



# Andrew Villeneuve

PHD CANDIDATE

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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

**Villeneuve, A.,** & White, ER. (2024). Predicting organismal response to marine heatwaves using dynamic thermal tolerance landscape models. *Journal of Animal Ecology*.

Bentley, BP., Cheng, BS., Brennan, RS., Swenson, JD., Adkins, JL., & ... (2024). Successful Invasion Into New Environments Without Evidence of Rapid Adaptation by a Predatory Marine Gastropod. *Molecular Ecology*. 33 (23), e17575

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*. 12 (12), 1175-1180

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

Silver Spring, MD

KNAUSS MARINE POLICY FELLOW

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

Amherst, MA

MASTER'S STUDENT

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 plates 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.

# Trainings and Field Schools

## Emerging topics in coastal marine ecosystems

2023

UNIVERSITY OF CÁDIZ, SPAIN

European Marine Research Network

- Summer training course on emerging topics, Euromarine network

## Workshop in Support of Developing Indigenous Collaboration in Arctic Observing Networks

2021

VIRTUAL

Kawerak, Inc.

- Training for incorporating Indigenous Knowledge for application within the Central Arctic Ocean Fishing Agreement

**Bowdoin Marine Science Semester**

BRUNSWICK, ME

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

2015

Bowdoin College

**Madagascar Biodiversity and Natural Resource Management**

TAOLAGNARO, MADAGASCAR

- Study abroad semester, taught in French

2015

School for International Training

**Grants and Fellowships**

**New Hampshire Sea Grant**

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

2023

**University of New Hampshire**

SCHOOL OF MARINE SCIENCES AND OCEANOGRAPHY GRADUATE RESEARCH FUND, \$2,010

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

**Environmental Conservation Graduate Council, University of Massachusetts Amherst**

TREASURER

2019

**National Science Foundation Graduate Research Fellowship Program**

HONORABLE MENTION

2019

**Bowdoin Science Station**

KENT ISLAND STUDENT RESEARCH FELLOWSHIP

2014

**Bowdoin College**

BOWDOIN FACULTY SCHOLAR

2012

**Teaching**

**Tohoku University**

CO-INSTRUCTOR

- R by the Sea Japan

Sendai, Japan

2025

**University of New Hampshire**

TEACHING ASSISTANT

- Introductory Biology

Durham, NH

2022-2023

**University of Massachusetts Amherst**

TEACHING ASSISTANT

- Marine Ecology

Amherst, MA

2018, 2020

**University of Massachusetts Amherst**

TEACHING ASSISTANT

- Fundamentals of Ecology

Amherst, MA

2019, 2020

**Service**

- Ecological Forecasting Initiative Student Association (EFISA) Co-chair, 2024-2026.
- Journal Referee
  - Aquatic Ecology
  - Journal of Animal Ecology

- Ecography
- Journal of Molluscan Studies
- Ecology
- Conservation Physiology

## 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)
- Comfortable **boating skills** in the Caribbean, Chesapeake Bay, and Gulf of Maine. Small craft operation (up to 28') and basic maintenance experience. Trailering experience. State of Maine boating license.
- 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

- Advanced data science, visualization, frequentist and Bayesian hierarchical statistical Modeling, **R and Rstudio**
- Oceanographic data, **Python**
- Version control, **Git and Github**
- Reproducible workflows and websites, **Markdown, Quarto, and Jupyter Notebooks**
- Parallel computing and big data, **BASH and Slurm**

## 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)