

Justin P. F. Pomeranz

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RESEARCH AND SPECIAL SKILLS

Ecological networks, freshwater ecosystems, anthropogenic impacts.

Extensive knowledge of the R programming language. Fieldwork experience in numerous ecosystems, and under variable conditions. Experience identifying plants, fish, terrestrial and aquatic invertebrates, under both field and lab conditions.

EDUCATION

Ph.D. *Freshwater Ecology*, February, 2019. Freshwater Ecology Research Group, School of Biological Sciences University of Canterbury, Christchurch, New Zealand. "Body Size Distributions and Diet Breadth: Stream Food Web Proxies and Predictions Across a Contaminant Gradient." Adviser: Jon Harding

M.Sc. *Ecology*, 2015. Graduate Degree Program in Ecology, Colorado State University, Fort Collins, Colorado, USA. GPA: 3.8 / 4.0. "Reciprocal Subsidies in a Fourth Order Rocky Mountain Stream." Adviser: Will Clements

B. Sc. *Biology*, 2010. Biological Science, Colorado State University, Fort Collins, Colorado, USA. GPA: 3.7 / 4.0

PUBLICATIONS

Journal Articles (4 published, 1 in review)

1. **Pomeranz, J.P.F.**, Harding, J.S. *In review*. Inferring food web structure and stability across an anthropogenic stress gradient.
2. **Pomeranz, J.P.F.**, Thompson, R.M., Poisot, T., Harding, J.S. 2018. Inferring predator-prey interactions in food webs. *Methods in Ecology and Evolution* 00: 1-12.
[dx.doi.org/10.1111/2041-210X.13125](https://doi.org/10.1111/2041-210X.13125)
3. **Pomeranz, J.P.F.**, Warburton, H., Harding, J. 2019. Anthropogenic mining alters macroinvertebrate size spectra in streams. *Freshwater Biology* 64: 81–92.
[dx.doi.org/10.1111/fwb.13196](https://doi.org/10.1111/fwb.13196)

4. Cadmus P., **Pomeranz, J.P.F.**, Kraus, J.M. 2016. Low-cost floating emergence net and bottle trap: comparison of two designs. *Journal of Freshwater Ecology* 31: 653-658. [dx.doi.org/10.1080/02705060.2016.1217944](https://doi.org/10.1080/02705060.2016.1217944)
5. Kraus, J.M., **Pomeranz, J.F.**, Todd, A.S., Walters, D.M., Wanty, R.B., Schmidt, T.S. 2016. Aquatic pollution increases use of terrestrial prey by stream fish. *Journal of Applied Ecology* 53: 44-53. [dx.doi.org/10.1111/1365-2664.12543](https://doi.org/10.1111/1365-2664.12543)

Technical Reports

1. Kraus J.M., **Pomeranz, J.**, Todd A.S., Walters D.M., Schmidt T.S., Wanty R.B. Fish Diets Switch From Aquatic to Terrestrial Insects in Streams Effected By Metal Contamination. USGS GeoHealth Newsletter, https://www2.usgs.gov/envirohealth/cbp/headlines/2017-02-15-fish_diet.htm
2. Nehring, R.B., Heinold, B., **Pomeranz, J.** Colorado River Aquatic Resources Investigations Federal Aid Project F-237R-18. June 2011. Colorado Division of Wildlife (Currently Colorado Parks and Wildlife), Aquatic Wildlife Research Section, Fort Collins, CO. Job Progress Report

Electronic Media and Media Coverage

Pomeranz J. and Walters D.M. "Dining out: Fish switch from an aquatic to a terrestrial-based diet in streams impacted from metal contamination". *Journal of Applied Ecology Blog*. <https://appliedecologistsblog.com/2015/11/05/dining-out-fish-switch-from-an-aquatic-to-a-terrestrial-based-diet-in-streams-impacted-from-metal-contamination/>, November 5, 2015

ORAL PRESENTATIONS

(* *Presenting author*)

2018

- * **Pomeranz, J.P.F.**, Warburton, H., Thompson, R.M, Poisot, T., Harding, J.S. Acid mine drainage and freshwater food webs: Inferring predator-prey interactions and stability in size structured communities. Annual meeting of the Ecological Society America, New Orleans, LA, USA.
- * **Pomeranz, J.P.F.**, Warburton, H., Thompson, R.M, Poisot, T., Harding, J.S. They're probably feeling insecure: inferring food web structure and stability using probabilistic networks. Annual meeting of the Society for Freshwater Science, Detroit, MI, USA.

