Eiren Kate Jacobson

Centre for Research into Ecological and Environmental Modelling
School of Mathematics and Statistics, University of St Andrews
The Observatory, Buchanan Gardens
St Andrews, Fife, Scotland KY16 9LZ

Phone: +44 (0)7427 000858
Email: eiren.jacobson@st-andrews.ac.uk
Website: www.eirenjacobson.info

ABOUT

I am a quantitative ecologist specializing in applied, collaborative, and interdisciplinary research on marine mammal populations. I work within CREEM, where I use my interdisciplinary skills and experience in biology, ecology, oceanography, and statistics to develop and apply quantitative methods for assessing the population size, status, trend, and impacts of anthropogenic activities on cetaceans (beluga whales, beaked whales, harbour porpoise) and pinnipeds (harbour seals, grey seals, walrus). I specialize in research that has direct applications to marine mammal conservation and management. My particular areas of statistical contribution include maximizing the utility of existing, imperfect datasets through innovative modelling approaches and developing statistical methods to utilize novel data sources generated through technological advances. I am committed to building an inclusive research culture and actively work to increase equity, diversity, and inclusion within and beyond the University.

EDUCATION

Scripps Institution of Oceanography, University of California, San Diego — La Jolla, CA
Ph. D. in Biological Oceanography — *September 2017*
M. S. in Biological Oceanography — *March 2014*

Columbia College, Columbia University in the City of New York — New York, NY
B. A. in Environmental Biology — *May 2010*

RESEARCH EXPERIENCE

Centre for Research into Ecological and Environmental Modelling
School of Mathematics and Statistics, University of St Andrews
Research Fellow — St Andrews, UK
Supervisor: Len Thomas — *June 2018 - Present*

Recent Projects (Funder):
- Improving US marine mammal stock assessments with close-kin mark-recapture (US Marine Mammal Comm.)
- Designing a close-kin mark-recapture study for Pacific Walrus (US Geological Survey)
- Marine mammal remote detection via innovative environmental DNA sampling (US Navy ONR)
- Using population models to understand harbour seal decline in Scotland (Scottish Government)
- Models for estimating pinniped pup production from serial counts at breeding colonies (NERC)

School of Aquatic and Fishery Sciences, University of Washington
Affiliated with the NOAA AFSC Marine Mammal Laboratory
Postdoctoral Research Associate — Seattle, WA
Supervisors: André Punt and Charlotte Boyd — *September 2017 - November 2018*

Scripps Institution of Oceanography, University of California, San Diego
Affiliated with the NOAA SWFSC Marine Mammal and Turtle Division
Graduate Student Researcher — La Jolla, CA
Supervisors: Jay Barlow and Peter Franks — *June 2012 - September 2017*

NOAA SWFSC Marine Mammal and Turtle Division
Research Technician — La Jolla, CA
Supervisors: Jay Barlow and Karin Forney — *June 2010 - June 2012*

PEER-REVIEWED PUBLICATIONS

Jacobson, E. K., M. V. Bravington, D. L. Miller, I. S. Trukhanova, R. L. Taylor, W. S. Beatty. 2026. Combining close-kin and self mark-recapture to design an effective survey for Pacific walrus. *Ecology*, 107(6): e70377. DOI: 10.1002/ecy.70377.

Jacobson, E. K., M. R. Goldman, L. Thomas, D. J. F. Russell. 2025. A state-space model for estimating pinniped pup production from serial counts at breeding colonies. *Ecological Modelling*, 510: 111333. DOI: 10.1016/j.ecolmodel.2025.111333.

Valdivia-Carillo, T., M. Shaffer, K. Parsons, **E. K. Jacobson**, A. O. Shelton, A. Im, K. M. Nichols, A. Wells, A. Ramón-Laca, R. P. Kelly, A. M. Van Cise. 2025. Leveraging metabarcoding and generalized additive models to describe cetacean eDNA distribution along the Washington State coast using opportunistic samples. *bioRxiv*. DOI: 10.1101/2025.11.21.689289.

Brasseale, E., N. Adams, E. E. Allan, **E. K. Jacobson,** R. P. Kelly, O. R. Liu, S. Moore, M. Shaffer, J. Xiong, K. Parsons. 2025. Marine eDNA production and loss mechanisms. *Journal of Geophysical Research: Oceans*, 130(4): e2024JC021643. DOI: 10.1029/2024JC021643.

Schaub, M., M. N. Maunder, M. Kéry, J. T. Thorson, **E. K. Jacobson**, and A. E. Punt. 2024. Lessons to be learned by comparing fisheries stock assessment models (SAMs) with integrated population models (IPMs). *Fisheries Research*, 272: 106925. DOI: 10.1016/j.fishres.2023.106925.

Warlick, A. J., G. K. Himes Boor, T. L. McGuire, K. E. W. Shelden, **E. K. Jacobson**, C. Boyd, P. R. Wade, A. E. Punt, S. J. Converse. 2023. Demographic and environmental drivers of population dynamics and viability in an endangered top predator using an integrated model. *Animal Conservation*, 27(2): 240–252. DOI: 10.1111/acv.12905.

Hin, V., A. M. de Roos, K. J. Benoit-Bird, D. E. Claridge, N. DiMarzio, J. W. Durban, E. A. Falcone, **E. K. Jacobson**, C. M. Jones-Todd, E. Pirotta, G. S. Schorr, L. Thomas, S. Watwood, J. Harwood. 2023. Using individual-based bioenergetic models to predict the aggregate effects of disturbance on populations: a case study with beaked whales and Navy sonar. *PLoS One*, 18(8): e0290819. DOI: 10.1371/journal.pone.0290819.

Jacobson, E. K., E. Elizabeth Henderson, David L. Miller, Cornelia S. Oedekoven, David J. Moretti, and Len Thomas. 2022. Quantifying the response of Blainville's beaked whales to U.S. Naval sonar exercises in Hawaii. *Marine Mammal Science*, 38(4): 1549–1565. DOI: 10.1111/mms.12944.

Jacobson, E. K., C. Boyd, T. L. McGuire, K. E. W. Shelden, G. K. Himes Boor, and A. E. Punt. 2020. Assessing cetacean populations using integrated population models: an example with Cook Inlet beluga whales. *Ecological Applications*, 30(5): e02114. DOI: 10.1002/eap.2114.

Jacobson, E. K., K. A. Forney, and J. Barlow. 2017. Using visual survey data to estimate passive acoustic detection parameters for harbor porpoise abundance estimates. *Journal of the Acoustical Society of America*, 141(1): 219–230. DOI: 10.1121/1.4973415.

Jacobson, E. K., K. A. Forney, and J. T. Harvey. 2015. Acoustic evidence that harbor porpoises *(Phocoena phocoena)* avoid bottlenose dolphins *(Tursiops truncatus)*. *Marine Mammal Science*, 31(1): 386–397. DOI: 10.1111/mms.12154.