



# Andrew Villeneuve

PHD STUDENT

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Andrew is a marine ecologist with interests in global change across levels of ecological organization. He is dedicated to working on applied questions in the face of climate and biodiversity crises.

## Education

### University of New Hampshire

PHD STUDENT

Durham

2022 - 2026

### University of Massachusetts Amherst

MASTER OF SCIENCE

Amherst Center

2018 - 2021

### Bowdoin College

BACHELOR OF ARTS

Brunswick

2012 - 2016

## Publications

Sasaki, M., Barley, JM., Gignoux-Wolfsohn, S., Hays, CG., Kelly, MW., & ... (2022). Greater evolutionary divergence of thermal limits within marine than terrestrial species. *Nature Climate Change*. 1-6

Barley, JM., Cheng, BS., Sasaki, M., Gignoux-Wolfsohn, S., Hays, CG., & ... (2021). Limited plasticity in thermally tolerant ectotherm populations: evidence for a trade-off. *Proceedings of the Royal Society B*. 288 (1958), 20210765

Villeneuve, A., Komoroske, LM., & Cheng, BS. (2021). Environment and phenology shape local adaptation in thermal performance. *Proceedings of the Royal Society B*. 288 (1955), 20210741

Villeneuve, A., Komoroske, LM., & Cheng, BS. (2021). Diminished warming tolerance and plasticity in low-latitude populations of a marine gastropod. *Conservation Physiology*. 9 (1), coab039

Villeneuve, A., Thornhill, I., & Eales, J. (2019). Upstream migration and altitudinal distribution patterns of *Nereina punctulata* (Gastropoda: Neritidae) in Dominica, West Indies. *Aquatic Ecology*. 53 (2), 205-215

Villeneuve, A.. (2017). Habitat selection and population density of the world's smallest chameleon, *Brookesia micra*, on Nosy Hara, Madagascar. *Herpetological Conservation and Biology*. 12 (2), 334-341

Wheelwright, NT., Taylor, LU., West, BM., Voss, ER., Berzins, SY., & ... (2017). Pupation site selection and enemy avoidance in the introduced pine sawfly (*Diprion similis*). *Northeastern Naturalist*. 24 (sp7)

## Selected Work and Research Experience

### Department of Biological Sciences, University of New Hampshire

PHD STUDENT

Durham, NH

2022 - Present

- Quantifying the impacts of heatwaves on marine invertebrate populations using an exposure magnitude-duration framework

### NOAA Fisheries

KNAUSS MARINE POLICY FELLOW

Silver Spring, MD

2021-2022

- I worked with the Office of the Assistant Administrator for Fisheries on high-level science management and policy. I worked on improving the NOAA institutional repository, wrote fisheries survey communications materials, and create a bibliometric analysis of NOAA Fisheries publications. I supported NOAA Arctic policy by working on incorporating indigenous traditional ecological knowledge into the US position in a multilateral agreement.

### Department of Environmental Conservation, University of Massachusetts Amherst

MASTER'S STUDENT

Amherst, MA

2018-2020

- I conducted research on the growth and survival of locally adapted populations of the Oyster Drill (*Urosalpinx cinerea*) collected from sites along the latitudinal gradient on the Pacific and Atlantic coasts of the US. I mentored an undergraduate research intern and their independent project as part of the Five College Coastal and Marine Science program. I was a teaching assistant for Marine Ecology and Introduction to Ecology.

## Hurricane Island Foundation

Rockland, ME

RESEARCH ASSISTANT

2018

- I assisted growth rate research on bottom culture and ear-hung scallop aquaculture in the Gulf of Maine. Operated outboard motorboats in variable coastal conditions. I mentored two students from the Women of the Sea Program on their independent research projects.

## Operation Wallacea

Rosalie, Dominica

AQUATIC ECOLOGIST

2017

- Directed field season research for long-term stream monitoring project using macroinvertebrate biotic indices and tracked migration patterns of a freshwater snail. One published paper as product. I instructed high school students in field ecology methodology and directed data collection for both projects.

## Smithsonian National Zoo

Washington, DC

CONSERVATION INTERN

2017

- I performed animal husbandry of threatened and endangered herpetofauna, and collected behavioral data of amphibians within exhibits

## Smithsonian National Museum of Natural History

Washington, DC

REEF BIODIVERSITY TECHNICIAN

2016

- Analyzed images and data on reef organism growth under ocean acidification conditions. Field processed photographic and genetic samples from settlement places on an expedition in Curaçao. I participated in two submersible dives to collect settlement plates.

