

TESTIMONY OF

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**OHIO SEA GRANT COLLEGE PROGRAM,
F.T. STONE LABORATORY, AND
CENTER FOR LAKE ERIE AREA RESEARCH (CLEAR)**

THE OHIO STATE UNIVERSITY

**BEFORE THE
FINANCE SUBCOMMITTEE ON AGRICULTURE, DEVELOPMENT, AND
NATURAL RESOURCES
REPRESENTATIVE ANDY THOMPSON, CHAIR**

February 15th, 2017

Chairman Thompson and members of the subcommittee, my name is Chris Winslow and I appreciate having this opportunity to submit testimony regarding the budget of the Ohio Sea Grant College Program based out of The Ohio State University. I am the Director of both the Ohio Sea Grant College Program and Ohio State University's Stone Laboratory Island campus. As I will highlight, both of these programs work together to influence research, education, and outreach related to Lake Erie and the communities within its watershed. I earned my BS from Ohio University and both my MS and Ph.D. from Bowling Green State University working on Lake Erie fisheries issues, specifically the impact of invasive fish. Throughout my career I have tracked research on Lake Erie as it has changed from a poster child for pollution problems (Cuyahoga River burned in 1969) to one of the best examples of ecosystem recovery in the world. Clearly Ohio Sea Grant and OSU's Stone Lab have played a role in this rebirth and have helped demonstrate that there is a direct relationship between a healthy Lake Erie and a healthy coastal economy. I am currently a member of many Lake Erie relevant committees, task teams, and advisory boards including: Lake Erie Millennium Network (co-director), Annex II and Annex IV of the Great Lakes Water Quality Agreement (Lakewide Action and Management Annex and Objectives and Targets Task team of Nutrient Annex, respectively); International Joint Commission's Research Coordinating Committee of the Science Advisory Board (role: investigating Great Lakes transboundary issues and recommending solutions to US Environmental Protection Agency and Environment and Climate Change Canada), Advisory Board of the Cleveland Water Alliance, Agency Partner for Ohio Lake Erie Commission, and Advisory Board of OSU's Global Water Institute. These aforementioned entities play a critical role in guiding the management and restoration of Lake Erie and the entire Great Lakes region. For example, the Objectives and Targets Task Team for Annex IV is developing the phosphorus loading targets for the US and Canada to address Lake Erie harmful algal blooms, the dead zone, and nuisance algal problems. The Lake Erie Millennium Network works hard to get academics and state agency personnel in the same room to align research priorities and discuss research findings. Perhaps equally important, in addition to research support and priority setting, these entities develop communication efforts to inform stakeholders of successes and future challenges.

Ohio Sea Grant Background

Ohio Sea Grant, established in 1988, is one of 33 state programs in the National Sea Grant College Program, which is part of the National Oceanic and Atmospheric Administration (NOAA) in the US Department of Commerce. Every coastal state, including the Great Lakes states, has a

Sea Grant program. Sea Grant is modeled after the Land Grant system with research, education, and outreach components. National reviews of our program over the past five years ranked us as one of the top four programs in the country, and as a result of those high marks our federal funding has increased throughout the years. Ohio Sea Grant has and continues to be recognized as a partnership between government, academia and the private sector and focuses on what we call the 3 E's: economy, environment, and education.

Research

Throughout its history, Ohio Sea Grant has shown that it is a program for the entire state—we solicit research proposals from every college and university in the state, and support only the highest quality projects based on a very extensive review process guaranteeing maximum research impact. Our current request for research projects is driven by state agency priorities (solicited by me) and state agencies sit on the Advisory Board that guides the current projects we are managing. Since 2005, we have supported 60 principal and co-principal investigators at Ohio State University (6 different OSU colleges and 16 different departments). Additionally, we have supported 53 principal and co-principal investigators across 13 additional Ohio universities (23 different college departments across the 13 institutions). Currently, we are supporting >60 applied research projects on various critical issues facing Lake Erie.

Research at the facility occurs year-round addressing issues such as the aquatic dead zone in Lake Erie (location of low available oxygen), harmful algal blooms, invasive species (e.g., Asian Carp and zebra mussels), water pollution (e.g., nutrients, pharmaceuticals, legacy industrial pollutants, and personal care products, etc.), habitat restoration (e.g., clean marinas, wetland restoration, Lake Areas of Concern, etc.), and many projects to enhance the economic value of Lake Erie to the State of Ohio (e.g., business retention and expansion, leadership academy, Charter Captain Conference, etc.).

You name a Lake Erie issue, and I can almost guarantee that Ohio Sea Grant and Stone Lab are addressing it. Our success is enhanced by partnering with numerous coastal businesses, agencies, and organizations. In previous years when state funding has fluctuated support letters submitted by numerous businesses have highlighted the value that the private sectors attributes to Ohio Sea Grant and OSU's Stone Lab.

