



# *Caribbean Marine Science*

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## *Association News*

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### **Notes from the Editors**

Our greetings to all the AMLC members. Once again, we would like to request contributions for the newsletter from our members and readers. We have a very diverse membership involved in many different areas of research. Your newsletter is an efficient way of sharing information about your projects, or even better, finding help or cooperation from other members of the Association. Please, do not hesitate if you have interesting information, a laboratory profile, an announcement, a request for information, or summer courses for the year that you want to share with the rest of us.

### **New AMLC List Servers**

We now have two list servers dedicated to our members. The first one is for all AMLC members

(including graduate students) and the second is only for AMLC student members. The purpose of these list servers is to facilitate communication and foster collaboration between and among our members. We hope that students will take advantage of this new capability. We would like to especially thank Laurie Richardson and all other people involved in getting these important communication capabilities established. The list server addresses are:

[amlcmembers@clio.fiu.edu](mailto:amlcmembers@clio.fiu.edu) (all members)

[amlcstudents@clio.fiu.edu](mailto:amlcstudents@clio.fiu.edu) (Only student members)

Only AMLC members who are on the list can post to the list. Any posting is first routed to the host computer at Florida International University. If it is not from a subscribed member it will not be sent to the list. Current members are automatically subscribed, and new members are added when they join AMLC. The newsletter will be now circulated electronically through our list server, which insures delivery and that only paid members are in our mailing list.

### **Proceedings of the Trinidad Meeting**

The proceeding from our previous meeting in Port of Spain, Trinidad are in process. The selected committee of editors have the manuscripts already and should be done with the reviews soon.

### **Future Meetings of the AMLC**

One of our new Institutional members, the Department of Marine Biology at St. George's University in Grenada, has graciously and enthusiastically agreed to host our next AMLC Executive Board Meeting from July 28<sup>th</sup> – 31<sup>st</sup> of 2004. All members of the Executive Board should plan to attend the meeting and start with the

reservations. Look for further news in your future e-mails and additional information may be requested from Dr. Claire Morral at [cmorrall@sgu.edu](mailto:cmorrall@sgu.edu). One of our oldest member, the Bermuda Biological Station for Research, has agreed with equal grace and enthusiasm to host the 2006 Executive Board Meeting. The Curacao Sea Aquarium will be organizing our next Scientific Meeting in 2005.

**Web site address:** <http://amlc.uvi.edu>

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## *Profiles*

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### **Department of Marine Biology, St. George's University, Grenada, West Indies.**

#### **University Background**

St. George's University is located in the parish of St. George's in the southern part of the island of Grenada. St. George's University consists of three schools: a School of Medicine, a School of Arts & Sciences and a School of Veterinary Medicine (established 1976, 1994 and 1998 respectively). St. George's University (SGU) has a student population of approximately 2000 individuals from a wide range of backgrounds and countries. SGU employs approximately 350 staff and 140 full time faculty. Specialist Visiting Professors attend SGU each semester to contribute to the diverse courses offered by the three schools. The School of Arts & Sciences is an undergraduate school, which offers a range of degree programs and two pre-professional programs that prepare students for entry into Veterinary or Medical School. St. George's University medical students spend their 5<sup>th</sup> and 6<sup>th</sup> terms in St. Vincent. Both medical and veterinary students move on to affiliated institutions in the UK and USA to complete their professional training. A Graduate Studies Program is run by the Medical School and a popular Masters of Public Health is offered as a free standing degree (MPH) or as a dual MD/MPH or DVM/MPH program. High academic standards are required from all students at SGU and we pride ourselves on an extensive range of student support services provided by staff and faculty. Reduced tuition rates are in place for CARICOM nationals and undergraduate

scholarships are available to Grenadian students. The Windward Island Research and Education Foundation (WINDREF) is based at the SGU's True Blue campus. WINDREF seeks to advance health and environmental development through multi-disciplinary research and education programs. The Founders Library, located on the True Blue campus houses a diversity of books, journals and provides students with computers and study space. The main True Blue campus in Grenada is modern with state-of-the-art academic, administrative and residential support space that has expanded significantly in the past five years. Further information is available at [www.sgu.edu](http://www.sgu.edu).

