

TRACI POPEJOY DUBOSE

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EDUCATION

- 2020 Ph.D., Ecology and Evolutionary Biology
University of Oklahoma, Norman, OK
Dissertation: *Interaction of climate and space in variation of the functional niche of freshwater mussels (Family: Unionidae)*, Advisor: Dr. Caryn C. Vaughn
- 2015 M.S., Applied Geography, University of North Texas, Denton, TX
- 2012 B.S., Biology, University of Texas at Dallas, Richardson, TX

PROFESSIONAL EXPERIENCE

- Current ORISE Participant: USFS Postdoctoral Fellowship Evaluating Watershed Health & Freshwater Mussel Communities – PI: Dr. Wendell Haag and Dr. Steven Price
- 2020–2023 Postdoctoral Researcher – PI: Dr. Meryl Mims and Dr. Jeff Walters
- Summer 2018 Analysis of Archaeological Unionid Shell from 41TR203 (archaeological site)
Contracted by aci, Inc.
- 2015–2018 Research Assistant – PI: Dr. Caryn C. Vaughn
University of Oklahoma, Norman, OK
- Fall 2014 Analysis of Unionid Shell from a Brazoria Archaeological Site
Contracted by CRC, LLC
- Summer 2014 Research Assistant – PI: Dr. Charles R. Randklev
Texas A&M Agrilife Research Extension, Keller, TX
- 2014 Analysis of Archaeological Unionid Shell from 41HM61 (archaeological site)
Contracted by Coastal Environments, Inc.

PUBLICATIONS

[ORCID](#) [0000-0002-9309-4397] | [Google Scholar](#) [iWZhmNkAAAAJ]

* indicates undergraduate researcher

Manuscripts in preparation (drafts available on request)

DuBose, T.P., Himes Boor, G.K., Fields, M., Kalies, L., Costillo, A., Moskwik, M.P., Walters, J.R.
Can a remotely sensed habitat quality index reliably predict both habitat use and demographic performance: a case study with longleaf pine and red-cockaded woodpeckers. *In review at Ecological Indicators*

Dubose, T.P., Catalan, V.*, Moore, C.E., Farallo, V.R., Benson, A.L., Dade, J.*, Hopkins, W.A., Mims, M.C. ATraIU-TaDS: Anuran Traits of the United States with Thermal Data for Southeastern Species. *In review at Ichthyology and Herpetology*

Walters, J.R., **DuBose, T.P.**, Garcia, V., Rose, K., Blanc, L. The endangered Red-Cockaded Woodpecker is an effective umbrella species for bird communities in pine ecosystems in the southeastern United States. *In review at Ecology*

DuBose, T.P., Vaughn, C.C., Hopper, G., Gido, K., Parr, T.B. Freshwater mussels engineer macroinvertebrate habitat through different mechanisms at different spatial scales. *In prep for Hydrobiologia*

Pfeiffer, J., **DuBose, T.P.**, Keogh, S. Synthesis of natural history collections data reveals patterns of US freshwater mussel diversity and decline. [preprint available on bioRxiv](#)

