November/December 2002 • Vol. 24/No. 6 • $6.00/Year

TWINE LINE

The educational newsletter of Ohio Sea Grant, covering issues, events, and research related to Lake Erie and the Great Lakes

A Tale of Two Forts

Fort Series No. 4 – The Neutral Villages

September 22, 1764, Col. John Bradstreet's encampment near Junqueindundeh, lower falls of the Sandusky River — As an engineer in His Royal Majesty's Service, Lieutenant John Montressor was charged with designing the protective encampments needed wherever Colonel Bradstreet's army paused along its march. On this partly wooded bluff overlooking the lower falls of the Sandusky River, however, Montressor noticed that defensive earthworks already existed. But these appeared much too old to have been built by the recently defeated French. Friendly Indians who were part of the Colonel's forces explained to Montressor that the remains were those of an old fort at which local tribes could find shelter from marauding Iroquois nearly 100 years ago.

This expedition of 1,100 British troops and 200 Indians had arrived at the head of Sandusky Bay with a mission of forcing unruly tribes to comply with recent treaties. On August 12, 1764 near Presque Isle, a delegation of Indians claiming to represent several tribes had promised the Colonel that all white prisoners held in the region would be delivered into British hands at the lower falls of the Sandusky within three weeks. Col. Bradstreet dispatched Ensign Christopher Pauli and a small detachment from Fort Detroit back to the charred ruins of Fort Sandusky, near the mouth of Cold Creek on Sandusky Bay.

Continued on Page 4

Inside: North Coast News & Friends of Stone Laboratory

Sea Grant Ohio Sea Grant College Program — The Ohio State University

www.sg.ohio-state.edu

ASK Your Agent

Sponsored by Ohio Sea Grant Extension

For answers to Lake Erie -related questions, visit the Lake Erie Information Discussion Board at ***www.sg.ohio-state.edu/discus***

Dave Kelch, Lorain

What is the Steelhead Streamside Survey?

by Dave Kelch, Ohio Sea Grant Extension

Lake Erie's steelhead fishery is rapidly becoming a destination for anglers from throughout the country, and rightfully so. This very successful steelhead trout stocking program, conducted and administered by the Ohio Department of Natural Resources, Division of Wildlife, provides anglers with the opportunity to catch trophy class rainbow trout (steelhead) in Lake Erie tributary streams during the fall, winter, and spring months (see the Nov/Dec 2001 *Twine Line*, vol. 23/no.6, for more information regarding this program and where to catch steelhead).

Ohio Sea Grant has initiated a full scale research effort to survey these anglers during the 2002-2003 Lake Erie Ohio tributary steelhead angling season. From October 2002 through April 2003, Ohio Sea Grant will contact anglers at popular streamside locations, seeking their participation in a survey to better understand steelhead angler fishing habits, economic expenditures, and angling/visitation needs. The data will be analyzed and reported to local county visitor bureaus, angling groups, the ODNR/Division of Wildlife, and others interested in this rapidly growing fishery. This is the first time a formal survey of Ohio Lake Erie steelhead stream anglers has been conducted, and data from this research project will be helpful to management agencies not only in Ohio but also throughout the Great Lakes.

Anglers will be provided with a letter explaining the survey, and will be asked to provide their name and address. The survey will then be mailed to them within one to two weeks of their contact. During the streamside contact, anglers are also asked questions regarding how many hours they fished that day and how many fish they caught.

This research effort is being conducted by Sea Grant district specialists Frank Lichtkoppler and Dave Kelch, in addition to a research associate, Ms. Kelly Riesen, who has been hired to assist in angler contacts. Ms. Riesen attained her Bachelor of Science degree from Ohio Northern University, with a dual major in biology and environmental science. She has work experience with Ohio EPA in fish electro-shocking survey work, and was employed by the Ohio State University's F.T. Stone Laboratory during the Summer/Fall of 2002 as a research aide and environmental biology educator for school study tours. TL

For Your Information

HAPPY NEW YEAR!

Ohio Sea Grant and Stone Laboratory hope your holidays were wonderful and want to wish everyone a Happy New Year! Our focus in 2003 will remain strongly on the environment, education, and the economy as we strive to maximize the value and benefit of Lake Erie, the Great Lakes, and our oceans to the people of Ohio and this country. We will continue to do this using a combination of research, education, and outreach/extension. However, our program relies on partnerships and at this time of year we often think of our many friends and partners. Please accept our sincere thanks. We are very fortunate to have so many wonderful and dedicated allies to help us with our work.

