

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**

**Director** – Center for Lakes and Reservoirs, Portland State University, Portland, Oregon, 2018-

**Associate Professor** – Department of Environmental Science and Management, Portland State University, Portland, Oregon, 2017-

**Assistant Professor** – Department of Environmental Science and Management, Portland State University, Portland, Oregon, 2011-2017.

**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

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

1. Loewen, C.J.G., **A.L. Strecker**, G.L. Larson, A. Vogel, J.M. Fischer, R.D. Vinebrooke. 2018. Macroecological drivers of zooplankton communities across the mountains of western North America. *Ecography*, doi: 10.1111/ecog.03817.
2. Chiapella, A., M. Nielsen-Pincus, and **A.L. Strecker**. 2018. Public perceptions of mountain lake fisheries management in national parks. *Environmental Management* 226:169-179.
3. Cimino, S.A. and **A.L. Strecker**. 2018. Boater knowledge and behavior regarding aquatic invasive species at a boat wash station. *Northwest Science* 92:224-233.
4. Record, S.\*, **A.L. Strecker\***, M.-N. Tuanmu, L. Beaudrot, P.L. Zarnetske, Y. Belmaker, E. Gerstner. 2018. Does scale matter? Incorporating biological realism when predicting changes in species distributions. *PLoS One* 13: e0194650.

\* both authors contributed equally

5. Brittain, J.T. and **A.L. Strecker**. 2018. The interactive effect of multiple stressors on crustacean zooplankton communities in montane lakes. *Water Resources Research*, in press. doi: 10.1002/2017WR020605
  6. Read, Q.D., J.M. Grady, P.L. Zarnetske, S. Record, B. Baiser, J. Belmaker, M.-N. Tuanmu, **A. Strecker**, L. Beaudrot, K. Thibault. 2018. Among-species overlap in rodent body size distributions predicts species richness along a temperature gradient. *Ecography*, in press. doi: 10.1111/ecog.03641
  7. Whitney, J.E., J.B. Whittier, C.P. Paukert, J.D. Olden, and **A.L. Strecker**. 2017. Forecasted range shifts of arid-land fishes in response to climate change: the influence of fish traits. *Reviews in Fish Biology and Fisheries* 27:463-479.
  8. Zarnetske, P.L., B. Baiser, **A.L. Strecker**, S. Record, Y. Belmaker, M.-N. Tuanmu. 2017. The interplay between landscape structure and biotic interactions (Invited). *Current Landscape Ecology Reports* 2: 12–29.
  9. Kuehne, L.M., J.D. Olden, D.M. Theobald, **A.L. Strecker**, J.J. Lawler. 2017. Past, present, and future of ecological integrity assessment for freshwaters. *Frontiers in Ecology and the Environment* 15: 197-205.
  10. **Strecker, A.L.** and J.T. Brittain. 2017. Increased habitat connectivity homogenizes freshwater communities: Historical and landscape perspectives. *Journal of Applied Ecology* 54: 1343-1352.
  11. Elder T., Woodley C., Weiland M. and **Strecker A.L.** 2016. Factors influencing the survival of outmigrating juvenile salmonids through multiple dam passages. *Ecology and Evolution* 6: 5881-5892.
  12. Granek, EF, KE Conn, E Nilsen, L Pillsbury, **A Strecker**, B Fish, 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. *Science of the Total Environment* 557–558: 869-879.
  13. Pool, T.K., J. Cucherousset, S. Boulétreau, S. Villéger, **A.L. Strecker**, G. Grenouillet. 2016. Increased taxonomic and functional similarity does not increase communities' trophic similarity. *Global Ecology and Biogeography* 25: 46-54.
  14. 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**
15. **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.
  16. 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.
  17. 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. Multidimensional assessment of the spatial distribution of water resource vulnerability in the Columbia River basin, USA. *Atmosphere-Ocean* 51: 339-356.

