

Fieldwork

Investigating Submarine Ground Water on Maryland's Eastern Shore

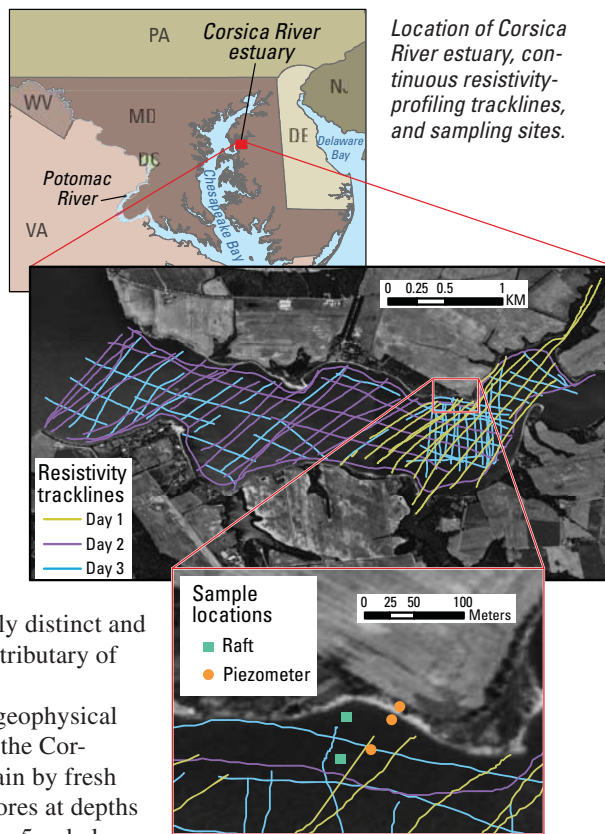
By John Bratton, John Crusius, and Kevin Kroeger

The estuary of Maryland's Corsica River, a small tributary on the eastern shore of Chesapeake Bay, was the site of fieldwork during April and May 2007. An interdisciplinary team of U.S. Geological Survey (USGS) scientists investigated submarine ground-water discharge—the movement of ground water into the coastal ocean via underwater seepage. Resource managers are concerned about nutrients entering the estuary through this pathway, leading to eutrophication, harmful algal blooms, and fish kills. The Corsica River watershed has been targeted by the State of Maryland for implementation of intensive restoration efforts to improve water quality.

The scientists sought to test hypotheses about ground-water flow under the estuary and ground-water discharge into the estuary and to constrain the results of ongoing modeling efforts by colleagues from the USGS Water Resources Discipline, including **Ward Sanford**. The team used a continuous resistivity-profiling system (a method for detecting low-salinity submarine ground water over

a large area), offshore piezometers (temporary wells used to collect ground-water samples from discrete depths), seepage meters (devices for measuring direct ground-water discharge at a particular location on the sediment surface), and a raft equipped with instrumentation to measure radon-222 (a natural tracer of ground-water discharge). This work expands on a previous investigation in the lower Potomac River estuary in September 2006, which characterized similar processes in that geologically distinct and much larger, western-shore tributary of Chesapeake Bay.

Results of sampling and geophysical measurements indicate that the Corsica River estuary is underlain by fresh ground water in sediment pores at depths of less than 1 m to more than 5 m below the sediment surface, depending on distance from shore and the presence of confining units. In some locations, low-salinity ground water may extend more than 200 m offshore, as evidenced by electrical-resistivity data. Brackish ground water that was more saline than surface water was encountered at shallow subsurface



Location of Corsica River estuary, continuous resistivity-profiling tracklines, and sampling sites.



Adrian Green (left) and **Laura Erban** sampling ground water beneath the Corsica River.

depths at sites more than 8 m from shore, indicating submarine recharge during a previous period when surface-water salinity was higher. Samples of ground water and surface water were collected for analysis of nutrients, stable isotopes, radioisotopes, and age tracers, among other parameters. Ground-water discharge and submarine recharge at the site were highly dynamic, as evidenced by changes in the salinity of ground-water samples collected at the same locations on different days, large variations in seepage-meter measurements, and fluctuations by

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Sound Waves

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Submission Guidelines

Deadline: The deadline for news items and publication lists for the October issue of *Sound Waves* is Tuesday, August 14.

Publications: When new publications or products are released, please notify the editor with a full reference and a bulleted summary or description.