October Water Levels

Lake Erie's level declined during October. The mean level was 570.73 feet which is 0.30 foot lower than last month's mean level and 0.37 foot below normal. The 2002 level is 0.45 foot higher than the October 2001 level and 1.53 feet above the Low Water Datum elevation reference system. TL

Exotic Aquatics on the Move **(EATM)**

The EATM web site is Ohio Sea Grant Education's component of a national project that involved educators from six Sea Grant programs and six state Geographic Alliances. The site organizes information for a growing list of the most common aquatic nuisance species in the U.S., focusing on important geographical factors such as origin, distribution, movement, impacts, and control methods. The site is produced and maintained by Ohio State University environmental communication students, and designed for teachers and learners in grades 6-12. A CD-ROM containing 27 classroom activities in PDF format is available for $7.00 through the EATM web site at ***www.iisgcp.org/EXOTICSP/.*** TL

Fishhook Waterflea Found in Lake Erie's Central Basin

State wildlife biologists confirmed the presence of the fishhook waterflea (*Cercopagis pengoi*), an invasive exotic plankton species, in the Ohio waters of Lake Erie's Central basin and are urging anglers to help prevent the spread of the exotic species. First reports of the waterflea in Lake Erie came last year in the Canadian portion of Lake Erie's Western Basin near Leamington, Ontario. The species has already infested much of the Great Lakes, and is currently found in Lake Michigan, Lake Ontario, and Lake Huron. Because it is closely related to the spiny waterflea (*Bythotrephes*), it has been observed in the same areas and thought to occupy the same niche in the Lake Erie food web. Both are expected to become dominant components of the offshore plankton population in Lake Erie's Central Basin. TL

Twine Line *(ISSN 1064-6418) is published bi-monthly six times a year by the Ohio Sea Grant College Program at The Ohio State University, 1314 Kinnear Rd., Columbus, OH 43212-1194. A 1-year subscription is $6.00 (use the form on back to order). The opinions expressed are those of the authors only. Please contact the office to obtain permission before reprinting articles or graphics. Ohio Sea Grant is a statewide program that supports greater knowledge and stewardship of Lake Erie and the Great Lakes. It is part of the National Sea Grant College Program (NOAA grant NA16RG2252, project M/P-2), which includes 30 state programs. Support of Ohio Sea Grant is provided by National Sea Grant, the State of Ohio, The Ohio State University, Ohio State University Extension, and participating universities, agencies, and businesses. The* North Coast Newsletter *is provided by the Ohio Lake Erie Commission as a special promotion. It is a funded feature highlighting Lake Erie as Ohio's most valuable resource.*

Research Review:
The Ghost of Summers Past

by Dr. Robert Heath, Kent State University

With the increasing abundance of phytoplankton in Lake Erie and the appearance of large "dead zones" (zones of low oxygen in the lake) in the summer, American and Canadian scientists have begun to wonder whether an old problem – eutrophication – is returning, and if so, whether it can be controlled as it was in the past.

Since the mid-1970s scientists and lake managers have recognized that growth of phytoplankton algae in Lake Erie and the other Great Lakes was dependent on the amount of phosphorus present in the water. Phosphorus (P) is essential for the growth of all organisms; without it they cannot live or grow. When phosphorus is present in a chemical form that algae can take up directly from the water, the algae will grow rapidly until they run out of phosphorus or other nutrients necessary for growth.

In the past, loading too much phosphorus into Lake Erie caused eutrophication – development of an overabundance of algae that die and decay. As algae sank to the bottom of the lake and decayed, dissolved oxygen was consumed, leading to the death of fish and other organisms in the bottom waters.

As long as phytoplankton are limited in their growth by P-availability, eutrophication can be controlled by limiting inputs of P to the lake. This strategy is the basis for much of the Great Lakes Water Quality Agreement. The strategy of limiting amounts of P permitted to enter Lake Erie has worked in the past to control eutrophication. But what if Lake Erie phytoplankton aren't P-limited? Former strategies may not provide an effective control of eutrophication, requiring development of new management strategies.