**\*\* A 'Most Read' paper in *Atmosphere-Ocean*; included in the 2013 Water Science and Resources Reading List.**

18. 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.
19. 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.
20. 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.
21. **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.
22. 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.
23. 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.
24. **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.
25. **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*.**

26. **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.
27. **Strecker, A.L.** and S.E. Arnott. 2010. Complex interactions between regional dispersal of native taxa and an invasive species. *Ecology* 91: 1035-1047.
28. **Strecker, A.L.** and S.E. Arnott. 2008. Invasive predator, *Bythotrephes*, has varied effects on ecosystem function in freshwater lakes. *Ecosystems* 11: 490-503.
29. **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.
30. **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.
31. **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.

32. **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**

1. Elder, T. and **A.L. Strecker**. Productive marine phases and density dependence influence early maturation in Chinook salmon. In revision for *Ecosphere*.
2. Jordan, M.P., A.R. Stewart, C.A. Eagles-Smith, A.L. Strecker. Nutrients mediate the effects of temperature on methylmercury concentrations in freshwater zooplankton. In review at *Science of the Total Environment*.
3. Lockwood, J.L., D.J. Welbourne, C. Romagosa, P. Cassey, N.E. Mandrak, **A.L. Strecker**, B. Leung, O.C. Stringham, B. Udell, D.J. Episcopo-Sturgeon, M.F. Tlusty, J. Sinclair, M. Springborn, E.F. Pienaar, and A. Rhyne. When pets become pests: The role of the exotic pet trade in producing invasive vertebrate animals. In review at *Frontiers in Ecology and the Environment*.
4. Moser, K., J. Baron, J. Brahney, I. Oleksy, J. Saros, E. Hundey, S. Sadro, J. Kopacek, M. Kainz, **A. Strecker**, et al. Mountain lakes: Eyes on global environmental change. Invited manuscript in review at *Global and Planetary Change*.

#### **CHAPTER**

Chang, J., E. Watson, and **A.L. Strecker**. 2018. Climate change and stream temperature in the Willamette River Basin: Implications for fish habitat. In "Bridging Science and Policy Implication for Managing Climate Extremes," (ed. H-S. Jung and B. Wang). *World Scientific Series on Asia-Pacific Weather and Climate*, Vol. 10, Singapore, p 119-132.

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

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

Wells, S., R. Miller, T. Pennington, **A. Strecker**, M. Sytsma. 2018. *Early Detection Monitoring Program for Zebra/Quagga Mussels and New Zealand Mudsnaills & Macrophyte Suppression Program*. Prepared for Seattle City Light.

Chiapella, A., **A.L. Strecker**. 2018. *A Stable Isotope Approach to Understanding Contaminant Distribution in Food Webs of Montane Lakes*. Prepared for North Coast Cascades Science Learning Network.

McGann, B., **A. Strecker**. 2018. *Effects of Rotenone on Zooplankton Communities Summary Report*. Prepared for Washington Department of Fish and Wildlife.

Berger, C.J., S.A. Wells, R. Miller, M. Sytsma, **A. Strecker**. 2018. *Dexter Reservoir Model Development and Calibration Report*. Prepared for US Army Corps of Engineers.

Olden, J.D., L. Kuehne, J.J. Lawler, **A.L. Strecker**, D.M. Theobald. 2017. *Systematic review of aquatic ecological integrity assessments in western North America: Identifying challenges and opportunities for integration into landscape conservation plans*. Prepared for the Landscape Conservation Cooperative Network.