Peer-reviewed publications

- (13) **DuBose, T.P.**, Moore, C.E., Silknetter, S., Benson, A.L., Alexander, T.*, O'Malley, G., Mims, M.C. Mismatch between conservation status and climate change sensitivity leaves some anurans in the United States unprotected. *Biological Conservation* 277(2023): 109866. doi:10.1016/j.biocon.2022.109866
- (12) Lopez, J., **DuBose, T.P.**, Franzen, A., Atkinson, C.L., Vaughn, C.C. (2022) Long-term monitoring shows that drought sensitivity and riparian land use change coincide with freshwater mussel declines. *Aquatic Conservation: Marine and Freshwater Ecosystems*. 32(10): 1571-1583. doi:10.1002/aqc.3884
- (11) **DuBose, T.P.**, Patten, M.A., Holt, A.S.*, Vaughn, C.C. (2022) Latitudinal variation in freshwater mussel potential maximum length in Eastern North America. *Freshwater Biology*. doi: 10.1111/fwb.13898
- (10) Vaughn, C.C., Parr, T.B., Gido, K.B., **DuBose, T.P.**, Gates, K.K., Hopper, G.W. Do mobile consumers homogenize the distribution of resources in stream food webs? (2022) A test with overlapping fish and mussel aggregations. *Freshwater Biology*. 67(4): 684-694. doi: 10.1111/fwb.13872
- (9) Randklev, C.R., Wolverton, S., Johnson, N., Smith, C., **DuBose, T.P.**, Robertson, C.R., Conley, J. (2020) The utility of zooarchaeological data to guide listing efforts for an imperiled mussel species (Bivalvia: Unionidae: *Pleurobema riddellii*). *Conservation Science and Practice* e253. doi:10.1111/csp2.253
- (8) **DuBose, T.P.**, Ashford, K.*, Vaughn, C.C. (2020) Freshwater mussels increase survival of largemouth bass (*Micropterus salmoides*) in drying pools. *Ecology of Freshwater Fish* 29: 220-229. doi:10.1111/eff.12508
- (7) Hopper, G., **DuBose, T.P.**, Gido, K.B., Vaughn, C.C. (2019) Freshwater mussels alter fish distributions at fine spatial scales through habitat modifications. *Freshwater Science*. 38(4)
- (6) **DuBose, T.P.**, Atkinson, C.L., Vaughn, C.C., Golladay, S.W. (2019) Drought-induced, punctuated loss of freshwater mussels alters ecosystem services at several timescales. *Frontiers in Ecology and Evolution*. 7: 274 doi:10.3389/fevo.201900274
- (5) Randklev, C.R., Tsakris, E.T., Johnson, M.S., **Popejoy, T.**, Hart, M., Khan, J., Geeslin, D., Robertson, C.R. (2018) The effect of dewatering on freshwater mussel (Unionidae) community structure and the implications for conservation and water policy: a case study from a spring-fed stream in the southwestern United States. *Global Ecology and Conservation*. doi:10.1016/j.gecco.2018.e00456
- (4) Hopper, G., Gido, K.B., Vaughn, C.C., Parr, T.B., **Popejoy, T.**, Atkinson, C.L., Gates, K.G. (2018) Biomass distribution of fishes and mussels mediates spatial and temporal heterogeneity in nutrient cycling in streams. *Oecologia* 188:1133–1144

- (3) **Popejoy, T.**, Randklev, C.R., Neeson, T.M., Vaughn, C.C. (2018) Prioritizing sites for conservation based on historical baselines and feasibility of protection. *Conservation Biology* 32:1118-1127. doi:10.1111/cobi.13128
- (2) **Popejoy, T.**, Randklev, C.R., Wolverton, S., Nagaoka, L. (2018) Conservation implications of late Holocene freshwater mussel remains of the Leon River in central Texas. *Hydrobiologia* 810:477-487
- (1) **Popejoy, T.**, Wolverton, S., Nagaoka, L., Randklev, C.R. (2017) An Interpretive framework for assessing freshwater mussel taxonomic abundances in zooarchaeological faunas. *Quaternary International* 427A:36-46

Published datasets

Pfeiffer, J., **DuBose, T.**, Keogh, S., 2022., U.S. freshwater mussel occurrence data: Dryad, <https://doi.org/10.5061/dryad.c2fqz61cg>

DuBose, T.P., Moore, C.E., Silknetter, S., Benson, A.L., Alexander, T., O'Malley, G., and Mims, M.C., 2022, Rarity and Climate Sensitivity index and components of 90 species of frogs and toads native to the conterminous United States: U.S. Geological Survey data release, <https://doi.org/10.5066/P9U56Z7W>.

Vaughn, C.C., Gido, K.B., Parr, T.B., **DuBose, T.P.**, Hopper, G, Lopez, J.W., Higgins, E. 2021. Overlapping fish and mussel hotspots: Open Science Framework repository, <https://doi.org/10.17605/OSF.IO/FWJH9>.

Hopper, G., Bucholz, J., **DuBose, T. P.**, Fogelman, K., Keogh, S., Kubala, M., Lodato, M., Nichols, D., Sanchez Gonzalez, I., Stoeckel, J., Pfeiffer, J., Lozier, J., Atkinson, C. L. SHELD: a trait database for freshwater mussels of the United States of America. [in prep]

COLLABORATIVE GRANTS AWARDED

Oklahoma Department of Wildlife Conservation, 2019-2020. "Status assessment for the Southern Hickorynut in Oklahoma" PI: C.C. Vaughn Co-PI: J. W. Lopez, **T. P. DuBose**. \$101,693.

AWARDS & GRANTS (\$17,545 total)

2019	Society of Freshwater Science General Endowment Award	\$1,000
2019	OU Department of Biology Adams Summer Scholarship	\$3,400
2017-2019	OU Graduate Student Senate Travel Award x3	\$1,344
2015, 2019	Freshwater Mollusk Conservation Society Student Travel Award x2	~\$1,600
2017-2018	OU Department of Biology Adams Academic Year Scholarship x2	\$2,250
2018	OU Biological Station Research Grant	\$3,000
2017-2018	OU Loren G. Hill Zoology Excellence Fund x2	\$1,000
2016-2018	OU Graduate Student Senate Research Award x3	\$1,700
2016	Texas Mollusca Society Metcalf Research Award	\$1,000
2016	South Central Society of Freshwater Science Travel Grant	\$250
2015	UNT College of Arts & Sciences Travel Grant	\$250
2013-2014	UNT Graduate Award – scholarship	\$750
2010-2012	University of Texas at Dallas Academic Excellence Scholarship	
2010-2012	Burlington Northern Santa Fe Academic Scholarship	

