

# Maina Handmaker

PHD STUDENT

University of Massachusetts Amherst

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## Education

### University of Massachusetts Amherst

PHD STUDENT, WILDLIFE, FISH, & CONSERVATION BIOLOGY

- Environmental Conservation Department
- Advisor: Dr. Nathan Senner

Amherst, Massachusetts

2022-Present

### University of South Carolina

PHD STUDENT

- Advisor: Dr. Nathan Senner (Lab transferred institutions in Fall 2022)

Columbia, South Carolina

2020-2022

### Bowdoin College

B.A., ENVIRONMENTAL STUDIES AND VISUAL ARTS

Brunswick, Maine

2007-2011

## Work Experience

### Western Hemisphere Shorebird Reserve Network (WHSRN), Shorebird Recovery Program, Manomet, Inc.

COMMUNICATIONS SPECIALIST AND PROGRAM ASSOCIATE

- Designed and managed WHSRN website, newsletter, and site partner outreach and support in English and Spanish; assisted Shorebird Habitat Management Division with workshops, outreach, and publications.

Brunswick, Maine

2017-2020

### Six River Farm

FIELD CREW, GREENHOUSE MANAGER, FARMERS' MARKET MANAGER

- Core team member on 30-acre diversified organic vegetable farm. Managed seedling propagation, three weekly farmers' markets, and helped lead a team of 10-12 crew members to efficiently complete essential tasks of planting, weeding, harvesting, and preparing produce for market.

Bowdoinham, Maine

2010-2016

## Research Experience

### University of Massachusetts Amherst

PHD RESEARCH

- Studying the role nocturnal roosts play in the stopover ecology and migratory performance of Atlantic Flyway Whimbrel (*Numenius phaeopus*). Conducting nocturnal ground counts, trapping and banding birds, deploying PinPoint GPS transmitters, coordinating fieldwork logistics, leading study design, managing survey and tracking data, analyzing and mapping movement tracks, building movement models and conducting statistical analyses to understand stopover ecology, behavior, and habitat selection.

Fieldwork: coastal South Carolina

2020-Present

### South Carolina Department of Natural Resources

SHOREBIRD TECHNICIAN

- Analyzed Whimbrel count data and deployed first GPS PinPoint tag on a southbound Whimbrel as pilot study for graduate research project. Designed and coded figures in R, began manuscript about largest known Whimbrel nocturnal roost in Western Hemisphere. Assisted Felicia Sanders (SCDNR) and Dr. Adam Smith (USFWS) with post-processing of Ruddy Turnstone nanotag data, literature review, and drafting manuscript for publication.

Remote

April-July 2020

### Manomet, Inc.

CO-LEAD BANDER AND EDUCATION COORDINATOR

- Monitored 50 mist nets 5 days a week with 3 other banders; extracted, banded, aged and sexed passerines and near-passerines. Coordinated education and outreach programming. Taught hands-on demonstrations about bird-banding and bird migration for school groups.

Plymouth, Massachusetts

March-June 2017

### Thunder Cape Bird Observatory

MIGRATION MONITORING ASSISTANT

- Operated mist-nets, hawk nets, ground traps, and Heligoland traps. Extracted, banded, and measured biometrics, including nighttime protocol to band Northern Saw-Whet Owls.

Thunder Bay, Ontario, Canada

September-October 2016

## Grants, Fellowships, and Recognitions

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TOTAL FUNDING RAISED: \$336,764

### Dissertation Fieldwork Grant

UNIVERSITY OF MASSACHUSETTS AMHERST GRADUATE SCHOOL (\$4,950)

December 2022

### Best Student Oral Presentation Award

ASSOCIATION OF FIELD ORNITHOLOGISTS

October 2022

### Travel Award to attend 2022 Annual Meeting in San Juan, Puerto Rico

AMERICAN ORNITHOLOGICAL SOCIETY (\$500)

July 2022

### Hesse Research Award

AMERICAN ORNITHOLOGICAL SOCIETY (\$2,420, PI)

May 2022

### Atlantic Flyway Shorebird Initiative Grant

NATIONAL FISH AND WILDLIFE FOUNDATION (\$90,000, Co-PI)

March 2022

### E. Alexander Bergstrom Memorial Research Award

ASSOCIATION OF FIELD ORNITHOLOGISTS (\$1,476, PI)

March 2021

### Bill Terrell Graduate Research Grant

GEORGIA ORNITHOLOGICAL SOCIETY (\$7,500, PI)

January 2021

### Graduate Research Fellowship

NATIONAL SCIENCE FOUNDATION (\$138,000)

March 2020

### Atlantic Flyway Shorebird Initiative Grant

NATIONAL FISH AND WILDLIFE FOUNDATION (\$84,418 Co-PI)

March 2020

### Research Grant

CAROLINA BIRD CLUB (\$7,500, PI)

January 2020

### Lydia Bell Award for Initiative in Public Service

BOWDOIN COLLEGE

May 2011

### Community Service Award in Environmental Studies

BOWDOIN COLLEGE

May 2011

## Scientific Publications

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Smith, A.D., F. J. Sanders, J. Thibault, D. Carter, **M.C. Handmaker**, and F. Smith. *In review*. South Atlantic Bight – a Final Stop for Ruddy Turnstones Migrating to the Arctic. *Journal of Field Ornithology*.

