

Fieldwork

There's Room for Shorebirds, Too

By Kevin D. Lafferty

Think of southern California, and images of beach, sun, and surf come to mind, coupled with boundless recreation opportunities for beachgoers. What's missing from these images? Shorebirds. Disturbance by people and their pets is causing shorebirds like the threatened western snowy plover to seek more remote locations. Can protection of small areas of special habitat provide important sanctuaries for these birds, with relatively little impact to the beachgoing public?

To investigate this question, **Kevin Lafferty**, a marine ecologist with the USGS Western Ecological Research Center in Santa Barbara, CA, conducted a preliminary beach trial last summer at Coal Oil Point Reserve, a public beach in Santa Barbara.

Kevin observed that human activity at the reserve often displaced shorebirds that were approached within 20 yards; 10 percent of humans and 40 percent of dogs disturbed shorebirds, most of which flew when disturbed. Unlike most other birds, threatened western snowy plovers hid from people up on the dry sand instead of moving. Still, each snowy plover was disturbed about 115 times per week, 16 times more than at remote or protected areas. Despite disturbance, the snowy plovers stayed faithful to their preferred habitat around a lagoon mouth, although they were less abundant near beach-access points.

Kevin noted the types of disturbance snowy plovers were most sensitive to, measured the distance at which they reacted to disturbance, and determined the preferred habitat of plovers within a 3-km stretch of beach designated as critical habitat for the population. He then developed a mathematical model that predicted the optimal amount of habitat to set aside to maximize protection of plovers with minimal inconvenience to beach users.

A preliminary trial began last summer to help buffer a snowy plover chick and



*Can sunbathers, pets, and surfers share the beach with this newly hatched snowy plover chick? Photograph courtesy of **Todd Huspeni** (University of California, Santa Barbara).*

its father from disturbance. A rope fence denoted the boundaries of the sensitive area. People could walk along the water's edge for a 300-yard stretch, but were asked not to enter the adjoining dry sand around the lagoon. Volunteers staffed the area to encourage people to respect the closed area and to comply with the local dog-leash ordinance.

The result? Disturbance to snowy plovers and other birds decreased dramatically, helping the plover chick successfully fledge.

Snowy plover densities increased inside the fenced area. In addition, the number of least terns, an endangered species, increased six-fold. In total, the abundance of birds in the protected area increased nearly fourfold. Counts of birds outside the fence remained largely unchanged, suggesting that additional birds were entering the protected area.

The fence, which is still in place, allows birds to sit in one spot without being forced away within a few minutes. In addition, other birds flying along the coast may notice a lot of birds sitting on the beach, realize the area must be a safe place to rest for a spell, and fly in.

Most beach users walk along the wet sand near the water's edge and are not affected by the fence, which encloses only dry sand. During the preliminary trial, fewer than 5 percent of the people using the beach had to choose a different patch of dry sand to sit on. Interviews with beachgoers revealed that many people valued the increased opportunity to view wildlife, and even more said they were glad that the minor inconvenience was an alternative to beach closures used elsewhere to protect endangered birds. ❁



*A rope fence marks an area reserved for shorebirds to rest undisturbed by people and their pets, in a preliminary trial last summer at Coal Oil Point Reserve. Photograph by **Kevin Lafferty**.*

Sound Waves

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Submission Guidelines

Deadline: The deadline for news items and publication lists for the March issue of *Sound Waves* is Friday, February 22.

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

Geophysical Survey of the Northwest Australian Margin

By Uri ten Brink

During October and November 2001, the USGS, in cooperation with scientists from the Scripps Institution of Oceanography, the Lamont-Doherty Earth Observatory, and the University of Hawai'i, conducted a seismic survey of the Exmouth Plateau and Cuvier Basin offshore northwestern Australia aboard the R/V *Maurice Ewing*.

The Exmouth Plateau is a shallow, submergent continental margin, several hundred kilometers wide, that contains the largest oil-producing fields in Australia. To the south, a narrow shelf, less than 100 kilometers wide, characterizes the adjacent Cuvier Basin. Both shelves have been extensively modified by volcanic activity during continental rifting and the early formation of ocean floor. The structure and geologic history of these areas are analogous to those of the Blake Plateau and the Baltimore Canyon Trough offshore the southeast coast of the United States. Unlike their U.S. counterparts, however, the Australian shelves have only a thin (less than 1 km) cover of postrift sediment. The thinness of cover facilitates both direct sampling (through drilling) and remote

sensing (through seismic methods) of the rift and crustal structure.