Images: Please submit all images at publication size (column, 2-column, or page width). Resolution of 200 to 300 dpi (dots per inch) is best. Adobe Illustrator® files or EPS files work well with vector files (such as graphs or diagrams). TIFF and JPEG files work well with raster files (photographs or rasterized vector files).

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Can't find the answer to your question on the Web? Call 1-888-ASK-USGS

Want to e-mail your question to the USGS? Send it to this address: ask@usgs.gov

Fieldwork, continued

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a factor of three or more in surface-water radon activities during the measurement period.

John Bratton, John Crusius, and Kevin Kroeger of the USGS Woods Hole Science Center (WHSC) in Woods Hole, Massachusetts, conducted the work, with assistance from other WHSC personnel, including **VeeAnn Cross, Chuck Worley, Laura Erban, Adrian Green, and Sandy Baldwin**. Collaborators included **Jennifer Bowen**, who recently completed a term as a Postdoctoral Scientist at the Woods Hole Marine Biological Laboratory. **Bowen** performed microbial sampling in the field and prepared samples in the laboratory of **Jeff Cornwell** at the University of Maryland Center for Environmental Science Horn Point Laboratory. **Bob Shedlock**

(USGS Maryland-Delaware-District of Columbia Water Science Center) provided helpful input during the design stage of the field effort.

The work was supported financially by the USGS Coastal and Marine Geology Program (**John Haines**, Program Coordinator), the USGS Priority Ecosystems Science Program (**Scott Phillips**, Chesapeake Bay Ecosystem Coordinator), and the Maryland Department of Natural Resources (**John McCoy**, Ecosystems Restoration Division Chief). The field effort benefited significantly from the logistical support and hospitality of the Queen Anne's County Department of Parks and Recreation (**Gary Rzepecki**, Parks Superintendent) and the Corsica River Yacht Club (**Reed Rogers**, Commodore). ❁

Outreach

ISIS Teachers Visit USGS Woods Hole Science Center

By Bill Winters

For the fifth time since 1995, a group of teachers from the Institute for Science Instruction and Study (ISIS) visited the U.S. Geological Survey (USGS) Woods Hole Science Center in Woods Hole, Massachusetts. The Connecticut high-school and middle-school science teachers toured the center on March 24, along with **Gennaro Frumento** and **Scott**

Graves, coordinators of the ISIS program and professors in the Department of Science Education and Environmental Studies at Southern Connecticut State University.

ISIS, established in 1985, is an intense, 2-year interdisciplinary program directed at advanced-degree science teachers in-

(ISIS Teachers continued on page 3)



Bill Winters and Dave Mason (first and second from left) pose with 22 high-school and middle-school science teachers from the Connecticut Institute for Science Instruction and Study (ISIS), who visited the USGS Woods Hole Science Center to learn about gas hydrates and other topics of USGS research.

Outreach, continued

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terested in bringing new technologies, ideas, and discoveries into the classroom. This year's group had a tour of the Woods Hole facility, including a visit to GHASTLI (Gas Hydrate And Sediment Test Laboratory Instrument) and other instrumentation in the Geotechnical Laboratory used by **Bill Winters**, **Bill Waite**, and **Dave Mason**. The teachers received a presentation on gas hydrates and USGS gas-hydrate field and laboratory programs. They also viewed video clips about a force-12 storm weathered by the Ocean Drilling Program's JOIDES *Resolution* and about various USGS field programs.

Numerous fact sheets and Web-related handouts about gas hydrates and coastal processes (especially those in Long Island Sound) were provided for the teachers by **Nancy Soderberg** and **Cida Freitas**. During the tour of the center, the teachers also viewed hallway posters depicting ongoing gas-hydrate work



Dave Mason (right) discusses the use of pressure vessels to preserve sediment samples containing natural gas hydrate recovered during field expeditions to India, Canada, Alaska, and other offshore U.S. locations.

performed by **Debbie Hutchinson**, **Carolyn Ruppel**, and **John Pohlman**. Because each of the teachers instructs more than 100 students per day, the in-

formation gained during the Woods Hole visit potentially reaches vast numbers of students. We look forward to seeing the next group in 2 years! ❁

Meetings

DOI Officials Visit Northern Gulf Coast to View Federal Lands Affected by 2005 Hurricanes

