



# Tidings

*A publication of the Florida State University Coastal & Marine Laboratory*

## Animals of Big Bend Seagrass Meadows By Chris Stallings

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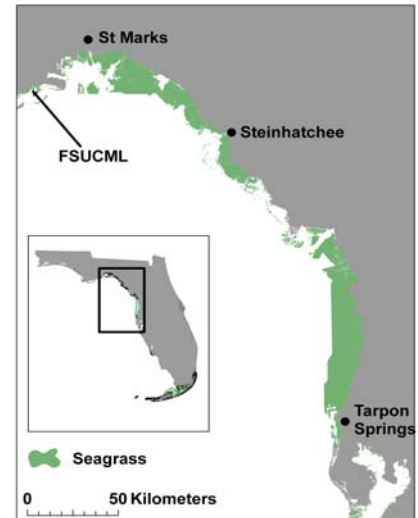
Imagine a seagrass meadow the size of a football field. How many shrimps, crabs, fishes, and other marine animals could this meadow support? How many species would be found there? Would the animals be evenly dispersed across the seagrass meadow or would there be other patterns of organization? Now try to imagine a seagrass meadow, and the animals within it, the size of 726,000 football fields! This is the estimated size (approximately 3000 km<sup>2</sup>) of one of the largest seagrass meadows in the world, located in the Big Bend of Florida. In collaboration with several researchers at the FSUCML and The Nature Conservancy, I have begun research funded by the Florida Fish and Wildlife Conservation Commission to identify the species composition, distribution, and abundance of animals asso-

ciated with this critically important habitat in the northeastern Gulf of Mexico.

Seagrass meadows serve as nursery, feeding, and refuge habitats for many marine species. Indeed, Florida seagrass meadows are inhabited by a diverse and great abundance of animals, including many that are economically-important (i.e., to commercial and recreational fisheries), and 120 species of fish and 37 species of macro-invertebrates identified as "species of greatest conservation need" by the Florida Comprehensive Wildlife Conservation Strategy. Management and conservation efforts directed for these species require information on their distributions and relative abundances within Florida seagrass meadows.

Although both past and ongoing research and monitoring efforts in the Big Bend seagrass meadows have addressed many important issues, most have been conducted at relatively local scales and none have set out to characterize the animal communities across the entire region.

In addition to characterizing the animal communities in Big Bend seagrass meadows, we are collecting data on both fine- and broad-scale environmental parameters, which may directly and/or indirectly affect the animals. A clear understanding of how these factors and the animal communities interact across the spatial extent of the entire Big Bend region is crucial to proper management and conservation efforts, particularly as coastal development and other human activities increase in the area.



See results of Stallings's study of predators of the Caribbean on the web : <http://www.marinelab.fsu.edu/news/predators/>

## Message from the Director: The Year of Science and Action for the Oceans

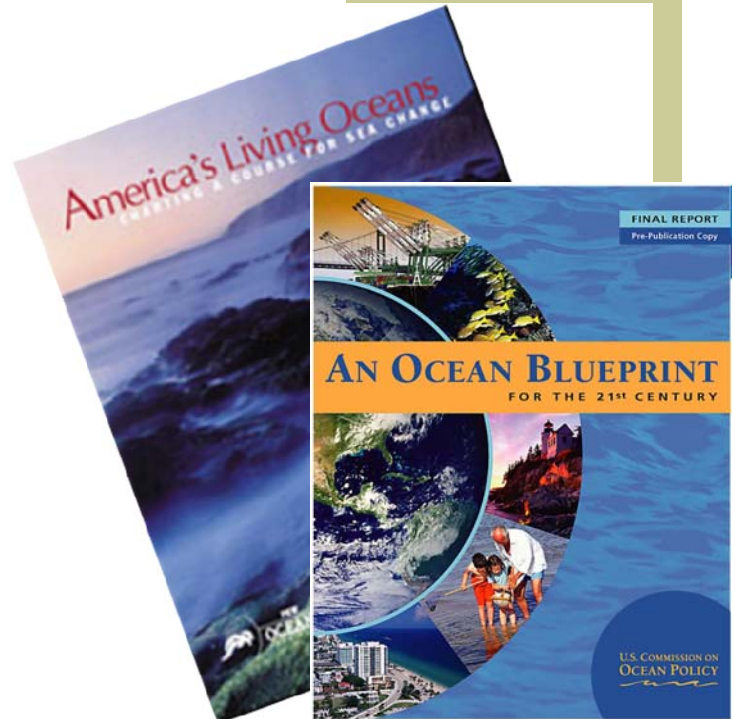
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This year, 2009, is The Year of Science, according to the Coalition on the Public Understanding of Science (COPUS), a grassroots coalition whose primary goal is to increase public understanding of the nature of science and its value to society. This, too, is the year of The Florida State University Coastal and Marine Open House, held April 18<sup>th</sup>, 2009, with much fanfare and delight for children and adults. Events like these are two-way streets because they help the general public learn about what we do as scientists, and it helps scientists—too often accused of being locked in an Ivory Tower, engaged in over-specialized research that disconnects them from everyday life—think about the broader application of their work and learn to communicate it to non-scientists.

