

ANGELA L. STRECKER

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### **EDUCATION**

#### **Ph.D., Biology. Queen's University, Kingston, Ontario, 2007.**

*Thesis title:* "Responses of zooplankton community structure and ecosystem function to the invasion of an invertebrate predator, *Bythotrephes longimanus*."

*Supervisor:* Dr. S. Arnott

#### **B.Sc. (Honours), Biology. University of Regina, Regina, Saskatchewan, 2001.**

*Thesis title:* "Effects of environmental warming and biodiversity on the phytoplankton of alpine ponds."

*Supervisor:* Dr. R. Vinebrooke

### **PROFESSIONAL EXPERIENCE**

**Assistant Professor** – Department of Environmental Science and Management, Portland State University, Portland, Oregon, 2011-

**Post-Doctoral Fellow** – School of Aquatic and Fishery Sciences, University of Washington, Seattle, Washington, 2009-2011

*Supervisors:* Drs. J. Olden (University of Washington) and C. Paukert (Missouri Cooperative Fish and Wildlife Research Unit)

**Post-Doctoral Fellow** – Department of Ecology & Evolutionary Biology, University of Toronto, Toronto, Ontario, 2007-2009.

*Supervisors:* Drs. P. Abrams, M-J. Fortin, D. Jackson, B. Shuter

**Environment Canada Science Horizons Youth Intern** – Department of Biology, University of Regina, Regina, Saskatchewan, 2001.

*Supervisors:* Dr. R. Vinebrooke (University of Regina) and D. Donald (Environment Canada)

**Research Assistant** – Department of Biology, University of Regina, Regina, Saskatchewan, 2000.

*Supervisor:* Dr. R. Vinebrooke

### **PUBLICATIONS** (underline = student co-author)

Granek, EF, KE Conn, E Nilsen, L Pillsbury, **AL Strecker**, B Fish, and S Rumrill. 2016. Spatial and temporal variability of contaminants within estuarine sediments and native Olympia oysters: A contrast between a developed and an undeveloped estuary. In press at *Science of the Total Environment*.

Pool, T.K., J. Cucherousset, S. Boulétreau, S. Villéger, **A.L. Strecker**, and G. Grenouillet. 2016. Increased taxonomic and functional similarity does not increase communities' trophic similarity. *Global Ecology and Biogeography* 25:46-54.

Belmaker, Y., P.L. Zarnetske, M.-N. Tuanmu, **S. Zonneveld**, S. Record, **A.L. Strecker**, and L. Beaudrot. 2015. Empirical evidence for the scale-dependence of biotic interactions. *Global Ecology and Biogeography* 24: 750-761.

**\*\* F1000 Prime Recommended Paper**

- Strecker, A.L.** and J.D. Olden. 2014. Fish species introductions provide novel insights into the patterns and drivers of phylogenetic structure in freshwaters. *Proceedings of the Royal Society – B* 281: 20133003.
- Chang, H., I-W. Jung, **A.L. Strecker**, D. Wise, M. Lafrenz, V. Shandas, H. Moradkhani, A. Yeakley, Y. Pan, R. Bean, G. Johnson, and M. Psaris. 2013. Water supply, demand, and quality indicators for assessing the spatial distribution of water resource vulnerability in the Columbia River basin. *Atmosphere-Ocean* 51: 339-356.  
**\*\* A 'Most Read' paper in *Atmosphere-Ocean*; included in the 2013 Water Science and Resources Reading List.**
- Pool, T.K., **A.L. Strecker**, and J.D. Olden. 2013. Identifying preservation and restoration priority areas for desert fishes in an increasingly invaded world. *Environmental Management* 51:631-641.
- Stasko, A., T. Patenaude, **A.L. Strecker**, and S.E. Arnott. 2012. Portage connectivity does not predict establishment success of canoe-mediated dispersal for crustacean zooplankton. *Aquatic Ecology* 46: 9-24.
- Foster, S.E., W.G. Sprules, and **A.L. Strecker**. 2012. Effects of *Bythotrephes longimanus* (Crustacea, Cladocera) on the abundance, morphology, and prey community of *Leptodora kindtii* (Crustacea, Cladocera). *Hydrobiologia* 683:163-172.
- MacLennan, M., S.E. Arnott, and **A.L. Strecker**. 2012. Differential sensitivity of planktonic trophic levels to extreme summer temperatures in boreal lakes. *Hydrobiologia* 680:11-23.
- Strecker, A.L.**, J.D. Olden, J. Whittier, and C. Paukert. 2011. Defining conservation priorities for freshwater fishes according to taxonomic, functional, and phylogenetic diversity. *Ecological Applications* 21:3002-3013.
- Young, J.D., **A.L. Strecker**, and N.D. Yan. 2011. Increased abundance of the non-indigenous zooplanktivore, *Bythotrephes longimanus*, is strongly correlated with greater spring prey availability in Canadian Shield lakes. *Biological Invasions* 13:2605-2619.
- Rennie, M.D, **A.L. Strecker**, and M.E. Palmer. 2011. *Bythotrephes* invasion elevates trophic position of zooplankton and fish: Implications for contaminant biomagnification. *Biological Invasions* 13:2621-2634
- Strecker, A.L.**, J.M. Casselman, M-J. Fortin, D.A. Jackson, M.S. Ridgway, P.A. Abrams, and B.J. Shuter. 2011. A multi-scale comparison of trait linkages to environmental and spatial variables in fish communities across a large freshwater lake. *Oecologia* 166:819-831.
- Strecker, A.L.**, P.M. Campbell, and J.D. Olden. 2011. The aquarium trade as an invasion pathway in the Pacific Northwest. *Fisheries* 36:74-85.  
**\*\* A 'Most Read' paper in *Fisheries*.**
- Strecker, A.L.**, B.E. Beisner, S.E. Arnott, A.M. Paterson, J. Winter, O.E. Johannsson, and N.D. Yan. 2011. Direct and indirect effects of an invasive planktonic predator on pelagic food webs. *Limnology and Oceanography* 56: 179-192.
- Strecker, A.L.** and S.E. Arnott. 2010. Complex interactions between regional dispersal of native taxa and an invasive species. *Ecology* 91: 1035-1047.
- Strecker, A.L.** and S.E. Arnott. 2008. Invasive predator, *Bythotrephes*, has varied effects on ecosystem function in freshwater lakes. *Ecosystems* 11: 490-503.

