



2nd - 6th July 2018 | University of St Andrews

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Daily Agenda

29 June (Friday)	Location
09:00 - 17:00 Workshop: Combining different data types in a single model	Maths Lecture Theatre C
09:00 - 17:00 Workshop: Template Model Builder	Maths Lecture Theatre B
30 June (Saturday)	Location
09:00 - 17:00 Workshop: Hierarchical Modelling of Species Communities	Maths Lecture Theatre B
09:00 - 17:00 Workshop: Modelling Spatial Point Processes with inlabru	CREEM Seminar Room
1 July (Sunday)	Location
09:00 - 17:00 Workshop: Animal Movement Modelling	Maths Lecture Theatre C
09:00 - 17:00 Workshop: Model-based multivariate analysis of abundance data using R	Maths Lecture Theatre B
17:00 - 19:00 Opening Reception	MSB Cafe/ Foyer
2 July (Monday)	Location
09:00 - 09:15 Welcome	Physics LT A
09:15 - 10:00 Plenary Chair: Shirley Pledger (2266) Combining mathematical and statistical models: a disease ecology perspective Jennifer Hoeting - <i>Colorado State University, United States</i>	Physics LT A
10:00 - 10:15 Break	On Site
10:15 - 11:00 Biodiversity Chair: Len Thomas (2528) Hierarchical modelling of the biodiversity impacts of road network topology Joseph Chipperfield - <i>Norwegian University of Life Sciences (NMBU), Norway</i> (2401) Multivariate Bayesian models to assess the contribution of species composition and habitat fragmentation to ecosystem multifunctionality Lionel Hertzog - <i>University of Ghent, Belgium</i> (2432) A generic method for estimating and smoothing multispecies biodiversity indices, robust to intermittent data Nick Isaac - <i>CEH, United Kingdom</i>	Physics LT B
10:15 - 11:00 Integrated and Marine Ecology Chair: Jason Matthiopoulos (2622) Emerging models and challenges in the integration of unmarked data Elise Zipkin - <i>Michigan State University, United States</i> (2465) Using generalised estimating equations to describe marine soundscapes: A case study from Western Australia Sarah Marley - <i>Centre for Marine Science and Technology (CMST), Australia</i> (2425) Evaluating population viability and efficacy of conservation management using integrated population models Sarah Saunders - <i>National Audubon Society & Michigan State University, United States</i> (2331) Integrated modeling of the Pacific walrus population over forty years Rebecca Taylor - <i>US Geological Survey, USA</i>	Physics LT A
10:15 - 11:00 Survey Design Chair: Eric Rexstad (2627) I've got some free time, should I add repeated count surveys to my study? Beth Gardner - <i>University of Washington, United States</i> (2434) Zigzag transect sampling with equal coverage probability	Physics LT C

Alf Harbitz - *institute of marine research, Norway*

(2487) Designing a rolling, national survey for monitoring the effects of an agri-environment scheme
Peter Henrys - *Centre for Ecology and Hydrology, United Kingdom*

(2530) An Elementary Time Series Model for Evaluating Monitoring Designs
Ken Newman - *Biomathematics and Statistics of Scotland, United Kingdom*

11:00 - 11:30 **Tea/Coffee**

MSB & Physics Cafe/Foyer

11:30 - 12:30 **Movement Ecology (I)**

Physics LT A

Chair: Danielle Harris

(2559) Joint modeling of multi-scale animal movement data using hierarchical hidden Markov models
Timo Adam - *Bielefeld University, Germany*

(2534) Identifying seasonal movement patterns of maned wolves (*Chrysocyon brachyurus*) with remote sensing, movement analytics and data mining
Vanessa Brum-Bastos - *University of St Andrews, United Kingdom*

(2561) Bayesian Inference for Animal Movement in Continuous Time
Hajar Alkhezi - *University of Sheffield, United Kingdom*

(2631) Incorporating detection data into state-space models to improve light-based geolocation
Marie Auger-Methe - *The University of British Columbia, Canada*

(2554) Fast, flexible inference for continuous-time movement models
Paul Blackwell - *University of Sheffield, United Kingdom*

11:30 - 12:30 **Multi-species Modelling & Fisheries Research**

Physics LT C

Chair: Paul Conn

(2602) Bayesian inference for a covariance matrix
Ignacio Alvarez-Castro - *Universidad de la Republica, Uruguay*

(2353) Ordination plots for model-based analysis of species composition data
Philip Dixon - *Iowa State University, United States*

(2346) On the similarities of generalized linear latent variable models and multivariate log-Gaussian Cox processes for multi-species modeling in ecology
Riki Herliansyah - *Institut Teknologi Kalimantan, Indonesia*

(2533) Revisiting beta diversity: a multivariate approach using Template Model Builder
Andrea Havron - *University of Auckland, New Zealand*

(2629) Modeling a mixed-species groundfish fishery with technical interactions using a feedback-control loop and environmental data linked to catch composition
Carey McGilliard - *National Oceanic and Atmospheric Administration, United States*

11:30 - 12:30 **Population Dynamics (I)**

Physics LT B

Chair: Adam Butler

(2351) Climate and resource variation differentially affect intrinsic population processes to drive patterns of seabird population dynamics in UK coastal waters
Kate Searle - *Centre for Ecology and Hydrology, United Kingdom*

(2576) Multi-scale modeling of forest bird population response to spruce budworm outbreaks
Adam C. Smith - *Canadian Wildlife Service, Canada*

(2436) Measuring Repeatability in the Diets of Grey Seals (*Halichoerus grypus*)
Connie Stewart - *University of New Brunswick (Saint John), Canada*

(2645) Dual-scale density-dependent regulation of spatially structured populations
Chris Sutherland - *University of Massachusetts - Amherst, United States*

(2517) The cumulative stress was a major driver of recent coral mortality on the Great Barrier Reef.
Julie Vercelloni - *The University of Queensland, Australia*

12:30 - 14:00 **Lunch**

MSB & Physics Cafe/Foyer

14:00 - 15:30 **Citizen Science and Big Data**

Physics LT A

Chair: Byron Morgan

(2471) Determining the phenology of marked and unmarked seabirds from a very large force sensor data set
Philipp Boersch-Supan - *British Trust for Ornithology, United Kingdom*

(2520) Video classification in marine environments with convolutional and recurrent neural networks
Ian Durbach - *University of Cape Town, South Africa*

(2621) Evaluation of *tensorFlow* and *resNet* for Automatic Object Detection in Drone Photography
Trent McDonald - *Western EcoSystems Technology, Inc, United States*

