

**Kelly Aho**

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**EDUCATION**

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<b>PH.D.</b>	<b>SCHOOL OF THE ENVIRONMENT</b> <i>Yale University, New Haven, CT</i>	2021
<b>MESC.</b>	<b>SCHOOL OF FORESTRY AND ENVIRONMENTAL STUDIES</b> <i>Yale University, New Haven, CT</i>	2015
<b>B.A.</b>	<b>BIOLOGY MODIFIED WITH ENVIRONMENTAL STUDIES MAJOR</b> <i>Dartmouth College, Hanover, NH</i>	2011

**RESEARCH POSITIONS**

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**ASSISTANT PROFESSOR** 2023-PRESENT  
*DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCE*  
*DEPARTMENT OF INTEGRATIVE BIOLOGY*  
*MICHIGAN STATE UNIVERSITY*

**POSTDOCTORAL FELLOW** 2021-2022  
*NATIONAL ECOLOGICAL OBSERVATORY NETWORK*

**FUNDING AND AWARDS**

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2022 Battelle Outstanding Performance Award in Recognition of Outstanding Scientific Engagement to Optimize NEON's Reaeration Data

2021 Top 5 Outstanding Student Presentations at 7<sup>th</sup> North American Carbon Program Meeting

2021 Third place for peer-reviewed poster presentation at Yale Climate Day

2021 National Ecological Observatory Network Postdoctoral Fellowship

2019 Yale Institute for Biospheric Studies Doctoral Dissertation Improvement Grant

2017 NASA CT Space Grant Graduate Research Fellowship

2017 Yale Analytical and Stable Isotope Lab Matching Funds

2016 Yale Institute for Biospheric Studies Doctoral Fellowship

2015 Yale Analytical and Stable Isotope Lab Matching Funds

2015 Carpenter Sperry Conference Travel Funding

2015 Yale School of Forestry and Environmental Studies Conference Travel Funding

2014 Chinese Academy of Science Travel Support

2014 Yale Institute for Biospheric Studies Master's Research Grant

2014 Carpenter Sperry Research Grant

2014 Yale Analytical and Stable Isotope Lab Matching Funds

2014 Armbrecht Family Research Support

## 2013 Best Research Proposal Award in Natural Science Research Methods Class

**PUBLICATIONS**

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**Aho, Kelly**, Taylor Maavara, Kaelin Cawley, and Peter Raymond. “Inland waters as nitrous oxide sinks: The prevalence of nitrous oxide undersaturation in freshwater ecosystems.” *In prep.*

Maavara, Taylor, Craig Brinkerhoff, Jake Hosen, **Kelly Aho**, Laura Logozzo, James Saiers, Aron Stubbins, Peter Raymond. “Watershed DOC uptake occurs mostly in lakes in the summer and in rivers in the winter.” *Limnology and Oceanography*, (2023).  
<https://doi.org/10.1002/lno.12306>

DelVecchia, Amanda, Spencer Rhea, **Kelly Aho**, Emily Stanley, Alice Carter, and Emily Bernhardt. “Variability and drivers of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O concentrations in streams across the United States.” *Limnology and Oceanography*, (2022).  
<https://doi.org/10.1002/lno.12281>

Dwivedi, Dipankar, Andre Santos, Malcolm Barnard, Theresa Crimmins, Avni Malhotra, Kent Rod, **Kelly Aho**, ... Samantha Weintraub-Leff. “Biogeosciences Perspectives on Integrated, Coordinated, Open, and Networked (ICON) Science.” *Earth and Space Science*, (2022).  
<https://doi.org/10.1029/2021EA002119>

Liu, Shaoda, Catherine Kuhn, Giuseppe Amatuli, **Kelly Aho**, David Butman, George Allen, Peirong Ling, Ming Pan, Dai Yamazaki, Craig Brinkerhoff, Colin Gleason, Xinghui Xia, and Peter Raymond. “The importance of water throughput in routing terrestrial carbon to the atmosphere via global streams and rivers.” *PNAS* 119, 1–9 (2022).  
<https://doi.org/10.1073/pnas.2106322119>

**Aho, Kelly**, Jennifer Fair, Jake Hosen, Ethan Kyzivat, Laura Logozzo, Lisa Weber, Byungman Yoon, Jay Zarnetske, and Peter Raymond. “An intense precipitation event causes a temperate forested drainage network to shift from N<sub>2</sub>O source to sink.” *Limnology and Oceanography*, (2022). <https://doi.org/10.1002/lno.12006>