Our work getting science to the public doesn't end with the Open House. The scientists at the FSUCML are dedicated to getting science into the policy arena by working closely with state and federal agencies, international organizations, and NGOs interested in the application of science to real life problems. Never has there been a greater need or a better time. The need was made clear earlier this decade in two reports on the state of the oceans delivered by The Pew Oceans Commission (2003) and the U. S. Commission on Ocean Policy (2004). Both reports, through different mandates, different origins, and different corporate constitutions delivered essentially identical messages to the citizens of the United States. From ecological, managerial, and political perspectives, the oceans and our coasts are in serious trouble. The best available scientific information shows us again and again that there are virtually no natural areas left on this planet that have not been touched in some way by overexploitation, habitat loss, pollution, or declines in water quantity and quality. Amid all the controversy about these environmental issues--this point has been made abundantly clear. The human footprint on ecosystems is profound and has expanded to such an extent that it has differentially undermined ecological connectivity and integrity at an ever increasing rate.

To ensure that these reports did not fade in memory, the commissioners from both groups came together to form The **Joint Ocean Commission Initiative (JOCI)**—a bipartisan, collaborative group intent on accelerating “. . . the pace of change that results in meaningful ocean policy reform” and reporting annually on how the nation fared in this regard. Their report for 2009, “Changing Oceans, Changing World: Ocean Priorities for the Obama Administration and Congress” ([http://www.jointoceancommission.org/resource-center/1-Reports/2009-04-07\\_JOCI\\_Changing\\_Oceans,\\_Changing\\_World.pdf](http://www.jointoceancommission.org/resource-center/1-Reports/2009-04-07_JOCI_Changing_Oceans,_Changing_World.pdf)) points to the critical need to recognize the links between ocean health and the economic state of the nation, the mismatch between ocean systems and the way they are managed, and erosion of funding for ocean research. I urge you to take the time to read this report, share it with your children, your parents, your friends, and engage your political representatives to take meaningful action for the ocean at local, state, and federal levels. There is not a better time than now, given the new administration's dedication to having science and reason, rather than political ideology, inform our management decisions.

**YEAR** 2009  
**of SCIENCE**  
Explore. Empower. Engage...



*Julia O'Connor*



## News and Notes

- We hosted two Oberlin College students, **John Thiele**, and **Sarah Sawtelle**, during their January term. Sarah and John participated in various research projects going on around the Lab and joined **Bob Paine**, visiting from University of Washington, and several other Oberlin students who were staying in Tallahassee on an early morning field trip. **Maria Thiele-Sippola** generously acted as chaperone.
- The FSUCML Scientific Advisory Board met for the first time on 20 March 2009. The board, chaired by **Robert Paine** (Professor Emeritus, University of Washington), also includes **David Conover** (SUNY), **Marc Mangel** (University of California, Santa Cruz *en absentia*), and **Mary Power** (University of California-Berkeley). An oyster roast held afterwards included about 75 guests, including **T.K.** and **Virginia Weatherell**, all listening to the music of The Mayhaws and Grant Peeples.
- The FSUCML Board of Trustees met on 21 March 2009 to hear the Scientific Advisory Board's report and attend to other board business. The following individuals attended the meeting: Chairman of the Board, **Pat Hamilton**, Board members **Mike Greenberg**, **Bill Herrnkind**, **Arthur Stern**, **Manley Fuller**, and **Mike Putland**, **Marcella** and **Carl Matthei**, **Ross Ellington**, FSU Associate Vice-President for Research and **Kirby Kemper**, FSU Vice-President for Research, **Felicia Coleman**, and **Todd Engstrom**, **FSUCML** also attended.

