

In the footsteps of dinosaurs

October 27 2010, By Colleen Luby

(PhysOrg.com) -- A geosciences grad student is piecing together evidence about dinosaurs from fossilized footprints.

Uncovering clues to unlock ancient puzzles is no new task for Patrick Getty, a geosciences graduate student at UConn. Ever since he was a child, Getty has had a passion for the past, specifically dinosaurs. This summer was no exception.

Getty grew up in Massachusetts, not far from Holyoke, where Dinosaur Footprint Reservation is located. He recently returned to his childhood haunt and spent three months mapping dinosaur footprints there. His goal was to test previous hypotheses of dinosaur movement in Hartford Basin, a rift basin associated with the breakup of Pangaea, the [supercontinent](#) that existed about 250 million years ago, and the opening of the Atlantic Ocean.

The reservation was given its first cursory description in the 1830's by Edward Hitchcock, an American geologist, and was mapped by noted American paleontologist John Ostrom in 1970. Ostrom found 134 dinosaur prints, and concluded from his findings that the unknown dinosaurs that inhabited this particular locale were carnivorous and were likely moving together as a group. Additional, preliminary studies over the years indicated, however, that the site is more complex than Ostrom thought, and that his hypothesis needed to be reexamined.

"This was always puzzling because having a large carnivorous herd wouldn't make sense ecologically," says Getty. "Most of the prey species

were smaller than the carnivores, so as a unit, the herd would not be able to sustain itself on the available prey.”

Getty identified more than 1,000 dinosaur footprints this year, looking at different layers of rock for prints. Using the print size and the shape of the toes and claws, he was able to roughly estimate the size of each dinosaur, and also whether or not each dinosaur was a predator. Looking at the different layers on which Ostrom discovered his prints adds a time dimension to the research; deeper layers revealed prints made earlier in time, which added valuable insights into changes in the dinosaurs’ habits over the years.

After further inspection of the rocks in which the footprints are preserved, Getty noted that the dinosaur tracks are roughly parallel to ripple marks, which were made by waves and indicate the orientation of the ancient shoreline. In his new assessment of the dinosaur track patterns, Getty hypothesizes that these [dinosaurs](#) may have been following this ancient shoreline for hunting.

For Getty, this new insight exemplifies his passion for paleontology.

“My work is about constantly learning something new about ancient organisms that we can’t study directly. Modern biologists can study, for example, a certain tree in front of them if they want to. We are limited in this respect, so when we find something new or draw a new conclusion from older evidence, it is important to integrate these new ideas into our knowledge base.”

Provided by University of Connecticut

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