TEACHING & MENTORING

Undergraduate Student Research Mentor for: Victorjose Catalan, Alexandria S. Holt, Janell Hartwell, Kathryn Ashford, and Matthew Carmen
Historical Hydroperiods in Southwest Arizona in 2022: group mentorship of 5 undergraduates

Graduate Students, Committee Member for: Ciara Mason (University of North Texas)

Guest Lectures:

Freshwater Ecology: Macroinvertebrates. November 1, 2022

Environmental Science seminar: Unassuming and powerful: Freshwater mussels as junctions in stream ecosystems. April 1, 2021

Intro to Quantitative Biology: Goodness of Fit and Contingency Tests. March 05, 2020

Stream Ecology: Trophic groups and food webs. May 31, 2019

Teaching Positions:

University of Oklahoma, Norman, OK

2019-2023 Carpentries Workshops instructor & helper

Spring 2020 Intro to Quantitative Biology Teaching Assistant

Fall 2019 Ecology Teaching Assistant

Summer 2019 Stream Ecology TA, at the University of Oklahoma Biological Station

2018–2019 Authentic Research in Introductory Biology Lab Teaching Assistant

University of North Texas, Denton, TX

2013–2015 Biology for Educators Lab Teaching Assistant

Spring 2013 Environmental Science Teaching Assistant

PROFESSIONAL SERVICE

Associate Editor for *Freshwater Mollusk Biology and Conservation*, 2023 to present

Reviewed manuscripts for: *Aquatic Ecology, Ecosphere, Environmental Evidence, Environmental Reviews, Freshwater Science, Freshwater Biology, Freshwater Mollusk Biology and Conservation, Frontiers in Ecology and Evolution, Global Change Biology, Hydrobiologia, Oecologia, Southwestern Naturalist*

Society Committee Memberships: Freshwater Mollusk Conservation Society DEI committee

Memberships:

Society for Freshwater Sciences 2016-2023

Freshwater Mollusk Conservation Society 2015-2024

Society of Ethnobiology 2014

Society for American Archaeology 2014

Attendee of the Texas Mussel Workshop 2013, 2014

Popular media interviews: [A freshwater mussel apocalypse is underway—and no one knows why. \(nationalgeographic.com\)](#), [‘Mussel-bola’ Could Be Spreading. Maybe Now You’ll Pay Attention. - The New York Times \(nytimes.com\)](#)

INSTITUTIONAL SERVICE

2021–2022 Virginia Tech Early Childhood Initiatives Advisory Committee member, Stream Team Website Committee

- 2021 Career Development co-chair, Virginia Tech Postdoc Association
 2017–2020 Graduate Student Senator in OU Student Government
 Public Relations Committee Chair 2018–2020
 Fall 2017 Graduate student on OU Genetics of Behavioral Traits position search committee
 2016 Web Committee, OU Biology Department

OUTREACH

- 2021 – co-wrote American Society for Cell Biology COMPASS outreach grant to mentor underserved high school students in Virginia’s New River Valley
 Spring 2018 – visited and assisted with Mr. Cole’s Ecology class in Noble Highschool
 Summer 2017 – assist with NSF funded teaching workshop in conjunction with K20 center at OU

INVITED SEMINARS

- 2021** Unassuming and powerful: Freshwater mussels as junctions in stream ecosystems. Kennesaw State University.

