

Thicket of Diversity Accomplishments 2022

The Thicket of Diversity (ToD), established in 2006, operates under the Big Thicket Association (BTA) with the mission to identify every species of plant, animal, and other life form living in the Big Thicket National Preserve (BTNP) and Southeast Texas. In 2022 two research projects were completed and outreach through publications and presentations was conducted. Three projects are ongoing. ToD projects are performed with penalty monies from the Texas Commission on Environmental Quality enforcement actions.

Dr. Daniel Bennett of Stephen F. Austin State University and Dr. John Pascarella of Sam Houston State University documented 127 species of bees with 94 as new to the preserve. Graduate student Archie Saul's thesis, "*The Bees of Two Sites in the BTNP, Texas with a consideration of the effects of a rare flooding event,*" became available for viewing online.

Alison Tarter, Southern Region Climate Center, Texas A&M University, collaborated with Dr. Astrid Schwalb, Texas State University, to research mussels. 32 species were verified. Tarter presented research August 7-12 at the Freshwater Mussel Conservation Society's symposium. In March, *Hydrobiologia* published, "*Impact of extreme climatic events on unionid mussels in a subtropical river basin.*" It was co-written by ToD researchers Tarter; Schwalb; Neil B. Ford, University of Texas at Tyler; and Daniel E. Symonds of Stantec Consulting. Daniel F. Ford of Edge Engineering and Science in Houston also contributed. The study looked at the impacts of droughts, flooding, and salt water intrusion and concluded that protecting wetlands is crucial to protect freshwater mussels and the ecosystem services they provide.



Tarter Identifies Freshwater Mussels

The North Carolina Museum of Natural Sciences visited the region to begin their survey of the leeches of the BTNP. Dr. Bronwyn Williams, Research Curator of Non-molluscan Invertebrates, is eagerly at the helm after the retirement of the project's lead researcher. Megan McCuller, Collections Manager of Non-molluscan Invertebrates, and Jean Im, DigIn technician joined Bronwyn in BTNP this fall. In spite of the drought-like conditions, they documented a minimum of five leech species.

Robert Laroche and Dr. Scott Egan of Rice University and Dr. Daniel Duran of Rowan University, New Jersey were awarded funds to initiate "*Exploring Tiger Beetle Diversity Associated with Salt Domes Across East Texas.*"

Longtime ToD researcher, Dr. Scott Solomon, was the keynote speaker for Big Thicket Day on the Neches in October. Solomon teaches ecology, evolutionary biology and scientific communication as an Associate Teaching Professor at Rice University. He is also a Research Associate at the Smithsonian Institution's National Museum of Natural History.

Dr. Solomon has conducted multiple surveys of ants and teaches an annual course using the Big Thicket as an outdoor learning lab. His students utilized the housing provided at Saratoga's Big Thicket Field Research Station Learning Center owned by the preserve that is managed by the BTA.

Post Covid, the Field Research Station experienced an uptick in users with a total of over 600 overnight stays. Groups using the facility included Texas State University, American Youth Works/ Texas Conservation Corps, Americorps, Smithsonian Environmental Research, CorpsTHAT, Rice University, Student Conservation Association- Gulf Coast, and the North Carolina Museum of Natural Sciences.

A Sour Lake Historical Tour with information on ToD was presented for the deaf conservation work crew staying at the Field Research Station. An interpreter and food were provided by the Lions Club of Sour Lake.

Additional outreach was reported by Texas Parks and Wildlife interpreter Kathy Smith. Village Creek State Park staff coordinated educational activities and longleaf pine restoration. Dr. Randell Yoder and Dr. Matthew Pyne shared updates on biodiversity research conducted through Lamar University.

The Thicket of Diversity was further disseminated through exhibits at Champions for Nature-Ford Park, Big Thicket Day on the Neches, and in the Jefferson Theater at a movie showing of *Deep in the Heart* hosted by the National Parks Conservation Association and partners. A Wildflower slideshow created from photographs by Alec Dyer was posted for public sharing on Youtube.

Dr. Jeff Pittman continued updates on the ToD's website. To see a wealth of information on Big Thicket science and this amazing project, go to www.thicketofdiversity.org.

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