**Aho, Kelly**, Jennifer Fair, Jake Hosen, Ethan Kyzivat, Laura Logozzo, Gerard Rocher-Ros, Lisa Weber, Byungman Yoon, and Peter Raymond. “Distinct concentration-discharge dynamics in temperate streams and rivers: CO<sub>2</sub> exhibits chemostasis while CH<sub>4</sub> exhibits source limitation due to temperature control.” *Limnology and Oceanography*, (2021). <https://doi.org/10.1002/lno.11906>

Maavara, Taylor, Laura Logozzo, Aron Stubbins, **Kelly Aho**, Craig Brinkerhoff, Jake Hosen, Peter Raymond. “Does photomineralization of dissolved organics matter in temperate rivers?” *Journal of Geophysical Research: Biogeoscience*, (2021).  
<https://doi.org/10.1029/2021JG006402>

**Aho, Kelly**, Jake Hosen, Laura Logozzo, Wade McGillis, and Peter Raymond. “Highest rates of primary productivity maintained despite CO<sub>2</sub> depletion in a temperate river network.” *Limnology and Oceanography Letters*, (2021). <https://doi.org/10.1002/lol2.10195>

Yoon, Byungman, Jake Hosen, Ethan Kyzivat, Jennifer Fair, Lisa Weber, **Kelly Aho**, Rachel Lowenthal, Serena Matt, William Sobczak, Jamie Shanley, Joh Morrison, James Saiers, Aron Stubbins, and Peter Raymond. “Export of photolabile and photoprivable dissolved

- organic carbon from the Connecticut River.” *Aquatic Sciences*, (2021).  
<https://doi.org/10.1007/s10021-020-00514-7>
- Brinkerhoff, Craig, Peter Raymond, Taylor Maavara, Yuta Ishitsuka, **Kelly Aho**, and Collin Gleason. “Lake morphometry and river network controls on evasion of terrestrially sourced headwater CO<sub>2</sub>.” *Geophysical Research Letters*, (2020).  
<https://doi.org/10.1029/2020GL090068>
- Hosen, Jake, **Kelly Aho**, Jennifer Fair, Ethan Kyzivat, Serena Matt, John Morrison, Aron Stubbins, Lisa Weber, Byungman Yoon, and Peter Raymond. “Source switching maintains dissolved organic matter chemostasis across discharge levels in a large temperate river network.” *Ecosystems*, (2020). <https://doi.org/10.1007/s10021-020-00514-7>
- Mwanake, Ricky M., Gretchen Gettel, **Kelly Aho**, David Namwaya, Frank Masese, Klaus Butterback-Bahl, Peter Raymond. “Land use, not stream order, controls N<sub>2</sub>O concentration and flux in the upper Mara River basin, Kenya.” *Journal of Geophysical Research: Biogeosciences*, (2019). <https://doi.org/10.1029/2019JG005063>
- Hosen, Jake, **Kelly Aho**, Alison Appling, Elisabeth Creech, Jennifer Fair, Robert Hall, ... Peter Raymond. "Enhancement of primary production during drought in a temperate watershed is greater in larger rivers than headwater streams." *Limnology and Oceanography*, (2019).  
<https://doi.org/10.1002/lno.11127>
- Aho, Kelly**, and Peter Raymond. “Differential Response of Greenhouse Gas Evasion to Storms in Forested and Wetland Streams.” *Journal of Geophysical Research: Biogeosciences* (2019). <https://doi.org/10.1029/2018JG004750>
- Yan, Fangping, Mika Sillanpaa, Shichang Kang, **Kelly Aho**, Bin Qu, Da Wei, Xiafei Li, Chaoliu Li, and Peter Raymond. “Lakes on the Tibetan Plateau as Conduits of Greenhouse Gases to the Atmosphere.” *Journal of Geophysical Research: Biogeosciences* (2018).  
<https://doi.org/10.1029/2017JG004379>
- Qu, Bin, **Kelly Aho**, Chaoliu Li, Shichang Kang, Mika Sillanpää, Fangping Yan, and Peter Raymond. “Greenhouse Gas Emissions in Rivers of the Tibetan Plateau.” *Scientific Reports* (2017). <https://doi.org/10.1038/s41598-017-16552-6>
- Qu, Bin, Mika Sillanpää, Chaoliu Li, Shichang Kang, Aron Stubbins, Fangping Yan, **Kelly Aho**, Feng Zhou, and Peter Raymond. “Aged Dissolved Organic Carbon Exported from Rivers of the Tibetan Plateau.” *PloS one* (2017). <https://doi.org/10.1371/journal.pone.0178166>
- Obbard, Rachel W., Theresa Cassano, **Kelly Aho**, Greg Troderman, and Ian Baker. “Using Borehole Logging and Electron Backscatter Diffraction to Orient an Ice Core from Upper Fremont Glacier, Wyoming, USA.” *Journal of Glaciology* (2011).  
<https://doi.org/10.3189/002214311798043762>

