

**Astrid N. Schwalb, Ph.D.**  
 Department of Biology  
 Texas State University  
 San Marcos, TX, 78666

## I. Academic/Professional Background

A. Name: Astrid N. Schwalb

Title: Assistant Professor of Biology

### B. Educational Background

<i>Degree</i>	<i>Year</i>	<i>University</i>	<i>Major</i>	<i>Thesis/Dissertation</i>
PhD	2010	University of Guelph, ON, Canada	Integrative Biology	Host infection strategies determine dispersal abilities in freshwater mussels ( <i>Bivalvia: Unionidae</i> ).
MS	2004	University of Potsdam, Germany	Biology	Horizontal and vertical movements of unionid mussels in the River Spree.
BS	2001	University of Konstanz, Germany	Biology	NA

### C. University Experience

<i>Position</i>	<i>University</i>	<i>Dates</i>
Assistant Professor	Texas State University	2014-present
Postdoctoral Fellow	University of Lethbridge	2013-2014
Postdoctoral Fellow	University of Waterloo	2010-2012
Graduate Research Assistant	University of Guelph	2005-2009
Teaching Assistant	University of Guelph	2005-2009

### D. Relevant Professional Experience

<i>Position</i>	<i>Entity</i>	<i>Dates</i>
Research Assistant – Ecotoxicological research	University of Guelph	2005
Research Assistant – Aquatic Biomonitoring	Leibniz-Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany	2002, 2003

**II. TEACHING****B. Courses Taught:**

Stream Ecology (BIO 7419)

Aquatic Biology (BIO 3460)

Graduate Research Experience and Thesis courses (BIO 5114, 5214, 5314, 5399A, 5199B)

Undergraduate Research (4299)

**C. Graduate Theses/Dissertations, Honors Theses, or Exit Committees**

*Supervisor, In-progress:* Bianca Hernandez (MS), Jenae Olson (MS), Ashley Seagroves (MS), Brittney Sanchez (MS). Rebecca Zawalski (MS) co-adviser with Dr. Nowlin; Carolyn Trombley (MS) at University of Guelph, co-adviser with Dr. Cottenie.

*Committee Member, In-progress:* Erin Dascher (PhD), Michael Markowski (MS), Alison Tarter (MS).

**D. Courses Prepared and Curriculum Development:**

Stream Ecology (BIO 7419) Texas State University, San Marcos.

Aquatic Biology (BIO 3460) Texas State University, San Marcos.

**I. Other:**Guest Lecturer:

Aquatic Biology (BIOL 3460), Texas State University, TX 2014

River Science (ENV 4000/5000), University of Lethbridge, AB. 2013

Aquatic Ecology (BIOL 351), University of Waterloo, ON. 2010

Population Ecology (BIOL 3110), University of Guelph, ON. 2008

Teaching Development

Completed program for Excellence in Teaching and Learning, Texas State University 2014-2015

Attended teaching development seminar series, 2011  
Centre for teaching excellence, University of Waterloo, ON.

Attended University Teaching: Theory/Practice, University of Guelph, ON. 2009

Teaching Assistant:

University of Guelph, ON:

Ecology (BIOL 2060DE) 2009

Biology II (BIOL 1040) 2008, 2009

Population Ecology (BIOL 3110) 2007

Biology of Polluted Waters (ZOO 4350) 2007

Introduction to Aquatic Environments (BIOL 3450) 2006

Project/Colloq. in Environmental Science (ENVS 4011/2) 2005, 2006

Laboratory and Fieldwork in Ecology (BIOL 3010) 2005

Statistics for Biology. Tutorial, University of Potsdam, Germany. 2004

Introduction to Botany. Lab exercise, University of Konstanz, Germany. 2001

**III. SCHOLARLY/CREATIVE**

## A. Works in Print (including works accepted, forthcoming, in press)

## 2. Articles

a. Refereed Journal Articles:

Schwalb, A. N., T.J. Morris, and K. Cottenie. 2015. Dispersal abilities of riverine freshwater mussels influence metacommunity structure. *Freshwater Biology* 60: 911-921.