- Turner, B., C. Gantz, C. de Rivera, **A. Strecker**, M. Sytsma. 2017. *Zebra and Quagga Mussel Monitoring in the Columbia River Basin*. Prepared for the Pacific States Marine Fisheries Commission.
- Miller, R., S.A. Wells, M. Sytsma, C.J. Berger, **A. Strecker**. 2017. *Dexter Reservoir 2016/2017 Limnological Data Summary and Data Quality Assessment*. Prepared for US Army Corps of Engineers.
- Cimino, S., R. Miller, **A.L. Strecker**. 2016. *Oregon Lake Watch, 2015 Annual Report*. Portland State University, Center for Lakes and Reservoirs.
- Jordan, M., R. Miller, **A.L. Strecker**. 2015. *Oregon Lake Watch, 2014 Annual Report*. Prepared for Oregon State Marine Board.
- Wells, S., **A.L. Strecker**, M. Sytsma, S. Wells, C. Berger, R. Miller. 2015. *Modeling Mussels: Development of CE-QUAL-W2 Dreissena spp. mussel subcomponent (TI #320)*. Prepared for Bonneville Power Administration.
- 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, S., **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** (last five years; \* presented by; underline = student co-author)
- Gantz, C.\*, **Strecker, A.** 2018. Using landscape genetic approaches to uncover dispersal and genetic diversity patterns in a large hydrologic project in the American West. Oregon Lakes Association Annual Meeting, Portland, OR.
- Chiapella, A.M.\*, **Strecker, A.L.**, Eagles-Smith, C. 2018. From fish to forests: mercury in mountain lake food webs influenced by variables at multiple scales. Oregon Lakes Association Annual Meeting, Portland, OR.
- Strecker, A.L.\***, M. Holgerson, C. Crisafulli, J. Gawel. 2018. Primary succession and community assembly in ponds created by the Mount St. Helens eruption. Oregon Lakes Association Annual Meeting, Portland, OR.

- Berger, C.J., S.A. Wells, R. Miller, M. Sytsma, **A. Strecker**, C. Overman. 2018. Dexter Reservoir Water Quality Research and Modeling. Oregon Lakes Association Annual Meeting, Portland, OR.
- Zarnetske, P.L.\*, S. Record, Q.D. Read, J. Grady, B. Baiser, **A.L. Strecker**, L. Beaudrot, J. Belmaker, M.-N. Tuanmu, K. Thibault. 2018. NEON's continental scale biodiversity. Ecological Society of America Annual Meeting, New Orleans, LA.
- Holgerson, M.A.\*, **A.L. Strecker**. 2018. Floodplain pond invertebrates: How do zooplankton and macroinvertebrate communities respond to environmental stressors? Association for the Sciences of Limnology and Oceanography Annual Meeting, Victoria, BC.
- Strecker, A.L.\***, M. Holgerson, C. Crisafulli, J. Gawel. 2018. Primary succession and community assembly in ponds created by the Mount St. Helens eruption. Association for the Sciences of Limnology and Oceanography Annual Meeting, Victoria, BC.
- Culpepper, J.\* et al. 2018. A conceptual model for understanding the role of mountain gradients on lakes. Association for the Sciences of Limnology and Oceanography Annual Meeting, Victoria, BC.
- Chiapella, A.\*, **Strecker, A.**, Eagles-Smith, C. 2018. From fish to forests: mercury in mountain lakes influenced by variables at multiple scales. Association for the Sciences of Limnology and Oceanography Annual Meeting, Victoria, BC.
- Gantz, C.\*, **Strecker, A.** 2018. Using landscape genetic approaches to uncover dispersal and genetic diversity patterns in a large hydrologic project in the American West. Association for the Sciences of Limnology and Oceanography Annual Meeting, Victoria, BC.
- Chiapella, A.\*, **Strecker, A.**, Eagles-Smith, C., Nielsen-Pincus, M. 2017. Interactions and Implications of Two Anthropogenic Stressors in Mountain Lakes. Oregon Lakes Association Annual Meeting, Florence, OR. October 2017.
- McGann, B.\* and **A.L. Strecker**. 2017. Recovery of Zooplankton Communities Following Whole-Lake Disturbance. Ecological Society of America Annual Meeting, Portland, OR.
- Holgerson, M.A.\*, A. Duarte, **A.L. Strecker**, M. Adams, M.P. Hayes. 2017. How do multiple stressors govern amphibian occupancy in floodplain wetlands? Ecological Society of America Annual Meeting, Portland, OR.
- Strecker, A.L.\***, M. Holgerson, C. Crisafulli, J. Gawel. 2017. Primary succession and community assembly in ponds created by the Mount St. Helens eruption. Ecological Society of America Annual Meeting, Portland, OR.
- Loewen, C.J.G.\*, **A.L. Strecker** and R.D. Vinebrooke. 2017. Functional traits mediate species' response to environmental and spatial structures across the North American Cordillera. Ecological Society of America Annual Meeting, Portland, OR.
- Read, Q.D.\*, J. Grady, P.L. Zarnetske, S. Record, B. Baiser, J. Belmaker, M.-N. Tuanmu, **A.L. Strecker**, L. Beaudrot, K. Thibault. 2017. Intraspecific variation reflects drivers of rodent community assembly across the National Ecological Observatory Network. Ecological Society of America Annual Meeting, Portland, OR.
- Granek, E.F.\*, J. Peters, J. Teixeira, K. Conn, E. Nilsen, **A.L. Strecker**, L. Pillsbury, W. Fish, S. Rumrill, E. Prichard. 2017. Emerging contaminants in our oceans: Where, what, and why do they matter? Ecological Society of America Annual Meeting, Portland, OR.