- Strecker, A.L., R. Milne,** and S.E. Arnott. 2008. Dispersal limitation and climate-related environmental gradients structure microcrustacean composition in freshwater lakes, Ellesmere Island, Canada. *Canadian Journal of Fisheries and Aquatic Sciences* 65: 1905-1918.
- Strecker, A.L.,** S.E. Arnott, N.D. Yan, and R. Girard. 2006. Variation in the response of crustacean zooplankton species richness and composition to the invasive predator *Bythotrephes longimanus*. *Canadian Journal of Fisheries and Aquatic Sciences* 63: 2126-2136.
- Strecker, A.L.** and S.E. Arnott. 2005. Impact of *Bythotrephes* invasion on zooplankton communities in acid-damaged and recovered lakes on the Boreal Shield. *Canadian Journal of Fisheries and Aquatic Sciences* 62: 2450-2462.
- Strecker, A.L.,** T.P. Cobb, and R.D. Vinebrooke. 2004. Effects of experimental greenhouse warming on phytoplankton and zooplankton communities in fishless alpine ponds. *Limnology and Oceanography* 49: 1182-1190.

#### **IN REVIEW**

- Brittain, J.T. and **A.L. Strecker.** The interactive effect of multiple stressors on crustacean zooplankton communities in montane lakes. In revision.
- Chang, J., E. Watson, and **A.L. Strecker.** Climate change and stream temperature in the Willamette River Basin: Implications for fish habitat. In review at *World Scientific Series on Asia-Pacific Weather and Climate*.
- Elder T., Woodley C., Weiland M. and **Strecker A.L.** Factors Influencing the Survival of Outmigrating Juvenile Salmonids through Multiple Dam Passages. In review at *Ecology and Evolution*.
- Record, S.\*, **A.L. Strecker\***, M.-N. Tuanmu, L. Beaudrot, P.L. Zarnetske, Y. Belmaker. Does Scale Matter? Incorporating Biological Realism When Predicting Changes in Species Distributions. In revision.  
\* both authors contributed equally
- Strecker, A.L.** and J.T. Brittain. Increased habitat connectivity homogenizes freshwater communities: Historical and landscape perspectives. In review at *Journal of Applied Ecology*.
- Whitney, J.E., J.B. Whittier, C.P. Paukert, J.D. Olden, and **A.L. Strecker.** Forecasted range shifts of arid-land fishes in response to climate change: the influence of fish traits. In preparation for *Ecography*.
- Zarnetske, P.L., B. Baiser, **A.L. Strecker,** S. Record, Y. Belmaker, M.-N. Tuanmu. The interplay between landscape structure and biotic interactions (Invited). In review at *Current Landscape Ecology Reports*.

#### **CHAPTER**

- Strecker, A.L.** 2011. An overview of invasive freshwater cladocerans: *Bythotrephes longimanus* as a case study. In "Handbook of Global Freshwater Invasive Species," Francis, R. (ed), Earthscan, London, UK, pp. 149-156.

#### **NON-REFEREED CONTRIBUTIONS**

- Jordan, M., R. Miller, **A.L. Strecker.** 2015. *Oregon Lake Watch, 2014 Annual Report.* Prepared for Oregon State Marine Board.
- Miller, R., C. Buhl, M. Sytsma, **A.L. Strecker.** 2014. *Integrated Aquatic Vegetation Management Plan for Yoncalla Ponds, Yoncalla, Oregon.* Prepared for North Douglas Betterment.
- Miller, R., M. Sytsma, **A.L. Strecker.** 2014. *Physical, Chemical and Biological Assessment of Yoncalla Log Ponds.* Prepared for North Douglas Betterment.

