FELLOW NEWS

News for and about the NOAA Fellows

In This Issue

January 2007 Issue 32

Focus on Fellows:

Patrick Limber

In the late 1990s, Coastal Fellow Patrick Limber could be found plucking a jazz guitar in The Big Easy, not strolling the seashore pondering the mysteries of earth science. But a series of events turned his attention away from music as a career and toward the study of coastal geology and policy. That switch, while surprising to some, does not seem such a big stretch to him.

"Having a musical background has really helped my progress in coastal science and policy because it gave me discipline and a good work ethic, as well as the ability to think in an abstract way," says Patrick.

Patrick began playing guitar at 11 years old, studied classical and jazz guitar in high school and college at the North Carolina School of the Arts, and specialized in jazz performance for one year at the University of New Orleans. Inspired by the musical pedigree of that city, Patrick remembers a stint studying under jazz pianist Ellis Marsalis that served as a high point—and low point—in his musical career.

"It was fun but also led to my musical burnout, as I practically lived in a little practice room with my guitar," says Patrick. "It is extremely difficult to make a living as a musician. For me, it was a high-work, low-reward profession."

While taking time off from college to consider other options, Patrick realized that his interests in science and the environment were worth pursuing. He entered the State University of New York–Purchase in late 1999 as an environmental science major and analyzed shoreline change along the beachfront of Long Island for his senior thesis.

"After that, I was hooked," says Patrick, who completed an M.S. in earth science from the University of California at Santa Cruz, specializing in coastal geology. While in Santa Cruz, he learned about the coastal

Continued on Next Page

fellowship from his office mate David Revell, the coastal fellow in Oregon from 1999 to 2001.

Patrick, who is now back on his home turf with a coastal fellowship at the North Carolina Division of Coastal Management, is studying two different types of oceanfront shoreline indicators used to calculate erosion rates.

One common methodology calculates shoreline position from digitized aerial photography, while a newer method extracts shoreline data from airborne topographic laser altimetry (lidar) data based on mean high-water elevation.

"This project is important for several reasons, one being that the division uses shoreline change rates as the basis for coastal policy decisions like determining setbacks for oceanfront structures," says Patrick. The project is nearly complete, and "so far, the results are very positive. On average, the mean high-water shoreline is only a few meters seaward of the photo-derived shoreline. That means the two shoreline types can be used as surrogates, or in tandem, without introducing significant errors to shoreline change rates."

Patrick gets ready for an aerial survey of the coast.

Many individuals have helped Patrick during his fellowship. Jeff Warren, the division's coastal hazards specialist, and Guy Stefanski, the division's manager and strategic planner, have both provided support and guidance when needed. Personnel at the U.S. Geological Survey and the U.S. Army Corps of Engineers have also assisted Patrick in this complex undertaking, as have project partners Jeffrey List, Amy Farris, and Kathryn Konicki from the U.S. Geological Survey Woods Hole Field Center in Massachusetts.

"The fellowship has presented me with the opportunity to gain a real-world perspective on coastal management issues, make excellent contacts, and travel to conferences that I normally wouldn't have been able to attend," says Patrick. Building on that experience, he intends to stay focused on coastal science and policy, although he is not sure whether a permanent position in coastal management or a Ph.D. program will be his next step.

Wherever the coastal science and management opportunities take him, Patrick will be bringing his guitar. Now teaching himself to play bluegrass guitar, Patrick continues to enjoy the music of jazz and classical artists and composers that include John Coltrane, Wes Montgomery, J.S. Bach, and Sergei Rachmaninoff. "Even though I'm not pursuing music anymore, these artists are still inspiring—I work most efficiently when listening to them!"

Focus on Fellows: Maria del Mar Lopez-Rivera

"Maria of the sea" is the English translation of "Marimar," the nickname that Coral Fellow Maria del Mar Lopez-Rivera has known since childhood. The parallel between Marimar's name and her profession strikes acquaintances as an amusing coincidence. To her, the name holds a deeper significance and is one of many synchronicities that eventually guided her to a career in marine science.

