

Carla L. Atkinson

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EDUCATION

- 2013** Ph.D. Ecology and Evolutionary Biology, University of Oklahoma. Advisor: Dr. Caryn C. Vaughn. Dissertation title: Hierarchical controls on the impact of consumer stoichiometric regulation: from species traits to ecosystem level consequences
- 2008** M.S. Ecology, University of Georgia. Advisor: Dr. Alan P. Covich. Thesis title: Food resource quality and its utilization by a native and invasive bivalve in a Gulf Coastal Plain stream
- 2006** B.S. Biology (summa cum laude), Missouri State University, Advisor: Dr. Alexander Wait. Minors: Chemistry and Environmental Science and Policy.

PROFESSIONAL EXPERIENCE

- 2014-** **Assistant Professor**, University of Alabama, Department of Biological Sciences
- 2013-14** **Postdoctoral Associate**, Cornell University. EVOTRAC project. Advisor: Alex Flecker.
- 2010-13** **Graduate Research Fellow (EPA STAR Fellow)**, University of Oklahoma. Advisor: Caryn Vaughn
- 2013** **Graduate Teaching Assistant**. BIOL 4423/5423 – Stream Ecology. University of Oklahoma BioStation.
- 2011** **Biological Technician**. Robert S. Kerr Laboratory, Ada, OK. Environmental Protection Agency. Supervisor: Ken Forshay
- 2010-11** **Graduate Teaching Assistant**. BIOL 1005 – Concepts in Biology. University of Oklahoma
- 2009-10** **Graduate Research Assistant**. University of Oklahoma. Advisor: Caryn Vaughn
- 2009** **Research Technician II**. J.W. Jones Ecological Research Center. Supervisor: Stephen W. Golladay
- 2009** **Research Assistant**. Elevation Gradient Project. Luquillo LTER, Puerto Rico. Supervisor: Alan P. Covich
- 2006-08** **Graduate Research Assistant**. University of Georgia, Odum School of Ecology, Advisors: Alan P. Covich and Stephen P. Opsahl
- 2008** **Research Assistant**. Freshwater crab and shrimp collection. Luquillo LTER, Puerto Rico. Supervisor: Alan P. Covich
- 2006** **Field Research Technician**. Environmental Monitoring and Assessment Project (EMAP) on the Missouri River. Supervisor: John Havel
- 2003-05** **Laboratory Assistant**. Missouri State University Inorganic Chemistry Laboratory. Supervisor: Richard Biagioni.
- 2002-05** **Field and Laboratory Assistant**. Missouri State University Geomorphology Laboratory. Supervisor: Robert Pavlowsky.

PUBLICATIONS

Peer-Reviewed Publications:

- Atkinson, C.L. and C.C. Vaughn. *In press*. Temporal and spatial scaling of the impact of freshwater mussels on ecosystem function. *Freshwater Biology*.
- Capps, K.A., C.L. Atkinson, and A. Rugenski. *In press*. Consumer-driven nutrient dynamics in freshwater ecosystems: an introduction. *Freshwater Biology*.