2017

- * **Pomeranz, J.P.F.**, Warburton, H., Harding, J.S., Thompson, R.M. Anthropogenic effects on ecological networks: Understanding how acid mine drainage impacts freshwater food webs. Annual meeting of the New Zealand Freshwater Science Society, Hamilton, NZ.

* **Pomeranz, J.P.F.**, Warburton, H., Harding, J.S. Allometric body mass – abundance scaling relationships vary in response to a gradient of mining impacts. Annual meeting of the Society for Freshwater Science, Raleigh, NC, USA.

2016

* **Pomeranz, J.P.F.**, Harding, J.S., Trumm, D., Webster-Brown, J., Weber, P., Cavanagh, J., Craw, D., Pope, J. On the road to predicting aquatic food web response to restoration. Joint meeting of the New Zealand Ecological Society and the Society for Ecological Restoration Australasia, Hamilton, NZ.

Fairgray M., Webster-Brown, J., Harding, J.S., **Pomeranz J.P.F.**, Waters, S. Geochemical modelling of metal bioavailability toxicity in streams draining the Tui mine site, Te Aroha, NZ. Annual meeting of the New Zealand chapter of Australasian Institute of Mining and Metallurgy, Wellington, NZ.

* **Pomeranz, J.P.F.**, Warburton, H., Harding, J.S. Can mass-abundance relationships detect ecological impacts across a contaminant gradient? Annual meeting of the Society for Freshwater Science, Sacramento, USA.

Kraus J.M., Walters D.M., Wanty R.B., Schmidt T.S., **Pomeranz J.F.**, Todd A.S., Heiker L. How stressors shape subsidies: lessons from metal-impacted streams. Annual meeting of the Society for Freshwater Science, Sacramento, USA. Invited.

2015

Kraus J.M., **Pomeranz J.F.**, Todd A.S., Walters D.M., Wanty R.B., Schmidt T.S. Aquatic pollution increases use of terrestrial prey subsidies by stream fish. Annual meeting of the Society for Freshwater Science, Milwaukee, WI.

Kraus J.M., **Pomeranz J.F.**, Todd A.S., Walters D.M., Wanty R.B., Schmidt T.S. Aquatic pollution increases use of terrestrial prey subsidies by stream fish. Rocky Mountain SETAC, Denver, CO, USA.

2014

* **Pomeranz, J.P.F.**, Clements, W.H. Availability and Utilization of Terrestrial and Aquatic Prey Resources to Brown Trout in the Arkansas River, CO. Joint Aquatic Sciences Meeting, Portland, OR, USA

2013

* **Pomeranz, J.P.F.**, Clements, W.H. Relative Importance of Aquatic and Terrestrial Resources to Brown Trout in the Arkansas River, Colorado. Annual meeting of the Society for Freshwater Science, Jacksonville, FL, USA

GRANTS AND AWARDS

2018

New Zealand Freshwater Science Society S.I.L. 1987 Trust Travel Award (\$1,790 NZD)

2016

University of Canterbury Doctoral Scholarship (living stipend and tuition fees for 3 years)
New Zealand Freshwater Science Society S.I.L. 1987 Trust Travel Award (\$1,400 NZD;
declined)

TEACHING

- 2018 Invited instructor – Valley Floor Living Classroom, Watershed Education Program, Telluride Institute, Telluride, CO, USA.
- 2017 Invited workshop instructor - R tutorial for the Freshwater Ecology Research group, University of Canterbury.
- 2016 Teaching assistant – Freshwater Ecosystems (BIOL 375), University of Canterbury.
- 2013 Teaching assistant - Design of Fish and Wildlife Projects (FW 370), Colorado State University
- 2012 Teaching assistant - Design of Fish and Wildlife Projects (FW 370), Colorado State University

PEER-REVIEW, SERVICE, AND OUTREACH

Reviewer for: Environmental Science & Technology, Current Zoology, Austral Ecology, PeerJ.

