

# Heidi E Golden, PhD

## Curriculum vitae

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### EDUCATION

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PhD, University of Connecticut, Storrs, CT, Ecology and Evolutionary Biology	2016
MS, University of Massachusetts, Amherst, MA, Forestry and Wildlife Management	1996
BS, University of Connecticut, Storrs, CT, Ecology and Evolutionary Biology	1989

### RESEARCH, EXPERIENCE, & TEACHING

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Woodwell Climate Research Center, Falmouth, MA Evolving Meta-Ecosystems Inst., Research Scientist	2024-present
Golden Ecology LLC, Simsbury, CT Founder, Scientist, Aquatic Ecologist	2020-2024
Princeton Hydro, LLC, South Glastonbury, CT Scientist, Aquatic Ecologist	2019-2020
USGS Northeast Climate Adaptation Science Center, Woods Hole, MA Postdoctoral Research Fellow, with Dr. Linda Deegan	2018-2019
Ecology and Evolutionary Biology Dept, University of Connecticut, Storrs, CT Research Associate, <i>Gratis</i> (2018-present) Adjunct Faculty, General Biology, Evolution 2245W (2018-2019) Postdoctoral Research Fellow, with Dr. Mark Urban (2016-2018) Graduate Research Assistant, with Dr. Mark Urban (2010-2016)	2010-2018
Ecology and Evolutionary Biology Dept, University of Connecticut, Avery Point, CT Adjunct Faculty, Evolution EEB2245 (2018-as needed)	Spring 2018
The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA Research Consultant for Dr. Linda Deegan (1996-2010) Research Assistant for Arctic Long Term Ecological Research Program (1991-1993)	1991-2010
Forestry & Wildlife Dept, University of Massachusetts, Amherst, MA Research Consultant for Dr. Martha Mather	2008
University of Massachusetts, Amherst, MA Teaching Assistant for Forestry and Wildlife (1996) Teaching Assistant for Entomology Department (1995) Research Assistant for Forestry and Wildlife Department (1993-1995)	1993-1996
Waquoit Bay Estuarine Research Reserve, University of Massachusetts, Waquoit, MA Research Assistant and Field Coordinator for Dr. Linda Deegan	1990-1991
Environmental Research Institute, University of Connecticut, Storrs, CT Research Assistant for water testing	1988-1989

## PUBLICATIONS

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- Golden HE, Urban MC, and Deegan LA (in prep) Local adaptation in Arctic fish portends climate change winners and losers. *BMC Ecology and Evolution*. Expected publication 2024.
- Deegan LA, Urban MC, Golden HE, MacKenzie CJA, and Peterson B. (in prep) Climate change threatens Arctic grayling trophic subsidy to lakes. *Ecology Letters*. Expected publication 2024.
- De Carle DB, Gajda L, Bielecki A, Cios S, Cichocka JM, Golden HE, Gryska AD, Sokolov S, Shedko MB, Knudsen R, Utevsky S, Swiatek P, and Tessler M. (2022). Recent evolution of Arctic leech relatives: systematics of Acanthobdellida. *Zoological Journal of the Linnean Society*. 196(1):149-168. <https://doi.org/10.1093/zoolinnean/zlac006>
- Evans A, Zimova M, Giery S, Golden H, Pastore A, Nadeau C, Urban M. (2022) An Eco-evolutionary Perspective on the Humpty-Dumpty Effect and Community Restoration. *Oikos* 2022: e08978. <https://onlinelibrary.wiley.com/doi/10.1111/oik.08978>
- Golden HE, Holsinger KE, Deegan LA, MacKenzie CJA and Urban MC (2021) River drying structures population genetic variation for Arctic freshwater fish. *Conservation Genetics*. 22(3):369–382. <https://doi.org/10.1007/s10592-021-01339-0>
- Bowden WB, Peterson BJ, Deegan LA, Huryn AD, Benstead JP, Golden H, Kendrick M, Parker SM, Schuett E, Ballino JJ, and Hobbie JE (2014) Ecology of streams of the Toolik Region. In Alaska's Changing Arctic: Ecological consequences for tundra, streams, and lakes. JE Hobbie and GW Kling (eds) Oxford University Press, New York, NY. 331 pp. <https://oxford.universitypressscholarship.com/view/10.1093/acprof:osobl/9780199860401.001.0001/acprof-9780199860401>
- Deegan LA, Golden HE, Harrison J, Kracko K (2005) Swimming performance and metabolism of 0+ year *Thymallus arcticus*. *Journal of Fish Biology*. 67(4):910-918. <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.0022-1112.2005.00784.x>
- Deegan LA, Wright A, Ayvazian SG, Finn JT, Golden H, Merson RR, and Harrison J (2002) Nitrogen loading alters seagrass ecosystem structure and support of higher trophic levels. *Aquatic Conservation: Marine and Freshwater Ecosystems*. 12:193-212. <https://onlinelibrary.wiley.com/doi/abs/10.1002/aqc.490>
- Deegan LA, Golden HE, Harvey CJ, and Peterson BJ (1999) Influence of environmental variability on the growth of age-0 and adult Arctic grayling. *Transactions of the American Fisheries Society*. 128(6): 1163-1175. <https://afspubs.onlinelibrary.wiley.com/doi/10.1577/1548-8659%281999%29128%3C1163%3AIOEVOT%3E2.0.CO%3B2>
- Golden HE and Deegan LA (1998) The trophic interactions of young Arctic grayling (*Thymallus arcticus*) in an Arctic tundra stream. *Freshwater Biology*. 39:637-648. <https://onlinelibrary.wiley.com/doi/abs/10.1046/j.1365-2427.1998.00314.x>
- Deegan LA, Peterson BJ, Golden H, MacIvor CC and Miller MC (1997) Effects of fish density and river fertilization on algal standing stocks, invertebrate communities and fish production in an arctic river. *Canadian Journal of Fisheries and Aquatic Sciences*. 54(2):269-283. <https://cdnsiencepub.com/doi/abs/10.1139/f96-268>

