

Blue-green Algae Task Force DRAFT Consensus Document #1

24 September 2019

The Blue-green Algae Task Force is an advisory body, appointed by Governor Ron DeSantis, to aid the Department of Environmental Protection in fulfilling its mission to protect, conserve and manage the state's natural resources and enforce its environmental laws. The task force, through its discussion and deliberations, provides guidance and specific, science-based recommendations with the goal of expediting improvements and restoration of Florida's water bodies that have been adversely affected by blue-green algae blooms.

Increased delivery of nutrients to Florida's water bodies is widely recognized as the primary driver of algal proliferation and subsequent degradation of aquatic ecosystems. Major sources of nutrients include, but are not limited to, agricultural operations, wastewater treatment plants, onsite sewage disposal systems and urban storm water runoff. The Department of Environmental Protection, by nature of its regulatory authority, is the primary state agency responsible for establishing, implementing and enforcing rules intended to prevent nutrient over-enrichment and resultant negative environmental impacts. To facilitate task force discussion and deliberation, members were provided with an overview of current and relevant regulatory programs and DEP responsibilities. Also provided was information related to the data available to inform effective policy and management.

To date, the task force has convened on four separate occasions to address specifically the issue of nutrient over-enrichment and blue-green algal blooms. Focus has been placed squarely on source identification, nutrient reduction and remediation efforts with additional guidance provided on innovative technologies as they relate to the prevention, clean-up and mitigation of harmful algal blooms. Most recently, the task force has considered the issue of algal toxins and human health impacts to identify knowledge gaps and research priorities.

The following is a concise summary of key topical issues discussed by the task force thus far and highlights areas where additional study and/or regulatory reform is warranted:

Basin Management Action Plans

- Basin Management Action Plans (BMAPs) are restoration road maps with an identified suite of projects/actions collectively intended to reduce pollutants to achieve a restoration target. A strategic implementation of any of the DEP approved plans is hindered, in large part, by local funding constraints and commitments. As a consequence, delays in the anticipated time to achieve a specific restoration target within BMAP areas can be expected. Moreover, the effectiveness of specific projects cannot be regularly and rigorously assessed due to a lack of available monitoring data calling into question returns on investment.

Accordingly, the Blue-green Algae Task Force recommends a more strategic approach to project selection and implementation. Spatially focused suites of projects in areas likely to yield maximum pollutant reduction are encouraged as is the development of a purposeful sampling and monitoring program to ensure the projects (or suites of projects) are working as intended.

Agricultural Best Management Practices

- The agricultural sector is a significant contributor to excess delivery of nutrients to surface waters throughout Florida and has been identified as the dominant source of both phosphorus and nitrogen within the Lake Okeechobee watershed and a number of other BMAP areas. Agricultural Best Management Practices (BMPs) are practical, cost-effective actions that agricultural producers can take to conserve water and reduce the amount

of pollutants, i.e. nutrients, entering water bodies. The task force recognizes, however, that BMPs are not a vehicle to achieve water quality targets established within BMAP areas. Nevertheless, their adoption and implementation is statutorily required within BMAP areas and presumed to result in reduced environmental impacts. Despite the statutory requirement indicated above, only 75% of eligible agricultural parties within the Lake Okeechobee BMAP area are enrolled in an appropriate BMP. Enrollment numbers are considerably less in other BMAP areas.

The Blue-green Algae Task Force recognizes that full compliance with the statute is necessary to realize the nutrient reduction benefits as calculated in the BMAP process to achieve a TMDL. The task force recommends action to increase BMP enrollment in all BMAP areas to ensure that the maximum environmental benefit is achieved and that there is an accurate accounting of nutrient loading to those waterbodies that are designated as impaired and targeted for restoration. Enrollment, in of itself, does not ensure compliance. It is critical that all agricultural producers enrolled in BMP programs maintain accurate records to demonstrate that they are implementing BMPs and that these records are verified by an appropriate regulatory authority.

Although BMPs, by design, are, from an agricultural producer's perspective, technically feasible and economically viable, that does not imply that their adoption and full implementation will alleviate downstream water quality impairments. In fact, as indicated above, the task force recognizes that BMPs were not intended as a primary tool to achieve regulatory water quality standards. Nevertheless, current (and arguably outdated) BMP manuals should be subject to regular review and revision to achieve a greater environmental benefit; improved water quality, in particular. Advanced technologies that reduce leaching and runoff of nutrients and the subsequent delivery of those nutrients to groundwater or adjacent surface waters should be incorporated into revised and updated BMP manuals as appropriate.

The task force recommends that the effectiveness of BMPs be supported by adequate data to justify the presumption of compliance granted upon enrollment and implementation. There are few data available outside of the Everglades Agricultural Area (EAA) that would allow for a rigorous and quantitative assessment of BMP effectiveness. Such data are recognized by the task force as an essential element of a comprehensive and science-based water quality restoration program that is progressive and adaptive in nature. Accordingly, the task force recommends the implementation of a representative onsite sampling program to assess the effectiveness of sector specific BMPs intended to reduced nutrient loading to adjacent water bodies.