How do you know when algae are P-limited? When algae are P-limited, they act differently than algae that have enough P to grow rapidly. Ordinarily when algae are provided sufficient phosphorus for maximum growth rates they photosynthesize at their maximum rate and take up phosphate from their surroundings at a relatively slow rate. Also, when algae have sufficient P resources they biochemically store excess P, sort of a biochemical savings account.

Many processes change when algae are P-limited. P-limitation can lower the maximal rate of photosynthesis (P-opt) and greatly enhance the maximal rate of phosphate uptake from the environment (Vmax). Also, the biochemical savings account is depleted and algae develop a "phosphorus debt." Some algae can also produce special enzymes capable of releasing P from organic compounds dissolved in the water. These enzymes, called "phosphatases," are attached to the outside of algal cells and are produced only when algae become starved for phosphorus and when phosphate concentrations in the lake water decline to very low levels.

These different biochemical behaviors allow scientists to identify when algae are P-limited and to predict the success of various management strategies that may be used to control eutrophication. P-limited communities are characterized by having high phosphatase activities, significant P-debts, low maximum rates of photosynthesis (Popt) and high maximal rates of phosphate uptake (Vmax). Usually scientists divide the Popt by the Vmax to get a measure called the Phosphorus Deficiency Index (PDI).

Jane Forsyth

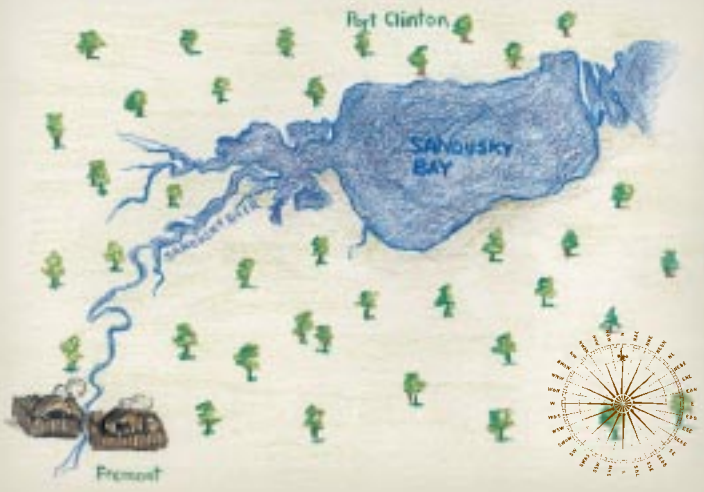
Scientists in recent years have been concerned that even with phosphorus controls in place, the overabundance of algae (like pictured here in 1972) could be returning to Lake Erie.

The problem is that P-limitation is not an "all or nothing" response. Instead, behaviors indicating P-limitation occur over a range from severe P-limitation to weak P-limitation or to none at all. Management strategies designed to control the growth of P-limited phytoplankton are most effective on those algae that are most severely P-limited. Estimating the effectiveness of such a management strategy depends on determining the intensity of the P-limitation. For example, the "phosphorus deficiency index" is variable throughout the lake and changes through the season, the lower the index the more severely P-limited the algal community is; only values less than 30 are considered to indicate severe P-limitation of phytoplankton communities.

Research over the past several years supported by Ohio Sea Grant and the Lake Erie Protection Fund indicates that Lake Erie phytoplankton have decreased in the degree of P-limitation over the past several years. At the height of the growing season this past summer, indicators of phytoplankton P-limitation were uniformly weak: phosphatase activity was very low, P-debt was low, and the PDI equaled 33, indicating only moderate P-limitation. Continuing research will continue to track these indicators to determine the potential effectiveness of management efforts that have worked in the past – and hopefully will continue to work in the future. TL

For more information about this Ohio Sea Grant funded project, contact Dr. Heath at ***rheath@kent.edu****.*

NEUTRAL FORTS - ***Continued from Page 1***



The Two Neutral Villages

Pauli's mission was to establish a new post and meet with Shawnees and Delawares who were to hand over the white prisoners. Ensign Pauli had commanded Fort Sandusky a year earlier when the garrison was overrun in the first strike of Pontiac's Rebellion. His men were slaughtered, the fort burned and Pauli himself was taken prisoner. Now, a year later, instead of collecting prisoners, Christopher Pauli and his men had been taken prisoner again. Col. Bradstreet's army was at Sandusky Bay to ensure by any force necessary that all prisoners, including his soldiers, were released.

