

Fieldwork

Paleoshorelines and Spawning Groupers— Deep Diving at the Shelf Edge, Northeastern Gulf of Mexico

By Kathy Scanlon

From March 21 to 28, 2005, **Kathy Scanlon** and **Julia Knisel** of the U.S. Geological Survey (USGS) Woods Hole Science Center were in the northeastern Gulf of Mexico collecting rocks near the West Florida shelf edge. The work was conducted from the National Aeronautics and Space Administration (NASA)'s 176-ft retrieval ship *Liberty Star*, one of two ships built to recover the Space Shuttle's solid rocket boosters and return them to Kennedy Space Center for refurbishment. Owned by NASA and operated by the United Space Alliance, the ships also support other missions, such as scientific investigations.

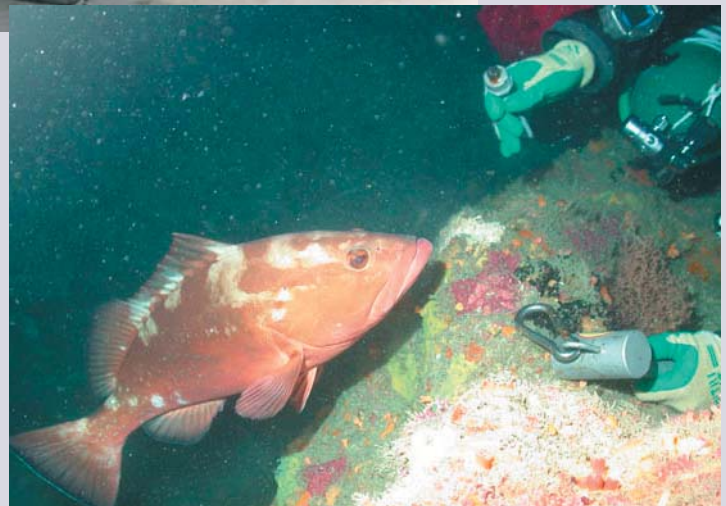
Collecting rocks at water depths of 75 m (nearly 250 ft) was not a trivial task—it required a remotely operated vehicle (ROV) equipped with video cameras, and a team of four divers qualified to do deep technical diving, breathing specially mixed gases instead of ordinary air. The divers could stay on the bottom for about 15 minutes and needed to spend 1 to 1.5 hours at shallower depths for decompression. Rock outcrops were first located using the ROV, and then the divers followed the ROV cable to the bottom and set to work quickly with chisels and sledges to collect fresh rock samples.

The cruise was part of a collaborative effort between USGS geologist **Kathy Scanlon** (Woods Hole, MA) and Florida State University (FSU) biologists **Felicia Coleman** and **Chris Koenig** (Tallahassee, FL). **Coleman** and **Koenig** are studying the effects of fishery-closed areas on spawning grouper populations. The ROV was used to assess the numbers and sizes of gag, scamp, red grouper, and other fish at numerous sites both inside and out-



Julia Knisel (USGS, right) stands by to assist technical diver **Doug Kesling** (NURC/UNCW) as he gets ready to enter the water. Each diver carried about 200 lb of gear, including four tanks (two on his back and one under each arm) in order to have enough gas of various mixtures for the deep depths and for the decompression. Photograph by **K. Scanlon** (USGS).

A curious red grouper watches as technical diver **Jay Styron** (NURC/UNCW) prepares to break off a rock sample. Photograph taken by **L. Horn** (NURC/UNCW) using the ROV.



side the protected areas, and to observe spawning behavior. Many of these fish spawn at rocky shelf-edge outcrops that are believed to have been formed along

paleoshorelines during the Pleistocene, when sea level was considerably lower. Analyses of the rocks collected on this

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Sound Waves

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Submission Guidelines

Deadline: The deadline for news items and publication lists for the July 2005 issue of *Sound Waves* is Friday, June 10.

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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cruise will help determine their age and environment of formation, knowledge that may lead to refinement of paleo-sea-level curves. It will also allow us to model where similar paleoenvironments may occur, information that is very useful for fishery management. In addition, compositional analysis may help shed light on the mystery of why groupers spawn at some outcrops but not at others.

Funding for this work came from the National Oceanic and Atmospheric Administration (NOAA)'s National Undersea Research Program (NURP) through the National Undersea Research Center at the University of North Carolina, Wilmington (NURC/UNCW), which paid for the ship time and provided the technical divers, the ROV, and the ROV operators.✻

Happy scientists **Chris Koenig, Kathy Scanlon, and Julia Knisel** (left to right) examine rock samples obtained by divers. At least two distinct rock types were recovered: a carbonate-cemented oolitic sandstone from the long ledges of the paleoshoreline outcrop and what appear to be concretions of shells and other carbonate material from shelf-edge pinnacles. Photograph by **M. Tubridy** (United Space Alliance).



