

# OHIO SEA GRANT AND STONE LABORATORY

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Ohio State University's Ohio Sea Grant College Program is one of 33 programs in the NOAA National Sea Grant Program. Through coastal research, education, and outreach projects, Sea Grant addresses critical environmental, economic, and education issues. As a partnership between universities, government, and private industry, Sea Grant supports research projects at several Ohio colleges and universities, 8 extension agents from Toledo to Conneaut, and strong education and communications programs. Ohio Sea Grant's F.T. Stone Laboratory, located on Gibraltar Island at Put-in-Bay was created in 1895 and is the oldest freshwater biological field station in the country.

In 2013 Ohio Sea Grant was evaluated and ranked as one of the top programs (number 2 or 3 out of 33) in the country by NOAA's National Sea Grant College Program, and in 2009 Ohio Sea Grant's outreach program was named as Ohio State University's top outreach program for the C. Peter Magrath Engagement Award.

**Ohio Sea Grant**  
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Ohio Sea Grant, based at The Ohio State University, is one of 33 state programs in the National Sea Grant College Program of the National Oceanic and Atmospheric Administration (NOAA), Department of Commerce. Ohio Sea Grant is supported by the Ohio Board of Regents, Ohio State University Extension, other universities, industries, and associations.

Updated Jan. 9, 2014

## I. Required NOAA National Sea Grant Metrics (1 Feb. 2012 to 31 Jan. 2013)

- 6,812 K-12 students reached through educators
- 16 curricula developed
- 364 acres of degraded ecosystem restored as a result of Sea Grant activities
- 274 Ohio Sea Grant sponsored and/or organized meetings, workshops, and conferences with 25,114 attendees
- 481 Ohio Sea Grant public or professional presentations with 25,586 attendees
- 45 certified and 31 pledged marinas are part of our Ohio Clean Marinas Program



## II. Outreach Accomplishments

- Shrink Wrap Recycling Program: More than 2.3 million pounds of boat shrink wrap and greenhouse plastic have been recycled into highway guard rail blocks, which now protect 411 miles of Ohio highways.
- Ashtabula River Clean-up: As a founding partner, Ohio Sea Grant helped the partnership achieve its long-term goals of removing more than 635,000 cubic yards of contaminated sediment from Ashtabula River, one of Lake Erie's important tributaries.
- Charter Captains Conference: Now in its 33rd year and annually reaching 20-25% of licensed charter captains, the Ohio Chart Captains Conference helps Lake Erie charter boat business be more successful through training in business management, regulatory requirements, and environmental issues.
- Local Government Leadership Academy: Since the program's start in 2002, more than 325 people have participated in its training, including mayors, State Senators, and State Representatives. Sea Grant has assisted many other Ohio counties in developing similar programs.
- Ohio Tourism: Ohio Sea Grant contributed to research examining effects of funding on tax revenues that led to a budget increase of 40% to the State of Ohio Division of Travel and Tourism.
- Climate Education and Training: More than 33,500 people have received climate research, planning information and training through the OSU Climate Change Team's webinars since 2009. The OSU Climate Change Team is a multi-departmental partnership that brings climate research information to environmental professionals and the general public (See Appendix 1).
- New Regional Site: Ohio Sea Grant has developed a new website with the OSU Climate team, [www.greatlakesclimate.com](http://www.greatlakesclimate.com). It is the first and only Great Lakes climate information repository.
- Disposal of Unwanted Medications: Ohio Sea Grant partnered with Pennsylvania Sea Grant and New York Sea Grant in 2010 to teach the general public about proper disposal of unwanted medications. More than 10,000 Ohioans participated and returned 2,500 pounds of unwanted medications in 2012.
- Invasive Species State Management Plan: In 2012, in response to growing ecological and economic threats of aquatic invasive species, Ohio Sea Grant partnered to co-chair the state advisory committee and revise the state's Comprehensive Management Plan used to coordinate interagency management under the leadership of the Ohio Department of Natural Resources.
- Ohio Coastal Training Program: Through a partnership with Old Woman Creek National Estuarine Research Reserve, Ohio Sea Grant, ODNR Office of Coastal Management, and the Ohio Lake Erie Commission, more than 1,800 engineers, planners, zoning officials, and stormwater professionals from around the region have learned how to implement best practices that minimize development impacts on Lake Erie.
- Four of our Extension agents received eight awards at the Oct. 7, 2013 Ohio NACDEP meeting (See Appendix 2).