(2610) Using Big Data, Citizen Science, and Quantitative Ecology to Inform Avian Conservation
Nicole Michel - *National Audubon Society, United States*

(2443) Subsampling Ideas for Large Spatial Data Sets
Jay Ver Hoef - *US Government, United States*

(2450) Modeling season-specific, inter-annual trends in avian abundance with citizen science data
Daniel Fink - *Cornell Lab of Ornithology, United States*

(2407) An application of citizen science and distance sampling in the Scottish uplands
Solene Marion - *St Andrews University, United Kingdom*

14:00 - 15:30 **Evolutionary Ecology**

Physics LT C

Chair: Mick McCarthy

(2501) Where you're born matters: a systematic review and meta-analysis of reproductive success in diverse captive environments

Kate Farquharson - *University of Sydney, Australia*

(2634) Predicting bird community reservoir competence for West Nile virus using phylogenetic mixed effects models

Morgan Kain - *McMaster University, Canada*

(2472) A simple approach of modelling phylogenetic comparative analysis of varying complexity

Michael Li - *McMaster University, Canada*

(2442) Are animals shrinking due to climate change? Temperature mediated selection on body mass in mountain wagtails

Res Altwegg - *University of Cape Town, South Africa*

(2463) Model Misspecification Undermines Tests of The Neutral Theory for Life Histories

Mathieu Authier - *ADERA - Observatoire Pelagis UMS3462 CNRS-ULR, France*

(2467) Explicit modelling of proximate mechanisms for revealing life-history tradeoffs

Mathieu Buoro - *INRA, France*

(2468) The importance of size in the oldest macroscopic communities.

Emily Mitchell - *University of Cambridge, United Kingdom*

14:00 - 15:30 Occupancy Modelling (I)

Physics LT B

Chair: Darryl MacKenzie

(2333) Bayesian occupancy models using logic link functions.

Allan Clark - *University of Cape Town, South Africa*

(2588) Seasonal occupancy models: Estimating seasonal variation in occupancy and detection within closed occupancy models

Alison Johnston - *Cornell Lab of Ornithology, United Kingdom*

(2478) Estimating Seasonal Variation in Occupancy and Detection Within Closed Occupancy Models

David Harris - *David Harris Data Analysis, United States*

(2483) A state-space occupancy model to accommodate multiple scales of variable detection probabilities

Seth Harju - *Heron Ecological, LLC, United States*

(2429) Integrating multispecies occupancy and structural equation models to estimate amphibian community dynamics and wetland hydroperiod

Courtney Davis - *Pennsylvania State University, United States*

(2422) Ghosts, demons and elusive species; Adaptive multi-method occupancy sampling for monitoring of multiple species and false positive agents

Torbjørn Ergon - *Centre for Ecological and Evolutionary Synthesis, University of Oslo, Norway*

(2380) Strategies for using unstructured citizen science data within occupancy models

Wesley Hochachka - *Cornell Lab of Ornithology, United States*

15:30 - 15:45 Break

On Site

15:45 - 16:30 Abundance Estimation (I)

Physics LT B

Chair: Bill Gould

(2591) Combined Models for Counts and Mark-Recapture Data

Simon Bonner - *University of Western Ontario, Canada*

(2447) Close-Kin Mark-Recapture: statistical methods for design

Mark Bravington - *CSIRO, Australia*

(2535) Evaluating and comparing the performance of different PVA methods in predicting future abundance of UK seabirds

Adam Butler - *Biomathematics and Statistics Scotland, United Kingdom*

15:45 - 16:30 Integrated Modelling (I)

Physics LT C

Chair: Alison Parton

(2356) Synthesizing multiple data streams to estimate abundance and detection probability in a highly wary, long-lived apex predator: an integrated modeling approach

Abby Lawson - *Clemson University, United States*

(2619) Integrated models for studying annual variation in phenology and population abundance

Andreas Lindén - *Novia University of Applied Sciences, Finland*

(2500) Quantifying the power to detect trends in vital rates using integrated population models

Beth Ross - *USGS, United States*

15:45 - 16:30 Species Distribution Modelling (I)

Physics LT A

Chair: Paul Blackwell

(2288) Logistic modelling of point process: a Bayesian approach for presence-only data

Guido Alberti Moreira - *Universidade Federal do Rio de Janeiro, Brazil*

(2408) Statistical modeling of multiple species presence-only data under opportunistic sampling and unbiased inference of their distributions.

Christophe Botella - *INRA, France*

(2350) A dynamic mechanistic species distribution model of wolves' recolonization in France

Julie Louvrier - *CEFE, France*

16:30 - 17:00 Tea/Coffee

MSB & Physics Cafe/Foyer

17:00 - 17:45 Disease Ecology

Physics LT B

Chair: Matt Schofield

(2387) Outfoxing Rabies: Disentangling the determinants of local and regional rabies persistence in European foxes using state-space models

Laurie Baker - *University of Glasgow, United Kingdom*

(2506) When and where: estimating the location and time of introduction for exotic pests and pathogens

Trevor Hefley - *Kansas State University, United States*

(2639) Bayesian quantification of the fundamental thermal niche of huanglongbing, a vector-borne pathogen of citrus trees.

Leah R. Johnson - *Virginia Polytechnic and State University, United States*

(2371) Modelling responses of major African zoonoses to environmental and socio-economic change

David Redding - *University College London, United Kingdom*

17:00 - 17:45 Integrated Modelling (II)

Physics LT A

Chair: Mark Bravington

(2552) Bucking the trend: Exploiting the strengths of different data sources to assess the status of an endangered deer in southeast Asia

Diana Bowler - *Norwegian Institute for Nature Research, Norway*

(2577) Towards Spatio-Temporal State Space Models for Ecological Dynamics

Michael Dowd - *Dalhousie University, Canada*

(2601) Assessing cetacean populations using integrated population models: an example with Cook Inlet beluga whales

Eiren Jacobson - *University of Washington & NOAA AFSC Marine Mammal Laboratory, United States*

(2322) Integrated Population Modelling incorporating Spatial Information

Marina Jimenez Munoz - *School of Mathematics, Statistics and Actuarial Science, University of Kent, United Kingdom*

17:00 - 17:45 Software Developments

Physics LT C

Chair: Remi Choquet

(2537) Modeling fecundity with generalizations of the Poisson distribution using glmmTMB

Mollie Brooks - *DTU Aqua, Denmark*

(2499) greta: simple and scalable statistical modelling in R

Nick Golding - *University of Melbourne, Australia*

(2493) Residual diagnostics for hierarchical statistical models

Florian Hartig - *University of Regensburg, Germany*

(2399) momentuHMM: R package for generalized hidden Markov models of animal movement