Technical diver **Lance Horn** (NURC/UNCW) poses during a decompression stop. Support divers were standing by in a small boat whenever the technical divers were in the water. Additional safety for the divers was provided by a recompression chamber onboard the Liberty Star. Photograph by **D. Kesling** (NURC/UNCW).

Research

Study Shows that Introduced Foxes Transformed Vegetation on the Aleutian Islands from Lush Grassland to Tundra

By **Tim Stephens**, University of California, Santa Cruz

Huge colonies of seabirds accustomed to nesting on islands free of predators began disappearing when fur traders started introducing foxes onto islands in the Aleutian archipelago in the 18th century. The ground-nesting birds made easy meals for the foxes. A study published in the March 25 issue of the journal *Science* (v. 307, no. 5717, p. 1959-1961) now shows that

the effects of the introduced foxes rippled through entire island ecosystems, transforming the vegetation from lush grasslands to scrubby, low-growing tundra.

It turns out that the nutrient-poor volcanic soils of the Aleutian archipelago can support dense grasslands only if they receive regular doses of fertilizer in the

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Research, continued

(*Foxes on Aleutians continued from page 2*)

form of bird droppings. On islands without foxes, seabirds transfer nutrients from the ocean to the land by feeding on marine fish and invertebrates and spreading nutrient-rich guano around the islands. Add foxes, and the indirect effects on the whole ecosystem are as dramatic as the direct effects on the seabirds.

“Introduced species are a global phenomenon, and we tend to focus on the direct effects, such as the reduction or extinction of species that are consumed by an introduced predator. This study shows how the effects of introduced species can spread throughout an ecosystem in unpredictable ways,” said **Donald Croll**, an assistant professor of ecology and evolutionary biology at the University of California, Santa Cruz (UCSC), and first author of the *Science* paper.

Efforts by the U.S. Fish and Wildlife Service (USFWS) to remove introduced foxes from the Aleutian Islands have been largely successful. Seabirds are beginning to make a comeback on islands previously colonized by foxes, and in some places the vegetation has begun to look lush. But it is likely to take decades for the ecosystems to fully recover from the effects of



*Introduced arctic fox taking a least auklet, a seabird breeding in the Aleutian Islands, Alaska Maritime National Wildlife Refuge. Fox predation decimated seabird populations and reduced the guano supplied by seabirds to the Aleutians, transforming the vegetation on the islands from productive plant communities dominated by grasses to less productive communities dominated by low-lying shrubs. Photograph by **Anthony DeGange**, USFWS.*

the foxes, said **James Estes**, adjunct professor of ecology and evolutionary biology at UCSC and research wildlife biologist at the U.S. Geological Survey (USGS), who is a coauthor of the paper.

“Most seabirds only have a single offspring each year, so their capacity for population increase is quite low. The foxes are mostly off the islands now, but we will probably continue to see the effects for a long time,” **Estes** said.

In addition to **Croll** and **Estes**, the authors of the *Science* paper include UCSC gradu-

*Grass-dominated plant communities in the Aleutian Islands (left) have been transformed to communities dominated by low-lying shrubs (right) due to reduced nutrient inputs. Foxes introduced for the Alaska fur trade decimated breeding seabird populations on the islands, leading to reduced nutrient input from seabird guano. Photographs by **Croll** and UCSC staff.*



ate student **Eric Danner**, University of Montana plant ecologist **John Maron**, and USFWS biologist **Vernon Byrd**. The study grew out of conversations between **Estes**, who has been doing research in Alaskan coastal waters for decades, and **Byrd**, supervisory biologist for the Alaska Maritime National Wildlife Refuge. While working to save the endangered Aleutian Canada goose, which the foxes were driving toward extinction, **Byrd** had noticed the differences between islands with and without foxes and speculated that nutrients might play a role.

“He had these interesting ideas about foxes and birds and nutrient chains, and I thought we should do some studies to see how robust the idea is,” **Estes** said.

The team of researchers, accompanied by a small army of student assistants, conducted extensive surveys on the islands for several weeks each summer over three years. They surveyed dozens of islands from one end of the archipelago to the other. **Estes** said the differences were striking between fox-free and fox-infested islands (defined as those where self-sustaining populations of foxes persisted into the late 1990s).

“When you go to an island that had foxes, it’s very easy to walk around because the plants don’t grow much higher than your ankles. But on the other islands, it’s hard work just to get through the vegetation. It was exhausting just trying to get around on those islands,” he said.