## II. Outreach Accomplishments *(continued)*

- Ohio Sea Grant was funded by the Asian Carp Regional Coordinating Committee to synthesize Asian Carp Outreach and Education for the Great Lakes region and Mississippi Basin.
- In 2013, Ohio Sea Grant led and hosted its 6th annual Lake Erie Day for Coastal County Commissioners, Mayors and Decision Makers, the 4th annual OSU Communicators Retreat at Stone Laboratory (20 units and 4 OSU regional campuses present), and special multi-day workshops for outdoor writers and science writers at Stone Laboratory. A list of other conferences, special events and groups hosted at Stone Lab in 2012 and 2013 can be found in Appendix 3.
- Media exposure: 454 media mentions in 205 venues in 2012 and 398 media mentions in 172 venues in 2013.

## III. Education Accomplishments

- Stone Laboratory Field Trip Program: Using Lake Erie as its living laboratory, Stone Lab has provided groups grade 4-12 and adults with one-of-a-kind science experiences for more than 35 years.
- Curricula Development: Ohio Sea Grant developed cutting-edge Great Lakes climate change curricula 20 years ago and continues to develop and update curricula and teach educators how to incorporate that curricula into their classrooms.
- Great Lakes Literacy Principles: Ohio Sea Grant helped develop the Lake Erie Literacy Principles in 2009 and the Great Lakes Literacy Principles in 2010. NOAA currently uses the Great Lakes principles as a linkage requirement for its Great Lakes education grants.
- Aquatic Visitors Center: Through a partnership with ODNR Division of Wildlife, Ohio Sea Grant runs the former fish hatchery, where annually more than 15,000 visitors learn about our Lake Erie resource through hands-on science.

		<b>2012</b>	<b>2013</b>
Enrollment	College students	121	91
	High school students	64	69
	Workshop participants	57	58
	Total	242	218
Scholarships	College students and teachers	38 (\$29,000)	24 (\$17,253)
	High School Students	34 (\$13,875)	29 (\$12,680)
	REU students	10 (\$36,823)	10 (\$41,150)
	Total Scholarships and REUs dollar amount **	\$79,698	\$71,083
	Visitors to Aquatic Visitor Center	Approx. 15,000/year	
Participants in Stone Lab field trips	>3,400	>4,450	
Scholarships to outstanding high school students at State Science Day	12	15	

\*\* Since 2000 we have awarded 325 scholarships to college students and 274 to high school students totaling \$290,817. We have also supported 94 REUs, totaling \$303,109.

#### IV. Research Accomplishments

- Ohio Sea Grant Funds that are supporting FAES Faculty:

Elena Irwin, Professor, AEDE

**Linking agricultural production and Great Lakes ecosystem services: Modeling and valuing the impacts of harmful algal blooms in Lake Erie**

Elizabeth Dayton, Research Scientist, SENR

**Beneficial reuse of dredged material in manufactured soil blending**

Jay Martin, Professor, FABE

**Impacts of climate change on public health in the Great Lakes due to harmful algae blooms**

Mark Partridge, Professor, Swank Chair in Rural-Urban Policy, AEDE

**Leveraging Natural Amenities for Sustainable Development in the Great Lakes Region**

Han-Ping Wang, Principal Scientist and Director - Aquaculture Research, OSU South Centers

**Genetic Improvement of Yellow Perch: Creating the fourth generation of fast-growing lines and performing on-farm and on-station performance testing**