- Sitters, J., **C.L. Atkinson**, N. Guelzow, P. Kelly, and L.L. Sullivan. *In press*. Spatial stoichiometry: cross-ecosystem material flows and their impact on recipient ecosystems and organisms. *Oikos*.
- Vaughn, C.C., **Atkinson, C.L.**, and J.P. Julian. *In press*. Multiple droughts lead to long-term losses in mussel-provided ecosystem services. *Ecology and Evolution*.
- Capps, K.A., **C.L. Atkinson**, and A. Rugenski. *In press*. Implications of species addition and species loss on nutrient dynamics in freshwaters. *Freshwater Science*.
- Atkinson, C.L.**, J.P. Julian, and C.C. Vaughn. 2014. Species and function lost: interaction between drought and land cover. *Biological Conservation* 176:30-38.
- Atkinson, C.L.**, J.F. Kelly, and C.C. Vaughn. 2014. Tracing consumer-derived nitrogen in riverine food webs. *Ecosystems* 17:485-496.
- Atkinson, C.L.**, A.D. Christian, D.E. Spooner, and C.C. Vaughn. 2014. Long-lived organisms provide an integrative footprint of agricultural land use. *Ecological Applications* 24:375-384.
- Atkinson, C.L.**, C.C. Vaughn, K.J. Forshay, and J.T. Cooper. 2013. Aggregated filter-feeding consumers alter nutrient limitation: Consequences for ecosystem and community dynamics. *Ecology* 94:1359-1369. *The Faculty of 1000 recommended this paper*.
- Atkinson, C.L.** 2013. Razor-backed musk turtle (*Sternotherus carinatus*) diet across a gradient of invasion. *Herpetological Conservation and Biology* 8:561-570.
- Atkinson, C.L.**, J.P. Julian, and C.C. Vaughn. 2012. Scale-dependent longitudinal patterns in mussel community composition. *Freshwater Biology* 57:2272-2284.
- Atkinson, C.L.** 2012. *Sternotherus carinatus* (Razor-backed musk turtle). Reproduction. *Herpetological Review* 43:517.
- Atkinson, C.L.**, S.W. Golladay, and M.R. First. 2011. Water quality and planktonic microbial assemblages of isolated wetlands in an agricultural landscape. *Wetlands* 35:885-894.
- Atkinson, C.L.**, M.R. First, A.P. Covich, S.P. Opsahl, and S.W. Golladay. 2011. Suspended material availability and filtration-biodeposition processes performed by native and invasive bivalve species in streams. *Hydrobiologia* 667:191-204.
- Atkinson, C.L.**, S.P. Opsahl, A.P. Covich, S.W. Golladay, and L.M. Conner. 2010. Stable isotopic signatures, tissue stoichiometry, and nutrient cycling (C and N) of a native and invasive bivalve. *Journal of the North American Benthological Society* 29:496-505.
- Atkinson, C.L.**, S.W. Golladay, S.P. Opsahl, and A.P. Covich. 2009. Stream discharge and floodplain connections affect seston quality and stable isotopic signatures in a coastal plain stream. *Journal of the North American Benthological Society* 28:360-370.
- Sterrett, S.C., L.L. Smith, M.B. Howze, A.M. Heupel and **C.L. Atkinson**. 2008. *Pseudemys concinna* (Eastern River Cooter) movement. *Herpetological Review* 39:464.

Reviews:

- Atkinson, C.L.** 2013. A comprehensive review of North America's most imperiled faunal group: setting the framework for new hypotheses. Invited review, *Ecology* 94: 2657-2658.

Other publications:

- Atkinson, C.L.**, K.J. Forshay, and C.C. Vaughn. 2013. Native mussels alter nutrient availability and reduce blue-green algae abundance. *EPA Science Brief*. EPA/600/F-13/231.
- Capps, K.A., **C.L. Atkinson**, A. Rugenski, C. Baxter, K.S. Boersma, C.C. Carey, P.B. McIntyre, J.W. Moore, W.H. Nowlin, and C.C. Vaughn. 2012. Organized oral session: Impacts of species addition and species loss on ecosystem function in freshwater systems. *Bulletin of the Ecological Society of America* 93:402-408.

Manuscripts in Review or Preparation:

- Atkinson, C.L.** and J.T. Cooper. *In review*. Hierarchical controls on benthic algal species composition within a watershed. For *Freshwater Science*.
- Atkinson, C.L.**, A. McCormick, and M.M. Gangloff. *In prep*. Associations between native freshwater mussels and *Corbicula fluminea* in southeastern streams. For *Biological Invasions*.
- Rugenski, A., **C.L. Atkinson**, and K.A. Capps. *In review*. Consumer-driven nutrient dynamics from individuals to ecosystems: integrating abiotic and biotic factors. For *Biological Reviews*.

