

## Curriculum Vitae

Elizabeth Zwamborn  
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### Education

- 2017-present      ***Doctorate in Biology***, *Dalhousie University*, Halifax, NS, Canada  
Thesis: Decision making in long-finned pilot whales off Cape Breton, Nova Scotia  
*Supervisor*: Dr. Hal Whitehead
- 2013-2016      ***Masters in Biology***, *Dalhousie University*, Halifax, NS, Canada  
Thesis: Repeated call sequences in long-finned pilot whales: social setting, modification, and behavioural context  
*Supervisor*: Dr. Hal Whitehead
- 2009-2013      ***Bachelor of Science Honours in Biology*** (Ecology Emphasis, Environmental Studies Minor), *Trinity Western University*, Langley, BC, Canada  
Thesis: Investigation of the viability of falconry as an alternative bird management practice in blueberry crops  
*Supervisor*: Karen Steensma

### Related Work and Teaching Experience

- 2018-present      ***Field Teaching Assistant and Coordinator –Marine Mammalogy***, *Dalhousie University*, Nova Scotia, Canada  
- Prepared course material, lectured, maintained equipment, supervised student projects, and coordinated logistics for a marine mammal field course trip in Cape Breton, Nova Scotia
- 2018      ***Lab Coordinator – Coral Reef Ecology and Tropical Botany***, *Trinity Western University*, Hawaii, USA  
- Prepared course material, lectured, maintained equipment and supervised student project for coral reef ecology and tropical botany field courses held on the Big Island, Hawaii
- 2017      ***Northern Bottlenose Whale Photo ID – Contract Work***, *Department of Fisheries and Oceans*, NS, Canada  
- Sorted through all 2016 photos of northern bottlenose whales, identified individuals, matched within the season, and matched between different existing catalogues for this species

- 2016-2017 ***Assistant Professor, Au Sable Institute of Environmental Studies, Whidbey Island, WA, USA***
- Prepared course material, lectured, marked assignments, and taught in-field for a five-week marine mammal field course held on Whidbey Island and San Juan Island, Washington State in both 2016 and 2017
- 2016 ***Marine Mammal Observer, Department of Fisheries and Oceans, Nanaimo, BC, Canada***
- Was involved in distance sampling of marine mammals – particularly cetaceans – on summer research surveys, including data entry, observation, photo identification from ship and zodiac, sea otter counts, and other duties
- 2015 ***Sessional Instructor, Trinity Western University, Salt Spring Island, BC, Canada***
- Prepared course material, lectured, marked assignments, and taught in-field labs for a two-week marine ecology field course held on Salt Spring Island, British Columbia
- 2013-present ***Cape Breton Pilot Whale Project Coordinator and Lead Researcher, Whitehead Lab – Dalhousie University, Pleasant Bay, NS, Canada***
- Organized and led research in a long-term project focused on long-finned pilot whales, involving photo-identification, acoustic, behavioural, and environmental data collection; recruited and supervised research assistants; managed databases; maintained and fixed equipment; organized and coordinated all logistics
  - Identified and photographed other cetacean species encountered during the trips
- 2013-present ***Coop Coordinator, Whitehead Lab – Dalhousie University, Halifax, NS, Canada***
- Interviewed, hired, organized, and oversaw coop student in lab who worked on the pilot whale photo ID database in the Whitehead Lab each semester
  - Applied for and coordinated grants for coop positions each semester
- 2013-2015 ***Naturalist, Captain Marks Whale and Seal Cruise, Pleasant Bay, NS, Canada***
- Guided boat tours daily during the months of July and August, interacting with the public to inform them about the wildlife,

particularly cetaceans, they were seeing, as well as discussing conservation issues

- 2013-2014      ***Teaching Assistant, Dalhousie University, Halifax, NS, Canada***  
- Lectured, marked assignments, and ran labs for Introductory Biology
- 2012-2013      ***Teaching Assistant, Trinity Western University, Langley, BC, Canada***  
- Lectured, invigilated exams, held office hours, marked assignments, and ran labs for Introductory Biology
- 2012            ***Undergraduate Research Assistant, Trinity Western University, Langley, BC, Canada***  
- Conducted field research through collecting data and observations for a project quantifying bird damage in soft fruit crops nationwide (USA) in collaboration with MSU, OSU, WSU, Cornell, and the USDA