Thomas Blaine, Associate Professor, Extension

**Value of Lake Erie shoreline anglers to lakeshore economy**

- Research Partnerships between Ohio Sea Grant and FAES Faculty:

Jay Martin, Professor, FABE

Robyn Wilson, Assistant Professor, SENR

Eric Toman, Assistant Professor, SENR

Brian Roe, Professor, AEDE

Elena Irwin, Professor, AEDE

**Maumee Bay NSF project**

- FAES funds leveraged for external dollars:

- Ohio Sea Grant is leading NOAA's ~1.2 million dollar Coastal Storm Grant Program.
  - Ohio Sea Grant received 52 pre-proposals in mid-December and was told by NOAA that this was the most pre-proposals ever submitted for a Coastal Storms RFP.
  - The Joyce Foundation has provided \$92,000 for special outreach on Lake Erie to elected officials and the media will provide \$50,000 in 2014.
  - Dr. Chris Winslow received a grant from NSF and Bowling Green State University for a science education project with teachers.
  - Dr. Kristin Stanford received a grant from Northern Illinois University (ODNR Division of Wildlife Funds) to continue work on the recovery of the Lake Erie Water Snake population.
  - Dr. Justin Chaffin received grants from OEPA Environmental Education Fund, OEPA, the University of Michigan, Ohio Sea Grant, and the GLRI (USEPA) for research on nutrients and harmful algal blooms.
  - Frank Lichtkoppler and Jill Jentes Banicki received multiple grants from NOAA and USDA to develop online climate change training for environmental planners, as well as climate change curriculum for Great Lakes educators.
  - Ohio Sea Grant developed a new 2014-2018 strategic plan and are currently developing an electronic reporting system for staff and Principal Investigators we fund.
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## V. Notable Partnerships

- Phosphorous Task Force: Ohio Sea Grant is leading efforts for the State of Ohio to solve nutrient loading problems that lead to harmful algal blooms. This is a national and global problem and Ohio Sea Grant is recognized nationally for our leadership in this area.
- US/Canadian Great Lakes Collaboration: Director Reutter has been asked to be US Co-Chair for the Annex 4 (nutrients), Objectives and Loadings Task Team of the Great Lakes Water Quality Agreement.
- 80 business, agencies, and NGOs signed onto a support letter for our program during the state and federal funding process (See attached letter).
- Abbreviated list of recent partners:

Ohio Supercomputer Center	OSU Extension's Watershed Program
Great Lakes Commission	Ashtabula City Port Authority
Center for Disease Control	Ashtabula River Partnership
Ohio Department of Health	Ashtabula River RAP
Great Lakes Regional Water Program	United States Army Corps of Engineers
NOAA Old Woman Creek NERR	OEPA
NOAA Great Lakes Environmental Research Laboratory	The Nature Conservancy
NOAA Coastal Services Center	Ohio Charter Boat Association
	Lake Erie Commission

## VI. Facilities Improvements

- Exterior renovation of the Stone Lab Research Building was completed and the water quality lab was renovated, including new equipment.
- Forty solar panels were added to Stone Lab bringing our total to 90 panels demonstrating 8 different solar installation strategies.
- New Forty-year roofs on twelve buildings, new furnace and remodeled upstairs in Bayview Office (Stone Lab's Business Office)
- Air conditioning in South Bass Lighthouse
- Several buildings were rewired and WiFi access and speed was improved
- Four live video feeds were added at Stone Lab and appear on our website
- Equipment:
  - Our 22-ft, trailerable, Boston Whaler, the *Buckeye I*, was overhauled.
  - New 4-wheel drive pickup with a towing package was purchased to transport *Buckeye I*, anywhere on Lake Erie to support our event-based research/monitoring program.
  - Fully outfitted water quality lab (e.g., SEAL Analytical Nutrient Autoanalyzer, spectrophotometer, Nanopure water purification system, BioTek Microplate Reader, muffle furnace, drying oven, centrifuge, and sonicator).

