

**Testimony in Support of full funding of the H2Ohio Wetlands Program
managed by the Ohio Department of Natural Resources and
the H2Ohio Wetlands Monitoring Program conducted by
members of the Lake Erie and Aquatic Research Network**

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Chair Jerry Cirino, Vice Chair Brian Chavez, Ranking Member Paula Hicks-Hudson and members of the committee, thank you for allowing us to submit proponent testimony for the H2Ohio funding provisions in HB96.

I am Bob Midden, a professor emeritus in the Chemistry Department at Bowling Green State University and one of the ten lead scientists in the H2Ohio Wetlands Monitoring Program. I am speaking on behalf of that program and in support of the Ohio Department of Natural Resources which is managing the creation and restoration of wetlands throughout Ohio. As you know, the H2Ohio program is designed to reduce the incidence and intensity of Harmful Algal Blooms (HABs) in Lake Erie, Grand Lake St. Marys and other Ohio water bodies. HABs pose a massive economic, environmental, and health threat that is estimated by some to jeopardize the jobs of more than **100,000 Ohio workers** and could be very detrimental to the more than **\$17 billion dollars of economic activity** in the eight Ohio counties along the shore of Lake Erie. It has had a similarly devastating effect on the economy surrounding Grand Lake St. Mary's, the largest inland lake in Ohio and in other Ohio water bodies. This certainly justifies major investment by the State to reduce the problems and impacts of HABs to a safe level.

The increase in the incidence and intensity of HABs is attributed primarily to the phosphorus and nitrogen that is used to maximize crop growth which is critical for making our food supply affordable. However, small amounts of the phosphorus and nitrogen are washed out of fields into waterways and to the water bodies where they feed the unfettered growth of the primitive bacteria that form HABs. The H2Ohio program is funding the adoption of agricultural methods that reduce the loss of phosphorus and nitrogen from farm fields but results to date indicate that farmers, alone, cannot be expected to solve the HABs problem.

Wetlands used to be prevalent throughout Ohio and especially in Northwest Ohio which is the western Lake Erie watershed and the primary source of the phosphorus and nitrogen driving the formation of HABs in Lake Erie. Wetlands were largely drained to make the land useful for other purposes but that eliminates the multiple benefits that wetlands provide, especially for purifying natural waters. When water enters wetlands, it spreads out and slows down. That allows the eroded soil particles it is carrying to settle out and fall to the bottom. Those particles carry some of the phosphorus and nitrogen from farm fields. Some of the dissolved phosphorus is captured by the soil at the bottom and absorbed by the plants and microorganisms. Nitrogen compounds are also absorbed by plants and microorganisms and some are converted into

harmless elemental nitrogen molecules that are released into the air. Thus, the water that leaves the wetland typically contains less phosphorus and nitrogen and thereby reduces the problem of HABs. We should not put the entire burden of solving the HABs problem on farmers and instead, contribute to this solution by continuing to create and restore these natural resources that not only help to purify the water but also provide many other valuable benefits such as reducing flooding and providing habitat for many types of wildlife that depend on wetlands for their survival and propagation. This includes many types of fish and waterfowl which are popular for certain recreational activities such as fishing, hunting, and bird watching. And wetlands reduce not only phosphorus and nitrogen contamination in water but also undesirable contaminants such as heavy metals, pesticides, and the sediment that, when delivered to water bodies such as Lake Erie, requires dredging to maintain shipping channels. Thus, investing in wetlands has multiple Returns On Investment that make them a particularly cost-effective means of addressing the problem of HABs.

The ODNR has been wise with their H2Ohio funding. They have allocated a relatively small portion to learning more about the factors that determine how to make the most effective wetlands at the lowest cost by commissioning a team of scientists in the Lake Erie and Aquatic Research Network to conduct a comprehensive, multi-disciplinary evaluation of wetland structure and function. This team has already identified some key principles for optimizing wetland function. However, wetlands change over time and to realize the maximum benefit from this investment, it is necessary to continue to monitor these wetlands so that the factors that determine long-term benefit can be best discerned. Knowing how to create a wetland that works great for one to three years is certainly worthwhile, but to get the most bang for the buck, it's much better to know how to produce wetlands that will continue to perform optimally for 10, 15, 20 years or longer, as some wetlands have been found to do.

Thus, we applaud the continued funding of the H2Ohio Program and urge this body to restore the full amount of funding proposed by the Governor. Truly, ***this is an investment in the future of Ohio*** – an investment that can enable some of the most cost-effective means of battling HABs. By learning how to optimize wetland nutrient removal, the monitoring program can help reduce the algal blooms that detrimentally impact large segments of the Ohio economy while providing valuable assistance to Ohio's agricultural industry in meeting the need to reduce the amounts of phosphorus and nitrogen reaching vulnerable water bodies. The economic impact of massive HABs in Lake Erie on State finances due to reduced income and sales tax would be far more costly than the line item for this program. We ask that the legislature continue to make this a high priority as we continue to optimize our understanding of wetland function so we can provide the best possible guidance for all future efforts to resolve this problem and assure a safe and prosperous future for all Ohioans.