## 2009 Open House a Huge Success

FSUCML hosted 1,200 visitors at its biannual Open House on Saturday 18 April. On a day that put a smile on everyone's face, FSUCML faculty and staff, Saturday-at-the-Sea staff, FSU main campus faculty, undergraduate and graduate students, visiting researchers, and a host of volunteers talked and demonstrated the significant scientific, conservation, and policy-related work that they do. Representatives of 20 local organizations and agencies joined us, including The Nature Conservancy, The Gulf Specimens Laboratory, The Apalachicola National Estuarine Research Reserve, and Florida Sea Grant. Local clam farmer, Van Lewis, shucked a few for science. We told stories about seagrasses and sharks and oysters and oxygen. A flock of kids participated in the treasure hunt, caught fish using a remotely operating underwater vehicle, and tonged for pearl-filled oysters. **Melvin Pope** won the raffle for a boat ride and picnic lunch on Dog Island. Thanks to all our visitors, volunteers, and participants. See you in 2011.



Spring 2009

## Lunch Bunch

The FSU Coastal and Marine Lab hosts an informal weekly gathering called "Lunch Bunch" in which local scientists, natural resource managers, and others interested in the pressing scientific and management questions of the region meet with our scientists and staff. Typically, the format is for the guest to give a short presentation about his or her research or conservation interests and is then inundated with questions by the audience. We have enjoyed hosting **Dr. Jack Rink**, McMaster University, Hamilton, Ontario, currently on sabbatical at the FSUCML; **Dr. Don Strong**, a former FSU faculty member in the Department of Biological Science, and currently at the Bodega Marine Laboratory at the University of California, Davis; **Dr. Jes Hines**, post-doctoral associate in Dr. Nora Underwood's laboratory in the FSU Department of Biological Science; **Rachel Wilson**, a graduate student of Dr. Jeffrey Chanton in the FSU Department of Oceanography; **Dr. Mike McManus**, of The Nature Conservancy, who received his Ph. D. at FSU under Dr. Joseph Travis; and **Dr. Bill Herrnkind**, FSU Professor Emeritus and currently a Senior Scientist in Residence at the FSUCML.

## New Faces

We are pleased to welcome two new faces to the Lab. **Rosanne Weglinski**, the new boat captain, and **Alison Ma**, our new Marine Technical Operations Coordinator and Dive Safety Officer.

Rosanne took the helm as captain of the RV SEMINOLE at FSUCML on 1 February 2009. Formerly, Rosanne was Chief of Marine Operations and Captain on a research vessel in the Pacific on Palmyra Atoll. The atoll is owned by The Nature Conservancy and the U. S. Fish and Wildlife Service and run as a research station for a consortium of universities. She also ran her own charter recreational diving business for 14 years and in the off-season, ran live-aboard dive boats for Explorer Ventures in the Caribbean. In September she conducted a month-long diving operation, making a promotional DVD of the Red Sea in Egypt, and her boat co-starred in the movie "The Truman Story" starring Jim Carrey (Paramount Pictures), shot in Seaside, Florida. Rosanne's goal as the FSUCML boat captain is to continue to improve the RV Seminole and ensure safe research operations for oceanography, meteorology, and ecology for the FSU Coastal and Marine Lab. She recently discovered a treasure-trove of remote sensing equipment and is busy getting up to snuff to get the equipment operational.



Alison received a Bachelor of Science degree in Biological Sciences at Simon Fraser University in Vancouver, British Columbia, Canada. She has a strong interest in diving physiology and was a research intern at the Duke University Medical Center and Divers Alert Network, where she co-authored publications on diver respiration physiology and physical fitness of scientific divers. Alison has been active in the Canadian Association for Underwater Science, and has dived in the challenging conditions in the Pacific Northwest. Alison can boast an unusual personal accomplishment of a self-guided exploration of the Calamian Archipelago in the South China Sea using a traditional Filipino canoe. Alison started in her position at the Lab on 12 January 2009, and has made huge steps in building the diving capacity of the FSU scientific diving program.



