

DEBORAH SHARPE



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MARINE FIELD BIOLOGIST

Detail-oriented marine mammal scientist with extensive field experience studying pinnipeds and cetaceans in the wild. Outreach expertise with proven ability to maintain working partnerships with government agencies and Indigenous communities. Expertise in machine learning models and geospatial analysis. Published lead author with excellent oral and written communication skills. Demonstrated leadership experience with capacity for advanced problem-solving. Adaptable and incisive; highly successful at working closely with others in a team environment.

HIGHLIGHTED SKILLS

- Remote field work, including boat-based research
- Wildlife capture and handling, including pinnipeds
- Science communication and environmental outreach
- Bioacoustic analysis
- Spatial modeling w/ GIS software
- R, Python, and MatLab

EDUCATION

Ph.D., University of Victoria [in progress]

Dissertation: *Assessing how vessel noise impacts marine mammals in the Canadian Arctic*

Advisers: Dr. Francis Juanes & Dr. Stephen Insley

M.Sc., Alaska Pacific University (Environmental Science)

Thesis: *Call types of Bigg's killer whales in western Alaska: Using vocal dialects to assess population structure*

Adviser: Dr. Leslie Cornick

B.Sc., Penn State University (Ecology)

Topic: *Effect of prey selection on dragonfly flight performance*

Adviser: Dr. James Marden

RESEARCH & LEADERSHIP EXPERIENCE

NOAA/ RACE/ Conservation Engineering

Data Management Specialist

November 2021 – October 2022

Worked on the development of machine learning (ML) and artificial intelligence (AI) methods for detecting salmon bycatch in Alaskan fisheries. Using CVAT, reviewed and annotated video footage from inside Bering Sea trawl nets to create training data for computer vision (CV) algorithms.

Washington Dept. of Fish and Wildlife

Scientific Technician 3 (CWT Lab Lead)

September 2020 – April 2021

Lead technician for the Coded-Wire Tag Lab. Worked collaboratively with lab personnel to process 1000's of salmon heads each month. Determined lab priorities, oversaw day-to-day activities, and trained staff as needed.

Harris Environmental Group

Protected Species Observer

November 2019 – February 2020

Collected data on marine bird and mammal habitat usage during pile-driving activities. Position required entering data, including spatial coordinates, into ESRI's Survey123 app, as well as communicating with team members and the public.

NOAA/ Marine Mammal Laboratory

Field Research Leader

July 2019 – October 2019

Field supervisor on project examining northern fur seal demography in the Pribilof Islands. Conducted flipper tag resight surveys, sex/age class counts, and used hand-held telemetry equipment to survey for VHF tags. Responsible for data management and quality assurance. Supervised field technicians, coordinated logistics in the field, maintained research equipment, and wrote regular project reports.

Washington Dept. of Fish and Wildlife

Biological Technician

May – June 2018

Observed, counted, and accurately identified shrimp and marine fish species landed, and interviewed anglers on fishing behavior in order to determine catch per unit of effort. Served as a liaison between WDFW and the public, interacting with different stakeholder groups.

NOAA/ Marine Mammal Laboratory

Field Camp Leader, May – August of 2014 - 2017

Biological Technician, May – July of 2012 - 2013

Conducted research on the population structure and vital rates of Steller sea lions in AK. Responsible for data management and data quality, as well as writing project reports. Built queries in relational databases (SQL & Access) to locate errors. Supervised field technicians (2014-2017) and coordinated logistics in the field, including the mobilization and demobilization of equipment at field sites.

Alaska Pacific University

Graduate Researcher

August 2014 – April 2016

Analyzed acoustic recordings of killer whales to develop a catalog of call types from western Alaska. Managed large datasets and developed a random forest model to automatically classify vocalizations. Thesis preparation required technical writing and exceptional literature search/review skills.

NOAA/ Marine Mammal Laboratory

Acoustic Analyst

January 2014 – May 2014

Assistant to the Cetacean Assessment and Ecology Program, analyzed 10,000 45-sec audio files obtained from an underwater EAR deployed in the western Aleutian Islands. Visually reviewed hours of spectrograms and isolated all biological signals from background noise.

Saltwater, Inc.

