

Lydia N. Walton

BSc. Honours Biology (Marine Concentration)
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INTERESTS

Marine Ecology, Food Web Ecology, Climate Change, Ichthyology, Invertebrate Biology, Stable Isotope Analysis, Ecophysiology, Multiple Climatic Stressors

EDUCATION

University of Victoria – 2017 - 2021

- **Bachelor of Science Honours** (Biology Major with Marine Biology Concentration).
 - Supervisor: Prof. Julia K. Baum.
 - Thesis: The impact of human-driven and natural disturbances on the isotopic niche of a generalist carnivore reef fish, *Paracirrhites arcatus*.
- **Cumulative GPA** of 8.03 (9-point scale) or 4.0 (4-point scale converted).

Bamfield Marine Sciences Centre – Summer 2019

- Completed 3-week Marine Behavioural Ecology course with an A+.
- Gained experience working in the fields of marine ecology and invertebrate biology.
- Designed and completed a research project that included gathering data in the lab and the field, writing and publishing a scientific report in the Bamfield Library.

DELE Level B2 – 2016

- Received Level B2 DELE diploma from the Ministry of Education, Spain, certifying degree of competence and mastery of the Spanish language.

William Aberhart High School – 2015 - 2017

- Graduated with honours from the Spanish Bilingual Program.
- Graduated with an overall average of 95%.
- Member of the Aberhart Cross Country team as well as the Aberhart Swim and Dive team.

RESEARCH EXPERIENCE

Juanes Lab, **Research Technician** – Fall 2021 to present

- I am primarily involved in the Coho Otolith Project, working closely with graduate students to understand the effects of abnormal otoliths on hatchery and natural origin salmon.
- In the field, I work with other research assistants and graduate students to collect adult Coho and Chinook salmon samples (i.e., otoliths, muscle tissue, and scales) from hatcheries on Vancouver Island and Mainland BC.
- In the lab, I dissect otoliths from adult and juvenile Coho salmon, photograph the otoliths using a stereoscope and CellSens, and determine the percent coverage of aragonite and vaterite for each otolith using Photoshop.
- I prepare salmonid and sand lance otoliths for microchemistry analyses by encasing individual otoliths in epoxy and sanding down otoliths until their core is reached.

University of Victoria, **NSERC USRA** – Summer 2021

- Working closely with Prof. Baum and her post-doc Dr. Starko, I reviewed and synthesized the literature pertaining to the potential for marine ecosystems within Canada (including kelp, seagrasses, and salt marshes) to sequester carbon, and hence serve as “natural climate change solutions”. This research helped support current research in the Baum Lab, as well as newly developed projects and grant proposals.
- Prepared stomach samples of reef fish for DNA metabarcoding by identifying prey items, sorting them taxonomically, taking subsamples for stable isotope analysis, and storing them for future processing.

University of Victoria, **Work Study** – Fall 2020

- Worked in Prof. Julia Baum’s research laboratory at the University of Victoria to process samples for stable isotope analysis.
- Dried, ground, and packed samples of fish white muscle tissue for analysis in a mass spectrometer.

University of Victoria, **Research Assistant** – Summer 2020 (Supported by Venture for Canada)

- Worked closely with researchers in Prof. Julia Baum’s research laboratory at the University of Victoria to synthesize data collected during Baum Lab expeditions to Kiritimati before, during and after the 2015-2016 marine heatwave. Assisted in studying the effects of mass coral mortality on habitat complexity.
- Assisted Prof. Baum and one graduate student to process 3D models and 2D photo-mosaics from overlapping photographs taken at permanent reef plots on the island using ArcMap. Identified and measured corals and quantified metrics of habitat complexity in each reef plot.
- Processed stable isotope samples from Kiritimati.

University of Victoria, **Strickland Cruise** – Fall 2019

- Biological oceanography laboratory excursion in Saanich Inlet collecting physical, chemical, and biological data using CTDs, Niskin bottles, and plankton nets.
- Laboratory analysis of chlorophyll fluorescence and phytoplankton counts using fluorometers and inverted light microscopes.