GRANTS AND SCHOLARSHIPS

Fellowships and Scholarships:

- 2011-14** EPA Science to Achieve Results (STAR) Fellowship (\$126,000)
- 2009-13** W.O. Wethington Fellowship, University of Oklahoma Graduate College (\$20,000)
- 2012** Corinne Price Scholarship, College of Arts and Sciences, University of Oklahoma (\$1,200)
- 2011** Adams Scholarship, University of Oklahoma, Zoology Department (\$3,500)
- 2010** Robert E. and Mary B. Sturgis Scholarship, University of Oklahoma, College of Arts and Sciences (\$1,000)
- 2006-08** University-Wide Research Assistantship, University of Georgia (\$42,000)
- 2002** Board of Governor's Scholarship (full-tuition scholarship)
- 2002** White River Valley Electric Scholarship, White River Electric (\$2,500)
- 2002** A+ Scholarship, Missouri State-Wide Scholarship (\$2,800)

Research Grants:

- 2012** Research Grant, Graduate Student Senate, University of Oklahoma (\$285)
- 2012** General Endowment Award, Society of Freshwater Science (\$1,000)
- 2011** Grant-in-Aid of Research, Sigma Xi (\$600)
- 2010** Research Grant, Graduate Student Senate, University of Oklahoma (\$370)

Travel Grants:

- 2014** Travel to Woodstoich Symposium, Sydney, Australia
- 2013** Parkyn Legacy Award, British Ecological Society (\$448)
- T.H. Williams International Travel Award, Graduate College, University of Oklahoma (\$1,800)
- Travel Grant, College of Arts and Sciences, University of Oklahoma (\$750)
- Conference Exhibition Grant, Graduate Student Senate, University of Oklahoma (\$472)
- 2012** Travel Award, Ecological Society of America, Aquatic Ecology Section (\$300)
- Travel Grant, College of Arts and Sciences, University of Oklahoma (\$750)
- Conference Exhibition Grant, Graduate Student Senate, University of Oklahoma (\$375)
- Travel Grant, Dept. of Zoology, University of Oklahoma (\$250)
- 2011** OFWIM Travel Grant, Organization of Fish and Wildlife Managers (\$600)
- Robberson Travel Grant, Graduate College, University of Oklahoma (\$500)
- Travel Grant, College of Arts and Sciences, University of Oklahoma (\$750)
- Travel Grant, Dept. of Zoology, University of Oklahoma (\$250)
- 2010** Travel Award, American Society of Limnology and Oceanography (\$250)
- Travel Grant, College of Arts and Sciences, University of Oklahoma (\$750)
- Travel Grant, Dept. of Zoology, University of Oklahoma (\$250)
- Conference Exhibition Grant, Graduate Student Senate, University of Oklahoma (\$213)

AWARDS AND HONORS

- 2014** Provost's Best Ph.D. Dissertation Award, Science and Engineering, University of Oklahoma
2013 Best Poster Award – Science A. Graduate College Research and Performance Day, University of Oklahoma
2013 Best Student Presentation Symposium Finalist, American Fisheries Society
2012 Best Poster Award, Biology Dept. Retreat, University of Oklahoma BioStation
2010 Clark Hubbs Best Student Poster Award, Southwestern Association of Naturalists
2004 Leadership Award, Opening the Horizons (sponsored by National Science Foundation)
2002-06 Dean's List, Missouri State University

INVITED TALKS

Cornell University, Biogeochemistry and Environmental Science and Sustainability (BESS) Seminar Series, Ithaca, NY. October 2014. Role of consumers in driving ecosystem function and services across environmental gradients. Invited by Lily Twining

Universidad San Francisco Quito, Biology Departmental Seminar, Quito, Ecuador. February 2014. Ecosystem-level consequences of animal nutrient cycling in streams. Hosted by Andrea Encalada.

