

Into the wild



The IU Southeast Field Biology group takes a break from exploring the Amazon jungle.

IU Southeast Field Biology students study Amazon's biodiversity

By Kristin Kennedy

Photos by Clint Franklin, Lori Hayden and Elizabeth Rueschoff.

A geoscience professor, two biology professors, a lab services coordinator and 13 students from IU Southeast traveled down a river three to four times wider than the Ohio. The river was flooded, and the group was looking for life. The river was the Amazon.

The sunlight glistened off the water as the group moved down the Amazon. The river seemed to go on forever, and it was teeming with life. Pink river dolphins, matamata turtles and even piranhas were just a few of the creatures lurking in the Amazon's depths.

Researching on the river

From April 30 to May 10, the group traveled to Manaus – in the Upper Amazon region of Brazil – to study flora, fauna and wildlife. The IU Southeast students on the trip were enrolled in L303 Field Biology.

This year, the Field Biology instructors included Clint Franklin, senior lecturer of geosciences, David Taylor, professor of biology and Elizabeth Rueschoff, assistant professor of biology and Jon Norman, lab services coordinator in the School of Natural Sciences.

During this year's Field Biology trip to Manaus, the group spent most of the trip on the Amazon River. The group lived, studied and researched in a research vessel for the duration of the trip.

Katherine Clark, '16, went on this year's Field Biology trip. Clark is not a biology major: She studies business with concentrations in accounting and international business. However, she decided to enroll in Field Biology, and she received a study-abroad scholarship



Podocnemis erythrocephala, a species of turtle in the Amazon.

from the IU Southeast School of Business for the trip.

Clark said living in the research vessel was not cushy, but it enabled the students to conduct the research they needed.

"We were warned from the beginning that it wasn't going to be fancy," Clark said. "We lived as biologists live out in the wild."

The Amazon is flooded for most of each year. Rueschoff said the flooding was beneficial for the Field Biology group, because it allowed the research vessel

to travel on top of the rainforest canopy. This enabled the group to see plants, such as orchids and bromeliads, that they normally would not have seen.

While traveling down the Amazon, the Field Biology group used a mobile app to georeference data – to link data to a specific location. Georeferencing combines GPS and the research technique of random sampling.

During the trip, the Field Biology group collected data on matamata turtles.

"They have these huge heads nearly the size of their bodies, and they're lunge predators," Taylor said. "So these are fish eaters. And part of their ugliness is that, like alligator snappers, they sort of look like something a fish is interested in, and they grab their prey by sucking and lunging."

In addition to matamata turtles, the Field Biology students researched scarlet macaws, swallows, pink river dolphins and other animals, including other species of turtles.

Clark said she loved seeing the pink river dolphins. The Field Biology students were able to spend time with the dolphins, petting them as a guide fed them.

IU Southeast Field Biology students conduct research in the Amazon rainforest.





The Amazon River is three to four times as wide as the Ohio River.

Spending time in Manaus

The Field Biology group did not just spend time on the water.

In the beginning of the trip, the group hiked into the rain forest to release turtles back into the wild. Additionally, Taylor said the group visited an urban forest, Reserva Ducke. In the forest, the IU Southeast group hiked with graduate students to check traps for some of the forest turtles.

The group also visited an indigenous village. In the village, the students could purchase handmade goods.

Clark said she saw a necklace and immediately wanted to buy it. She learned from a shop employee that the necklace was made of caiman vertebrae. Caimans are animals similar to alligators and crocodiles.

“That shows that (the natives) don’t waste anything,” Clark said. “It’s such a different way of life.”

The Field Biology group also visited a village house, which enabled the students to get a firsthand look at how people live and farm in the Amazon region. Near the house, the group saw evidence of slash-and-burn agriculture, which occurs when plants in forests are razed to create fields.

Besides the few experiences on land in Manaus, Taylor said the Field Biology group was “on the boat and on the water.”