## The Wilderness Society

San Francisco, CA

WILDERNESS TECHNICIAN

2016

- I completed a wilderness area assessment of Stanislaus and Eldorado National Forests using GPS tablets and ArcGIS. Performed tasks independently in remote mountain areas. I recommended the outlines of a new wilderness area based on observed human impacts and natural features.

## Bowdoin Science Station

Kent Island, NB, Canada

KENT ISLAND FELLOW

2014

- I designed and collected data on the effects of current strength on intertidal invertebrate biodiversity.

## Darling Marine Station, University of Maine

Walpole, ME

MARINE SCIENCE INTERN

2013

- I analyzed benthic images from the Drake Passage of species diversity focusing on corals with a master's student.

## Cape Eleuthera Institute

Deep Creek, The Bahamas

LIONFISH AND AQUACULTURE INTERN

2012

- I maintained open ocean aquaculture cage with juvenile Cobia, involved daily SCUBA diving. I conducted patch reef surveys of fish diversity and lionfish morphological data. REEF fish surveyor certified.

# Field Schools

## Bowdoin Marine Science Semester

2015

BRUNSWICK, ME

Bowdoin College

- Immersive marine science semester. Final thesis on population genetics of an invasive tunicate

## Madagascar Biodiversity and Natural Resource Management

2015

TAOLAGNARO, MADAGASCAR

School for International Training

- Study abroad semester, taught in French

# Grants, Fellowships, and Service

## New Hampshire Sea Grant

NEW HAMPSHIRE SEA GRANT GRADUATE FELLOWSHIP, \$19,510

2023

## University of New Hampshire

STUDENT TEACHING ASSISTANT SUMMER FELLOWSHIP, \$5,000

2023

## National Sea Grant

2021 JOHN A. KNAUSS MARINE POLICY FELLOWSHIP

2020

## PADI Foundation

PADI FOUNDATION GRANT, \$3,141

2019

## American Malacological Society

MELBOURNE R. CARRIKER STUDENT RESEARCH AWARDS IN MALACOLOGY, \$950

2019

## Journal Referee

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- Aquatic Ecology
- Ecography
- Journal of Molluscan Studies

## Skills

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### FIELD AND RESEARCH

- Have used and trained others on ecological research methods, including transects, quadrats, water quality, species identification (highly proficient in rocky coast Atlantic and Caribbean), habitat classification, microscope and microphotography use, and general photography.
- Competent SCUBA diver and snorkeler. 100+ Dives in the Caribbean, Gulf of Maine, and tropical Pacific. PADI Rescue Diver. ~50 dives for scientific purposes (transect, REEF surveys, aquaculture farms). ~15 coldwater dives (Gulf of Maine, freshwater)
- Basic molecular and bioinformatic skills, including mDNA extraction, isolation, amplification (PCR), sequence assembly, and alignment. Construction of haplotype networks to model population structure, which I have previously used to analyze population structure in the invasive tunicate *Didemnum vexillum* (undergraduate term paper).
- Comfortable boating skills in the Caribbean, Chesapeake Bay, and Gulf of Maine. Small craft operation (up to 28') and basic maintenance experience. Trailering experience. US Boating Certified.
- Experience with animal husbandry and aquatic plumbing. System experience ranges from large open-water aquaculture systems to recirculating seawater systems to tropical reef systems.
- Trained Wilderness First Responder. Certified August 2013, recertified June 2018. Wilderness Medical Associates. Experience working in isolated field conditions (e.g. Madagascar, Bay of Fundy, Dominica).
- Advanced French reading, writing, and comprehension. CEFR level B2.

### ORGANIZATIONAL, ANALYTICAL AND COMPUTER SKILLS

- Experienced with R programming for data management and frequentist statistical analysis. Extensive use throughout graduate career to analyze data for final thesis. RMarkdown and GitHub repository experience. Graphing using ggplot.
- ArcGIS analysis experience and map production. \* Image analysis software, including Webplot digitizer, ImageJ, Tracker, and Leica microimaging products.
- Scientific figure alteration via Illustrator/Inkscape.
- Time management, distance learning, and collaboration applications usage includes Asana, Slack, Zoom, and Google Suite.
- Website and repository design in Weebly, Google Sites, Notion, and Github.
- Meeting facilitation throughout Knauss fellowship, especially as a member of IARPC secretariat.

## References

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- **Easton White**, PhD Advisor, [easton.white@unh.edu](mailto:easton.white@unh.edu)
- **Brian Cheng**, Master's Advisor, [bscheng@umass.edu](mailto:bscheng@umass.edu)