Following the attack on Fort Sandusky, the year before, Captain James Dalyell marched 200 troops to the falls of the Sandusky River and burned the Wyandot village of Junqueindundeh in retribution. Now, as Montressor stood overlooking the partially rebuilt village, a circular earthwork some 300 yards in circumference stood behind him as a reminder that warfare was not new along Sandusky Bay.

Surviving accounts from the 18th and 19th centuries leave little doubt that a pair of fortified, neutral villages once existed at the lower falls of the Sandusky River (present day Fremont, Ohio). But the circumstances and dates of these ancient forts are partly shrouded by word-of-mouth accounts and centuries of time.

Jesuit Father Gabrial Seguard traveled the Great Lakes region prior to his return to France in 1615. He later wrote of seeing a fortified town, half on each side of the Sandusky River. Local Indians related to him that inhabitants of the eastern village offered sanctuary to travelers from the east; the western village offered safe shelter to refugees from the west.

The villages reported by Father Seguard may have been precursors to the pallisaded villages built by Wyandots who arrived decades later, fleeing the warfare between their nation and the Iroquois League in the 1640s. During that conflict the advantages of neutrality were demonstrated by a tribe known as the Neutral Nation, located north of Lake Ontario. The Neutrals remained immune to Iroquois onslaughts for many years by allowing war parties of Hurons (Wyandots) and Iroquois to cross their territory unchallenged to attack each other.

By 1649 the Iroquois League destroyed the Huron homeland in the area east of Lake Huron, sending the survivors fleeing for refuge among other tribes north of Lakes Superior and Huron. Ohio Wyandots in the early 1800s attributed the earthwork ruins of the neutral villages to their own tribe. This suggests that a small group of fleeing Hurons may have found their way to the falls of the Sandusky River decades before the larger Huron immigration, and adopted the same neutrality that had helped the Neutral Nation temporarily survive.

Both villages were occupied by Wyandots, but were maintained for opposing forces. The eastern village, on a bluff known as the Blue Banks, was a sanctuary for the Iroquois. The western village, on a bluff now occupied by the Sandusky County fairgrounds, was a safe site for enemies of the Iroquois, be they Wyandots, Eries or other tribes from the west. Major B.F. Stickney, an Indian agent giving a speech in Toledo in 1845, related an account given to him by Wyandots at Lower Sandusky:

> "…Two walled towns were built near each other, and each was inhabited by those of Wyandott (sic) origin. They assumed a neutral character, and the Indians at war recognized that character. They might be called two neutral cities. All of the west might enter the western city, and all of the east the eastern. The inhabitants of one city might inform those of the other that war parties were there or had been there; but who they were, or whence they came, or any thing more, must not be mentioned. The war parties might remain there in security, taking their own time for departure. At the western town they suffered the warriors to burn their prisoners near it; but the eastern would not. (An old Wyandott informed me that he recollected seeing, when a boy, the remains of a cedar post or stake, at which they used to burn prisoners). The French historians tell us that these neutral cities were inhabited, and their neutral character respected, when they first came here. At length a quarrel arose between the two cities, and one destroyed the inhabitants of the other. This put an end to all neutrality."

Archeological excavation around Sandusky Bay indicate that villages from the 13th, 14th, and 15th centuries were generally open in design, while those from the late 17th and 18th centuries were fortified. Their defenses usually consisted of earthen revetments surrounding palisades constructed of tall, sharpened poles. Whether the need for defense stemmed from hostile local neighbors or from depredations by the powerful Iroquois League, Indian villages in the region had become forts. And though fortifications rose and fell through nearly two and a half centuries of warfare involving the French, English, Americans, and perhaps a dozen Indian nations, the two neutral villages overlooking the Sandusky River at present day Fremont were the earliest of Sandusky Bay's forts. *TL*

To read Fred Snyder's previous fort articles published in Twine Line *(Part 1 in the Jan/Feb 1998 issue; Part 2 in the Mar/Apr 1998 issue and Part 3 in the May/June 1998 issue), log onto* ***www.sg.ohio-state.edu***

Do Something Unique Next Summer — Take a Course at Stone Laboratory

The Ohio State University's Island Campus on Lake Erie

www.sg.ohio-state.edu

Live, learn, and earn college credit at the oldest freshwater biological field station in the U.S. Stone Laboratory offers 1-week and 5-week courses for college students (undergraduate and graduate), educators (classroom teachers and non-formal educators), and select high school students. Courses are offered in the biological sciences and natural resources and include classroom, laboratory, and field studies.

