

# Alison A. Tarter

409.920.5889 – tartera@me.com

## EDUCATION

---

### Master of Science in Aquatic Biology

Expected Spring 2019

Texas State University, San Marcos

Thesis title: "Distribution of Unionid Mussels in the Big Thicket Region of Texas"

Advisors: Astrid Schwalb, PhD and Thom Hardy, PhD

### Bachelor of Art in Photojournalism

1999

Stephen F. Austin State University, Nacogdoches, TX

## RESEARCH EXPERIENCE

---

### Graduate Research Assistant

2018 – Present

*Department of Aquatic Biology, Texas State University*

- Designed and executed a publication quality project on the distribution, genetic distinction, density, diversity, and habitat preferences of freshwater mussel species (unionids) in Southeast, Texas
- Sought, wrote, and was awarded a grant to fund my research project
- Collaborate and coordinate with faculty, researchers at other institutions, and fellow graduate students
- Seek, train, and schedule volunteer research assistants for field work
- Create and maintain a database of variables related to local freshwater mussel distribution and community composition
- Integrate historic field distribution records with remotely sensed data to inform survey site selection
- Interpretation and presentation of crucial findings
- Produce a systematic literature review relevant to research questions

### Graduate Research Assistant

2015 - 2017

*The Meadows Center for Water and the Environment, Texas State University*

- Contributed to the creation of a multi-disciplinary predictive habitat suitability model, based in GIS, aimed to track flood pulse-related spawning occurrences in riverine fish
- Created and adapted data sets for use in GIS- based ecological modeling
- Contributed to ongoing projects including the creation of multi-disciplinary, predictive hydrologic models
- Created and maintained a database of variables related to seasonal flooding and spawning behavior in large-bodied fish
- Used appropriate software to create, translate, and integrate GIS data layers and digitize data as required
- Performed spatial / temporal habitat analysis of inundated areas at various modeled stages of flooding
- Collaborated with faculty in other departments and state / federal agencies

## TEACHING EXPERIENCE

---

### Lead Environmental Educator

2016, 2017

#### *Big Thicket Association*

- Created and implemented curriculum that incorporates local environmental processes with state education (k-12) science standards
- Prepared and taught interactive programs appropriate for a wide range in education (kindergarten to post baccalaureate) and interest levels
- Dynamic in situ interpretation of regional ecology and history on a “floating laboratory” - *The Ivory Bill* (educational excursion boat for the Big Thicket Association)
- Water quality testing and experiments part of long-term ecological monitoring project
- Created and conducted interactive simulations of ecological processes
- University to kindergarten level -- performed interactive water quality experiments on “floating classroom”
- Collaborated with nonprofit and government agencies to implement no-cost interactive science education programs and workshops for regional schools
- Displayed ability to connect with students of varying backgrounds
- Delivered requested scientific talks at various community engagements and schools
- Managed and scheduled boat captains and volunteers
- Maintained boat and educational instruments

### Assistant Instructor, Functional Biology Laboratory

2014, 2015

#### *Department of Biology, Texas State University*

- Prepared and facilitated laboratory lectures, taught fundamental techniques and procedures used in scientific research (lab safety, lab techniques, equipment, measurements, scientific report writing, scientific method)
- Created, proctored, and graded assessments to ensure student comprehension of material covered (including scientific reports, lectures, quizzes, and examinations)
- Taught students how to design and implement controlled scientific experiments
- Taught students to develop skills needed to interpret and present experiment results of scientific data, identify independent and dependent variables, conduct appropriate analysis of data, draw conclusions, and convey inferences through oral presentations and/or written reports that incorporate the use of tables, figures, and graphs
- Collaboration and coordination with classroom section instructors

## GRANTS

---

### 2017 “Freshwater mussel biodiversity survey within the Big Thicket National Preserve”

Thicket of Diversity, Performed with penalty monies from a Texas Commission on Environmental Quality enforcement action