SELECTED PRESENTATIONS

- 2022** **T.P. DuBose**, C.E. Moore, S. Silknetter, A.L. Benson, T. Alexander, G. O’Malley, & M.C. Mims. “Conservation Lists Miss Some Anuran Species that are Intrinsically Sensitive to Climate Change” Presented at the Joint Aquatic Sciences Meeting, Grand Rapids, MI.
- T.P. DuBose**, T.A. Smith, S.R. Craft, J.P. Chong, M. Hove, A.J. Franzen, D.A. Woolnough, X. Ranganwami, J.M. Pfeiffer, M.E. Bradley, K. Inoue, & J.S. Tiemann. “Identifying, Promoting, and Supporting Diversity within the Freshwater Mollusk Conservation Society” Poster presented at the Joint Aquatic Sciences Meeting, Grand Rapids, MI.
- M.C. Mims, C.E. Moore, **T.P. DuBose**, S. Silknetter, & A.L. Benson. 2022. The power, potential, and pitfalls of opportunistic data for vulnerability assessments. Invited talk for the United States Geologic Survey Science Analytics and Synthesis Group (~35 scientists).
- T.P. DuBose**, G. Himes Boor, & J. R. Walters. “Linking TNC North Carolina HQI to red-cockaded woodpecker habitat” Presented at the North Carolina Longleaf Pine Summit, a regional meeting for ~125 longleaf pine conservation partners.
- T.P. DuBose**, V. Catalan, C.E. Moore, V.R. Farallo, & M.C. Mims. “ATraiU 2.0: a Database of physiological limits of anurans in the southeastern United States” Virtual presentation at the Southeastern Partners in Amphibian and Reptile Conservation Meeting.
- 2020** **T.P. DuBose**, C.L. Atkinson, C.C. Vaughn. & S.W. Golladay. “Drought impacts to stream communities and ecosystems within freshwater mussel beds” Duck & Fletcher Scholarship Finalist, Oklahoma Natural Resources Conference, Norman, OK.
- 2019** **T.P. DuBose**, C.L. Atkinson, & C.C. Vaughn. “Lessons were learned: how animals and ecosystems react to stressful events” Invited presentation to the University of Oklahoma Biological Station 70th Anniversary Celebration, Madill, OK.
- T.P. DuBose**, C.L. Atkinson, C.C. Vaughn & S.W. Golladay. “Drought-induced, punctuated loss of freshwater mussels alters ecosystem function: a mesocosm experiment”

Presented at the Freshwater Mollusk Conservation Society Symposium, San Antonio, TX.
Presented at the Society of Freshwater Science Conference, Salt Lake City, UT.

- 2018** **T. Popejoy**, G. Hopper, C.C. Vaughn & K. Gido. "Do freshwater mussels influence the abundance of macroinvertebrate functional feeding groups?" Presented at the Society of Freshwater Science Conference, Detroit, MI.
- T. Popejoy**. "Freshwater mussel associations with macroinvertebrates and fish: a field enclosure experiment". Seminar presentation at the University of Oklahoma.
- 2017** **T. Popejoy** & C.C. Vaughn. "Latitudinal variation in *Amblema plicata* size and growth characteristics in North America" Presented at the Freshwater Mollusk Conservation Society Symposium, Cleveland, OH. Poster presented at Society of Freshwater Science Conference, Raleigh, NC.
- T. Popejoy**, C.R. Randklev, T.M. Neeson, & C.C. Vaughn. "Prioritizing mussel beds to conserve based on similarity to the past and feasibility of protection" Poster presented at the Freshwater Mollusk Conservation Society Symposium, Cleveland, OH.
- T. Popejoy**. "Size and Growth Rate Variation in Freshwater Mussels across a Latitudinal Gradient" and below is a summary". Seminar presentation at the University of Oklahoma.
- 2016** **T. Popejoy**, Charles R. Randklev, Steve Wolverton, & Lisa Nagaoka. "Using Zooarchaeological Data for Unionid Conservation: A Case Study for a Central Texas River" Presented at the Society for Freshwater Science Conference, Sacramento, CA.
- 2015** **T. Popejoy**, S. Wolverton, C.R. Randklev, & L. Nagaoka. "The Contemporary and late Holocene Freshwater Mussel Community of the Leon River, Central Texas" Poster presented at the Freshwater Mollusk Conservation Society Symposium, St. Louis, MO.
- 2014** **T. Popejoy**, C.R. Randklev, L. Nagaoka, & S. Wolverton. "Applied Zooarchaeology of the Late Holocene freshwater mussel community of the Leon River Basin of central Texas" Presented at the Texas Freshwater Mussel Symposium & Workshop. Junction, TX
- T. Popejoy**, C.R. Randklev, & S. Wolverton. "Zooarchaeology and Conservation Biology of the Late Holocene Freshwater Mussel Community in the Leon River Basin of Central Texas" Poster presented at the Society of Ethnobiology meeting. Cherokee, NC
- T. Popejoy**, A. Eddins, & S. Wolverton. "Applied Zooarchaeology of the Late Holocene Freshwater Mussel Community in the Upper Trinity River of North Texas" Poster presented at the Society for American Archaeology 2014 meeting. Austin, TX

EXTRACURRICULAR EXPERIENCE

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| 2019 | Software Carpentry Instructor Certification |
| 2016 | Professional Ethics Course |
| 2015–2020 | Coach of Never Mrs (OU women's ultimate frisbee team) |
| 2014 | GABRAF Organizational Committee — Web Master |
| 2014 | UNT Silvey Society |
| 2012 | Undergraduate Science Tutor at University of Texas at Dallas |

SKILLS

Git and Github, Programming in R, Open water diving, Microsoft Office