- 2018 Society for Freshwater Science INSTARS graduate mentor, Detroit, MI
Volunteer instructor at the Bureau of Land Management's "Cottonwood Days". Public environmental education for local 6th graders. Montrose, CO, USA.
Volunteer instructor for Norwood Public School environmental science field day. Norwood, CO, USA.
Member, Uncompahgre Watershed Partnership, Ridgway, CO, USA.
- 2017 Volunteer instructor at the Bureau of Land Management's "Cottonwood Days". Public environmental education for local 6th graders. Montrose, CO, USA.
Riparian restoration volunteer, Bureau of Land Management, Gunnison Gorge National Conservation Area, CO, USA.
Member, Uncompahgre Watershed Partnership, Ridgway, CO, USA.

PROFESSIONAL MEMBERSHIPS

Society for Freshwater Science, Ecological Society of America, New Zealand Freshwater Science Society, New Zealand Ecological Society.

CITIZENSHIP: USA, New Zealand Student Visa

LANGUAGES: English, R

TRAININGS AND CERTIFICATIONS

Summer School in Data-driven Ecological Research (Université de Montréal; 2018)

Electric Fishing Machine certificate (National Institute of Water and Atmospheric Research, New Zealand; 2016)

CPR / First aid (New Zealand, 2015)

Motorboat Operator Certification Course (US Department of the Interior; 2014)

REFERENCES:

Jon Harding, Ph.D., Dean Postgraduate Research, University of Canterbury

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Phone: +64 364 2987 x 4988

Johanna Kraus, Ph.D., Research Ecologist, US Geological Survey

Email: jkraus@usgs.gov

Phone: +1 (970) 226-9436

Will Clements, Ph.D., Professor, Colorado State University

Email: William.Clements@colostate.edu

Phone: +1 (970) 491-0690

ADDITIONAL WORK EXPERIENCE

Pathways Ecologist, US Geological Survey

5/2015 to 9/2015

Investigation of the impacts of aquatic contaminants on cross ecosystem subsidies.

Duties included: Collecting benthic and emergent aquatic insects, preparing environmental and biologic samples for chemical analysis, identification of aquatic and terrestrial invertebrates.

Supervisor: Johana Kraus

Lead Technician, University of Alaska Fairbanks

5/2014 to 10/2014

The role of environmental processes in structuring the distribution of Chinook salmon spawning and rearing habitats across a large Alaska river basin.

Duties included: Deploying temperature loggers, snorkel surveys for juvenile Chinook, collecting samples for eDNA, piloting watercraft in swift water habitats, data entry, and preliminary data analyses.

Supervisor: Jeff Falke

jfalke4@alaska.edu

Student Contractor, US Geological Survey

6/2012 to 8/2014

Assessing the use of terrestrial prey by Salmonids across a trace metal gradient in the Colorado Mineral Belt.

Duties included: Collection of emergent adult aquatic insects, surveying fish populations using backpack electroshocking, collection of fish diet samples by gastric lavage, identification of adult aquatic insects and terrestrial and aquatic invertebrates from fish diet samples, and data entry.

Supervisor: Johana Kraus

Ecology technician, Colorado State University

7/11 to 12/11

Arkansas River National Damage Assessment report.

Duties included: Collection of benthic and emergent adult aquatic insects, pan trap collection of terrestrial invertebrates, fish surveys using electrofishing techniques, identification of aquatic and terrestrial invertebrates, standard chemical analyses, and data entry.

Supervisor: Will Clements

Biological Science Technician, Colorado Division of Wildlife

1/2010-7/2010

Environmental assessment of the Windy Gap Firing Project.

Duties included: Collection and identification of benthic macroinvertebrates, conducting fish population survey with electrofishing techniques, data entry, data analyses, and preparation of a technical report.

Supervisor: Barry Nehring (Retired)

Biological Science Technician, US Geological Survey

6/2009-12/2009

Study of the Mountain Pine Beetle outbreak.

Duties included: Conducting surveys of mountain pine beetle infestations throughout the state of Colorado, standard forestry measurements, fuels assessments, and data entry.

Navigation in the field using topographic maps, aerial imagery, and handheld GPS unit.

Downloading and processing data in ArcGIS.

Exotic Plant Management Intern, Student Conservation Association

5/2007-9/2007

Duties included: Conducting surveys for exotic weed infestations at Craters of the Moon National Monument. Identification of native and exotic plants in the field and laboratory.

Navigation in the field using topographic maps, aerial imagery, and handheld GPS unit.

Downloading and processing data in ArcGIS.