadline for adoption.
<p><b>Updates to Stormwater Design Criteria</b></p> <p>“The task force recommends also that stormwater design criteria be revised and updated to incorporate recent advances in stormwater treatment technologies and other practices that have demonstrated environmental benefits, specifically nutrient reduction.”</p>	<b>No</b>	<p>The report issued by the Stormwater TAC acknowledges deficiencies in design criteria with outdated rainfall data, use of ineffective systems, and potential for groundwater contamination, but no changes have been made to the actual regulations. If adopted, these requirements would only apply to new permits and therefore would not address the tens of thousands of systems that already exist.</p>

## Innovative Technologies and Applications

The regulatory system in place for the last several decades has failed to protect our water resources as evidenced by rampant water quality impairments. Protective regulations need to be supported by scientifically proven, peer-reviewed new technologies to stop and reverse the decline of our water resources. While funding has been increased in recent years aimed at fighting harmful algal blooms, the focus has tended to be on clean-up and remediation rather than prevention. It is more feasible and cost-effective to prevent a waterway from becoming polluted in the first place than to try to clean it up retroactively.

BGATF Recommendation	Has the BGATF recommendation been fully implemented?	Analysis
<p><b>Diversification of Technologies Portfolio</b>                      “The task force recommends an investment in a diverse portfolio of technologies, focusing on those that are demonstrably cost-efficient, environmentally safe and scalable.”</p>	<p><b>No</b></p>	<p>While more funding has been allocated for technology to combat harmful algal blooms (HABs), there is concern these technologies have not been proven to be cost-efficient, environmentally safe, and scalable.</p> <p>The Fiscal Year 2022-23 budget made \$20 million available for innovative technologies to combat harmful algal blooms; however, the focus of programs and funding is on red tide rather than blue green algae.</p> <p>During the 2022 legislative session, SB 834/ HB 421 directed FDEP to procure innovative technologies that would, among other things, physically remove harmful algal blooms, toxins, algae, and nutrients from water bodies in this state, provide the best available technology for the long-term cleanup of the harmful algal blooms, and develop a plan for emergency response action. The Legislature failed to pass this bill.</p> <p>Experimental technologies are, by definition, not rigorously tested and should therefore be subject to meticulous review. In February of 2022, FDEP proposed a Generic National Pollutant Discharge Elimination System (NPDES) permit for discharges associated with experimental technologies to control HABs. This proposed permit would have fast-tracked permitting and removed the safeguards required for individual permits that regulate entities</p>

		that discharge into waterways.
<p><b>Invest in Prevention Technologies</b>  “Technologies that are focused on cleanup and mitigation of blue-green algae blooms, though important, are event driven and should not consistently dominate expenditures. Technologies with a prevention focus are desirable and will require more strategic and longer-term investments.”</p>	<b>No</b>	<p>Many of the “innovative technologies” funded have focused on remediation and clean-up of harmful algae blooms. Few prevention-focused technology solutions have been implemented. During FY 2021-2022, 16 projects were funded by the Innovative Technologies Grant program with only two categorized as “prevention” projects. The long-term efficacy of prevention projects attempted is unknown.</p>
<p><b>Invest in HAB Detection &amp; Forecasting</b>  “The task force also recommends investments in technologies with the potential to detect, monitor and forecast harmful algal blooms to enable more proactive response.”</p>	<b>Yes</b>	<p>FDEP is working on at least four preliminary algae detection and prediction projects in South Florida, including in the Indian River Lagoon (IRL Council’s “Integrating HAB Data Across Platforms,” and “Multi-Spectral Optical Sensor Trained Remote Sensing Analysis of Satellite Imagery”), Lake Okeechobee (Florida Atlantic University Harbor Branch’s “Harmful Algal Bloom Assessment of Lake Okeechobee System”), and Polk County water bodies (Polk County’s “Forecasting, Detection and Mitigation of HAB”).</p>
<p><b>Invest in Nutrient Reduction Technologies</b>  “Finally, the task force encourages an investment in a program to aid in the development and/or implementation of technologies to reduce nutrients and/or harmful algae.”</p>	<b>Yes</b>	<p>The Legislature has been funding a grant-matching program for “innovative technologies and short-term solutions to aid in the prevention, cleanup, and mitigation of harmful algal blooms.”</p> <ul style="list-style-type: none"> <li>● \$10 million in 2020-2021 budget</li> <li>● \$10 million in 2021-2022 budget</li> <li>● \$15 million in 2022-2023 budget</li> </ul>

## Blue-Green Algae Blooms and Public Health

Increasing harmful algal bloom events are cause for public health concern, and the Blue-Green Algae Task Force recognized the limited amount of research on the topic. Harmful algal blooms can produce toxic compounds, known as cyanotoxins, which can be harmful to human and animal health. In May 2019, the Environmental Protection Agency (EPA) issued Recommended Human Health Recreational Ambient Water Quality Criteria or Swimming Advisories for toxins such as microcystins and cylindrospermopsin. EPA recommended a maximum magnitude of 8 µg/L for microcystins and 15 µg/L for cylindrospermopsin. Following the EPA’s recommendations, the Florida BGATF released their consensus report with the following recommendations for public health and toxic blooms.

