

"Guarding"

NYSG offered teachers and students a rare learning opportunity in late July aboard EPA's R/V Lake Guardian



“*I know the teachers and students aboard the Lake Guardian have learned a great deal and they will enthusiastically share their hands-on environmental experiences in all their interactions.*
”
*— Helen Domske
Coastal Education Specialist*

Helen Domske (right), NYSG's Great Lakes coastal educator, talks about her experiences on the week-long tour with Meghan Rubado from the *Syracuse Post Standard*.
Photos by Paul C. Focazio

"There's a push toward teaching hands-on science right in the *local* environment and I think the Great Lakes is a resource to tap into because students can really relate to it."

Michael Lauria, a biology teacher at Sweetholm High School near Buffalo, used his experiences this past summer aboard EPA's *R/V Lake Guardian* to help earn his master's degree from the University at Buffalo.

In late July, Lauria joined other middle and high school teachers, graduate students, and nature center educators for a rare learning opportunity on Lakes Ontario and Erie aboard the 180-foot research vessel. The week-long educational tour began in Buffalo Harbor on Lake Erie, went through the Welland Canal, and stopped at Fort Niagara before cruising Lake Ontario. Participants docked in Clayton, explored the Thousand Islands region, and then went back to Oswego before heading back to Buffalo.

The training program was led by NYSG's Coastal Education Specialist **Helen Domske** and **William Edwards**, an assistant professor of biology at Niagara University. It was made possible by a

partnership among Sea Grant and the US Environmental Protection Agency (EPA), Niagara University, the Niagara Environmental Leadership Institute, and the Great Lakes Program at the University at Buffalo. Instruction on fish and fisheries was provided by **Mike Weimer** of the US Fish and Wildlife Service.

"The *Lake Guardian* course was a rewarding experience for me, both professionally and personally," says Domske. "The EPA was pleased with our successful journey, we received glowing evaluations, and Sea Grant received press coverage in several ports along the lakes."



Valued at \$70,000, the excursion garnered write-ups in the *Watertown Daily Times*, *Palladium Times*, and *Syracuse Post Standard*, as well as news segments by local television and NPR radio stations.

The "Multiplier Effect"

"This collaboration illustrates how strongly the EPA believes, as does Sea Grant, in teaching teachers about the Great Lakes environment," says Domske. "New York Sea Grant believes in the 'teach the teacher' approach and this course was an innovative way to get teachers to infuse Great Lakes materials into their science curriculum."

The Lake

Domske hopes that this enthusiasm among teachers about Great Lakes issues will trickle down to their students. "If you teach something to an individual stakeholder with an interest in the environment, he or she might share that information with two or three friends or family members. If you teach something to a teacher, though, that multiplier effect can be in the hundreds or thousands. We really worry about the next generation—that there will be a shortage of scientists and people who really care about the lakes. Teachers are that link between today's knowledge and research and the future."

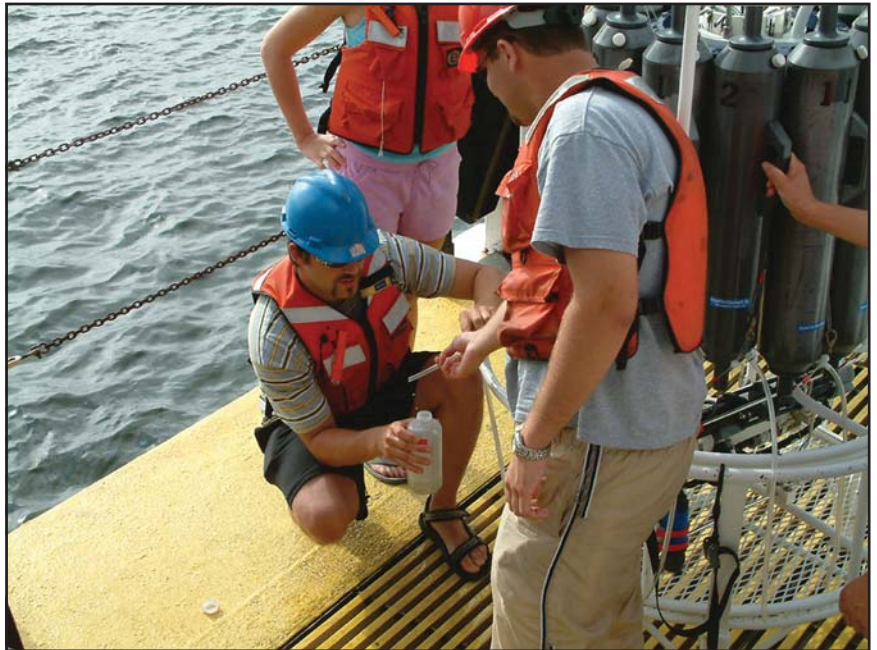
Domske, who has more than 20 years experience as an aquatic science educator, offers teacher training every summer. Four years ago, she had an opportunity to teach aboard the *Lake Guardian* on Lake Erie. "The chance to again work on a top-notch research vessel and share those opportunities with students and teachers was wonderful," she says. "To experience the size, power and beauty of Lake Ontario from aboard this ship was overwhelming."