### **Related Volunteer Experience**

- 2019            ***Volunteer, Sperm Whale Network and Culture Research, Caribbean Sea***  
- Helped crew a research sailboat (40ft) on several two-week trips offshore of the Lesser Antilles (from St. Kitts to Trinidad)  
- Used PAMGuard to track sperm whales both at night and during the day  
- Collected photographic and behavioral data, skin samples, and recordings of sperm whales  
- Identified other cetacean species encountered during the trips
- 2014-present      ***Volunteer, Marine Animal Response Society, Halifax, NS, Canada***  
- Responded to marine mammals in distress throughout Nova Scotia and other maritime provinces  
- Necropsied dead animals to determine cause of death
- 2014            ***Volunteer, Sperm Whale Network and Culture Research, Galapagos, Ecuador***  
- Helped crew a research sailboat (40ft) on several two-week trips offshore of the Galapagos Islands  
- Used PAMGuard to track sperm whales both at night and during the day  
- Collected photos/behavioral data, skin samples, and recordings  
- Identified other cetacean species encountered during the trips

- 2013 *Marine Mammal Research Unit Volunteer, University of British Columbia, Vancouver, BC, Canada*
- Cleaned pinniped scat samples and added to database
  - Did data entry for a survey on grey seals and the east coast fisheries
  - Transcribed field notes for acoustic data analysis on ‘northern resident’ orcas and echolocation during foraging
  - Used bomb calorimetry to assess caloric content of northern fur seal prey
- 2011-2016 *Volunteer Crew, Sailing and Life Training Society, Victoria, BC, Canada*
- Trained and earned sailing certifications
  - Volunteered helping on summer trips which included teaching students about sailing, marine life, cooking, building community, and helping establish life skills
- 2011 *Intern, Orcalab, Hanson Island, BC, Canada*
- Carried out bioacoustic and observational data collection for several cetacean species, particularly killer whales
  - Became familiar with maintenance and nature of instruments used in acoustic recording

## **Publications**

**E.M.J. Zwamborn** and H. Whitehead. 2017. The baroque potheads: modification and embellishment in repeated call sequences of long-finned pilot whales. *Behaviour*. DOI:10.1163/1568539X-00003451

**E.M.J. Zwamborn** and H. Whitehead. 2016. Repeated call sequences and behavioural context in long-finned pilot whales off Cape Breton, Nova Scotia, Canada. *Bioacoustics*. DOI:10.1080/09524622.2016.1233457

E.C.M. Parsons, S. Baulch, T. Bechshoft, G. Bellazzi, P. Bouchet, A. Cosentino, C. Godard-Coddington, F. Gulland, M. Hoffmann-Kuhnt, E. Hoyt, S. Livermore, C. MacLeod, E. Matrai, L. Munger, M. Ochiai, A. Peyman, A. Recalde-Salas, R. Regnery, L. Rojas-Bracho, C. Salgado-Kent, E. Sloaten, J.Y. Wang, S. Wilson, A. Wright, S. Young, **E. Zwamborn**, and W. Sutherland. 2015. Key research questions of global importance for cetacean conservation. *Endangered Species Research*, 27:113-118.

## **Conference Proceedings**

K. Steensma, C. Lindell, D. Leigh, C. Burrows, S. Wieferich, and **E. Zwamborn**. In Press. Bird damage to fruit crops: A comparison of several deterrent techniques. *Proceedings of the 27<sup>th</sup> Vertebrate Pest Conference*.

## Awards and Grants

- 2019      ***Canadian Graduate Scholarship – Doctoral, National Science and Engineering Research Council of Canada***  
- Upgraded to higher level NSERC award and will receive \$35,000 per year (instead of \$21,000 per year) for the remainder of my doctoral program award
- 2018      ***Amy R. Samuels Cetacean Research Award, Animal Behavior Society***  
- Received \$2,000 USD to cover cost of LIDAR systems for the 2018 field season of the Cape Breton Pilot Whale Project
- 2018      ***PADI Foundation Grant***  
- Received \$3,888 USD for use updating equipment for the 2018 field season of the Cape Breton Pilot Whale Project
- 2017      ***Nova Scotia Graduate Scholarship, Dalhousie University***  
- Received up to \$15,000 per year in top up funds for the first four years of my doctoral program
- 2017      ***Post Graduate Scholarship – Doctoral, National Science and Engineering Research Council of Canada***  
- Received \$63,000 in scholarship money over three years of my doctoral program
- 2015      ***PADI Foundation Grant***  
- Received \$3,185 USD for use updating equipment for the 2015 field season of the Cape Breton Pilot Whale Project
- 2013      ***Canadian Graduate Scholarship – Masters, National Science and Engineering Research Council of Canada***  
- Received \$17,500 in scholarship money for the first year of my master's program
- 2013      ***Best Oral Presentation, The Canadian Botanical Association, Ivring K. Barber School Undergraduate Research Conference***  
- Received \$100 for best oral presentation related to botanical studies
- 2012      ***Au Sable Fellowship Scholarship, Au Sable Institute of Environmental Studies***  
- Received a \$1,400 scholarship for academic excellence