During the cruise, the group collected both multichannel seismic (MCS) reflection data and wide-angle seismic-reflection and -refraction data. The MCS data were collected with a streamer (6 km long) with 480 hydrophone groups. The sound energy was generated by the R/V *Ewing's* large airgun array. The wide-angle seismic data were collected with 22 ocean-bottom seismometers (OBS's) from the Ocean-Bottom Seismometer Facility at Scripps. The OBS data were processed and modeled on board by **Uri ten Brink** with the aid of Lamont student **Mike Tischer**, using the Woods Hole Field Center's RayGui software.

Preliminary results show the crustal structure of these margins to be highly unusual. Continental structures extend far into the abyssal plain, where magnetic anomalies were previously interpreted to indicate the existence of oceanic crust.

The scientists and crew on board also took some time from probing the Earth to watch a fantastic display of the Leonid meteorite shower in the heavens above. ☼

Research

What's Wrong with the California Sea Otter?

By James A. Estes

Some of the most important insights about wildlife populations come from retrospective analyses of data and records that accumulate over years, decades, and even centuries. Biologists from the USGS Western Ecological Research Center, California Department of Fish and Game, and Smithsonian Institution recently undertook such analysis in an effort to better understand why the threatened California sea otter is doing so poorly.

Information on the abundance and distribution of California sea otters has been re-

corded since the early 1900's, and beach-cast sea otter carcasses have been recovered and salvaged since 1968. The salvage records contain many different kinds of information, including age, sex, location, date, body condition, and cause of death. By 1999, the salvage database had grown to include 3,105 records.

Our analysis was more or less a "fishing expedition"—a search for the proverbial needle in a haystack—which we hoped

(*Sea Otter continued on page 3*)

Research, continued

(Sea Otter continued from page 2)

would provide clues about why the California sea otter population has grown at such a sluggish rate during the best of times and why it is currently in decline. Our approach was to characterize overall patterns in this unique database, and especially to contrast periods of population growth and decline.

These efforts provided important insights. Overall, we were able to determine that the carcasses of an estimated 40 to 60 percent of dead sea otters were not recovered and that 70 percent of the sea otters whose carcasses were recovered died from unknown causes, thus creating considerable uncertainty about population-level assessment from the carcass record. Nonetheless, the high proportion of prime-aged adults (3 to 10 years old) in this record explains why the population has not grown more rapidly.

Prime-aged adults, and animals for which cause of death was unknown, were more common in the carcass record during periods of population decline. Carcasses of sea otters killed by white-shark attacks also were more common during the periods of decline. A disproportionately large number of carcasses were recovered during spring and summer, and this pattern was more pronounced during the periods of population decline. Per capita pup production and mass/length ratios of adult carcasses declined over the 31-year period examined in the study, indicating that environmental conditions for otters are



California sea otters had been hunted to near extinction by 1911, when unregulated hunting of sea otters was stopped. Slow growth occurred with protection, but the population currently appears to be roughly stable or possibly in slow decline. Scientists are studying information accumulated over decades for clues that might explain why the California sea otters' population growth has been so sluggish. Photograph courtesy of Friends of the Sea Otter.

deteriorating. However, neither measure varied consistently between periods of population increase and decline.

Neither sex composition nor the proportion of carcasses of sea otters that died of infectious disease varied significantly between the periods of population increase and decline, although the overall high proportion of deaths from infectious disease suggests that this factor has contributed to the chronically sluggish growth rate of the California sea otter population. The population decline from 1976 to 1984 was likely due to sea otters drowning after being caught unintention-

ally in gill nets; population growth resumed when gill nets were transferred farther offshore. There is correlative evidence that the population decline from 1995 to 1999 is associated with a developing live-fish fishery, although further information is needed to establish a causal relationship. (The live-fish fishery is a relatively new industry along the central California coast that uses box traps to catch live fish for sale to restaurants specializing in very fresh fish. Caught in shallow water without hooks, the fish can be returned unharmed if undesirable or undersize.)

