Holly Funkhouser

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Curriculum Vitae

SUMMARY

Seven years of research experience, one peer-reviewed publication, and the recipient of the Joy Archer Environmental Science Research Award.

EDUCATION

Masters of Science, Major in Fish and Wildlife Conservation
GPA : 4.0, Fall 2023
Virginia Polytechnic Institute and State University, Blacksburg, VA

Bachelor of Science, Double Major in Biology and Environmental Science & Policy
GPA : 3.4, May 2019
College of William and Mary, Williamsburg, VA

Select Relevant Courses

Restoration Ecology	Introduction to ArcGIS
Integrative Biology: Animals (Zoology)	Introduction to Biostatistics
Endangered Species Management	Advanced Conservation Biology
Evolution of Organisms	Environmental Science and Policy

Awards, Scholarships, and Special Recognition

- Joy Archer Award for Excellence in Environmental Research (ENSP department) (*2019*)
- Environmental Honors (ENSP department) (*2019*)
- William & Mary Dean's List (*Fall 2017 – Spring 2019*)
- Green Spring Garden Club Scholarship Recipient (ENSP department) (*2018*)
- Honors Fellowship Award (William & Mary Charles Center) (*2018*)
- William & Mary Wren Scholar (*2015*)

RESEARCH EXPERIENCE

Graduate Research Assistantship, August 2021 – present

Virginia Polytechnic Institute and State University, Blacksburg, VA

Working towards a Master's degree in Fish and Wildlife Conservation and studying Eastern hellbender reproduction and behavior

- Established research question, hypothesis, and developed the methods to accomplish research goals
- Has successfully reared about 1,300 hellbender eggs to hatching (with experience maintaining a captive rearing system, conducting water chemistry, recognizing dead or unviable eggs and larvae)
- Conducted field research surveys of hellbender reproduction (number of nests, size of clutch, etc.) in freshwater streams
- Designed and implement a dissolved oxygen manipulation system
- Has experience operating common water quality field equipment (YSI, Hobo Conductivity loggers, MiniDot DO loggers)

Independent Student Honors Thesis Research, June 2018-May 2019
William and Mary Keck Environmental Lab, Williamsburg, VA

Designed and conducted an environmental science honors project on current and future diamondback terrapin nesting habitat using spatial analysis and machine learning (2018-2019)

- Established research question, hypothesis, and developed the methods to accomplish research goals
- Collected, edited, and analyzed spatial data in ArcGIS and used MaxEnt, a machine learning program, to create terrapin nesting distribution models
- Considered the impacts of sea level rise on future terrapin nesting habitat
- Conducted a thorough literature review, wrote a thesis, and preformed a successful oral defense of the research

Student Research Assistant, June 2016-May 2018
William and Mary Keck Environmental Lab, Williamsburg, VA

Researched the impact of red funneled crab pot openings on blue crab catch and terrapin bycatch (*2017*)

- Built on previous research and assisted with research question, hypothesis, and the methods of the project
- Recorded the size, sex, and number of blue crabs and terrapins caught in control and test pots. Practiced field work research methods, kept thorough field records, analyzed data, and presented results

Researched the effectiveness of Bycatch Reduction Devices for minimizing diamondback terrapin bycatch (*2016*)

- Recorded the size, sex, and number of blue crabs and terrapins caught in control and test pots. Practiced field work research methods, kept thorough field records, analyzed data, and presented results
- Research was published in the North American Journal of Fisheries Management

Student Researcher, August 2013-May 2015
Massanutten Regional Governor's School, Mount Jackson, VA

- Established research question and conducted water quality tests of tributaries to the North Fork of the Shenandoah River. Analyzed and presented research results (*2013-2014*)
- Designed and constructed a successful micro-hydroelectric generator (*2014-2015*)

PUBLICATION

Grubbs, S. P., Funkhouser, H., Myer, P., Arendt, M., Schwenter, J., & Chambers, R. M. (2018). To BRD or not to BRD? A test of bycatch reduction devices (BRDs) for the blue crab fishery. North American Journal of Fisheries Management, 38(1), 18-23.