University of Victoria, **Baum Lab Volunteer** – Fall 2019

- Used Image J software to measure length, width, and area of coral recruits from photographs.
- Transcribed and organized fish dissection data sheets and Chondrichthyes survey spreadsheets in Excel.
- Used Agisoft Metashape Professional software to measure coral growth from photographs (e.g. masked corals, edited markers, created 3D models of coral).
- Transcribed protocols for packing dried samples of macroalgae and turf. Prepped macroalgae samples for drying and subsequent stable isotope analysis.

FUNDING AND AWARDS

- 2021 Provost's Advocacy and Activism Award (\$1,150)
- 2021 NSERC USRA award (\$6000)
- 2020 Venture for Canada Internship Program (\$6300)
- 2017 University of Victoria entrance scholarship (\$2000)
- 2017 Alexander Rutherford Scholarships (\$2500)

PRESENTATIONS

- Mar 2022 The impact of global and local disturbances on the isotopic niche of a generalist carnivore reef fish, *Paracirrhites arcatus* – Poster presentation, Pacific Ecology and Evolution Conference (PEEC)
- Jul 2021 Do disturbances impact the isotopic niche of a generalist carnivore reef fish, *Paracirrhites arcatus*? – Poster presentation, 14th International Coral Reef Symposium (ICRS) 2021 Virtual

VOLUNTEER

BC Conservation Foundation (BCCF) – 2022

- I collaborated with the Juanes Lab, Goldstream Hatchery, and BCCF to pit tag 7,500 coho salmon smolts before release into the stream.

Adult Salmon Diet Project (ASDP) – 2022

- Alongside members of ASDP in the Juanes Lab at UVic, I collected stomach samples from adult chinook and coho salmon during the Sidney Angler Derby. I also explained details of ASDP and other research done in the Juanes Lab to anglers and the general public.

Calgary Zoo – 2014

- Volunteer with the Junior Zoo Guide program.
- Developed great customer service skills by greeting visitors, assisting with children's activities and managing the flow of pedestrian traffic through various exhibits.
- Volunteered during Calgary Zoo Lights, assisting in the Kids Zone and Santa's Oasis, taking photos and engaging the children in various activities.

Telus Spark – 2014

- Developed leadership skills working with the summer camp program, organizing activities and supervising young children.

EMPLOYMENT HISTORY

Calgary Zoo – Summer 2018 & Summer 2019

- Employed as a Concessions customer service representative.
- Worked as a cashier in various outlets assisting guests and balancing cash.
- Worked in kitchens prepping and cooking food items.

Disney on Ice – 2016

- Employed as an usher throughout the event.
- Welcomed guests and provided any assistance needed and worked as a ticket scanner at the gate.

Calgary Stampede – 2016

- Employed in the Howdy Guest Relations booth during the Calgary Stampede.
- Received approximately 30 hours of customer service training, answered questions from visitors in both English and Spanish, made recommendations for various venues and events on the Stampede grounds and offered solutions to customer complaints.

OUTREACH

2022 River Never Sleeps Festival (Rosewall Creek Hatchery) – I worked with other members of the Juanes Lab to present the Coho Otolith Project and Adult Salmon Diet Program (ASDP) to the general public. We created an educational game for children, teaching them to properly weigh and length fish, fill out data cards, and identify prey bones under the microscope. We also communicated our research goals to community members and other scientists.

WORKSHOPS

2021 Indigenous Cultural Acumen Training (ICAT) – Indigenous Academic and Community Engagement at the University of Victoria

2020 Anti-racism Awareness training - Equity and Human Rights at the University of Victoria

MEMBERSHIPS

- **UVic Sci EDI** – A group of upper-year undergraduate students in the UVic Faculty of Science, dedicated to bringing about systemic change within the faculty. As a group, we collaborate on action items for improving equity, diversity and inclusion within the faculty of science and present our findings to each department. We are currently working in collaboration with EQHR to develop an EDI course for all science students.

PROFESSIONAL CERTIFICATIONS

- PADI Recue Diver and Dry Suit Diver
- PADI Emergency Oxygen provider
- Emergency First Response Primary and Secondary Care (CPR and First Aid)
- UVic Aquatic Care: Ethical Use of and Care of Aquatic Animals in Science
- UVic Fish Euthanasia
- OHSE | WHMIS
- OHSE | Biosafety for Lab Workers