By Dawn Lavoie and Emily Brown

The Department of the Interior (DOI) manages about one-fifth of all the surface land in the United States, much of it as wildlife refuges and national parks. When Hurricanes Katrina and Rita swept ashore along the northern Gulf of Mexico in 2005, they caused severe damage not only to human infrastructure but also to public lands managed by two DOI agencies—the Fish and Wildlife Service (FWS) and the National Park Service (NPS)—in southern Louisiana and coastal Mississippi. Restoration decisions being made in the region by the states of Louisiana and Mississippi and the U.S. Army Corps of Engineers (USACE) will affect these lands. Eight DOI officials visited the northern Gulf Coast to gather information and to meet—and facilitate joint activities with—the USACE New Orleans Division and the

Louisiana Department of Natural Resources (LADNR). The DOI team included **David Lehman**, Senior Advisor to the Secretary; **Doug Domenech**, Deputy Chief of Staff; **Kameran Onley**, Assistant Deputy Secretary with DOI ocean responsibilities; **Tim Petty**, Deputy Assistant Secretary for Water and Science; **Chris Kearney**, Deputy Assistant Secretary for Policy, Management and Budget; **Mike Olsen**, Deputy Assistant Secretary for Lands and Minerals Management; **Todd Willens**, Deputy Assistant Secretary for Fish, Wildlife and Parks; and **Paul Gugino**, Special Assistant to the Solicitor. **Mark Myers**, USGS Director, and **Suzette Kimball**, USGS Eastern Regional Director, also participated in the fact-finding tour.

Upon arrival in New Orleans, the DOI officials were given a series of short pre-

sentations: a brief overview of Louisiana's coastal history by **Dawn Lavoie**, Gulf of Mexico Science Coordinator for the USGS; a short discussion of restoration projects funded by the State of Louisiana and the USACE by **Kirk Rhinehart**, head of LADNR's Coastal Restoration Division; a review of NPS issues in the Louisiana National Parks by **David Muth**, Chief of Planning and Resource Stewardship, Jean Lafitte National Historical Park and Preserve; and a post-Katrina update on the eight southern Louisiana FWS Refuges by **James Harris**, senior biologist for FWS. The group then boarded seaplanes and flew over the city of New Orleans, southern Louisiana wetlands and restoration projects, Jean Lafitte National Historical Park and Preserve, and Bayou Sauvage

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Meetings, continued

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Seaplane tour of southern Louisiana wetlands. Left to right: **Mark Myers** (USGS Director), **Doug Domenech** (DOI Deputy Chief of Staff), and **Kirk Rhinehart** (LADNR).



Remnants of the *Chandeleur Islands* (Breton National Wildlife Refuge) decimated by Hurricane Katrina.



Loss of infrastructure and housing on the Mississippi Gulf Coast after Hurricane Katrina.

National Wildlife Refuge. Narrators in the four seaplanes were **Rhinehart**, **Lavoie**, **Shea Penland** (Director of the Pontchartrain Institute for Environmental Sciences, University of New Orleans [UNO]), and **Kate Rose** (also UNO).

The first field stop was at the Jean Lafitte National Historical Park and Preserve (Barataria Preserve), where **Muth** pointed out the habitat change after Hurricanes Katrina and Rita brought down two thirds of the canopy cover. Projects sponsored by the NPS and the State (funded under the Breaux Act) include the Barataria Basin Landbridge Shoreline Protection Project, designed to reduce shoreline erosion and protect the intermediate to brackish marshes in the preserve.

At the second field stop, **Chuck Villarubia**, LADNR project manager for the Davis Pond Freshwater Diversion Project (URL <http://www.lacoast.gov/programs/DavisPond/>), and **Rhinehart** demonstrated how the water-diversion system works by turning on the flow from the Mississippi River. During the demonstration, a record-high discharge of 13,900 cubic feet per second (cfs) was reached. **Charlie Demas**, USGS director of the Louisiana Water Science Center, monitored the discharge. The Davis Pond structure consists of four 14-ft gated square culverts, inflow and outflow channels, east and west guide levees, and a rock weir. When fully functional, the Davis Pond system will divert fresh water and nutrients, via controlled flow, from the Mississippi River into coastal bays and marshes to imitate historical spring floods, combat land loss, reduce saltwater intrusion, and establish favorable salinity conditions for wetland restoration.

At the south shore of Lake Pontchartrain, **Demas** described conditions after Hurricane Katrina with illustrations of storm surge, data collection and sampling, and search-and-rescue operations by USGS volunteers from the Louisiana Water Science Center and the National Wetlands Research Center.