PLATFORM PRESENTATIONS

Working Plan Presentation	2022
Atlantic Estuarine Research Society	2019
Undergraduate Science Symposium	2019
Marsh Resilience Summit	2019
Summer Research Showcase	2018
Mid-Atlantic Diamondback Terrapin Working Group	2018
Undergraduate Science Research Symposium	2017

Work Experience

AmeriCorps Gulf Corps Conservation Crew Member, September 2020-present
Louisiana Conservation Corps, Baton Rouge, LA

- Contributed to numerous conservation projects along the Gulf Coast of Louisiana
- Preformed hurricane restoration, trail work, monitoring, invasive species removal, and prescribed burns for the Nature Conservancy, the National Forest Service, and Recreation and Park Commission for the Parish of East Baton Rouge

Teacher/Naturalist, August 2019-March 2020
Echo Hill Outdoor School, Worton, MD

- Taught elementary and middle school age students in three core areas. These areas include science & ecology, history & culture, and adventure course & group development.
- Adapted classes to fit the age and stage of the audience
- Facilitated positive outdoor experiences

Skills

Software Expertise

ArcGIS	R-Studio
MaxEnt (machine learning program)	Movie Maker
Google Drive (Docs, Sheets, Slides)	Video Conferencing Programs
Microsoft Office (Word, Excel, PowerPoint, Publisher)	

Data collection

- Experience operating a hellbender egg captive rearing (recognizing and recording unviable eggs or successful hatchlings), processing successful hatchlings (measuring mass, and length, and storing tissue samples), conducting hellbender nesting surveys in artificial nest boxes, recording clutch size, health, and development
- Deploying, downloading, and cleaning water quality data such as dissolved oxygen and conductivity
- Measuring and sexing diamondback terrapins and blue crabs, water testing, using giving up densities, measuring browsing pressure, handheld GPS navigation, vegetation quadrats etc.

Restoration skills

Training and experience with tools for the purpose of construction, deconstruction, trail maintenance, hurricane clean up (chainsaw trained), invasive species removal, and prescribed burns

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Certifications

Basic Life Support for Infants and Adults CPR – Expires November 2024
S-190 Introduction to Wildland Fire Behavior
S-290 Intermediate Wildland Fire Behavior Course
S-130 Firefighter Training
FEMA Basic Incident Command System for Initial Response
FEMA An Introduction to the National Incident Management System
FEMA Introduction to Incident Command System, ICS-100
FEMA National Response Framework, An Introduction

Leadership, Activities, and Service

Fish and Wildlife Graduate Student Association 2021-present
Serving as the Outreach Chair for the 2022-2023 academic year (responsible for organizing a weekly wildlife club at a local elementary school, various outreach events, and the formation of an outreach committee)

Stream Team 2022-present
Attending weekly science meetings and meeting with and hosting visiting scholars

Round Hill Church of the Brethren 2016-2021
Participated in numerous fundraising and service projects

Baptist Collegiate Ministries Family Group Leader 2015-2019
Led weekly group meetings, organized monthly social events, coordinated weekly summer dinners, planned larger BCM events, and participated in numerous service projects

William and Mary Wren Scholar 2015-2019
Weekly science discussions, alternative Freshman Biology lab, and research opportunities

William and Mary Rowing Club 2015-2017
Regattas, daily practices, and an estimated 75 hours contributed to "rent-a-rower" (a fundraising program for the team)

Green Springs Garden Club Christmas Homes Tours 2018

National Honors Society 2013-2015
Served as Vice President

National FFA Organization 2011-2015
Served as Vice President, Student Advisor, and Treasurer

References

William Hopkins, PhD, Professor, Department of Fisheries and Wildlife Sciences, Virginia Polytechnic Institute and State University, Blacksburg, VA, hopkinsw@vt.edu

Dr. Randy Chambers, PhD, Professor, Department of Biology, College of William and Mary, Williamsburg, VA, (757) 221-2331, rmcham@wm.edu

Betsy McCown, Associate and Managing Director, Echo Hill Outdoor School, Worton, MD, (410) 348-5880, betsy@ehos.org