Brett McClintock - *NOAA Marine Mammal Lab, United States*

18:15 - 19:15 Public Lecture: Counting on Conservation

MSB Booth LT

3 July (Tuesday)

Location

09:00 - 09:45 Plenary

Physics LT A

Chair: Simon Bonner

(2265) Trait-based demography: linking individuals, populations, and communities in varying environments

Stephen Ellner - *Cornell University, United States*

09:45 - 10:00 Break

On Site

10:00 - 11:00 Fisheries Research (I)

Physics LT C

Chair: Ken Newman

(2440) Spatio-temporal modelling of population mixture for marine species

Toshihide Kitakado - *Tokyo University of Marine Science and Technology, Japan*

(2381) In Growth We Trust: Effects of abiotic and biotic factors on somatic growth rates of non-native fish and their impacts on native populations

Josh Korman - *Ecometric Research/University of British Columbia, Institute of Oceans and Fisheries, Canada*

(2482) A Bayesian hierarchical model to unravel the spatial covariations in the response of Atlantic salmon populations to climate change in the North Atlantic Ocean.

Maxime Olmos - *Agrocampus Ouest, France*

(2502) Modeling effects of time-dependent covariates in space-for-time capture-recapture models

Russell Perry - *US Geological Survey, United States*

(2542) Estimating gear efficiency for multiple non-target fish species

Nokuthaba Sibanda - *Victoria University of Wellington, New Zealand*

10:00 - 11:00 Movement Ecology (II)

Physics LT A

Chair: Mevin Hooten - Associate Professor, Department of Fish, Wildlife, and Conservation Biology, Colorado

(2390) Linking movement behaviour with habitat suitability to predict potential little owl dispersal: an ABC-calibrated individual-based simulation model

Severin Hauenstein - *University of Freiburg, Biometry and Environmental System Analysis, Germany*

(2454) The Markov-modulated movement model: inferring behavioural states and characteristics from animal tracking data in the presence of significant autocorrelation.

Ethan Lawler - *Dalhousie University, Canada*

(2593) Understanding the response of harp seals to long-term changes in Arctic sea-ice cover

James Grecian - *University of St Andrews, United Kingdom*

(2575) What is moving? How the semantic conceptualisation of movement data changes animal-environment inferences.

Paul Holloway - *University College Cork, Ireland*

(2437) Metrics for describing dyadic joint movement

10:00 - 11:00 Statistical Theory (I)**Physics LT B**

Chair: Torborn Ergon

(2587) Do not use multimodel averaging to understand multifactorial systems
Benjamin Bolker - *McMaster University, Canada*(2320) Is Bayesian identifiability really a problem?
Diana Cole - *University of Kent, United Kingdom*(2466) Accounting for Matching Uncertainty in Automated Photo-Identification
Amanda Ellis - *Eastern Kentucky University/University of Kentucky, United States*(2423) Sampled posterior p-values as tools to criticize statistical models: mathematical results and application issues
Frédéric Gosselin - *IRSTEA, France*(2307) Estimation of negative binomial parameters using clustered occurrence data
Wen-Han Hwang - *National Chung Hsing University, Taiwan***11:00 - 11:30 Tea/Coffee****MSB & Physics Cafe/Foyer****11:30 - 12:30 Abundance Estimation (II)****Physics LT C**

Chair: Tiago Marques

(2565) Forecasting population abundances at multiple locations: do hierarchical models perform better than several simple models fitted to each population?
Mathieu Chevalier - *Swedish University of Agricultural Sciences, Sweden*(2438) Aerial survey estimates of polar bears and their tracks in the eastern Chukchi Sea
Paul Conn - *NOAA Alaska Fisheries Science Center, United States*(2428) Accounting for uncertainty in species reporting when modelling seasonal abundance
Emily Dennis - *Butterfly Conservation, United Kingdom*(2613) Estimating cetacean densities using slow-moving autonomous ocean vehicles
Danielle Harris - *Centre for Research into Ecological and Environmental Modelling, University of St Andrews, United Kingdom*(2625) Comparing methods for estimating abundance from passive acoustic monitoring data using the example of bowhead whales
Cornelia Oedekoven - *University of St Andrews, United Kingdom***11:30 - 12:30 Capture-Recapture Modelling (I)****Physics LT A**

Chair: Andy Royle

(2316) A spatially explicit capture recapture model for partially identified individuals when trap detection rate is less than one
Soumen Dey - *Indian Statistical Institute, Bangalore Centre, India*(2313) Regularization techniques for covariate selection in capture-recapture models
Olivier Gimenez - *CNRS, France*(2449) Continuous-time spatial capture-recapture with animal movement
Richard Glennie - *University of St Andrews, United Kingdom*(2508) On the reliability of N-mixture models
Richard Barker - *University of Otago, New Zealand*(2457) A spatially explicit mark-resight model of eastern barred bandicoots, *Perameles gunnii*, using multiple data types
Rebecca Groenewegen - *The University of Melbourne, Australia***11:30 - 12:30 Spatial Modelling (I)****Physics LT B**

Chair: Leah Johnson

(2654) Black swans in space: modelling spatiotemporal ecological processes with extremes
Sean Anderson - *Fisheries and Oceans Canada, Canada*(2311) Spatial dimensions of pelagic diversity in a geodiverse offshore marine park
Phil Bouchet - *University of Western Australia, Australia*(2597) Sparse models for multivariate log-Gaussian Cox processes, with an application to multi-species modeling in ecology
Achmad Choiruddin - *Aalborg University, Denmark*(2516) Mapping prehistoric forest composition and its uncertainty: identifying regions of change, stability, and high uncertainty
Andria Dawson - *Mount Royal University, Canada*(2623) A spatio-temporal simulation framework for assessing the ability of fisheries-dependent data to support mixed fisheries management
Paul Dolder - *GMIT, Ireland***12:30 - 14:00 Lunch****MSB & Physics Cafe/Foyer****12:50 - 13:50 British Ecological Society Workshop: How to Get Published****MSB Exhibition Lab****14:00 - 15:30 Invited - Movement****Physics LT A**(2328) Multistate step-and-turn movement models in continuous time
Alison Parton - *University of Sheffield, United Kingdom*(2302) Animal movement models for recharge dynamics
Mevin Hooten - *Colorado State University, United States*(2343) A multi-scale modeling framework for the feedback between movement and body condition of Merino sheep
Vianey Leos Barajas - *Iowa State University, Germany***14:00 - 15:30 Invited - New Data****Physics LT B**