- Brenneis, V., S. Cimino, **A.L. Strecker**. 2014. *OSMB AIS Funds Final Report: Task 1. Boat Ramp Monitoring for New Zealand Mud Snails*. Prepared for Oregon State Marine Board.
- Strecker, A.L.**, R. Miller, V. Morgan. 2014. *OSMB AIS Funds Final Report: Task 4. Oregon Lake Watch*. Prepared for Oregon State Marine Board.
- Cimino, **A.L. Strecker**. 2014. *OSMB AIS Funds Final Report: Task 6. Tenmile Lake Boat Wash Effectiveness Monitoring*. Prepared for Oregon State Marine Board.
- Whittier J.B., C.P. Paukert, J.D. Olden, K.L. Pitts and **A.L. Strecker**. 2011. *Lower Colorado River Basin Aquatic Gap Analysis Project: Final Report*. U.S. Geological Survey, Gap Analysis Program.
- Strecker, A.L.** 2005. Invasive species in Killarney Park lakes. Killarney Park Tourist Information Guide.
- Strecker, A.L.** 2002. The effects of an exotic species, *Bythotrephes longimanus*, on freshwater zooplankton communities recovering from acidification. Friends of Killarney Park Newsletter.

**CONFERENCE PRESENTATIONS** (\* presented by; underline = student co-author)

- Elder, T.\* and **A.L. Strecker**. 2015. Why Are There so Many Sneaky Males? Changes in the Proportion of Precocious Males over 16 Years in Columbia River Chinook Salmon Populations. American Fisheries Society Annual Meeting, Portland, OR.
- Chiapella, A.C.\* and **A.L. Strecker**. 2015. Food Matters: Using Stable Isotopes to Establish the Dominant Biological Pathways of Contaminant Accumulation in Trout-Stocked Mountain Lake Food Webs. American Fisheries Society Annual Meeting, Portland, OR.
- Strecker, A.L.**\* and J.T. Brittain. 2015. Effects of landscape-scale changes in freshwater connectivity: Implications for biological communities in lakes and ponds on the arid Columbia Plateau, Washington. International Association for Landscape Ecology World Congress, Portland, OR.
- Zarnetske, P.L.\* , Y. Belmaker, S. Record, M.-N. Tuanmu, **A.L. Strecker**, L. Beaudrot, S. Zonneveld. 2015. Scale-dependence of biotic interactions: implications during climate change. International Association for Landscape Ecology World Congress, Portland, OR. **(Invited)**
- Chiapella, A.\* , **A.L. Strecker**. 2015. Macroinvertebrate Community Change Along An Elevation Gradient In Fishless Versus Fish-stocked Montane Lakes. Association for the Sciences of Limnology and Oceanography Annual Meeting, Granada, Spain.
- Chang, H.\* , M. Psaris, **A.L. Strecker**. 2014. Aquatic Species Responses to Changes in Streamflow and Stream Temperature in the Willamette River Basin of Oregon. American Geophysical Union, San Francisco, CA. **(Invited)**
- Brittain, J.T.\* and **A. Strecker**. 2014. Using differences in aquatic food web structure to identify pollutant responses in montane lakes. Oregon Lakes Association Meeting, Astoria, OR.
- Record, S.\* , J. Belmaker, P.L. Zarnetske, L. Beaudrot, **A.L. Strecker**. 2014. The influence of scale on the importance of biotic interactions in species distribution models. Ecological Society of America, Sacramento, CA.
- Belmaker, Y.\* , P.L. Zarnetske, M.-N. Tuanmu, S. Record, S. Zonneveld, **A.L. Strecker**, L. Beaudrot. 2014. Empirical evidence for the scale-dependence of biotic interactions. Gordon Research Conference, Biddeford, ME.
- Brittain, J.T.\* and **A. Strecker**. 2014. The response of plankton communities in lakes of different fish stocking histories to atmospheric nitrogen deposition simulations in montane lakes. Joint Aquatic Science Meeting, Portland, OR.

