

## CHAD WESLEY HARGRAVE

### *Curriculum Vitae*

Department of Biological Sciences  
Sam Houston State University  
Huntsville, Texas 77341

Phone: 936-294-1543  
Fax: 936-294-3940  
email: cwhargrave@shsu.edu

### **EDUCATION**

**Ph.D. Zoology** University of Oklahoma, Norman, OK. May 2005

Advisor: William Matthews

DISSERTATION: Effects of Fish Density, Identity, and Diversity on Stream Ecosystems.

**M.S. Zoology** University of Oklahoma, Norman, OK. May 2000

Advisor: William Matthews

THESIS: Spatial and Temporal Variation in Fish Assemblages of the Upper Red River After a Summer Drought.

**B.S. Biology *Cum Laude*** University of Arkansas, Fayetteville, AR. May 1998

Honors Thesis Advisor: James Johnson

THESIS: Status of the Arkansas Darter (*Etheostoma cragini*) and Least Darter (*Etheostoma microperca*) in Arkansas.

### **EMPLOYMENT**

Assistant Professor, Department of Biological Sciences, Sam Houston State University, Huntsville, TX. 2006-present.

Post-Doctoral Research Fellow, University of Oklahoma Biological Station, Kingston, OK. 2005- 2006.

Graduate Research Assistant, Sam Noble Museum of Natural History, Norman, OK. 2004-2005.

Graduate Curatorial Assistant, Sam Noble Oklahoma Museum of Natural History, Norman, OK. 2003-2004.

Graduate Research Assistant, Department of Zoology, University of Oklahoma, Norman, OK. 2002-2003.

Graduate Teaching Assistant Department of Zoology, University of Oklahoma, Norman, OK. 1998-2002.

Biological Technician, U.S. Forest Service, Ozark Ranger District, Ozark, AR. 1997-1998.

### **TEACHING EXPERIENCE**

**Sam Houston State University:**

General Ecology & Lab (BIO340); fall, spring 2006-2011; 70 students/class

Fish Ecology (BIO595); fall 2010; 6 students

Community Ecology (BIO595); spring 2010; 9 students  
Ichthyology (BIO582); fall 2009; fall 2009; 9 students  
Experimental Design (BIO595); spring 2009, 2011; 20 students  
Aquatic Ecology (BIO433); spring 2007; 20 students  
Environmental Science (BIO137); fall 2006; 60 students

**University of Oklahoma Biological Station:**

Reservoir Fish Ecology (ZOO4970/5970); summer 2005-2006; 16 students/class

**RESEARCH INTERESTS**

Fish Ecology  
Fish Conservation  
Ecosystem, Community, and Population Ecology  
Human impacts on Aquatic Ecosystem Structure and Functions  
Effects of Climate Change on Aquatic Ecosystems

**RESEARCH GRANTS, CONTRACTS AND FELLOWSHIPS**

13. Unites States Department of Agriculture, Sustainable Agriculture Water Conservation, Rio Grande Basin Initiative, 2010-2011  
Amount: 49,800  
Title: *Aquatic Habitat Quality in the Trans Pecos (Big Bend) Ecoregion, Southwest Texas.*  
PI: Chad Hargrave
12. Unites States Bureau of Reclamation, 2010-2013  
Amount: 150,000  
Title: *Conservation of Fish Species in Phantom Spring Lake*  
PI: Chad Hargrave
11. Texas Parks and Wildlife Department, 2010-2011  
Amount: \$18,884  
Title: *Long-term monitoring of the Endangered Pecos Gambusia and Commanche Springs Pupfish.*  
PI: Chad Hargrave, Co-PI: P. Raelynn Deaton
10. U.S. Fish and Wildlife Service & Texas Parks and Wildlife Department, 2009-2010  
Amount: \$28,000  
Title: *Ecosystem-level Conservation of the Endangered Pecos Gambusia and Commanche Springs Pupfish.*  
PI: Chad Hargrave, Co-PI: P. Raelynn Deaton
9. United States Department of Agriculture, Sustainable Agriculture Water Conservation Research, 2009-2011  
Amount: \$50,376  
Title: *Local processes driving fish assemblages in the Rio Grande Basin*