## VII. Omnibus Proposal for 2014-18 Developed and Submitted

In 2013, solicited and evaluated 28 pre-proposals from 7 Ohio academic institutions and agencies, received 17 full proposals from 5 institutions, and will fund 7 new projects with continued funding to 3 projects in 2014.

- Funding will begin 1 February 2014 or 1 February 2015.
  - The 10 research projects support scientists at 5 universities (BGSU, KSU, OSU, University of Cincinnati, and the University of Toledo) and the Ohio Division of Wildlife.
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## VIII. Recent Funding Sources

Development/Endowment funds (detailed below)	Great Lakes National Program Office (US EPA)
National Science Foundation (NSF)	The Nature Conservancy
Ohio Travel Association	Lake Erie Protection Fund (Ohio Lake Erie Commission)
Ohio EPA	Ohio Department of Natural Resources
USDA Great Lakes Regional Water Program grant	Ohio Board of Regents

## IX. Development/Endowment Funds

- 20 different endowments with a principal balance of \$1,310,123

## Appendix 1: Climate Webinar Types and Intended Audience

- 350 formal and informal teachers were introduced to Ohio Sea Grant's new Great Lakes Climate curriculum. Included providing teachers with professional development credit and \$2,000 for teacher stipends.
- 450 environmental professionals were trained on NOAA and EPA climate planning tools and offered professional development credit
- Teaching webinar to educate the public about Lake Erie's harmful algal blooms (HABs) and to announce NOAA's HABs predictions
- 2-part Invasive Species webinar series to provide online training for master gardeners and aquaria enthusiasts
- 3-part Green Marinas webinar series to provide online training for marinas on issues (invasive species, stormwater, boat washing) that can help Great Lakes stewardship.

## Appendix 2: Extension Awards from the October 7, 2013 Ohio NACDEP Meeting

- Joe Lucente, Frank Lichtkoppler, and Tory Gabriel win North Central Runner Up for NACDEP Educational Piece Award
  - Sea Grant/Stone Lab Team won Joint Council of Extension Professionals award
  - Sea Grant/Stone Lab Team won Epsilon Sigma Phi- National Extension Honorary Society award
  - Joe Lucente and David Civittolo won Multi-Disciplinary Team Teaching Award for Ohio Business Retention and Expansion
  - Sarah Orlando and Tory Gabriel took 3rd place for Videos, CD's, DVD's or Podcasts
  - Tory Gabriel, Joe Lucente, Sarah Orlando, Frank Lichtkoppler won 1st place for Computer Generated Presentations with Lake Erie Critical Issues
  - Joe Lucente took 2nd place for Promotional Flyer with Toledo Local Government Leadership Academy
  - Joe Lucente (voted on by CD peers) won Mid-Career Award in Community Development (10-20 Years)
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**Appendix 3: List of conferences, special events and groups that visited at Stone Lab in 2012 and 2013**

