

# DANIELLE DERRICK

Master's of Science  
Earth to Ocean Research Group  
Department of Biology  
Simon Fraser University  
Burnaby, BC  
(613) 621-1212  
[dherric@sfu.ca](mailto:dherric@sfu.ca)  
[www.daniellehderrick.weebly.com](http://www.daniellehderrick.weebly.com)

## EDUCATION

---

- December 2020 MSc. Science, Marine Biodiversity and Conservation, GPA 4.0/4.33 (A)  
**Simon Fraser University**, Burnaby, BC  
Supervisor: Dr. Nicholas K. Dulvy  
Thesis: "Hotspots in the marine realm: the where and why of shark and ray biodiversity"
- June 2017 BSc. (Honours) Biology with a concentration in Evolution, Ecology, and Behaviour, GPA 10.05/12 (A-)  
**Carleton University**, Ottawa, ON  
Advisor: Dr. Nigel Waltho  
Honours Thesis: "Partitioning the impacts of dams – how benthic invertebrates respond to unlimited ramping"

## GRANTS AND SCHOLARSHIPS

---

- 2020 ESRI Canada Centre of Excellence Student Associate Achievement Award (\$1,000)  
2020 ESRI Canada Higher Education Scholarship in GIS (\$2,000)  
2019 Natural Sciences and Engineering Research Council Scholarship (\$17,500)  
2018 Simon Fraser University Graduate Fellowship (\$6,500)  
2017 4<sup>th</sup> place recognition in global ESRI GIS story map competition  
2012 Carleton University Entrance Scholarship (\$8,000)  
2012 Carleton University Alumni Scholarship (\$2,000)  
2012 Carleton University Chagnon Scholarship (\$1,000)

## PUBLICATIONS

---

**Derrick, DH.**, Cheok, J., and Dulvy, NK. (2020) Spatially congruent sites of importance for global shark and ray biodiversity. PLoS ONE 15(7): e0235559.  
<https://doi.org/10.1371/journal.pone.0235559>

Shiffman, DS., O'Farrell, MM., Bittick, SJ., Cashion, M., Colla, S., Coristine, L., **Derrick, DH.**, Macdonald, CM., Orobko, M., Provencher, J., and Dulvy, NK. (2020) Inaccurate and biased global media coverage underlies public misunderstanding of shark conservation threats and solutions. iScience 23(6): 101205. <https://doi.org/10.1016/j.isci.2020.101205>

Yan, HF., Kyne, PF., Jabado, RW., Leeney, RH., Davidson, LNK., **Derrick, DH.**, Finucci, B., Freckleton, RP., Fordham, SV., and Dulvy, NK. (2021) Overfishing drives range contraction of iconic fishes to near extinction. *Science Advances*.

**Derrick, DH.**, Davidson, LNK., and Dulvy, NK. Shark and ray biodiversity driven by tropical cradles of young, narrow-ranging species. *In prep.*

**Derrick, DH.**, Timusk, E., Waltho, N., and Smokorowski, K. Partitioning the impacts of dams - how benthic invertebrate assemblages respond to unlimited ramping. *In prep.*

## **PROFESSIONAL EXPERIENCE**

---

### **2020/21 IUCN GIS technician - The Global Shark Trends Project**

April 2020 – January 2021

Dr. Nick Dulvy, Biological Sciences SFU

- Attended and consolidated expert knowledge from global shark assessment workshops on species status and distributions throughout the world's oceans
- Developed, edited and updated in collaboration with 10 Red List Assessors distributed worldwide over 200 maps of species distributions using spatial analytics and GIS for submission to the IUCN (International Union for the Conservation of Nature) Red List Assessment program

### **2018 Field Technician - Environment and Climate Change Canada**

May 2018

- Assisted a PhD Candidate with the collection of field data for their thesis
- Located and excavated over 200 Rhinoceros Auklet burrows on Lucy Island, BC to collect data on habitat characteristics, population statistics, and retrieve eggs for toxicity analysis pertaining to transfer of toxins from adults to offspring

### **2017 Spatial Analyst and Field Technician - Alaska Whale Foundation**

April – August 2018

Dr. Andy Szabo, Director and Research Biologist

- Collected field data on the spatial movements of Humpback Whales in Southeast Alaska and collected tissue samples for isotope analysis on whale diet content
- Performed GIS and statistical analyses pertaining to movement models and feeding behaviours of Humpback Whales
- Developed a grant application from spatial analyses on the ship strike risk of Humpback Whales in the inside passage of Southeast Alaska

### **2015 Environmental Monitoring Assistant - City of Ottawa**

September – December 2015

Brian Bezaire, Water Environment Protection Program

- Assisted in the research, development and execution of environmental studies and policies through field monitoring activities
- Involved in the research and preparation of reports, studies, and surveys related to water, wastewater, surface water, and solid waste infrastructure and programs
- Sorted through sediment and invertebrate samples for community abundance data and ecosystem health data of rivers, streams and lakes of the Ottawa area
- Collected and prepared data for reports relating to water quality health by dissecting benthic invertebrate samples from various urban streams