The researchers found that the density of breeding seabirds on fox-free islands was two orders of magnitude higher than on fox-infested islands. The resulting difference in nutrient inputs was reflected in soil phosphorus levels that were more than three times higher on fox-free islands. The vegetation on the islands also showed significant differences in nutrient content.

Evidence that more ocean-derived nutrients were cycling through the ecosystems of fox-free islands than on fox-infested islands came from analyses of nitrogen isotopes in soil, plant, and animal samples.

“The terrestrial ecosystem was being subsidized by marine-derived nutrients, and the foxes basically cut off the subsidies by interrupting the flow of nutrients

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Research, continued

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coming from offshore,” **Croll** said. “It transformed the plant community from one that does well in nutrient-rich conditions to one that does well in nutrient-depleted conditions.”

Foxes were first introduced to some of the islands by Russian fur traders in the mid- to late-18th century as a way to supplement the declining harvest of sea-otter pelts. But the practice escalated between the 1890s and the 1930s, when the U.S. Government worked to establish fox-farming businesses on the islands. Mostly arctic foxes and smaller numbers of red foxes were introduced to more than 400 islands.

Byrd, who has been involved in restoration efforts in the Aleutian Islands

since 1971, said that most of the islands had major breeding colonies of seabirds before the arrival of foxes. About 26 species of seabirds regularly nest on the islands, he said, including surface nesters, such as gulls and terns, that lay their eggs on the ground; burrow nesters, such as puffins, that dig burrows in the soil for their nests; and crevice nesters, such as auklets, that nest in boulder piles and rock crevices.

According to **Byrd**, surface nesters and burrow nesters tended to disappear completely from islands with foxes, whereas populations of crevice nesters were reduced but not eliminated. Ledge nesters such as murrelets and kittiwakes, which nest

on steep cliff faces, were less affected by the foxes, he said.

“Wherever the puffins and gulls have come back after the removal of the foxes, the vegetation has started to become lush again,” **Byrd** said. “The terrestrial ecosystem was probably modified in more ways than we know, and maybe it won’t be exactly like it was, but the conditions are there for a successful restoration of the native biodiversity.”

*About the author: Article author **Tim Stephens**, who holds degrees from the University of California, Santa Barbara (B.A., botany), and Cornell University (M.S., plant pathology), is a science writer in the UCSC Public Information Office. ✪*

Outreach

Animal Ambassadors Help Educate Public About Alligators and Crocodiles in Florida

By **Hannah Hamilton**

Thousands of visitors to the U.S. Geological Survey (USGS) exhibitor booth at the 15th annual Kanapaha Botanical Gardens’ Spring Garden Festival, held in Gainesville, FL, on March 19 and 20, had an opportunity to meet representatives of two of Florida’s native species: the American alligator and the American crocodile.

These animal ambassadors for the USGS Florida Integrated Science Center (FISC) introduce children and adults to USGS environmental research on endangered species, alligator-habitat use as it pertains to Everglades restoration, and contaminant studies in the Everglades and other freshwater bodies of Florida.

Well known throughout the State, the American alligator is Florida’s top aquatic predator and an almost-routine sight in Florida’s rivers, lakes, swamps, and ponds. The American crocodile, in contrast, is rarer in Florida and much less well known than its more common cousin. American alligators live in freshwater over a range that extends from East Texas



Hannah Hamilton holds **Sam**, an American crocodile.

to North Carolina and from Florida to Arkansas. American crocodiles, though found in parts of Central and South America, have only a small population and a limited range in the United States, where they live in the southernmost part of Florida, in both fresh and brackish waters. Other differences between these animals can be seen in their:

- **Heads:** viewed from above, the American alligator has a snout that is more U-shaped, like a shovel, whereas the crocodile has a longer, more pointed nose.
- **Teeth:** the lower fourth tooth on each side of the jaw of the American crocodile is visible even with the mouth closed.
- **Coloration:** American alligators are mostly black, whereas American crocodiles are brownish gray.

A three-year-old crocodile nicknamed “Sam” by the FISC contaminants-research group represents the Federally listed endangered species studied by FISC scientists. Some of these endangered species, such as the West Indian manatee and the Gulf sturgeon, are better known than others, such as the Okaloosa darter (a small fish) and the

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purple bankclimber (a freshwater mussel). All are Federally protected species that play key roles in the ecosystems they inhabit. USGS scientists are working to better understand the impacts of changing ecosystem health and stability on these and other species that share their waters.



Herpetologist **Margaret Gunzburger** holds Sam, an American crocodile.