Education

The Ohio State University's Stone Laboratory (part of Ohio Sea Grant) located on Gibraltar Island near Put-in-Bay has been Ohio's Lake Erie Laboratory since 1895. It is the oldest freshwater biological field station in the country. This Ohio State University facility offers ~25 college courses and professional development workshops each summer. Courses are designed for college undergraduate and graduate students, k-12 teachers, agency personnel, and advance, top-tier high school students. Since 2000, our students have come from >80 colleges and universities and >300 high schools.

Ohio Sea Grant, with OSU support, manages Stone Labs' 15 buildings located on two Lake Erie islands (~10 acres on South Bass Island and ~6 acres on Gibraltar Island). These structures include Jay Cooke's Castle, a National Historic Landmark; the historic South Bass Island Lighthouse; and the historic Put-in-Bay Fish Hatchery, which we lease from the Ohio Department of Natural Resources and have converted into an Aquatic Visitors Center that attracts 20,000 visitors annually. Using private donations we have created 23 different

endowments to support the program. Each summer we award scholarships that total ~\$35,500 to ~52 students (259 scholarships awarded over past five year; \$177,900). Additionally we annually support ~10 Research Experience for Undergraduates (REU) Scholarships that total ~\$40,000 (50 REU scholarships awarded over past five years; \$204,500). We also award 15 scholarships to superior high school students at the Ohio Academy of Science's State Science Day.

Outreach

Our outreach program includes 7 extension educators/specialists located along the Lake Erie shoreline between Toledo and Conneaut, that are considered is part of OSU Extension. During the spring and fall Stone Laboratory offers field trips for grades 5-12 reaching ~4,000 participants annually. During the fall we host numerous outreach events. These outreach opportunities include, but are not limited to, water treatment plant operators, the Ohio Farm Bureau, Ohio/Michigan/Indiana farmers, Coastal County Commissioners and Mayors, charter captains, and regional science writers.

We have had a line item in the State Budget annually since 1983 and this support allows us to continue the research, education, and outreach efforts highlighted above. Our state funding peaked in 2011 at just over \$300,000 per year and currently stands at \$299,250 per year. The federal funding that we receive from NOAA requires a non-federal match of \$1 non-federal dollar per \$2 federal dollars, meaning that **we get \$2 federal dollars per dollar the state invests in us. Therefore, the current state investment leverages just under \$600,000 federal dollars.** We then strive to leverage these funds even further to maximize the benefit Ohio receives from the program and **typically have been able to produce more than \$10 per dollar invested by the state in our line item.**

This state funding is critically important to the operation and financial stability of Ohio Sea Grant and Stone Lab. It literally provides support for everything we do related to Lake Erie research, education and outreach; e.g., teaching of courses, training research students, offering professional development workshops, hosting grade school field trips and informal education/outreach conferences, and providing trusted, unbiased Lake Erie data and information to decision makers, media personnel, state agencies, the tourism sector, and business owners. Some recent and specific Sea Grant initiatives include:

- As Interim Director and now Director I have played a **prominent role in building partnerships** that increase our grant portfolio. Historically, Ohio Sea Grant has managed 8-10 research projects annually (~\$480,000). However, since April of 2015, we have increased that research portfolio dramatically. We currently have 119 projects listed within OSU's Office of Sponsored Program's research database. This number of projects clearly highlights the programs considerable experience in proposal preparation. Many of these projects support the continued growth of our research endeavors but also include a tremendous amount of education and outreach initiatives and partnerships.
- **Strong leadership to create a consortium of Lake Erie Researchers.** The program was recently awarded an NSF planning grant to create a consortium of Lake Erie researchers. The Lake Erie Area Research Network (LEARN) will better position the state's universities (Ohio Sea Grant as a leader) to address Lake Erie issues while fostering the sharing of multiple university assets, reducing research redundancies, and positioning Ohio's researchers and universities to be more competitive for large federal grants.