University of Oklahoma, Biology Departmental Seminar, Norman, OK. November 2013. Ecosystem-level consequences of consumer-mediated nutrient cycling in streams. Organized by Mike Kaspari.

The Ohio State University, Columbus, OH. July 2013. Mussels as a model: Impact of consumer-driven nutrient recycling on stream ecosystems. Hosted by Stuart Ludwin.

University of Oklahoma BioStation, Kingston, OK. June 2013. Freshwater mussels: Ecological engineers and sentinels of ecosystem change. Hosted by Gary Wellborn.

Kansas State University, Manhattan, KS. November 2012. Translocation of nutrients by freshwater mussels - alteration of ecosystem and community processes. Hosted by Keith Gido.

University of Texas Tyler. Tyler, TX. September 2012. The functional roles of unionid mussels on ecosystem processes impact community structure. Hosted by Neil Ford.

University of Oklahoma, Zoological Society, Norman, OK. November 2009. The natural history and ecology of native freshwater mussels. Hosted by Kenneth Hobson.

University of Georgia, Graduate School Board, Athens, GA. April 2008. Ecosystem services and resource utilization by a native and non-native bivalve: How do they compare? Invited by Dean Maureen Grosso.

SELECTED PRESENTATIONS (15 of 35 total, + denotes invited)

- ⁺**Atkinson, C.L.**, C.C. Vaughn, and A.S. Flecker. Species traits: Are stoichiometric and thermal traits linked? *Oral Presentation*. Joint Aquatic Sciences Meeting. May 2014. Portland, Oregon.
Atkinson, C.L., J.F. Kelly, and C.C. Vaughn. Tracing mussel-derived nitrogen in riverine food webs. *Oral Presentation*. INTERCOL/British Ecological Society Joint Meeting. August 2013. London.
⁺**Atkinson, C.L.** and C.C. Vaughn. Alteration of relative storage and cycling of nutrients by freshwater mussels. *Oral presentation – Special Session invitation*. Society of Freshwater Science Meeting. May 2013.

Jacksonville, Florida.

- Atkinson, C.L.** and C.C. Vaughn. Tracing mussel-derived nitrogen in riverine food webs. *Oral Presentation*. Freshwater Mollusk Conservation Society Meeting. March 2013. Guntersville, Alabama.
- +Atkinson, C.L.,** K.A. Capps, K.A., and A. Rugenski. The effects of species gain and species loss on nutrient storage and cycling in freshwater ecosystems: Summarizing patterns across ecosystems. *Oral Presentation*. Ecological Society of America Meeting. August 2012. Portland, Oregon.
- Atkinson, C.L.,** C.C. Vaughn, and K.J. Forshay. Translocation of nutrients by freshwater mussels – alteration of ecosystem and community processes. *Oral Presentation*. Society of Freshwater Science Meeting. May 2012. Louisville, Kentucky.
- Atkinson, C.L.** Translocation of nutrients by freshwater mussels alters ecosystem and community processes: the potential consequences of future losses. *Oral Presentation*. EcoMunch Seminar Series. February 2012. University of Oklahoma, Norman Oklahoma.
- Atkinson, C.L.** Mussel species turnover along the river continuum. *Oral Presentation*. Organization of Fish and Wildlife Information Managers Meeting. October 2011. St. Louis, Missouri.
- Atkinson, C.L.** and C.C. Vaughn. Modification of nutrient limitation by unionid mussels. *Oral Presentation*. North American Benthological Society. May 2011. Providence, Rhode Island.
- Atkinson, C.L.** and C.C. Vaughn. Alteration of nutrient dynamics by unionid mussels. *Oral Presentation*. Freshwater Mollusk Conservation Society. April 2011. Louisville, Kentucky.
- Atkinson, C.L.,** S.W. Golladay, and M.R. First. Differences in water column heterotrophs attributed to water chemistry across a gradient of agricultural impacts. *Poster Presentation*. American Society of Limnology and Oceanography / North American Benthological Society Joint Meeting. June 2010. Santa Fe, New Mexico.
- Atkinson, C.L.** A.P. Covich, S.P. Opsahl, S.W. Golladay, L.M. Conner. Trophic niche space of a native mussel and *Corbicula fluminea* in a coastal plain stream. *Oral Presentation*. North American Benthological Society. May 2009. Grand Rapids, Michigan.
- Atkinson, C.L.** Controls on food quality and its utilization by freshwater bivalves in a coastal plain stream. *Oral Presentation*. Thesis Defense Seminar. November 2008. Odum School of Ecology, University of Georgia, Athens, Georgia.
- Atkinson, C.L.,** S.P. Opsahl, A.P. Covich, and S.W. Golladay. Differences in feeding ecology and ecological services provided by native mussels versus an invasive bivalve, *Corbicula fluminea*. *Oral Presentation*. North American Benthological Society. May 2008. Salt Lake City, Utah.
- Atkinson, C.L.,** S.P. Opsahl, A.P. Covich, and S.W. Golladay. Resource utilization and ecosystem services provided by *Corbicula fluminea* compared to a native mussel. *Oral Presentation*. Southeastern Ecology and Evolution Conference. March 2008. Florida State University, Tallahassee, Florida.