(2572) Emerging opportunities and challenges for passive acoustics in ecological assessment and monitoring
Kate Jones - *University College London, United Kingdom*

(2644) Big data on the move: Challenges and solutions for animal biologging data
Luca Borger - *Swansea University, United Kingdom*

(2397) Automated Birdsong Recognition as a Source for Abundance Estimation
Stephen Marsland - *Victoria University of Wellington, New Zealand*

15:30 - 16:00 Tea/Coffee

MSB & Physics Cafe/Foyer

16:00 - 18:00 Poster Session (I)

MSB SR 1

(2585) Estimating conservation limits for Atlantic salmon stocks in Scottish rivers using Bayesian hierarchical methods.
James Ounsley - *Marine Scotland Science, United Kingdom*

(2452) Spatial models for marine visual survey data: abundance estimation and sampling design for monitoring programs
Nicholas Perkins - *University of California Davis and California Department of Fish and Wildlife, United States*

(2342) 'TIMES – THEY ARE A-CHANGIN' – Movement Ecology Approach for Tiger Conservation in India
Bilal Habib - *Wildlife Institute of India, India*

(2637) Indiana Bat Migration Patterns
Giovanni Petris - *University of Arkansas, USA*

(2514) Changes in demographic structure along the population cycles in rodents
Viktoria Radchuk - *Leibniz Institute for Zoo and Wildlife Research, Germany*

(2579) Using meta-population models to assess risk to population viability of freshwater fishes from water resources development
Norbert Menke - *Department of Environment and Science, Australia*

(2658) Predicting the population consequences of disturbance in a data-poor scenario
Leslie New - *Washington State University, USA*

(2297) Causal model for biological impacts of flow regimes of the Murray River, Australia—integrating deterministic models into probabilistic models for predictions
Chi Le - *La Trobe University, Australia*

(2420) Dynamics of small fish populations: a natural experiment from irrigation ponds on the Sundays River, South Africa.
Sanet Hugo - *South African Institute for Aquatic Biodiversity, South Africa*

(2289) Leaping Forward in Assessing Amphibian Dynamics Using Multistate Occupancy Models
William Gould - *New Mexico State University, United States*

(2594) Addressing heterogeneity in snow leopard density within a large landscape in Nepal sampled using fecal DNA
Madhu Chettri - *Inland Norway University of Applied Sciences*

(2274) Is the degree of spatial aggregation of *Calluna vulgaris* regulated by nitrogen deposition or precipitation?
Christian Damgaard - *Aarhus University, Denmark*

(2400) Spatio-temporal modelling of canopy-forming algae in relation to its monitoring program
Adrien Ickowicz - *CSIRO, Australia*

(2426) Analysis of elephant carcass locations in Etosha National Park using the new, and improved, CReSS with SALSA model selection.
Lindesay Scott-Hayward - *University of St Andrews*

(2489) A Preferential Sampling Model for Spatially Differing Sampling Processes
Thomas Neyens - *University of Hasselt, Belgium*

(2582) Advances in the Assessment of Diversity and Similarity with Overdispersed Counts Data
Salme Kärkkäinen - *University of Jyväskylä, Finland*

(2522) The development of an FTIR function for tracking bud dormancy in kiwifruit
Denny (Denise) Meyer - *Swinburne University of Technology, Australia*

(2282) Ecological modeling to guide Everglades restoration efforts
Ruscena Wiederholt - *Everglades Foundation, United States*

(2433) Rarefaction techniques and temporal change in species richness
Hideyasu Shimadzu - *Loughborough University, United Kingdom*

(2511) Evaluation of novel approaches to modelling dolphin distribution using long-term presence-only Citizen Science data
Chandra Salgado Kent - *Curtin University / Oceans Blueprint, Australia*

(2349) *n2kanalysis*: a framework for automated and reproducible statistics from long-term ecological monitoring
Thierry Onkelinx - *Research Institute for Nature and Forest (INBO), Belgium*

(2418) Do humans and machines think alike? – A study in the logic of benthic macroinvertebrate taxa identification
Johanna Ärje - *University of Jyväskylä, Finland*

(2521) Evaluation of the disturbance effect of vessel noise on harbour porpoises based on static acoustic monitoring data
Benno Woelfing - *University of Veterinary Medicine Hannover, Foundation, Germany*

(2595) The importance of being random! Fully accounting for random effects in nonlinear hierarchical Bayesian models does matter
Ugoline Godeau - *IRSTEA Nogent-sur-Vernisson, France*

(2377) Hierarchical model-based estimation of population body growth curves for redbfish (*Sebastes mentella* and *S. fasciatus*) off the eastern coast of Canada
Noel Cadigan - *Marine Institute of Memorial University of Newfoundland, Canada*

(2618) Likelihood free methods for animal movement
Juan Manuel Morales - *Laboratorio Ecotono-INIBIOMA-Crüb Universidad Nacional del Comahue-CONICET*

(2474) Effects of spatial aggregation of nests on population recruitment: the case of a small population of Atlantic salmon
Mathieu Buoro - *French National Institute of Agronomic Research (INRA)*

