

Maina Handmaker

PHD CANDIDATE

University of Massachusetts Amherst

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Education

University of Massachusetts Amherst

Amherst, Massachusetts

PHD STUDENT, WILDLIFE, FISH, & CONSERVATION BIOLOGY

2022-Present

- Environmental Conservation Department
- Advisor: Dr. Nathan Senner

University of South Carolina

Columbia, South Carolina

PHD STUDENT

2020-2022

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

Bowdoin College

Brunswick, Maine

B.A., ENVIRONMENTAL STUDIES AND VISUAL ARTS

2007-2011

Work Experience

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

Brunswick, Maine

COMMUNICATIONS SPECIALIST AND PROGRAM ASSOCIATE

2017-2020

- 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.

Six River Farm

Bowdoinham, Maine

FIELD CREW, GREENHOUSE MANAGER, FARMERS' MARKET MANAGER

2010-2016

- 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.

Research Experience

University of Massachusetts Amherst

Fieldwork: coastal South Carolina

PHD RESEARCH

2020-Present

- 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.

South Carolina Department of Natural Resources

Remote

SHOREBIRD TECHNICIAN

April-July 2020

- 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.

Manomet, Inc.

Plymouth, Massachusetts

CO-LEAD BANDER AND EDUCATION COORDINATOR

March-June 2017

- 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.

Thunder Cape Bird Observatory

Thunder Bay, Ontario, Canada

MIGRATION MONITORING ASSISTANT

September-October 2016

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

Grants, Fellowships, and Recognitions

TOTAL FUNDING RAISED: \$337,964

Donald L Mader Natural Resources Conservation Award

UMASS AMHERST - DEPT. OF ENVIRONMENTAL CONSERVATION (\$1,000)

May 2023

Dissertation Fieldwork Grant

UMASS AMHERST - GRADUATE SCHOOL (\$4,950)

December 2022

Best Student Oral Presentation Award

ASSOCIATION OF FIELD ORNITHOLOGISTS

October 2022

Travel Grant

UMASS AMHERST - DEPT. OF ENVIRONMENTAL CONSERVATION (\$200)

October 2022

Travel Award

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

Smith, A. D., F. J. Sanders, K. L. Lefevre, J. M. Thibault, K. S. Kalasz, **M. C. Handmaker**, F. M. Smith, and T. S. Keyes (2023). Spring migration patterns of red knots in the Southeast United States disentangled using automated telemetry. *Scientific Reports* 13:11138. [PDF](#)

Smith, A.D., F. J. Sanders, J. Thibault, D. Carter, **M.C. Handmaker**, and F. Smith (2023). South Atlantic Bight – a Final Stop for Ruddy Turnstones Migrating to the Arctic. *Journal of Field Ornithology* 94. [PDF](#).

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

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-

Presentations

Association of Field Ornithologists Centennial Meeting

Plymouth, Massachusetts

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

2022

ATLANTIC COAST WHIMBREL

- Winner of Best Student Oral Presentation Award

American Ornithological Society Annual Meeting

San Juan, Puerto Rico

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

2022

International Wader Study Group Conference

Virtual presentation

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

2021

WHIMBREL NUMENIUS HUDSONICUS DURING NORTHWARD MIGRATION

Broome County Naturalists' Club

Virtual presentation

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

2021

American Ornithological Society Annual Meeting

Virtual presentation

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

2021

WHIMBREL NUMENIUS PHAEOPUS DURING NORTHWARD MIGRATION

Teaching and Outreach

Introduction to Quantitative Ecology

UMass Amherst

TEACHING ASSISTANT

Fall 2022

- Instructor: Meg Graham MacLean

Landscape Ecology

UMass Amherst

TEACHING ASSISTANT

Fall 2022

- Instructor: Meg Graham MacLean

Skype-a-Scientist

VOLUNTEER SCIENTIST

2021–Present

- 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.

Bird Banding Lab

Manomet, Inc.

LEAD EDUCATOR

Spring 2017

- 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.

Tropical Biology and Conservation

UCEAP

SUPPORT STAFF

Spring and Fall 2016

- Assisted with field instruction and logistics for undergraduates enrolled in University of California Education Abroad Program's Tropical Biology and Conservation course based in Monteverde, Costa Rica.

Service and Mentoring

Student Affairs Committee

AMERICAN ORNITHOLOGICAL SOCIETY

2020–Present

- 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.

Graduate Fellowship Peer Mentor

UNIVERSITY OF SOUTH CAROLINA

2021–2022

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

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

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