#### **Grenada**

Grenada (pronounced Gre-nay-da) is a Tri-Island state located in the south of the Caribbean island chain. As a result of the agricultural output of the islands, the islands are commonly known as the Spice Isles. Grenada is by far the largest of the three sister isles (at 18 km wide and 34 km long): its 440 sq. km are mountainous, volcanic terrain, reaching heights of over 840 meters at Mount St. Catherine. Average temperatures range from 24C/75F to 30C/87F, tempered by the steady and cooling trade winds. The lowest temperatures occur between November and February; the driest season is between January and May. Grenada's population numbers about 100,000, comprising citizens of African, East-Indian, and European descent.

The islands' rich marine resources include extensive coral reefs, seagrass meadows and mangrove forests. Grenada has numerous healthy, well-preserved and diverse reefs offering boundless diving opportunities. These resources are readily accessible and amenable as educational study areas and research sites. Two Marine Protected Areas have recently been established through the governments Fisheries Division and many more are planned in the region. In addition to the abundant and diverse marine natural resources and spectacular sandy beaches, Grenada affords a diverse array of tropical terrestrial study sites. These include lush tropical rain forest and elfin woodland, fringing and lagoon mangrove systems, volcanic crater lakes, rivers, streams and sulphur springs.

## **Marine Biology at St. George's University**

Marine biology began at St. George's University in August 1998 with the arrival of Dr. Geoffrey Wigham. Dr. Wigham was loaned to SGU from the University of Plymouth (UK) where he had an excellent track record of setting up an array of Marine Biology Degree programs. During the three years that Dr Wigham was based at SGU, he designed a Marine Biology degree, along with marine major and a minor track. Dr Wigham also assisted with the design and construction of a purpose built Marine Station at the True Blue campus.

### **The Marine Station**

The Marine Station was completed in 2001 and has since served as a teaching base for a range of undergraduate courses and visiting groups, and as a research base for industry and university scientists from the Europe, North America and the Caribbean. The Marine Station is conveniently located just behind one of the campus beaches. The Station has an air conditioned teaching laboratory/lecture room upstairs that accommodates up to 40 students. A wet-bench runs along the back wall of the room. Adjacent to the teaching room is a large wooden deck overlooking the University Bay, providing space suitable for briefings or relaxation. On the lower level of the Marine Station is an air conditioned technician's room/research area, a large enclosed clear space that can be set-up as needed, a long wet-bench and a large circular seawater tank. An open seawater circulation system feeds both upstairs and downstairs in the Marine Station and to a larger laboratory (accommodating 60 students) a short distance away. The front of the marine station has a shaded concrete deck with two partly enclosed freshwater showers and a wide wooden deck on the east side. The Marine Station is equipped with a wide range of equipment for teaching marine biology both in the laboratory and in the field (i.e. buckets, aquaria, sieves, quadrats, plankton nets microscopes, refractometers, and pH meters). We also have a small amount of scuba equipment (including four sets of BC's, regulators and weights and eight tanks). The Station is supplied with both 110 and 220 volt power and is telephone connected.

The bay in front of the marine station is a wonderful snorkeling spot that provides safe and easy access to lush seagrass beds and an array of reef vertebrates and invertebrates. A second beach (with black sand) is located on the west side of the True Blue Campus, which is ideal for comparative beach studies. St. Georges University has a second campus in Grenada located on the beautiful west coast Grand Anse beach. This campus has student accommodation that can be made available to visiting groups and an excellent refectory. The Grand Anse campus is located in close proximity to a number of scuba dive operators.

Dr. Clare Morrall received a B.Sc. degree from the University of Plymouth where she worked with fish and Marine Biology. After a year traveling and working on the Great Barrier Reef, she returned to the University of Plymouth to get her Master's degree in Applied Marine Science. She stayed registered at Plymouth for her Ph. D research but was based in warmer climes at the Bermuda Biological Station for Research (BBSR) where she worked on the characterization of the Nitric Oxide Synthase enzyme and investigating environmental stress responses in the sea anemone *Aiptasia pallida*. She then moved to Grenada early in 2001 to take up a position as Assistant Professor in the Marine Biology Department of St. George's University..

### **Marine Biology at St. George's University**

Courses in marine biology are currently offered as part of a Bachelor of Sciences Degree (Life Sciences Major) from the School of Arts & Sciences. Courses currently on offer are: Marine Foundation, Aquatic Biology, Diversity Adaptation & Function, Aquatic Ecosystems and Marine Habitats & Organisms. She is currently teaching undergraduate courses in Marine Biology to predominantly Caribbean students and has recently been working alongside the SGU's School of Veterinary Medicine toward establishing a turtle rehabilitation centre at the SGU True Blue campus. The Department of Marine Biology supports work done on island by the Marine Conservation group Ocean Spirits (<http://www.oceanspirits.org/>) and by the Grenada government Fisheries division (including their Marine Protected Area project). Links between The Nature Conservancy (<http://nature.org/>) and Marine Biology at SGU have been established and we hope to be working on projects together in the near future.