- (2547) An ABC framework for parameterising physiologically structured population models
Alison Parton - *University of Sheffield, United Kingdom*
- (2617) Fire interval distributions in landscapes with alternative stable states
Juan Manuel Morales - *Laboratorio Ecotono - INIBIOMA, Universidad Nacional del Comahue - CONICET*
- (2391) Quantifying behavioural responses of minke whales to sonar activity during Navy training exercises.
Catriona Harris - *University of St Andrews, United Kingdom*
- (2403) Hierarchical Bayesian Modelling of *Xylella fastidiosa* spread in southern Italy and mainland Spain
Joaquín Martínez-Minaya - *University of Valencia, Spain*
- (2462) On the model checking of the single index model.
YIH-HUEI Huang - *Tamkang University, Taiwan*
- (2567) Identifying fishing behaviours of inshore fishing vessel
Sophie Smout - *Centre for Research into Environmental and Ecological Modelling*
- (2366) Large scale monitoring of grassland biomass dynamics with Sentinel-2 satellite images
Franck Jabot - *Irstea, France*
- (2268) Migrating distance sampling projects from Distance for Windows to the Distance R package
Eric Rexstad - *University of St Andrews, Scotland*
- (2325) Measuring species aggregation from species accumulation curves: a scale-free alternative to β -diversity
Robert Szava-Kovats - *University of Tartu, Estonia*
- (2628) Estimating marine megafaunal species diversity from the discovery record by means of mixed models using surrogates for historical scientific effort.
Charles Paxton - *University of St Andrews, United Kingdom*
- (2415) Estimating tree height for a given girth
Els Lommelen - *Research institute for nature and forest, Belgium*
- (2485) Applications and new developments of NIMBLE software in ecology
Perry de Valpine - *University of California, Berkeley, United States*
- (2424) Model-based hypervolumes for complex ecological data
Susan Jarvis - *Centre for Ecology and Hydrology, United Kingdom*
- (2560) Acoustic signalling predicts surface behaviour in common bottlenose dolphins (*Tursiops truncatus*); implications for habitat use and marine spatial planning.
Simon H. Elwen - *Mammal Research Institute, Department of Zoology and Entomology, University of Pretoria, Private Bag X20, Hatfield 0028, Gauteng, South Africa. C/O Sea Search Research and Conservation NPC, 4 Bath Road, Muizenberg, Cape Town, 7945, South Africa.*
- (2616) Valuing information for sustainable fisheries
Caitlin Allen Akselrud - *University of Washington, United States*
- (2416) Improved inference in point-transect models: application to Hawaiian forest birds
Richard Camp - *University of St Andrews, Scotland*
- (2513) Estimating the population of a social animal from camera traps
Nilanjan Chatterjee - *Wildlife Institute of India, India*
- (2543) Assessing the suitability of hidden Markov models for identifying potential behavioural states of the European lobster.
Kirsty Lees - *Newcastle University, England*
- (2394) Changing the perspective: a different time scaling in capture-recapture models, the age.
Blanca Sarzo - *Valencia University, Spain*
- (2382) Mixture of Poisson point pattern processes as a tool to check on species misidentification.
Emy Guilbault - *Newcastle University, Australia*
- (2439) Modelling detection probability using a new link function in interval-censored detection
Guido Alberti Moreira - *UFRJ*
- (2570) GLMMs disentangle the relative importance of niche and neutral processes for the assembling of bird communities in tropical fragmented landscapes
Melina de Souza Leite - *University of São Paulo, Brazil*
- (2558) Global effects of land use on zoonotic host communities
Rory Gibb - *University College London, United Kingdom*
- (2475) Comparing biophysical and economic impacts of climate change on biodiversity.
Simon Kapitza - *University of Melbourne, Australia*
- (2456) Sampling-Based Approaches to Maximum Likelihood Estimation for Latent Variable Models
Chun Yu Hong - *UC Berkeley Department of Statistics, United States*

18:30 - 21:30 British Ecological Society Movement Ecology SIG social event**Madras Rugby club****4 July (Wednesday)****Location****09:00 - 09:45 Plenary****Physics LT A**

Chair: Richard Barker

(2267) Model selection and evaluation for hierarchical models
William Link - *USGS Patuxent Wildlife Research Center, United States***09:45 - 10:00 Break****On Site****10:00 - 11:00 Distance Sampling****Physics LT C**

Chair: Cornelia Oedekoven

(2586) Incorporating distance sampling within an integrated species distribution modeling framework

Matthew T. Farr - *Michigan State University, United States*

(2659) Evaluating measurement error in 3D animal location from pairs of 3D bearing arrays and its propagation to estimates of animal density

Tiago Marques - *University of St Andrews, Scotland*

(2299) Reliable variance propagation for spatial density surface models

David Miller - *University of St Andrews, United Kingdom*

(2640) Log-linear models applied to mark-recapture line transect sampling

Matthew Schofield - *University of Otago*

(2359) Modeling sound attenuation in heterogeneous environments for improved bioacoustic sampling of wildlife populations

Andy Royle - *USGS Patuxent Wildlife Research Center, USA*

10:00 - 11:00 Movement Ecology (III)

Physics LT A

Chair: Marie Auger-Méthé

(2406) New tools for combining telemetry data and resource variables in the study of wildlife interactions: The wildlifeDI R package

Jed Long - *University of St Andrews, United Kingdom*

(2580) The application of continuous-time Markov Chain models in the analysis of choice flume experiments

Evalyne Muiruri - *Cefas, United Kingdom*

(2473) Modelling and Inference for the Movement of Interacting Individuals

Jordan Milner - *The University of Sheffield, United Kingdom*

(2614) Joint species movement modelling: linking behaviour to species' traits and phylogenetic relatedness.

Juan Manuel Morales - *INIBIOMA-CRUB, CONIECT*

(2386) Markov chain Monte Carlo as a model of animal movement and space use

Théo Michelot - *University of Sheffield, United Kingdom*

10:00 - 11:00 Spatial Modelling (II)

Physics LT B

Chair: Enrico Pirotta

(2643) Conservation reserve design under climate uncertainty: risk & reward trade-offs

Mitchell Eaton - *US Geological Survey, United States*

(2592) Extending the toolbox - dropping the linearity assumption for complex spatial models fitted with INLA

Janine Illian - *University of St Andrews, United Kingdom*

(2484) Estimation and application of ecological memory functions in time and space

Malcolm Itter - *University of Helsinki, Finland*

(2584) Modeling spatial and spatial-ontogenetic structure of old-growth boreal forests by random point process models with hierarchical interactions

Pavel Grabarnik - *Institute of Physico-chemical and Biological Problems of Soil Science, Russian Academy of Sciences, Russia*

(2504) Shared latent fields for mark-location dependence in a log Gaussian Cox process

Charlotte Jones-Todd - *NIWA, New Zealand*

11:00 - 11:30 Tea/Coffee

MSB & Physics Cafe/Foyer

11:30 - 12:30 Genetics and Stream Networks

Physics LT C

Chair: Stacy De Ruiter

(2315) An asymmetric measure of population differentiation based on the saddlepoint approximation method

Louise McMillan - *University of Auckland, New Zealand*

(2405) Generalized Additive Models for estimating plant protection product occurrences and related effects in streams

Andreas Scharmüller - *University Koblenz-Landau, University of Strasbourg, Germany*

(2306) Estimating Salmonid Escapement Across a Stream Network using PIT Tags

Kevin See - *QCI, United States*

(2490) Modelling flooding levels in a wetland with partially missing rain gauge data

Gordana Popovic - *University of New South Wales, Australia*

(2345) Incorporating ecology into authentication of manuka honey

Claire McDonald - *Ministry for Primary Industries, New Zealand*

11:30 - 12:30 Population Dynamics (II)

Physics LT A

Chair: Olivier Gimenez

(2612) A spatially-explicit abundance-based metapopulation model for count and occupancy data

Paige Howell - *University of Georgia, United States*

(2557) A demo-genetic model for spontaneous forest establishment

Dominique Lamonica - *University of Hohenheim, Germany*

(2421) Multidimensional Hidden Markov Model with Data Feedback : new framework for estimating dynamics of species with dormant stage.