Outreach

Stellwagen Bank National Marine Sanctuary Region Web Site

By Sarah Fuller

A Web site for the Stellwagen Bank National Marine Sanctuary has been added to the Woods Hole Field Center (WHFC)'s list of project pages as part of the USGS National Geologic Studies of Benthic Habitats. The new Web site (URL: <http://woodshole.er.usgs.gov/>

[project-pages/sbnmsweb/](http://woodshole.er.usgs.gov/project-pages/sbnmsweb/)) contains a list of publications and CD-ROMs, which include topographic, sun-illuminated, and backscatter-intensity maps of the sea floor in the sanctuary. Other highlights of the Web site include images of geologic features in the

sanctuary and 200 photographs of the sea floor, organized by habitat and fauna type.

Page Valentine heads the Stellwagen Bank Mapping Project. Other contributors to the Web site are **Sarah Fuller**, **Kara Hass**, and **Tammie Middleton**.

Science Mentoring

By Sarah Jablonski

Members of the Woods Hole science community recently had the opportunity to volunteer at the Lawrence School in Falmouth, MA, through the Woods Hole Science and Technology Education Partnership (WHSTEP). Scientists, including **Sarah Jablonski** of the Woods Hole Field Center (WHFC), guided 7th-

and 8th-grade science students in the early stages of planning their science projects to help them to develop their ideas. According to **Sarah**, the students were very enthusiastic. There were many different and interesting project ideas. Participants had a lot of fun and **Sarah** received several handmade thank-you

cards. Mentors will be back at the Lawrence School in a couple of weeks to see how the students' projects are coming along and to offer more guidance. If anyone from WHFC would like more information or would like to volunteer, please contact Molly Cornell at mcornell@cape.com. ❁

Woods Hole Field Center Food Drive

Last month, **Sarah Jablonski** organized a food drive for the Woods Hole Field Center holiday party. All donations were given to the Falmouth Food Bank. The Falmouth Service

Center was delighted and grateful for the gifts. Thanks to all for supporting Falmouth families in need during the holiday season. Special thanks to **Sarah** for her efforts. ❁



Meetings

Coastal and Marine Geology Program Planning Meeting, Palo Alto, CA

By Becky Deusser

Approximately 80 scientists from the USGS Coastal and Marine Geology Program (CMGP) gathered in Palo Alto, CA, in mid-January to participate in the development of a new, long-term science plan for the program. This meeting was the first in several years to bring together a large number of scientists from all the program centers.

Facilitated by **Susan Warner** (LEAD Alliance), the 4 1/2-day meeting gave participants a forum in which to share information about their current research and their visions for the program's future.

The meeting was structured around seven themes: (1) Resources, Minerals, Ground Water, and Energy; (2) Habitats, Coral Reefs, Watersheds, and Wetlands; (3) Erosion, Storms, Sea Level, and Subsidence; (4) Earthquakes, Tsunamis, and Landslides; (5) Pollution and Contaminated Sediments; (6) Emerging and

Critical Technologies; and (7) Regional Synthesis and National Knowledge Bank. A typical day consisted of a morning session on one theme and an afternoon session on another. The seven themes were introduced in 40-minute overview presentations by **Jeff Williams, Mike Field, Bob Morton, Eric Geist, Mike Bothner, Chris Sherwood, and Brad Butman**, respectively. Each overview presentation was followed by a set of 5-minute open-forum talks and a panel-led discussion about the session's theme. A late-afternoon poster session introduced the next day's themes and gave participants a chance to learn more about each other's research.

The final afternoon was a wrapup session entitled "Seeking a Consensus on CMGP Science Priorities." As the session opened, participants were charged to address such questions as: In what ar-

reas can CMGP become a leader? What makes CMGP unique, or what is our niche? How can CMGP improve its public impact? During the wrapup session, participants were divided into seven groups according to the chosen themes. Group members were tasked to define a single research goal for their studies that could be accomplished over the next 5 years. Members also identified five to seven key science questions surrounding the research goal.