2009-2012      ***President's Academic Scholarship, Trinity Western University***  
- Received a \$6,000 per year academic scholarship

2009-2013      ***Dean's List Academic Award, Trinity Western University***  
- Received after each semester for academic excellence

### **Conferences and Posters**

2017      ***22<sup>nd</sup> Biennial Conference of the Society for Marine Mammalogy***,  
Halifax, NS, Canada  
- Poster presentation: "Absence of group-specific call  
repertoires amongst stable social units of long-finned pilot  
whales"

2017      ***31<sup>st</sup> Conference of the European Cetacean Society***, Middelfart,  
Denmark  
- Oral presentation: "Long-term social units of long-finned pilot  
whales do not show group-specific repertoires of repeated  
calls"

2016      ***30<sup>th</sup> Conference of the European Cetacean Society***, Funchal,  
Madeira, Portugal  
- Poster presentation: "Social context of repeated call sequences  
in long-finned pilot whales"

2015      ***21<sup>st</sup> Biennial Conference of the Society for Marine Mammalogy***,  
San Francisco, CA, USA  
- Poster presentation: "Embellishment of repeated calls by long-  
finned pilot whales (*Globicephala melas*) off Cape Breton,  
Nova Scotia"

2015      ***Watkins Memorial Marine Mammal Bioacoustics Symposium***,  
New Bedford, MA, USA  
- Oral presentation: "Vocalizations and social structure in the  
Cape Breton population of long-finned pilot whales  
(*Globicephala melas*)"

2015      ***Conference of the European Cetacean Society***, BICREF, Malta  
- Oral presentation: "Vocalizations and social structure in the  
Cape Breton population of long-finned pilot whales  
(*Globicephala melas*)"

- 2013 ***Ivring K. Barber School Undergraduate Research Conference,***  
Langley, BC, Canada
- Invited oral presentation: “Investigation of the viability of falconry as an alternative bird management practice in blueberry crops”
- 2012 ***Regional Conference on Undergraduate Research of the Murdock College Science Research Program,*** Walla Walla, WA, USA
- Presented during poster sessions: “Investigation of the viability of falconry as an alternative bird management practice in blueberry crops”
- 2012 ***Small Fruit Conference,*** Lynden, WA, USA
- Invited poster presentation: “Investigation of the viability of falconry as an alternative bird management practice in blueberry crops”

### **Professional Affiliations**

Society for Marine Mammalogy, Student Member

European Cetacean Society, Student Member

American Cetacean Society, Student Member

Animal Behaviour Society, Student Member

### **Related Skills and Qualifications**

- Relevant Skills:
  - Cetacean Identification
    - Experience with identification photography in a range of field conditions
    - Manual and software (e.g. Finscan. Adobe Lightroom) related matching
  - Boating Experience
    - Skippering experience (motor vessels)
    - Sailing experience (including 100ft+ tall ships, 40ft Valiant, and smaller vessels)
    - Intermediate Sail Qualifications
    - Commercial Small Vessel Operator Skippering Qualifications
  - Unmanned Aerial Vehicles
    - Experience with UAV piloting for cetacean research
  - Statistics
    - Familiarity with programs R and SPSS

- Microsoft Office
    - Including Word, Excel, PowerPoint, and Access
  - Acoustic Analysis
    - Raven Pro Sound Analysis Software
    - Familiarity with PAMGuard
  - ArcGIS
- Relevant Certifications:
- Personal Operators License and full driver's license
  - SVOP (Small Vessel Operators Proficiency) certified
  - MED A2 (Marine Emergency Duties) certified
  - Mariners Medical Certificate
  - ROC-M (Restricted Operators Certificate with Marine Qualifications)
  - ROC-A (Restricted Operators Certificate with Aeronautical Qualification)
  - TP 15263E – Pilots of Unmanned Air Vehicle Systems
  - Civil Aviation Medical Exam (Category 4)
  - Canadian Council on Animal Care Certification (Care and Use of Wildlife)
  - PADI SCUBA Rescue Diver Certification
  - Canadian Power and Sail Squadron Certification
- Languages: English and French

## **Students Supervised**

### **Honours:**

- Julie Merchel (2016 – 2017) co-supervisor
- Liza Tistrin (2017 – 2018) co-supervisor
- Nicole Ure (2018 – 2019) co-supervisor

### **Dalhousie Integrated Science Program:**

- Katie Korol (2018) supervisor
- Emma White (2018) supervisor

### **Experiential Learning:**

- Sarah Dier-McComb (2015)
- Rory Macklin (2018)
- Aaron Clausen (2019)