

Sarah L. Amundrud

(778) 319 – 1905 ♦ samundrud@gmail.com
<https://samundrud.com>

EDUCATION

- 2014-20 **PhD in Ecology, University of British Columbia**
Thesis title: Abiotic and biotic processes shape species distributions and ecological communities across spatial scales
Committee: Diane Srivastava (advisor), Chris Harley, Villy Christensen, Amy Angert
**one year interruption due to maternity leave in 2018*
- 2012-14 **MSc in Ecology, University of British Columbia**
Thesis title: Direct and indirect effects of drought on community structure and ecosystem processes in an aquatic ecosystem
Committee: Diane Srivastava (advisor), Chris Harley, John Richardson
- 2008-12 **BSc Honours in Ecology and Environmental Biology, University of British Columbia**
Thesis title: The relative importance of predators and nutrients on eelgrass benthic food webs in British Columbia
Advisor: Mary O'Connor

EXPERIENCE

- 10/2020- **Climate Data Scientist, RiskThinking.AI, Toronto, ON**
Responsible for compiling, interpreting, evaluating and presenting climate data in innovative ways; contributing to the improvement and augmentation of structured and unstructured data using machine learning and natural language processing approaches
- 9-10/2020 **Teaching and Research Postdoctoral Fellow, University of British Columbia, Vancouver, BC**
Developed course material for the Living Data Project; trained the next generation of scientists in best practices in reproducible research, collaboration, data management, and synthesis statistics
- 5-8/2020 **Data Science Postdoctoral Fellow, Insight Fellowship Program, New York, NY**
Created ApplicantScore, which scores and ranks 12,000 text based job applications/year for the Insight Fellowship Program (<https://samundrud.com/applicantscore/>)
- 5/2019- **Research Consultant, BC Ministry of Agriculture, Kelowna, BC**
Advise on management practices to halt the spread of an invasive insect pest by conducting population surveys and building degree day models (<https://samundrud.com/bmsb/>)

PUBLICATIONS

13. Srivastava, D. S., Coristine, L., Angert, A. L., Bontrager, M., **Amundrud, S. L.**, Williams, J., Yeung, A. C. Y., de Zwaan, D. R., Thompson, P. L., Aitken, S. N., Sunday, J. M., O'Connor, M. I., Whitton, J., Brown, N. E. M., MacLeod, C. D., Wegener Parfrey L., Bernhardt, J. R., Carrillo, J., Harley, C. D. G., Martone, P. T.,

Freeman, B. G., Tseng, M., and Donner, S. D. Wildcards in climate change biology. *Ecological Monographs* (in press) MS#: ECM20-0019