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## **Studying and Research Opportunities**

In addition to offering undergraduate courses to students based at SGU on a full time basis we are able to accept students for shorter-term study periods (attendance of SGU as part of a semester or year abroad is possible). We are keen to support and collaborate with students, scientists and companies who require the use of an educational and/or research base in the Caribbean. The marine environment of Grenada has received little research attention so far, thus research opportunities abound. There is much to be learnt from a wide range of investigations at varying levels, from baseline studies upwards. Grenada is a prime location for field study visits for students at high schools, colleges or universities, or simply groups of people interested in short term continuing education courses. It may be possible to arrange technical and teaching support from St. George's University staff and faculty. University accommodation is available to visiting groups predominantly during the summer vacation (approximately mid-May until the end of July). We hope to have a Marine summer course for college and university level students in the near future. Grenada has a well developed dive industry that has a great track record of serving visiting scientist, groups and our own students well. A wide range of dive and snorkel vessels are available for charter. We will happily recommend a dive company to suit your needs.

Dr Clare Morrall, Chair of Life Sciences, Pre-Veterinary Program Director, Assistant Professor, Department of Marine Biology, St. George's University, P.O. Box 7, St. George's, Grenada, West Indies, Tel: (473)-444-4175 ext. 2360, Fax: (473) 435 1835, email: [cmorrall@sgu.edu](mailto:cmorrall@sgu.edu), [www.sgu.edu](http://www.sgu.edu)

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## ***General Interest***

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### **NURP Research Contributes to Nassau Grouper Conservation in the Bahamas**

Nassau grouper were once among the most important fishery species in the wider Caribbean

region, but overfishing has reduced their numbers such that they are now protected from fishing in State and Federal waters of the US and are on the IUCN's Red List of endangered species. One of the few places where stocks support a healthy fishery is in the Bahamas, but even there stocks are showing signs of decline. For the past 15 years, researchers at the Perry Institute for Marine Science's Caribbean Marine Research Center (CMRC), NURP's center for the Caribbean region, have been studying Nassau grouper. This research has been focused on issues aimed at helping managers protect or rebuild Nassau grouper stocks.

On December 16 2003, Mr. Michael Braynen, the Director of the Bahamas Department of Fisheries, announced the first ever closed fishing season for Nassau grouper in Bahamian waters. This announcement included the declaration of a closed fishing season for Nassau grouper for the entire month of January in 2004 and from December 16 2004 until January 16 2005. These annual closed seasons encompass winter full moon periods when spawning aggregations are likely to form.

Scientific research on Nassau grouper populations conducted by CMRC researchers played a major role in this decision. Highlights of this research include: documentations of declines in numbers of fish at specific spawning aggregations sites over 12-15 years of fishing them; a trend towards declining recruitment of juvenile fish into the population; and documentation of individual fish migrating tens to hundreds of kilometers to spawning aggregation sites. Ongoing Nassau grouper research at CMRC will focus on further examinations of their movements to and from spawning aggregation sites and monitoring recruitment, to evaluate effectiveness of the closed season.

#### **Source:**

**Craig Dahlgren, PhD**  
**Director of Scientific Operations**  
**Perry Institute for Marine Science**  
**Caribbean Marine Research Center**  
**Perry Currents, vol 2(1) 2004**  
[www.cmrc.org](http://www.cmrc.org)

## **Awash in a Sea of Synthetics**

A car tire; a Japanese traffic cone; ten year old water jugs; miles of tangled fishing nets; this is some of the bounty found floating in the middle of the Pacific Ocean in an area called the North Pacific subtropical gyre, which lies between Hawaii and California. Charles Moore, sea captain, sailor and ocean crusader, describes the area's combination of winds and currents as creating "a sort of toilet-bowl effect where you have got a little bit of depression in the middle and a circulating current brings stuff from the edges into the center."

Since 1999, Captain Moore has been trawling the ocean's garbage patches in his 50-foot catamaran research vessel Alguita. He came across the gyre in 1997, as he was returning home from a regatta in Hawaii, and decided to take a shortcut. The North Pacific subtropical gyre is an area of flat calm that sailors tend to avoid. His craft, however, was equipped with twin diesels and an extra fuel bladder, so he headed into it. Its currents collect decades worth of garbage. For 10 straight days, he couldn't look over the side without seeing plastic debris.

