

Summary: Dr. Zachary Loughman, Astacidea (Crayfish)

Dr. Zachary Loughman of West Liberty University, VA was recruited by Mona Halvorsen after viewing his presentation at Discover Life in America's conference. His research, "Proposal for Crayfish Surveys of Big Thicket National Preserve," began in 2013.

The proposal was accepted but there were issues with using TCEQ funds to pay for supplies. Both the Science Committee and the researcher were educated on this limitation. A checklist was created to help the committee score proposals to avoid this problem in the future. This was explained to the researcher and adjustments were made. The end result was that all funds were used according to TCEQ guidelines. Receipts supported expenses. Of note, Loughman's journal impressively documented his work log and research.

Mona Halvorsen helped Loughman. She collected equipment mailed to the FRS. She identified sites, water levels, road conditions for access, and served as a guide. She assisted with collections and data reporting. Data was interactively mapped using ARC/GIS software. A subscription needs renewal to enable viewing of this information online.

Loughman's expertise, knowledge, and enthusiasm was tapped, and he shared presentations with Kountze High School, a Science Café in Beaumont, and at a local Mini-Bioblitz with the National Park Service. Media outreach was excellent. A poster was created, and Loughman continued to present and publish his work.

In 2015 Loughman presented in Savannah, Georgia "Astacology and crayfish conservation in the southeastern United States: Past, present and future" at the Southern Division of the American Fisheries Society. Loughman also published a list of all crayfishes (family *Cambaridae*) in the southern United States, which includes common names, global conservation status, an alternative review of the conservation status based on the IUCN red list criteria, and state distribution.

In 2016 Loughman's research was presented and published in the proceedings of the West Virginia Academy of Science 91st Annual Meeting at Marshall University. The topic was the result of research from Angelina County. (Myers et. al, 2016) Loughman conducted further research in the lab on potential impacts of invasive crayfish on native crayfish. (Hale, et. al, 2016)

In 2018 Loughman's research was referenced in the *Middle and Lower Neches River Basin Bioassessment* published by Texas Parks and Wildlife.

Receipt of the final report and data lagged. After communication with researcher and Laura Musilli, the Grants Manager at West Liberty University, a No-Cost Extension was submitted. Assistance was given regarding submission of receipts, and Mary C. Johnston reviewed the final report and made suggested improvements. The Final Report was then accepted in 2018 by ToD's Science Committee and BITH, and all funds were expended.

This was an exciting, interesting research project. The ToD worked with a very busy researcher (He was actually selected as 2014 Professor of the Year by the Faculty Merit Foundation of West Virginia.) We were able to submit data to NPS and successfully conclude the project in 2018.

Submitted by Mary C. Johnston, October 26, 2020

In 2026, ToD Chair Mary Johnston and Intern, Natalia Doiron, reviewed data and records. No additional research has been conducted and the Taxa Tally data remains current and is verified.

Submitted by Mary C. Johnston, April 2026.