



# Newsletter

## NCSE hosts its first International Statistical Ecology Conference

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*Participants at ISEC 2008*

For three days in July of 2008, much of the world of statistical ecology was to be found attending the international statistical ecology conference in St. Andrews. Participants from 32 countries were greeted with typical 'four seasons in one day' Scottish weather. Nevertheless, a stimulating three days of intellectual exchange occurred under the threatening skies.

The conference began with Simon Pepper, rector of St. Andrews and former head of WWF Scotland setting the tone by asking the delegates to place the subject of the conference in the context of the environmental state of the world. Luminaries of statistical ecology provided seven thought-provoking invited presentations. Jim Clark started things off with a discussion of Bayesian methods in ecosystem studies. Anne Chao also addressed community-level questions by describing continuing work to estimate species richness. Ken Burnham used the opportunity of his impending retirement to discuss developments in capture-recapture

theory during his >30 years of involvement in the area. Roger Pradel described extensions to multi-state models in which the state of the individual is uncertain. Carl Schwarz pushed forward ideas of parameter estimation into designing experiments in mark-recapture methods. Shirley Pledger discussed her recent efforts incorporating heterogeneity into mark-recapture models. Provocatively Jim Nichols challenged the biologists in attendance to work more closely with statisticians, and equally encouraged statisticians to be more pro-active in exerting influence in ecological investigations.

Besides the invited speakers, there were 96 contributed talks on a wide-variety of topics. Many speakers were students entered in a competition for best presentation. That competition was won by Vanessa Cave of St. Andrews.

A poster session had more than 30 posters, with the best student poster award given to Maren Rebke from the Max Planck Institute for Demo-

graphic Research in Rostock. An extra treat during the evening poster session was the unveiling of a poster created by Rachel McCrea and Byron Morgan to celebrate Ken Burnham's contribution to the field of statistical ecology.

Delegates were treated to the conference banquet in the old portion of the St. Andrews campus and were piped into the banquet room. After the meal, all were entertained by Prof. Richard Cormack and a visual display of his photographic talents.

Plans are already under way for the next international statistical ecology conference to be held in Kent in July of 2010. The list of invited speakers is every bit as luminary as last year's group. We will also have a series of workshops associated with the conference. For further information, see page 2. I am sure that that conference will be every bit as memorable as the one held in 2008.

### Special points of interest:

- ISEC 2010
- NCSE Associate Members

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## NCSE prepares for ISEC 2010

The International Statistical Ecology Conference (ISEC 2010) will take place from Tuesday 6th to Friday 9th July 2010 at the University of Kent at Canterbury in the UK.

This conference will bring together experts from around the world to discuss topics of interest to ecological statisticians and numerical biologists. Sessions will focus on mark-recapture methods, distance sampling methods, other abundance estimation techniques, monitoring of biodiversity, survey design and analysis for estimating population trends, modelling of spatial trends in animal density, integrated population modelling, stochastic population dynamics modelling, stochastic multispecies modelling, and stochastic modelling of animal movement.

There will also be a series of workshops linked to the conference.

Seven eminent invited speakers will give the plenary talks through the conference. They are:

- Professor Lord Robert May of Oxford OM AC FRS, Department of Zoology, University of Oxford

- Carmen Fernandez, Instituto Español de Oceanografía, Spain
- Jeff Laake, Alaska Fisheries Science Center, National Oceanic and Atmospheric Administration, United States Department of Commerce
- Darryl MacKenzie, Proteus Research & Consulting Ltd
- Marc Mangel, Department of Applied Mathematics and Statistics, University of California
- Ken Pollock, Professor of Zoology, North Carolina State University
- Nigel Yoccoz, Institute of Biology, University of Tromsø.

Take a look at the ISEC 2010 website: <http://www.creem.st-and.ac.uk/ocs/index.php/isec/isec2010/> for further information on each speaker. Further information about the conference, including the process for booking places and contributing talks and posters, will be made available on the website as it becomes available.



*Views of Woolf College, University of Kent*

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*Take a look at our new website—*

[www.ncse.org.uk](http://www.ncse.org.uk)

## Training workshops in 2009

A full slate of workshops are to be held at the Observatory in St. Andrews. The workshop series begins in early June with Darryl MacKenzie from Proteus Ltd. (New Zealand). He will lead a four-day workshop in species occurrence and occupancy. In July, the distance sampling group from St. Andrews will deliver their introductory workshop at San Diego State University for 3.5 days, followed by a one-day workshop on acoustic methods in distance sampling.

During the month of August, there will be three workshops. Leading a workshop in Europe for the first time in over a decade, Gary White, emeritus professor from Colorado State Univ., will deliver a five-day workshop on mark-recapture methods, using the MARK software he has authored over the past 15 years. Also instructing

during this workshop will be Paul Doherty, a faculty member at Colorado State University.

The introductory and advanced versions of the distance sampling workshops will be held during the third and fourth weeks of August, led by the distance sampling group

at St. Andrews. Finally, in September, ahead of the Euring conference, Dr Ruth King, Prof. Byron Morgan and Dr Olivier Gimenez will deliver their workshop on Bayesian analytical methods in population ecology. Full details of these workshops can be found online at <http://creem2.st-andrews.ac.uk/workshops.aspx>

Workshops at St Andrews	Dates
Species occupancy and occurrence	9-12 June
MARK workshop	3-7 August
Introductory distance sampling	18-21 August
Advanced distance sampling	24-28 August
Bayesian analysis of population ecology	7-11 September





## NCSE welcomes first Associate Members

We are pleased to welcome the following associate members to NCSE.