Lakeside Learning

The *Lake Guardian* gave seven school teachers and seven undergraduate students the chance to seine, scientifically age fish, and collect



Molly Thompson (far left), NYSG's dune and habitat educator, points out some of the physical features of the fragile dunes along Lake Ontario's eastern shoreline.



Along the way on this 400-mile aquatic exploration, students took water samples and generated a week-long snapshot of data for Lakes Erie and Ontario. These data, which include figures on dissolved oxygen levels and water temperature, are on file with the EPA.

plankton, lake bottom and water samples. Students and educators also learned about exotic species—the impacts zebra mussels, spiny water fleas, sea lamprey, purple loosestrife, and other invaders are having on the lakes. Once released into the lakes via the ballast water of ships, invasive species enter an environment where they have no natural enemies. It is because of this worldwide exchange of ballast water that species tend to spread, thrive, and pose potential problems (see article page 7).

In the Niagara Falls area, students met with residents to hear about issues affecting that part of Lake Ontario. Along the St. Lawrence River, discussions turned to local issues including expanding the Seaway, controlling the double-crested cormorant, restoring numbers of native common terns, and monitoring water levels.

In Oswego, the group traveled to the Black Pond Wildlife Management Area along Lake Ontario's eastern shoreline for a guided tour on dune ecology by NYSG educator **Molly Thompson** and her summer 2003 dune stewards. "Here is where you'll find the largest and most extensive freshwater sand dune formations in New York State," Thompson explains.

Some of the students and teachers on the educational tour (including Michael Lauria, in red shirt at lower left) take a break from learning to smile for some scenic snapshots.



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"These dunes are nearly as high as those in Cape Cod, where the tallest ones in the entire northeast exist. Dunes develop over the years thanks to plant growth cycles that make it possible for trees to root themselves."

Teachers and students later traveled to the nearby Salmon River Fish Hatchery, where they saw first-hand how the NYS Department of Environmental Conservation raises trout and salmon to stock Lake Ontario.

The take-home message in all of this? "We're trying to help people who do outreach to better understand the Great Lakes ecosystem so they can spread the word," says Edwards. Last year, while teaching at Ohio State University, Edwards led a class on a similar one-week trip on Lake Erie. He says this year's focus was on Lake Ontario because "it doesn't get the public awareness that the other lakes get." Domske adds, "Being that Lake Ontario provides so much of the New York shoreline, we felt it was important for New York teachers to know more about it."

Surveying with Summer Stewards



Five college students from SUNY CESH and SUNY College at Oswego spent this past summer educating visitors about the value of the beaches, dunes, and wetlands at several public areas along an

18-mile stretch of Lake Ontario's eastern shoreline. "For the third year now, the dune stewards have played an integral role in informing beachgoers on how they can help protect the shoreline dunes," says **Molly Thompson**, NYSG's dune and habitat educator. "Their patrolling of the beach and interaction with its visitors has been important in minimizing activities that cause negative impacts on the area."

On a given day, **Willow Eyres** picked up trash or offered a nature walk at the Deer Creek Wildlife Preserve, while **Charlie Hawkins** cut vegetation to open trails at Southwick Beach. **Jeffrey Nassimos** and **Evan Proulx** (pictured left) added and repaired string and snow fencing at locales such as the Black Pond Wildlife Management Preserve. "This fencing will allow for blowing sand to accumulate on the dune while discouraging foot traffic," says Thompson, who supervised the students. The students also distributed brochures to help bolster stewardship and posted signs to illustrate how the actions of visitors and residents affect the ecosystem.

Rachel Habig, a PhD candidate at CESH, worked through the season with NYSG's Coastal

Tourism Specialist **Diane Kuehn** to compile data on visitor use since 1985. With the exception of the last three years, data was not collected in a consistent manner. So, Kuehn and Habig are now analyzing data to identify population trends for each of the public areas. They are also pinpointing sections of high use and environmental impacts, such as the loss of beach grass, a plant that inhibits dune erosion. "Input from Rachel and Molly has made it possible to develop a data collection protocol to be used in the future to collect more reliable data," says Kuehn. "This information will help dune managers determine if beach visitors understand how their activities impact the area."

Proulx, a recent SUNY Oswego graduate who majored in public justice and minored in biology and forensic science, has aspirations of becoming an Environmental Conservation officer. The skills he's learned as a Lake Ontario dune steward for two years support this goal. "The steward program has helped me develop leadership and people skills that an enforcement officer can use," says Evan. "I've learned a lot about how fragile our ecosystems are and how to communicate that to the public." Nassimos, an CESH student with ambitions towards consulting, adds, "I now realize the key role public outreach plays in the environmental policy and management discipline."



All photos and both articles by Paul C. Focazio