12. Romero, G. Q., Marino, N. A. C., MacDonald, A. A. M., Céréghino, R., Trzcinski, M. K., Acosta Mercado, D., Leroy, C., Corbara, B., Farjalla, V. F., Barberis, I. M., Dézerald, O., Hammill, E., Atwood, T. B., Piccoli, G. C. O., Ospina Bautista, F., Carrias, J., Leal, J. S., Montero, G., Antigueira, P. A. P., Freire, R., Realpe, E., **Amundrud, S. L.**, de Omena, P. M., Campos, A. B. A., Kratina, P., O’Gorman, E. J., and Srivastava, D.S. 2020. Extreme rainfall events alter the trophic structure of a freshwater ecosystem across the Neotropics. *Nature Communications* 11: 3215.
11. **Amundrud, S. L.**, and Srivastava, D. S. 2020. Thermal tolerances and species interactions determine elevational distributions of insects. *Global Ecology and Biogeography* 29: 1315-1327.
10. Srivastava, D.S., Céréghino, R., Trzcinski, M. K., MacDonald, A. A. M., Marino, N. A. C., Acosta Mercado, D., Leroy, C., Corbara, B., Romero, G. Q., Farjalla, V. F., Barberis, I. M., Dézerald, O., Hammill, E., Atwood, T. B., Piccoli, G. C. O., Ospina Bautista, F., Carrias, J., Leal, J. S., Montero, G., Antigueira, P. A. P., Freire, R., Realpe, E., **Amundrud, S. L.**, de Omena, P. M., Campos, A. B. A. 2020. Ecological response to altered rainfall differs over the Neotropics. *Ecology* 101: e02984.
9. Srivastava, D. S., Ware, J. L., Ngai, J. T., Starzomski, B. M., and **Amundrud, S. L.** 2020. Habitat size thresholds for predators: why damselflies only occur in large bromeliads. *Biotropica* (in press)
8. **Amundrud, S. L.**, and D. S. Srivastava. 2019. Disentangling how climate change can affect an aquatic food web by combining multiple experimental approaches. *Global Change Biology* 25: 3528-3538.
7. **Amundrud, S. L.**, Clay-Smith, S. A., Flynn, B. L., Higgins, K. E., Reich, M. S., Wiens, D. R. H, and Srivastava, D. S. 2019. Drought alters the trophic role of an opportunistic generalist in an aquatic ecosystem. *Oecologia* 189: 733-744.
6. **Amundrud, S. L.**, Videla, M., and Srivastava, D. S. 2018. Dispersal barriers and climate determine the geographic distribution of the damselfly *Mecistogaster modesta*. *Freshwater Biology* 63: 214–223. (cover image)
5. **Amundrud, S. L.**, and Srivastava, D. S. 2016. Phytotelm bromeliads as model systems to study ecosystem responses to environmental stress. *Bulletin of the Ecological Society of America* 97: 403-405.
4. **Amundrud, S. L.**, and Srivastava, D. S. 2016. Trophic interactions determine the effects of drought on an aquatic ecosystem. *Ecology* 97: 1475–1483.
3. **Amundrud, S. L.**, and Srivastava, D. S. 2015. Drought sensitivity predicts habitat size sensitivity in an aquatic ecosystem. *Ecology* 96: 1957–1965.
2. **Amundrud, S. L.**, Srivastava, D. S, and O’Connor, M. I. 2015. Indirect effects of predators control herbivore richness and abundance in a benthic eelgrass (*Zostera marina*) mesograzed community. *Journal of Animal Ecology* 84: 1092-1102.
1. Chen, Y., **Amundrud, S. L.**, and Srivastava, D. S. 2014. Spatial variance in soil microarthropod communities: niche, neutrality or stochasticity? *Ecoscience* 21(3-4): 405-418.

Manuscripts submitted or in preparation, available upon request

14. **Amundrud, S. L.**, Reich, M, Flynn, B, Cereghino, R., and Srivastava, D. S. (in prep) Low elevation populations of Neotropical aquatic insects are most vulnerable to warming and face highest pressure from forest loss.

RESEARCH SCHOLARSHIPS **\$228,300****one year interruption due to maternity leave in 2018*

2015-20*	Four Year Doctoral Fellowship , University of British Columbia (\$30,333 accepted)	\$72,800
2016-19*	Killam Doctoral Scholarship , University of British Columbia (\$10,000 accepted)	\$62,000
2016-19*	NSERC CGS-D Alexander Graham Bell , University of British Columbia	\$70,000
2016	NSERC Michael Smith Foreign Study Supplement , University of British Columbia	\$6,000
2016	GoGlobal Self-Directed Research Award , University of British Columbia	\$2,000
2014-15	BRITE Graduate Fellowship , University of British Columbia	\$11,000
2011	NSERC Undergraduate Student Research Award , University of British Columbia	\$4,500

AWARDS AND RECOGNITIONS **\$19,150**

2020	Excellence in PhD Research Award , Canadian Society for Ecology and Evolution	\$500
2019	BRITE Internship Award , Ministry of Agriculture (Kelowna)	\$6,000
2017	Zoology Travel Award , University of British Columbia	\$500
2015	Best MSc Thesis in Zoology Prize , University of British Columbia	\$500
2015	BRITE Internship Award , Canadian Parks and Wilderness Society (CPAWS)	\$6,000
2013	McLean Fraser Memorial Scholarship , University of British Columbia	\$950
2013	Zoology Travel Award , University of British Columbia	\$500
2012	Dean's Honour List , University of British Columbia	-
2012	Mary and Joseph Bryant Scholarship , University of British Columbia	\$1,200
2012	Botany and Zoology Student Research Award , University of British Columbia	\$650
2011	Dean's Honour List , University of British Columbia	-
2010	President's Entrance Scholarship , University of British Columbia	\$2,000
2010	Tony Pletcher Memorial Scholarship , Langara College	\$150
2010	Rose Bing Memorial Scholarship , Langara College	\$100
2009	Real Estate Foundation Biology Award , Langara College	\$100
2005	Leadership Award , Phoenix Direct, Adelaide, Australia	-