The wealth of information and insights that came out of the workshop is being used by the organizing committee, including **John Haines, Jeff List, Tom Parsons, and John Brock**, to put together a long-term plan for the program. ❁

Curt Mobley is Guest Speaker in St. Petersburg

By Tonya Clayton

The Center for Coastal and Regional Marine Studies (CCRMS) was pleased to welcome **Curt Mobley** to St. Petersburg, FL, for a series of talks on December 12 and 13. **Curt** is Vice President and Senior Scientist at Sequoia Scientific, Inc., in Seattle, WA. He is the author of the highly acclaimed text, *Light and Water: Radiative Transfer in Natural Waters*, as well as the *Hydrolight* radiative-transfer software package. In collaboration with the College of Marine Science at the University of South Florida (USF St. Petersburg campus), the center cohosted three seminars that were highly relevant to USGS research on benthic productivity and remote sensing in shallow marine environments. These talks attracted a good turnout, with scientists attending not only from CCRMS and USF, but also from Mote Marine Laboratory in Sarasota and the USGS Water Resources office in Tampa.

Curt's first talk was titled "Phase Function Effects on Oceanic Light Fields." The phase function of a particle—for example, a clay particle suspended in saltwater—can be thought of as describing the directions in which incident photons are likely to be scattered upon interaction with the particle. Because scattering processes are quite difficult to measure, the phase functions of various types of particles tend to be largely unknown. In this talk, **Curt** discussed the various assumptions typically required when modeling scattering processes in natural waters, as well as the implications of those assumptions. With an unusually comprehensive data set collected during the U.S. Navy's Hyperspectral Coastal Ocean Dynamics Experiment, he demonstrated that using a phase function with the correct backscatter fraction and overall shape is crucial to achieving model-data closure.

Curt's second talk was on the "Effects of Optically Shallow Bottoms on Upwelling Radiances." Drawing on his

experience with the U.S. Navy's Coastal Benthic Optical Properties field experiment, **Curt** discussed the complexities of modeling remote-sensing reflectance and other optical quantities in shallow coastal environments. In particular, he discussed and quantified the problems that arise when a shallow sea bottom is non-Lambertian (that is, when light is not scattered equally in all directions after striking the bottom), when the bottom surface is sloping, or when the bottom surface is of more than one bottom type (for example, both seagrass and coralline sand). These conditions are particularly problematic for nonspecialists in radiative transfer, because off-the-shelf radiative-transfer models typically rely on the assumptions of a Lambertian bottom reflector, a flat bottom, and horizontal homogeneity. **Curt's** talk brought good news because he discussed how the effects of these real-world complexities can be accounted for by users of *Hydrolight* or other computationally efficient radiative-transfer models. These results are especially pertinent for USGS efforts to apply the tools of remote sensing to coral reefs or other shallow aquatic environments.

Curt's third talk was on "Multi-disciplinary Applications of Radiative Transfer Modeling." Although radiative transfer might seem at first glance to be a bit of an arcane topic, understanding and predicting how photons propagate through



Curt's "honorarium" for his three seminars was a guided trip to manatee country. Owing to unseasonably warm December weather, he encountered no manatees but was happy to see lots of great Florida geology. Here, he stands by spring waters bubbling to the surface near the head of Potter Creek.

natural waters actually have great relevance to a tremendously broad range of Earth-science topics. Particularly pertinent to USGS interests, for example, is understanding how suspended sediment in estuarine waters affects seagrass beds or how water depth influences remotely sensed images of coral reefs. In his final talk, **Curt** outlined some basic principles of radiative-transfer modeling and provided many examples of how this tool is currently being used by scientists in the fields of life, Earth, and ocean sciences. ❁

Gulf of Mexico Integrated Database Workshop Held in St. Petersburg, FL

By Heather Mounts

The USGS Gulf of Mexico Integrated Database Workshop is a combined inventory and planning effort for the gulf region. The Gulf of Mexico Joint Planning Team organized and conducted the workshop, held at the Bayfront Center Complex in St. Petersburg, FL, on December 4 and 5. The workshop had two main objectives:

1. To conduct an inventory of all information that the USGS has developed for the gulf region, including satellite and land-use data, as well as data from research projects, cooperative-research-unit projects, and water-resources investigations and monitoring.
2. To identify and promote a methodology to provide these data to the scientific community via Internet access and in coordination with the "Gateway to the Earth" concept, which involves creating interlinked access among all USGS Web sites via a robust search engine that indexes detailed metadata tags. The focus will be on three classes of users: professionals (who want detailed data), citizens interested in outdoor recreation (who want quick and easy access to specific products), and science-attentive citizens (who want science explained in understandable terms) with age ranges from children to senior citizens.