Captain Moore would later learn that the area he had crossed is also known among oceanographers as the "eastern garbage patch", a term coined by the oceanographer and world-leading expert on floating debris, Curtis Ebbesmeyer. "You have to visualize twice the size of Texas, swirling around like the hands of a clock" says Prof. Ebbesmeyer.

Captain Moore has used his personal inheritance to fund his non-profit organization, the Algalita Marine Research Foundation. To quantify the gyre's synthetic soup of debris, he began trawling the patch using what he calls a manta trawl. He was shocked to discover six pounds of plastic debris for every pound of plankton.

The problem is not limited to the North Pacific subtropical gyre. Capt. Moore is now trawling at the mouths of the Los Angeles and San Gabriel rivers, to learn where all this plastic is originating and how it travels. Just a little rain can wash it from the land to the rivers and on to open water. "It doesn't take a lot of rain to give us a lot of debris,

because along with the rain comes the wind and a lot of these things are very light", he says. "The Styrofoam cups and the plastic bags are our modern tumbleweeds".

The attributes that make plastic so ubiquitous today (it is indestructible, watertight, and easy to shape) are the very reasons why it turns up in the middle of the ocean. "It does not biodegrade," explains Ann Zellers, a research biologist with the Algalita Foundation, "and it just becomes more friable and breaks into smaller pieces. As it breaks into smaller pieces, it becomes food for animals with the same sized mouth". What's worse, petroleum-based plastics are lipophilic, which means they attract oily chemicals, some of which are toxic, such as polychlorinated biphenyls or PCBs. These chemicals accumulate into the fatty tissue of fish, and pass up into marine mammals and eventually humans. We will eventually eat what we toss into the sea.

Rob Krebs, director of communications for the American Plastic Council, insists that responsibility for this sea of synthetics does not lie with his industry alone: "This is a problem that we all share and understand. It is litter and it's human behavior that is causing this amount of debris in the ocean".

Capt. Moore thinks one reason humans have not galvanized around the issue of plastics pollution is that the oceans are so vast, it's hard to appreciate the scale of the problem. Meanwhile, out in the toilet bowl known as the North Pacific subtropical gyre, the human-made bits keep swirling round and round. Ranking environmental problems on a scale from one to ten, "I would rank oil spills as a one", says Prof. Ebbesmeyer. "Plastic is a nine".

### Source:

Ian Connacher  
Associate Producer at Dayly Planet  
Discovery Channel Canada  
<http://www.exn.ca>  
globeandmail.com

## **Minding Nemo: Tropical Fish Trade Threatens Coral Reef Ecosystems.**

More than 20 million tropical fish and up to 10 million other marine critters are caught each year

for the aquarium trade, according to a new report from the U.N. Environment Programme. One of the most destructive harvesting methods involves stunning tropical fish with a near-lethal dose of sodium cyanide, which can harm not only fish but coral reef ecosystems as well. Still, the report found that if harvesting were conducted sustainably, the aquarium trade could help coastal communities in Southeast Asia fight poverty and provide locals with incentives to protect fish stocks and marine ecosystems. The nonprofit Marine Aquarium Council offers a certification program for ensuring that fish have been caught sustainably; the UNEP report recommends wider application of such programs.

Source: BBC News, Alex Kirby, 30 Sep 2003  
[www.gristmagazine.com/forward.pl?forward\\_id=1561](http://www.gristmagazine.com/forward.pl?forward_id=1561)

## **U.S. Supports International Conservation Measures for Queen Conch**

In September, 2003 the U.S. Fish and Wildlife Service announced that the United States will prohibit the importation of queen conch, its meat, shells, and other products from three Caribbean countries: Honduras, the Dominican Republic, and Haiti; in support of an international effort to help stem continued and significant declines in this species. The ban implements restrictions in the United States that have been called for globally under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

“The United States is the world’s largest marketplace for queen conch, accounting for 80 percent of the legal trade,” said Service Director Steve Williams. “We are joining our CITES partners in implementing and enforcing this global conservation action to make sure queen conch is a sustainable and valuable commercial resource throughout the Caribbean region”. A similar embargo on international trade under CITES is already in place for queen conch and conch products from four other Caribbean countries: Antigua and Barbuda, Barbados, Dominica, and Trinidad and Tobago. Before trade can resume, each of these seven countries must implement a

number of long-term conservation measures, such as conducting population surveys and developing scientifically sound species management programs to ensure the sustainability of its conch population.