Spring 2009

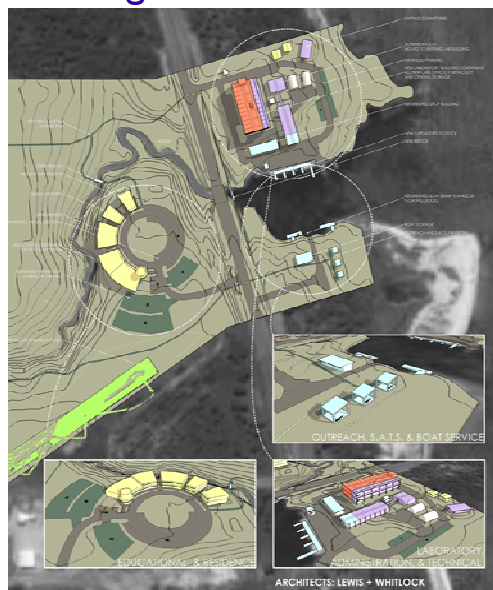
## Facility Improvements & a Pontoon Boat Make-over

We made two important improvements to FSUCML facilities in the past 6 months: a paint job for most of the buildings on campus and replacing the railing at the dock (thanks to a minor renovation award and the generosity of the Office of Research) .



One other change warrants comment. Sometimes we can stare for years at our familiar surroundings and not see obvious opportunities for improvements. The pontoon boats that we use all the time at FSUCML for research and more frequently for education are an example of such temporary blindness. **Bobby Henderson**, long-time FSUCML employee and boat specialist, recently “saw” the pontoon boats and created valuable benches and a cleverly designed moveable wet table for on-the-spot specimen sorting. Kudos to Bobby for his initiative.

## Planning for the Future



Two important events took place recently in developing our strategic plan for renovation and new construction at the FSUCML, thanks to a \$25,000 planning grant from the National Science Foundation. With the help of **Mark Bertolami**, FSU Department of Facilities Design and Construction and architect **Cam Whitlock** and intern **Alex Melamed** of Lewis and Whitlock, PA., we held (1) a vision workshop, attended by FSUCML faculty and staff, participants from the FSU departments of oceanography, biological science, geography, and anthropology, and associates from The Nature Conservancy, the National Marine Fisheries Service, and the Apalachicola National Estuarine Research Reserve; and (2) a charrette for FSUCML staff, faculty, and post docs. Based on the ideas and discussions emanating from these events, the architects developed a conceptual plan for the laboratory that includes (1) a new laboratory building, (2) a new education center with an auditorium and cafeteria, (3) expanded dormitory space for graduate

students, post docs, and visiting faculty; (4) renovation of existing space for administration, and (4) a floating dock system and reconstructed boat ramp on the waterfront. Clearly, our dreams for an exciting new phase for the Lab are taking shape.

## Spring 2009

## Spring 2009 FSUCML Lecture Series

- 22 Jan. 2009 **Dr. John Bruno**, University of North Carolina (Chapel Hill) "Florida's Coral Reefs: Threats, Decline, Management, and Signs of Hope?" Elise B. Newell Seminar funded by Florida Sea Grant.
- 12 Feb. 2009 **Dr. Don Strong**, University of California, Davis (Bodega Marine Laboratory) "Ecological and Evolutionary Misadventures of Invasive *Spartina*"
- 12 Mar. 2009 **Dr. Anne Rudloe**, Gulf Specimen Marine Laboratory, Panacea FL "Sea Turtles"
- 9 Apr. 2009 **Dr. Ken Heck**, Dauphin Island Sea Lab, "Consumers Rule: Predator Primacy in Shallow Benthic Ecosystems"
- 14 May 2009 **Dr. Steve Geiger**, Florida Fish and Wildlife Research Institute, "Status of Bay Scallops, (*Argopecten irradians*) in Florida west coast waters,"
- 11 June 2009 **Dr. Walter Tschinkel** Florida State University, Distinguished Professor and author of the widely acclaimed Harvard University Press book, "The Fire Ants"
- 10 July 2009 **Dr. David Kimbro**, FSUCML, "The Effects of Non-native Predators and Coastal Oceanography on the Health of Oyster Habitat"
- 13 Aug. 2009 **Dr. Helen Light**, U. S. Geological Survey (retired) "Water-Level Decline in the Apalachicola River and Effects on Floodplain Ecology"
- 10 Sept. 2009 **Jack Rudloe**, Gulf Specimen Marine Laboratory, prolific author of nature books. "Shrimp"
- 9 Oct. 2009 **Dr. Gil Nelson**, Gil Nelson Associates, botanist and author of numerous books on the flora of Florida. "Coastal Vegetation of the Florida Big Bend"

Check our website for more information: <http://www.marinelab.fsu.edu/outreach.html#lecture>

## Education

## Credit Courses Summer 2009

- Research for Teachers—Inquiry in Marine Ecology: a Research Experience for Teachers. *Dr. Bill Herrnkind* (FSU Professor Emeritus Department of Biological Science).
- Biology of Fishes: exploring fish and their habitats in marine and freshwater systems. *Dr. Christopher Koenig* (FSU Department of Biological Science).
- Special Topics in Marine Invertebrate Zoology. BSC-4933-2. *Dr. Bill Herrnkind* (FSU Emeritus Department of Biological Science) and *Dr. David Kimbro* (FSUCML).

