

Kurt Conrad Heim

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[Website](#)

Montana State University

Department of Ecology

PO Box 173460

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EDUCATION

Ph.D. Fish and Wildlife Biology

Montana State University

Expected 2019

M.S. Fisheries

University of Alaska Fairbanks

2014

B.S. Biology

Messiah College

2009

EMPLOYMENT

Research Assistant

Jan. 2015 – Present

Montana State University, Department of Ecology

- Ph.D. research on movement, migration, and population genetics of Yellowstone cutthroat trout and the spread of introgression with Rainbow trout
- Extensive fieldwork in Yellowstone National Park including radio telemetry, PIT tagging, PIT and radio antenna construction, and genetic sampling

Lead Research Technician

Aug. 2014 – Nov. 2015

University of Alaska Fairbanks, U.S. Geological Survey, Alaska Cooperative Fish and Wildlife Research Unit

- Led fisheries fieldwork for FISH CAFE (Response of an Arctic Freshwater Ecosystem to Climate and Land-use Change in the Fish Creek Watershed, Beaufort Coastal Plain of Alaska)
- Prepared manuscript (Heim et al. 2018, *in minor revision at Ecology of Freshwater Fish*)

Research Assistant

Jan. 2012 – Aug. 2014

University of Alaska Fairbanks, U.S. Geological Survey, Alaska Cooperative Fish and Wildlife Research Unit

- M.S. research on movement ecology of Arctic grayling in a seasonally frozen tundra stream
- Extensive remote fieldwork on Arctic Coastal Plain of Alaska including helicopter and fixed wing travel, remote deployment of PIT tag antennas, and mobile PIT tracking surveys

Experimental Biology Aide

2011

Oregon Department of Fish and Wildlife

- Conducted spawning Coho salmon surveys, North Umpqua River and tributaries

North Pacific Groundfish Observer**2009 – 2011**

National Marine Fisheries Service and Saltwater Inc.

- Accrued 198 sea days on commercial fishing vessels in Bering Sea and Gulf of Alaska

Fisheries Technician**2009**

Wyoming Bureau of Land Management

- Conducted fish passage inventory project in southwest Wyoming

PEER-REVIEWED PUBLICATIONS

7. (In review) Arp, C. D., M. S. Whitman, B. M. Jones, D. A. Nigro, V. A. Alexeev, A. Gädeke, S. Fritz, R. Daanen, A. K. Liljedahl, F. J. Adams, B. V. Gaglioti, G. Grosse, **K. C. Heim**, J. R. Beaver, L. Cai, M. Engram, and H. R. Uher-Koch. xxxx. Ice roads through lake-rich arctic watersheds: Integrating climate uncertainty and freshwater habitat responses into adaptive management.
6. (In revision, minor) **Heim, K. C.**, M. E. Steeves, T. E. McMahon, B. D. Ertel, and T. M. Koel. xxxx. Quantifying uncertainty in aquatic telemetry: Using received signal strength to estimate telemetry error. *North American Journal of Fisheries Management*.
5. (Accepted) **Heim, K. C.**, C. D. Arp, M. S. Whitman, M. S. Wipfli. xxxx. The complementary role of lentic and lotic habitats for Arctic grayling in a complex stream-lake network in Arctic Alaska. *Ecology of Freshwater Fish*.
4. **Heim, K. C.**, M. S. Whitman, and L. L. Moulton. 2016. Arctic grayling (*Thymallus arcticus*) in saltwater: a response to Blair et al. (2016). *Conservation Physiology* 4, cow055.
3. **Heim, K. C.**, M. S. Wipfli, M. S. Whitman, and A. C. Seitz. 2016. Body size and condition influence migration timing of juvenile Arctic grayling. *Ecology of Freshwater Fish* 25:156-166.
2. **Heim, K. C.**, M. S. Wipfli, M. S. Whitman, C. D. Arp, J. Adams, J. Falke. 2016. Seasonal cues of Arctic Grayling movement in a small Arctic stream: The importance of surface water connectivity. *Environmental Biology of Fishes* 99:49-65.
1. Arp, C. D., M. S. Whitman, B. Jones, G. Grosse, B. Gaglioti, and **K. C. Heim**. 2015. Distribution and biophysical processes of beaded streams in Arctic permafrost landscapes. *Biogeosciences* 12:29-47.

OTHER PUBLICATIONS

3. **Heim, K. C.** 2017. Fish movement under the midnight sun: Behavioral adaptations to a harsh aquatic environment. *Fisheries* 43:260-267.
2. Ertel, B. D, **K. C. Heim**, J. L. Arnold, C. R. Detjens, T. M. Koel. 2017. Preservation of native cutthroat trout in Northern Yellowstone. *Yellowstone Science* 25:35-41.
1. **Heim, K. C.** 2015. Resident freshwater fish ecology in Arctic Alaska: Understanding beaded streams. ONCORHYNCHUS (newsletter of the Alaska Chapter, American Fisheries Society) XXXV, Spring 2015.

