

DEBORAH SHARPE

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MARINE FIELD BIOLOGIST

Detail-oriented marine mammal scientist with extensive field experience studying ESA-listed pinnipeds and cetaceans in the wild. Marine mammal outreach expertise with proven ability to maintain working partnerships with government agencies. 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
- Data QA/QC and database management
- Science communication and environmental outreach
- Chemical immobilization
- Quantitative analysis using R
- Geospatial modeling
- Python scripting

EDUCATION

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

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)

Effect of prey selection on dragonfly flight performance

Adviser: Dr. James Marden

RESEARCH / LEADERSHIP EXPERIENCE

NOAA/ RACE/ Conservation Engineering

Data Management Specialist

November 2021 – PRESENT

Analyst working on the development of machine learning (ML) and artificial intelligence (AI) methods for detecting salmon bycatch in Alaskan fisheries. Using CVAT, review and annotate 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 a 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.

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.

Wildlife Research Institute
Burrowing Owl Field Biologist
March – May 2007

Collected data on the distribution, abundance, and habitat preferences of burrowing owls in the Imperial Valley, CA. Owl presence was recorded along predefined transect routes with Trimble GPS units and abundances estimates were achieved using mark-recapture methodology.

Houston Zoo, Inc.
Zookeeper
January 2006 – March 2007

In conjunction with the Army Corps of Engineers, maintained remote photo-trapping system to monitor wild North American river otters as a zoo-sponsored conservation project. Managed and supervised both teenage and adult volunteers.

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

Assessed impacts of forestry practices on survival of white-tailed deer. Live-trapped 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.

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>

TEACHING EXPERIENCE

- 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 lab supplies.
- Alaska Museum of Science and Nature**
Outreach Facilitator
October 2014 – April 2015
Brought hands-on science activities to local elementary schools. Demonstrated principles of chemistry, physics, and geology and interacted with kids and parents from diverse backgrounds.
- 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 supplied them with facts about the residential dolphin population, coral reef ecology, and threats to the marine environment.
- Colorado State Forest State Park**
Volunteer Interpreter
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.
- Kapalua Adventures**
Mountain Adventure Guide
April – November 2008
Guided zipline tours in the West Maui Mountains and educated guests about the ecological and cultural significance of the landscape.
- CIMI Tallship Expeditions**
Marine Science Instructor/Deckhand
February-August 2005
Designed and taught onboard marine science classes geared for high school students. Focus was on kelp forests, plankton, invertebrate phyla, water quality, and marine conservation. Also taught lessons in snorkeling, sail theory, charting, and knot-tying.

FUNDING AWARDS

- 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

- Sharpe, D.L.**, Wade, P.R., Castellote, M., and Cornick, L.A. (2016). Using vocal dialects to assess the population structure of Bigg's killer whales in Alaska. Poster presentation at the International Marine Conservation Congress, St. John's, Newfoundland, Canada
- Sharpe, D.L.**, Wade, P.R., Castellote, M., and Cornick, L.A. (2016). Using vocal dialects to assess the population structure of Bigg's killer whales in Alaska. Oral presentation at the Alaska Marine Science Symposium, Anchorage, AK
- Sharpe, D.L.**, Wade, P.R., Castellote, M., and Cornick, L.A. (2015). Using vocal dialects to assess the population structure of Bigg's killer whales in Alaska. Poster presentation at the Society for Marine Mammalogy Biennial Conference on the Biology of Marine Mammals, San Francisco, CA

VOLUNTEER WORK

SR³: Sealife Response + Rehab + Research | *Volunteer* | November 2016 – Current

Provide on-call assistance with marine mammal strandings and necropsies throughout western Washington.

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

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

USGS Alaska Science Center | *Student Volunteer* | September 2015

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

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.

San Juan Co. Marine Mammal Stranding Network | *Volunteer Necropsy Assistant* | June 2010 -

September 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 with killer whale research activities in the San Juan Islands, including sighting focal animals from zodiacs and recording field notes.

TECHNICAL APTITUDE

Basic Computing	(Word, Excel, PowerPoint, Outlook , etc.)
Database Management	(Access, SQL)
Bioacoustic Analysis	(Adobe Audition, Raven Pro, Ishmael)
Quantitative Analysis	(R, JAGS, WinBUGS, JMP)
Geospatial Analysis	(ArcMap 10, ArcGIS Online, QGIS)
Scripting	(Python)
Data Annotation	(CVAT)
Image Analysis	(ACDSee Pro, VLC)
Graphic Design	(Photoshop, Gimp 2)
Webpage Development	(WordPress)
Bibliographic Management	(EndNote, Refworks)

TRAINING & CERTIFICATIONS

First Aid & CPR/AED, September 2021 (current)

USFWS Marbled Murrelet Certified Monitor, January 2020

Cold Water Survival Safety, December 2013, May 2013, May 2014, May 2015, May 2016, May 2017

Wilderness First Aid, March 2017

Open-Water & Dry-Suit SCUBA, September 2007 (current)