Septic Tanks

- The task force recognizes that conventional onsite sewage treatment and disposal systems, i.e. septic systems, were designed to manage health risks associated with the introduction of human waste to the environment. Accordingly, they have been and continue to be permitted and regulated by the Department of Health. However, conventional septic systems are also a well-known and substantial source of nutrients to groundwater and surface waters across the state. There are, in fact, more than 2.5 million septic systems in Florida and the nutrients in the effluent from these systems contributes to the development and maintenance of harmful blue-green algae blooms.

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 excessive nutrient pollution and also are protective of human health. The Department of Environmental Protection should develop a comprehensive regulatory program to ensure that onsite sewage treatment and disposal systems, where appropriate, are

sized, designed, constructed, installed, operated and maintained to prevent environmental impact and preserve human health.

- Best available information suggests that underperformance of septic systems and general system failure is commonplace. Poorly functioning and/or failing septic systems contribute disproportionately to nutrient pollution and pose increased health concerns. 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 negative environmental impacts and preserve human health, particularly in sensitive areas. At present there is no requirement that conventional septic systems be inspected post-permitting.

Current regulations prohibit permitting of conventional septic systems on lots of 1 acre or less in Outstanding Florida Spring watersheds. The task force recommends broader adoption of this rule or a more protective regulation to include other environmentally sensitive areas with the realization that conventional septic systems continue to be permitted throughout the state at a high rate.

Sanitary Sewer Overflows

- Sanitary sewer overflows (SSOs) are both a human health concern and a source of localized nutrient pollution. The magnitude of the issue as it relates to harmful algal blooms is not known. Nevertheless, every effort should be made to minimize the occurrence of SSOs and their potential negative environmental and health impacts.

Acute power failure during storm events and hurricanes is a leading cause of SSOs. Thousands of lift stations across the state were constructed prior to 2003 and are not required to have an emergency back-up power source. 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.

- Infiltration and Inflow (I&I) is also a major cause of SSOs during storm events. Leaky infrastructure can present a problem also during non-storm times, as waste water can leave pipes and enter the environment through the same leaks that water enters the pipes during storm events. The problem, however, is difficult to manage under the state's current regulatory framework and corrective action is largely reactionary. The task force recommends that the Department of Environmental Protection pursue a more proactive approach to address I&I issues to reduce the risk of SSOs and associated water quality degradation.

Water Quality Monitoring

- The task force recognizes that the development and implementation of a state-wide comprehensive water quality monitoring strategy will be a key part of its water quality protection efforts moving forward. Appropriately scaled monitoring data allow water resource managers to evaluate the effectiveness of specific actions and projects intended to provide environmental benefit and are an essential part of any science-based decision-making process. Given the current focus on blue-green algae blooms in Lake Okeechobee and northern estuaries, i.e. Caloosahatchee and St. Lucie, the task force recommends an expanded water quality monitoring program in each of the relevant BMAP areas to identify priority areas for project implementation and for subsequent evaluation of project effectiveness in achieving nutrient load reductions. The task force recommends also that additional environmental parameters be incorporated into those monitoring programs to aid our understanding of the factors that lead to the development, maintenance and senescence of harmful algal blooms and toxin production.

Innovative Technologies

- A broad suite of innovative technologies is potentially available to aid in the prevention, clean-up and mitigation of harmful algae blooms. Technologies, however, vary widely in approach (biological, chemical and/or mechanical in nature), scalability and cost.

The task force recommends an investment in a diverse portfolio of technologies, focusing on those that are demonstrably cost-efficient, environmentally safe and scalable. Technologies that are focused on clean-up 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. The task force recommends also investments in technologies with the potential to detect and monitor harmful algal blooms to enable more proactive response. Finally, the task force encourages an investment in a common testing facility to aid in the development of technologies to reduce nutrients and/or harmful algae.

Public Health

- Public health issues as they relate to blue-green algae blooms are an increasing concern in Florida, though the science bearing on those concerns is quite limited and not well developed. The task force recommends a greater state investment in this research arena. Of particular importance are studies that address acute and chronic health effects of exposure of humans and other animals to algal toxins. An essential component of such studies is ready access to quantitative data on algal toxins in water, sediments and air. Accordingly, the task force recommends that sampling for algal toxins be incorporated strategically into existing and future water quality sampling/monitoring programs.

- Research findings should inform also the development of defensible health advisories to be established by the Florida Department of Health. The task force further recommends that the Department of Health work collaboratively with the DEP to implement a transparent and readily consumable communication plan to inform the public about the potential health impacts associated with exposure to algae and/or algal toxins.

Stormwater Treatment Systems

- The presumption that a stormwater treatment system constructed and permitted in compliance with BMP design criteria will not cause or contribute to violations of surface water quality standards in adjacent and/or connected waterbodies has not been rigorously evaluated. Given the quantity of water collected, treated and conveyed in stormwater systems throughout the state, 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. Available data suggest that a substantial number of stormwater treatment systems throughout the state fail to achieve their presumed performance standards. The task force recommends that the effectiveness of stormwater treatment systems be supported by adequate data to justify the rebuttable presumption of compliance as provided in statute. Finally, that task force recommends also stormwater design criteria be revised and updated to incorporate recent advances in stormwater treatment technologies and other practices that have demonstrated environmental benefits; nutrient reduction specifically.

Note – this draft document was prepared for discussion purposes among Blue-green Algae Task Force members and will be made available also for public comment. It is fully expected that revisions to the document will be made and a final version will reflect the consensus of the group.