“Georgina,” an American alligator, helps FISC educate the public about environmental contaminants, a category that includes any physical, chemical, biological, or radiological substance which adversely affects air, water, soil, or living organisms. Thus, three-year-old Georgina serves as a reminder that the waters alligators inhabit also support Florida’s growing human population and its pursuit of recreational activities.

FISC researchers study alligators to determine the effects that bioaccumulation of contaminants has on their reproductive health. Some compounds can mimic natural hormones and alter the normal biological functions of the endocrine, reproductive, and immune systems in wildlife. Although many of the observed effects are sublethal, such problems as impaired hormone production or activity, modified adult sexual behavior, and reduced fertility, hatch-

ability of eggs, and survival of offspring can result in substantial losses in wildlife populations. ☼



Margaret Gunzburger holds Sam, an American crocodile, and booth visitor **Ann Foster** holds Georgina, an American alligator. The crocodile has a longer, more pointed snout than the alligator, one of the differences between these closely related animals.

Scientist Shares USGS Work Experience with Student Recruits

By Ann Tihansky

On March 20, **Noah Silverman** represented the U.S. Geological Survey (USGS) on a student-recruitment cruise conducted by the University of South Florida (USF) College of Marine Science. For the past three years, the College of Marine Science has hosted visiting students whom the college would like to recruit. These potential candidates are the “cream of the crop” in their science departments and have backgrounds that fit with research needs and opportunities identified by the College of Marine Science faculty committee. This year, the student recruits came from as far away as Peru and St. Thomas, U.S. Virgin Islands, and from such schools as Michigan State University, the University of Maine, Duke University, and the University of North Carolina. The cruise was an opportunity for the students to experience time aboard a large (105 ft long) research vessel while interacting with local scientists from research organizations and governmental agencies within the Tampa



Noah Silverman collecting data for an intertidal-vegetation study in the Tampa Bay estuary.

Bay area, including the Fish and Wildlife Research Institute, the Florida Institute of Oceanography, the University of South Florida (USF) Center for Ocean Technology, and the USGS.

The students left the dock aboard the Florida Institute of Oceanography’s research vessel *Suncoaster* at 9:30 a.m. for a tour of Tampa Bay that circled under

the Sunshine Skyway Bridge. They returned to the dock at 1:30 p.m. During the cruise, all the scientists spoke to the students about their work and how their organizations interact with the College of Marine Science. **Noah**, who is both a USGS scientist and a USF Marine Science student, shared his knowledge of ongoing USGS research and programs, as well as examples of collaboration between the USGS and USF and how these activities pertain specifically to students. **Noah** also provided students with samples of USGS work, including fact sheets and information about student appointments. **Nadina Piehl**, the USF Marine Science coordinator of the event, was grateful to have **Noah** as the USGS representative and said, “**Noah** was a tremendous help and influence to the prospective students.” The students were extremely enthusiastic about ongoing USGS research, and several asked **Noah** about future possibilities of working with the USGS. ☼

USGS Oceanographer Interviewed About Erosion by Hurricanes

U.S. Geological Survey (USGS) oceanographer **Abby Sallenger**, of the USGS Center for Coastal and Watershed Studies in St. Petersburg, FL, was interviewed at the National Hurricane Conference in New Orleans, where he spoke on “Coastal Impacts of the 2004 Hurricanes” at the Closing General Session on March 25, 2005. He was quoted in numerous articles in the news that morning, including the following:

- *Pensacola News Journal*
<http://www.pensacolanejournal.com/news/html/7DE31F2B-D968-4BBF-A2AF-F8175EB56A7A.shtml>
- *Florida Today*
<http://www.floridatoday.com/apps/pbcs.dll/article?AID=/20050325/NEWS01/503250340/1006>
- *Gannett News*
<http://www.news-press.com/apps/pbcs.dll/article?AID=/20050325/NEWS01/503250481/1075> (abbreviated article by author of the *Pensacola News Journal* article)
- *Naples Daily News*
http://www.naplesnews.com/npdn/news/article/0,2071,NPDN_14940_3652156,00.html [requires free registration]
- MSNBC
<http://www.msnbc.msn.com/id/7326182/>

Meetings

“Knowledge Management for Coastal and Marine Geology” Workshop Held in St. Petersburg, FL

By Dennis Krohn

The fifth annual Knowledge Management workshop was hosted by the U.S. Geological Survey (USGS) Center for Coastal and Watershed Studies in St. Petersburg, FL, from March 8 to 10. Knowledge Management is a newly established project within the USGS Coastal and Marine Geology Program (CMGP) that combines the former Knowledge Bank and Data Management projects.