- Cimino, S.A.\*, V. Brenneis, and **A.L. Strecker**. 2014. Investigating shifts in food web position of benthic invertebrates due to New Zealand mudsnail invasion in freshwater lakes and brackish estuaries. Joint Aquatic Sciences Meeting, Portland, OR.
- Elder T.\*, Woodley C., Ploskey G., Weiland M. and **Strecker A.** 2014. Factors Influencing The Survival of Juvenile Salmonids Migrating Through the Lower Columbia River Hydrosystem. Joint Aquatic Sciences Meeting, Portland, OR.
- Strecker, A.L.\***, R. Miller, M. Sytsma, J. Eilers. Multiple stressors in mountain lakes: Implications of fish stocking for plankton communities and harmful algal blooms. Joint Aquatic Science Meeting, Portland, OR.
- Strecker, A.L.\*** and J.D. Olden. 2014. Desert fish communities as a model to understand community assembly and dynamics. WA-BC Chapter, American Fisheries Society, Vancouver, WA. **(Invited)**
- Cimino, S.A.\* and **A. Strecker**. 2013. Developing an understanding of the distribution vectors of invasive species via qualitative surveys of boaters at Tenmile Lake. Oregon Lakes Association and Washington Lakes Protection Association Joint Conference, Vancouver, WA.
- Elder, T.\*, C. Woodley, G. Ploskey, M. Weiland, and **A.L. Strecker**. 2013. Factors Influencing the Survival of Juvenile Salmonids Migrating Through the Lower Columbia River Hydrosystem. Oregon Lakes Association and Washington Lakes Protection Association Joint Conference, Vancouver, WA.
- Strecker, A.L.\*** 2013. Contemporary and historical comparisons of chemical and biological characteristics of lakes and ponds on the arid Columbia Plateau, Washington. Ecological Society of America, Minneapolis, Minnesota, USA.
- Elder, T.\*, C. Woodley, G. Ploskey, M. Weiland, and **A.L. Strecker**. 2013. Cumulative Survival of Juvenile Salmonids Passing Through the Lower Columbia River Hydrosystem. Western Division American Fisheries Society Meeting, Boise, Idaho, USA.
- Strecker, A.L.\*** 2012. Contemporary and historical comparisons of chemical and biological characteristics of lakes on the Columbia Plateau. Washington State Lake Protection Association, Wenatchee, Washington, USA.
- Chang, H., I-W. Jung, **A.L. Strecker\***, D. Wise, M. Lafrenz, V. Shandas, H. Moradkhani, A. Yeakley, Y Pan, R. Bean, G. Johnson, and M. Psaris. 2012. Multidimensional assessment of the spatial distribution of water resource vulnerability in the Columbia River basin, USA. Ecological Society of America, Portland, Oregon, USA.
- Whittier, J.\* , C.P. Paukert, J.D. Olden, **A.L. Strecker**, K. Pitts. 2012. Linking protected lands with streams of high biological conservation potential in arid systems: now and in the future. 6th World Fisheries Congress, Edinburgh, Scotland.
- Strecker, A.L.\*** and J.D. Olden. 2011. Phylogenetic patterns of fish community assembly in the American Southwest: The influence of non-native species and the environmental template. American Fisheries Society, Seattle, Washington, USA.
- Whittier, J.\* , C.P. Paukert, J.D. Olden, K. Pitts, **A.L. Strecker**. 2011. Developing conservation priorities for native fish in the Lower Colorado River Basin. American Fisheries Society, Seattle, Washington, USA. **(Invited)**
- Pool, T.K.\* , **A.L. Strecker**, J.D. Olden. 2011. A novel application of a management area prioritization method supporting the conservation of freshwater fishes. American Fisheries Society, Seattle, Washington, USA.

- Whittier, J.\*, **A.L. Strecker**, J. Olden, C. Paukert. 2011. Priority watershed planning in the Colorado River basin: new tools and approaches. Missouri Chapter of the American Fisheries Society, Jefferson City, Missouri, USA.
- Strecker, A.L.\*** and J.D. Olden. 2010. Prioritizing present and future conservation efforts for native fishes in the Lower Colorado River Basin. Desert Fishes Council, Moab, Utah, USA. **(Invited)**
- Strecker, A.L.\***, J.D. Olden, J. Whittier, C. Paukert. 2010. Setting conservation priorities for native fishes in the Lower Colorado River Basin. American Society of Limnology and Oceanography/North American Benthological Society, Santa Fe, New Mexico, USA.
- Strecker, A.L.\***, P.A. Abrams, J.M. Casselman, M-J. Fortin, D.A. Jackson, L. Marcogliese, M.S. Ridgway, B.J. Shuter. 2009. Fitting together functional traits and hierarchical environmental variation in freshwater fish communities in the Great Lakes. Canadian Society of Ecology and Evolution, Halifax, Nova Scotia, Canada.
- Rennie, M.D.\*, **A.L. Strecker**, and M. Palmer. 2009. Bythotrephes invasion elevates trophic position of fish and zooplankton communities. 4th International *Bythotrephes* Workshop, Dorset, Ontario, Canada.
- Strecker, A.L.\***, P.A. Abrams, J.M. Casselman, M-J. Fortin, D.A. Jackson, L. Marcogliese, S.W. Milne, M.S. Ridgway, B.J. Shuter. 2008. Spatial structure of coastal fish communities in Lake Huron. American Fisheries Society, Ottawa, Ontario, Canada.
- Strecker, A.L.\***, P.A. Abrams, J.M. Casselman, M-J. Fortin, D.A. Jackson, S.W. Milne, M.S. Ridgway, B.J. Shuter. 2008. Spatial dynamics and interactions between coastal fish community functional groups in Lake Huron. Ecological Society of America, Milwaukee, Wisconsin, USA.
- Strecker, A.L.**, M.S. Ridgway\*, S.W. Milne, P.A. Abrams, M-J. Fortin, D.A. Jackson, and B.J. Shuter. 2008. Using hydroacoustics to infer spatial patterns of Lake Huron coastal pelagic fish. International Association for Great Lakes Research, Peterborough, Ontario, Canada.
- Strecker, A.L.\***, M.S. Ridgway, B.J. Shuter, M-J. Fortin, D.A. Jackson, P.A. Abrams, S.W. Milne. 2008. The use of spatial analyses to infer patterns in coastal fish communities in Lake Huron. Great Lakes Fisheries Commission, Niagara Falls, Ontario, Canada.
- Arnott, S.E.\*, J. Binks, A.M. Derry, L. Duke, J. Forrest, J. Pokorny, and **A.L. Strecker**. 2007. The influence of dispersal on community composition depends on local factors. American Society of Limnology and Oceanography, Santa Fe, New Mexico, USA.
- Strecker, A.L.\*** and S.E. Arnott. 2007. Dispersal mediates the effects of an invasive predator, *Bythotrephes*, on a zooplankton community. American Society of Limnology and Oceanography, Santa Fe, New Mexico, USA.
- Arnott, S.E.\*, A.M. Derry, **A.L. Strecker**, J. Forrest, J. Pokorny, and J. Binks. 2007. The influence of dispersal on community composition depends on niche availability. International Association of Theoretical and Applied Limnology, Montréal, Québec, Canada.
- Strecker, A.L.\*** and S.E. Arnott. 2007. Regional dispersal of zooplankton may dampen the effects of an invasive predator, *Bythotrephes*, on local communities. Society of Canadian Limnologists, Montréal, Québec, Canada.
- Strecker, A.L.\*** and S.E. Arnott. 2006. Disruption of energy flow in boreal shield lakes: Implications of the invasion of an invertebrate predator, *Bythotrephes*. Society of Canadian Limnologists, Calgary, Alberta.