The formal part of the information tour by DOI officials included a meeting with the New Orleans District office of the USACE, in which discussion centered on

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Meetings, continued

(DOI Visit continued from page 4)

how DOI can contribute to restoration activities in the region and specifically how to support planning responsibilities of the State and the USACE. The USGS plays a large role in the Science and Technol-

ogy Program that supports the Louisiana Coastal Area (LCA) Ecosystem Restoration Program. In addition to providing scientific information, the USGS hosts the Science Board, a body of nationally

recognized scientists who come together to ensure the application of rigorous scientific principles and processes to the LCA Plan and provide national perspective and oversight. ❁



Dave Muth (NPS, left) discusses transition from forest to open marsh at Jean Lafitte National Historical Park and Preserve.



Charlie Demas (USGS, left) addresses the group on the south shore of Lake Pontchartrain (lake is behind photographer).



Chuck Villarubia and **Kirk Rhinehart** of LADNR (first and second from left in photograph at left) explain operation of pilot diversion at Davis Pond to DOI visitors.



Coastal Sediments '07 Conference a Success in New Orleans

By Matthew Arsenault and S. Jeffress Williams

The U.S. Geological Survey (USGS) and its coastal and marine science research were well represented at Coastal Sediments '07—the Sixth International Symposium on Coastal Engineering and Science of Coastal Sediment Processes—held in New Orleans, Louisiana, from May 13 to 17, 2007. Scientists from the three centers of the USGS Coastal and Marine Geology Program attended the conference, presenting papers, chairing technical sessions, and staffing a prominent USGS information booth at the Intercontinental Hotel on St. Charles Street.

The Coastal Sediments specialty conference, sponsored by the American Society of Civil Engineers and first held in 1977, takes place roughly every 4 years; this year's conference theme was "Coastal Engineering and Science in Cascading Spatial and Temporal Scales." The theme was chosen, along with the venue, to stimulate and encourage papers devoted to addressing and understanding the many issues facing the community and society in managing coastal areas. In total, 197 presentations were given, with about 340 attendees representing 24 countries from around the globe. The presentations were based on peer-reviewed papers included in the conference proceedings, published as three hardcopy volumes and a CD version.

A total of 29 members from the USGS represented the Woods Hole Science Center, the Florida Integrated Science Center, and the Western Coastal and Marine Geology Team and delivered a total of 18 talks on recent research results in sessions on Barrier Island Breaching, Storm Overwash, Storms, Shoreline Change, Tsunamis, Sea Level Rise, Sediment Transport, Coastal Morphology, Remote Sensing, and Sea Floor Mapping. Some of the USGS participants were **Cheryl Hapke, Hilary Stockdon, Abby Sallenger, Jeff Williams, Walter Barnhardt, Chris Polloni, Matt Arsenault, Bruce Jaffe,**

Erika Lentz, Ph.D. student from University of Rhode Island, checks out a 3D display of sand waves in San Francisco Bay, while **Jeff Williams** (far right) talks with **Cornelia Dean**, science writer for the New York Times.



Chris Polloni (right) discusses coastal imaging and shares his 3D glasses with **Luciana Esteves**, a Postdoctoral Research Fellow from the University of Plymouth, U.K.



Jane Denny, Guy Gelfenbaum, Bob Morton, Jeff List, Laura Fauver, Bruce Richmond, Curt Storlazzi, Edwin Elias, and Mark Hansen. Many other USGS staff were coauthors on papers presented.

S. Jeffress Williams (Woods Hole Science Center) served on the CS07 Conference Steering Committee and headed up the Exhibits and Sponsorship

Coordination. This is the fourth Coastal Sediments conference that **Williams** has helped organize since 1987. **Matthew Arsenault** and **Chris Polloni** (both of the Woods Hole Science Center) staffed the USGS exhibit and distributed data products and handouts on USGS research activities. The exhibit backdrops featured images from mapping projects

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off Puerto Rico, usSEABED sea-floor-mapping data coverage, high-resolution mapping of San Francisco Bay, and the effects of Hurricane Katrina on the Louisiana coast, among other topics. Many of the activities performed by the USGS are of significant interest to the broader scientific community, and conference attendees were eager to talk about their use of data products and models produced by the USGS. The exhibit was a huge success thanks to help and materials from **Diane Welch**, **Karen Morgan**, **Laura Torresan**, **Peter Dartnell**, **Helen Gibbons**, and **Nancy Soderberg**, who supplied fact sheets, computer animations, and posters.

