Researchers move endangered mussels to save them

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A team of biologists, headed by Jeremy Tiemann of the Illinois Natural History Survey, transported two endangered freshwater mussel species, the northern riffleshell (Epioblasma rangiana) and clubshell (Pleurobema clava, pictured), from Pennsylvania to Illinois. Credit: Jeremy Tiemann

(Phys.org) —Researchers have transported two endangered freshwater mussel species from Pennsylvania to Illinois in an attempt to re-establish

their populations in the western part of the Ohio River Basin.

The team of biologists, led by Jeremy Tiemann, of the Illinois Natural History Survey (INHS), traveled to the site of a bridge-replacement project on Pennsylvania's Allegheny River to collect northern riffleshell (Epioblasma rangiana) and clubshell (Pleurobema clava) mussels. The INHS is a division of the Prairie Research Institute at the University of Illinois.

The two mussel species historically had inhabited the Ohio River Basin, an area that stretches from Illinois to Pennsylvania and New York to Kentucky. The 2- to 3-inch-long northern riffleshells and their larger clubshell counterparts make their homes three or more inches beneath the surface of the gravel layer they live in, Tiemann said.

There are more than 30,000 individual mussels of these species living under Pennsylvania's Hunter Station Bridge. The bridge-replacement project brings with it the potential for huge losses of the already endangered species, he said.

Mussels reproduce by attaching their juveniles to certain species of fish, so finding a suitable habitat for them can be a challenge. The northern riffleshell was "last seen alive in Illinois about a hundred years ago," Tiemann said. There are sites on the Vermillion River in Illinois that serve as the perfect backdrop for the re-establishment of populations in the species' historical range, he said.

"It is a win-win situation for everybody," Tiemann said. "We save the mussels and get a new population here in Illinois."

The team collected the mussels over a two-day period in late August, and then brought them to their lab in Illinois to be tagged with a "microchip similar to what you put in your dog or cat. (It's) the size of a large grain

of rice," Tiemann said.

Last year, the group collected and transported 1,000 northern riffleshells and 200 clubshells. The team has seen an 80 percent survivorship within this group.

This year, they transported 750 clubshell and 250 northern riffleshell mussels.

The benefit of the project stretches beyond simply removing these species from the endangered list. Mussels have "their own little niche within the ecosystem and food webs" of their habitats, Tiemann said. Their shells provide a home for many fish and insects. They also are effective biofilters that help clean the water.

"A group of mussels in a tight area can filter as much water as a treatment plant," Tiemann said. "Hopefully we will one day be able to pinpoint the exact monetary value of these Vermillion River mussels so policymakers can translate the science into dollars."

For now, Tiemann is happy to see the restoration making waves among enthusiastic farmers, government wildlife agencies and concerned citizens.

"A lot of people like to be outside, and this is one thing we can do to restore this scenic river to its pre-settlement condition," Tiemann said.

Provided by University of Illinois at Urbana-Champaign