**Strecker, A.L.** and S.E. Arnott.\* 2005. *Bythotrephes* effects on crustacean zooplankton: surveys and experiments on inland lakes. Great Lakes Fisheries Commission Invertebrate Invasions Workshop, Ann Arbor, Michigan, USA.

**Strecker, A.L.\*** and S.E. Arnott. 2005. Responses of zooplankton community structure and function to an invasive predator in boreal lakes. American Society of Limnology and Oceanography, Santiago de Compostela, Spain.

**Strecker, A.L.\*** and S.E. Arnott. 2005. *Bythotrephes*-induced changes in zooplankton community structure and its impact in boreal lakes. Society of Canadian Limnologists, Windsor, Ontario. **(Invited)**

**Strecker, A.L.\*** and S.E. Arnott. 2003. The effects of *Bythotrephes longimanus* on zooplankton communities in lakes recovering from acidification. Ecological Society of America, Savannah, Georgia.

**Strecker, A.L.\*** and S.E. Arnott. 2003. The effects of an invasive invertebrate predator, *Bythotrephes longimanus*, on zooplankton communities in lakes recovering from acidification. Society of Canadian Limnologists, Ottawa, Ontario. **(Invited)**

Vinebrooke, R.D.\*, **A.L. Strecker**, T.P. Cobb, and M.D. Graham. 2002. Coupling of zooplankton and phytoplankton responses to greenhouse warming of alpine ponds. American Society of Limnology and Oceanography, Victoria, British Columbia, Canada.

Vinebrooke, R.D.\*, T.P. Cobb, and **A.L. Strecker**. 2001. Global warming and zooplankton communities in alpine ponds of the Canadian Rocky Mountains: A greenhouse-warming experiment. Ecological Society of America, Madison, Wisconsin, USA.

#### **INVITED SEMINARS**

- University of Florida, Department of Wildlife Ecology and Conservation, Gainesville, FL, 2014.
- Oregon State University, Department of Fisheries and Wildlife, Corvallis, OR, 2013, 2014.
- National Invasive Species Council Advisory Committee Meeting, Portland, OR, 2012 (joint with J. Olden).
- Portland State University, Department of Systems Science, Portland, OR, 2012.
- USGS Oregon Water Science Center, Portland, OR, 2012.
- Oregon Department of Fish and Wildlife, Clackamas, OR, 2011.
- Portland State University, Department of Environmental Science and Management, Portland, OR, 2011.
- University of British Columbia, Faculty of Forestry, Vancouver, BC, 2011 (joint with J. Olden).
- University of the Fraser Valley, Department of Biology, Abbotsford, BC, 2011.
- Ontario Ministry of Natural Resources - Trent University, Peterborough, ON, 2010.
- University of Texas at Austin, School of Biological Sciences, Austin, TX, 2009.
- University of Toronto, Department of Ecology & Evolutionary Biology, Toronto, ON, 2007, 2008.
- McGill University, Aquatic Seminar Series, Department of Biology, Montréal, QC, 2008.
- Queen's University, Department of Biology, Kingston, ON, 2007.

#### **POSTERS** (underline = student co-author)

Holgerson, M., **A.L. Strecker**, M. Adams, and M. Hayes. 2016. Restoring floodplain wetlands: A species-to-ecosystem approach. Society for Ecological Restoration Northwest Regional Conference, Portland, OR.

Johnson, A., M. Obedzinski, and **A.L. Strecker**. 2015. Determining Winter Habitat and Juvenile Coho Salmon Growth Relationships in the Russian River Watershed, California. American Fisheries Society Annual Meeting, Portland, OR.

Jordan M. and **A. Strecker**. 2014. The effects of anthropogenic stressors on mercury concentrations and ecological processes in freshwater zooplankton. Joint Aquatic Sciences Meeting, Portland, OR.

Chiapella, A.C. and **A. Strecker**. 2014. An analysis of the cumulative mechanisms contributing to PCB dynamics in food webs of high elevation lakes. Joint Aquatic Sciences Meeting, Portland, OR.

Brittain J.T. and **Strecker A.L.** 2013. The response of plankton communities to atmospheric deposition simulation in alpine lakes of Mount Rainier National Park. Oregon Lakes Association and Washington Lakes Protection Association Joint Conference, Vancouver, WA.

Jordan M. and **A. Strecker**. 2013. A mesocosm study of climate change and eutrophication effects on zooplankton communities in a mercury-contaminated reservoir. Oregon Lakes Association and Washington Lakes Protection Association Joint Conference, Vancouver, WA.