- 2012**
- Lake Erie Commission Meeting on 6 June
  - Western Lake Erie Basin Partnership on 12 June
  - Institutes for Journalism and Natural Resources on 16 June
  - OSU President’s Club on 22 & 23 June
  - Lonz Foundation on 13 July
  - Lakeside Community on 3 August
  - Science writers on 20-21 August
  - Ohio Environmental Council, Congressional aids, and Agriculture Leaders on 22 August
  - Charter Captains on 23 August
  - Coastal County Commissioners and Mayors on 24 August
  - Donor Dinner on 25 August
  - NRCS and Agriculture Leaders on 29-30 August
  - Open House and FOSL Annual Meeting 7-9 September
  - OSU Communicators 13-14 September
  - TNC Boards of Trustees from 3 states 20-21 September
  - Buckeye IHOP 28-30 September
  - Ecosummit on 3 October
- 2013**
- FOSL Work Weekend 19-21 April
  - Outdoor Writers 3-4 May
  - Lake Erie Commission Meeting on 6 June
  - Western Lake Erie Basin Partnership on 12 June
  - Institutes for Journalism and Natural Resources on 16 June
  - OSU President’s Club on 21 June and 13 September
  - International Farm Safety Conference 23 June
  - NOAA HAB Press Conference 2 July
  - Special Island Donor Event with Pat Aveni 13 July
  - Representatives from Governor’s Office, Attorney General, and State Auditor on 25 July
  - Northwest Ohio Water Environment Association on 2 August
  - Carroll/Harrison County Agriculture Leaders and Farm Bureau on 2 August
  - WEWS, ABC Channel 5 in Cleveland on 8 August
  - Coastal County Commissioners, Mayors, and Decision Makers on 16 August
  - Charter Captains and rep. from NY Attorney General on 22 August
  - Michigan Farmers and Farm Bureau on 23 August
  - Science writers on 26-27 August
  - Special Donor Event, Marching Band, Tall Ships Battle 1-2 September
  - NRCS and Agriculture Leaders on 29-30 August
  - Michigan Public Radio and State Dept. of Agriculture on 3 September
  - Open House and FOSL Annual Meeting 6-8 September
  - OSU Communicators Retreat on the Rock Lab 19-20 September
  - Indiana Agriculture Leaders 20 September
  - National Sea Grant Advisory Committee Meeting 22-24 September
  - John L. Crites Student Reunion 27-29 September
  - Buckeye IHOP 4-6 October
  - Cleveland Water Alliance 15 October
  - Agriculture Commissioners 25 October
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3 April 2013

To our elected officials, decision makers:

We strongly support your continued investment in the Ohio Sea Grant College Program, which includes Stone Laboratory. We see this as a very wise investment of state and federal dollars. Sea Grant leverages the state investment to the program more than 15:1. The program has been a problem solver and an opportunity creator for private investment in Ohio by working to eliminate Harmful Algal Blooms and improve the Lake Erie ecosystem, preventing introductions of Asian Carp and other invasive species, restoring endangered species, cleaning up contaminated areas and protecting human health, developing new technologies for water treatment and contaminant removal, and supporting charter fishing, shrink wrap recycling, coastal economic development, new tourism opportunities, boat sales, and aquaculture.

Over 200 students from all over Ohio participate in the program's 20 courses each year, over 75 receive scholarships and fellowships each year from the program through private sector donations, over 200 classes and groups (grades 4 through adult) participate in field trips and workshops at Stone Lab, 20,000 people visit the Lab each year, and the Sea Grant outreach program directly reaches hundreds of thousands of people annually.

During these challenging economic times, we consider Ohio Sea Grant to be a wise investment of state and federal dollars and encourage you to invest as much as you can in the program.

Sincerely,

Alliance for the Great Lakes, Joel Brammeier, President & CEO  
 Alliance for Water Future, Fran DiDonato, Project Manager  
 American Rivers, Katie Rousseau, Associate Director  
 Ashtabula City Port Authority  
 Ashtabula County Convention & Visitors Bureau, Mark Winchell, Executive Director  
 Ashtabula Remedial Action Plan Council  
 Beagle Bioproducts, Inc., Jim Cook, Director of Field Operations  
 Beaver Park, Marina, Bill Schaeffer, Manager  
 Buckeye Friends of Stone Lab  
 Catawba Landing Marina, Mike Callahan, Manager  
 Cleveland Museum of Natural History, Renee A. Boronka, Associate Director  
 Cleveland State University, George Walker, Provost  
 Collision Bend Boaters Association, LLC, Wayne E. Bratton, Manager  
 Cranberry Creek Marina, Bob Hanko, Owner  
 Cuyahoga SWCD, Janine Rybka, District Administrator  
 Destination Toledo, Inc. Convention & Visitors Bureau, Richard C. Nachazel, President  
 Dutch Harbor Toot Toot Marina & Campground, Michael Bohling, Manager  
 EnviroScience, Inc., Martin A. Hilovsky, President  
 Erie County Health Department, Mark Janowich, Environmental Health Supervisor  
 Erie Soil and Water Conservation District, Breann Hohman  
 First Energy Development Department, Marty Kuula  
 First Island Son Bed and Breakfast  
 Friends of Stone Laboratory, Sheila Lewicki, President  
 Great Lakes Innovative Stewardship Through Education Network, Glenn Odenbrett, Director  
 Hocking Hills Tourism Association, Karen Raymore, Executive Director  
 Holiday Harbor Marina, Bob Lieblein, Manager  
 Hoty Marine Group, Richard (Dick) Henry, General Manager  
 International Ship Masters Association, Lodge #4, Wayne E. Bratton, 1st Vice-President  
 Island Bike & Cart Rental  
 Island Transportation  
 Lake Carriers' Association, Glen Nekvasil, Vice President  
 Lake County Engineer's Department, James R. Gills, P.E., P.S., County Engineer  
 Lake County Port Authority, Catherine Walsh, Executive Director  
 Lake County Visitors Bureau, Bob Ulas, Executive Director  
 Lake Erie Charter Boat Assn., Rick Unger, President  
 Lake Erie Improvement Assn., Jim Stouffer, President  
 Lake Erie Islands Browns Backers  
 Lake Erie Islands Chapter of the Black Swamp Conservancy, Lisa Brohl, Chair