- The program is currently managing \$5,000,000 in **funding from the Ohio Department of Higher Education** (ODHE; \$4,000,000 in two \$2,000,000 allocations) and OSU's College of Food and Agricultural Sciences (Field to Faucet Initiative; \$1,000,000) to address Lake Erie harmful algal blooms. The Advisory Board established to guide the ODHE harmful algal bloom initiative includes Ohio Environmental Protection Agency, Ohio Department of Natural Resources, Ohio Department of Health, Ohio Department of Agriculture, the Lake Erie Commission, and the National Wildlife Federation.
- **Be known resource for media, legislators, and general public to learn about Lake Erie and Great Lakes issues and research successes.** In every odd year, Ohio Sea Grant and Stone lab work to co-host a State Legislators outreach event and twice a year we host a Coastal County Commissioners, Mayors, and Decision Maker Day on Lake Erie. These two events are intended to educate policy makers about critical issues affecting Lake Erie and to involve them in hands-on scientific activities to enhance their understanding and retention of information. Additionally, we also host a two-day Science Writers Workshop at Stone Lab where up to 35 science and outdoor reporters (radio, TV, magazine, and newspapers) come to Stone Lab for hands-on experiences and to learn about the issues affecting Lake Erie, the Great Lakes, and in many cases the nation. The information gained allows participants to prepare more informative and accurate articles for the public. Science and outdoor writers come to us for information on issues weekly and we typically appear in over 400 articles in over 200 venues annually.
- **Generate revenue and partnerships with island businesses.** I have worked with the Office of Research and the College of Food, Agricultural, and Environmental Sciences to offer the OSU lighthouse grounds as a location to host special events (e.g., weddings, receptions, reunions, etc.). As we develop this location as an event destination we are partnering with island businesses to provide transportation, catering, and housing for clients. We are working to show that OSU's growth generates growth for the island community. The hope is to use the revenue generated to (1) staff the grounds during the season when it isn't being used for closed events and as a tourist destination, (2) to develop and purchase educational displays for the grounds and use it as an additional outreach location, and (3) to renovate the facility and upgrade grounds for visitors and future events (e.g., window replacement, plumbing, burying electric lines, landscaping, addition of picnic tables, gazebos and chairs for public, etc.). Once the needed educational displays and renovations/upgrades are completed, we hope to use revenue to support scholarships for college students and to support field trip groups to visit Stone Lab and participate in our hands-on science experiences (grades 5-12).
- We are leading the **Clean Marina Program and the Clean Boater Program** for Ohio and with the Ohio Division of Watercraft and the Ohio Coastal Management Program have expand this program to the entire state.

Typical Ohio Sea Grant Annual Education and Outreach Metrics

Metric	Value
Sea Grant supported undergraduates	70
Sea Grant supported Masters students	41
Sea Grant supported PhDs	39
Number of k-12 students reached	27,816
Number of k-12 educators reached	440
Sea Grant Sponsored/Organized events	315
Attendees at Sea Grant meetings/workshops	2,661
Public and professional presentations	807
Attendees at public and professional presentations	44,950

Bottom line: Ohio Sea Grant and Stone Laboratory are exceptional programs and assets to the entire state. We solve environmental problems (>50 ongoing research projects), enhance the local economy (i.e., business retention and expansion programming), inform decision-makers, and improve the quality of science education in Ohio. I would argue that since we first received funds in 1983, we have annually demonstrated that our line item is not a cost to Ohio, but a wise investment of valuable state funds.

Sea Grant is not an organization that can be linked to a single user group, one activity, or one discipline—we are a research, education and outreach program that has numerous initiatives addressing the Lake Erie environment, enhancing Great Lakes education, and growing the region’s economy (The 3 E’s; environment, education and the economy). Further, we bring the strength and expertise of all Ohio’s colleges and universities to bear on problems and opportunities facing Ohio and Lake Erie. **Ohio Sea Grant supports the currently proposed, approximately level funding, arguing that it is clearly a wise investment.** If possible, however, I urge you to provide additional support. We are ready, with increased state support, to (1) leverage additional federal and state funding, (2) to build on past successes, and (3) grow our existing partnerships with Ohio’s academic institutions, businesses, and state agencies.

If additional funds can be allocated, Sea Grant would use this support to:

1. Increase the number of farmers and water treatment plant operators that we reach by providing our island based informal outreach events at no charge to participants. We need to explain the current algal bloom issue to farmers so they understand the importance of taking action and are aware of emerging best management practices to keep the phosphorus on their fields. Our goal IS NOT to vilify agriculture but to work with farmers and agribusiness to put data supported, economically sensible/feasible best management practices in place to reduce nutrient runoff. Ohio Sea Grant’s efforts are also in play to reach urban and suburban nutrient contributors (e.g., lawn fertilizer, wastewater combined sewer overflows, urban runoff, septic systems, etc.).
2. Purchase analytical equipment and hire technicians for our newly renovated water quality lab (2013). This will allow us to analyze more water samples and to process them more quickly. Sample analysis currently being completed for academics, grant funded efforts, and municipalities.
3. Continue to upgrade our research and teaching facilities at Stone Lab to accommodate the increased need for researcher housing and to adequately host the thousands of

stakeholders we educate about the critical issues facing Lake Erie and the research efforts to address these issues.

4. Purchase data buoys for continual monitoring in Lake Erie.

Thank you for all of your support over the years and for the opportunity to comment today on our line item. At this time I welcome any questions you might have.