**Nicholas Aebischer** is Deputy Director of Research at the Game and Wildlife Conservation Trust. Nicholas is perhaps best known amongst the statistical ecology community for his work on compositional analysis of habitat use from radio-tracking data, but has many papers on wide-ranging topics in farmland, moorland and marine ecology.

**Nicole Augustin** is Lecturer in Statistics at the University of Bath. Nicole was a PhD student at St Andrews, working on spatial models for ecological survey data, in particular auto-Poisson and auto-logistic models. She has also published on model averaging, forestry applications of statistics, and generalized additive models.

**Paul Blackwell** is already actively involved in NCSE activities, having attended past workshops and spoken at an NCSE-organised session at the International Biometrics Conference in Dublin. He is Professor of Statistics at the University of Sheffield. He has published extensively on marine ecology, on radio-carbon dating, and on dispersion, diffusion and invasion models.

**Bill Browne** is Professor of Biostatistics at the University of Bristol. His publications span MCMC methods, risk models, random effect models and multilevel models, with applications in ecology, medicine, epidemiology, agriculture, veterinary science and education. His contributions to statistical ecology include modelling of the Wytham Wood great tit data. His colleague, **Sean Rands**, a lecturer in the School of Clinical Veterinary Science at Bristol, also has interests in statistical ecology, including social

foraging theory models, models for reserve allocation decisions in animals, and the effects of predation risk on behaviour.

**David Elston** is already an honorary professor within NCSE. He is Director of Biomathematics and Statistics Scotland, who provide a statistical consultancy service to Scottish research institutes. He has published statistical and modelling papers in a wide range of journals, spanning statistics, terrestrial and marine ecology, biology, agriculture, land use, hydrology, geography, environmental management and veterinary science. Two of his staff, **Mark Brewer** and **Adam Butler**, are also associate members. Mark's interests are in spatio-temporal modelling, compositional data analysis, Bayesian mixture modelling and kernel density estimation. Adam shares Mark's interests in spatio-temporal modelling, and also works with environmental risk assessment and extreme value methods.

**Dan Haydon** is Professor of Population Ecology and Epidemiology at the University of Glasgow. His primary research focus is in epidemiology, primarily in the context of domestic and wild animal populations. His work in ecology includes modelling population dynamics and especially population cycles, and in movement models.

**Chiara Mazzetta** is Research Fellow at the University of Warwick, having previously been a PhD student under Steve Brooks at Cambridge, followed by a spell as Post-Doctoral Research Assistant with Byron Morgan at Kent. Prior to her PhD, Chiara worked in medical statistics. Since moving into statistical ecology, she has worked with MCMC methods, with ecological applications in modelling demographic trends and ring-recovery data.

*“NCSE announces first Associate Members.”*

## RUWPA to be contract research arm of NCSE

The Research Unit for Wildlife Population Assessment (RUWPA) performs a contract research function, specialising in population assessment. RUWPA staff have particular expertise in distance sampling methodology and in the development of methods for specialised types of wildlife survey. RUWPA has also conducted research in state-space modelling of population dynamics. Recent projects include population assessment techniques in the context of impact assessment, and the

assessment of new survey methodology such as digital imagery for assessment of seabird distribution in the vicinity of wind farm developments.

More information can be found at [www.ruwpa.st-and.ac.uk](http://www.ruwpa.st-and.ac.uk).

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*Aerial survey for sea ducks, Horns Rev offshore wind farm, Jutland  
© Ib Krag Petersen, NERI, Denmark*

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NCSE was set up in October 2005 as a joint venture between the Universities of Kent, Cambridge and St Andrews, with funding from the EPSRC. Its objectives include:

- To be a Centre of international repute for the development and application of novel statistical methods in population ecology, integrating the partner Universities' research programmes and activities in statistical ecology.
- To develop novel statistical methodology for the analysis of complex data sets arising in ecology and to apply these methods to a broad collection of topical and important data sets.
- To train PhD and postdoctoral researchers to work as statistical ecologists.
- To develop a computer software system to enable ecologists to use cutting edge statistical methodology on their own data.
- To train end-users in the use of methodology and accompanying software developed by NCSE.
- To build upon and create new collaborations with relevant stakeholders.
- To develop and deliver a programme of workshops and conferences.



## Snippets!

### Movements:

Chiara Mazzetta has moved from the University of Kent to become a Research Fellow at the University of Warwick. She has also recently become an associate member of NCSE.

### Congratulations to:

Rachel McCrea (nee Borysiewicz) on the successful submission of her PhD thesis entitled 'The combined analysis of multisite mark-recapture-recovery and census data'.

### Welcome to:

Gurutzeta Guillera-Arroita who has joined NCSE from Imperial College. She is based at the University of Kent and is working with Byron Morgan, Martin Ridout and Matthew Linkie, of the Durrell Institute of Conservation and Ecology, on her PhD project model-

ling the spatio-temporal distribution of Sumatran tigers and their prey.

Beth Norris who has joined NCSE from the Durrell Institute of Conservation and Ecology based at the University of Kent. Beth is working on a PhD project modelling the spatial distribution of benthic organisms. She is jointly supervised by Byron Morgan, Martin Ridout and Jon Barry of Cefas.

Jose Lahoz-Montfort who has joined NCSE from Imperial College and is based at the University of Kent. Jose is working with Byron Morgan, Stephen Freeman and Sarah Wanless, both from the Centre for Ecology and Hydrology, on a PhD project entitled 'Integrated population models for colonial British seabirds'.