## EDUCATIONAL OUTREACH

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- Golden HE (November 2022) Explorating ecology, trait variation, selection and evolution with fiber. Frederick Tuttle Middle School. South Burlington, VT.
- Golden HE (August 2022) Ecology of yogurt: Interactions between organisms and their environment. Hunt Middle School. Burlington, VT.
- Golden HE (August 2022, July 2021) Fabulous fiber: Exploring ecology, evolution, properties, and

- utilization of fiber. Hunt Middle School Summer Education Program. Burlington, VT.
- Golden HE and Wildman LAS (May 2021) Human impacts on stream ecology and geomorphic processes in the Pequabuck River – A field experience. Bristol High School. Bristol CT.
- Golden HE (July 2019) Species resiliency to climate change from the Arctic to New England. Woods Hole Science School. Woods Hole, MA.
- Golden HE (June 2019) Ecosystems to Genomes: Climate impacts across space and time. Penikese Island School. Gosnold, MA.
- Golden HE, Deegan LA, MacKenzie CJA, Urban MC (March 2016, 2017, and 2018) FishScope: Tracking fish movement through space and time. University of New Haven. West Haven, CT.
- Golden HE (April 2012, 2014, and 2015) Ecology and Evolutionary Biology: Ecosystems to genomes in the Alaskan Arctic. Conard High School. West Hartford, CT.
- Golden HE (2012) Climate change and Arctic grayling metapopulation dynamics. Ecology and Evolutionary Biology Graduate Student Symposium. Storrs, CT.
- Golden HE (2009) Climate change in the Alaskan Arctic: An overview from the Arctic LTER 2008 Field Season. CT DEEP Climate Change Education Committee. Hartford, CT.