More than 40 participants attended the meeting, which was held in the neighboring Fish and Wildlife Research Institute (FWRI) on the University of South Florida campus. In addition to USGS

participants from the three CMGP centers (in St. Petersburg, FL, Woods Hole, MA, and Santa Cruz and Menlo Park, CA), this year’s group included guests from the Woods Hole Oceanographic Institution (WHOI), the Lamont-Doherty Earth Observatory of Columbia University (LDEO), and the USGS Geospatial Information Office (GIO). The agenda, a list of attendees, and photographs can be viewed at URL <http://woodshole.er.usgs.gov/workshops/kmw05/>.

This year, the former Knowledge Bank team had a new product to show: USGS Monterey Bay Science (URL [http://](http://montereybay.usgs.gov)

montereybay.usgs.gov), a geographically based prototype for the Coastal and Marine Knowledge Bank, a work-in-progress that facilitates access to coastal and marine data, information, and knowledge compiled from both USGS and non-USGS sources. The prototype USGS Monterey Bay Science Web site represents the CMGP initiative to present interdisciplinary scientific information (see article in *Sound Waves*, November 2004, at URL <http://soundwaves.usgs.gov/2004/11/research3.html>). **Rex Sanders** (CMGP, Santa Cruz, CA) demonstrated the Monterey Bay node twice: once at the meeting and a second time for employees at the USGS St. Petersburg office. Initial feedback from primarily outside users has been positive, with most users encouraging further development of the Monterey Bay Web site.

The plenary presentations included a description of the National Assessment Program by **Hilary Stockdon** (CMGP, St. Petersburg), as well as presentations of other organizations’ databases by **Bill Haxby** (LDEO) and **Bruce Tripp** (WHOI). The Knowledge Management team has been tasked with developing a nationwide product on the topic of

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USGS Coastal and Marine Knowledge Management workshop participants on a field trip to Fort Desoto Park on March 10. From left to right: **Chris Polloni**, **Alan Allwardt**, **Dennis Krohn**, **Jonathan Childs**, **Shawn Dadisman**, **Lori Hibbeler**, **Fran Lightson**, **Clint Steele**, **Debbie Hutchinson**, **Brian Buczkowski**, **Carolyn Degnan**, **Jolene Shirley**, **Rob Wertz**, **Nancy Soderberg**, **Rex Sanders**, **Dave Foster**, and **Dann Blackwood**. **Gregg Brooks** and **Bekka Larsen** (not pictured) from Eckerd College led the field trip.

Meetings, continued

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Coastal Change Hazards. This task is part of a move toward organizing information by topic, although the earlier practice of organizing information by geographic region will be retained in particular cases. **Hilary** described CMGP Coastal Change studies, their goals, and how they relate to the National Assessment of Coastal Change Hazards. After **Hilary's** presentation, **Karen Morgan** and **Kristy Guy** (CMGP, St. Petersburg) sat in on a session on how best to integrate Knowledge Management planning with the current National Assessment priorities.

Tom Gunther (GIO, Reston, VA) and **Sky Bristol** (GIO, Denver, CO) represented the USGS Geospatial Information Office at the meeting, where they provided a USGS-wide perspective, noting that the work being done in the Knowledge Management project of the Coastal and Marine Geology Program has value for all USGS science programs and projects. Topics addressed by the Knowledge Management project—including digital libraries, scientific data-archival tools, data rescue, bibliographical tools, data-management plans, and photo servers—are all topics that must also be addressed by the entire USGS. The GIO representa-

tives expressed their appreciation for the opportunity to participate in the conference and their eagerness to work with CMGP on knowledge-management issues generally and on specific near-term goals, such as planning and cosponsoring a USGS-wide knowledge-management workshop and working with a Central Region project to apply knowledge-management tools in a portal environment. Since the meeting, CMGP and GIO staffs have written a memorandum of cooperation and have been included in the early planning stages of a USGS-wide digital-library meeting.

On the data-management side, **Jim Flocks**, **Shawn Dadisman**, and **Karynna Calderon** (CMGP, St. Petersburg) demonstrated the combined efforts of USGS and academic collaborators on managing geologic data sets from the Louisiana coastal zone. A wide range of data types (such as sediment-sample analyses, geophysical profiles, and raster-image base maps) is integrated with spatial data to provide processing and visualization capabilities using standard geographic-information-system (GIS) and Internet browsing tools. The integrated geodatabase also serves as a digital archive of al-

most any type of data and can be quickly and easily expanded.

Fran Lightsom (CMGP, Woods Hole) continued the data-management discussions by making a strong argument for a photoserver to be included in the next round of portal tools. **Rex Sanders** completed the formal presentations with a proposal for a “Self-service Online Digital Archive” (SODA). The proposal generated a lot of discussion, and the first tentative steps in developing such an archive have been taken in Woods Hole.