- McGann, B.\* and **A.L. Strecker**. 2016. Recovery of Zooplankton Communities Following Whole-Lake Disturbance. Oregon Lakes Association Annual Meeting. The Dalles, OR.
- Zarnetske, P.L.\*, Q. Read, S. Record, B. Baiser, **A.L. Strecker**, L. Beaudrot, M.-N. Tuanmu, Y. Belmaker. 2016. Intraspecific trait variation at a continental scale. Ecological Society of America Annual Meeting, Ft. Lauderdale, FL.
- Chiapella, A.M.\*, **Strecker, A.L.**, Eagles-Smith, C., Gundersen, D. 2016. Untouched? Not so much: The factors influencing contaminant concentrations in mountain lake food webs. Association for the Sciences of Limnology and Oceanography Annual Meeting, Santa Fe, NM.
- Strecker, A.L.\***, M. Holgerson, C. Crisafulli, J. Gawel. 2016. Primary succession and community assembly in ponds created by the Mount St. Helens eruption. Association for the Sciences of Limnology and Oceanography Annual Meeting, Santa Fe, NM.
- Johnson, A.\*, M. Obedzinski, and **A.L. Strecker**. 2016. Why do the fish move? Multiple spatial scale predictors of juvenile coho salmon winter movement timing. Society for Freshwater Science Annual Meeting, Sacramento, CA.
- Kuehne, L.M.\*, J.D. Olden, J.J. Lawler, **A.L. Strecker**, D.M. Theobald. 2016. Making good or broken promises? Trends in ecological integrity assessment across the United States. Society for Freshwater Science Annual Meeting, Sacramento, CA.
- 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.

#### **INVITED SEMINARS**

- University of Regina, Institute of Environmental Change and Society, Regina, SK, 2017.
- Portland State University, Department of Environmental Science and Management, Portland, OR, 2017.
- Washington State University, School of the Environment, Vancouver, WA, 2017.
- University of Idaho, Department of Fish and Wildlife Sciences, Moscow, ID, 2017.
- 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)

Gantz, C.A. and **A. Strecker**. 2017. How are dispersal and genetic diversity affected by the environmental mosaic of the Columbia Basin Project? Oregon Lakes Association, Florence, OR.

Gantz, C.A. and **A. Strecker**. 2017. How are dispersal and genetic diversity affected by the environmental mosaic of the Columbia Basin Project? Ecological Society of America Annual Meeting, Portland, OR.

Holgerson, M., **A.L. Strecker**, M. Adams, and M. Hayes. 2016. Restoring floodplain wetlands: A species-to-ecosystem approach. Society of 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.

