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St. Mark's science teacher brings Costa Rica back to the classroom

Elizabeth Eubanks, 48, a middle school science teacher at St. Mark Catholic School in Boynton Beach, recently returned from a research trip to Costa Rica along with Steve Oberbauer, a professor of biological sciences at FIU.

In 2008, they traveled to Barrow, Alaska to the Barrow Arctic Science Consortium to study the role of global warming on Arctic ecosystems and recorded their experiences live on the website polartrec.com.

"Elizabeth was so good in Alaska, I had to bring her with us to Costa Rica," said Oberbauer, who helped set up a science project at St. Mark for the students to measure the growth of mangrove trees by outfitting them with den-

drometers, an instrument used to measure tree and plant growth.

Eubanks participated as part of a grant offered to PolarTREC, an educational research organization, and funded by the National Science Foundation.

Oberbauer explained that as part of the NSF requirements, there needs to be an educational and outreach component.

Eubanks fulfilled this requirement.

During her month in Barrow, and as an undergrad zoology major, she especially took note of the different species of birds and helped the team by tagging photos and measuring the amount of light reflected from plants.

Students at St. Mark were able to follow



along on Eubanks' daily discoveries and ask questions via Skype.

St. Mark student India D. Roehrich-Hill blogged, "I loved the photographs. Especially the frog and green bird.

When do the birds start migrating and when do they reach their destination? Where are their take-off areas and destinations?"

"Elizabeth is a wonderful as an outreach

person. She blogged and shot videos and photos to send back to her students and hosted the Arctic Research Consortium of the U.S webinar," said Oberbauer, a specialist in

CULTURE TO THE CLASSROOM Steve Oberbauer and Elizabeth Eubanks spent time doing research in Costa Rica recently. SUBMITTED PHOTO

both Arctic and tropical climate change effects.

The seven-day trip to the La Selva Biological Station in Costa Rica complements the research Oberbauer and Eubanks did in Alaska.

The project investigates the relationship between the dry season across a range of rainfall and compares it to growth of tropical moist forest trees.

"There are good years and bad years. One factor that influences tree growth is how much rain falls in the dry sea-

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son," Oberbauer said. "In the dry season in Costa Rica, no month gets less than 10 centimeters of rain."

They've discovered that the more rain in the dry season, the higher the growth rate.

"We're looking at how water affects tree growth in the forests of Costa Rica and at the carbon changes or carbon fluxes within water and outside water," Eubanks said. "This is an environmental indicator of how the area is doing."

Although Oberbauer lost some data when one of his instruments was submerged in 8 feet of water when the river rose unexpectedly due to rainfall in the mountains, he was able to get most of the data he needed and will return within the next few months to finalize his research.

Eubanks conveys her enthusiasm to her students with daily opportunities to interact with her in the field and learn along with her.

"I hope to convey to my students that learning is fun. It's not only about science fairs or textbooks, lab coats or beakers, but real people

who enjoy time and nature," she said. "Studying carbon fluctuations may seem boring, but I hope it gives my students an appreciation to get out in the field and do their own explorations."

Kelly Ruiz, the principal of St. Mark Catholic School, filled in and taught Eubanks' class while she was in Costa Rica.

"The students love the technology aspect of the project," she said. "They were able to participate remotely in water sampling, learn about wildlife in the rain forest including howler monkeys, crab spiders, turtles and exotic birds. They've learned a lot from Elizabeth's adventures and are actively studying the ecosystem, specifically the mangroves, around our school."

To cap off Eubanks' research week and to solidify what she and the students have learned, Eubanks has organized a field trip to Sea World for the students to learn more about marine life.

She also plans to go with some students and parents to Alaska, as part of a Teacher Researcher Experience program.

The highlight of the

Costa Rica trip for Eubanks was learning about the diversity of species and seeing more than 100 new species in the animal kingdom, especially the variety of birds.

"It blew me away," she said. "I saw 53 new birds in one day, including a mandibled Keel-billed Toucan, the national bird of Belize, a squirrel cuckoo, named for its tendency to dart from tree to tree in short bursts like a squirrel, a chestnut-colored woodpecker and the Collared Aracari, a toucan-like bird."

"If there's one thing I've learned from my experience with Dr. Oberbauer and his staff, it's to keep my eyes open," she said. "First, I learned to keep my eyes open for dangerous creatures such as viper snakes, which are poisonous and for spiders that bite or toxic thorns. Second, I learned to watch out for anything new - new birds, new insects, new wildlife. One of my most favorite new insects is the leaf-cutter ant, which grow their own food, a type of fungus, in underground gardens. They are amazing and I was completely enthralled."