

Welcome to the 5th Annual P.U.R.E. Symposium!

Tuesday April 6, 2010
LSF 102



“A Survey of the Biodiversity of Reptiles and Amphibians at Lynches River County Park.”

Caren Chinich 4:00 – 4:15pm

Faculty mentor: Dr. Jeff Camper and Dr. Julia Krebs

Reptiles and amphibians play a vital role in an ecosystem’s food chain, as well as account for a large portion of the biomass in the ecosystem in which they reside. A study performed at Lynches River County Park surveyed the biodiversity and habitat of reptiles and amphibians at the park. Drift fences and coverboards were used as trapping methods and evaluated for effectiveness. The results showed that the highest number of species was found in the pine forest over the sand and swamp habitats. The long leaf pine forest is a prime habitat due to the abundance of undergrowth. Low plants and shrubs allow for protection and downed trees, stumps, and logs create cover objects for reptiles and amphibians to hide and nest. More animals were also found on days with precipitation and temperatures between 15.5 and 21.5 degrees Celsius. Water plays a vital role in high summer temperatures by preventing desiccation in amphibians. Temperature is also an important factor for the animals. If the temperature becomes too hot, reptiles go into a type of dormancy known as aestivation until temperatures reach a tolerable level and moisture is present. When exposed to cold temperatures, reptiles become lethargic and will seek dens, logs, or other shelter to escape the cold.

“Changes in Community Structure of Two Invasive Bivalves in Lake Erie.”

Daniel Joyner and Rita Lai 4:15 – 4:30pm

Faculty mentors: Dr. Ann Stoeckmann

This project examined the current state of a community of Zebra and Quagga mussels, two invasive species of dreissenid mussels in Lake Erie. This mussel community has changed since the initial invasion in the mid-1980’s. The Quagga mussel invaded in the early 1990’s and is replacing the Zebra mussel. Densities and length/frequency distributions are being altered by predation by the round goby, a fish that is a third community invader. The goby eats smaller, newly settled mussels and thereby alters mussel recruitment. Two groups of mussels were examined. The first was mussels that naturally inhabited rocks on the benthos of Lake Erie. Rocks were collected by scuba and 64cm² circular areas of the population were sampled. The second group was composed of mussels that had settled on 6x8cm plates protected from goby predation by cages suspended on lines in Lake Erie. The plates were in place from April - August 2008. Factors examined included density (number/m²), species proportion, length/frequency distribution, and for the rock group, the correlation between length and body mass. Data from this 2008 project will be compared to 1999 -2001 and 2003 data. Preliminary results show a 50% increase in total density of mussels to 15,078 mussels/m² from 2003. Quagga mussels remain the dominant species but their representation decreased from 81% to 71%. In addition, Quagga mussels are now the dominant settler on the plates at 64% compared to 2% in 2001. The settlers would also have contributed about 23,900 mussels/m² additional mussels to the community if there were no predation.

“Analysis of Diamondback Terrapin Diet.”

Katherine McDaniel 4:30 – 4:45pm

Faculty Mentor: Dr. Peter King

The diamondback terrapin turtles, *Malaclemys terrapin*, were studied in North Inlet Winyah Bay, Georgetown, SC and feces from 19 terrapins from 2008 and 5 terrapins from 2009 were collected and examined for food items. Food items found consisted of periwinkle snails (*Littorina irrorata*), crabs, and plant matter. The terrapin diet was found to consist primarily of periwinkle snails. Crabs represented the second largest food item in their diet, and plant matter represented the third largest food item in their diet.

“Injuries to Diamondback Terrapins, *Malaclemys terrapin*, in North Inlet-Winyah Bay, Georgetown, SC.”

Monica Sokol 4:45 – 5:00pm

Faculty Mentor: Dr. Peter King

Diamondback terrapin injuries were documented throughout a 4-year mark and recapture study at North Inlet-Winyah Bay, Georgetown, SC. Forty three of the 301 terrapins caught (14.3%) exhibited some type of injury. Injuries were classified by cause. 46.6% of the injuries were likely caused by human impact, 46.5% due to predation or developmental problems, and 6.9% by indeterminate factors. Human impact will be illustrated and discussed.

The Department of Biology at FMU strongly encourages student participation in research activities. We offer many opportunities for undergraduates to assist in faculty research or develop their own independent research projects. Students can earn academic credit through Special Studies (BIO 497) and Honors Independent Study.

If you are interested in learning more about P.U.R.E. or available research opportunities, please visit our website at: <http://www.fmarion.edu/academic/Biology> and click on 'Research' link. You can also contact Dr. Barbeau (tbarbeau@fmarion.edu) or Dr. Pryor (gpryor@fmarion.edu), the coordinators of P.U.R.E. We can answer any questions you might have and get you started on a research project!