After two days of rainy weather, atypical of Florida, the skies cleared on the meeting's last day for a field trip to Fort Desoto Park, led by **Gregg Brooks** and **Bekka Larsen** of Eckerd College. The dynamic coastal changes observed in the park put a real-world face on many of the abstract issues discussed during the meeting. **Gregg** described the positive effects of a new bridge that has replaced part of a causeway leading to the park, thus improving circulation in the park's waterways. A photograph and an article about the bridge are posted on the Web at URL <http://www.baysoundings.com/wint05/bridge.html>. ❁



The “data booth” at Fort Desoto Park was a natural attractor for workshop participants (left to right) **Rob Wertz**, **Shawn Dadisman**, **Alan Allwardt**, **Dennis Krohn**, **Jon Childs**, **Fran Lightsom**, **Nancy Soderberg**, **Carolyn Degnan**, **Clint Steele**, and **Brian Buczkowski**. The booth's original function was to convert the coordinates of a target to elevation and azimuth settings for the fort's guns.

Staff at USGS National Wetlands Research Center Receive Awards

By Gaye Farris

Staff members of the U.S. Geological Survey (USGS) National Wetlands Research Center have recently received recognition for their services.

USGS contractor **Gabrielle Boudreaux Bodin**, IAP World Services, Inc., received an outstanding-stewardship award from the Coalition to Restore Coastal Louisiana (URL <http://www.crcl.org/>), and the research center's publishing staff received regional and international awards of distinction from the Society for Technical Communication (URL <http://www.stc.org/>) for a map and poster they produced.

Bodin's award was for her work as outreach coordinator for the Coastal Wetlands Planning, Protection and Restoration

Act's task force. (Visit URL <http://www.lacoast.gov/> and scroll down the page for a link to information about the act.) **Bodin** was responsible for strategic planning, implementing the outreach program, and serving as a liaison for several Federal and State agencies, as well as nongovernmental organizations.

Bodin has attended numerous conferences and workshops throughout the Nation to raise awareness about Louisiana coastal-land loss. Additionally, a brochure produced by **Bodin's** outreach team, "Turning the Tide, the Fight to Keep Coastal Louisiana on the Map" (URL <http://www.lacoast.gov/freestuff/brochures/turningTheTide.htm>), has

received an award from the National Association of Government Communicators (URL <http://www.nagc.com/>).

Publishing staff members **Natalie Trahan**, IAP World Services, Inc., and **Susan Lauritzen**, USGS visual-information specialist, accepted an award from the Houston Chapter of the Society for Technical Communication for the "Circumpolar Arctic Vegetation" map and poster (URL <http://www.geobotany.uaf.edu/cavm/>). **Trahan** and **Lauritzen** accepted the award on behalf of the USGS as well as its partners in the project, the University of Alaska Institute of Arctic Biology and the U.S. Fish and Wildlife Service.

The Houston award automatically

qualified the map and poster for the society's international competition where it also was deemed distinguished. These are the fourth and fifth awards that this map and poster have received. The map, featuring informational text and photographs, was named distinguished in the Technical Publications-Informational Materials category. ❁



USGS media specialist contractor **Gabrielle Boudreaux Bodin**, IAP World Services, Inc., receives an outstanding-stewardship award from the Coalition to Restore Coastal Louisiana.



USGS graphics contractor **Natalie Trahan**, IAP World Services, Inc., left, and **Sue Lauritzen**, USGS visual-information specialist, right, accept publishing awards from **Cindy Pao**, president of the Houston Chapter of the Society for Technical Communication.

Employee Recognized for Providing Updated Topographic Maps to Police in Falmouth, MA

David Nichols, Associate Chief of Operations at the U.S. Geological Survey (USGS) Woods Hole Science Center in Woods Hole, MA, has received a Certificate of Appreciation from the Falmouth Police Department for assisting an investigation by providing geographic-information-system (GIS) and topographic maps of the local area.

The maps were requested for use by search teams in a missing-persons investigation, which became a homicide case when the victim's remains were discovered buried beneath jetty rocks in Woods Hole. The case began in September 2003, when the victim was first reported missing, and ended in October 2004, when the murderer was convicted

and sentenced to life imprisonment without parole.

At a ceremony held April 8, 2005, Falmouth Police Chief **David F. Cusolito** presented awards to those involved in the murder case, saying that if he remembers nothing else from his years of service, he will remember how officers and agencies

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Awards, continued

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came together and gave “everything they could give in order to solve a crime.” Additional information about the case and the awards ceremony is available in a news article at URL <http://www.capenews.net/news/general+news/story.php?id=4234>.