Sebastian Le Coz - *INRA, France*

(2611) Density dependent habitat selection during the eradication of invasive American mink

Ewan McHenry - *University of Aberdeen, Scotland*

(2512) Environmental variables driving phytoplankton population dynamics

Louise Lindroos - *Åbo Akademi University, Finland*

11:30 - 12:30 Species Distribution Modelling (II)

Physics LT B

Chair: David L. Miller

(2515) Can simple envelope ensembles improve transferability of non-native species distributions?

Matt Hill - *CSIRO, Australia*

(2318) Modelling presence-absence response curves in the ecological niche theory framework
Leire Citores - *AZTI - BCAM, Spain*

(2413) Hierarchical Bayesian models reveal the habitat characteristics of Arctic marine mammals
Jussi Mäkinen - *University of Helsinki, Finland*

(2541) A simple canonical method for fitting nonlinear environmental gradients to community data.
Russell Millar - *University of Auckland, New Zealand*

12:30 - 14:00 Lunch

MSB & Physics Cafe/Foyer

14:00 - 18:00 Excursions

Default Location

5 July (Thursday)

Location

09:00 - 09:45 Plenary

Physics LT A

Chair: Mark Kery

(2971) Why don't we ask: can citizen science improve ecology and conservation?
Kerrie Mengersen - *Queensland University of Technology, Australia*

09:45 - 10:00 Break

On Site

10:00 - 11:00 Capture-Recapture Modelling (II)

Physics LT B

Chair: Russell Millar

(2661) Estimating size-dependent mortality rates in competing risks situations using mark-recapture-recovery data
Chloé Nater - *University of Oslo, Norway*

(2549) A hidden Markov model to estimate prevalence of hybrids in free-ranging admixed populations
Nina Luisa Santostasi - *Centre d'ecologie fonctionnelle et evolutive, France*

(2385) Species distribution modelling from a camera-trap survey of leopards in the Kruger National Park, using spatial capture-recapture methods.

Nakedi Maputla - *African Wildlife Foundation, South Africa*

(2414) Modelling spatial patterns of migratory connectivity and survival using a REML-like approach
Saskia Schirmer - *University of Greifswald, Germany*

(3046) Joint estimation of growth and survival using capture-mark-recapture data.
David Miller - *Penn State University, United States*

10:00 - 11:00 Movement Ecology (IV)

Physics LT A

Chair: Peter Henrys

(2411) Modelling movement patterns of sharks using acoustic detections
Theoni Photopoulou - *University of St Andrews, United Kingdom*

(2277) Central place foragers and moving stimuli: a hidden-state model to discriminate the processes affecting movement
Enrico Pirota - *Washington State University, United States*

(2404) Making sense of ultra-high resolution animal movement data
Jonathan Potts - *The University of Sheffield, United Kingdom*

(2538) Selecting the number of states in hidden Markov models - practical challenges and pragmatic solutions
Jennifer Pohle - *Bielefeld University, Germany*

(2379) Accounting for phenology in the analysis of animal movement
Henry Scharf - *Department of Statistics, Colorado State University, United States*

10:00 - 11:00 Statistical Theory (II)

Physics LT C

Chair: Hideyasu Shimadzu

(2365) Selection of the most favourable clones of *Populus x canescens* in the context of breeding
Ivy Jansen - *Research Institute for Nature and Forest, Belgium*

(2446) Identifying the characteristic scales in hierarchical signals
Leena Pasanen - *Research Unit of Mathematical Sciences, University of Oulu, Finland*

(2441) Mixtures with Negative Components
Shirley Pledger - *Victoria University of Wellington, New Zealand*

(2445) Hierarchical modeling in ecology
Matthew Schofield - *University of Otago, New Zealand*

(2672) Statistical models of gendered patterns of citation and authorship in ecology
Michael McCarthy - *The University of Melbourne, Australia*

11:00 - 11:30 Tea/Coffee

MSB & Physics Cafe/Foyer

11:30 - 12:30 Multi-species Modelling & Community Dynamics

Physics LT A

Chair: Theoni Photopoulou

(2392) Inferring species interactions from time series using autoregressive models and causal approaches
Frederic Barraquand - *CNRS, France*

(2367) Neutral models with environmental stochasticity: rationale, inference and perspectives
Franck Jabot - *Irstea, France*

(2642) Using topic models to describe disturbance and quantify responses to environmental change in palaeoecological time series

Gavin Simpson - *Institute of Environmental Change and Society, Canada*

(2395) Joint species distribution models with interactions and imperfect detection
Marc Kery - *Swiss Ornithological Institute, Switzerland*

(2480) Spatial covariation of competing species in a fluctuating environment
Aline Magdalena Lee - *Centre for Biodiversity Dynamics, Norwegian University of Science and Technology, Norway*

11:30 - 12:30 Spatial Modelling & Statistical Theory

Physics LT B

Chair: Allan Clark

(2470) The epidemics of a wild plant pathogen obey the laws of graph theory
Elina Numminen - *University of Helsinki, Finland*

(2296) Efficient MCMC for Spatially Explicit Capture-Recapture
Daniel Turek - *Williams College, United States*

(2281) Accounting for spatial autocorrelation in deforestation modelling
Ghislain Vieilledent - *Joint Research Center of the European Commission, Italy*

(2497) Not all information is equal: Understanding the data drivers behind spatial conservation priorities
Heini Kujala - *The University of Melbourne, Australia*

(2378) Maximum likelihood estimation with data from a response-selective stratified sampling design, with application to fish growth curve estimation
Noel Cadigan - *Marine Institute of Memorial University of Newfoundland*

11:30 - 12:30 Survey design, statistical theory & Species Distribution Modelling

Physics LT C

Chair: Diana Cole

(2361) Statistical properties of a new method based on point-to-plant distances to record and monitor plants in herbaceous, terrestrial vegetation
Hans Van Calster - *Research Institute for Nature and Forest, Belgium*

(2525) Design and implementation of a monitoring scheme to assess habitat quality of European protected habitats in Flanders (Belgium)
Toon Westra - *Nature and Forest Research Institute (INBO), Belgium*

(2604) Penalized Estimation of Hidden Markov Models for Behavioral State Switching
Meridith Bartley - *Penn State University, USA*