**GRANTS**

Pacific States Marine Fisheries Commission (2017-2018). <i>Mussel Monitoring under the Water Resources Reform and Development Act.</i> Co-PI	\$152,812
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National Science Foundation (2016-2017). <i>Improving Graduate Student Preparedness</i> . PI	\$31,527
US Army Corps of Engineers (2016-2019). <i>Dexter Reservoir Study</i> . Co-PI	\$260,336
Washington Department of Fish and Wildlife (2014-2017). <i>Recovery of Zooplankton in Treated Lakes</i> . PI	\$42,972
National Science Foundation (2016). <i>REU: EAGER: Metapopulation and metacommunity dynamics in a changing spatial and environmental mosaic – The importance of dispersal and gene flow</i> . PI	\$7560
National Science Foundation (2016-2018). <i>EAGER: NEON: Intraspecific traits</i> . Co-PI	\$300,000
PSU Faculty Enhancement Grant (2016-2018). <i>The climate squeeze: How will climate change influence habitat refuges and food web dynamics in pond ecosystems at Mount St. Helens</i> . PI	\$15,000
National Science Foundation (2015-2017). <i>EAGER: Metacommunities and Metapopulations</i> . PI	\$157,993
North Coast and Cascades Science Learning Network (2014-2016). <i>Contaminants in Mountain Lakes</i> . PI	\$7876
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	\$161,320
PSU College of Liberal Arts and Sciences Innovation Grant (2013-2014). <i>Harmful algal blooms in high elevation lakes</i> . PI	\$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

## **TEACHING EXPERIENCE**

### **COURSES**

- Portland State University: Introduction to Environmental Systems (ESM 220 – 4 cr), Capstone-Science Inquiry (ESM 450/UNST 421 – 6 cr), Fish Ecology and Conservation (ESM 4/574 – 4cr), Limnology and Aquatic Ecology (ESM 4/575 – 4 cr), Limnology Laboratory

(ESM 4/577 – 2 cr), Data Management (ESM 5/ESR605 – 2 cr), Applications of Ecosystem Services (ESR 610 – 4 cr), Graduate Research Toolbox (ESM 554 – 4 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 (ESM 220, 2012; ESM 450/UNST 421; 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 senior undergrad/graduate student course in fish ecology and conservation (ESM 4/574)
- Developed a new graduate course highlighting research and professional skills (ESM 554)
- Created materials for Limnology Class (ESM 4/575) and Laboratory (ESM 4/577), as well as Capstone (ESM 450/UNST 421).

#### **GUEST LECTURE**

- Methods and Models for Ecosystem Services (GEOG 694), Seminar Speaker Series (ESM 507), Portland State University, 2013-2014.
- Water and Society (FISH 101), Limnology (FISH/BIOL 473), University of Washington, 2010.
- Community Ecology (EEB 321), University of Toronto, 2007, 2008.
- Introductory Biology of Organisms (BIOL 103), Community and Ecosystem Ecology (BIOL 303), Advanced Data Management and Experimental Design (BIOL 843), Queen's University, 2006, 2007.

#### **MENTORSHIP**

##### ***Post-Doctoral Fellow***

- Dr. Meredith Holgerson (2016-2018): Assistant Professor, St. Olaf College.

##### ***Doctoral Students***

- *Current:* Taylor Dodrill (2018- ), Lara Jansen (2018- ), Ariana Chiapella (2013- ), Crysta Gantz (2016- ).
- *Graduated:*
  - Tim Elder (2011-2018): Southwest Oregon Project Manager, Wild Salmon Center.

##### ***Masters Students***

- *Graduated:*
  - Jeff Brittain (2012-2015): Natural Resources Specialist, Oregon Department of Environmental Quality
  - Samuel Cimino (2012-2016): Biologist, Pacific Northwest Aquatic Monitoring Program

- Amelia Johnson (2014-2016): Salmon Recovery Specialist, Lower Columbia Fish Recovery Board
- Meredith Jordan (2012-2016): Environmental Scientist, Hahn and Associates
- Brian McGann (2015-2017): Environmental Planning Specialists

### ***Honours Thesis Students***

- 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 Students***

- Angela Arrington (2018-), Kat Maloney (2018), Alonso Delgado (2017- 2018), Elizabeth Zamudio (2017-18), 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.

