

Jordanna N. Bergman | Curriculum Vitae

Department of Biology, Carleton University, 1125 Colonel By Drive, Ottawa, ON, K1S 5B6
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EDUCATION

- Carleton University**, Ottawa, ON, CAN 2018-present
PhD Student in Biology
Thesis: Examining the ecological connectivity of the Rideau Canal Waterway as experienced by native and invasive fish species.
Advisors: Dr. Steven Cooke and Dr. Joseph Bennett
Expected graduation: September 2022
- University of South Florida**, Tampa, FL, USA 2010-2015
Bachelor of Science in Marine Biology
Advisor: Dr. Philip Motta
Minors: Geology, Environmental Policy

AWARDS, GRANTS, AND HONOURS

- NSERC Canada Graduate Scholarships - Master's Program (\$17 500 CAN) 2019-2020
Carleton University Biology Department Award (\$ 5 900 CAN) 2019-2020
Queen Elizabeth II Graduate Scholarship (\$15 000 CAN) 2018-2019
Carleton University Biology Entrance & Department Award (\$ 7 900 CAN) 2018-2019
NSERC Undergraduate Student Research Award (\$7 000 CAN) Summer 2015
Florida Bright Futures Scholarship (\$13 000 USA) 2010-2015
University of South Florida Scholarship Grant (\$6 100 USA) 2010-2013
Dean's Honour List, University of South Florida (Honourary) Fall 2011

PEER-REVIEWED PUBLICATIONS

Articles published or accepted in peer-reviewed journals

1. **Bergman, J.N.**, Bennett, J.R., Binley, A.D., Cooke, S.J., Vincent, F., Hlina, B.L., Reid, C.H., Vala, M.A., Madliger, C.L. (2019). Scaling from individual physiological measures to population-level demographic change: case studies and future directions for conservation management. *Biological Conservation*. 238: 108242. <https://doi.org/10.1016/j.biocon.2019.108242>
2. Krumhansl, K.A., **Bergman, J.N.**, Salomon, A.K. (2017). Assessing the ecosystem-level consequences of a small-scale artisanal kelp fishery within the context of climate-change. *Ecological Applications*. 27: 799-813. <https://doi.org/10.1002/eap.1484>
3. **Bergman, J.N.**, Lajeunesse, M.J., Motta, P.J. (2017). Teeth penetration force of the tiger shark *Galeocerdo cuvier* and sandbar shark *Carcharhinus plumbeus*. *Journal of Fish Biology*. 91: 460-472. <https://doi.org/10.1111/jfb.13351>

Articles submitted to peer-reviewed journals

4. **Bergman, J.N.***, Binley, A.D.*, Murphy, R.E.*, Proctor, C.A.*, Nguyen, A.T.*, Urness, E.S.*, Vala, M.A.*, Vincent, J.G.*, Fahrig, L., Bennett, J.R. (2019). How to rescue Ontario's Endangered Species Act. *equal contributors. (in revision; 16-Sep-2019; *FACETS* facets-2019-0050).

5. Cooke, S.J., **Bergman, J.N.**, Nyboer E.A., Reid, A.J., Gallagher, A.J., Hammerschlag, N., Van de Riet, K., Vermaire, J.C. (2019). Overcoming the Concrete Conquest of Aquatic Ecosystems. (submitted; *Biological Conservation*)

Serving as **peer referee** for *ICES Journal of Marine Science*, *Journal of Fish Biology*, *Conservation Physiology*

NON-PEER REVIEWED PUBLICATIONS

- Bergman, J.N.**, Cooke, S.J. (2019). Tracking Fish in the Rideau Canal Waterway. *Muskies Canada Release Journal – Research Special Issue*, Vol. 42 No. 4.
http://muskiescanada.ca/RJ/RJ_2019_Vol42_No4.pdf?mc_cid=d1a8e197ed&mc_eid=7e1e47217b
- Bergman, J.N.** (2019). Stress Response of Sifakas to Seasonal Changes and Habitat Degradation: Things are Not What They Appear. *Society for Experimental Biology Autumn 2019 Issue*.
<https://www.sebiology.org/digital-magazine/Autumn-2019/>
- Bergman, J.N.***, Binley, A.D.*, Murphy, R.E.*, Proctor, C.A.*, Nguyen, A.T.*, Urness, E.S.*, Vala, M.A.*, Vincent, J.G.*, Fahrig, L., Bennett, J.R. (2019). Comment on the 10 Year Review of the Ontario Endangered Species Act. *authors contributed equally. Ontario Environmental Registry (request PDF).
- Bergman, J.N.** (2019). Fish Tagging in the Rideau Canal. *Anglers Atlas* (request PDF).