PRESENTATIONS

*indicates presenter, † indicates undergraduate mentee

Amundrud, S. L.* (2020) Drivers of species distributions and ecological communities: the influence of spatial scale and environmental context. *CSEE Excellence in PhD Research Award Seminar*: [talk](#) (invited)

Amundrud, S. L.* (2020) The relative importance of abiotic and biotic processes depends on spatial scale and environmental context. *Early Career Scientist Symposium, Center for Biodiversity and Global Change, Yale University*: [talk](#) (invited)

Srivastava, D. S.* and **Amundrud, S. L.** (2019) Cambio Climático y Redes Tróficas en Costa Rica. *iACG Annual Meeting, Santa Rosa, Costa Rica*: [talk](#) (invited)

Aroeste, S.*†, and **Amundrud, S. L.** (2018) Developing better species distribution models for climate change: bromeliads as a model system. *UBC Multidisciplinary Undergraduate Research Conference (MURC), Vancouver*: [talk](#)

Amundrud, S. L.* and Srivastava, D. S. (2017) Drought causes shift in functional role of aquatic macroinvertebrate from shredder to predator. *Canadian Society for Ecology and Evolution (CSEE) 12th Annual Meeting, Victoria*: [talk](#)

Amundrud, S. L.* (2016) Bromeliads as model ecosystems to explore ecological effects of environmental change. *Research Seminar (University of Georgia, Costa Rica Campus), San Luis, Costa Rica*: [talk](#) (invited)

Amundrud, S. L.*, Clay-Smith, S., Flynn, B., Reich, M., and Srivastava, D. S. (2016) Drought indirectly affects a bromeliad food web by altering predator survival and omnivory. *ATBC Conference, Montpellier, France*: [talk](#)

Amundrud, S. L.* (2016) Predation mediates the ecological effects of climate change: Experimental evidence from bromeliad food webs. *Séminaire Ecolab (Université Paul Sabatier), Toulouse, France*: [talk](#) (invited)

Amundrud, S. L.* (2016) Logging and the degradation of mountain caribou habitat. *Biodiversity Lunchtime Internal Seminar Series (BLISS), Vancouver*: [talk](#)

Amundrud, S. L.* (2015) Predicting the effects of climate change on an aquatic ecosystem: the role of climate, habitat, and predation. *Bromeliad Working Group Meeting, Paraty, Brazil*: [poster](#)

Amundrud, S. L.* and Srivastava, D. S. (2015) Direct and indirect effects of drought on community structure and ecosystem processes in bromeliad ecosystems. *Bromeliad Working Group Meeting, Paraty, Brazil*: [talk](#)

Srivastava, D.* **Amundrud, S. L.**, y el Bromeliad Working Group. (2015) Cadena trófica de las bromelias en un clima cambiante. *ACG Conference, Costa Rica*. [talk](#)

Liederbach, A.*†, Pagowski, V. †, and **Amundrud, S. L.** (2015) Effect of habitat size on species richness. *UBC Multidisciplinary Undergraduate Research Conference (MURC), Vancouver*: [talk](#)

Pagowski, V.*†, Liederbach, A. †, and **Amundrud, S. L.** (2015) Strategies for effective conservation: an investigation on the effect of habitat size on functional richness. *UBC Multidisciplinary Undergraduate Research Conference (MURC), Vancouver*: [poster](#)

Caulk, N.* **Amundrud, S. L.**, Huang, A., Cheung, W, and O'Connor, M. I. (2014) Top down control in BC seagrass meadow faunal communities. *Zostera Experimental Network (ZEN) Conference*: [poster](#)