**2015      Research Assistant - Fisheries and Oceans Canada**

May - August 2015

Dr. Karen Smokorowski, Great Lakes Labs for Fisheries and Aquatic Sciences

- Actively participated in electrofishing operations on the Magpie and Batchawana Rivers studying the effects of changes in ramping rate from hydroelectric dams on downstream benthic invertebrate and fish communities
- Processed and analyzed samples from various ongoing research projects including fish length, weight, age, and community assemblages
- Involved in setting out gill nets for Lake Sturgeon to record weight and length, gather tissue samples, and PIT tag the fish for a project studying movement patterns and determining areas of refuge
- Operated electrofishing and various forms of boating equipment

**2014      Student Aquatic Technician - Fisheries and Oceans Canada**

May - August 2014

Sea Lamprey Control Centre

- Worked in collaboration with U.S Fish and Wildlife Service to distribute and operate lampricidal treatments in various freshwater tributaries of the Great Lakes
- Communicated with landowners and the public to discuss and inform of the risks and rationale of lampricidal treatments, as well as to operate in a transparent and trustworthy manner with the public
- Participated in after treatment analyses to estimate and count the number of fish, non-target lamprey, and other invertebrate mortalities
- Determined and plotted future analysis and discharge sites for lamprey treatments on various maps of the Great Lakes and the tributaries within Canada and the United States

**TEACHING EXPERIENCE**

**2019      Teaching Assistant for Techniques in Ecology and Evolution**

Dr. Mika Mokkonen and Erin Barley, Biological Sciences SFU

- Developed weekly tutorial lessons and activities for ~25 students to complement material covered in lectures and labs and help prepare students for exams and writing evaluations
- Provided help with field collection techniques and guiding student lab work, statistical analyses, introductions to coding in R, and marked assignments and lab reports

**2018 Teaching Assistant for General Biology (BISC102)**

Dr. Rolf Mathews, Biological Sciences SFU

- Developed weekly class tutorials and activities for 30+ students that reflected content learned in lectures and labs to help students prepare for exams and assignments
- Marked assignments and exams and provided critical feedback
- Demonstrated laboratory activities and provided support to 70+ students

**LEADERSHIP ROLES**

---

- 2019-20** Director of consumables for PEEC (Pacific Ecology and Evolution Conference) 2020 held in Bamfield, Vancouver Island, BC
- 2019-20** Organiser for Earth to Ocean statistical collaboration group
- 2019-20** Organiser and developer for the Earth to Ocean Research Group website
- 2019** GIS and conference assistant for ESRI at the week-long GIS ESRI User Conference in San Diego, CA
- 2018** Dulvy lab shark science Monday twitter posts engager for the public on past and present elasmobranch research
- 2018** Programmed and developed a spatial reference app in support of community pick-up sports with SFU for ESRI's ECCE (ESRI Canada Center of Excellence) program across Canada
- 2017** Humpback Whale research and conservation presentation with Alaska Whale Foundation on the National Geographic Alaskan Cruise
- 2017** Volunteer for Carleton University's GIS Day
- 2017** Programmed and developed an app on reducing carbon footprint by travel with Carleton for ESRI's ECCE program across Canada
- 2016-17** Volunteer at the Wild Bird Care Center for the rehabilitation of injured birds and community outreach and education
- 2012-17** Volunteer note taker at Carleton University for the Paul Menton Center for Students with Disabilities

**PROFESSIONAL CERTIFICATES AND TRAINING**

---

- WHMIS (Workplace Hazardous Material Information System) training (2018)
- Wilderness First Aid 50-hour (2020)
- CPR A with AED (2020)
- Pleasure Craft Operator's Card (2014)
- Bear Safety Training (2015)
- Electrofishing (Class 1) (2015)

## **RESEARCH AND ANALYTICAL SKILLS**

---

Advanced knowledge in spatial analyses in ArcGIS and R Studio

Ecological data collection, entry, and analysis with PRIMER, SPSS, MS Excel and Access

Multivariate and Spatial Statistics

Data and project management with OpenRefine, Git, and GitHub

Advanced data manipulation and statistical modeling skills in R

Introductory analytical skills in Python

## **ADDITIONAL CONTRIBUTIONS**

---

**2020** Collaborator with the Canadian Institute of Ecology and Evolution (CIEE) 2020 to analyze the spatial and temporal changes of all marine species from invertebrates to marine mammals over a 50-year period present within the Gulf of the St. Lawrence

**2020** Guest speaker at ESRI's Virtual User Conference for the Ocean, Weather and Climate symposium

**2016-20** ESRI Canada Centre of Excellence member at Carleton University (2016/17) and at Simon Fraser University (2018-2020)

**2019** Guest presenter for SFU GIS Day

**2019** Guest speaker at ESRI's User Conference in San Diego, CA on biodiversity and conservation of the world's oceans using spatial techniques and GIS

**2018** Guest lecturer for an undergraduate SFU Fisheries Course – "Whaling: A Global Crisis"

**2016** Conservation research on cetaceans in Taiwan and Hong Kong – survey methods, anthropogenic and climatic impacts on marine ecosystems, and developing strategies to mitigate current and future impacts