### SCIENTIFIC PRESENTATIONS

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- Golden HE, Urban MC, Deegan LA, and Mackenzie CJA (June 2019) Local trait adaptation in Arctic grayling: Climate change implications for Arctic freshwater fish. NSF Site Review - Toolik Field Station. North Slope, AK.
- Golden HE (February 2019) Using genetics to inform climate adaptation science. Toolik Field Station - All Scientists Meeting. Portland, OR.
- Golden HE (December 2018) Informing management decisions for climate change using genetics. Northeast Climate Adaptation Science Center. Amherst, MA.
- Golden HE (October 2018) Arctic grayling as foundation species in oligotrophic freshwater systems. Long Term Ecological Research – All Scientists Meeting. Pacific Grove, CA.
- Golden HE, MacKenzie CJA, Deegan LA and Urban MC (June 2018) Spawning displacement predicts fine-scale genetic differentiation: Implications for a changing Arctic – Southern New England Chapter of the American Fisheries Society. Narragansett, RI.
- Golden HE (April 2016) Otolith Microchemistry: Tracking fish movement through space and time. Wetzel Foundation. Storrs, CT.
- Golden HE, MacKenzie CJA, Deegan LA and Urban MC (August 2015) Habitat fragmentation alters Arctic grayling movement and vital rates. Long Term Ecological Research Program – All Scientists Meeting. Estes Park, CO. (poster)
- Golden HE (May 2014) Population structure of Arctic grayling on Alaska’s North Slope. Marine Biological Laboratory and the University of Chicago Retreat. Woods Hole, MA. (poster)
- Golden HE (March 2014) Assessing population structure of Arctic grayling on Alaska’s North Slope. Arctic LTER Annual Meeting. Woods Hole, MA.
- Golden HE, Deegan LA, Peterson BJ, Urban MC and MacKenzie CJA (March 2014) Habitat connectivity and metapopulation structure of Arctic grayling (*Thymallus arcticus*). Arctic LTER Annual Meeting. Woods Hole, MA.
- Golden HE (June 2013) Assessing metapopulation structure of Arctic grayling on Alaska’s North Slope. Arctic Long Term Ecological Research (LTER) NSF Site Review. Toolik Field Station, AK.

- Golden HE (March 2013) Habitat connectivity and metapopulation structure of Arctic grayling (*Thymallus arcticus*) on Alaska's North Slope. Arctic Long Term Ecological Research (LTER) Annual Meeting. Woods Hole, MA.
- Golden HE (2012) Assessing Metapopulation Structure of Arctic Grayling on Alaska's North Slope. American Fisheries Society – Alaska chapter meeting. Kodiak, AK.
- Deegan LA, MacKenzie CJA, Golden HE, and Peterson BJ (2012) FISHSCAPE: Changing seasonality of arctic rivers disrupts key landscape trophic linkage between stream and lake ecosystems. American Fisheries Society – Alaska chapter meeting. Kodiak, AK.
- Golden HE (2012) Using Microsatellite Markers to Identify Metapopulation Structure of Arctic Grayling (*Thymallus arcticus*) on Alaska's North Slope. Arctic Long Term Ecological Research (LTER) Annual Meeting. Woods Hole, MA.
- Golden HE (2011) Habitat Connectivity and Metapopulation Dynamics of Arctic Grayling (*Thymallus arcticus*) on Alaska's North Slope. Arctic Grayling Symposium and Workshop. Grande Prairie, Alberta, Canada.
- Golden HE (2011) Predicting Permafrost Failure in the Upper Kuparuk River Region, Alaska. Arctic Long Term Ecological Research (LTER) Annual Meeting. Woods Hole, MA.
- Golden HE and Deegan, LA (1995) The trophic interactions of young-of-the-year Arctic grayling, *Thymallus arcticus*, in an Arctic tundra stream. Ecological Society of America. Snowbird, UT.
- Golden HE and Deegan, LA (1995) The trophic interactions of young Arctic grayling (*Thymallus arcticus*) in an Arctic tundra stream. American Fisheries Society. Tampa, FL.
- Geyer (Golden) HE, Deegan LA, Finn JT and Ayvazian SG (1991) Algae and invertebrates: The correlation. New England Estuarine Research Society. Nova Scotia, Canada.
- Geyer (Golden) H, Deegan LA, Finn JT and Ayvazian SG (1990) The effects of macroalgae on the abundance of eelgrass (*Zostera marina*) in the Waquoit Bay estuary. General Scientific Meetings, Marine Biological Laboratory, Woods Hole, MA. [Biological Bulletin 179(2):223].