Dave was asked early in the case if the USGS could provide maps for search teams composed of the Falmouth Police Department, the Massachusetts State Police Special Emergency Response Team, and the Barnstable County Sheriff’s Department. He contacted GIS specialist **VeeAnn Cross**, also of the USGS Woods Hole Science Center, and facilities manager **Ernie Charette** of the Woods

Hole Oceanographic Institution for help in locating current GIS and topographic information. Fortunately, the Woods Hole Oceanographic Institution was in the middle of a construction project and could provide updated topographic data that **Dave** passed along to the police.

The USGS Woods Hole Science Center has received various requests for assistance from the community over the years. Typically, the center is asked to help search for downed aircraft or sunken boats using sea-floor-mapping tools such as sidescan sonar. **Dave** recalls a few such cases in the past 20 years, including one in the early 90s in which he used

sidescan sonar to locate a fishing vessel out of New Bedford that sank off Martha’s Vineyard in a northeast gale. Notes **Dave**, “We feel that this is a good way to support our local community by being responsive neighbors, and we try to lend assistance where needed.”

At the recent awards ceremony in Falmouth, **Chief Cusolito** expressed his appreciation for such responsiveness, saying, “The investigation of this incident serves to illustrate a high spirit of cooperation between State, local, and civilian entities that are more than willing to pool their collective resources” to achieve a common goal. ❁

Staff and Center News

In Memoriam: Polly Hastings

By Jamey Reid and Ellen Mecray

The U.S. Geological Survey (USGS) Woods Hole Science Center announces with great sorrow the April 3, 2005, death of Oceanographic Data Specialist **Polly Hastings** of the Coastal and Marine Geology Program at her sister’s home in Osterville, MA, of cancer. She was 58.

Polly joined the USGS in 1978 and until 1989 was part of a team studying the transport and fate of sediment. **Polly** played a key role in processing and archiving large time-series data sets obtained from moored instruments deployed along the U.S. continental margins. During this period, she spent most of her time ashore

but also participated in research cruises to deploy and recover instruments.

Polly left the USGS briefly and returned in 1994 as a database manager responsible for maintaining, verifying, and responding to data calls regarding the contaminated-sediment and east-coast sediment-texture databases. She also assisted in developing and testing software for the center’s sediment laboratory. In addition, she worked on the Marine Aggregates project, compiling and verifying data for the usSEABED data collection (see article in *Sound Waves*, March 2002, at URL <http://soundwaves.usgs.gov/2002/03/meetings5.html>).



Polly and her horse, Jamie.

More recently, **Polly** came full circle in her project work, returning to physical-oceanography data sets to make significant contributions to the following projects: the Fate of Sediments and Contaminants in Massachusetts Bay, the South Carolina Coastal Erosion Study, Monterey Canyon Currents and Sediment Transport Studies, and Studies of Polluted Sediment Offshore Los Angeles.

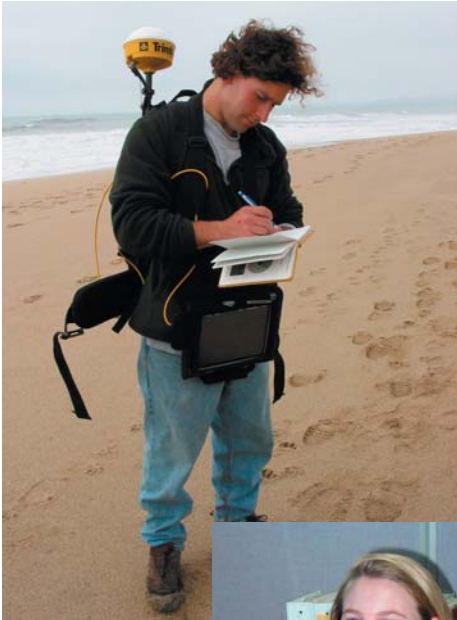
In her personal life, **Polly** enjoyed birdwatching, cooking, swimming, and spending time with her horses, Foggy and Jamie, as well as her cats, Oscar and Nigel. Although she enjoyed spending most of her free time at her home on Cape Cod, in March 2005 she fulfilled a dream to go to the Galápagos Islands, where she snorkeled and saw the amazing breadth of life in the exotic animals that inhabit the islands.

Polly was a valued colleague and friend to many. She was a long-term contributor to USGS research; her productivity, dedication to the highest standards of data quality, and good spirits will be sorely missed. ❁

Scientific crew of the research vessel Oceanus during a cruise off Massachusetts in fall 1984: (left to right) Polly Hastings, Carol Parmenter, Andy Eliason, Mike Bothner, Joe Newell, Brad Butman, Rick Rendigs, Bill Strahle, John Larson, John Moody, Greg DeLisio.