"I believe everything happens for a reason," says Marimar, whose fellowship is with the Puerto Rico Department of Natural and Environmental Resources (DNER). "It was my destiny to work with the ocean."

"As an undergraduate, I wanted to specialize in medicine and become a psychiatrist," says Marimar, who attended the University of Puerto Rico in the city of San Juan. But she could not bring herself to follow the pre-med college track. "Something inside told me, 'You need to finish your B.A. in biology.'"

Following her instincts, Marimar continued taking biology courses and did fieldwork in forests and rivers as the assistant of a graduate student. She enjoyed research and discovered a bond with students in the ecological sciences that was missing in her interactions with pre-med students.

Her commitment to marine science was put to the test when she assisted a graduate student friend in monitoring coral reefs. Marimar claimed to be an experienced diver, but in fact she had done very little diving, and her first experience was a frightening one.

"We had to hammer metal rods underwater, in a very harsh environment with strong currents that was located miles from the coast of Puerto Rico. The water was murky, and I couldn't see anything in front of me," says Marimar, who persisted, despite her anxieties, eventually becoming a skilled diver and undersea researcher.

Marimar went on to complete a master's degree in tropical ecology at the University of Puerto Rico, specializing in fish and coral ecology. It was while attending the 2004 International Coral Reef Symposium on a graduate student scholarship that Marimar first learned about the coral fellowship. "I thought, 'I really want to have this job someday,'" she says, "but then I forgot about it for a long time."

Many months later, she was sent a fellowship application by a colleague, and she happened upon an article describing the fellowship—all within the space of one week. Marimar was struck by the synchronicity. "I thought, 'I've finally found something right for me!'"

Marimar with a sandy sea turtle.

In her fellowship work, Marimar helps develop management plans for natural protected areas, including Vieques Island and Mona Island Natural Reserve, the most pristine reserve in Puerto Rico. Marimar is also active in the island's Coral Reef Initiative Program and develops workshops for stakeholders in different municipalities.

Switching emphasis from research to management has provided some challenges. "Before, I was always in the sea, and now I'm at a desk! But I have learned a lot," says Marimar. "As a scientist, you sometimes forget that your research will be used in the real world for action. Now, in my job, I often think, 'How can I translate this research into management action? What research will give us the information we need?'"

Marimar considers herself fortunate to have been guided in her career by several mentors. Alberto Sabat, professor of ecology and former director of the biology department at the University of Puerto Rico, is a "father figure" and trusted advisor. Edwin Hernandez, a professor in marine ecology at the university, has helped Marimar make the transition from student to professional.

At DNER, Marimar's supervisor Mayra Garcia "has really taken me under her wing and taught me a lot," she says. And she considers her colleagues in the fellowship to be "like sisters. We have a great time together at meetings, and we learn a lot from each other, too," she adds.

Marimar is mulling over possible career and academic paths when the fellowship concludes, but "I am not yet certain of my future plans, and I don't want to close any doors." She trusts that, just as in the past, she will be led to her proper destination, if only she is alert enough to pay attention to the signs. "Right now, I'm living in the moment. When the time comes to decide, I will know."

Focus on the Coral Fellowship:
Coral Updates

American Samoa

Sharon Gulick, the coral fellow in American Samoa, has recently been coordinating a student internship program in marine science at the American Samoa Community College. The student interns are implementing projects supporting American Samoa's 2006–2007 Rare Pride Education and Outreach Campaign. Their projects include developing island-wide litter monitoring and producing puppet shows to engage local elementary school students on issues related to sea turtles, sand mining, and coral-reef health.

Commonwealth of the Northern Mariana Islands (CNMI)

Lihla Noori, the coral fellow in Rota, CNMI, has her hands full with a local action strategy for land-based pollution. The Talakhaya Revegetation Project's first-year plan is nearing completion, with 2,000 native seedlings planted by more than 200 students who are now registered as Earth Team volunteers with the Natural Resources Conservation Service. Given the projected 10,000 seedlings to be planted next year through the Rota Livelihoods Initiative, Lihla is coordinating a workshop on peer learning and capacity building with partners on Guam who have conducted large-scale planting for decades.