## DATASETS

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- Aho, Kelly**, Jennifer Fair, Jake Hosen, Ethan Kyzivat, Laura Logozzo, Lisa Weber, Byungman Yoon, Jay Zarnetske, and Peter Raymond. 2021. Dissolved N<sub>2</sub>O concentrations in the Connecticut River Watershed ver 2. *Environmental Data Initiative*.  
<https://doi.org/10.6073/pasta/3494ca49fc3283eea5e4fc2f8a24ce3b>

**Aho, Kelly**, Jennifer Fair, Jake Hosen, Ethan Kyzivat, Laura Logozzo, Gerard Rocher-Ros, Lisa Weber, Byungman Yoon, and Peter Raymond. 2021. Dissolved CO<sub>2</sub> and CH<sub>4</sub> concentrations in the Connecticut River Watershed ver 1. *Environmental Data Initiative*. <https://doi.org/10.6073/pasta/af4daec813775b7f426a1db574cbebc7>

**Aho, Kelly**, Kaelin Cawley, Amanda DelVecchia, Emily Stanley, and Peter Raymond. 2021. Dissolved greenhouse gas concentrations derived from the NEON dissolved gases in surface water data product (DP1.20097.001) ver 1. *Environmental Data Initiative*. <https://doi.org/10.6073/pasta/47d7cb6d374b6662cce98e42122169f8>

**Aho, Kelly**, Jacob Hosen, Laura A. Logozzo, Wade R. McGillis, and Peter A. Raymond. 2021. Paired CO<sub>2</sub>-O<sub>2</sub> measurements from streams and rivers ver 1. *Environmental Data Initiative*. <https://doi.org/10.6073/pasta/68cfcebdede8d3a671cd426a1252f255>

#### REPORTS AND OTHER NON-REFEREED PUBLICATIONS

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Ghosh, Anwasha, Andrew Robison, Ariana Chiapella, Brittini Bertolet, Corday Selden, Danielle Perry, Hannah Reich, Isabella Oleksy, Jana Isanta-Navarro, **Kelly Aho**, Laura Ganley, Laura Melo Vieira Soares, Liam Heffernan, Ohad Peleg, Pfananani Ramulifho, Patricia Thibodeau, Paula Reis, Matthew Sasakim Nicholas Ray, Rebecca Maher, Richard LaBrie, and Shannon Speir. "Eco-DAS: an effective platform for developing professional collaborations among early career aquatic scientists." *Limnology and Oceanography Bulletin* (2022). <https://doi.org/10.1002/lob.10485>

**Aho, Kelly**, T. Chakraborty (TC), Bowen Fang, Kangning Huang, Ava Liang, Natalie Schultz, Charlotte Stanley, Anna Walsh, Zhongwang Wei, Yichen Yang, Bowen Zhao, and Xuhui Lee. *Fundamentals of Boundary-Layer Meteorology: Solution Manual* (2017).

**Aho, Kelly**, and Elin Beck. "Effects of Epiphyte Cover on Seagrass Growth Rates in Two Tidal Zones." *Dartmouth Undergraduate Journal of Science* (2011).

#### CONFERENCE AND MEETING PRESENTATIONS

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**Aho, Kelly**, Taylor Maavara, Kaelin Cawley, and Peter Raymond. Inland waters as nitrous oxide sinks: The prevalence of nitrous oxide undersaturation at NEON aquatic sites. Invited presentation at Joint Aquatic Sciences Meeting 2022. Online.

**Aho, Kelly**, Taylor Maavara, and Peter Raymond. Inland waters act as periodic nitrous oxide sinks: The frequency and importance of nitrous oxide undersaturation in freshwater bodies. Poster presented at AGU Fall Meeting 2021; December 2021; New Orleans, LA.

**Aho, Kelly**, Jennifer Fair, Jake Hosen, Ethan Kyzivat, Laura Logozzo, Lisa Weber, Byungman Yoon, Jay Zarnetsky, and Peter Raymond. An intense precipitation event causes a temperate forested drainage network to shift from nitrous oxide source to sink. Presentation at Society for Freshwater Science Annual Meeting 2021. Online.

**Aho, Kelly**, Jennifer Fair, Jake Hosen, Ethan Kyzivat, Laura Logozzo, Gerard Rocher-Ros, Lisa Weber, Byungman Yoon, and Peter Raymond. Hydrologic controls on CO<sub>2</sub> and CH<sub>4</sub> emissions from temperate streams and rivers. Poster presented at 7<sup>th</sup> North American Carbon Project Open Sciences Meeting 2021. Online.

