

# Capt Rachel Egly, USCG

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9/30/2023

## Education

**M.S., Natural Resources and Environmental Sciences**      2018      UNIVERSITY OF ILLINOIS  
*Research focus in Freshwater Ecology and Aquatic Invasive Species*      Champaign-Urbana, IL

**B.S., Civil Engineering**      2016      UNIVERSITY OF ILLINOIS  
*Coursework focus in Water Resources and Environmental Engineering*      Champaign-Urbana, IL

**Passed Fundamentals of Engineering Exam (EIT)**

**USCG 25-Ton Master Captain MMC**

**PADI SCUBA Certified**

## Professional Experience

**LOYOLA UNIVERSITY CHICAGO**      Chicago, IL      May 2018-present

**Research Associate, Lab Manager, and Adjunct Professor**

- Led a team to perform field sampling and data analysis for crayfish and other invasive aquatic invertebrates in the Chicago area
- Taught an introductory environmental science course
- Developed a species distribution model (SDM) for an invasive amphipod in several basins in North America
- Constructed lab-scale electric barrier for testing on invasive aquatic invertebrates
- Mentored undergraduate and graduate students

**UNIVERSITY OF ILLINOIS**      Champaign-Urbana, IL      July 2016-May 2018

**Graduate Research Assistant**

- Performed field sampling in the Western U.S. for crayfish of conservation concern
- Developed SDMs for several native and nonnative crayfish species in the Great Lakes and in the Western U.S.

**U.S. GEOLOGICAL SURVEY**      Urbana, IL      July 2013-June 2016

**Hydrology Intern**

- Analyzed water data and assembled reports utilizing specialized software
- Performed field data collection on preventative measures against Asian Carp

## Leadership and Activities

**SOCIETY OF WOMEN ENGINEERS**      Champaign, IL      August 2012-May 2016

**Community Service Girl Scout Workshop Chair, 2014-2015**

**Community Service Orpheum Chair, 2013-2014**

**Outreach Co-Chair, 2012-2013**

**ALTERNATIVE SEASONAL BREAKS ORGANIZATION**      Buffalo National River, AR      March 2015

**Trip Facilitator**

- Organized events and fundraising for a volunteer trip to Buffalo National River to build new hiking trails

## Programs and Skills

- ArcMap
- R
- Microsoft Excel
- Microsoft Access
- Autodesk Inventor
- Field sampling
- Data collection and analysis
- Species distribution modeling (SDM)
- Technical writing

## **Publications**

- Principe, N.G., Ash, K.T., Davis, M.A., **Egly, R.M.**, Larson, E.R., 2021. A molecular and morphological guide to the pilose crayfishes of western North America. *Western North American Naturalist* 81(3) 344-360
- O'Shaughnessey, E.M., **Egly, R.M.**, Harris, B., Keller, R.P., 2021. Distribution of crayfish in the Southern Basin of Lake Michigan and the Greater Chicago Region. *Journal of Great Lakes Research*
- **Egly, R.M.**, Polak, R.D., Cook, Z.A., Moy, H.D., Staunton, J.T., Keller, R.P., 2021. Development and first tests of a lab-scale electric field for investigating potential effects of electric barriers on aquatic invasive invertebrates. *Frontiers in Ecology and Evolution* 9(214)
- **Egly, R.M.**, O'Shaughnessey, E.M., Keller, R.P., 2021. Updated occurrence data and species distribution modeling of the invasive scud *Apocorophium lacustre* in the Mississippi River, Upper St. Lawrence River, and Great Lakes Basins. *Freshwater Science* 40(1) 162-174
- **Egly, R.M.**, Annis, G., Chadderton, W.L., Peters, J.A., Larson, E.R., 2019. Predicting the potential distribution of the nonnative Red Swamp Crayfish *Procambarus clarkii* in the Laurentian Great Lakes. *Journal of Great Lakes Research* 45(1)
- **Egly, R.M.**, Larson, E.R., 2018. Distribution, habitat associations, and conservation status updates for the pilose crayfish *Pacifastacus gambelii* (Girard, 1852) and Snake River pilose crayfish *Pacifastacus connectens* (Faxon, 1914) of the western United States. *PeerJ* 6:e5668
- Larson, E.R., **Egly, R.M.**, Williams, B.W., 2018. New records of the non-native virile crayfish *Faxonius virilis* (Hagen, 1870) from the upper Snake River drainage and northern Bonneville Basin of the western United States. *BioInvasions Records* 7(2): 177-183
- Koebel, C.M. and **Egly, R.M.**, 2016. Water pressure and ground vibrations induced by water guns at a backwater pond on the Illinois River in Morris, Illinois. U.S. Geological Survey Scientific Investigations Report 2016-5098

## **Recent Presentations**

- Egly, R.M., Keller, R.P. and Polak, R., 2023, Effectiveness of electric barriers for preventing the spread of invasive invertebrates: American Fisheries Society, Grand Rapids, MI
- Egly, R.M. and Keller, R.P., 2023, Removal of invasive crayfish *Procambarus clarkii* in an urban river system: Ecological Society of America, Portland, OR
- Egly, R.M. and Keller, R.P., 2022, Removal of an invasive crayfish *Procambarus clarkii* in an open, flowing, urban system: American Fisheries Society, Spokane, WA.
- Egly, R.M., 2020, Climate change and invasive crayfish in the Chicago region: Keynote Presentation: Chicago River Student Congress, Chicago, IL.
- Egly, R.M. and Keller, R.P., 2019, Effectiveness of electric and carbon dioxide barriers for preventing spread of the invasive amphipod *Apocorophium lacustre* into the Laurentian Great Lakes: Ecological Society of America, Louisville, KY.
- Egly, R.M. and Larson, E.R., 2019, Distribution, habitat associations, and conservation status updates for two crayfishes endemic to the Western U.S.: Society for Freshwater Science, Salt Lake City, UT.
- Egly, R.M. and Keller, R.P., 2019, Updated occurrence data, species distribution modeling, and potential management of the invasive scud *Apocorophium lacustre*: Illinois American Fisheries Society, Champaign, IL
- Egly, R.M. and Larson, E.R., 2018, Distributional declines of two crayfishes endemic to the Western U.S. documented by comparing species distribution modeling to field sampling: Society for Freshwater Science, Detroit, MI. Winner of Best Poster in Applied Research.

## **Relevant Coursework**

**ECOLOGY** GIS in Natural Resource Management, Landscape Ecology, Conservation Biology, Quantitative Methods in Natural Resources and Environmental Sciences, Fishery Ecology and Conservation

**HYDROLOGY** Fluid Mechanics, Water Resources Engineering, Environmental Engineering, Geotechnical Engineering, Water Quality Engineering, Physical Geology, Water Resources Field Methods, Energy and Global Environment, Environmental Systems, Surface Hydrology, Water Technology and Policy, Urban Hydrology and Hydraulics

## **Memberships and Societies**

Society for Freshwater Science	American Water Works Association
American Fisheries Society	Society of Women Engineers
Ecological Society of America	Water Environment Federation