## **TEACHING EXPERIENCE**

### **COURSES**

- Portland State University: Introduction to Environmental Systems (ESM220 – 4 cr), Capstone-Science Inquiry (ESM450/UNST421 – 6 cr), Limnology and Aquatic Ecology (ESM475/575 – 4 cr), Limnology Laboratory (ESM477/577 – 2 cr), Data Management (ESM505/ESR605 – 2 cr), Applications of Ecosystem Services (ESR 610 – 4 cr), Graduate Research Toolbox (ESM554 – 2 cr)

### **CERTIFICATION**

- Certificate I: Scholarship, and Certificate II: Practical Experience, Program in University Teaching and Learning, Centre for Teaching and Learning, Queen's University, 2006.

### **INSTRUCTIONAL & PROFESSIONAL DEVELOPMENT**

- In-class evaluation by Center for Academic Excellence (ESM220, 2012; ESM450/UNST421; 2012, 2013).
- Workshop, "D2L Basics," PSU Office of Information Technology, Portland, OR. (December 2011).
- Workshop, "Using Clickers to Increase Attendance, Retention, and Engagement in Your Courses," PSU Center for Academic Excellence, Portland, OR. (September 2011).

### **CURRICULUM DEVELOPMENT**

- Developed a new graduate course highlighting research and professional skills (ESM554)
- Created materials for Limnology Class (ESM475/575) and Laboratory (ESM477/577), as well as Capstone (ESM450/UNST421).
- Designed lab module for Introductory Biology of Organisms (BIOL103), Queen's University, 2005.

### **GUEST LECTURE**

- Methods and Models for Ecosystem Services (GEOG694), Seminar Speaker Series (ESM507), Portland State University, 2013-2014.
- Water and Society (FISH101), Limnology (FISH/BIOL473), University of Washington, 2010.
- Community Ecology (EEB321), University of Toronto, 2007, 2008.
- Introductory Biology of Organisms (BIOL103), Community and Ecosystem Ecology (BIOL303), Advanced Data Management and Experimental Design (BIOL843), Queen's University, 2006, 2007.



**LABORATORY INSTRUCTOR**

- Introductory Biology of Organisms (BIOL103), Diversity of Life II (BIOL202), Community and Ecosystem Ecology (BIOL303), Queen's University, 2003-2007.
- Limnology of Stressed and Recovering Ecosystems, Ontario University Field Biology Program (BIOL407), Queen's University, 2005.
- Introductory Biology II (BIOL101), Introductory Microbiology (BIOL220), University of Regina, 2000-2001.

**STUDENT SUPERVISOR*****Doctoral Students***

- Tim Elder (2011- ), Ariana Chiapella (2013- ), Crysta Gantz (2016- ), Portland State University.

***Masters Students***

- Jeff Brittain (2012-2015), Samuel Cimino (2012-2016), Amelia Johnson (2014- ), Meredith Jordan (2012- ), Brian McGann (2015-), Portland State University.

***Honours Thesis Students***

- Alec Trusty, Portland State University, 2016.
- Megan MacLennan, Queen's University, Kingston, Ontario, 2007.  
Honours thesis published in *Hydrobiologia* (2012).
- Rebecca Milne, Queen's University, Kingston, Ontario, 2006.  
Honours thesis published in *Canadian Journal of Fisheries and Aquatic Sciences* (2008).
- Melissa Cuke, Queen's University, Kingston, Ontario, 2005.
- Emily Parrott, York University, Toronto, Ontario, 2003.

***Undergraduate Student Projects***

- Olivia Franke (2016), Alec Trusty (2015-2016), Mia Jauregui (2014-2015), Jared Anderson (2013-2014), Jesse Klinger (2012-2013), Portland State University.
- Philip Campbell (2009-2010), University of Washington.  
Capstone project published in *Fisheries* (2011).
- Lisa Duke (2006-2007), Thea Whitman (2006-2007), Johanna Pokorny (2005-2007), Alanna Kalyniuk (2004-2005), Queen's University.
- Elizabeth Hatton (2002), University of Guelph.

**GRANTS (\*=PENDING)**

* Department of Defense, Strategic Environmental Research and Development Program (2017-2021). <i>Climate Change and Vernal Pools</i> . PI	\$1,293,198
* National Science Foundation (2016-2019). <i>REU: Eco-Informatics for Bioinvasions</i> . Co-PI	\$372,778
National Science Foundation (2016-2018). <i>EAGER: NEON: Intraspecific traits</i> . Co-PI	grant total \$300,000 PSU total \$20,976
Washington Department of Fish and Wildlife (2015-2016). <i>Recovery of Zooplankton in Treated Lakes</i> . PI	\$15,915
National Science Foundation (2015-2017). <i>EAGER: Metacommunities and Metapopulations</i> . PI	\$157,993
US Army Corps of Engineers (2015-2016). <i>Dexter Reservoir Study</i> . Co-PI	\$28,389
North Coast and Cascades Science Learning Network (2014-2016). Contaminants in Mountain Lakes. PI	\$7876