#### PUBLIC OUTREACH

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- Withrow S (May 2019) Falmouth, Bourne Students Tour Coonamessett River Restoration. The Falmouth Enterprise.  
[https://www.capenews.net/falmouth/news/falmouth-bourne-students-tour-coonamessett-river-restoration/article\\_21ca4601-4bbe-54d1-9d4e-321a327f77c1.html](https://www.capenews.net/falmouth/news/falmouth-bourne-students-tour-coonamessett-river-restoration/article_21ca4601-4bbe-54d1-9d4e-321a327f77c1.html)
- McGlinchey D (May 2019) Scientists track river herring to help population recover. Woods Hole Research Center. <http://whrc.org/scientists-track-river-herring-to-help-population-recovery/>
- Brookshire B. Science for the People: #388 (Sep 2016) Audio segment on Arctic and Antarctic fish featuring O'Brien K, Golden H and Balcombe J. <http://www.scienceforthepeople.ca/episodes/fish>
- Eckhardt B (Jan 2016) Climate change: Predicting the Impact. UConn documentary featuring M Urban and H Golden's Arctic research. <https://www.youtube.com/watch?v=3jjVeQ0ZIsI>
- Golden, HE, *et al.* (2015). The carbon problem/Arctic change and global change panel. ScienceWriters2015 Annual Meeting. Marine Biological Laboratory, Woods Hole, MA
- Golden HE (2015 to present) Heidi Golden Arctic Research: The FishScape team explores the ecology of Arctic aquatic landscapes. <https://heidigoldenarcticresearch.wordpress.com/>
- Golden HE (2014 to present) Arctic Research and Exploration Blog. <http://hegolden.tumblr.com/>

Frontier Scientists (2014) Four articles and five videos featuring Heidi Golden's Arctic grayling research.  
<http://frontierscientists.com/scientists/heidi-golden/>

Golden HE (2013) Arctic Research and Exploration. <http://www.heidigoldenarcticresearch.com/>

Golden HE, Barton O, Dubel M and Karafelis P (2009) Creating sustainable school communities panel.  
 CT Outdoor Environmental Educators Association. New Britain, CT.

Metzner J (2008) Pulse of the Planet radio series: Science Diary. <http://www.pulseplanet.com/>

### AWARDS

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Fisheries & Oceans Canada, Indigenous Habitat Participation	2021
NSF Office of Polar Programs, Collaborative research (NSF 1417754)	2015
Ralph M. Wetzel Endowment Fund – UConn Ecology and Evolutionary Biology Dept and CT State Museum of Natural History	2015, 2013, 2012
Vertebrate Award – UConn Ecology and Evolutionary Biology Dept	2014
US EPA STAR Fellowship Award (FP-91745901-1)	2012
CT DEEP Governor's Steering Committee, Climate Change Leadership Award	2009
West Hartford Board of Education, Outstanding Achievement in Leadership Award	2009
U. S. Coast Guard Reserve, Certificate of Appreciation for Outstanding Performance	1991
U. S. Coast Guard Reserve, Reservist of the Quarter Award for Outstanding Service	1991

### MILITARY SERVICE

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US Coast Guard Reserve, New Haven, CT and Woods Hole, MA Petty Officer (Boatswain's Mate) search and rescue team	1987-1995
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### VOLUNTEER SERVICE

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Coonamessett River Trust, Falmouth, MA Board Member	2018-2020
Woods Hole Research Center, Falmouth, MA Polaris Project	2017-2020
West Hartford Public Schools, West Hartford, CT High School Science Research Mentorship Program (2013-2018) AP Biology course guest lecturer (2012-2018)	2012-2018
Connecticut Department of Energy and Environmental Protection, Hartford, CT Climate Change Education Committee	2007-2010
Connecticut Partnership for Sustainability Education, New Britain, CT	2008-2011
Sustainable West Hartford, West Hartford, CT	2007-2010
West Hartford Public Schools, West Hartford, CT Energy Conservation Committee Board (2007-2010) Monarch Watch Butterfly Tagging Program (2001-2012)	2001-2012
Temple Sinai, Newington, CT Judaic studies teacher for 4 <sup>th</sup> and 7 <sup>th</sup> grades	2007-2010
Girl Scouts of the USA, West Hartford, CT Troop Leader for girls K-5 <sup>th</sup> grade	2003-2009

Connecticut Department of Energy and Environmental Protection, Hartford, CT  
Farmington River trout assessment

1995

**REFERENCES**

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Dr. Linda A Deegan  
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Woods Hole Research Center  
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Falmouth, MA, 02540  
Phone: 508-444-1557  
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University of Connecticut  
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Wildlife Biologist  
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