Products generated from the two objectives will be a catalog of USGS data holdings for the gulf region and a report on the workshop's findings and recommendations for a methodology.

The steering committee consisted of **Heather Henkel**, **Heather Mounts**, and **Rob Wertz** (Center for Coastal and Regional Marine Studies (CCRMS), St. Petersburg, FL), **Jeff Eidenshink** (EROS Data Center, Sioux Falls, SD), **Tim Boozer** (Water Resources (WRD), Ocala, FL), **Helena Schaefer** (National Wetlands Research Center, Lafayette, LA), and

Jayne May (WRD, Austin, TX). **Tracy Enright** and **Kathy Pegram** (CCRMS) helped with registration and with compiling workshop handouts. Participants included 39 attendees from the USGS. The steering committee specifically selected participants to represent a cross section of database professionals (administrators, distributors, and so on) and scientists (data generators and users) from the four main USGS disciplines (water, geology, mapping, and biology). Other agencies represented were the National Oceanic and Atmospheric Administration (NOAA), the Florida Marine Research Institute (FMRI), the U.S. Environmental Protection Agency (EPA), and the National Biological Information Infrastructure/Houston Advanced Research Center (NBII/HARC). The USGS administers the NBII Program through the USGS Biological Informatics Office (BIO) and the USGS Center for Biological Informatics (CBI). The USGS funds many NBII activities and makes accessible its biological data sets, such as the North American Breeding Bird Survey, through the NBII. The Houston Advanced Research Center (HARC) is a partner with NBII. Representatives of these agencies were invited to attend because of their active roles in the gulf region. To date, 209 data sets for the gulf region have been collected and placed into an Excel database, providing name, area description, point of contact, and USGS office/discipline involved. The data catalog will soon be available upon request from the workshop's Web site, URL <http://sofia.usgs.gov/gom/>. Information on other data sets will be added over time as data sets are developed.

The workshop was divided into five major components:

1. management perspective
2. technology assessment
3. standardization
4. case studies
5. discussion groups

The first four components consisted of 24 presentations to provide participants

with an overview of ongoing programs and activities currently associated with the USGS and its partners. Topics ranged from "Gateway to the Earth" concepts to "Deep-Water Study Areas in the Gulf of Mexico." Steering committee members **Tim Boozer** and **Jeff Eidenshink** gave talks. Speakers from the Coastal and Marine Geology Program included **Trent Faust**, **Greg Ferrara**, **Heather Mounts**, **Lisa Robbins**, **Rob Wertz**, and **Kim Yates** (CCRMS), **Fausto Marincioni** and **Kathy Scanlon** (Woods Hole Field Center), **Lynn Wingard** (Reston, VA), and **Jane Reid** (Santa Cruz, CA). Other presenters included **Tom Armstrong** (Science Coordinator for the USGS Eastern Region Regional Director), **Virginia Burkett** (National Wetlands Research Center, Lafayette, LA), **Gary Brewer** (Biological Resources (BRD), Reston, VA), **Bob Pierce** (WRD, Atlanta, GA), **Jim Flaherty** (USGS, Rolla, MO), **Ken Lanfear** (WRD, Reston, VA), **Jennifer Gains** (BRD, NBII), and **Roy Sonenshein** (USGS South Florida Information Access (SOFIA), Miami, FL). The fifth component consisted of breakout sessions that were held on the second day.

Following the workshop, the steering committee met at the USGS Center for Coastal and Regional Marine Studies (CCRMS) in St. Petersburg, FL, on December 6. After assimilating notes taken at the breakout sessions, the committee developed a draft recommendation for a data-management system for the gulf region. Over the next month, the committee will continue to refine and further develop the recommendation. The committee will also compile, evaluate, and take into consideration all responses from the exit survey e-mailed to workshop participants on December 11. ☼

Cooperative Agreements Meeting, Woods Hole Field Center

By Janet Paquette

Shelley Welch (Chief of Acquisitions and Grants Branch in Reston, VA) visited the Woods Hole Field Center (WHFC) last month to discuss issues and concerns about cooperative research. Those who attended the meeting included **Scott Tilley** (Management Advisor of Eastern Region), **Pat Mullan** (Administrative Officer of