### **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**

- Coverage of research on models used for conservation: <https://www.sciencedaily.com/releases/2018/04/180418144732.htm>  
[https://www.eurekalert.org/pub\\_releases/2018-04/psu-bsm041718.php](https://www.eurekalert.org/pub_releases/2018-04/psu-bsm041718.php)

- Coverage on KOIN6, Fox12, KGW, KCBY11, Health News Digest, Lake Oswego Patch, Salem Statesman Journal, The Oregonian for research on contaminants in oysters (2016).
- PSU Vanguard, May 2016 - Lake Watch: Volunteer group grips at lakeside plant invaders (<http://psuvanguard.com/lake-watch-volunteer-group-grips-at-lakeside-plant-invaders/>)
- 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), Sarah Burnet (University of Idaho)

### **UNIVERSITY**

**Program Director:** Graduate Certificate in Hydrology

**Committees:** Grad Council (2018- ), Task Force on Academic Quality (2014-2016), Student Educational Travel (=Academically-Controlled Auxiliary Activities; 2013-2016)

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

### **DEPARTMENTAL**

**Committee Chair:** Public Relations and Development (2013-2016); Awards (2013-2016)

**Committees:** Graduate (2011-2016); Public Relations and Development (2011-2013); Faculty Search (Biogeochemistry 2012-13)

**ESM Graduate Student Joint Campus Colloquium:** Organizer and student liaison (2012-2016)

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

## **PROFESSIONAL ACTIVITIES**

### **SOCIETIES**

American Fisheries Society, Association for the Science 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***

- Illinois-Indiana Sea Grant, 2013.

- Minnesota Aquatic Invasive Species Research Center, 2017.
- National Science Foundation (panelist, Population and Community Ecology cluster), 2014, 2016, 2018.
- National Science Foundation (ad hoc), 2012, 2017.
- Portuguese Foundation for Science and Technology, 2011.

### ***Journals (30+)***

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

### ***Panelist***

Panelist, International Association for Landscape Ecology World Congress, Funding Opportunities at the National Science Foundation, 2015.

Panelist, Joint Aquatic Sciences Meeting, Professional Application Workshop for Students, 2014.

### **PUBLIC OUTREACH (SINCE 2011)**

- Student mentor, Association for the Science of Limnology and Oceanography Annual Meeting, 2016, 2018.
- 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), 2012, 2013.

### **SYNERGISTIC ACTIVITIES (SINCE 2011)**

**Director, Center for Lakes and Reservoirs, PSU, 2018 - present.**

**Participant**, working group on environmental change in mountain lakes, 2017-

**Invited Participant, National Socio-Environmental Synthesis Center (SESYNC)**, working group on invasive species in the global pet trade, 2017-19.

### **Session Organizer**

- “Mountain Lakes” at Oregon Lakes Association/Washington Lake Protection Association Annual Meeting, 2018.
- “Small Pond Ecology: Synthesizing Current Knowledge and Identifying Future Research Needs” at Association for the Sciences of Limnology and Oceanography, 2018.
- “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.

**Expert Reviewer for Intergovernmental Platform on Biodiversity and Ecosystem Services**, Deliverable 2a: Guide on production and integration of assessments from and across all scales, 2014.

**Affiliate Faculty, Oregon State University, Department of Fisheries and Wildlife**, January 2014 – present.

**Invited Participant to early career scientist workshop, “Scaling UP: Continental Scale Ecology”**; hosted by Ecological Society of America, June 2013.

**ESUR-IGERT Associate Faculty, PSU**, October 2012 – present.

**Assistant Director, Center for Lakes and Reservoirs, PSU**, 2012 – 2018.

**Member of collaborative interdisciplinary working group**, assessed water vulnerability in the Columbia River Basin (PSU), 2011-2012.