CONFERENCE PRESENTATIONS AND INVITED SEMINARS

- Bergman, J.N.**, Bennet, J.R., Cooke, S.J. (2020). Investigating the ecological connectivity of the Rideau Canal Waterway as experienced by native and invasive fish species. Second Annual NSERC Strategic Partnership Grant Meeting. Carleton University, Ottawa, ON (oral presentation).
- Bergman, J.N.** (2019). Maintaining sustainable marine fisheries. Conservation Biology Course, Carleton University, Ottawa, ON (oral presentation).
- Bergman, J.N.**, Bennet, J.R., Cooke, S.J. (2019). Investigating fish movements in the Rideau Canal to optimize conservation decisions. Big Rideau Lake Association, Portland, ON (oral presentation).
- Bergman, J.N.**, Bennet, J.R., Cooke, S.J. (2019). Fish connectivity in the Rideau Canal. Rideau Canal Waterway Annual Meeting, Chaffey's Lock, ON and Ottawa, ON (oral presentation).
- Bergman, J.N.**, Bennet, J.R., Cooke, S.J. (2018). Can selective fragmentation of Canada's Rideau Canal optimize conservation decisions? First Annual NSERC Strategic Partnership Grant Meeting. Carleton University, Ottawa, ON (oral presentation).
- Bergman, J.N.**, Heppell, S.A., Shea, C.P., Lowerre-Barbieri, S.K. (2017). Seasonal cycles of gonadal development and plasma sex steroid levels in the protogynous gag grouper *Mycteroperca microlepis*. 147th Annual Meeting of the American Fisheries Society, Tampa, FL (oral presentation).
- Bergman, J.N.**, Lajeunesse, M.J., Motta, P.J. (2017). Teeth penetration force of the tiger shark *Galeocerdo cuvier* and sandbar shark *Carcharhinus plumbeus*. FISH, Ft. Lauderdale, FL (oral presentation).
- Krumhansl, K.A., **Bergman, J.N.**, Salomon, A.K. (2015). Impacts of Giant Kelp Canopy Harvest on Temperate Reef Fish. Western Society of Naturalists, Sacramento, CA (poster presentation).
- Bergman, J.N.**, Motta, P.J. (2015). Shark conservation and changing public perception. The Great American Teach-In, Auburndale, FL (oral presentation)

RESEARCH HISTORY

Biological Scientist II

Fall 2015-Fall 2018

Marine Fisheries Research, Fish and Wildlife Research Institute, St. Petersburg, FL:

1) Served as field Primary Investigator (PI) for the MARFIN Grant NA15NMF4330155 “Is low male abundance limiting stock productivity? Assessing factors affecting reproductive potential of gag grouper, *Mycteroperca microlepis*, in the Gulf of Mexico,” and assist in all aspects of sample collection, data preparation, final reports, and peer-reviewed manuscripts.

Sampling conducted via hook and line fishing 60-100 miles offshore year-round in the Gulf of Mexico

2) Responsible for leading a physiology project to analyze sex hormones in blood plasma of sexually mature gag grouper to elucidate sex change, seasonal trends, and reproductive status in gag grouper.

3) Analyzed and managed all videos from an underwater videography array (~8000 hours) for species identification, abundance, and behavioural characteristics that may be related to spawning activities.

NSERC Undergraduate Student Research Award (USRA) Student

Summer 2015

Coastal Marine Ecology & Conservation Laboratory, Simon Fraser University, Burnaby, BC:

1) Conducted research via dry suit diving in a remote coastal field setting off the Central Coast of British Columbia to investigate harvest impacts of surface canopy from giant kelp on local fish and invertebrate communities; published a scientific paper from this research in *Ecological Applications*.

2) Performed invertebrate belt transects for the annual Rocky Reef Monitoring Survey at Hakai Institute to investigate abundance, biomass, and biodiversity shifts with sea otter occupation time.

3) Collected and processed field data for measurements of kelp productivity and population dynamics.

4) Conducted tensile tests to measure biomechanical properties of giant kelp blades.

Undergraduate Research Student

2014-2015

Integrative Biology Laboratory, University of South Florida, Tampa, FL:

Designed and implemented an independent research project examining tooth penetration force in carcharhinid sharks via biomechanical manipulations and highspeed videography analysis; published a scientific paper from this research in *Journal of Fish Biology*.

Research Volunteer

Fall 2010, Summer 2011

South Florida/Caribbean Network (50 hours), National Park Service, Miami, FL:

Assisted in research accuracy assessments of the marine benthic map for Biscayne National Park.

PROFESSIONAL HISTORY

Co-chair for The Ottawa-Carleton Institute of Biology (OCIB) Symposium

Fall 2018-Spring 2019

Carleton University, Ottawa, ON:

Responsible for organizing all aspects of this non-profit conference including managing keynote speakers, funding sources, food and drink, the student poster session, oral presentations, and advertising.