Schwalb, A.N., A.C. Alexander, A.J. Paul, K. Cottenie, and J.B. Rasmussen 2015. Changes in migratory fish communities and their health, hydrology, and water chemistry in rivers of the Athabasca oil sands region: A review of historical and current data. *Environmental Reviews* 23:1-18.

Schwalb, A.N., D. Bouffard, L. Boegman, L. Leon, J. G. Winter, L. Molot, and R.E.H. 2015. 3D modeling of dreissenid mussel impacts on phytoplankton in a large lake supports the nearshore shunt hypothesis and the importance of wind-driven hydrodynamics. *Aquatic Sciences* 77:95-114.

Schwalb, A.N., T.J. Morris, N.E. Mandrak, and K. Cottenie. 2013. Distribution of unionid freshwater mussels depends on the distribution of host fish on a regional scale. *Diversity and Distributions* 19: 446-454.

Schwalb, A.N., D. Bouffard, T. Ozersky, L. Boegman, and R.E.H. Smith. 2013. Impacts of hydrodynamics and benthic communities on phytoplankton distributions in a large, dreissenid-colonized lake (Lake Simcoe, Ontario, Canada). *Inland Waters* 3: 269-284.

North, R.L., D. Barton, A.S. Crowe...A.N. Schwalb (27/32 in alphabetical order)... J.D. Young. 2013. The state of Lake Simcoe (Ontario, Canada): the effects of multiple stressors on phosphorus and oxygen dynamics. *Inland Waters* 3: 51-74.

Schwalb, A.N., T.J. Morris, and J.D. Ackerman. 2012. The effect of settling velocity on the transport of mussel larvae in a cobble-bed river: Water column and near-bed turbulence. *Limnology and Oceanography: Fluids and Environments* 2: 28-40.

Schwalb, A. N., and J.D. Ackerman. 2011. Settling velocities of juvenile Lampsilini mussels (Mollusca: Unionidae): The influence of behavior. *Journal of the North American Benthological Society* 30: 702-709.

Schwalb, A.N., M.S. Poos, K. Cottenie, and J.D. Ackerman. 2011. Dispersal limitation of unionid mussels and implications for their conservation. *Freshwater Biology* 56: 1509-1518.

Schwalb, A.N., M.S. Poos, and J.D. Ackerman. 2011. Movement of logperch: Implications for dispersal of endangered snuffbox mussels via its obligate host fish. *Aquatic Sciences* 73: 223-231.

Schwalb, A.N., M. Garvie, and J.D. Ackerman. 2010. Dispersion of freshwater mussel larvae in a lowland river. *Limnology and Oceanography* 55:628-638.

- Poos, M.S., A.J. Dextrase, A.N. Schwalb, and J.D. Ackerman. 2010. Secondary invasion of the round goby into high diversity Great Lakes tributaries and species at risk hotspots: potential new concerns for endangered freshwater species. *Biological Invasions* 12: 1269-1284.
- Fudge, D.S., L.J. Szewciw, and A.N. Schwalb. 2009. Morphology and Development of Blue Whale Baleen: An Annotated Translation of Tycho Tullberg's Classic 1883 Paper. *Aquatic Mammals* 35: 226-252.
- Gillis, P.L., R.J. Mitchell, A.N. Schwalb, G.L. Mackie, C.M. Wood, and J.D. Ackerman. 2008. Sensitivity of the glochidia (larvae) of freshwater mussels to copper: Assessing the effect of water hardness and dissolved organic carbon on the sensitivity of endangered species. *Aquatic Toxicology* 88: 137-145.
- Schwalb, A.N., and M.T. Pusch. 2007. Horizontal and vertical movements of unionid mussels (Bivalvia: Unionidae) in a lowland river. *Journal of the North American Benthological Society* 26: 261-272.
- Stirk, W.A., A.N. Schwalb, M.E. Light, J. Medkova, R. Lenobel, M. Strnad and J. van Staden 2003. Potential Medicinal Value of Some South African Seaweeds. *South African Journal of Botany* 69: 462-268.