Lake Erie Islands Nature and Wildlife Center, Kristin Stanford, Chair  
 Lake Erie Marine Trades Association, Ken Alvey, President  
 Lake Erie Nature and Science Center, Catherine Timko, Executive Director  
 Lake Erie Shores & Islands Welcome Center East, Dawn M. Weinhardt, Managing Director  
 Lake Erie Waterkeeper, Inc., Dave Spangler, President  
 La Mica Biological Station  
 Mansfield/Richland County Convention and Visitors Bureau, Lee Tasseff, President  
 Miller Boat Line, Julene Market, Owner/Marketing  
 Morrison Products Inc., Nicole Lorenzo Luna, Safety, Sustainability and Training Manager  
 National Center for Water Quality Research, Ken Krieger, Director  
 North Coast Charter Boat Association, Joe Takacs, Secretary  
 Northeast Ohio Regional Sewer District, Kyle Dreyfuss-Wells, Manager of Watershed Programs  
 Ohio Chapter of the American Fisheries Society, Tony Sindt, President  
 Ohio Environmental Council  
 Ohio Lake Management Society, Robert Carlson, President  
 Ohio Travel Association, Melinda Huntley, Executive Director  
 Ohio Wetlands Association, Ray Stewart  
 Ottawa County Board of Commissioners, Jim Sass, Commissioner  
 Ottawa County Visitors Bureau, Larry Fletcher, Executive Director  
 Perry Partners  
 Put-in-Bay Township Park District, Kelly Faris, Chair  
 Reveille LTD, Glenn T. Grisdale, AICP, GISP Principal  
 Salsbury-Schweyer, Inc., Sabrena Schweyer, FAPLD  
 Sandusky City Commission, John F. Hamilton, President and Diedre Cole, Commissioner  
 Sandusky Harbor Marina/Marinas International, Jerry Parsons, General Manager  
 Sandusky River Watershed Coalition, Cindy Brookes, Watershed Specialist  
 Spitzer Riverside Marina/Spitzer Lakeside Marina, Matthew Edwards, General Manager  
 TC Insights, Priscilla Diem, Founder  
 The Nature Conservancy, Ohio, Josh Knights, Executive Director  
 Toledo City Council, D. Michael Collins, Councilman  
 Toledo-Lucas County Port Authority, Joe Cappel, Director  
 Trident Marine Corporation, Wayne E. Bratton, President  
 Upper Maumee Watershed Partnership  
 Vermillion Power Boats, Janet Koehn, Office Manager  
 Village of Marblehead, Jacqueline A. Bird, Mayor  
 Western Basin Sportfishing Association  
 Western Reserve Land Conservancy, Rich Cochran, President and CEO