

# Laura A. Twardochleb

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Fisheries and Wildlife  
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## EDUCATION

Ph.D. Fisheries and Wildlife; Ecology, Evolutionary Biology, and Behavior, Michigan State University (expected 2020)

Advisor: Dr. Phoebe Zarnetske

M.S. Aquatic and Fishery Sciences, University of Washington (2015)

Thesis: Urban development modifies lake food webs in the Pacific Northwest

Advisor: Dr. Julian Olden

B.S. Ecology and Evolution with Honors, University of California, Santa Cruz (2010)

Undergraduate Research: Do Non-Native Crayfish Add Functions or Replace Native Functions in Stream Food Webs?

Advisor: Dr. Jonathan Moore

## RESEARCH INTERESTS

Community and food web ecology

Invasion ecology

Freshwater ecology and conservation

Ecological effects of climate change

## FELLOWSHIPS AND SCHOLARSHIPS

Michigan State University Enrichment Fellowship (2015-2020), \$200,000

National Science Foundation Graduate Research Fellowship (2012-2017), \$134,000

UW College of the Environment, Student Travel Award (2014), \$305

American Fisheries Society, Eugene Maughan Scholarship (2012), \$1,500

Northwest Scientific Association, Student Grant Award (2012), \$1,500

## AWARDS AND HONORS

UW SAFS Graduate Student Symposium, Best Poster Presentation (2013)

Phi Beta Kappa Honors (2010)

Graduated *Cum laude*, UC Santa Cruz (2010)

## PUBLICATIONS

Kuehne, L.M. \*, **Twardochleb, L.A.** \*, Fritschie, K.J., Mims, M.C., Lawrence, D.J., Gibson, P.P., Stewart-Koster, B., and Olden, J.D. 2014. Practical science communication strategies for graduate students. *Conservation Biology* 28: 1225-1235.

\* *The first two authors contributed equally to the manuscript.*

**Twardochleb, L.A.**, Olden, J.D., and Larson, E.R. 2013. A global meta-analysis of the ecological impacts of non-native crayfish. *Freshwater Science* 32: 1367-1382.

Moore J.W., Carlson S.M., **Twardochleb L.A.**, Hwan J.L., and Fox J.M. 2012. Trophic Tangles through Time? Opposing Direct and Indirect Effects of an Invasive Omnivore on Stream Ecosystem Processes. *PLoS ONE* 7(11): e50687. doi:10.1371/journal.pone.0050687.

**Twardochleb L.A.**, Novak M., and Moore J.W. 2012. Using the functional response of a consumer to predict biotic resistance to invasive prey. *Ecological Applications* 22: 1162-1171.

#### MANUSCRIPTS IN PREPARATION OR REVIEW

**Twardochleb, L.A.**, and Olden, J.D. Non-native Chinese mystery snail (*Bellamya chinensis*) supports consumers in urban lake food webs. In review at *Ecosphere*.

Linzmaier, S.L., **Twardochleb, L.A.**, Olden, J.D., Mehner, T., and Arlinghaus, R. Inter-continental comparison reveals differences in the trophic ecology of Eurasian perch (*Perca fluviatilis*) and North American yellow perch (*Perca flavescens*). In review at *Ecology of Freshwater Fish*.

**Twardochleb, L.A.**, and J.D. Olden. Human development modifies the functional composition of lake littoral invertebrate communities. In prep.

Beakes, M.P., Moore, J.W., **Twardochleb, L.A.**, Cois, C., Collins, A., Hayes, S.A., Retford, N., and Sogard, S.M. Seasonality, wildfire, and shifting subsidies for stream food webs. In prep.

