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Chairman Andy Harris
Science, Space, and Technology
Subcommittee on Energy and Environment
2321 Rayburn House Office Building
Washington, DC, 20515

The Honorable Brad Miller
Science, Space, and Technology
Subcommittee on Energy and Environment
394 Ford House Office Building
Washington, DC, 20515

Dear Chairman Harris,
Dear Ranking Member Miller:

As Co-Chairman of the National Harmful Algal Blooms Committee (NHC) and Director of the U.S. National Office for Harmful Algal Blooms (HABs), and as the Chair of the NHC Subcommittee on Freshwater HABs, we are writing to express our gratitude for the hearing you held June 1, 2011 on the reauthorization of the Harmful Algal Bloom and Hypoxia Research and Control Act (HABHRCA) that expired in 2010. Reauthorization of HABHRCA is needed to both continue the mandate Congress previously gave to the National Oceanographic and Atmospheric Administration (NOAA) to conduct research for coastal (oceans, estuaries, and the Great Lakes) HABs, and to provide a comparable mandate to the U.S. Environmental Protection Agency (EPA) for HABs in all other freshwater bodies.

Our national marine HAB strategy is viewed by many colleagues as a model that has succeeded because of its organization, structure, and planning. As recently as 25 years ago, this was not the case, however, as there was very little research on HABs, and that being conducted in the academic community was scattered and unfocused. We worked together as a community of scientists, managers, and agency officials, and created two national science agendas that have prioritized and guided marine and Great Lake HAB research for nearly 20 years. The model was formulated as a series of complementary NOAA funding programs called ECOHAB, MERHAB, and PCMHAB. Progress has been substantial on all fronts, and many exciting new technologies such as automated, in situ cell and toxin detection, or bloom forecasting are being transitioned to operational use in HAB management programs.

We are also writing to emphasize the need for specific programs that deal with the practical application of HAB research, directed towards bloom intervention, as well as to the mitigation and remediation of impacts. We feel strongly that pursuing a diversified approach to HABs, including direct intervention, complements longer-term watershed management strategies directed at reducing or eliminating nutrient loading caused by human activity, while also providing a critical tool for the blooms not associated with human-induced nutrient loading. EPA reported in 1972 that 10-20% of our Nation's freshwaters were eutrophic (nutrient over enrichment that causes excessive plant growth, particularly HABs), whereas their most recent report in 2009 indicated that slightly over 50% are now eutrophic or hypereutrophic. Despite using watershed management to reduce or eliminate non-point source runoffs, the number of eutrophic lakes is increasing rapidly. This emphasizes the need for direct intervention or "water-body management" strategies – strategies that directly suppress or eliminate HABs, or that remove nutrients and other pollutants in the affected water body using physiologically based,

ecologically sustainable methods. Most nutrients enter water bodies through non-point source runoff. Clearly, the long-term watershed management strategies employed by EPA over the past 3 decades to address non-point source pollution would be complemented by more direct and immediate strategies to address HABs when they impact local waters.

In this regard, we are strong advocates of "water-body management" strategies that remove nutrients in the affected water body directly, or that directly suppress or eliminate harmful blooms in those locations. One approach to bloom suppression is artificial circulation, a strategy that eliminates the quiescent, stagnant water in which freshwater HABs thrive. In a similar manner, clay dispersal and flocculation eliminates HABs by sedimenting cells to the bottom where they are decomposed. Nutrients can be removed through the diversion of high nutrient water entering lakes to side-stream flow ways to grow non-toxic green algae that act as biofilters for nutrient removal. Another example is the use of floating islands (biohavens) that can remove large amounts of nutrients and other contaminants. Constructed of recycled polymer fibers and vegetated with native plants, this floating technology mimics a "concentrated wetland". **When done appropriately, the social and economic benefits from these types of short-term interventions are substantial.**

For example, to date, approximately 6,000 TMDL (total maximum daily load) studies have been conducted on freshwater lakes, ponds, and other water bodies that are affected by eutrophication, and in many cases, HABs. There are 60,000 more locations waiting for TMDL studies and the resulting watershed management programs, which carry significant direct and indirect costs to taxpayers and businesses, some of which cost hundreds of millions or billions of dollars. If however, we balance these efforts with direct and cost-effective in-water HAB suppression and nutrient reduction technologies, it should be possible to delist many of these water bodies, removing the need to establish TMDLs, and leading to significant cost savings, while also improving the water quality and protecting human and aquatic-ecosystem health in the near term.

The technologies needed to achieve this type of intervention are being developed through the long-standing ECOHAB program, and transitioned to practical use through a new research program established through HABHRCA called Prevention, Control, and Mitigation of HABs (PCMHAB). This new initiative supports multiple lines of promising technology development and pilot testing, moving towards full-scale application in the battle against HABs – techniques that can lead to direct control or suppression of HABs, as well as mitigation of bloom impacts, such as through improved monitoring and forecasting.

We urge you to reauthorize HABHRCA, to include a mandate for EPA to address freshwater HAB problems, and to sustain the critical NOAA ECOHAB, MERHAB, and PCMHAB research programs for both freshwater and marine HABs. Enactment of a HABHRCA reauthorization that includes an EPA mandate for freshwater HABs is the most important step that can be taken to help ensure the sustainability of all our Nation's water bodies.

Sincerely yours,

Don Anderson

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