The Service is the federal agency responsible for implementing CITES in the U.S. Working with its Federal partners, the U.S. Department of State and the U.S. Commerce Department’s NOAA-Fisheries, the Service promotes regional cooperation, scientifically-based management plans, and enhanced law enforcement capabilities. Marking its 30<sup>th</sup> anniversary this year, CITES is a treaty to which the U.S. and some 160 other nations belong, including Honduras and the Dominican Republic. The treaty provides for the monitoring and regulating of international commerce in wild animal and plant species through a system of permits.

Since the mid-1980’s, the State of Florida and the Federal government have banned all harvest of native queen conch populations found in State of Florida waters and adjacent Federal waters. In 1992, the U.S. proposal to place queen conch on CITES appendix II was adopted by the CITES parties. An appendix II listing includes species that, although currently not threatened with extinction, may become so without trade controls. These controls ensure trade is legal and does not threaten the species’ survival in the wild.

“Although the U.S. is temporarily closing to queen conch imports from these three countries in order to give these populations an opportunity to recover, Americans can still purchase this commodity from other countries where legal trade is allowed,” Williams said. “However, we are now asking U.S. tourists who visit the Caribbean to take care before purchasing any queen conch meat or souvenirs because they chance having it confiscated upon their return.”

To learn more about queen conch please visit the following websites:

<http://international.fws.gov>  
[www.nmfs.noaa.gov/prot\\_res/PR/queenconch.html](http://www.nmfs.noaa.gov/prot_res/PR/queenconch.html)  
[www.floridamarine.org/products/product\\_info.asp?id=1595](http://www.floridamarine.org/products/product_info.asp?id=1595)  
[www.strombusgigas.com/](http://www.strombusgigas.com/)

[www.le.fws.gov/Info\\_Importers\\_Exporters.html](http://www.le.fws.gov/Info_Importers_Exporters.html)

## **Petition to Take Action to Protect Species from Global Warming**

The Center for Biological Diversity petitioned the Bush administration to protect three coral species native to Florida and the Caribbean under the federal Endangered Species Act (“ESA”). The three species, Elkhorn, Staghorn, and Fused-Staghorn coral, were the primary components of coral reef ecosystems throughout the Caribbean for nearly 500,000 years. Unfortunately since the 1970’s these species have suffered 80%-98% declines throughout significant portions of their range, an unprecedented rate of loss unmatched in the known history of the Earth. If these losses are not arrested and reversed, these species could go extinct within the foreseeable future, resulting not only in the loss of these irreplaceable forms of life, but also billions of dollars in tourist, recreational, medicinal, and subsistence income.

The unprecedented decline of these coral species is due to the combined effects of disease, thermally induced bleaching, physical destruction from storms, predation, competition, and activities that degrade habitat and water quality. But the best available science indicates that each of these threats has been exacerbated and accelerated by a driving force: global climate change.

“The Bush administration has openly rejected the best available science on global climate change, leaving our coasts vulnerable to destruction, our pocket books vulnerable to enormous expenses, and our marine wildlife threatened with extinction,” said Brent Plater, staff attorney with the Center for Biological Diversity. “This petition will force the Bush administration to come to terms with the best science on global warming and ultimately take action to protect these species from extinction.”

Once listed, these coral species will have a variety of protections put in place. Direct “take” of the corals will be prohibited, critical habitat areas will be protected, and recovery plans will be implemented. Perhaps most importantly, because global climate change is largely driven by greenhouse gas emissions, the listing of these corals will require greenhouse-gas emitting industries to consider the well-being and

recovery of these corals before they are given permits to pollute.

“Requiring greenhouse-gas emitting industries to consider how their activities are impacting our most productive marine ecosystems is not only right in principle but also eminently sensible,” said Mr. Plater. “The destruction and loss of these coral species and therefore the loss of major portion of the Florida-reef tract ecosystem will result in the loss of billions of dollars to our economy, the loss of an unknown number of medicines, and decimate local biodiversity. It’s just common sense to consider these impacts before it is too late.”

## **Caribbean Journal of Science - Request**

Please take a few seconds to read about our journal and the advantages we offer scientists doing research on Caribbean natural history. Contact me if you need additional information or if you would like to receive an examination copy. You can also read about our journal’s history ([http://caribjsci.org/dec01/37\\_302-305.pdf](http://caribjsci.org/dec01/37_302-305.pdf)) and visit our website ([www.caribjsci.org](http://www.caribjsci.org)).