## Credit Courses Fall 2009

- AAUS Scientific Diving: Methods for Scientists. *Alison Ma*.

## Non-Credit Courses Summer 2009

- Introduction to Geographic Information Systems for Coastal & Marine Applications. 24-26 June. *Dr. Xiaojun Yang* (Dept. Geography) Geared for those with little or no previous GIS experience, participants will learn how to use GIS to address coastal environmental issues.
- Evening at the Edge. 8 May and 20 June. *Dr. Bill Herrnkind*. A short lecture and walk in the intertidal zone designed to educate and inspire coastal citizens through hands-on experience about the strange and wonderful sea life along our pristine shores and shallows.

## Publications and Grants

### SCIENTIFIC PAPERS

**Grubbs, R.D.** 2008. An overview of shark bycatch in pelagic fisheries: conservation and ecology of pelagic sharks. pp. 1-8 In: Y Swimmer, JH Wang, L McNaughton (eds.) Shark Deterrent and Incidental Capture Workshop. U.S. Dep. Commer., NOAA Tech. Memo., NOAA Technical Memorandum NMFS-PIFSC-16, 72p.

Hazen, E.L., **J.K. Craig**, C.P. Good, and L.B. Crowder. 2009. Vertical distribution of fish biomass in hypoxic waters on the Gulf of Mexico shelf. Marine Ecology Progress Series 375:195-207.

**Hughes, A.R.**, J.J. Stachowicz, and S.L. Williams. 2009. Morphological and physiological variation among seagrass (*Zostera marina*) genotypes. Oecologia 159: 725-733.

Carlson, J.K., C.T. McCandless, E. Cortés, **R.D. Grubbs**, K.I. Andrews, M. A. MacNeil, and J.A. Musick. 2009. An Update on the Status of the Sand Tiger Shark, *Carcharias taurus*, in the northwest Atlantic Ocean. NOAA Technical Memorandum NMFS-SEFSC-585, 23 p.

Bethea, D.M., L. Hollensead, J.K. Carlson, M.J. Ajemian, **R.D. Grubbs**, E.R. Hoffmayer, R. Del Rio, G.W. Peterson, D.M. Baltz and J. Romine (2009) Shark nursery grounds and essential fish habitat studies. Gulfspan Gulf of Mexico-FY08. Report to NOAA Fisheries, Highly Migratory Species Division. Sustainable Fisheries Division Contribution No. PCB-09/02.

Mann, D.A., J.V. Locascio, F.C. Coleman, and **C.C. Koenig**. 2008. Goliath grouper, *Epinephelus itajara*, sound production and movement patterns on aggregation sites. Endangered Species Research, doi:10.3354/esr00109

Murie, D.J. D.C. Parkyn, **C.C. Koenig**, **F.C. Coleman**, J. Schull, S. Frias-Torres. 2008. Evaluation of fin rays as a non-lethal aging method for protected goliath grouper (*Epinephelus itajara*). Endangered Species Research, doi:10.3354/esr00146.

**Stallings CD.** 2009 Fishery-Independent Data Reveal Negative Effect of Human Population Density on Caribbean Predatory Fish Communities. PLoS ONE 4(5): e5333. doi:10.1371/journal.pone.0005333. *Featured on the website here:* <http://www.marinelab.fsu.edu/news/predators/>

### GRANTS

**Hughes, Randall.** Clonal variation in salt marsh cordgrass (*Spartina alterniflora*): Effects on and responses to associated species. \$11,887. April 2009-2010. FSU Office of Research, Council on Research and Creativity.

**Petes, Laura**, and **Felicia Coleman**. An ecological approach to oyster reef restoration in Apalachicola Bay. USFWS Coastal Program in the Florida Panhandle Grant, \$15,466.

**Stallings, Chris**, and **Felicia Coleman**. Nearshore reefs as secondary nursery habitat for gag. North Gulf Institute. \$36,350.