- Amundrud, S. L.*** and Srivastava, D. S. (2013) Drought increases ecosystem functioning by reducing top-down control in a bromeliad food web. *Canadian Society for Ecology and Evolution (CSEE) 8th Annual Meeting, Kelowna*: [talk](#)
- O'Connor, M. I.*, Whippo, R., **Amundrud, S. L.**, and Huang, A. (2013) Community ecology of British Columbia seagrass meadows. *Pacific Northwest Seagrass and Climate Change Workshop, Friday Harbor Laboratories*: [poster](#)
- Amundrud, S. L.***, O'Connor, M. I., and Srivastava, D. S. (2012) Bottom-up and top-down processes affect eelgrass communities in British Columbia. *Ecological Society of America 97th Annual Meeting, Portland*: [talk](#)
- Amundrud, S. L.*** and O'Connor, M.I. (2012) The relative importance of predation and eutrophication on eelgrass benthic food webs in British Columbia. *Multidisciplinary Undergraduate Research Conference (MURC), Vancouver*: [talk](#)
- Amundrud, S. L.*** and O'Connor, M. I. (2011) Predation, but not eutrophication, has strong effects on eelgrass communities in British Columbia. *Salish Sea Conference, Vancouver*: [poster](#)
- O'Connor, M.I.*, Duffy, E., Prentice, C., **Amundrud, S. L.***, and Hung, B. (2011) Salish Sea eelgrass communities in the context of a global eelgrass experimental network. *Salish Sea Conference, Vancouver*: [talk](#)
- Amundrud, S.L.*** and O'Connor, M.I. (2011) Food web structure, seasonal variation, and important predator and grazer species in British Columbia's eelgrass meadows. *Eelgrass Symposium Vancouver*: [talk](#)

TEACHING EXPERIENCE

- 2017 Instructional Skills Workshop, University of British Columbia: **Centre for the Integration of Research, Teaching, and Learning (CIRTL) Associate**
- 2014 **TA Coordinator**, *Fundamentals of Biostatistics*, University of British Columbia

University courses

- 2018 **Guest lecturer**, *Insect Ecology*, University of British Columbia
Instructor: Michelle Tseng
- 2012-17 **Lab instructor**, *Fundamentals of Biostatistics (7 terms)*, University of British Columbia
Instructors: Darren Irwin, Keith Jackson, Gordon McIntyre
- 2013 **Lab instructor**, *Ecological Methodology*, University of British Columbia
Instructor: Diane Srivastava

ACADEMIC SERVICE

- 2015-20 **Review committee** (5 times), Multidisciplinary Undergraduate Research Conference (MURC), University of British Columbia
- 2017 **Science mentor**, Research Experience Program (REX), University of British Columbia
- 2014–17 **Lab meeting organizer**, Srivastava Lab, University of British Columbia

Student mentoring

**indicates students who co-author publications with me (some in progress), †indicates students that presented independent research projects at a conference*

Shaan Aroeste[†], Kathleen Higgins*, Derek Wiens*, Sarina Clay-Smith*, Megan Reich*, Bret Flynn*, Annegret Liederbach[†], Veronica Pagowski[†]

Reviewer services

Journal of Animal Ecology (2020), Freshwater Biology (2020), Journal of Insect Conservation (2019), Global Change Biology (2019), Ecology and Evolution (2017, 2019), Ecosphere (2016), Journal of Applied Ecology (2015), Ecology (2015), SciTech: Biodiversity Management & Forestry (2015), Research Journal of the Costa Rican Distance Education University (2013)

COLLABORATIONS AND WORKING GROUPS

- 2017- **DNA barcoding of bromeliad insect fauna in the Neotropics**
PIs: Jessica Ware (Rutgers University) and Diane Srivastava (UBC)
- 2012- **Bromeliad Working Group**
- 2017 **Wildcards in Climate Change Biology**
PI: Diane Srivastava
- 2016- **Groupes de recherche internationaux (GDRI)**
PI: Antoine Lecerf (Paul Sabatier University, Toulouse, France)
- 2012-16 **AMAP (botAny and Modelling of Plant Architecture and vegetation)**
PI: Régis Cereghino (Université de Toulouse-ECOLAB, Toulouse, France)

OUTREACH

- 2019 **Technical assistant** (volunteer) at *The 1st Canadian Summit on Climate Action in Food Systems*
- 2018 **Interview** with the Ubyssy, University of British Columbia: *Over 60 UBC researchers sign the World Scientists' Warning to Humanity*
- 2015 **Data analyst** (volunteer): *B.C. forest wake-up call: heavy carbon losses hit 10-year mark* (Sierra Club)