PADI Open Water Scuba Instructor

2013-Present

Divemaster & Dive Trainer

2014-2015

Divemaster

2012-2014 (promoted)

Dive Operations, The Florida Aquarium, Tampa, FL:

- 1) Led dive experiences in the coral reef exhibit in close proximity to sharks, rays, and other aquatic organisms, and performed dive interpretive programs using a full-face mask scuba system.
- 2) Trained Dive Operations, Husbandry, and Volunteer divers in all aquarium diving and policies.
- 3) Organized orientations for the Dive with Sharks Program to discuss shark physiology, reproduction, ecology, and conservation.

The Florida Aquarium Husbandry Intern

2011-2012

Wetlands Team (400 service hours), The Florida Aquarium, Tampa, FL:

Monitored the safety and wellbeing of birds, reptiles, fish, rays, eels, and sharks, and served as a Water Quality Laboratory technician.

TEACHING EXPERIENCE

Laboratory Teaching Assistant

Fall 2018-present

Carleton University, Ottawa, ON:

Instructed 'Foundations of Biology I and II' and 'Fish Ecology'; responsible for educating students in the theory and application of biological principles, experimental design, report writing, and statistical analyses.

Invited Instructor for Environmental Science and Management

Fall 2018 & 2019

Undergraduate course, Carleton University, Ottawa, ON:

1) Instructed 30 students on agroecology and food production systems including organizing an off-campus educational trip to The Central Experimental Farm (Ottawa, ON), Roots and Shoots Farm (Alcove, QC), and Alska Farm (Low, QC).

2)

Volunteer Laboratory Teaching Assistant

Fall 2015

University of South Florida, Tampa, FL:

Instructed 'Fish Biology'; assisted students in learning internal and external anatomy, osteology, myology, taxonomy, and identification of fish, and supported freshwater and marine collection trips.

POPULAR MEDIA

CityTV: Goby fish invading Rideau Canal. (July 15, 2019). Personal interview for TV clip.

<https://toronto.citynews.ca/video/2019/07/15/goby-fish-invading-rideau-canal/>

CFRA 580 News Talk Radio: live interview at 12:33 on round goby research in the Rideau Canal Waterway (July 13, 2019).

CBC News: Invasive round goby fish found in Rideau Canal (July 12, 2019). Online article, radio broadcast of interview, and personal interview for TV clip.

<https://www.cbc.ca/news/canada/ottawa/invasive-goby-fish-found-rideau-canal-1.5208922;>

<https://www.cbc.ca/player/play/1570049603678>

Carleton Newsroom: Where The Wild Fish Go: Carleton students play pivotal role in Rideau waterway research (July 9, 2019). Online article and personal interview.

https://newsroom.carleton.ca/story/wild-fish-research/?utm_source=NewsroomBanner&utm_campaign=July2019

CTV: personal interview and filming crew (June 26, 2019).

<https://ottawa.ctvnews.ca/mobile/video?clipId=1745244&fbclid=IwAR20UL-SOOvODj0UcZY0N3P-uYX2kpw3wR-zyuGq62UUF5wrcuZhF5-n6pw>

TVO, Striking Balance. Multi-day filming crew, personal interview, documentary on Canada's 18 UNESCO-designated biosphere reserves. (May 2019). <https://www.tvo.org/programs/striking-balance>

CERTIFICATIONS AND SKILLS

Scuba Diving: AAUS D130 Scientific Diver, CAUS Scientific Diver I, PADI Open Water Scuba Instructor, DUI Dry Suit Diver, NAUI Nitrox, Handicap Scuba Association Buddy, Dive Trainer for The Florida Aquarium, acoustic receiver deployment and retrieval

Computer Skills: R Statistical Analysis, Microsoft Office Suite, Compliance Suite, High speed and underwater videography analysis, SigmaPlot Version 12 Program, ArcGIS 10.3.1

Freshwater and Marine Field Skills: Ontario pleasure craft operator; boat handling and trailering; hook & line fishing (manual and electric); survey, monitor, and/or collect fishes, elasmobranchs, invertebrates, and kelps (canopy, understory) through belt transects, quadrats, and biomass & productivity surveys on snorkel and scuba; underwater navigation and mapping; diving: shore, spring, drift, deep, cavern, boat, exploratory, night and limited visibility, free diving

Laboratory Skills: enzyme-linked immunosorbent assay (EIA) kits, blood extraction and preparation from teleosts, otolith removal, gonad histology preparation and assessment, gross dissections (agnathans, frogs, salamanders, teleosts, elasmobranchs, cats), experimental design, light microscopy, DNA and RNA extraction, PCR, centrifuges, agarose gels, bacterial culture, titration

References

Dr. Philip Motta, Professor

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Dr. Joseph Bennett, Assistant Professor

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Lindsay Huebner, Research Scientist

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Florida Fish and Wildlife Research Institute
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Dr. Steven Cooke, Professor

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