The Caribbean Journal of Science publishes formal articles, research notes, book reviews, and essays relevant to Caribbean natural science. Emphasis is on the various branches of zoology, botany, ecology, and geology. We offer authors:

- International peer review
- Careful editorial review
- Coverage by leading bibliographic services, including: Biological Abstracts, Current Contents, Elsevier Geological Abstracts, Science Citation Index Expanded, UnCover, and Zoological Record
- Papers in press listed online
- High quality printing
- Timely publication
- Simultaneous print and electronic publication
- International distribution and free availability on the web
- Inexpensive reprints

- Low page charges that can be waived

I look forward to receiving your next manuscript!

Sincerely, José A. Mari Mutt, Editor, Caribbean Journal of Science. [www.caribjsci.org](http://www.caribjsci.org)

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## *Meetings & Conferences*

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**Coastal Fisheries in Latin America and the Caribbean. "Assessing, Managing and Balancing Actions".** October 4-8, 2004, Mérida, Yucatán, México

Fisheries scientists, managers, and members of NGO's, and others with interest in Latin America and the Caribbean coastal fisheries. People with different backgrounds who are interested to contributing their experience to the understanding of these fisheries in the region can enrich this event. We expect this interaction and generation of knowledge and tools can help to make a change in the way resources are used in the coastal area.

*CoastFish 2004* aims to facilitate the exchange of assessment methods and management tools, and to improve knowledge about coastal fisheries in the region by sharing information and experiences.

<http://www.mda.cinvestav.mx/eventos/Coastfish/coastfish@mda.cinvestav.mx>

**2nd National Conference on Coastal and Estuarine Habitat Restoration. September 12-15, 2004.** The Washington State Convention & Trade Center and the Grand Hyatt. Seattle, Washington.

(<http://www.estuaries.org/objects/2004RAEFCF.pdf>)

**Annual Meeting of the Association of Tropical Biology and Conservation.** Miami, Florida. July 12 – 15, 2004.

The Association for Tropical Biology and Conservation will be holding their annual meeting in Miami, Florida from July 12 to 15 in 2004. Laurie Richardson, AMLC member, will be organizing a symposium in association with this conference titled "Coral Health and Reef Degradation". While the ATBS has a focus on tropical terrestrial ecosystems, this tropical marine symposium has been accepted and will allow AMLC members to bring their work on coral health to an important new audience. If interested in submitting a title and abstract for a talk, please contact Laurie Richardson at [richardl.fiu.edu](mailto:richardl.fiu.edu) for more information. To see more about ATBS, their website is [www.atbio.org](http://www.atbio.org).

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## *New Books*

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**Latin American Coral Reefs.** Edited by Jorge Cortés. Elsevier Press, 2003. 497 pp. US \$ 130.00.

This book presents a much-needed compilation of information for coral reefs from fourteen Latin-American countries and Belize. These countries cover the three major regions where coral reefs grow in Latin America, the Caribbean, Brazil and the eastern Pacific. This book comes out at a time when coral reef communities have been experiencing significant losses in hard coral cover and other biological components due to a combination of natural and anthropogenic detrimental factors such as local habitat degradation, over-fishing, pollutant input, bleaching, hurricanes and more recently, diseases. All chapters are formatted the same way so the lectors can easily compare information between different countries and regions.

The book covers a wide range of reef formations and biotic compositions in distinct environmental conditions throughout the three "isolated" (from each other) geographical regions. The Caribbean Sea is a relatively small, partially enclosed and highly



interconnected water body surrounded by dense human populations.

**Taming of the Oyster. A History of the National Shellfisheries Association and its Role in the Evolving Industry and Science of the Shellfisheries.** Mel Carriker.

This book is now in press at the Sheridan Press. It is about 260 pages long with some 100 photographs, some dating back to the early history of the Association of Shellfish Commissioners and the Oyster Growers and Dealers Association in the early 1900s. The book emphasizes the intertwining relationships of the associations, their leaders, and the impact of world wars, depressions, and evolving technology on them. If interested in purchasing this book please contact:

Mel Carriker: [carriker@udel.edu](mailto:carriker@udel.edu); ph: 302-645-4274.  
Sandy Shumway: [sandrashumway@hotmail.com](mailto:sandrashumway@hotmail.com);  
ph: 860-405-9282.

**Coral Disease and Health: A National Research Plan.** Woodley, CM, AW Bruckner, SD Galloway, SM Mc Laughlin, CA Downs, JE Fauth, EB Shotts and KL Lidie (2003). NOAA - Coral Disease and Health Consortium, 72 pp.