Washington Department of Fish and Wildlife (2014-2015). <i>Recovery of Zooplankton in Treated Lakes</i> . PI	\$12,500
Oregon State Marine Board (2014-2015). <i>Management of Aquatic Invasive Species</i> . PI	\$40,038
Bonneville Power Administration (2014-2015). <i>Managing Mussels</i> . PI	\$221,927
PSU Research Stimulus Grant (2014-2015). <i>Evaluating Lake Ecosystem Responses to Restoration Manipulations</i> . PI	\$4,988
PSU Research Stimulus Grant (2014-2015). <i>Training Undergraduates in the Informatics of Biological Invasions</i> . Co-PI	\$5,000
Oregon BEST (2014-2015). <i>Managing Mussels</i> . PI	\$22,193
US Fish and Wildlife Service, Landscape Conservation Cooperatives (2014-2016). <i>Integrating Assessment and Planning for Aquatic Resource Conservation at Landscape Scales</i> . Co-PI	grant total \$161,320
PSU College of Liberal Arts and Sciences Innovation Grant (2013-2014). <i>Harmful algal blooms in high elevation lakes</i> . PI	PSU total \$11,245 \$10,000
PSU College of Liberal Arts and Sciences Innovation Grant (2013-2014). <i>Klamath Lake Management</i> . Co-PI	\$6,000
PSU Faculty Enhancement Grant (2013-2015). <i>Metacommunities: Dispersal and environmental effects</i> . PI	\$15,000
PSU Research Stimulus Grant (2013-2014). <i>Metacommunities: Dispersal and environmental effects</i> . PI	\$4991
North Douglas Betterment (2013-2014). <i>Yoncalla Pond Limnological Assessment and Management Planning</i> . Co-PI	\$40,824
Oregon Sea Grant (2013-2014). <i>Contaminants in Oregon Waters</i> . Co-PI	\$26,000
Oregon State Marine Board (2012-2014). <i>Management of Aquatic Invasive Species</i> . PI	\$195,233

### **AWARDS AND SCHOLARSHIPS**

- Sigma Xi, Columbia-Willamette Chapter, Outstanding Researcher Award, Earth and Environmental Sciences, 2014.
- Ontario Graduate Scholarship in Science and Technology, Queen's University, 2006, (\$15,000).
- Pearl Williams and Llewellyn Hillis Fund, Queen's University, 2005 (\$400).
- Ontario Federation of Anglers and Hunters Conservation Grant, 2004 (\$2000).
- Natural Sciences and Engineering Research Council of Canada Post-Graduate Scholarship, 2004 (\$42,000).
- Graduate Dean's Doctoral Field Grant, Queen's University, 2004 (\$3000).
- Queen's Graduate Award, School of Graduate Studies and Research, 2004, 2006 (\$8000).
- Clemens-Rigler Travel Award, Society of Canadian Limnologists, 2003, 2006, 2007 (\$200-500).
- Sigma Xi Grants-in-Aid of Research, 2002 (\$300US).
- Natural Sciences and Engineering Research Council of Canada Post-Graduate Scholarship, 2001 (\$35,000).
- Natural Sciences and Engineering Research Council of Canada Undergraduate Student Research Award, 2000 (\$6000).
- Faculty of Science Dean's Honours List, University of Regina, 1998.
- Reverend Donald Flynn, S.J. Scholarship, Campion College, University of Regina, 1996 (\$400).

### **MEDIA COVERAGE**

- Salem Statesman Journal, June 2014 - Program seeks volunteers to help monitor lakes ([www.statesmanjournal.com/story/travel/outdoors/2014/06/17/program-seeks-volunteers-help-monitor-lakes/10715927/](http://www.statesmanjournal.com/story/travel/outdoors/2014/06/17/program-seeks-volunteers-help-monitor-lakes/10715927/))

- Sherwood Gazette, February 25, 2013 – Feature on Capstone class ([www.portlandtribune.com/sg/79-features/128777-class-at-the-refuge-proves-an-eye-opening-event-for-sms-students](http://www.portlandtribune.com/sg/79-features/128777-class-at-the-refuge-proves-an-eye-opening-event-for-sms-students))
- Portland Tribune, January 25, 2012 – Real Life Sciences ([www.portlandtribune.com/pt/9-news/18828-real-life-sciences](http://www.portlandtribune.com/pt/9-news/18828-real-life-sciences))
- Science Daily, May 13, 2008 ([www.sciencedaily.com/releases/2008/05/080509171616.htm](http://www.sciencedaily.com/releases/2008/05/080509171616.htm))
- CBC Radio, Ontario Morning - May 7, 2008, interview with Wei Chen (S. Arnott)
- Kingston Whig Standard - May 6, 2008, 'Underwater Woes' (press release from Queen's News Centre: [www.qnc.queensu.ca/campusnews\\_article\\_loader.php?id=4817431c699b8](http://www.qnc.queensu.ca/campusnews_article_loader.php?id=4817431c699b8))

## **SERVICE ACTIVITIES**

### **BEYOND PSU**

Student Committee: Christina Murphy (Oregon State University)

### **UNIVERSITY**

Committees: Student Educational Travel (=Academically-Controlled Auxiliary Activities; 2013- ); Task Force on Academic Quality (2014-present)

Student Committees: Zoe Bonak (Geography), Lindsay Holden (Biology)

