

UNCP scientists peer into the black waters of the Lumber River

Over the years, odes to the Lumber River have been sung by poets, outdoorsmen and Native Americans before them.

But it took a pair of scientists at UNCP to get a close look at one of the little known creatures lurking beneath the black water.

“Shrimp in the Lumber River?” said Andrew McMillan, a senior environmental science major. “I’d never heard of it before.”

“I’ve never seen one until we started this project,” said Dr. Patricia Sellers, an environmental science professor in the Biology Department.

Two years ago, McMillan was taking the course “Freshwater Ecosystems and Watershed Management” from Dr. Sellers, when they hauled in their first freshwater shrimp, he said.

“Later, when she said she wanted to look into it a little further, I volunteered,” he said. “We didn’t know a lot about freshwater shrimp and wanted to learn more.”

Collecting trips on the river sounded like fun to an avid hunter and Eagle Scout from the Wakulla community of Robeson County.

When a scientific inquiry is launched, investigators never know what they’ll find until they start down the road, or river in this case. Finding the first shrimp was a start.

The first hauls produced not one shrimp but two separate species – *Palaemonetes paludosus* and *Palaemonetes kadiakensis*, both commonly known as grass shrimp (and sometimes referred to as glass shrimp). More secrets began to unfold.

McMillan sent lab photos to Dr. Horton Hobbs, a noted expert on freshwater shrimp at Wittenberg University.

“Dr. Hobbs noted that it was ‘certainly unusual’ to find the co-existence of two separate species,” Dr. Sellers said.

With little prior research to guide them, the project launched an inquiry into the frequency of this cohabitation of species.

“We did have access to surveys from the 1980s by the (state) Department of Environment and Natural Resources’ Division of Water Quality that found one of these species,” Dr. Sellers said. “We have the state’s unpublished data on shrimp from their periodic benthic invertebrate monitoring.”

There were more surprises in store as the investigation moved forward, she said.



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Andrew McMillan and Dr. Patricia Sellers sort through their catch.

“This morning, we thought we found a new species, but we won’t know until it is verified,” Dr. Sellers said on March 16.

“It is unlikely.”

Using a seine and sweep nets, McMillan and Dr. Sellers set out last winter to learn more about shrimp stocks, distribution and habitat at different locations on the river.

“We didn’t know where we would find them,” McMillan said. “We considered factors like salinity, water depth and current.”

Back in the lab, McMillan photographed and examined the shrimp, which appear very similar to their much larger saltwater cousins. Dr. Sellers said there is more to learn.

“When the state sweeps, they say that 10 or more shrimp is an abundant supply,” she said. “We’ve had difficulty at some sites and the water has been very high at times.”

Dr. Sellers and McMillan have been collecting all semester, and they often find themselves up to their necks in the work.

On a warm afternoon on March 17, the search took them to a location off the Deep Branch Road. The poets are right about the Lumber River; even in winter, its beauty is magical.

In waders, McMillan and Dr. Sellers began their search in a grassy area along the bank with no luck at first. The tan grass teems with life – fish, crayfish, spiders, dragonfly larvae and tiny crustaceans wiggle and squirm in their catch.

“These beds are interesting,” Dr. Sellers notes. “You get something from every group of organisms.”

The total haul at the first site is five tiny shrimp that will go back to the lab in the Oxendine Science Building for further examination under a microscope.

The project was part of an independent study course. McMillan ‘09 aspires to continue his studies.

“I am applying to ecology grad schools in New Mexico and Arkansas,” he said. “If that doesn’t work out, I’d like to work with the forestry service.”

Until graduation, McMillan continued collecting and making poster presentations.

“I think I’ll title the project, ‘Shrimp in the Lumber River,’” he said. “I think that’s enough to surprise people.” ■