Center for Coastal and Regional Marine Studies), and **Janet Paquette** (Administrative Officer of WHFC). **Brad Butman** presented a general overview of Woods Hole research projects. **Tom Aldrich** then gave a summary of the USGS Cooperative Agreement with the Woods Hole Oceanographic Institution (WHOI), followed by a

presentation by **Pat Mullan** on the USGS Cooperative Agreement with the University of South Florida. The group discussed ways to better facilitate and manage cooperatives and contracts. **Tom Aldrich** also took **Shelley** on a tour of the Woods Hole research community. All in all, it was an especially beneficial meeting. ☼

Awards

Citation Classic

By Keith Kvenvolden

In November 2001, **Keith Kvenvolden** of the Western Coastal and Marine Geology team (WCMG) was notified by the Institute for Scientific Information (ISI) that his research paper “Gas Hydrates—Geological Perspective and Global Change” has been selected as a “citation classic,” a highly cited paper in the field of global warming, by ISI’s Web-based Essential Science Indicators (ESI) (<http://www.isinet.com/isi/products/rsg/products/esi/>). This paper was published in 1993 by the American Geophysical Union in *Reviews of Geophysics*, v. 31, no. 2, p. 173-187. Among the five technical reviewers who helped improve the quality of this paper were **Dave Scholl** (WCMG,

emeritus), **Rob Kayen** (WCMG), and **Charlie Paull** (Monterey Bay Aquarium Research Institute). **Tom Lorenson** (WCMG) and **Susan Vath** (USGS, retired) were acknowledged for their assistance in the preparation of the figures. The paper was adapted from the author’s 1991 Mendenhall Lecture (USGS).

ISI intends to include a feature related to this paper in ESI. This feature will be publicly accessible on the Special Topics editorial arm of ESI’s Web site, URL <http://www.esi-topics.com>. ESI is a new Web-based compilation of science indicators and trend data derived from the ISI database, focusing on highly cited papers, authors, organizations, journals, and na-

tions across a wide variety of fields. It combines these data with editorial content to highlight important results. In ISI’s latest analysis, this paper was among the top-cited papers identified. Being highly cited generally reflects the high regard in which a paper is held by fellow scientists, and its value to the scientific community as a whole. In 1996, the paper was reprinted in “Oceanography—Contemporary Readings in Ocean Sciences, 3rd Edition” (Pirie, R.G., ed.), Oxford University Press, New York, p. 338-357. Although this paper is now ancient history, its message was obviously timely and has influenced thinking regarding the occurrences and effects of natural-gas hydrate. ☼

Staff and Center News

Changing of the Guard in Western Region—Mike Carr Becomes Acting Regional Geologist, Homa Lee Becomes Acting Coastal and Marine Geology Chief

A change in the leadership of the Western Coastal and Marine Geology team (WCMG) took place in early January, when **Mike Carr**, WCMG chief since February 1996, became Acting Western Regional Geologist at the re-

quest of retiring Regional Geologist **Patrick Muffler**. **Homa Lee**, chief of the Coastal and Marine Geology Studies in Offshore Southern California project, agreed to become WCMG’s Acting Chief Scientist. **Homa** will benefit from

the experience of **Terry Bruns**, who is continuing as the team’s Associate Chief Scientist. The shift was rather sudden, but all parties are adjusting nicely. ☼

Visiting Scientist from The Netherlands

By Guy Gelfenbaum

Mathijs Meijs, a graduate student from the Technical University of Delft (TU Delft) in The Netherlands, is visiting the USGS and working with **Guy Gelfenbaum**, **Chris Sherwood**, **Peter Ruggiero**, and **Jessica Lacy**. **Mathijs** will be in Menlo Park, CA, from January 26, 2002, until February 24, 2002. **Mathijs** and his thesis advisors **Dano Roelvink** (from Delft Hydraulics) and **Marcel Stive** (from TU Delft) are working with the USGS on a cooperative study entitled "Morphological Modeling of Coastal Evolution in the Columbia River Littoral Cell." The study involves

applying linked models of hydrodynamics, sediment transport, and morphologic change to data sets from the Southwest Washington Coastal Erosion Study (a cooperative research program directed by the USGS and the Washington State Department of Ecology) to improve our ability to predict large-scale coastal change. ❁



Mathijs Meijs, graduate student from the Technical University of Delft in The Netherlands, is working with USGS scientists to model coastal evolution in the Columbia River littoral cell. Photograph by **Guy Gelfenbaum**.