For more information about the conference, visit URL <http://www.asce.org/conferences/cs07/>. The next Coastal Sediments conference will be held in 2011. Mark your calendar and make plans to participate. ❁



Jeff Williams (right) presents the conference's 2007 Coastal Award to **Leo van Rijn** of Delft Hydraulics and the University of Utrecht, the Netherlands. **Van Rijn's** research has greatly influenced engineers and geologists working in the areas of coastal sediment transport and morphology change (see "2007 Coastal Award" link at URL <http://www.asce.org/conferences/cs07/>).

Awards

USGS Researchers and Academic Collaborator Win Best Paper Award at International Conference on Landslides and Climate Change

U.S. Geological Survey (USGS) scientist and Mendenhall Postdoctoral Research Fellow **Brian Collins** received the Best Paper Award at the International Conference on Landslides and Climate Change, held May 21-24 on the Isle of Wight in the United Kingdom. He wrote the award-winning paper with fellow USGS researcher **Robert Kayen** and Professor **Nicholas Sitar** of the University of California, Berkeley. Titled "Process-based Empirical Prediction of Landslides in Weakly Lithified Coastal Cliffs, San Francisco, California, USA," the paper describes recent research on the prediction of coastal-bluff landslides in response to various climate-change scenarios using indices of wave action and precipitation. The model is based on a detailed field-monitoring program conducted by **Collins** since 2001 along the coast south of San Francisco, California. The conference was attended by landslide experts from



USGS scientist and Mendenhall Postdoctoral Research Fellow **Brian Collins** (left) receives the Best Paper Award from **Councillor Roger Mazillius**, Chairman of the Isle of Wight Council, while attending the International Conference on Landslides and Climate Change on the Isle of Wight, United Kingdom.

countries around the globe, including England, Scotland, Ireland, France, Canada, Norway, Italy, Spain, Austria, Ecuador, Australia, China, and Malaysia.

The citation of the winning paper is: Collins, B.D., Kayen, Robert, and Sitar, Nicholas, 2007, Process-based empirical prediction of landslides in weakly lithified

coastal cliffs, San Francisco, California, USA, in McInnes, R., Jakeways, J., Fairbank, H., Mathie, E., eds., Landslides and climate change—Proceedings of the International Conference on Landslides and Climate Change, Isle of Wight, United Kingdom, May 2007: London, Taylor & Francis, p. 175-184. ❁

Honoring the Commitment to Excellence

By Hannah Hamilton

U.S. Geological Survey (USGS) hydrologist **Kim H. Haag** received the Distinguished Service Award of the North American Benthological Society (NABS) during the opening ceremonies at the Society's annual meeting on June 3, 2007, in Columbia, South Carolina. This award recognizes a member who has made a genuine and lasting contribution to the betterment of the Society.

During the past 15 years, **Haag** has served as chair of three important Society committees: the Local Arrangements Committee for the 1992 annual meeting in Louisville, Kentucky; the NABS Endowment Long-Range Planning Committee in 1994; and the Board of Trustees for the NABS Endowments from 1995 to 1997. Elected society Treasurer in 1997, she was re-elected twice to serve in that position for a total of nine years. Her tenure as Treasurer was described as "exceptional" by all of the Society's presidents who have worked with her. She is currently an active member of the Finance, Endow-

ment, and Conservation committees.

Haag has worked for the USGS for more than 15 years and currently manages freshwater wetlands projects in central Florida. She is one of a number of USGS employees from across the Nation who are active NABS members. Results of USGS scientific investigations are frequently presented at the annual meetings and published in the *Journal of the North American Benthological Society*.