This is a report developed by the CDHC which presents the results of the first official CDHC meeting held in 2002 at which scientists, resource managers, and regulatory officials gathered to identify gaps in our understanding of the causes of global coral reef decline, address information needs, and recommend courses of action to meet these needs.

Contact : [Cheryl.Woodley@noaa.gov](mailto:Cheryl.Woodley@noaa.gov)  
[Andy.Bruckner@noaa.gov](mailto:Andy.Bruckner@noaa.gov)

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## *Courses Offered*

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### **Coral Tissue Slide Reading Workshop**

Dr. Esther Peters will offer a Coral Tissue Slide Reading Workshop this summer at Mote Marine

Laboratory's Tropical Research Laboratory (TRL), Summerland Key, Florida.

One workshop will be held July 19-21. Students taking the course "Diseases of Corals and Other Reef Organisms" at the lab July 10-18 will be accepted first into this session (up to 5 participants). Others who wish to participate in the workshop at Summerland Key will be accommodated in the July 19-21 session, or, if there is sufficient interest, another session might be held at Summerland Key July 22-24. It is likely a workshop will be held in the Washington, DC, area sometime in the fall. Please let Dr. Peters know if you would prefer to attend that session. Another option being developed is a course on histotechniques and histology of Anthozoa, to be held in Hawaii in late August 2004. This will soon be announced on these listserves, so stay tuned.

For the Summerland Key Workshop(s): Cost will be \$460 for professionals and \$320 for students (includes instructor fee and materials). Rooms will be available at TRL for an additional \$32 per night plus 11.5% taxes (\$107.04; arrive Sunday, depart Wednesday afternoon). The participant is responsible for paying for all meals and travel expenses to/from TRL. (Meals could run \$20-\$30 per day; taxi from Key West to Summerland Key is approximately \$65, although we'll try to arrange pickup from the Key West Airport; Miami is approximately 140 miles away and you'll have to arrange your own transportation from that airport to Summerland Key).

If you would like to reserve a space in one of the 2004 Coral Tissue Slide Reading Workshops, please copy the following into a new e-mail message, provide the requested information, and send it to Esther Peters at [mccarty\\_and\\_peters@compuserve.com](mailto:mccarty_and_peters@compuserve.com)

Registration fee of \$50 (applied to the cost of the workshop) will be due after you are notified of your acceptance.

## **Spaces are still available in the 2004 Central Caribbean Marine Institute Internship program.**

The internship entitled, Structure And Diversity of Coral Reefs, is a two week field program on Little Cayman Island. Participants will collect data for an ongoing health assessment project as well as documenting the biodiversity of Little Cayman reefs and how it is affected by different environmental factors. Students must be SCUBA certified prior to the start date of the internship.

The goals of this program are: (1) To increase the interest of future young scientists in coral reefs and enhance their training, (2) To learn more about coral reef communities and divulge this knowledge by means of scientific publications, and (3) To provide data that will assist in protecting these ecosystems.

Dates: July 26th - August 8<sup>th</sup> Credit available through Rutgers University. If you are interested in applying or know of somebody who might be interested please send an email to [INFO@reefresearch.org](mailto:INFO@reefresearch.org) or visit our website at [www.reefresearch.org](http://www.reefresearch.org).

Alexander Soranno  
Central Caribbean Marine Institute  
P.O. Box 1461  
Princeton, NJ 08540  
(908)-737-3725

## **Histotechniques and Histology of the Anthozoa**

Location: Hawaii Institute of Marine Biology  
Dates: Aug. 23-Sept. 1, 2004  
Instructors: Esther Peters, Ph.D., Tetra Tech, Inc.  
Kathy Price, HT, International Registry of Coral Pathology (NOAA)  
Greta Aeby, Ph.D., Hawaii Institute of Marine Biology

This workshop is intended to assist researchers in developing skills in histological techniques to further understand and interpret the histology of scleractinian corals and other anthozoans. Histology can support studies on many aspects of anthozoan biology such as their ecology, physiology, biochemistry,

reproduction, or pathology. We will introduce methods and techniques for preparing thin sections of coral tissues for examination by light microscopy to determine the condition of the tissues and cells, the animals' reproductive status, and whether any parasites or pathogens are present that might be affecting the health of the animal or its symbiotic algae. Course format will include lectures, demonstrations, and hands-on experience with all aspects of anthozoan histology. The field component of the course will include identification of local anthozoan species, specimen collection, and quantification methods for diseased corals, if present.