For more information contact the Stone Laboratory Columbus Office Phone: 614.292.8949, Fax: 614.292.4364 or download applications and forms, as well as view specific course information, directly from our web site at *www.sg.ohio-state.edu*

THE OHIO STATE UNIVERSITY

Sea Grant
Ohio Sea Grant College Program

Applications are now being accepted for Summer 2003.
Courses available on first-come basis. Application deadline is March 13.

Matt Thomas

Dear Friends,

Winter's chill is here, and it is becoming more evident with each day up here on the islands. Early cold temperatures have surrounded us with ice and filled us with hope of a great ice fishing season.

Although it is cold and quiet on Gibraltar Island, it is not a time of dormancy. Spring workshop slots are filling up and students have begun to inquire about summer courses and scholarship opportunities. Student scholarships range from a few hundred dollars for housing costs to a potential full ride. With the help of your donations, we were able to award over $17,000 dollars in scholarship money last year (a new record!). Unfortunately, we are only supporting a fraction of the students that we would like to.

The Friends of Stone Laboratory are also actively planning a full calendar of events, starting with our 4th annual winter lecture. In cooperation with Ohio Sea Grant, the FOSL will host a Lake Erie sport fishing seminar in Columbus. This event will be held at the Fawcett Center on March 4th at 7:00-9:30 pm. To find out more details for this winter event, please contact the Stone Lab office in Columbus.

I hope to see you there: if not in Columbus, then on the island this spring!

Sincerely,
Matt Thomas
FOSL President
thomas.347@osu.edu

FRIENDS OF
STONE LABORATORY
20 Years of Service

Buckeye Island Hop

by Doug Kane

Saturday October 5th, was a great day for the Friends of Stone Laboratory, Young Buckeyes of Central Ohio Alumni Club, and the College of Biological Sciences Alumni Society. These groups gathered on this warm, sunny autumn day at Put-In-Bay to volunteer their time and efforts to a variety of local organizations, including the F.T Stone Laboratory, Lake Erie Islands Historical Society, and Lake Erie Islands State Park. In the early part of the day a variety of volunteer jobs were accomplished. These tasks included working at South Bass Island State Park to clean out both the glacial grooves and the remnants of the swimming pool from the historic Victory Hotel. Some of the volunteers weeded and landscaped at the Put-In-Bay Historical Society. On Gibraltar Island, aquaria were cleaned and tested for leaks, railings were painted, steps built, rocks moved, and litter was picked up. Paint was also removed from the interior of the tower of the historic South Bass Island Lighthouse.

The Buckeye Hop was not just a volunteer event. This was the first time at Ohio State that an alumni club, alumni society, and a friends group collaborated on a single event. Over 40 people attended this event. Some attendees had never been to Stone Lab before, while others had spent many summers at the Lab. People came from as far as Chicago, IL and Columbiana County, OH and as near as South Bass Island. Members from all of the groups socialized during an island reception, followed by a delicious steak and perch dinner in the Stone Lab Dining Hall.

On Sunday morning, those new to Stone Lab toured Gibraltar Island and visited Cooke Castle. The leadership of each organization met and discussed how this great event had accomplished everyone's goals. During the weekend, each of the individual groups learned about the missions of the other groups, learned about Stone Lab, and helped strengthen partnerships with the Lake Erie Islands Historical Society, Ohio Department of Natural Resources, and Stone Lab, while doing some rewarding volunteer work.

Ron Schild, President of the Biological Sciences Alumni Society, noted that it was "exciting to see how community service and volunteer work can be a part of an alumni event." Eric Pineiro, of the Ohio EPA, was grateful for the opportunity to "discover" Stone Lab and came out of the event with "a greater appreciation of Stone Lab's facilities."

Each person and organization may have taken something different out of the Island Hop, but everyone made new friendships and helped to make it an event worth repeating. Bill Konves of the Young Buckeyes said, "This event was a great way to give back to Ohio State, as well as build camaraderie among fellow alumni. It was definitely a great weekend on the Lake."