- PI: Chad Hargrave
8. Texas Parks and Wildlife Department, 2008-2009  
Amount: \$2,200  
Title: *Baseline Data: Ecosystem-level Conservation of the Endangered Pecos Gambusia and Commanche Springs Pupfish.*  
PI: Chad Hargrave, Co-PI: P. Raelynn Deaton
7. Big Thicket Association, 2008-2010  
Amount: \$15,330  
Title: *Local, Regional, and Temporal Drivers of Fish Communities in the Big Thicket National Preserve*  
PI: Chad Hargrave
6. Sam Houston State University Competitive Intramural Research, 2007  
Amount: \$5,000  
Title: *Effects of Elevated Atmospheric CO<sub>2</sub> on Stream Ecosystems*  
PI: Chad Hargrave
5. National Science Foundation, Doctoral Dissertation Improvement Grant, 2003  
Amount: \$6,980  
Title: *A Mechanistic Test of Consumer-Mediated Regulation of Primary Production*  
PI: William J. Matthews (advisor), Co-PI: Chad Hargrave
4. McCarley Student Research, Southwestern Association of Naturalists, 2003  
Amount: \$1,000  
Title: *A Mechanistic Test of Consumer-Mediated Regulation of Primary Production*  
PI: Chad Hargrave
3. University of Oklahoma Competitive Intramural Research, 2002  
Amount: \$6,975  
Title: *Effects of Fish Species Richness on stream ecosystems*  
PI: Chad Hargrave
2. Sam Noble Oklahoma Museum of Natural History Hoving Ph.D. Fellowship, 2001-2005  
Amount: \$10,000  
Title: *Effects of Fish Density, Identity and Diversity on Stream Ecosystems*  
PI: Chad Hargrave
1. University of Arkansas Competitive Intramural Research, 1997  
Amount: \$500  
Title: *Status of the Arkansas Darter and Least Darter in Arkansas*  
PI: Chad Hargrave

Total Research Funding \$345,045

### **GRADUATE STUDENTS**

Kaitlen P. Gary (MS – 2011 Graduation)  
Samuel Hamontree (MS – 2013 Graduation)

## UNDERGRADUATE RESEARCH STUDENTS

Chad Cambell (2010 - present); Kelbi Deluane (2010 - present); Heather Otell (2009- present); Assumpta Nwaneri (REU 2010); Jessica Sanchez (2009 - 2010); Ivy McClellan (REU 2009) Samir K. Rosado (2008- 2009); Laura A. Gaides (2008- 2009); Kaitlen Gary (2007-2008); Landis Shoemaker (2006-2008); Andrea Heim (REU (2008); Samuel Hammontree (2006-2008); Hanna Turner (REU 2007)

## PEER-REVIEWED PUBLICATIONS

† indicates undergraduate in my lab when submitted.