Participants: Graduate-level students or working professionals. Limit 12 students.

Credit: College credit can be obtained through the University of Hawaii summer course offerings. Fee: \$900 covers lab supplies, course materials, and housing

Other Costs: Participants are responsible for food (to be purchased at local grocery store and prepared onsite) and travel to/from Honolulu. There are kitchen facilities available in the dorm room. Travel arrangements to Coconut Island will be provided. Participants should provide own mask, snorkel, fins and wetsuit or diveskin. Scholarships or other types of financial support are NOT available from HIMB.

Application deadline: May 30; application form is available on our website:

<http://www.hawaii.edu/HIMB/Education/histcourse04.html>

Submit applications to: Dr. Greta Aeby Hawaii Institute of Marine Biology PO Box 1346 Kaneohe, HI 96744 email: [greta@hawaii.edu](mailto:greta@hawaii.edu)

## Change of Address

MOVING? To ensure that you continue to receive *Caribbean Marine Science*, notification of upcoming AMLC meetings and other AMLC information, please fill out the following change of address form and mail to:

Dr. Laurie Richardson  
79 Marina Avenue  
Key Largo, FL 33037  
[richardl@fiu.edu](mailto:richardl@fiu.edu)

Name & Title \_\_\_\_\_

Institution/Association \_\_\_\_\_

Address \_\_\_\_\_

Telephone \_\_\_\_\_

FAX \_\_\_\_\_

E-mail \_\_\_\_\_

Scientific Interests \_\_\_\_\_

## Dues

Individual membership dues for 2003 are \$25.00 due March 31st, 2004. You may also help AMLC with a donation membership contribution if you wish; the schedule for these is presented below. Student dues are still \$5 per year. **The AMLC can now accept credit cards (Visa or Mastercard) payments for AMLC dues!** A 5% service charge will be added to credit card payments. Checks must be in U.S. dollars, from U.S. banks (or a U.S. dollars bank draft), made out to "AMLC", and sent to Laurie Richardson.

Name & Title \_\_\_\_\_

Institution/Association \_\_\_\_\_

New Address \_\_\_\_\_

Telephone \_\_\_\_\_

FAX \_\_\_\_\_

E-mail \_\_\_\_\_

Scientific interests \_\_\_\_\_

Membership Options: Student (US\$5.00) \_\_\_\_\_  
Regular (US\$25.00) \_\_\_\_\_ Sponsor(US\$30.00) \_\_\_\_\_  
Sustaining Member (US\$50.00) \_\_\_\_\_ and  
Patron (US\$100.00) \_\_\_\_\_.

My check (bank draft) is enclosed for US\$ \_\_\_\_\_ OR Please charge US\$ \_\_\_\_\_ to my  
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## ***AMLC Background & Goals***

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*The Association of Marine Laboratories of the Caribbean (AMLC)* was founded in 1956 by marine researchers with interests in the marine science of the tropical Atlantic and Caribbean. Founded primarily as a scientific organization, the strength of the AMLC lies in the diversity of its member laboratories and the extensive expertise of its membership. Institutional, individual scientist and student memberships are available.

Annual AMLC meetings are hosted by member laboratories which are actively conducting marine research in the Caribbean. The host laboratory arranges for facilities for research presentations, copies of the presented abstracts (the proceedings) and accommodations for participants. The AMLC has no designated official language so researchers are free to make their presentations in their native language.

**Caribbean Marine Science**, published in English and Spanish, is the biannual newsletter of the AMLC and informs members of AMLC activities, pertinent events, and relevant research.

The purpose of the AMLC is to advance common interest in the marine sciences by:

- a. Assisting and initiating cooperative research and education programs
- b. Providing for a for exchange of scientific and technical information
- c. Fostering personal and official relations among members
- d. Publishing the proceedings of scientific meetings and a newsletter
- e. Cooperating with governments and other relevant organizations
- f. Other means that may be desirable.

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## ***2003-04 AMLC Officers***

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**Contributions to the AMLC Newsletter:**

All members of the AMLC (individual and laboratory) are encouraged to send relevant news items at any time, to the newsletter. Relevant news items include, but are not limited to: new facilities, faculty/staff changes, positions available, research programs and initiatives, publications of general interest, awards, visiting scientist opportunities, and education programs. Submitted items should be sent to the AMLC newsletter office by the end of February for inclusion in the Spring issue, and by the end of September for the Fall issue.

**Please send your information and comments to:**

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