

Bermuda trip gives UWO students field experiences

by Matt Hietpas - Wednesday, October 17, 2012

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Bermuda is widely known for being a part of a mythological triangle and its paranormal disappearances of people.

But 12 undergraduate students, two geology professors and two graduate students from the University of Wisconsin Oshkosh know Bermuda a little differently. The group flew to Bermuda during summer 2012 for a week to study oceanographic and environmental factors affecting modern coral reefs.

And don't worry, the class made the flight back home.

During their trip, the UW Oshkosh's Coral Reefs and Geology of Bermuda class examined on- and off-shore reefs and associated environments. They studied sediments produced and ancient analogs preserved in rocks exposed on the island.

"The reefs are relatively healthy compared to other locations around the Caribbean, but environmental stress is evident as you move close to shore" said Eric Hiatt, UW Oshkosh geology professor.

One of the factors affecting the reefs is golf. Yes, golf. The tiny island of Bermuda is home to nine golf courses even though it is only 20 square miles of total land. Golf is one of the country's largest tourist attractions, bringing in people from all over the world. But with every stroke of golf played, the coral reefs suffer, Hiatt said.

"Golf courses require a lot of maintenance, fertilizer and pesticides, so there's a run off every time it rains and it ends up going into the oceans," Hiatt said. "The closer we got to land we saw more algae, the corals got a little more stressed with more damage, including bleaching and black band disease, which is basically a flesh-eating bacteria. It sweeps over the colony and destroys it."

According to Hiatt, the class was able to see more of the human impact on the reefs due to Bermuda's location. Other reefs like the Great Barrier Reef and the reefs in the Caribbean are generally affected by global warming.

"Bermuda sits right in the middle of the Gulf Stream and if you take away this warm water current, you wouldn't have reefs there. So the temperature effect is really not there in a negative way impacting the reefs," Hiatt said. "We can see the human impact more purely on the reefs."

Students studied modern coral reefs and other environments by taking a boat out every day and collecting samples by snorkeling.

"It was unbelievable. It's one thing to read about everything. As soon as you see it, you get a whole new perspective," said Krista Kroeninger, a senior studying geology. "(Snorkeling) was a little freaky at first."

I'm really scared of jellyfish.”

While overseas, the UW Oshkosh class stayed at the Bermuda Institute of Ocean Sciences, which is isolated from most of Bermuda's tourists areas. That location impacted their overall experience, Hiatt and his students agreed.

“You are totally immersed in everything, and it’s completely different than going to a classroom and reading about something,” said Tashia Norton, a senior studying sociology and geology.

As part of their studies, students took samples back to the institute where they were able to study the skeletal remains of organisms under binocular microscopes in a lab and then have a discussion and lecture about their findings each evening.

“Besides the actual field work, the [evening] lectures were my favorite part,” Kroeninger said. “You go and see the environment, then you do lab work and then discussions are where it all comes together and you get to see the big picture.”

The class also was able to study cave environments, one such was an underwater sinkhole formed when a cave collapsed thousands of years ago. Since Bermuda is located in the Atlantic Ocean, many of the caves fill with saltwater. But openings and fractures in the caves allow rainwater to seep in from above.

“In many of the caves, the rainwater floats on seawater because the seawater is salty,” Hiatt said. “Rainwater is cold but it’s less dense because it doesn’t have the saltiness. So when you go in, you can feel you are in fresh water. It’s as cold but you can swim down eight or 10 feet and you hit seawater that is very warm.”

Hiatt said Bermuda was a volcano millions of years ago, but has been dormant for about 20 million years. More recently, when there were ice sheets in Wisconsin, global sea level was about 350 feet lower than today.

“So we make the connection with Wisconsin geology and the glacial history of the world over the last million years. You can actually see the effects of the ice sheets expanding and the history of sea level rise and then fall in Bermuda,” Hiatt said. “It is really valuable for geology majors to see this modern system and then compare this to the ancient record on the island.”

Both students stressed the importance of taking the course and learning the material while in the field and in different environments.

“After being in this department and taking field courses, every time I go to a beach or even a park I immediately look at the geological environment,” Kroeninger said.

But traveling abroad, even for study, isn't always financially easy. To make the trip a reality, the students were given a donation from Kelley Steffen, a former UW Oshkosh student who went on the Bermuda trip 10 years ago.

“Kelley wasn’t really sure what she wanted to do when she got done with her degree at UW Oshkosh and

she went on the trip and from that she decided she wanted to work on these types of systems and in the ancient. So she did her master's degree at the University of Miami in Florida and now she works for Exxon-Mobil," Hiatt said. "She said the trip made such a difference to her that she wanted to give something back."

The donation was made in the name of her and her husband, Kelley and Hendrik Steffen-Braaksma; they now live in Houston, Texas. Hiatt said their donation was matched by Exxon-Mobil.

"For some of us (the donation) made the difference," Kroeninger said. "I can't imagine not doing it. If I had the opportunity to do it again, I would."

Norton agreed.

"I think this is one of the most valuable experiences I've had in college," Norton said. "It took me out of my normal, everyday routine of learning in a classroom."

Eric Hiatt teaches oceanography and geology courses at UW Oshkosh and another field course to the Florida Keys, and said he plans to run the Bermuda field course next in summer 2014.

Learn more:

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