FOSL

Researching, learning, and living aboard the R/V *Lake Guardian*

by Doug Kane

This past summer, I had the unique opportunity to both take a class, and perform research aboard the *Lake Guardian*. The *Lake Guardian* is a 180-foot research vessel, operated by the USEPA's Great Lakes National Program Office, which travels throughout the Great Lakes. From this platform, scientists can perform biological, chemical, physical, geological, and meteorological studies of the lakes.

My onboard experience began with a week-long class, collectively taught by Drs. David Culver and Bill Edwards (OSU), Colleen Edwards (Worthington City Schools), and Drs. David Rockwell, and Todd Nettesheim (USEPA). Stone Laboratory, Ohio Sea Grant, and the USEPA jointly offered this course on Great Lakes limnology (EEOB-698.01) in June 2002. The students enrolled in the course were primarily graduate students from numerous universities, and high school educators.

After loading a seemingly endless parade of scientific equipment aboard the ship, we departed and immediately went out to begin sampling in the western basin of Lake Erie. For the next week, our daily schedule consisted of lectures on Lake Erie limnology, on-site sampling for water column chemistry, plankton, and benthos, followed by the laboratory analysis of these samples. In between these tasks, we studied for tests and conducted independent research projects.

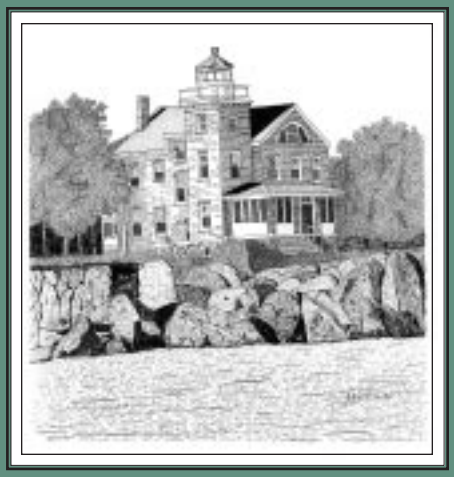
The above list of activities may sound like a lot, and in truth there were nights when I only got 2 or 3 hours of sleep. This intensive course gave students the experience and information that would take a 10-week quarter at a traditional college campus. Further, the students got first hand knowledge on how to perform shipboard based research. I know I attained a greater respect for the logistics of conducting shipboard studies, like that done on the Lake Guardian and other such vessels. In summation, the class was a lot of hard work, but extremely rewarding.

In August, I was lucky enough to return to the *Lake Guardian* as a researcher on the "Lake Erie Trophic Status Project." The goal of this project was to investigate the new biological and environmental pressures that are modifying nutrient and energy flow in Lake Erie, including investigating causes of the highly publicized "dead zone" in the central basin of Lake Erie. This trip included researchers from a variety of Canadian and U.S. universities and agencies, including the USEPA, USGS, Penn State University, Michigan State University, and Case Western Reserve University. It was especially interesting to hear the viewpoints (and dialects) of the Canadian researchers. The next week was spent sampling in the three basins of Lake Erie. Our group from Ohio State focused on analyzing oxygen concentrations, taking phytoplankton and zooplankton samples, and conducting zebra and quagga mussel nutrient excretion experiments. We also performed one 24-hour, on-site sampling, in one location. Needless to say, I did not get much sleep that night.

Living aboard the *Lake Guardian* was an interesting experience. The 15'x8' sleeping quarters contained three bunks. Luckily, we did not spend much time in the room, save for sleeping and showering. The resident crew, marine technicians, and scientists were pleasant and eager to help. The food on-board was excellent, with three meals a day and a huge selection of snacks. Besides gaining knowledge on these trips, I definitely gained a couple of pounds!!

During my two weeks aboard the *Lake Guardian*, there were stretches when we were out in the lake, without hitting port, for five days at a time. We did not experience any rough seas, but I was still glad that I do not get seasick. On both trips, a number of people, new to shipboard living, did become ill.

One of the best features of doing research aboard a ship is the short commute to work. The labs and galley were on the floor below the sleeping deck. It only took about 30 seconds to get to these areas from our rooms. Living and working aboard a ship for a week was a unique experience that presented many challenges, as well as many rewarding new experiences. **FOSL**



Lighthouse Print Available!