PROFESSIONAL SERVICE

Special Issue Organizer:

Freshwater Biology, Issue Title: *Ecosystem-level effects of consumer-driven nutrient dynamics*, Organized with Krista Capps and Amanda Rugenski. Proposal for issue accepted and issue anticipated in 2015.

Session Organizer:

Joint Aquatic Sciences Meeting. Session title: *From individuals to ecosystems: consumer driven nutrient cycling across aquatic ecosystems*. May 2014. Organized with Amanda Rugenski, Eric Moody, and Matt Trentman.

Society of Freshwater Science Meeting (formerly the North American Benthological Society). Session title: *More than just P in a bag: using consumer-driven nutrient dynamics to understand community interactions and ecosystem processes*. May 2013. Organized with Krista Capps and Amanda Rugenski

Ecological Society of America Meeting. Session title: *Impacts of Species Addition and Species Loss on Ecosystem Function in Freshwater Systems*. August 2012. Organized with Krista Capps and Amanda Rugenski

Society of Freshwater Science Meeting (formerly the North American Benthological Society). Session title: *Species addition and loss: effects on ecosystem processes*. May 2012. Organized with Krista Capps and Amanda Rugenski

Program Committee:

2014-15 Society of Freshwater Science, INSTARS
2011-14 Society of Freshwater Science, Graduate Resources – Mentor-Mixer Committee
2012 Freshwater Mollusk Conservation Society Workshop, Program Committee, Athens, GA

Session Moderator:

British Ecological Society/INTERCOL Joint Meeting, Aquatic Ecology Section, August 2013, London, UK
Society of Freshwater Science, Mollusk Section, May 2009, Grand Rapids, Michigan, USA

Reviewed Manuscripts for:

Aquatic Sciences, Ecological Applications, Ecological Entomology, EcoSphere, Environmental Management, Freshwater Biology, Freshwater Science (formerly Journal of the North American Benthological Society), Global Change Biology, Herpetological Conservation and Biology, Hydrobiologia, Journal of Shellfish Management, Limnology and Oceanography, Marine Ecology Progress Series, Oikos, Proceedings of the Royal Society-B, Southwestern Naturalist, Wetlands

