

LESLIE F. NEW, PHD

14204 NE SALMON CREEK AVE, VANCOUVER, WA 98686, USA
E-MAIL: LESLIE.NEW@WSU.EDU, PHONE: 360-546-9309

CURRICULUM VITAE

RESEARCH INTERESTS: Hierarchical Bayesian models; State-space models; Ecological modeling; Sustainable development; Community dynamics; Effects of anthropogenic disturbance; Human-wildlife conflict.

EDUCATION:

Ph.D. in Statistics and Biology, University of St Andrews (2010)

Thesis title: "Multi-species state-space modelling of the hen harrier (*Circus cyaneus*) and red grouse (*Lagopus lagopus scoticus*) in Scotland."

B.Sc. (cum laude) Natural Resources, Cornell University (2003)

Focus on wildlife biology and management, with an emphasis on statistical and mathematical methods in Ecology

CAREER:

- Assistant Professor of Statistics, Department of Mathematics and Statistics, Washington State University Vancouver (2015-present)
- Post-doctoral Fellow, USGS Patuxent Wildlife Research Center (2012-2014)
- Research Associate, National Research Council, Marine Mammal Commission (2011-2012)
- Research Fellow, School of Biology, University of St Andrews (2009-2011)
- Teaching Fellow, School of Mathematics and Statistics, University of St Andrews (2006-2009)

JOURNAL ARTICLES:

- Fleishman, E., Costa, D.P., Harwood, J., Kraus, S., Moretti, D., **New, L.F.**, Schick, R.S., Schwarz, L.K., Simmons, S.E., Thomas, L. and Wells, R.S. (*In press*) Monitoring population-level responses of marine mammals to disturbance. *Marine Mammal Science*.
- Harwood, J., King, S., Booth, C., Donovan, C., Schick, R.S., Thomas, L. and **New, L.** (2016) Understanding the population consequences of acoustic disturbance for marine mammals. In, Pooper, A.N. and Hawkins, A. (eds.) *The Effects of Noise on Aquatic Life II*, Springer Science+Business Media, NY, pp 417-423.
- Pirotta, E., Harwood, J., Thompson, P.M., **New, L.**, Cheney, B., Arso, M., Hammond, P.S., Donovan, C. and Lusseau, D. (2015) Predicting the effects of human developments on individual dolphins to understand potential long-term population consequences. *Proceedings of the Royal Society B*, DOI: 10.1098/rspb.2015.2109
- McMahon, C.R., **New, L.F.**, Fairly, E.J., Hindell, M.A. and Burton, H.R. (2015) The effects of body size and climate on post weaning survival of elephant seals at Heard Island. *Journal of Zoology*. DOI: 10.1111/jzo.12279
- Barraquand, F., **New, L.F.**, Redpath, S. and Matthiopoulos, J. (2015) Indirect effects of primary prey population dynamics on alternative prey. *Theoretical Population Biology*, **103**: 44-59.
- New, L.**, Bjerre, E., Millsap, B., Otto, M.C., and Runge, M.C. (2015) Incorporating uncertainty into a collision risk model for predicting avian fatalities at wind facilities: An example using golden eagles, *Aquila chrysaetos*. *PLOS ONE* 10(7): e0130978. doi:10.1371/journal.pone.0130978
- New, L.F.**, Hall, A.J., Harcourt, R., Kaufmann, G., Parsons, E.C.M., Pearson, H.C., Consantino, A.M. and Schick, R.S. (2015) The modelling and assessment of whale-watching impacts. *Ocean and Coastal Management*, **115**: 10-16.