15. Chad W. Hargrave, K. David Hambright, and Lawrence J. Weider. In Press. Variation in resource consumption across a gradient of increasing intra- and inter-specific richness. *Ecology*,
14. Chad W. Hargrave, Samuel Hamontree<sup>†</sup>, and Kaitlen P. Gary. 2010. Direct and indirect food web regulation of microbial decomposers in headwater streams. *Oikos*, 119:1785-1795.
13. Chad W. Hargrave and Christopher M. Taylor. 2010. Spatial and temporal variation in fishes of the upper Red River drainage (Oklahoma-Texas). *The Southwestern Naturalist*, 55:149-159
12. Chad W. Hargrave, Kaitlen P. Gary<sup>†</sup>, Samir K. Rosado<sup>†</sup>. 2009. Potential effects of elevated atmospheric carbon dioxide on benthic autotrophs and consumers in stream ecosystems: a test using experimental stream mesocosms. *Global Change Biology*, 15:2779-2790
11. Keith B. Gido and Chad W. Hargrave. 2009. Fish, Productivity. In Gene E. Likens (Ed.). *Encyclopedia of Inland Waters*, vol. 3, pp. 473-481 Oxford: Elsevier.
10. Chad W. Hargrave. 2009. Effects of fish species richness and assemblage composition on stream ecosystem function. *Ecology of Freshwater Fish* 18:24-32.
9. Chad W. Hargrave. 2006. A test of three alternative pathways for consumer regulation of primary productivity. *Oecologia* 149:123-132.
8. Chad W. Hargrave, Raul Ramirez, Melody Brooks, Michael A. Eggleton, Katherine Sutherland, Raelynn Deaton, and Heather Galbraith. 2006. Indirect food web interactions increase growth of an algivorous stream fish. *Freshwater Biology* 51:1901-1910.
7. Chad W. Hargrave, Katherine Sutherland, Edie Marsh-Matthews, and William J. Matthews. 2005. Multiple interacting factors affect pH in museum storage fluids. *Collection Forum* 19:23-31.
6. Michael A. Eggleton, Raul Ramirez, Chad W. Hargrave, Keith B. Gido, Jason R. Masoner, Gary D. Schnell, William J. Matthews. 2005. Predictability of littoral-zone fish communities through ontogeny in Lake Texoma, Oklahoma-Texas, USA. *Environmental Biology of Fishes* 73:21-36.
5. Chad W. Hargrave and Keith B. Gido. 2004. Evidence of reproduction by exotic grass carp in the Red and Washita Rivers (Oklahoma). *Southwestern Naturalist* 49:89-93.

4. Chad W. Hargrave and James E. Johnson. 2003. Status of Arkansas darter, *Etheostoma cragini*, and least darter, *E. microperca*, in Arkansas. *Southwestern Naturalist* 48:89-92.
3. Keith B. Gido, Chad W. Hargrave, William J. Matthews, Gary D. Schnell, and Darrell W. Poque. 2002. Structure of littoral-zone fish assemblages along physical and chemical gradients in a southern reservoir: local versus system-wide effects. *Environmental Biology of Fishes* 63:253-263.
2. Kerri E. Pratt, Chad W. Hargrave, and Keith B. Gido. 2002. Rediscovery of *Labidesthes sicculus* (Atherinidae) in Lake Texoma (Oklahoma-Texas). *Southwestern Naturalist* 47:112-118.
1. Thomas M. Buchanan, Chad Hargrave, Drew Wilson, Les. G. Claybrook, and Phillip W. Penny, Jr. 1996. First Arkansas records for bigscale logperch, *Percina macrolepida* Stevenson (Pisces: Percidae), with comments on habitat preference and distinctive characters. *Proceedings of the Arkansas Academy of Science* 50:28-35.

#### **ARTICLES IN REVIEW OR REVISION**

#### **INVITED SEMINARS**

Department of Biology, Trinity University, October 2010;

Hosted by: Dr. Kelly Lyons

Department of Biology, Texas State University, September 2009;

Hosted by: Dr. Michael Huston

Big Thicket Association, Big Thicket National Preserve, October 2009; Hosted by: Linda Brindle

Department of Earth and Environmental Sciences, University of New Orleans, November 2008;

Hosted by: Dr. Martin O'Connell

Department of Ecology and Evolutionary Biology, Rice University, October 2007; Hosted by:

Dr. Jennifer Rutgers

Department of Biological Sciences, University of Southern Mississippi, November 2006;