(2412) Spatio-temporal species distribution model to detect outbreaks of coral consuming Crown-of-thorns starfish in the Great Barrier Reef
Jarno Vanhatalo - *University of Helsinki, Finland*

(2301) A comparison of joint species distribution models for occupancy data.
David Wilkinson - *School of Biosciences, The University of Melbourne, Australia*

12:30 - 14:00 Lunch

MSB & Physics Cafe/Foyer

12:50 - 13:50 British Ecological Society Workshop: How to be a Good Reviewer

MSB Exhibition Lab

14:00 - 15:30 Movement Ecology (V)

Physics LT A

Chair: Ali Johnston

(2492) Inference for advection-diffusion models of collective movement: what are the drivers of the Serengeti wildebeest migration?
Elaine Ferguson - *University of Glasgow, United Kingdom*

(2330) Accounting for animal-specific variation in habitat selection studies: efficient estimation of mixed effects models
Johannes Signer - *University of Goettingen, Germany*

(2494) Don't get it wrong: safely selecting sub-sets from tracking data.
Emiel van Loon - *University of Amsterdam, Netherlands*

(2553) Continuous-time resource selection analysis for moving animals
Yi-Shan Wang - *University of Sheffield, United Kingdom*

(2486) Detecting long-term effects in animal movement
Anna-Kaisa Ylitalo - *Natural Resources Institute Finland, Finland*

(2498) Density-dependent analysis of intertidally foraging Oystercatchers by integrating individual tracking data, dynamic food landscapes and optimality models
Adriaan Dokter - *Cornell Lab of Ornithology, Cornell University, United States*

(2529) Grey seal behaviour in relation to environmental variability and commercial fishing activity – an analysis using multivariate hidden Markov models
Sina Mews - *Bielefeld University*

14:00 - 15:30 Occupancy Modelling (II)

Physics LT C

Chair: Catriona Harris

(2294) Using time-to-detection models to quantify biodiversity patterns across multiple taxa in a landscape threatened by shale gas development
Dominic Henry - *University of Cape Town, South Africa*

(2348) How can the score test be consistent?
Natalie Karavarsamis - *The University of Melbourne, Australia*

(2660) CUSUM residual plots for assessing fit of occupancy models
Darryl MacKenzie - *Proteus, New Zealand*

(2539) Developing a multispecies dynamic patch-occupancy model to infer poaching in Southeast Asia.
Lucile Marescot - *CNRS Center of Functional and Evolutionary Ecology, France*

(2671) Pairwise species misidentification in community occupancy models
Brittany Mosher - *US Geological Survey and Pennsylvania State University, United States*

(2630) An auxiliary variable approach to false-positive, multi-species models
Viviana Ruiz-Gutierrez - *Cornell Lab of Ornithology, United States*

(2583) Finding Africa's rarest rabbit: camera clusters and occupancy modelling of the riverine rabbit (*Bunolagus monticularis*).
Zoe Woodgate - *University of Cape Town, South Africa*

14:00 - 15:30 Population Dynamics and Species Distribution Modelling

Physics LT B

Chair: Lindesay Scott-Hayward

(2491) Spatiotemporal capture-removal model for estimating and predicting population dynamics of invasive predators
Dean Anderson - *Manaaki Whenua - Landcare Research, New Zealand*

(2355) Modelling species diversity in joint species distribution models with flexible multivariate Gaussian process priors.
Marcelo Hartmann - *University of Helsinki, Finland*

(2526) Quantifying the vulnerability of seabird populations to potential anthropogenic mortality
Julie Miller - *University of Glasgow, United Kingdom*

(2417) Spatial variation in local abundance of the Glanville fritillary butterfly in a heterogeneous landscape
Torsti Schulz - *University of Helsinki, Finland*

(2455) Bayesian multistate open robust design mark recapture reveals expression of individual heterogeneity in reproductive traits is amplified by population size
Janelle Badger - *Department of Biology and Wildlife, University of Alaska Fairbanks, United States*

(2389) N-mixture, site-occupancy and spatial capture-recapture models in a large applied project: the Swiss Breeding Bird Atlas 2013-2016
Jérôme Guélat - *Swiss Ornithological Institute, Switzerland*

(2550) Habitat Models Accurately Predict Population Change in Nature
Jason Matthiopoulos - *University of Glasgow, United Kingdom*

15:30 - 15:45 Break

On Site

15:45 - 16:45 Fisheries Research (II)

Physics LT C

Chair: Leslie New

(2636) Estimating individual- and population-level variation in the space use of white sharks off Cape Cod, Massachusetts, from passive acoustic telemetry data
Megan Winton - *School for Marine Science and Technology, University of Massachusetts Dartmouth, United States*

(2581) An EM algorithm to estimate inter-annual variation in fish growth from length-frequency data
Luke Batts - *Marine and Freshwater Research Centre, GMIT, Ireland*

(2646) A spatiotemporal model for combining survey and fishery data
John Best - *University of Washington, United States*

(2638) A spatially varying coefficient model to help stock assessment for data-poor species: a case study with skates (*Raja sp.*) population trends.
Thomas Cornulier - *University of Aberdeen, UK, United Kingdom*

(2563) Global reconstruction of life-history strategies for data-limited populations
Cat Horswill - *University of Glasgow, United Kingdom*

15:45 - 16:45 Multi-species Modelling (I)

Physics LT B

Chair: Ben Stevenson

(2569) Modelling hierarchical functional relationships with Markov random field tensor products
Eric Pedersen - *Fisheries and Oceans Canada, Canada*

(2546) A general framework for combining ecosystem models
Michael Spence - *CEFAS, United Kingdom*

(2648) What drives the distribution of eucalypt trees? Lessons from trait-based species distribution models.
Peter Vesk - *University of Melbourne, Australia*

(2339) Novel applications of the Monte-Carlo EM algorithm in ecology
David Warton - *UNSW Sydney, Australia*

15:45 - 16:45 Spatial Modelling (III)

Physics LT A

Chair: Janine Illian - Senior Lecturer in Statistics, University of St Andrews

(2641) Analysing telemetry data using spatial point process models
Esther Jones - *University of South Wales, United Kingdom*

(2632) Describing Southern Resident Killer Whale Habitat Use in the Salish Sea using Multiple Sources of Data.
Ruth Joy - *Simon Fraser University; SMRU Consulting, Canada*

(2568) A spatio-temporal model for fishing effort displacement due to area closures using INLA and SPDE: The scallop dredge fishery and offshore wind farms in Scotland
Andronikos Kafas - *University of Aberdeen & Marine Scotland, United Kingdom*