## A Case for Giving:

Private support provides us with tremendous flexibility to respond rapidly to exciting new opportunities and to plan for long-term development. We are now embarking on a capital campaign to build new housing, an education center, new research facilities, and a floating dock system in our boat basin. Your financial support makes it possible for us to provide invaluable support for these initiatives and for research, undergraduate and graduate scholarships, equipment, and general program support. The Coastal and Marine Laboratory depends on generous supporters like you to help create workable solutions locally and globally. So please consider a gift at any level that suits you best.

### Why donate to the Florida State University Coastal and Marine Laboratory? \*

1. Scholarships—Florida needs students who are well-trained in the challenges of the scientific understanding, conservation, and management of marine ecosystems. We provide an extraordinary opportunity for them to get hands-on field experience working on relevant problems.
  2. Research is needed to better understand this biologically rich part of a changing world. Ecologists, oceanographers, meteorologists, and others use our facilities as a base for their studies.
  3. Florida State University is doing its part by investing in our future through facility upgrades and resident faculty positions.
  4. The Florida State University Coastal and Marine Laboratory has a hard-working staff that is dedicated to providing a first-rate field laboratory to faculty and students.
- \* See the last page of the newsletter for details.

## A Case for Volunteering

We can use your help in the following areas:

- Develop and maintain a butterfly garden
- Publicity development for brochures.
- ACCESS and EXCEL database design experience to help with lab data management.

See the last page of this newsletter to offer volunteer services.



## Thanks to Friends of the Lab

### Conchs (\$25-\$99)

Mr. and Mrs. Charlie Fothergill  
Wilderness Graphics

### Sting Rays (\$100-\$499)

Mr. and Mrs. Darrel Acker  
Mr. and Mrs. Bruce Harrison  
Frank Lindamood  
Michael and Linda Mikos  
St. Marks National Wildlife Refuge  
Van Vandermeulen  
Rosanne Weglinski

### Groupers (\$500 - \$999)

Felicia Coleman & Christopher Koenig

### Leatherback Turtles (\$1,000—\$4,999)

Patrick Hamilton  
Dr. William F. Herrnkind

### Black Tip Sharks \$5,000—\$9,999

The Calvert Giving Fund  
Dr. Michael Greenberg  
The Dorothy and Jonathan Rintels  
Charitable Foundation

### In Kind

Sparky Huddleston

### Volunteers

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Daniel Crotty  
Olivia Davis  
Amber Ferguson  
Nick Kortessis  
Alejandra Mickle  
Will Overholt  
Nicole Roca  
Melissa Rohal  
Veronica Ryan  
Sarah Seip  
Jennifer and Bill Standley  
Dennis Swanson  
Robin Vroegop





**COASTAL & MARINE  
LABORATORY**

**We're on the Web**  
**[www.marinelab.fsu.edu](http://www.marinelab.fsu.edu)**

**Mission:** To solve ecological problems through innovative, interdisciplinary research in coastal and marine ecosystems of the northeastern Gulf of Mexico and provide scientific information as the basis for sound policy decisions.

## **Become a Friend of the FSU Coastal and Marine Laboratory!**

Join a group of dedicated people who support our mission. You can help us by making a private tax-deductible gift. Gifts of any amount are important, whether it's for our general operations or to an endowment dedicated to providing scholarships to undergraduate and graduate students for research. If you are interested, please print this page or use the downloadable form online: ([http://www.marinelab.fsu.edu/documents/donor\\_form.pdf](http://www.marinelab.fsu.edu/documents/donor_form.pdf)), print it out and mail with a check or provide your credit card information to:

The Florida State University Coastal and Marine Laboratory, c/o Kathy Houck  
3618 Coastal Highway  
St. Teresa, FL 32358-2702

**For more information about making donations, please contact Nancy Smilowitz, via email at [nsmilowi@mail.fsu.edu](mailto:nsmilowi@mail.fsu.edu), or by phone at 850.644.9324.**

### **YES. I WOULD LIKE TO BECOME A FRIEND OF THE FSUCML.**

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Direct to (check one): Scholarship Fund \_\_\_\_\_ General Operations \_\_\_\_\_

May we acknowledge you in our newsletter? \_\_\_\_\_Yes \_\_\_\_\_No

Are you interested in becoming a volunteer? \_\_\_\_\_Yes \_\_\_\_\_No