

TO CATCH A CRAYFISH



HIGH SCHOOL BIOLOGY STUDENTS LEARN HANDS-ON LESSONS WHILE HELPING THEIR LOCAL ECOSYSTEM.

Tracy Arnold

In a small central Wisconsin town, students in a high school biology class are helping to protect Wisconsin's native species and aquatic ecosystem.

The project at Pittsville High School started seven years ago with efforts to trap the invasive rusty crayfish (*Orconectes rusticus*), which had taken over the Yellow River. As conservation program coordinator for Wood County's Land and Water Conservation Department, I teamed up with Todd Steward Sr., life science and psychology teacher from Pittsville High School, to develop the hands-on project for his students.

Together we constructed traps, purchased waders and presented the project to students. They took the lead in developing plans, deploying the traps and waiting for the rusty crayfish to be caught.

The rusty crayfish is an invader in Wisconsin. Native to the Ohio River Basin, rusty crayfish are most commonly a

reddish-brown color, hence their name. In some instances they can be greenish or grey. During mating season, males can have blue claws.

"The most recognizable characteristic of a rusty crayfish is two 'rust' spots located on either side of their carapace and black circles around the tips of their front claws," said Laney Garrels, a student who has worked on the project. "It is easy to distinguish between a male and female rusty crayfish. The male crayfish have an extra pair of swimmerets that fold upwards under their abdomen, whereas the females do not."

Research and removal

Pittsville High School's rusty crayfish project involves research as well as removal of the invasive species. Every



Biology students at Pittsville High School in Wood County take to the Yellow River to participate in ongoing research and removal projects involving the rusty crayfish, an invasive species in Wisconsin.

SARAH DOWNS

other day while involved with the project, the student researchers head over to the Yellow River — just across Riverside Park from the high school — pull on waders, trudge through the river to retrieve their traps and drag the catch back to shore.

Once the traps are out of the water, teams of students pull out each crayfish to verify the species, take measurements and document sex, color changes and behaviors. Students also collect data on variables such as water temperature, water flow, river substrate, bait and bait containers used for trapping.

The students have learned over the years that water temperature dictates which crayfish they most likely will catch. Male crayfish come out first and tend to fill the traps at the beginning of the trapping season. Students take note of color changes on the claws of the male crayfish and when the claws start to turn blue, they know to be on the lookout for females. After the water reaches a certain warmer temperature, the females start to appear in traps.

Once the females start to appear, the students make observations of the underside of the tail. Females can be seen “in berry,” meaning they are carrying eggs under the tail. These eggs will stay there until they molt three to four times before they leave the mother’s tail. Ma-

ture female crayfish can carry between 80 to 575 eggs.

By determining the gender of each crayfish, the students can do population projections to help predict the future of the Yellow River ecosystem. By catching and removing the crayfish, they are helping to regenerate the river’s native ecosystem. Over the last three years of the project, students have started to see numerous macroinvertebrate, fish and amphibian species begin to return.

Great way to learn

Giving students a chance to see rusty crayfish up close is a great way for them to understand more about this invasive species, Steward said. “Everyone learns in different ways, but immersing yourself in your work is the best way to learn.”

Often the lessons are entertaining, and sometimes they are more of a practical nature, as noted by Paula Alvarez Pola, an exchange student from northern Spain.

“At first when I took biology class, it was because I just needed the credit to validate my school year, but I would never imagine how fun it would be,” she said. “I am always going to remember the first time I went to the river to start this experiment. Mr. Steward told us to pick some rocks to put them inside our traps (to weight them down), but he never said, ‘Don’t bend over picking your rocks or you will get wet.’

“So when I got in the river, the first thing I did to pick up a rock was bend over — so all the water came inside the waders. It was so cold and so wet. Even though it sounds pretty bad, it was the funniest thing I have ever done in biology class.”

The experience working on the rusty crayfish project, she added, is something she will carry with her when she returns to Spain.

“I was impressed how lucky these students are to take part in this experiment, because back home I would never be able to do it,” she said. “From this experience, I have learned so many new things and I would like to do the same project again, but with the invasive species from my country.”

Positive impact

Over the last seven years, students have caught thousands of rusty crayfish. So what becomes of them upon removal from the river?

After emptying all the traps and documenting their findings, the students put each day’s catch into storage bags and load them into a freezer donated by a local Maytag store. Once all research on the specimens is completed, they are loaded into coolers and taken to the Bay Beach Wildlife Sanctuary in Green Bay, where they become food for animals such as raccoons and otters in the sanctuary’s R-PAWS wildlife rehabilitation program.

Pittsville High’s rusty crayfish project continues to evolve and expand over time. The number of crayfish trapped has decreased while the number of native species documented in the Yellow River has increased, so students know they are making an impact.

Every year seems to bring a different obstacle during trapping season, whether it is low water temperature, extreme flooding or even snow. Still, the students are eager to get to the river each working day. To deal with any issues, they brainstorm potential solutions, make adjustments and put their ideas to the test in the field.

As word has spread about the project, it has even expanded. After school is out for the year, equipment used in the research is moved to North Wood County Park, on the Yellow River just north of Pittsville, where campers can continue the work of catching and removing the invasive crayfish throughout the summer.

The rusty crayfish research project started as an idea to connect high school students to real-world conservation problems and solutions. It has turned into a memorable experience for all involved. ❧

Tracy Arnold is the conservation program coordinator for Wood County’s Land and Water Conservation Department. Pittsville High School students Laney Garrels, Paula Alvarez Pola and Sarah Downs contributed to this story.

>>> FOR MORE INFORMATION

For more information on Pittsville High School’s rusty crayfish research and removal project, contact Tracy Arnold at tarnold@co.wood.wi.us or Todd Steward Sr. at stewardod@pittsville.k12.wi.us.