For the annual Rota Fiesta Outreach Event, Lihla planned an interagency coral booth promoting all three local coral projects. Student-oriented activities such as Know Your Watershed, Pin the Tail on the Marine Protected Area, and a hands-on erosion demonstration kept the crowds interested, despite the torrential downpour! A number of promotional materials on the revegetation project boasted, "Help Rota Save Our Soil, Save Our Reef!" Other educational materials were distributed to determine support for a community-based management plan for the local marine protected area.

Coral Reef Management Fellows, from left to right: Petra MacGowan, Maria del Mar Lopez-Rivera, Sharon Gulick, Lihla Noori, Romina King, and Karlyn Langjahr.

Guam

Guam's coral management fellow Romina King is involved in the Hidden Haggan campaign launched by the Guam Coastal Management Program. Hidden Haggan, part of the International Year of the Sea Turtle celebration, refers to the name of the green sea turtle in the Chamorro language of Guam's indigenous people. The *haggan* have tremendous cultural, spiritual, traditional, and economic importance to the Chamorro people, are great tourist attractions, and play a significant role in the health of the marine environment. The world's populations of marine turtles have declined, some to the point of extinction, as a result of incidental deaths in fishing gear, damage to turtle nesting beaches, and unsustainable harvests.

In celebration of Hidden Haggan, 20 fiberglass life-size turtles donated by UnderWater World were painted by local public and private school groups for display at various locations. The turtles will be involved in environmental education events throughout the year, such as the 5K Holiday Haggan Family Fun Run, the Haggan Parade, and a Hidden Haggan Quest. Proceeds will go toward education and protection efforts benefiting the Guam haggan.

Hawaii

Petra MacGowan will be working on the Coral Reef Local Action Strategies and marine protected area-related activities at the Hawaii Department of Land and Natural Resources' Division of Aquatic Resources.

U.S. Virgin Islands

Karlyn Langjahr will be working at the Virgin Islands Coastal Zone Management Program, assisting with local efforts to establish a territorial system of marine protected areas.

Focus on the Coastal Fellowship:

2007 State Projects Selected

Five exciting new projects have been selected for the 2007 to 2009 Coastal Management Fellowship. Below is a summary of each of these projects for the coming year. Recruiting efforts are well underway, but we need your help to spread the word to eligible applicants. Remember, applications should be submitted to area Sea Grant directors and are due no later than January 29, 2007.

San Francisco Bay Conservation and Development Commission
Project Goal: Promote effective and collaborative ecosystem-based management for San Francisco Bay through gathering data, enhancing coordination among agencies, and recommending ways to optimize management of the bay.

Connecticut Department of Environmental Protection Office of Long Island Sound Programs
Project Goal: Develop a coastal hazard plan for Connecticut by assessing current science, data, and policy, developing a hazards data Web site and visualization tool, and developing and implementing an outreach plan.

North Carolina Division of Coastal Management
Project Goal: Develop a comprehensive beach and inlet management plan for North Carolina by focusing on policy, science and engineering applications, spatial and information technology, or some combination of the three.

Oregon Coastal Management Program
Project Goal: Improve access to data and the availability of integrated information products centered on ocean management issues by expanding the Oregon Coastal Atlas to include ocean-related data and information.

South Carolina Office of Ocean and Coastal Resource Management
Project Goal: Assess past, present, and future conditions of the South Carolina coast by examining and assessing erosion control devices and beachfront structures, baselines and setbacks, and beach renourishment projects. Perform spatial analyses of shoreline change, complete regulatory analyses, and develop policy recommendations.

If you would like more information about the 2007 state projects, please visit the fellowship Web site at *www.csc.noaa.gov/cms/fellows.html* or contact the fellowship coordinator at *csc.fellowships@noaa.gov*.

Focus on the Center

The NOAA Coastal Services Center has created many spatial technology tools, several of which are described below, that can aid you in making critically important decisions affecting coastal areas.

To Predict Water Quality Impacts
With the *Nonpoint-Source Pollution and Erosion Comparison Tool*, users can predict potential water-quality impacts to rivers and streams from nonpoint-source pollution and erosion. See *www.csc.noaa.gov/crs/cwq/nspect.html*.