- Pirotta, E., **New, L.**, Harwood, J. and Lusseau, D. (2014) Activities, motivations and disturbance: fitting a state-space model to bottlenose dolphin behavioural data in Doubtful Sound, New Zealand. *Ecological Modelling*, **282**: 44-58.
- New, L.F.**, Clark, J.S., Costa, D.P., Fleishman, E., Hindell, M.A., Klanjscek, T., Lusseau, D., Kraus, S., McMahon, C.R., Robinson, P.W., Schick, R.S., Schwarz, L.K., Simmons, S.E., Thomas, L., Tyack, P. and Harwood, J. (2014) Estimating the long-term fitness of southern elephant seals on the basis of short-term measures of behaviour. *Marine Ecology Progress Series*, **496**: 99-108.
- Moretti, D., Thomas, L., Marques, T., Harwood, J., Dilley, A., Neales, B., Shaffer, J., McCarthy, E., **New, L.**, Jarvis, S. and Morrissey, R. (2014) A risk function for behavioral disruption of Blainville's beaked whales (*Mesoplodon densirostris*) from Mid-Frequency Active sonar. *PLOS ONE*, **9**: e85064.
- New, L.**, Moretti, D., Hooker, S., Costa, P. and Simmons, S. (2013) An energetics model for the survival and reproduction of beaked whales (family *Ziphiidae*). *PLOS ONE*, **8**: e68725. doi:10.1371/journal.pone.0068725
- Schick, R.S., **New, L.F.**, Thomas, L., Costa, D.P., Hindell, M.A., McMahon, C.R., Robinson, P.W., Simmons, S.E., Thums, M., Harwood, J. and Clark, J.S. (2013) Estimating resource acquisition and at-sea body condition of a marine predator. *Journal of Animal Ecology*, **82**: 1300-1315.
- Williams, R., Vikingsson, G.A., Gislason, A., Lockyer, C., **New, L.**, Thomas, L. and Hammond, P.S. (2013) Evidence for density-dependent changes in body condition and pregnancy rate of North Atlantic fin whales over four decades of varying environmental conditions. *ICES Journal of Marine Science*, **70**: 1273-1280.
- New, L.F.**, Harwood, J., Thomas, L., Donovan, C., Clark, J.S., Hastie, G., Thompson, P.M., Cheney, B., Scott-Hayward, L. and Lusseau, D. (2013) Modeling the biological significance of behavior change in coastal bottlenose dolphins in response to disturbance. *Functional Ecology*, **27**:314-322.
- New, L.F.**, Buckland, S.T., Redpath, S. and Matthiopoulos, J. (2012) Modelling the impact of hen harrier management measures on a red grouse population in the UK. *Oikos*, **121**:1061-1072.
- New, L.F.**, Buckland, S.T., Redpath, S. and Matthiopoulos, J. (2011) Hen harrier management: Insights from demographic models fit to population data. *Journal of Applied Ecology*, **48**:1187-1194.
- New, L.F.**, Matthiopoulos, J., Redpath, S. and Buckland, S.T. (2009) Fitting models of multiple-hypotheses to partial population data: Investigating the causes of cycles in red grouse. *American Naturalist*, **174**:399-412.

GRANTS AND CONTRACTS:

- Sea Mammal Research Unit, LLC (2015), facilitator: Population consequences of disturbance expert elicitation for sperm whales: \$3200 US
- U.S. Fish and Wildlife Service, Cooperative Ecosystem Study Unit grant (2015), lead scientist: Refinement of eagle population model and Bayesian risk models: \$26,085 US
- Washington State University, External Mentor Grant (2015): expert elicitation and risk for assessing the population consequences of disturbance. Prof. Mark Burgman, University of Melbourne, Australia as mentor: \$4750 US
- Sea Mammal Research Unit, LLC (2013), co-investigator: Assessing the population consequences of the T2 Port of Vancouver's expansion on southern resident killer whales: ~\$127,000 US
- Sea Mammal Research Unit, LLC (2012), lead scientist: Scoping model for the population consequences of disturbance on southern resident killer whales: \$25,000 US
- National Research Council (2011-2012), Research Associate: Cumulative Effects on Marine Mammals: \$60,000 US
- Scottish Natural Heritage (2010-2011), co-investigator: Dolphins and development: data analysis and spatial model: £40,000 (~\$60,000 US)

CONFERENCES:

- International Statistical Ecology Conference, Seattle WA (2016): “Statistical ecology and management: Boundary Issues”
- Joint Mathematics Meeting, Seattle WA (2016): “Modelling remote sensing data in ecology”
- 21st Biennial Conference on the Biology of Marine Mammals, San Francisco CA (2015): Invited workshop presentations “Population Consequences of Disturbance” and “Bridging the gap between behaviour, health and population consequences”
- International Marine Conservation Congress, Glasgow Scotland (2014): Organizer of a focus group and symposium on “The modeling and assessment of whale-watching impacts.”
- International Statistical Ecology Conference, Montpellier (2014): “Ecological modelling in BUGS: Some tricks of the trade”
- International Whaling Commission Scientific Committee Meeting, Bled Slovenia (2014): Invited Participant, Whale-watching sub-committee presentation
- Raptors of the Northwest Symposium, Pasco WA (2014): “Predicting golden eagle fatalities at wind facilities in the face of uncertainty.”
- International Congress for Conservation Biology, Baltimore MD (2013): Poster on “Adaptive management of golden eagles on wind farms in the U.S.”
- International Whaling Commission Scientific Committee Meeting, Jeju Island (2013): Invited Participant, Whale-watching sub-committee presentation
- International Statistical Ecology Conference, Oslo (2012): “The relationships between individual behaviour, foraging and fitness for southern elephant seals, and the connections to population dynamics”
- International Whaling Commission Scientific Committee Meeting, Panama City (2012): Invited Participant, Whale-watching and Ecological Concerns sub-committee presentations
- Ecological Society of America Meeting, Austin TX (2011): Symposium talk on the “Relations among foraging, disturbances to foraging, and vital rates in southern elephant seals”
- Bio-logging Conference, University of Tasmania (2011): Poster on “The Population Consequences of Disturbance”
- International Statistical Ecology Conference, University of Kent (2010): “Multi-species state-space modelling of the hen harrier and red grouse in and Scotland”
- National Centre for Statistical Ecology Conference, University of St Andrews (2006): “Population dynamics models for the hen harrier and red grouse”

TEACHING:

- **Developed** and **lectured** graduate course in applied multivariate statistics, Washington State University, Vancouver (2016)
- **Wrote** and **developed** a graduate and undergraduates course in statistics for engineers and scientists, Washington State University Vancouver (2015)
- **Developed** and **lectured** graduate course in generalized linear models and mixed models, Washington State University, Vancouver (2015)
- **Lectured**, course in Structured Decision Making at the US Fish and Wildlife Services National Conservation Training Center (2014)
- **Co-supervising**, PhD student investigating krill biomass, distribution and shoal structure, Macquarie University (2013-present)
- **Facilitated** real world case studies for Introduction to Structured Decision Making at the US Fish and Wildlife Services’ National Conservation Training Center (2013-2014)
- **Lectured**, School of Geography and Geosciences, University of St Andrews (2009-2011)
- **Developed** senior lectures for Fisheries Research, University of St Andrews (2009)
- **Developed** Master’s lectures and seminars on biodiversity, University of St Andrews (2009)
- **Lectured**, School of Biology, University of St Andrews (2008-2011)
- **Co-supervised** Honours Sustainable Development projects, University of St Andrews (2008-2011)

- Provided **statistical consulting** for Honours and Master's projects in Sustainable Development, University of St Andrews (2008-2011)
- **Developed** senior statistics lectures for Sustainable Development: Case Studies II, University of St Andrews (2008)
- **Lead developer** and **writer** for junior lectures on the application of statistics to real-world problems in Case Studies in Sustainable Development I, University of St Andrews (2007)
- **Member**, Sustainable Development Teaching Council, University of St Andrews (2006-2011)
- **Lectured**, School of Mathematics and Statistics, University of St Andrews (2006-2011)
- **Wrote** and **Co-developed** sophomore lectures on statistics for the course Sustainable Development: Ecological and Environmental Aspects, University of St Andrews (2006)

MEMBERSHIPS:

- American Association of University Women (2016-present)
- World Affairs Council (2016-present)
- International Statistical Ecology Conference local organizing committee (2016)
- Commission on Gender Identity/Expression and Sexual Orientation, Washington State University (2015-present)
- International Statistical Ecology Conference location selection committee (2014-present)
- US Office of Naval Research working group on Population Consequences of Acoustic Disturbances (2009-2015)
- Convener, International Whaling Commission inter-sessional working group on the Modelling and Assessment of Whale-watching Impacts (2013-present)

REFEREE:

Animal Conservation, Endangered Species Research, Ecological Applications, Environmental Impact Assessment Review, Frontiers in Marine Science, Journal of Animal Ecology, Journal of Applied Ecology, Journal of Fish and Wildlife Management, Marine Mammal Science, Methods in Ecology and Evolution, Physiological and Biochemical Zoology, PLoS ONE, Progress in Oceanography