### **DEPARTMENTAL**

Committee Chair: Public Relations and Development (2013- ); Awards (2013- )

Committees: Graduate (2011-2014, 2015- ); Public Relations and Development (2011-2013); Faculty Search (Biogeochemistry 2012-13)

ESM Graduate Student Joint Campus Colloquium: Organizer and student liaison (2012- )

Student Committees: Brian Adair, Nicole Alfafara, Erin Kincaid, Casey Lewis, Rich Miller, Briita Orwick, Joey Peters, Bern Romey, Jaclyn Teixeira, Christa von Behren

## **PROFESSIONAL ACTIVITIES**

### **SOCIETIES**

American Fisheries Society, American Society of Limnology and Oceanography, Ecological Society of America, International Association for Landscape Ecology, Oregon Lakes Association, Washington State Lake Protection Association

### **REVIEWER**

#### ***Associate Editor***

Journal of Applied Ecology (May 2012 - )

#### ***Grants***

National Science Foundation (panelist, Population and Community Ecology cluster, 2014, 2016), National Science Foundation (ad hoc), Illinois-Indiana Sea Grant, Portuguese Foundation for Science and Technology

#### ***Journals***

American Naturalist, Aquatic Biology, Aquatic Invasions, Archiv für Hydrobiologie, Biological Conservation, Biological Invasions, BioScience, Canadian Journal of Fisheries and Aquatic Sciences, Conservation Letters, Diversity and Distributions, Ecography, Ecological Applications, Ecology, Environmental Biology of Fishes, Fisheries, Freshwater Science, Hydrobiologia, Hydrology Research, Journal of Applied Ecology, Journal of Environmental Management, Journal of Great Lakes Research, Lake and Reservoir Management, Limnologica, Limnology and Oceanography, Marine and Freshwater Research, Oecologia, Oikos, Philosophical Transactions of the Royal Society B, PLoS One, The Prairie Naturalist.

**PUBLIC OUTREACH**

- Public seminar, Science on Tap, Portland, Oregon, 2015.
- Director, Oregon Lake Watch citizen science program, 2012-present.
- Ecological Society of America Buell Award judge (student presentation), 2008, 2012, 2013.
- Sierra Club Seattle Inner City Outings leader, 2010-2011.
- United Way King County Headstart literacy mentor, 2010-2011.
- Martin Luther King Jr. Science and Math Celebration mentor, 2010.
- Undergraduate Honours Poster Day judge: Department of Ecology & Evolutionary Biology, University of Toronto, 2009; Department of Biology, Queen's University, 2006, 2007.
- Canadian Society of Ecology and Evolution student presentation award judge, 2009.
- Joyceville Public School Science Fair judge, 2005.
- Frontenac, Lennox, and Addington Regional Science Fair judge, 2003, 2005.
- Public seminar, Natural Heritage Education program, Killarney Provincial Park, 2004.
- Career Day, Queen's University, 2004.
- Queen's Students for Literacy, 'Read for Fun', 2003-2004.
- 'Roots and Shoots': a conference for elementary school children by the Jane Goodall Institute, 2002.

**SYNERGISTIC ACTIVITIES**

- Panelist, International Association for Landscape Ecology World Congress, Funding Opportunities at the National Science Foundation, 2015.
- Expert panelist for Intergovernmental Platform on Biodiversity and Ecosystem Services, deliverable 2a: Guide on production and integration of assessments from and across all scales, 2014.
- Organized sessions "Contaminants and Stable Isotopes: Tools to Unravel the Effects of Anthropogenic Stressors on Aquatic Food Webs" at American Fisheries Society Meeting, 2015; "Impacts of Global Change on Aquatic Biodiversity and Ecosystem Processes in Mountains" at Joint Aquatic Sciences Meeting, 2014; "Invasive Species in the Pacific Northwest" at American Water Resources Association Annual Meeting, 2013.
- Panelist, Joint Aquatic Sciences Meeting, Professional Application Workshop for Students, 2014.
- Scientific Advisory Committee, Malheur Lake, 2013 – present.
- Invited participant to early career scientist workshop, "Scaling UP: Continental Scale Ecology," hosted by Ecological Society of America, June 2013.
- Assistant Director, Center for Lakes and Reservoirs, PSU, January 2013 - present
- ESUR-IGERT Associate Faculty member, PSU, October 2012 – present
- Member of collaborative interdisciplinary working group, assessed water vulnerability in the Columbia River Basin (PSU), 2011-2012
- Chaired sessions "Invasive Species," at American Fisheries Society Meeting, 2011; "Conservation Biology," at American Society of Limnology and Oceanography/North American Benthological Society Joint Meeting, 2010.
- Organized workshop "Impacts of *Bythotrephes* on Food Webs," 2007.
- Attended workshops "Lecturing and Presenting Information", "Active Learning," "Preparing a Teaching Dossier", "Equity in the Classroom", "Teaching Labs in Science and Engineering," and "Time Management" for completion of Certificate Program in University Teaching and Learning, Centre for Teaching and Learning, Queen's University, 2006.
- Co-chair of Biology Graduate Students Association, Queen's University, 2005-2006.
- Organized Ecology, Evolution, and Behaviour Seminar Series (2004-2005), Limnology Seminar Series (2002-2003), Queen's University.