Hosted by: Dr. Jacob Schaefer

Department of Wildlife and Fisheries Sciences, Texas A & M University, May 2006

Hosted by: Dr. Gil Rosenthal

Department of Zoology, University of Oklahoma, May 2004

Hosted by: Dr. Bill Matthews - Ph.D. Seminar

#### **ORAL PRESENTATIONS**

##### **First Authored Only:**

17. Potential hybridization between invasive *Gambusia geiseri* and endangered *Gambusia nobilis*.

At: Desert Fishes Council, 2010

16. Interactive effects of stream habitat complexity and consumers on stream ecosystem function (Invited).

- At: North American Benthological Society, 2010
15. Regional patterns in environment and fishes of the Rio Grande Basin, Texas (Invited)  
At: Rio Grande Basin Initiative, 2010
  14. On the Population and Community Ecology of Fishes in a small Second-order Stream Ecosystem.  
At: Texas Academy of Science, 2009; Southwestern Association of Naturalists, 2009
  13. Regional and Local variation in fishes of the Big Thicket National Preserve, Texas.  
At: OK-TX Aquatics Research Group and Great Plains Limnology Conference, 2008
  12. Mosquitofish ecology and a changing climate: the current and future ecological role of the *Gambusia affinis* in temperate streams.  
At: 3<sup>rd</sup> European Poeciliid Biologists Conference, 2008
  11. Global warming affects nutrient dynamics in small second order stream ecosystems;  
At: Texas Academy of Sciences, 2008; Southwestern Association of Naturalists, 2008
  10. Trophic and Functional effects of fishes in first- and second order perennial streams.  
At: Southwestern Association of naturalists, 2007.
  9. Effects of Genetic Diversity on Ecosystem Function: Grazing Rates in Clonal and Non-Clonal *Daphnia* assemblages.  
At: Southwestern Association of Naturalists, 2006; American Society of Limnology and Oceanography, 2006.
  8. Interactive consumer effects on ecosystem properties and functions  
At: Joint meeting of the Oklahoma-Texas Aquatics Research Group and Texas River and Reservoir Management Society, 2005.
  7. Fish effects on stream ecosystems: a mechanistic test  
At: North American Benthological Society, 2005; Southwestern Association of Naturalists, 2005.
  6. Fish diversity enhances ecosystem function.  
At: North American Benthological Society, 2003; Texas A&M Conservation Ecology Symposium, 2004.
  5. Evidence of natural grass carp reproduction in the Red and Washita rivers (Oklahoma).  
At: American Fisheries Society, Oklahoma Chapter Annual Meeting, 2003.
  4. Effects of fishes on stream ecosystem function.  
At: Southwestern Association of Naturalists, 2002; Great Plains Limnology Conference, 2002.
  3. Persistence and stability of fishes in a harsh prairie river system (upper Red River): Effects of scale.  
At: North American Benthological Society - Invited landscape ecology session, 2000; Oklahoma Academy of Science, 2002; Southwestern Association of Naturalists, 2000.
  2. Rediscovery of *Labidesthes sicculus* (Atherinidae) in Lake Texoma (Oklahoma-Texas).  
At: Great Plains Limnology conference, 2000.
  1. Current Status of Arkansas Darter (*Etheostoma cragini*) and Least Darter (*E. microperca*) in

Arkansas.

At: Arkansas Academy of Science, 1998; Great Plains Limnology conference, 1998;  
Oklahoma Academy of Science, 1998.

**Oral Presentations by students working in my lab SHSU:**

12. Gut contents, diet overlap and potential competitive interactions among fishes in a reconstructed desert wetland: implications for endangered species conservation  
At: Desert Fishes Council, 2010
11. Population dynamics of *Cyprinodon elegans* and *Gambusia nobilis* in two reconstructed desert wetlands.  
At: Desert Fishes Council, 2010
10. Population and community ecology of in San Solomon Cienega at Balmorhea State Park, Texas  
At: Texas Academy of Science, 2010
9. Preliminary analysis of critical current speed between *Gambusia nobilis* and *G. geisier* in Balmorhea State Park, TX.  
At: Texas Academy of Science, 2010.
8. Regional and Local variation in fishes of the Big Thicket National Preserve, Texas.  
At: Texas Academy of Science, 2009; Southwestern Association of Naturalists, 2009.
7. A context-dependent trophic cascade in a simple stream food web.  
At: OK-TX Aquatics Research Group and Great Plains Limnology Conference, 2008; Texas Academy of Science, 2009; Southwestern Association of Naturalists, 2009.
6. Fish mediated secondary production in stream ecosystems.  
At: OK-TX Aquatics Research Group and Great Plains Limnology Conference, 2008; Texas Academy of Science, 2009; Southwestern Association of Naturalists, 2008.
5. Effects of elevated CO<sub>2</sub> on stream ecosystem properties and functions.  
At: Texas Academy of Science 2008, Southwestern Association of Naturalists, 2008
4. Direct and indirect effects of fish on leaf litter decomposition;  
At: Texas Academy of Sciences, 2008; Southwestern Association of Naturalists, 2008
3. Predator-induced phenotypic plasticity in the western mosquitofish (*Gambusia affinis*).  
At: 3<sup>rd</sup> European Poeciliid Biologists Conference, 2008; Southwestern Association of Naturalists, 2008
2. A simple solution to a complex problem: a hypothesis based hierarchical approach for teaching general concepts in an ecology lab.  
At: Texas Academy of Sciences, 2008; Southwestern Association of Naturalists, 2008
1. Taxon-specific effects of microbial-mediated leaf litter decomposition in aquatic ecosystems.  
At: Texas Academy of Sciences, 2008; Southwestern Association of Naturalists, 2008