Sanders, F. J., **M. C. Handmaker**, A. S. Johnson, and N. R. Senner (2021). Nocturnal roost on South Carolina coast supports nearly half of Atlantic coast population of Hudsonian Whimbrel *Numenius hudsonicus* during northward migration. *Wader Study* 128. *PDF*.

Kamm, M. D., T. L. Lloyd-Evans, **M. Handmaker**, and J. M. Reed (2019). A half-century of changes in migratory land-bird numbers along coastal Massachusetts. *PLOS ONE* 14:e0222232. *PDF*.

## Popular Publications

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Iglecia, M. and **M. Handmaker**. 2018. *Whimbrels on the Wing*. Esri StoryMap. Publication of the Manomet Shorebird Recovery Program.

**Handmaker, M** and L. Chamberlin. 2017. *Journey of a Semipalmated Sandpiper*. Esri StoryMap. Publication of the Western Hemisphere Shorebird Reserve Network (WHSRN). \*Recognized by Esri one of 18 Favorite Community-Produced Story Maps of 2017, out of 250,000

## Presentations

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### Association of Field Ornithologists Centennial Meeting

Plymouth, Massachusetts

THE DAILY COMMUTE: THE INFLUENCE OF A CENTRAL NOCTURNAL ROOST ON DIURNAL HABITAT SELECTION STRATEGIES IN

ATLANTIC COAST WHIMBREL

2022

- Winner of Best Student Oral Presentation Award

## American Ornithological Society Annual Meeting

FAMILIAR TERRITORY? IMPLICATIONS OF EXTREME SITE FIDELITY TO FORAGING GROUNDS ON MIGRATORY STOPOVER

San Juan, Puerto Rico

2022

## International Wader Study Group Conference

NOCTURNAL ROOST ON SOUTH CAROLINA COAST SUPPORTS NEARLY HALF OF ATLANTIC COAST POPULATION OF HUDSONIAN

WHIMBREL NUMENIUS HUDSONICUS DURING NORTHWARD MIGRATION

Virtual presentation

2021

## Broome County Naturalists' Club

DISCOVERY AT DEVEAUX BANK: LEARNING FROM THE LARGEST KNOWN WHIMBREL NOCTURNAL ROOST

Virtual presentation

2021

## American Ornithological Society Annual Meeting

NOCTURNAL ROOST ON SOUTH CAROLINA COAST SUPPORTS NEARLY HALF OF ATLANTIC COAST POPULATION OF HUDSONIAN

WHIMBREL NUMENIUS PHAEOPUS DURING NORTHWARD MIGRATION

Virtual presentation

2021

# Teaching and Outreach

## Introduction to Quantitative Ecology

TEACHING ASSISTANT

- Instructor: Meg Graham MacLean

UMass Amherst

Fall 2022

## Landscape Ecology

TEACHING ASSISTANT

- Instructor: Meg Graham MacLean

UMass Amherst

Fall 2022

## Skype-a-Scientist

VOLUNTEER SCIENTIST

- Regular volunteer scientist participant; virtually connect with classrooms to answer student questions about ecology, bird migration, field biology research, and conservation. Lesson planning and content adapted for different age groups from kindergarten to middle school.

2021–Present

## Bird Banding Lab

LEAD EDUCATOR

- Coordinated weekly education and outreach programming for local school groups, from elementary to college age students. Led bird banding demonstrations and lessons on bird migration, long-term data collection, and the impacts of climate change on songbird populations.

Manomet, Inc.

Spring 2017

# Service and Mentoring

## Student Affairs Committee

AMERICAN ORNITHOLOGICAL SOCIETY

- Member of Webinar Series Subcommittee. Plan virtual panel discussions, webinars, and social events to create community and offer professional development opportunities for students in ornithology.

2020–Present

## Graduate Fellowship Peer Mentor

UNIVERSITY OF SOUTH CAROLINA

- Advise graduate students applying for the NSF GRFP. Provide general application guidance and detailed written feedback on research plans and personal statements.

2021–2022

# Professional Development and Relevant Coursework

## Modeling water level dynamics in intertidal zones using the Time-integrated Model of Shallow Water Availability (TiMSA)

TEXAS A&M HARTE RESEARCH INSTITUTE (VIRTUAL)

September 2022

## Google Earth Engine for Ecology and Conservation

ORGANIZATION FOR TROPICAL STUDIES (VIRTUAL)

November 2021

## Approaches and Applications in Species Distribution Modeling and Mapping

DR. JOHN KUPFER, UNIVERSITY OF SOUTH CAROLINA

Fall 2021

## Marine Data Science in R

DR. ERIN MEYER-GUTBROD, UNIVERSITY OF SOUTH CAROLINA

Spring 2021

## Experimental Design and Analysis

DR. NATHAN SENNER, UNIVERSITY OF SOUTH CAROLINA

Spring 2021

## Life-history Strategies

DR. CAROL BOGGS, UNIVERSITY OF SOUTH CAROLINA

Fall 2020

## Ornithology

DR. NATHANIEL WHEELWRIGHT, BOWDOIN COLLEGE

Spring 2011

## Skills

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Software/Tools	Programming	Fieldwork	Languages
Adobe Creative Suite	Rstudio	Passerine banding	English (native speaker)
Zotero	R	Shorebird banding and transmitter attachment	Spanish (proficient)
Quickbase		Mist net and leg snare extraction	
Wordpress		Boat driving and trailering	
ArcGIS Story Maps			

## References

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Dr. Rob Clay

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Felicia Sanders

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