The limited edition print of historic South Bass Island Lighthouse is now available. This is the newest print, in a series of prints, drawn by Dr. John Crites. A donation of $250.00 or more to the newly established research endowment, named in honor of Dr. Crites, will qualify you to receive this beautiful print. Support future researchers at Stone Lab and enjoy this historic print. **FOSL**

FOSL/Sea Grant Winter Lecture

Please mark your calendars for the FOSL/Sea Grant Annual Winter Lecture on March 4, 2003 from 7:00-9:30 at the Ohio State Fawcett Center of Tomorrow. This year's topic, "Lake Erie Sport Fishing," will include the impact of zebra mussels and other invasive species on Lake Erie; the "Dead Zone" and understanding Lake Erie; where, when, and how to fish for each species; where to launch you boat or how to go on a charter boat; and other species you might see while fishing for target species (walleye, yellow perch, smallmouth bass, steelhead, white bass). Feature speakers will include Matt Thomas, FOSL President; Dr. Jeff Reutter, Stone Lab Director; and Fred Snyder and Dave Kelch, Ohio Sea Grant Extension Agents.

If you plan to attend, please RSVP by February 24th to Bonita Cordi at *cordi.2@osu.edu* or call 614.292.8949. **FOSL**

Sea Grant
Ohio Sea Grant College Program
THE OHIO STATE UNIVERSITY
The Ohio State University
1314 Kinnear Road
Columbus, OH 43212-1194

Non Profit Org.
U.S. Postage
PAID
Columbus, Ohio
Permit No. 711

ADDRESS SERVICE REQUESTED

Ohio Sea Grant, The Ohio State Univ., 1314 Kinnear Rd., Columbus, OH 43212-1194
614.292.8949, Fax 614.292.4364, ***www.sg.ohio-state.edu***

Twine Line is published six times a year by Ohio Sea Grant Communications. To subscribe for one year, send $6.00 to the Columbus office.

Ohio Sea Grant Staff

Dr. Jeffrey M. Reutter, *Director* .....reutter.1@osu.edu
Karen T. Ricker, *Assistant Director/Communications* .....ricker.15@osu.edu
Dr. Rosanne W. Fortner, *Education Coordinator* .....fortner.2@osu.edu
Bonita Cordi, *Office Associate*.....cordi.2@osu.edu
Nancy Cruickshank, *Publications Manager*.....cruickshank.3@osu.edu
Cindy Hayter Allison, *Graphic Designer* .....hayter.2@osu.edu
Jill Jentes Banicki, *Editor & Science Writer* .....jentes.1@osu.edu
John Tripp, *Fiscal Manager* .....tripp.3@osu.edu

Ohio Sea Grant Extension

Frank R. Lichtkoppler*.....lichtkoppler.1@osu.edu
Lake County Extension Office, 99 E. Erie Street, Painesville, OH 44077
440.350.2582, Fax 440.350.5928

Fred L. Snyder* .....snyder.8@osu.edu
Camp Perry, Building 3, Room 12, Port Clinton, OH 43452
419.635.1022 (Phone & Fax)

John R. Hageman, Jr. .....hageman.2@osu.edu
F. T. Stone Laboratory , P. O. 119, Put-in-Bay OH 43456
419.285.2341 or 614.247.6502, Fax 614.247.6578

David O. Kelch.....kelch.3@osu.edu
Lorain County Extension Office, 42110 Russia Road, Elyria, OH 44035
440.326.5851, Fax 440.326.5878

Joe Lucente .....lucente.6@osu.edu
Lucas County Extension Office, One Gov. Ctr, Suite 550, Toledo, OH 43604
419.213.4254, Fax 419.213.4241

Walter D. Williams.....wwilliams@clevegrowth.com
Greater Cleveland Growth Association, 200 Tower City Center, 50 Public Square
Cleveland, OH 44113-2291, 216.621.3300, Fax 216.621.6013

**Extension Program Co-Coordinators*

Ohio Sea Grant Information & *Twine Line* Subscriptions 11/02

Ohio Sea Grant Publications, 1314 Kinnear Road, Columbus, OH 43212-1194
Many items are downloadable from our site at ***www.sg.ohio-state.edu***