To Determine Impervious Surface Coverage
With the *Impervious Surface Analysis Tool*, users can access remotely sensed imagery to calculate the percentage of impervious surface in a given area. See *www.csc.noaa.gov/crs/cwq/isat.html*.

To Prioritize Habitat Conservation Efforts
Users find the *Integrated Coastal Management* tool helpful when creating a habitat inventory, assessing land and water habitat conditions, ranking potential restoration and conservation sites, and analyzing "what if" changes in land use. See *www3.csc.noaa.gov/icm_help/*.

To Rank Vulnerabilities in a Community
The *Risk and Vulnerability Assessment Tool*, pilot-tested in North Carolina but adaptable to other coastal regions, helps local and state governments prioritize coastal hazard vulnerabilities in order to mitigate them. See *www.csc.noaa.gov/rva_tools/*.

To Evaluate Erosion Potential
The *Coastal Inundation Visualization Tool*, developed for several beaches in Oregon but applicable elsewhere, can be used to evaluate the potential for erosion and improve awareness of coastal storms. See *www.csc.noaa.gov/cspPNW/*.

Want to Learn More About Coastal Technology Tools?

Be sure to attend the Coastal GeoTools 2007 conference March 5–8 in Myrtle Beach, South Carolina, the "sun fun" capital of the Southeast. This conference, hosted by the NOAA Coastal Services Center, will provide you with information on the latest and greatest technology tools addressing coastal hazards, development pressures, and changes to the environment.

To learn more or register, check out the Coastal GeoTools Web site at *www.csc.noaa.gov/geotools/*.

Credits and Information

Fellow News is published by the National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center to relay information about the fellowship program and provide a forum for information exchange among fellows, mentors, Sea Grant, and the Center.

Please send your questions and suggestions for future editions to *csc.fellowships@noaa.gov*

Co-Editors:
Margaret VanderWilt
Kitty Fahey

Communications Director:
Donna McCaskill

Copy Editor:
Gerald Esch

Graphic Designer:
Frank Ruopoli

Upcoming Conferences and Events

FEBRUARY

February 26–March 2: **Aquaculture 2007**
San Antonio, Texas
www.was.org/meetings/ConferenceInfo.asp?MeetingCode=AQ2007

MARCH

5–8: **Coastal GeoTools 2007**
Myrtle Beach, South Carolina
www.csc.noaa.gov/geotools/

19–22: **The 17th Annual Association for Environmental Health and Sciences Meeting and West Coast Conference on Soils, Sediments, and Water**
San Diego, California
www.aehs.com/conferences/westcoast/index.htm

20–23: **Climate Prediction Applications Science Workshop**
Seattle, Washington
www.cses.washington.edu/cig/outreach/workshopfiles/cpasw07/

21–23: **American Shore and Beach Preservation Association's 2007 Coastal Summit**
Washington, D.C.
www.asbpa.org/conferences/conferences.htm

25–28: **Ports 2007**
San Diego, California
www.asce.org/conferences/ports07/

For more information on upcoming events, please visit *www.csc.noaa.gov/cms/conferences.html*.

NOAA Coastal Services Center Training

Project Design and Evaluation
January 29–30
February 1–2
U.S. Department of Agriculture
Natural Resources Conservation Service

February 7–9
Kachemak Bay National Estuarine Research Reserve

February 21–23
Florida Sea Grant

March 7–8
Cooperative Institute for Research In Environmental Sciences

March 21–22
Ohio Coastal Management Program

Public Issues and Conflict Management
January 8–10
ACE Basin National Estuarine Research Reserve

February 21–22
National Ocean Service

Introduction to ArcGIS
March 26–27
NOAA Coastal Services Center

Coastal Applications Using ArcGIS
March 28–30
NOAA Coastal Services Center

For more information, please visit www.csc.noaa.gov/training/.

NOAA Coastal Services Center
2234 South Hobson Avenue
Charleston, SC 29405-2413

PRST STD
POSTAGE & FEES PAID
NOAA COASTAL
SERVICES CENTER
PERMIT NO. G-19