## 5. Reports:

- Molot, L.A., A.N. Schwalb, D. Bouffard, T. Tennant, S.A., R.E.H.Smith, L. Boegman, J. Winter and B. Ginn. 2012. Predicting the influence of mixing hydrodynamics and food web structure on spatial variability of phosphorus concentrations in Lake Simcoe with a 3-D model. Final Report to the Lake Simcoe Clean Up Fund, Environment Canada.
- Schwalb A.N., T.J. Morris, and K. Cottenie. 2010. Freshwater mussel metacommunity analyses. Report for the Department of Fisheries and Ocean.
- Woolnough, D.A., K.A. McNichols, A.N. Schwalb, J.D. Ackerman and G.L. Mackie. 2007. Endangered unionid mussels in Ontario. 2007 Final Report (2007-ESRF-1350-a) Endangered Species Recovery Fund.
- McNichols, K.A., A.N. Schwalb, G.L. Mackie, and J.D. Ackerman. 2006. Fish host identification and rearing of juvenile unionid species at risk in recovery habitat in Southern Ontario Rivers. 2005/2006 Final Report (2006-ESRF-1094) Endangered Species Recovery Fund.

## B. Works not in Print

### 1. Presentations at Professional Meetings: \*indicate students advised and mentored

- Hernández\*, B.A., T.B. Hardy, C. Robertson, Clint, and A.N.Schwalb. 2016. Seasonal movements of unionid mussels in central Texas. Central Texas Eurycea Symposium, Georgetown, TX.

- Dascher\* E., Olson J., Burlakova L.E., Karatayev AY., Bonner T., and A.N. Schwalb, A.N. 2015  
 How does the distribution of unionid freshwater mussels in Texas relate to the distribution of fishes? International Meeting on Biology and Conservation of Freshwater Bivalves, Buffalo, NY.
- Schwalb, A.N., A.C. Alexander, A.J. Paul, K. Cottenie, P.A. Chambers, and J.B. Rasmussen. 2014. Changes in hydrology, water chemistry, and fish communities in the lower Athabasca region: A review of historical and current data. Joint Aquatic Sciences Meeting, Portland, OR.
- Schwalb, A.N., and J.B. Rasmussen. 2013. Changes in fish community composition and fish health in the lower Athabasca region: a review of historical and current data. Poster presentation. SETAC North America Annual Meeting, Nashville, TN.
- Schwalb, A.N., and J.B. Rasmussen. 2013. Changes in fish health and community composition in rivers of the Athabasca oil sands - a review of historical and current data. Poster presentation. SETAC – PNC Annual Meeting, Lethbridge, AB.
- Schwalb, A.N., T.J. Morris, N.E. Mandrak, and K. Cottenie. 2012. Distribution of unionid freshwater mussels depends on the distribution of host fish on a regional scale. Poster presentation. Society of Freshwater Science conference, Louisville, KY.
- Bocaniov, S.A., A.N. Schwalb, C.M. Spillman, M.R. Hipsey, L.F. Leon, and R.E.H. Smith. 2011. Can we model the impact of invasive dreissenid mussels on large lake ecosystems? A three-dimensional modeling study of Lake Erie and Lake Simcoe. Oral presentation. International Association for Great Lakes Research's Annual Conference, Duluth, MN.
- Schwalb, A.N., S.A. Bocaniov, L.F. Leon, L.A. Molot, and R.E.H. Smith. 2011. Assessing direct and indirect effects of invasive benthic filter feeders in a large lake – 3D modeling of processes in a lake invaded by dreissenid mussels. Oral presentation. North American Benthological Society conference, Providence, RI.
- Spillman, C.M., M.R. Hipsey, S.A. Bocaniov, A.N. Schwalb, and R.E.H. Smith. 2011. The nearshore shunt. Three dimensional modeling of dreissenid mussel effects in nearshore and offshore waters of Lake Erie. Oral presentation. Canadian Conference for Fisheries Research/Society of Canadian Limnologists/Society of Wetland Scientists joint conference, Toronto, ON.
- Schwalb, A.N., and J.D. Ackerman. 2010. Early life history traits in Lampsilini-mussels in relation to their host infection strategy. Poster presentation. American Society of Limnology and Oceanography and North American Benthological Society joint conference, Santa Fe, NM.
- Schwalb, A.N., M. McGarvie, and J.D. Ackerman. 2008. Freshwater mussel larval dispersal in rivers – a transport model and its empirical evaluation in the field. Oral presentation, Ontario Ecology and Ethology colloquium, Guelph, ON.
- Schwalb, A.N., Poos M., and J.D. Ackerman. 2008. Can a bad hitchhiking choice slow you down? Limitations to the dispersal of the endangered Snuffbox mussel (*Epioblasma*