#### PRESENTATIONS

**Twardochleb, L.A.**, and J.D. Olden. 2014. Do Anthropogenic Stressors Drive Functional Trait Convergence of Littoral Macroinvertebrate Assemblages? School of Aquatic and Fishery Sciences, Graduate Student Symposium, University of Washington, Seattle, WA. (contributed oral presentation)

**Twardochleb, L.A.**, and J.D. Olden. 2014. Effects of Non-Native Chinese Mystery Snail (*Bellamya chinensis*) on Food Webs of Urban Lakes: Prey Resource or Trophic Cul-de-Sac? Joint Aquatic Sciences Meeting, Portland, OR. (contributed oral presentation)

**Twardochleb, L.A.**, and J.D. Olden. 2013. Interactive Effects of Chinese Mystery Snail (*Bellamya chinensis*) and Urbanization on Lake Food Webs of Washington State, Washington Lake Protection Association, Vancouver, WA. (contributed poster)

#### RESEARCH

**University Enrichment Fellow**, Zarnetske Spatial & Community Ecology Lab, Michigan State University, East Lansing, MI (2015-present)

- Experimental studies of effects of climate change on species interactions and functional diversity of freshwater invertebrate communities.
- Predictive modeling of community responses to climate change.

**Graduate Research Fellow**, Olden Freshwater Ecology and Conservation Lab, University of Washington, Seattle, WA (2011- 2015)

- Assessed effects of lake development on macroinvertebrate functional diversity.
- Examined whether a non-native species provides a prey resource and maintains the integration of benthic energetic pathways to lake food webs across a gradient of urban development.
- Used meta-analyses to quantify global impacts of non-native crayfish on freshwater food webs. Published in *Freshwater Science*.
- Surveyed Lake Washington for spread of the invasive New Zealand mud snail. Submitted a report to Washington Department of Fish and Wildlife.

**Biological Science Technician**, US Geological Survey, Menlo Park, CA (Spring 2011)

- Invertebrate community dynamics in San Francisco Bay.

**Lab and Field Technician**, Moore Lab, University of California, Santa Cruz, CA (2009-2011)

- Quantified the functional response of a consumer to non-native prey. Experimental and field data were used to model the ability of a consumer to provide biotic resistance against invasive prey. Published in *Ecological Applications*.
- Studied impacts of invasive crayfish on stream food webs, and designed a field experiment that quantified leaf litter breakdown by native and invasive invertebrates. Published in *PLoS ONE*.
- Assisted with a study of the effects of wildfire on stream food webs.

**Research Assistant**, Ash Science Education Lab, University of California, Santa Cruz, CA (2007-2010)

## TEACHING

**Guest Lecturer**, FISH 423- Aquatic Invasion Ecology, University of Washington (Winter 2014)

**Teaching Assistant**, FISH 101- Water and Society, University of Washington (Winter 2012)

- Led discussion sections, graded exams, and provided feedback on written assignments for Honors section.

**Guest Lecturer**, FISH 490- Aquatic Microbiology, University of Washington (Winter 2012)

**Tutor**, Animal Physiology, Genetics, University of California, Santa Cruz (2010)

## MENTORING AND TRAINING

Meghan Rosewood, Undergraduate, University of Washington (2013)

Capstone Research Project: The effects of littoral habitat alteration on macroinvertebrate functional feeding group diversity in Washington Lakes.

Marina Krasnovid, Undergraduate, University of Washington (2013)

Projects: Stable isotope analysis of lake fish, and species identification of aquatic plants.

Leslie (Siwei) Chen, Undergraduate, University of Washington (2012)

Project: Benthic invertebrate diversity across a gradient of lake urbanization.

Andrea Wong, American Fisheries Society Hutton Scholar (2011)

Project: New Zealand Mud Snail distribution in Lake Washington.

## OUTREACH

Freshwater Conservation Exhibit Lead/Organizer, PAWS on Science Husky Weekend at Seattle Pacific Science Center (2013, 2014)

Secretary, American Fisheries Society, University of Washington Student Chapter (2012-2013)

## PROFESSIONAL ACTIVITIES

*Manuscript Referee for:*

Biological Invasions

Bioinvasions Records

Ecology

Hydrobiologia

Royal Society Open Science

## MEMBERSHIP

Ecological Society of America

Society for Freshwater Science