**AWARDS**

Best Graduate Student Paper, Conservation Ecology Symposium, Texas A & M 2004

Wilk's Award, Best Student Paper, Southwestern Association of Naturalists 2002  
James Thompson Award, Excellence in Graduate Teaching 2000  
2nd Place, best Undergraduate Paper, Arkansas Academy of Science 1998  
Samuel Dillenger Award: Outstanding Senior Zoologist, University of Arkansas 1998  
Scholar Preceptor Program, University of Arkansas Fort Smith 1995  
Outstanding Achievement in Biology, University of Arkansas Fort Smith 1995

### **PROFESSIONAL SOCIETIES**

Ecological Society of America  
North American Benthological Society  
Oklahoma-Texas Aquatic Research Group  
Organization of Biological Field Stations  
Southwestern Association of Naturalists  
Texas Academy of Science

### **SERVICE**

#### **Manuscripts reviewed for:**

<i>American Midland Naturalist</i>	<i>North American Journal of Fisheries Management</i>
<i>Ecology of Freshwater Fish</i> (7)	<i>Oecologia</i> (4)
<i>Ecology</i> (5)	<i>Oikos</i> (3)
<i>Evolutionary Ecology</i>	<i>Southwestern Association of Naturalists</i> (5)
<i>Freshwater Biology</i> (2)	<i>Transactions of the American Fisheries Society</i> (3)
<i>Great Plains Research</i>	
<i>Journal of Comparative Parasitology</i>	
<i>Lakes and Reservoirs Research and Management</i>	

#### **Grants reviewed for:**

*National Science Foundation*  
*Southwestern Association of Naturalists* (student grants)

#### **University Committees:**

##### **Departmental-level:**

*Distance Learning (Chair; 2010 - present)*  
*Environmental Science Program (2010 - present)*  
*Department Merit Review (2009),*  
*Departmental Budget (2008-present),*  
*Graduate Selections (2006-08),*  
*Seminar Committee (Chair; 2007-present),*  
*Center for Biological Field Studies (2006-present),*  
*Student Research Award (2008-present).*



University-level:

*SHSU Faculty Senate (2009-2012),*  
*SHSU Faculty Research Council (2008-2011),*  
*SHSU Capital Fund Campaign (2006-2009).*

**Elected Positions:**

Science Committee for the Big Thicket National Preserve (2010 - Present)  
Vice President, Executive Council, Big Thicket Association (2010 - 2013)  
Executive Council, Huntsville Senior Citizen Center (2010 - 2013)  
Board of Governors Southwestern Association of Naturalists (2006-2009).

**Public Outreach:**

Fish collecting trip on Neches River, Big Thicket Association, April 2010

Fishes of the Big Thicket National Preserve, Identification Workshop, Big Thicket Association,  
October 2009

Public Presentation, Bats of Texas, Huntsville Down-town Association and Rotary Club  
2007.

Co-host, Joint meeting of the Oklahoma Texas Aquatic Research Group and Texas Rivers and  
Reservoir Management Society, University of Oklahoma Biological Station 2005.

Public Outreach Specialist, University of Oklahoma Biological Station 2005-2006

Public presentation on Ecology of Lake Texoma, West End Association (2005, 2006, 2007).

Instructor for Science Institute for Secondary and Elementary School Teachers, Sam Noble  
Oklahoma Museum of Natural History, 2004-2005.

Various presentations at elementary schools on fish diversity and functional ecology  
2003 - present.