New Mendenhall Postdoctoral Fellows to Join Western Coastal and Marine Geology Team



Brian Collins performing digital geologic mapping of the Half Moon Bay coastline, California.



Amy Draut

Of 12 candidates selected to begin U.S. Geological Survey (USGS) Mendenhall Postdoctoral Fellowships in Fiscal Year 2006, three will join the Western Coastal and Marine Geology team:

- **David Finlayson** (University of Washington) will conduct a project entitled “Integrating Sediment Dynamics and Ecosystem Processes in Coastal Environments,” working with research advi-



David Finlayson and his daughter **Madrona (Maddie)** on Cama Beach (Camano Island, Puget Sound, WA).

sors **Guy Gelfenbaum, Peter Ruggiero, Jon Warrick, Jessica Lacy, Eric Grossman** (all USGS), and **Charles Simenstad** (University of Washington).

- **Amy Draut** (Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program) will conduct a project entitled “Modeling Transport and Sedimentation Processes in Watersheds and Coastal Regions,” working with USGS research advisors **Dan Hanes, Dave Rubin, Marlene Noble, and Jingping Xu**.
- **Brian Collins** (University of California, Berkeley) will conduct a project entitled “Ultra High-Resolution and High Frequency Change-Detection of Beach Face and Coastal Sea-Cliffs,” working with USGS research advisor **Rob Kayen**.

The team looks forward to welcoming these researchers in FY2006 and benefiting from their contributions. For more information about the USGS Mendenhall Postdoctoral Fellowship Program, visit URL <http://geology.usgs.gov/postdoc/>. ❁

New Operations Assistant Joins the Western Coastal and Marine Geology Team

Kathleen Donahue joined the U.S. Geological Survey (USGS) Western Coastal and Marine Geology team in March as the team’s new Operations Assistant at the USGS Pacific Science Center in Santa Cruz, CA. **Kathleen** comes to the team with more than 10 years of experience in research and administrative support in the local marine-sciences community. Her most recent position was as the PISCO (Partnership for Interdisciplinary Studies of Coastal Oceans) Project Coordinator at the University of California, Santa Cruz (UCSC) Marine Science Campus, where she was responsible for laboratory and field logistics, permits, travel, purchasing, and budget

management and also organized several conferences and workshops. Previously, **Kathleen** worked at the Monterey Bay Aquarium Research Institute (MBARI) as the project coordinator for construction of the research vessel *Western Flyer*. Her B.A. is from UCSC, where she majored in theater arts and film.

Kathleen is excited to become part of WCMG and looks forward to meeting and working with team members. Please stop by and welcome her when you are in Santa Cruz. ❁

Kathleen Donahue and her son, **Azure**, at Seacliff State Beach (Aptos, CA).



New Book on Coral Reefs of the U.S. Virgin Islands

By **Caroline Rogers**

A beautifully produced book entitled *The State of the Coral Reefs of the U.S. Virgin Islands* was published on March 11 by the Ocean Conservancy; it can be downloaded for free from the conservancy's Web site at URL <http://www.oceanconservancy.org/>.

The new book's primary authors are **Nicolas Drayton**, Caribbean Ecosystems Program Manager for the Ocean Conservancy; **Caroline Rogers**, marine ecologist with the U.S. Geological Survey (USGS); and **Barry Devine**, chief scientist at the



Brain coral with black-band disease, Waterlemon Cay, Virgin Islands National Park. A black band separates the white coral skeleton from the live coral tissue. Photograph by **Caroline Rogers**, USGS, from *The State of the Coral Reefs of the U.S. Virgin Islands*, available at URL <http://www.oceanconservancy.org/>.

Eastern Caribbean Center, University of the Virgin Islands. The book is the result of collaboration among people from several Federal and local agencies and nongovernmental organizations, including the USGS, the National Park Service, the Ocean Conservancy, the University of the Virgin Islands, the U.S. Virgin Islands Department of Planning and Natural Resources, and the Island Resources Foundation.

Written for a nontechnical audience with clear language and many photographs, the book has sections on general reef ecology, the current status of the

reefs, associated ecosystems such as seagrass beds, historical and current research, threats to coral reefs, and challenges for management. It also features interviews with local fishermen and residents who speak about the changes that have occurred during their lifetimes, including loss of living coral, increase in algae, and decline in fish abundance. The book emphasizes that the reefs in the Virgin Islands, despite deterioration, are still worth protecting and that people can change their actions to reduce stressors and encourage reef recovery. ❁



Cover of *The State of the Coral Reefs of the U.S. Virgin Islands*, a book recently published by The Ocean Conservancy and available at URL <http://www.oceanconservancy.org/>.

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