NABS is an international scientific organization whose purpose is to promote better understanding of the biotic communities of lake, stream, and wetland bottoms and their role in aquatic ecosystems. Disseminating new investigation results, new interpretations, and other benthological information to aquatic biologists and to the scientific community at large is key to their mission. For more



USGS hydrologist **Kim H. Haag** (left) receives the Distinguished Service Award from NABS president **LeRoy Poff**. Photograph by **Mark Wetzel**, Illinois Natural History Survey.

information on NABS, visit their Web site at URL <http://www.benthos.org/>. To learn about Kim Haag's recent work, visit URL <http://fisc.er.usgs.gov/haag/haag.html>. ❁

Staff and Center News

Western Coastal and Marine Geology Team Welcomes Peter Swarzenski

By Sam Johnson

I am pleased to announce that **Peter Swarzenski** has joined the U.S. Geological Survey (USGS) Western Coastal and Marine Geology Team at the Pacific Science Center in Santa Cruz, California. **Pete** transferred from our sister Coastal and Marine Geology Team in St. Petersburg, Florida, where he worked at the Florida Integrated Science Center (FISC)'s Center for Coastal and Watershed Studies. Collaborators on both coasts will continue to benefit from **Pete's** broad expertise and knowledge of marine and ground-water geochemistry, especially in estuarine and coastal environments.

Pete received a B.S. in environmental geology from the University of Colorado, followed by M.S. and Ph.D. degrees in

chemical oceanography from Louisiana State University. His Ph.D. dissertation was titled "Non-Conservative Behavior of Select Naturally Occurring Radionuclides and Metals in Coastal Waters." **Pete** joined the USGS in St. Petersburg in 1998 as a postdoctoral researcher working with **Jack Kindinger** and **Abby Sallenger** and was subsequently hired as a research oceanographer. His USGS work has concentrated on two areas:

- Investigation of biogeochemical processes related to fluvial transport and subsequent burial of organic and inorganic constituents in Gulf of Mexico sediment, to provide better understanding of historic and current pollutant storage and transport in

this highly industrialized and fragile coastal system. This effort also includes studies of hypoxia (oxygen depletion) cycles in the Mississippi Bight. (See related article in *Sound Waves*, June 2003, URL <http://soundwaves.usgs.gov/2003/06/research.html>.)

- Integrated investigations of coastal aquifers, including study of water-rock interactions, hydrogeology, geomicrobiology, chemical and physical oceanography, marine biology, electrical geophysical techniques, and isotope geochemistry. Current work includes projects in California (Santa Barbara), Wash-

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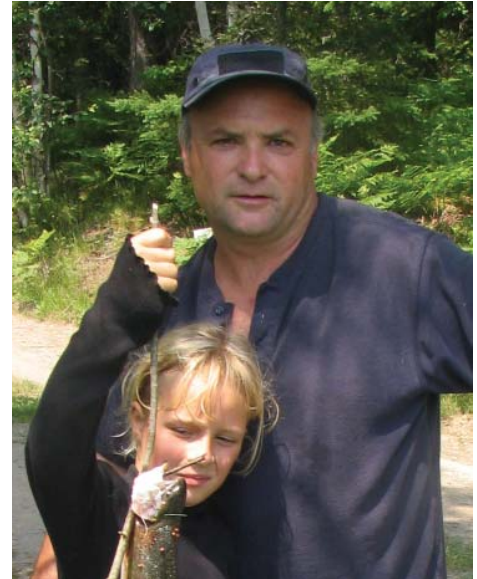
ington (Puget Sound), Florida (Florida panhandle, Biscayne Bay, Florida Bay, southeastern coastal waters, west-central Florida, Tampa Bay), and Israel. (See related article in *Sound Waves*, March 2007, URL <http://soundwaves.usgs.gov/2007/03/fieldwork2.html>.)

Pete is a member of the Geological Society of America, the American Geophysical Union, and the International Association of Geochemistry and Cosmochemistry.

Pete joined the team in Santa Cruz early this month (August 2007). He will continue his work with colleagues in St. Petersburg and Woods Hole (Massachusetts), as well as his ongoing collaborations with the Western Coastal and Marine

Geology Team's **Bob Rosenbauer**, **Eric Grossman**, and **Brian Edwards** and colleagues at the University of California, Santa Cruz. He is also assisting with initial plans for a lab that will enable the team to date cores by using lead-210 and cesium-137 and to measure groundwater flux by using a suite of short-lived isotopes; this lab will add a terrific new capability to the Pacific Science Center. Please join me in welcoming **Pete Swarzenski** to our team! ❁

Peter Swarzenski in Cape Breton, Nova Scotia, Canada, with daughter Simone, who is holding a lake trout she just caught. Photograph by Pete's wife, Pamela.