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ORAL PRESENTATIONS AND POSTERS (indicated by *)

- *Steeves, M. E., **K. C. Heim**, T. E. McMahon, T. M. Koel, B. D. Ertel. 2018. Understanding spatial uncertainty in aquatic telemetry studies: Using received signal strength to estimate telemetry error. Montana Chapter of the American Fisheries Society Annual Meeting. February 1, 2018. Butte, Montana.
- Heim, K. C.**, T. E. McMahon, T. M. Koel, B. D. Ertel. 2018. Effects of invasive hybridization on spawning dynamics in Yellowstone Cutthroat Trout across a gradient of environmental conditions. Montana Chapter of the American Fisheries Society Annual Meeting. February 1, 2018. Butte, Montana.
- Heim, K. C.** 2016. Factors influencing hybridization in the Lamar River watershed. Rangewide Yellowstone Cutthroat Trout Conservation Team Meeting. December 5, 2016. Bozeman, Montana.
- Heim, K. C.**, M. S. Wipfli, M. S. Whitman, and A. C. Seitz. 2014. Body size and condition influence migration timing of juvenile Arctic grayling on the Arctic Coastal Plain. Alaska Chapter of the American Fisheries Society Annual Meeting. October 20-24, 2014. Juneau, Alaska.
- Wipfli, M. S., J. McFarland, **K. C. Heim**, K. Gurney, S. Laske, M. S. Whitman, C. D. Arp, J. Adams, J. Koch. 2013. Freshwater food web processes on the Arctic Coastal Plain, Alaska: vulnerabilities in a changing environment. Joint Aquatic Sciences Meeting. May 5, 2014. Portland, Oregon.
- Wipfli M. S., J. McFarland, **K. C. Heim**, S. Laske, M. S. Whitman, C. D. Arp, J. Adams, J. Koch. 2013. Freshwater food webs and Arctic grayling foraging ecology on the Arctic Coastal Plain, Alaska. Alaska Chapter of the American Fisheries Society Annual Meeting. October 9, 2013. Fairbanks, Alaska.
- Heim, K. C.**, M. S. Wipfli, M. S. Whitman, J. Adams. 2013. Seasonal movement patterns of Arctic grayling (*Thymallus arcticus*) in a small beaded stream on the Arctic Coastal Plain, Alaska. Alaska Chapter of the American Fisheries Society Annual Meeting. October 9, 2013. Fairbanks, Alaska.
- Heim, K. C.** 2013. Seasonal movement patterns of Arctic grayling (*sulukpauraq*) in a small tundra stream. NPRA Subsistence Advisory Panel Meeting (public meeting). April 3, 2013. Nuiqsut, Alaska.
- ***Heim, K. C.**, M. S. Wipfli, M. S. Whitman, J. Adams. 2013. Seasonal movement patterns of Arctic grayling (*Thymallus arcticus*) in a small beaded stream on the Arctic Coastal Plain, Alaska. Biology and Graduate Student Association Science Symposium at UAF. March 29, 2013. Fairbanks, Alaska.
- Heim, K. C.**, M. S. Wipfli, M. S. Whitman, N. D. Sather, M. Loewen. 2012. Seasonal movement patterns of Arctic grayling (*Thymallus arcticus*) in a small beaded stream on the Arctic Coastal Plain, Alaska. Alaska Chapter of the American Fisheries Society Annual Meeting. October 25, 2012. Kodiak, Alaska.

TEACHING EXPERIENCE

Co-instructor

Feb. 21 – 24, 2017

Montana Fish, Wildlife and Parks Data Analysis Workshop, Montana State University

- Co-taught with Dr. Christopher Guy
- Hosted four-day data analysis and R programming workshop for state biologists

Teaching Assistant

Spring Semester 2016, 2017

Ichthyology, Montana State University

GRANTS AND AWARDS

Stream Habitat Improvement Project Grant

2017

Jackson Hole One Fly Foundation, \$15,000

Co-PI with Dr. Thomas McMahon

Matthew F. Clow Memorial Award

2017

Department of Ecology, Montana State University, \$1,600

Jim Belsey Scholarship

2016

Department of Ecology, Montana State University, \$2,500

Travel Grant

2015

NIMBIOS graduate workshop in statistical ecology, Knoxville, TN

Director's Travel Award

2012

Institute of Arctic Biology, University of Alaska Fairbanks, \$500

PROFESSIONAL SERVICE

Treasurer

2013 – 2014

American Fisheries Society UAF Student Subunit

President

2012 – 2013

American Fisheries Society UAF Student Subunit

Peer Reviewer for following journals:

Aquaculture Reports, Arctic, Freshwater Biology, Hydrobiologia, North American Journal of Fisheries Management

CONTINUING EDUCATION

Remote Worker Water Safety Course

Three-day, on the water training

May 2014

Microchemical Analysis of Otoliths

AFS Alaska chapter annual meeting

Hands-on, two-day course

October 2013

B3 Combination Helicopter/Airplane Safety Training

US Bureau of Land Management

One-day course

June 2012

Introduction to Electrofishing

Smith-Root Inc.

Two-day course

September 2011

Learning ArcGIS Desktop

Esri eight module, 24-hour online course

Summer 2009

SKILLS

Computer proficiencies:

- Excel, PowerPoint, Word, MySQL, R, ArcGIS, TextWrangler, HOBOWare, Adobe Illustrator, QGIS, PostgreSQL

Fieldwork experience:

- Designing, building, repairing, and maintaining PIT tag antennas. PIT tagging, anesthetizing fish, aquatic sampling (hook and line, fyke net, dip nets, beach seines, minnow traps, electrofishing, trawling)
- Hobo data-logger deployment and data acquisition, stream hydrology measurements, aquatic invertebrate sampling, gastric lavage (fish), otolith collection
- Helicopter and small aircraft travel, remote camping for extended periods of time, operating small boats

Quantitative:

- Regression and analysis of variance
- Generalized linear modeling (Poisson regression, negative binomial regression, etc.)
- Multivariate analysis (PCA, CCA, clustering), parametric and non-parametric correlation tests
- Development of R functions, loops, and application to large data sets
- Population dynamics modeling
- Population genetics analysis