**Aho, Kelly**, Jennifer Fair, Jake Hosen, Ethan Kyzivat, Laura Logozzo, Serena Matt, Lisa Weber, Byungman Yoon, and Peter Raymond. Distinct concentration-discharge dynamics: CO<sub>2</sub> exhibits chemostasis, while CH<sub>4</sub> exhibits dilution. Presentation at AGU Fall Meeting 2019; December 2019; San Francisco, CA.

**Aho, Kelly** and Peter Raymond. The Effects of Wetland Presence and Precipitation Events on Greenhouse Gas Flux from Streams in the Salmon River Watershed, CT. Poster presented at ASLO Aquatic Sciences Meeting; Feb 2015; Granada, Spain.

## **WORKSHOPS AND SYMPOSIA**

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Ecological Dissertations in the Aquatic Sciences (Eco-DAS) Symposium, Oct 2021; Online.

Inland Water Global HydroBioGeoChemistry Workshop; May 2018; Boulder, CO.

Forests and Climate Oak Spring Garden Foundation Symposium; April 2018; Upperville, VA.

## **TEACHING AND MENTORING EXPERIENCE**

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**CERTIFICATE OF COLLEGE TEACHING PREPARATION\*** 2020

*Poorvu Center for Teaching and Learning, Yale University*

\*Simultaneously earned the *Center for the Integration of Research, Teaching and Learning (CIRTL) Associate* title

**MCDUGAL GRADUATE WRITING FELLOW** 2016-2020

*Poorvu Center for Teaching and Learning, Yale University*

**GRADUATE WRITING CONSULTANT** 2016-2019

*Poorvu Center for Teaching and Learning, Yale University*

**MSC THESIS MENTOR AND COMMITTEE MEMBER** 2018-2019

*IHE Delft*

Student: Sharon Gubamwoyo; Project: Greenhouse gas fluxes in Taita Hills, Kenya

**AQUATIC CHEMISTRY TEACHING FELLOW** Fall 2018

*Yale, Professor Gabe Benoit*

Graduate Level Course

**MSC THESIS MENTOR AND COMMITTEE MEMBER** 2017-2018

*IHE Delft*

Student: Ricky Mwanake; Project: Patterns & drivers of N<sub>2</sub>O, Mara River, Kenya

**MSC THESIS MENTOR AND COMMITTEE MEMBER** 2017-2018

*IHE Delft*

Student: David Namwaya; Project: Drivers of CO<sub>2</sub> & CH<sub>4</sub> fluxes, Mara River, Kenya

**BIOGEOCHEMISTRY AND POLLUTION TEACHING FELLOW** Fall 2017

*Yale, Professor Gabe Benoit*

Graduate Level Course

**WETLAND ECOLOGY TEACHING FELLOW** Fall 2017

*Yale, Dr. Kealoha Freidenburg*

Graduate Level Course

Kelly Aho Feb 2023

**ECOSYSTEMS AND LANDSCAPES TEACHING FELLOW** Fall 2017  
*Yale, Professors Peter Raymond and Oswald Schmitz*  
Graduate Level Course

**BIOGEOCHEMISTRY AND POLLUTION TEACHING FELLOW** Fall 2015  
*Yale, Professor Gabe Benoit*  
Graduate Level Course

#### **PROFESSIONAL EXPERIENCE**

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**SCIENCE TEAM LEADER** 2017-2020  
*GRADUATE WRITING LAB, POORVU CENTER FOR TEACHING AND LEARNING, YALE*

**HYDROLOGY TECHNICIAN** Summer 2013  
*PETERSBURG RANGER DISTRICT, US FOREST SERVICE*

**SUSTAINABLE AGRICULTURE VOLUNTEER** 2011-2013  
*PEACE CORPS*

**BIOLOGICAL TECHNICIAN** Summers 2008, 2009, 2010  
*PETERSBURG RANGER DISTRICT, US FOREST SERVICE*

#### **PROFESSIONAL SERVICE**

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Reviewer for

*Biogeochemistry*  
*Biogeosciences*  
*Environmental Science and Technology*  
*Global Biogeochemical Cycles*  
*Hydrological Processes*  
*Journal of Geophysical Research - Biogeosciences*  
*Journal of Hydrology*  
*Limnology and Oceanography*  
*Limnology and Oceanography Letters*  
*Nature Communications Earth and Environment*

National Ecological Observatory Network Ambassador

External reviewer for WikiProject Limnology & Oceanography

National Ecological Observatory Network Aquatic Biogeochemistry Technical Working Group Member

2019 Editors' Citation for Excellence in Refereeing for *JGR - Biogeosciences*