Erinn Muller Receives Master's Degree from Florida Institute of Technology

By Caroline Rogers

On May 5, 2007, **Erinn Muller** graduated with a Master's Degree from Florida Institute of Technology. **Erinn** worked with U.S. Geological Survey (USGS) scientist **Caroline Rogers** at the USGS Caribbean Field Station on St. John, U.S. Virgin Islands, from January 2004 until December 2006, conducting extensive research on elkhorn coral (*Acropora palmata*) and its potential for recovery after severe losses 20 to 30 years ago from hurricanes and disease. The title of **Erinn's** thesis is "Prevalence of disease on the coral *Acropora palmata* (Scleractinia) at Hawksnest Bay, St. John, and colony recovery from white-pox lesions." Her work is especially timely because *A. palmata* was listed in May 2006 as threatened under the Endangered Species Act. **Erinn** found that disease and bleaching associated

with record-high seawater temperatures caused the highest mortality (both of entire colonies and portions of colonies) during her 32-month study. Although mortality of entire colonies was not related to colony size, faster healing rates

for disease lesions were correlated with larger colonies. Future bleaching events, disease outbreaks, and other stressors could inhibit recovery of this significant reef-framework-building coral. **Erinn** is planning to pursue a Ph.D. degree. ❁



Erinn Muller records data on an elkhorn-coral colony with white-pox disease, in Haulover Bay inside Virgin Islands National Park. Photograph courtesy of Caroline Rogers.

New Book Integrates Wealth of Data on Continental-Margin Sedimentation

The region known as the continental margin extends from coastal plains and mountains across shorelines to shallow continental shelves and deeper continental slopes and rises. Events in this region—including sudden occurrences, such as landslides and tsunamis, and long-term processes, such as sedimentation and erosion—have great impacts on humans because so many people live near the coastal ocean and depend on its bountiful resources. Both terrestrial and marine processes operate in this region, making the sedimentary strata that form here an especially rich record of Earth history.

These strata and the processes that affect them are the subject of a new book, *Continental Margin Sedimentation—From Sediment Transport to Sequence Stratigraphy*, published by Blackwell Publishing, Ltd., for the International Association of Sedimentologists.

Released in July 2007, the new book is an outgrowth of the STRATAFORM (STRATA FORMation on Margins) program funded by the U.S. Office of Naval Research (ONR) and begun in 1994. Participants in this program, including many in the U.S. Geological Survey (USGS), sought to understand how ongoing physical and biological processes affect what gets preserved in the geologic record and, therefore, how preserved strata can be used to unravel Earth history.

“We all learned a lot from STRATAFORM,” said USGS scientist **Homa Lee**, lead author of one of the chapters of the new book, “and we now run our own projects differently, integrating studies of processes—measurements of current speeds and suspended sediment, for example—with studies of the geologic record—such as core samples and seismic images of strata beneath the sea floor.”

Like **Lee**, many contributors to *Continental Margin Sedimentation* are current or former members of the USGS Coastal and Marine Geology Program, including **Mike Field** (USGS Pacific Science Center), who is also one of the book’s editors.

According to **Field**, “The volume centers on, but goes well beyond, the pioneering results of the STRATAFORM Program. Many of us in the USGS feel fortunate to have been involved with such a landmark study, guided by the vision of ONR’s **Joe Kravitz**. Continental margins are receiving increasing attention from marine scientists and managers, and we anticipate that this book will serve as a keystone for the next level of advancement in continental-margin science.”

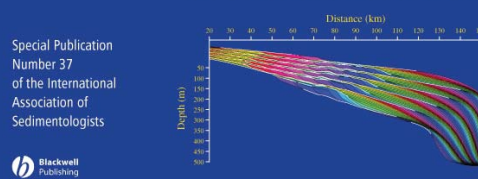
The full citation for the new volume is Nittrouer, C.A., Austin, J.A., Field,

Continental Margin Sedimentation

Edited by
C.A. Nittrouer
J.A. Austin
M.E. Field
J.H. Kravitz
J.P.M. Syvitski
and P.L. Wiberg

From Sediment Transport...

...to Sequence Stratigraphy



Cover of new book.

M.E., Kravitz, J.H., Syvitski, J.P.M., and Wiberg, P.L., eds., *Continental margin sedimentation—from sediment transport to sequence stratigraphy*: Blackwell Publishing, International Association of Sedimentologists Special Publication 37, 549 p. Additional information, including a detailed table of contents, is available online at URL <http://www.blackwellpublishing.com/book.asp?ref=9781405169349>. ❁

Recently Published Articles

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Publications, continued

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