(2620) A flexible and efficient spatiotemporal modeling strategy for trend analysis of North American bird count data
Tim Meehan - *Audubon Society, USA*

(2556) Achieving depth and breadth in spatial models of vector-borne diseases: An integrated framework for active survey and passive surveillance data
Luca Nelli - *University of Glasgow, United Kingdom*

16:45 - 17:15 Tea/Coffee

MSB & Physics Cafe/Foyer

17:15 - 18:00 Abundance Estimation (III)

Physics LT C

Chair: Emily Dennis

(2566) Understanding snow leopard distribution and their spatial ecology through Spatial Capture Recapture Analysis

Koustubh Sharma - *Snow Leopard Trust, Kyrgyzstan*

(2609) Integrating spatial capture-recapture and point count data to estimate bird density

Rahel Sollmann - *UC Davis, USA*

(2589) Estimating Animal Abundance from Passive Acoustics: A Real-world Test Using a Bottlenose Dolphin Population of Known Size

Len Thomas - *University of St Andrews*

17:15 - 18:00 Capture-Recapture Modelling (III)

Physics LT A

Chair: Ruth King

(2503) Putting the 'spatial' in 'spatial capture-recapture'

Ben Stevenson - *University of Auckland, New Zealand*

(2374) Novel Application of Adaptive Sampling Principles to Spatial Capture-Recapture

Alec Wong - *Cornell University, United States*

(2633) Modelling the recruitment of grey seals to the breeding population on the Isle of May

Hannah Worthington - *University of St Andrews, United Kingdom*

(2372) Maximum likelihood estimation for latent multinomial models using the saddlepoint approximation method

Wei Zhang - *Department of Statistical and Actuarial Sciences, Western University, Canada*

17:15 - 18:00 Multi-species Modelling (II)

Physics LT B

Chair: Mark Brewer

(2605) Using joint species movement modelling to infer the role of frugivory on structuring plant communities

Teresa Moran Lopez - *Laboratorio Ecotono, INIBIOMA, CRUB, Univ. Nacional del Comahue,, Argentina*

(2578) Efficient estimation methods for generalized linear latent variable models using TMB

Jenni Niku - *University of Jyväskylä, Finland*

(2272) Analysing community assembly processes with hierarchical modelling of species communities

Gleb Tikhonov - *University of Helsinki, Finland*

19:00 - 23:59 Banquet and Ceilidh

Old Course Hotel

6 July (Friday)

Location

09:00 - 09:45 Plenary

Physics LT A

Chair: Rachel Fewster

(2253) Monitoring the biodiversity of regions: principles and pitfalls

Steve Buckland - *University of St Andrews*

09:45 - 10:00 Break

On Site

10:00 - 11:30 Capture-recapture and Integrated Modelling

Physics LT B

Chair: Hannah Worthington

(2358) Estimating annual survival from combined live/dead encounter data using species-level random effects: a case study with North American wood warblers

Todd Arnold - *University of Minnesota, United States*

(2376) Spatial Capture-Recapture for Categorically Marked Populations with an Application to Genetic Capture-Recapture

Ben Augustine - *Cornell University, United States*

(2338) Spatially explicit capture-recapture: The "tweenage/teenage" years

Ruth King - *University of Edinburgh, United Kingdom*

(2606) Estimating density for species conservation using camera traps, unmarked individuals, and spatial count models.

Joanna Burgar - *University of British Columbia, University of Victoria, Canada*

(2590) Non-homogeneous Markov modulated Poisson processes for capture-recapture data

Rémi Choquet - *CEFE, CNRS, France*

(2651) Model projections in model space: Multimodel inference beyond model averaging

Jose-Miguel Ponciano - *University of Florida, United States*

(2656) Inferring processes from dynamic abundance time series

Jose Miguel Ponciano - *University of Florida*

10:00 - 11:30 Movement, Spatial and Multi-species Modelling

Physics LT A

Chair: Ben Bolker

(2540) Processing of acceleration and dive data on-board satellite relay tags to investigate diving and foraging behaviour in free-ranging marine predators

Sam Cox - *CNRS, France*

(2635) A simulation study to assess performance of Mahalanobis distance based metrics for dimension reduction and change-point detection in animal behavior time-series

Stacy De Ruiter - *Calvin College, United States*

(2548) Boat avoidance as a source of capture heterogeneity in Heaviside's dolphins (*Cephalorhynchus heavisidii*) in Namibia – a learned behaviour?

Simon Elwen - *University of Pretoria and Sea Search Research & Conservation, South Africa*

(2524) Modelling the Collective Movement of Reindeer.

Fay Frost - *University of Sheffield, United Kingdom*

(2469) Estimating interactions between individuals from concurrent animal movements

Ulrike Schlaegel - *University of Potsdam, Germany*

(2444) Dynamic factor analysis to investigate coherency in growth patterns across multiple fish species in the Northeast Atlantic

10:00 - 11:30 Population Dynamics (III)

Physics LT C

Chair: Perry de Valpine

(2369) Open population maximum likelihood spatial capture-recapture
David Borchers - *University of St Andrews, United Kingdom*

(2280) Beyond the proportional frailty models: Bayesian estimation of individual heterogeneity in mortality parameters
Fernando Colchero - *University of Southern Denmark, Denmark*

(2596) Using citizen science data in integrated population models to inform conservation decision-making
Orin Robinson - *Cornell Lab of Ornithology, United States*

(2496) The best of both worlds: Combining strengths of wildlife and fisheries statistical models for estimating survival probability from age at harvest data
Christopher Rota - *West Virginia University, United States*

(2544) Integrated population modelling of fuliginator beetle data with two temporal dynamic scales
Byron Morgan - *University of Kent, United Kingdom*

(2669) Local nest-boxes deployment creates a source population impacting large scale population dynamics
Rémi Fay - *Swiss Ornithological Institute, Switzerland*

(2461) Model validation in state-space fish stock assessments models
Anders Nielsen - *Technical University of Denmark, Denmark*

11:30 - 12:00 Tea/Coffee

MSB & Physics Cafe/Foyer

12:00 - 13:30 Invited - Distance Sampling

Physics LT A

(2323) Historical Perspective of Distance Sampling Development
Jeffrey Laake - *None, United States*

(2337) Distance Samplers and Other Animals
Rachel Fewster - *University of Auckland, New Zealand*

(2647) Application of structured surveys and distance sampling to conservation science – a key statistical contribution
Stephen Baillie - *British Trust for Ornithology, United Kingdom*

13:30 - 14:15 Awards Ceremony

Physics LT A

14:15 - Lunch and Conference End

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