Please send me the following

__*Twine Line* Newsletter.....6 issues for $6.00
__Publications Brochure .....free
__Guide for Put-in-Bay.....$4.00
__Technical Publications Brochure .....free
__Artificial Reef Fact Sheets (FS-072).....free
__Guide to Lake Erie Western Basin Fishing Reefs (GS-001).....$3.00
__Guide to Fishing Central Lake Erie (GS-008) .$3.00
__Beaches Fact Sheet (FS-078).....free
__Lake Erie Cookbook (GS-005) $4.00
__FOSL T-Shirt $13.00
__Water Levels Fact Sheet (FS-025).....free
__Shipwreck Dive Slates (GS-020).....$15.00

I have enclosed $_____(U.S. dollars).
Make checks payable to The Ohio State University.
❑ I am a Friend of Stone Lab
❑ I am a new subscriber to *Twine Line*

Name

Address

City

State ZIP

❑ cttl

FRIENDS OF STONE LABORATORY

20 Years of Service

F. T. Stone Laboratory

The Ohio State University, 1314 Kinnear Road, Columbus, OH 43212-1194
614.292.8949, Fax 614.292.4364, ***www.sg.ohio-state.edu***

Field Station Address
F.T. Stone Laboratory, The Ohio State University
PO Box 119, Put-in-Bay, OH 43456
419.285.2341, 614.247.6502, Fax 614.247.6578

Franz Theodore Stone Laboratory, Ohio's Lake Erie laboratory, offers intensive, hands-on university field courses from June to August in biology, geology, education, and natural resources. Workshops and group field studies are offered from mid-April through October. Research in aquatic, terrestrial, and island sciences has been conducted year round since 1895. Stone Laboratory's association with other programs based at The Ohio State University—the Ohio Sea Grant College Program, the Great Lakes Aquatic Ecosystem Research Consortium (GLAERC), and the Center for Lake Erie Area Research (CLEAR)—has made it an important research facility. Stone Laboratory is located on Gibraltar Island, across the harbor from Put-in-Bay.

Stone Laboratory Staff

Dr. Jeffrey M. Reutter, *Director* .....reutter.1@osu.edu
Dr. Rosanne W. Fortner, *Associate Director* .....fortner.2@osu.edu
John Hageman, *Laboratory Manager* .....hageman.2@osu.edu
Matt Thomas, *Assistant Laboratory Manager*.....thomas.347@osu.edu
Arleen Pineda, *Program Coordinator*.....pineda.2@osu.edu
Kelly Dress, *Office Associate*.....dress.3@osu.edu

The Friends of Stone Laboratory (FOSL) began in 1981 as a support group to "bring Stone Laboratory into the 21st century with the best possible facilities, equipment, and professors, and make this an unequaled learning experience available to all outstanding students." Members of the Friends provide a way for former students to support the facility by raising awareness and funds for scholarships, research, and equipment.

FOSL Board of Directors

Matt Thomas, *President*
Dr. Chris Stanton, *Vice President*
Joan Bradley, *Secretary*
Lydia Bailey, *Treasurer*
Dick Lorenz, *Past President,*
Mike Heniken, *FOSL Editor*

FOSL Board Members

Larry Cooper
Debbie Hawthorne
Doug Kane
Joe Conroy
Charlene Prochazka
Sara White

Donation Form for Friends of Stone Laboratory 11/02

My gift is designated for
Please indicate on your check's memo line.

__ Stuckey Plant Course Fund
__ Crites' Research Fellowship ($250 donation required for print)
__ Cooke Castle Renovation Fund
__ Director's Discretionary Fund
__ Frederick Memorial Scholarship Fund (scholarships for non-OSU students)
__ FOSL General Fund
__ FOSL Scholarship Fund
__ FOSL Sustaining Fund (equipment, supplies, etc.)
__ FOSL Visiting Professor Fund
__ Langlois Research Fellowship Fund
__ Special Publications Fund
__ Franz Stone Research Fund

First Name — Middle/Maiden Name — Last Name

Street Address Apt. No.

City State Zip Code e-mail Address

Home Phone Work Phone

Please make checks payable to:
Ohio State University Foundation

and return this form to:
c/o Friends of Stone Laboratory, (Attention: John Tripp)
1314 Kinnear Road, Columbus, OH 43212-1194

ISSN 1064-6418