## **PRESENTATIONS / SPEAKING ENGAGEMENTS**

---

### **2016**

- Trash Fish to Trophy Fish, Alligator Gar in a Changing World -- Golden Triangle Sierra Club
- Routinely presented educational seminars for the Sabine Neches Chapter of the Texas Master Naturalists (aquatic ecology, water quality assessment, marine trophic structure, ichthyology, area endemics)

### **2017**

- The effects of ocean acidification on marine life – Region 5 Science Conference for Texas Educators
- Storm surges, flooding, hydrologic modification, and the role of wetlands along the Gulf Coast -- Lamar University JASON Project, Beaumont, Texas
- Fish species identification and use of benthic organisms as bioindicators -- Michael Hoke Memorial Outdoor Awareness Program, Orange, Texas
- Estuarine systems and local concerns – Neches River Festival, Beaumont, Texas
- Beaumont Children’s Museum – Fish anatomy and comparative anatomy
- Introduction to marine biology -- Bob Hope School, Port Arthur, Texas

### **2018**

- Mussels of the Big Thicket -- Gulf States Mycological Society Conference, Wiggins, Mississippi
- Aquatic and estuarine ecology of Southeast Texas - Kountze ISD – Big Thicket National Preserve
- Wetland ecology - Dallas Community College – Big Thicket National Preserve
- Status Wildlife within the Lower Neches River drainage basin – Episode 010, A2Z Podcast

### **2019**

- Current Threats to Local Wildlife and related subjects -- Episode 065, A2Z Podcast
- Aquatic and estuarine ecosystems - Kountze ISD – Big Thicket National Preserve

## **PROFESSIONAL EXPERIENCE**

---

### **Naturalist / Interpretive guide**

**2011**

*McKinney Roughs Nature Park, Bastrop, Texas*

- Used my experience and knowledge of regional flora and fauna to lead interpretive nature hikes and outdoor activities
- Led activities (including kayaking, rafting, rock wall climbing, and high-ropes course) for summer nature camp
- Regularly gave presentations on native Texas animals using live animals

### **Deputy / Park Ranger – Travis Co. Sheriff’s Department**

**2004-2008**

*Travis County, Austin, Texas*

- Responded to law enforcement and medical calls
- Daily patrol and inspection of parks and preserves
- Supervised park employees and visitors
- Led nature hikes and gave interpretive talks as requested

## **CONSULTATION**

---

- National Parks Service (Big Thicket National Preserve) – Outreach Education – Talks and guided tours (hikes, canoe trips)
- Museum of the Gulf Coast [The Great Outdoors exhibit; evaluation (phylogeny, identification, cataloging) of historic bivalve collection]
- Wildlife film / photography science advisor and location scout

## **TECHNICAL SKILLS**

---

- Calibrating and maintaining lab and field instruments
- Water quality / chemistry testing (lab and field): BOD, TSS, total phosphates, nitrates, titrations, pH, alkalinity, turbidity, conductivity, heavy metals, and bacteriological tests
- Compiling, recording, storing, and interpreting data for future reports
- Computer Skills: GIS, HEC-RAS, Excel, Word, PowerPoint, R (statistical computing software), Photoshop
- Experience creating, conducting, and documenting biological field surveys (including obtaining state and federal collection permits required to work with threatened and endangered species)

## **RESEARCH INTERESTS**

---

- Use of hydrodynamic habitat models to determine environmental flows required for persistent occupation of selected aquatic organisms, including benthic macroinvertebrates
- Largescale study of cross-trophic transfer through stable isotope analysis

## **REFERENCES**

---

Thomas Hardy, Ph.D., Chief Science Officer  
The Meadows Center  
Department of Biology  
Texas State University, San Marcos  
512.245.6729  
Thom.Hardy@txstate.edu

Astrid Schwalb, Ph.D., Assistant Professor  
Department of Biology  
Texas State University, San Marcos  
512-245.8648  
Schwalb@txstate.edu

Cynthia Parish, Ed.D., Instructor  
Department of Earth and Space Sciences  
Lamar University, Beaumont, Texas  
409-880-8236  
Cynthia.parish@lamar.edu