Groundfish Observer

December 2012 – April 2013

Contracted to collect fisheries data for NMFS onboard Alaskan commercial groundfish vessels. Followed detailed scientific protocols, harvested otoliths and used dichotomous keys.

Center for Whale Research

Research Assistant

October 2010 – September 2011

Assisted in conducting boat-based photographic surveys of killer whales. Managed relational databases and performed quality assurance checks. Created web content and took a lead role in developing inaugural internship program. Assisted in training interns throughout their stay.

Houston Zoo, Inc.

Zookeeper

January 2006 – March 2007

With the Army Corps of Engineers, maintained remote photo-trapping system to monitor wild North American river otters as a zoo-sponsored conservation project. Supervised teenage and adult volunteers.

PUBLICATIONS

Sharpe, D.L., Castellote, M., Wade, P.R., and Cornick, L.A. (2017). Call types of Bigg's killer whales (*Orcinus orca*) in western Alaska: using vocal dialects to assess population structure. *Bioacoustics*, pp. 1-26. <http://dx.doi.org/10.1080/09524622.2017.1396562>

AWARDS & FELLOWSHIPS

Mitacs, *Accelerate Fellowship* | 2022 - 2026

University of Victoria, *Graduate Award* | 2023 - 2025

University of Victoria, *Faculty of Graduate Studies Travel Award* | 2024

Society for Marine Mammalogy, *Student Travel Grant* | 2024

At-Sea Processors' Association, *Graduate Research Scholarship* | 2014 - 2016

American Cetacean Society, *Student Travel Grant* | 2015

Society for Marine Mammalogy, *Student Travel Grant* | 2015

PRESENTATIONS

ORAL

ArcticNet / Arctic Change Conference | Ottawa, Canada | December 2024

*"Implementation of a modified sound propagation model to assess ringed seal (*Pusa hispida*) exposure to underwater vessel noise in the eastern Canadian Arctic"*

University of Victoria Biology Graduate Symposium | Victoria, Canada | April 2024

*"Ringed seal (*Pusa hispida*) exposure to underwater vessel noise in the eastern Canadian Arctic"*

Arctic Frontiers | Tromsø, Norway | January 2024

*"Ringed seal (*Pusa hispida*) exposure to underwater shipping noise in the eastern Canadian Arctic"*

Alaska Marine Science Symposium | Anchorage, USA | January 2016

"Using vocal dialects to assess the population structure of Bigg's killer whales in Alaska"

POSTER

Biennial Conference on the Biology of Marine Mammals | Perth, Australia | November 2024

*"Ringed seal (*Pusa hispida*) exposure to underwater vessel noise in the eastern Canadian Arctic"*

International Marine Conservation Congress | St. John's, Canada | July 2016

"Using vocal dialects to assess the population structure of Bigg's killer whales in Alaska"

Biennial Conference on the Biology of Marine Mammals | San Francisco, USA | December 2015

"Using vocal dialects to assess the population structure of Bigg's killer whales in Alaska"

OTHER RELEVANT EXPERIENCE

TEACHING

Alaska Pacific University | *Teaching Assistant (Intro to Chemistry)* | September 2014 – April 2015
Supervised 3-hour lab section of an undergraduate chemistry course. Set up materials prior to lab, performed demonstrations, and explained concepts and methods to students. Managed and inventoried lab supplies.

Colorado State Forest State Park | *Park Engagement* | May – September 2009
Designed and presented a variety of interpretative programs for a diverse group of park visitors. Programs included interpretive hikes, stream walks, fire-building tutorials and photo scavenger hunts.

CIMI Tallship Expeditions | *Marine Science Instructor/Deckhand* | February-August 2005
Designed and taught at-sea marine science classes for high school students. Topics included kelp forests, plankton, invertebrate phyla, water quality, and marine conservation, but also sail theory, charting, and knot-tying.

INTERPRETIVE GUIDING

San Juan Outfitters | *Whale Watch Naturalist* | May – September 2010
Gave engaging talks centered around killer whales and the surrounding Salish Sea ecosystem; provided information about local research and current conservation issues

Sunny Days Catamarans | *Interpreter/Mate* | October 2009 – April 2010
Provided snorkeling instruction to eco-tourism passengers and provided facts about the residential dolphin population, coral reef ecology, and threats to the marine environment

Kapalua Adventures | *Mountain Adventure Guide* | April – November 2008
Guided zipline tours in the West Maui Mountains, providing ecological and cultural interpretation of the landscape

ADDITIONAL FIELDWORK

USGS Alaska Science Center | *Otter Research Volunteer* | September 2015

Assisted in collecting northern sea otter foraging observations during a week-long trip to remote portions of the Kenai Peninsula. Recorded field data, managed gear, and operated a small skiff with outboard motor.