*triquetra*). Poster presentation, North American Benthological Society conference, Salt Lake City, UT.

Schwalb, A.N., and J.D. Ackerman. 2007. Dispersal in freshwater mussels. Oral presentation, International Society of Limnology conference, Montreal, QC.

Schwalb, A.N., K.A. McNichols, and T.J. Morris. 2007. The endangered Wavyrayed Lampmussel in the Grand River – A few pieces in a puzzle. Oral presentation. Grand River Watershed Research Forum, Cambridge, ON.

Gillis, P.L., A.N. Schwalb, R.J. Mitchell, K.A. McNichols, G.L. Mackie, and J.D. Ackerman. 2006. The effect of water composition on the acute toxicity of copper to glochidia of freshwater mussels. Poster presentation. Annual Meeting of the North American Society of Environmental Toxicology and Chemistry, Montreal, QC.

Schwalb, A.N., K.A. McNichols, and J.D. Ackerman. 2006. Rearing Fatmuckets in small buckets – Culturing of juvenile freshwater mussels. Oral presentation, College of Biological Sciences Graduate Symposium, University of Guelph, ON.

Schwalb, A.N. 2005. Moving on one foot – Horizontal and vertical movements of unionid mussels in a lowland river. Poster presentation, Peter Yodzis Colloquium, University of Guelph, ON.

## 2. Invited Talks, Lectures, and Presentations:

Schwalb, A.N. 2014. Distribution of mussels – A metacommunity approach. Aquatic Biology Society Seminar, San Marcos, TX.

Schwalb, A.N. 2013. Freshwater mussels – Findings of nine years of research. Limnological Institute, University of Konstanz, Germany.

Schwalb, A.N. 2013. Consequences of different ways to hitch a ride - Dispersal, distribution, and impact of freshwater mussels. Department of Biology, University of Regina, SK.

Schwalb, A.N., and J.D. Ackerman. 2009. Hitching a ride and going with the flow – Dispersal of unionid mussels (*Bivalvia: Unionidae*). Oral presentation. North American Benthological Society conference, Grand Rapids, MI.

Schwalb, A. N. 2007. Early life history of freshwater mussels – dispersal and settlement processes. Oral presentation, Loaves and Fishes Seminar Series, University of Guelph, ON

## 4. Workshops:

Workshop of the Freshwater Mollusk Conservation Society. Propagation and captive care of freshwater mollusks. March 2006, Columbus, Ohio.

## C. Grants and Contracts

### 1. Funded External Grants and Contracts:

2015-2018. Texas Department of Transportation. Evaluating the Effectiveness of Freshwater Mussel Mitigation Strategies. (PI: A Schwalb, co-PIs: D Rodriguez, MRJ Forstner, TB Hardy, collaborator: MC Barnhart).