UNIVERSITY SERVICE

2014 Undergraduate Thesis Reviewer, Dept. of Ecology and Evolutionary Biology, Cornell University
2012-13 Seminar Committee, Graduate student representative, Biology Department, University of Oklahoma
2010-12 Zoological Association of Graduate Students (ZAGS) President, Zoology Department, University of Oklahoma, Norman, OK
2011-12 Department Retreat Planning Committee, Biology Department, University of Oklahoma
2012 Organizer, Getting a Postdoc and Faculty Position in Life Sciences, Panel discussion with newly hired faculty. University of Oklahoma, Norman, OK
2012 Graduate Student Retreat Planning Committee, Zoological Association of Graduate Students, University of Oklahoma BioStation at Lake Texoma
2009-10 Animal Facilities Committee, Graduate student representative, Zoology Department, University of Oklahoma, Norman, OK
2007 Audio-Visual Committee, Institute of Ecology Graduate Student Symposium, University of Georgia
2006-07 Seminar Committee, Graduate student representative, Institute of Ecology, University of Georgia

TEACHING

2013 Stream Ecology (BIOL 4423/5423), Teaching Assistant, University of Oklahoma
2012 Principles of Ecology (BIOL 3403), Guest Lecturer, University of Oklahoma
2010-11 Concepts in Biology (BIOL 1005), Teaching Assistant, University of Oklahoma
2006 Limnology (BIO 562), Guest Lecturer, Missouri State University
2005 Opening the Horizons Program, Mentor, Sponsored by the National Science Foundation, Missouri State University. Taught middle-school age girls about biology and chemistry.
2002 Missouri A+ program, Creative writing tutor, Ozark High School, Ozark, MO

OUTREACH AND SERVICE

- 2013** **Presenter**, Biology Day at the BioStation – Mollusks of Lake Texoma, Madill High School, University of Oklahoma BioStation, Kingston, OK
- 2013** **Presenter**, Invertebrate Day, Wilson Elementary, Norman, OK
- 2012** **Presenter**, Sideshow Science – Oklahoma’s Aquatic Resources, Oklahoma City Science Museum, Oklahoma City, OK
- 2011-12** **Earth Day Presenter**, Freshwater Resources, Oklahoma East Central University, Ada, OK
- 2009** **BioBlitz Volunteer**, Oklahoma Biological Survey, Robber’s Cave State Park, OK
- 2008-09** **Science Fair Judge**, Darton College/Merck Regional Science Fair, Darton College, Albany, GA.
- 2008-09** **Presenter, Freshwater Mussel Workshop**, J.W. Jones Ecological Research Center, Newton, GA.
- 2008** **Presenter**, Biology of Freshwater Ecosystems – Flint River, After-School Program for elementary school students. LaGrange College, Albany, GA.
- 2006-09** **Rivers Alive Volunteer**, Georgia.
- 2006** **Presenter**, Biology of Streams, Girl Scout Troop, Ozark, MO
- 2004-05** **Presenter and Organizer**, Biodiversity and Health of Ozark Streams, Missouri State University Earth Day, Springfield, MO
- 2004** **Trail Volunteer**, Olympic National Park, Port Angeles, WA. Supervisor: Jack Galloway
- 2001-02** **State Forest Volunteer**, Busiek State Forest, Missouri Department of Conservation. Supervisor: Frances Dilsaver

TRAINING

- 2013** **SWAT (Soil and Water Assessment Tool) Beginner’s Workshop**, Texas A&M, College Station, TX
- 2012** **Python Scripting for ArcGIS**, South Central Arc Users Group, Oklahoma City, OK
- 2010** **Aquatic GIS Workshop**, St. Louis University, St. Louis, MO
- 2010** **Lab Safety Training**, Robert S. Kerr Environmental Research Center, U.S. Environmental Protection Agency, Ada, OK
- 2008** **Prescribed Fire Course**, J.W. Jones Ecological Research Center, Newton, GA
- 2005** **SCUBA Certification**, SCUBA Schools International
- 2002-06** **Level 2 Volunteer Monitor**, Missouri Stream Team. President of Missouri State University Stream Team (2004-2006), Springfield, MO

PROFESSIONAL MEMBERSHIPS

- Ecological Society of America
- Freshwater Mollusk Conservation Society
- Society of Freshwater Science (formerly the North American Benthological Society)
- Sigma Xi