San Juan Co. Marine Mammal Stranding Network | *Necropsy Assistant* | June 2010 – Sept 2012

Regularly assisted with necropsies of harbor seals, harbor porpoise, Steller sea lions, and river otters. Took biological measurements, collected and labeled tissue samples, and recorded necropsy observations.

NOAA Fisheries/Northwest Fisheries Science Center | *Volunteer* | September 2010 & June 2011

Assisted killer whale research activities, including sighting focal animals from zodiacs and recording field notes

Wildlife Research Institute | *Burrowing Owl Field Biologist* | March – May 2007

Collected data on the distribution, abundance, and habitat use of burrowing owls. Observations were recorded along transect routes and abundances estimates were derived using mark–recapture methods.

Minnesota Dept. of Natural Resources | *Deer Research Project Intern* | January – March 2004

Live-trapped white-tailed deer and utilized chemical immobilization to collect measurements, biological samples and attach radio-collars. Used aerial telemetry to locate deer mortality and look for signs of wolf predation.

PROFESSIONAL SERVICE

Canadian Society for Ecology and Evolution (CSEE) | September 2023 - Current

- *Student Representative* for the University of Victoria

ArcticNet Arctic Change Conference | December 2024

- *Co-chair*, SESSION: Arctic Acoustics: Insights into a Dynamic Underwater Soundscape

University of Victoria Biology Graduate Symposium | January – April 2023

- *Member*, Media Sub-Committee

Fishing for the Future: Igniting Technology Development Workshop | May 2022

- *Co-Secretary*, Organizing Committee

PEER REVIEW

Bioacoustics | 2019 – Current

OUTREACH & ENGAGEMENT

UVic Women in Science | *Peer Mentor* | September 2023 – April 2024

Provided one-on-one mentorship to an undergraduate student interested in biological research in marine systems

Campbell Creek Nature Center | *Volunteer Instructor* | September 2015

Taught 4th graders about watersheds, emphasizing salmon, people, and the importance of healthy streams and oceans

Alaska Museum of Science and Nature | *Outreach Facilitator* | October 2014 – April 2015

Brought hands-on science activities to elementary schools. Interacted with kids and parents from diverse backgrounds

Alaska's National Ocean Science Bowl | *Volunteer Official* | February 2015

Officiated high school quiz competitions as part of a program to promote marine science

NOAA Fisheries/Alaska Fisheries Science Center | *Outreach Volunteer* | January – April 2014

Conducted evening “Science Night” programs at local elementary schools for AFSC’s outreach department. Educated students and families from diverse backgrounds about marine mammal science and careers with NOAA.

PROFESSIONAL DEVELOPMENT

TRAINING & CERTIFICATIONS

- **Indigenous Cultural Acumen Training** | Mar 2023
- **Remote First Aid & CPR/AED** | Feb 2023
- **First Aid & CPR/AED** | Sept 2021
- **USFWS Marbled Murrelet Monitor Certificate** | Jan 2020
- **Cold Water Survival Safety** | May 2015, 2016, 2017
- **Wilderness First Aid** | Mar 2017
- **Open-Water & Dry-Suit SCUBA** | Sept 2007

WORKSHOPS & COURSES

Biennial Conference on the Biology of Marine Mammals | *Full-Day Workshop* | November 2024
“Genuine partnerships between western scientists and First Nations / Indigenous peoples to advance marine mammal science”

Biennial Conference on the Biology of Marine Mammals | *Full-Day Workshop* | November 2024
“AI & marine mammal science: advancing marine mammal research through machine learning”

Physalia Courses | *Short Course* | March 2023
“Analysis of Animal Movement Data in R”

SOCIETAL MEMBERSHIP

Society of Canadian Aquatic Sciences, *Member* | 2024 – Current

Society for Marine Mammalogy, *Member* | 2015 – Current