2015-2017. US Army Corps of Engineers. Developing quantitative-based approaches for determining impacts of navigation and ecosystem restoration projects on endangered freshwater mussels in the navigable waters of the United States (PI: A Schwalb, co-PI: TB Hardy).

2015-2016. Texas Parks and Wildlife Department. Development of Habitat Suitability Criteria for Benthic Macroinvertebrates in the Lower Guadalupe River. (PI: A Schwalb, co-PI: W Nowlin).

2015-2016. Wildlife Research Grant. Dispersal and migration of freshwater mussels. (PI: A Schwalb, co-PI: D Rodriguez).

2015-2018. US Army Corps of Engineers. Validating modeled effects of turbulence, boater behavior and colonization of zebra mussel dynamics in new environments. (PI: A Schwalb)

2015-2016. Texas Department of Transportation. Grant. Cost effective Mitigation Strategy for State Listed Freshwater Mussels. (co-PI with CR Randklev, TAMU and NB Ford, UT Tyler).

2014 – 2016. Texas Department of Transportation. Contract for survey and relocation of protected freshwater mussels and aquatic vertebrate species. (co-PI with TH Bonner and MRJ Forstner).

2013. Fisheries and Oceans Canada. Contract to analyze the relationship between differences in dispersal abilities and factors structuring mussel assemblages.

2013. Keefer Ecological Services Ltd. Contract to analyze plant community and environmental data with multivariate statistics.

2012. Fisheries and Oceans Canada. Contract to analyze the impact of host fish for distribution of mussels with multivariate statistics.

2010 – 2012. Environment Canada. Lake Simcoe Cleanup Fund. Examining the role of non-summer and nearshore processes in phosphorus dynamics and oxygen depletion in Lake Simcoe.” (PI: Dr. R. Smith, University of Waterloo, ON)

2010. Fisheries and Oceans Canada. Contract to examine the distribution of mussels in Ontario with multivariate statistics and to prepare report.

2008. Fisheries and Oceans Canada's Species at Risk program (SARCEP) and Interdepartmental Recovery Fund. Investigating the early life stages of the Endangered Wavyrayed Lampmussel (*Lampsilis fasciola*). (co-PI with TJ Morris, DFO Canada).

## 3. Funded Internal Grants and Contracts:

2015 Research Enhancement Program. Vertical migration of unionid mussel species in rivers of Central Texas.

## D. Fellowships, Awards, Honors:

NABS (North American Benthological Society) President's Award	2009
University of Guelph International Graduate Scholarship	2008
Norman James Scholarship in Aquatic Animal Ecology	2007
NABS Graduate Student Conservation Research Award	2007
University of Guelph Graduate Scholarship	2006, 2007
Brock Doctoral Scholarship Nominee by the College of Biological Sciences, University of Guelph. (not received)	2005
Graduated "with distinction" at the University of Potsdam, Germany.	2004

**IV. SERVICE**

## A. Institutional

Member of Faculty Search Committee For Aquatic Toxicology, Department of Biology, Texas State.	2014/2015
Member of the weekly Departmental seminar committee.	2014/2015
Member of two scholarships committees	2015
Member of Undergraduate Curriculum Committee. Department of Integrative Biology, University of Guelph, ON.	2007, 2008
Member of Faculty Search Committee. For Ecosystem Ecology, Department of Integrative Biology, University of Guelph, ON.	2007

## B. Professional:

Reviewer of manuscripts for:

Aquatic Conservation: Marine and Freshwater Ecosystems,  
Environmental Reviews,  
Freshwater Science,  
Freshwater Biology,  
Hydrobiologia,



Journal of Great Lakes Research,  
Limnology

Appointed member  
of COSEWIC's (Committee on the Status of Endangered Wildlife in Canada) Molluscs Species  
Specialist Subcommittee, Canada. 2012 – 2015