Woods Hole Field Center Gets a New Lab Van

By Ellen Mccray

The Woods Hole Field Center (WHFC) welcomed a new addition to its trailer fleet with the arrival of the new lab van. This heated facility is lined on all sides with shelves for storing boxed and dried sediment material for short-term sample analysis. The samples now stored in the new facility are inventoried and accessed regularly by the laboratory staff for the purpose of subsampling for further study. This van is a replacement for an older one that was supposed to be temporary.

There was a great saga behind the acquisition of this facility, and so we were all excited when it finally rolled onto the platform on January 10, 2002. Despite a rainstorm and the upcoming Coastal and Marine Geology Program (CMGP) planning meeting, we all rallied and transferred the boxed and inventoried material to its new home. On January 18, 2002, fresh from a red-eye flight out of San Francisco, **Ellen Mccray** joined **Sarah Jablonski**, **Michael Casso**, **Flavia Wood**, **Jennifer Moore**, **Joel Moore**, **Amy Farris**, and student intern **Vanessa LeBron** to celebrate the arrival with a champagne toast and ceremony. ❁



Woods Hole Field Center celebrates the newest addition to its trailer fleet. From left to right, **Flavia Wood**, **Amy Farris**, **Ellen Mccray**, **Michael Casso**, **Sarah Jablonski**, and **Jennifer Moore**.



Flavia Wood (left) and **Ellen Mccray** christen the new lab van with champagne.

Farewell to Two Members of the Western Coastal and Marine Geology Team

Ethel Lopez-Cavender and **Jennifer Dowling Champlin** left the Western Coastal and Marine Geology team in December and January, respectively. The team is sorry to lose these valuable

members. **Ethel**, who served on the team's administrative staff, has transferred to the Branch of Fiscal Services and will stay at the USGS Menlo Park campus. **Jennifer**, who conducted lab

work and data compilation and analysis for **Jim Hein**, will also stay in the San Francisco Bay area, where she will pursue a new career path. ❁

Woods Hole Field Center Visitor

Dave Stolper, a doctoral candidate at the University of Sidney, Australia, visited the Woods Hole Field Center in early December 2001 to give a talk entitled "Simulating

Large-Scale Coastal Evolution with Morphological Behavior Models." **Dave** was a guest of **Jeff List**. ❁



New Staff at Woods Hole Field Center

The Woods Hole Field Center welcomes **Catherine Albert** to our team. **Cat**

joined the administrative staff on December 10, 2001. ❁

Postdoctoral Scholar Presents Seminar at Woods Hole Field Center

By **Jeff Williams**

Extremely dynamic geologic processes that result in net long-term erosion and significant land loss and property damage dominate as much as 90 percent of coastal regions in the United States. These processes are complex because of a mixture of natural factors (such as storms, sand deficits, and relative sea-level rise) and a growing list of anthropogenic factors (such as coastal engineering structures, dams and levees, dredging, and fluid-induced subsidence). At the same time, coastal populations and development have exploded during the past 50 years, increasing the risk of a coastal crisis. Factors induced by climate change, such as accelerated sea-level rise and more

frequent catastrophic storms, are likely to increase the risks to the public over the next century.

As part of the Coastal and Marine Geology Program (CMGP)'s studies of the geologic framework and processes controlling coastal erosion, the USGS is partnering with the Woods Hole Oceanographic Institution (WHOI) in supporting a postdoctoral scholar fellowship program. **Ilya Buynevich**, who recently received his Ph.D. from Boston University, is one of the new scholars in residence in Woods Hole over the next 18 months. On December 20, 2001, he presented an invited seminar entitled "Sedimentary Records of Intense

Storms in Paraglacial Barrier Sequences." **Ilya's** talk summarized his coastal research in Maine and other parts of New England, in which he used historical shoreline data, coastal stratigraphy, and the sedimentary record to document late Holocene coastal change. One of the more important findings was that several of the rivers draining glacial terrain and discharging at the coast continue to be significant sources of sand-size sediment to coastal sediment budgets. **Ilya** will continue his coastal research in collaboration with the USGS and WHOI science community. ❁

Publications

Recently Published Articles

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