BGATF Recommendation	Has the BGATF recommendation been fully implemented?	Analysis
<p><b>Expand Algal Toxins Sampling</b>                      “The task force recommends that regular and proactive sampling for algal toxins be incorporated strategically into existing and future water quality sampling/monitoring programs.”</p>	<p><b>No</b></p>	<p>While monitoring efforts have been expanded in Lake Okeechobee, and FDEP launched the Algal Bloom Sampling Status dashboard, proactive monitoring efforts for blue green algae rarely take place statewide, with reactive monitoring based on observed blooms. FDEP’s Strategic Monitoring Plan for 2022 does not include any planned, proactive monitoring for cyanotoxins.</p> <p>The Department of Health’s Florida Healthy Beaches Program has not been consistently funded since 2012, with one appropriation for the program in 2019. The most recent appropriation includes a provision stating “...the department may expand the scope of such services to include monitoring of blue green algae and red tide toxins in certain coastal counties, as determined by the department, that have the greatest risk of long-term health impacts to residents, visitors, and those occupationally exposed in Florida,” but this testing focuses almost exclusively on red tide rather than blue green algae.</p>
<p><b>DEP WQ &amp; DOH Advisory Criteria</b>                      “Defensible health advisories should be established by the Florida Department</p>	<p><b>No</b></p>	<p>The process by which water quality standards are reviewed, updated, and adopted is called the Triennial Review of Water Quality Standards, which, pursuant to the Federal Clean Water Act (40 CFR 131.20), requires states to</p>



<p>of Health and defensible water quality criteria should be established by the Florida Department of Environmental Protection. These actions should be supported by the best available science and monitoring and updated as new information becomes available.”</p>		<p>conduct a comprehensive review of all water quality standards at least once every three years. FDEP initiated the most recent triennial review in 2019. Based on the draft rule for “Surface Water Quality Standards” issued pursuant to this process, FDEP has declined to adopt water quality criteria for cyanotoxins.</p>
<p><b>DEP &amp; DOH Algal Toxin Public Notice Plan</b>  “The task force further recommends that the Department of Health work collaboratively with the Department of Environmental Protection to implement a transparent, consistent and comprehensive communication plan that recognizes the diverse population in Florida in order to inform the public about the potential health impacts associated with exposure to algae and/or algal toxins.”</p>	<p><b>No</b></p>	<p>To determine the consistency of DOH’s HAB public health risk notification per DOH County health units, four Waterkeeper organizations (St. Johns Riverkeeper, Lake Worth Waterkeeper, Kissimmee Waterkeeper and Calusa Waterkeeper) conducted a survey of FDOH signage at public waterways access areas between May 15, 2020, and June 30, 2020. Thirty-one public access points on three major waterway systems (the Caloosahatchee River, Lake Okeechobee, and St. Johns River) were surveyed.</p> <p>Cyanobacteria blooms were common in each of the three waterways during the survey period. The results of the survey were that 22 (71%) of the 31 access points had no FDOH HAB signage of any kind, and 9 (29%) had an FDOH sign with some relevance to HABs, typically a FDOH HAB Caution or Alert sign. Signage was not consistent nor comprehensively placed within the survey parameters.</p>

## **Science-based Decision Making, Data Needs and Monitoring Programs**

The Blue-Green Algae Task Force's recommendations and consequent discussions on data needs and monitoring primarily revolved around questions of scientific practices and funding priorities, not on statutory or policy changes. During the December 2021 Task Force meeting, members expressed uncertainty about the extent to which monitoring programs have been expanded to address trends for key water quality parameters. Members acknowledged some efforts by water management districts to coordinate with state agencies, yet the end goal and whether efforts are “solutions-driven” remains unclear. For example, very little monitoring is conducted to assess the effectiveness of agricultural BMPs to determine their ability to reduce nutrient runoff. A bill during the 2022 legislative session, SB 832, would have added a layer of scrutiny of the effectiveness of the BMPs, but was not passed by the Legislature. Unanswered questions about the key components for groundwater monitoring and sampling design also persist.

During the same 2021 meeting, Chief Science Officer Dr. Mark Rains posed questions about the goals and intent of recommendations around data needs and monitoring, including how a coordinated “big-data ecosystem” could be proactive instead of reactive, prescriptive instead of descriptive.

South Florida Water Management District acted upon the Task Force’s recommendations to expand monitoring efforts in the Lake Okeechobee and northern estuaries basins. According to their December 2021 presentation, SFWMD has added 13 additional monitoring sites to facilitate DEP’s efforts to achieve TMDLs in the Okeechobee basin. The task force recommended establishing comparable monitoring and assessment programs in other BMAP areas across the state, which is extremely needed.

Greater investments in research efforts have demonstrated an adherence to the Task Force’s recommendations. FDACS and Florida’s research universities have submitted funding requests for work to enhance BMPs to reduce nutrient runoff, develop new BMPs for potential adoption, and develop agricultural nutrient runoff reduction projects. Recent legislative sessions have sustained and/or increased funding for research on harmful algal blooms and red tide mitigation technologies. Greater investments in research and monitoring efforts are needed to address unknowns about improved design and adaptive

management of agricultural and urban BMPs, regional improvement projects, and BMAPs. Sustained funding is required for a lasting, robust water quality monitoring program and this funding will only be meaningful if the data collected leads to scientifically backed, stringently enforced policy reform.

Ongoing Task Force discussions have demonstrated that the implementation of recommendations in this area is evolving, and additional clarity is needed. Most of the Task Force's recommendations in this area were posed as advice rather than explicit, measurable directives for change. This scorecard does not address each of the recommendations made by the Task Force in this category but provides insight on some of the progress made, and how scientific practices and funding priorities could be improved to strengthen water quality monitoring and decision-making programs.

## References:

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