Taking field biology at IU Southeast

Field Biology has been a course at IU Southeast for 36 years. In the course’s beginnings, students and faculty did not go abroad. Instead, they traveled to Florida to conduct research.

Nineteen years ago, however, students and faculty in the course began to go abroad. Field Biology has enabled IU Southeast students and School of Natural Sciences faculty to travel to

Jordan, the Bahamas, South Africa and other exotic locations.

The destination is determined by the instructors each summer before the following academic year. Rueschhoff said the instructors consider several factors when deciding on a trip location, including possible activities, available accommodations and cost.

“We try to hold the cost of the trip to approximately \$3,000 for the student,” Rueschhoff said. “If we cannot get flights, lodging, food and activities for the trip to fall within that price range, then we do not visit that location.”

It’s rare for the Field Biology groups to stay in hotels, Rueschhoff said. Depending on the trip locations, cheaper accommodations, such as field camps and even cruise ships, are used.

“Students are able to see if they are compatible with a career in field biology in terms of not having the amenities that they are used to at home,” Rueschhoff said.

Field Biology is offered during each spring semester, and any IU Southeast student can take the course if they have at least three credits from a different biology class.

“We’ve always left this course open to a wide spread of students,” Taylor said. “We actually like some diversity because you get different perspectives.”

Doing the work

Field Biology was designed to be different from traditional field biology courses offered at other schools, because the instructors wanted the course to be hands-on. Students in Field Biology learn about plants and animals during the first 14 weeks of the course, and a research trip occurs at the end of the course.

During the research trip, the students are required to update their field notebooks each day. The field notebooks can include the students’ observations, measurements, narratives and drawings.

In addition to keeping field notebooks, Taylor said photography is an important part of each trip, because it helps students identify unknown plants and animals.

Rueschhoff said Field Biology enables students to study organisms in their natural environments.

“It is one thing for the students to see pictures of animals in a book or in a PowerPoint presentation or lecture, but it is another thing to be able to observe these same animals in their natural habitat,” Rueschhoff said.

Providing opportunities to study abroad

Taylor said Field Biology creates great opportunities for students who may not have studied abroad otherwise. He said the course can help students as they apply for jobs, graduate school and professional schools.

Before taking Field Biology, some students have never been out of the U.S., Rueschhoff said. As a result, these students normally experience personal transitions during Field Biology trips.

“(The students’) personal growth and



A piranha from the Amazon River.

perspective changes,” Rueschhoff said. “They are able to see different cultures, meet many different people and see that there are many different ways of doing things across the globe.”

Rueschhoff said taking Field Biology is a “life-changing experience” for students.

“I have never met a student who was not somehow changed for the better by one of these Field Biology classes,” Rueschhoff said. “Very often, students describe this course as the most valuable course they have taken at IUS.”

Celebrating 20 countries in 20 years

Next year will be the 20th anniversary of the study-abroad component of the Field Biology course. Taylor said the Field Biology program will celebrate traveling to 20 countries in 20 years. As part of the celebration, he wants the program to fundraise.

“This trip is expensive, because of the equipment costs and the fact that we take multiple faculty,” Taylor said.

Taylor said a fundraising event is in the works, and it will focus on Field Biology alumni.

“I would hope to have a video of the most recent trips, recollections of previous trips, alumni recollections, and finally something about the future of the program,” he said.

Taylor said he hopes the fundraising could allow the creation of study-abroad scholarships that could be set up so students taking Field Biology could easily use them.

As of Aug. 28, the trip location for the spring 2016 semester had not been finalized. Taylor said the Field Biology group may travel to Australia or Belize.

Clark said she is thinking about enrolling in the spring 2016 Field Biology course, so she can celebrate the 20th anniversary with the group.

“I don’t even need the science credits, but I want to take it again,” Clark said.

Clark said she thinks other students should take Field Biology next year and in future years, and they should take advantage of other study-abroad trips.

“You get to see a realistic aspect of life when you see how other people live,” she said. 