



EUROPEAN SCIENCE FOUNDATION

Scientific Programme on

OPTIMALITY IN BIRD MIGRATION

Final Conference

“Migration in the life-history of birds”

16 – 20 February 2005

Wilhelmshaven
Germany

hosted by

Institute of Avian Research
'Vogelwarte Helgoland'



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Programme

Wednesday, 16 February

- 14:00-21:00 Registration
Poster set-up
- 19:00-21:00 Informal come-together, snacks & beer

Thursday, 17 February

- 08:30-09:00 Opening
- 09:00-10:00 Plenary 1: **S. Bensch: Migratory connectivity**
Chair: *F. Spina*
- 10:00-10:30 break
- 10:30-12:30 Symposium 6: **The study of connectivity: rings, isotopes and more**
Convenors: *F. Spina & T. Szep*
- P. P. Marra*: Seasonal interactions and the relevance of understanding migratory connectivity
 - T. Szep*: Identifying potential wintering and migration areas by using NDVI satellite data and survival data
 - R. Ambrosini*: Estimating connectivity using recovery and recapture data
 - C. Sanpera*: Migratory connectivity, migration pattern and pair bonds in Audouin's Gulls: Insights from stable isotopes and mercury
 - M. Wink*: Use of DNA markers to study bird migration
- 12:30-14:00 lunch
- 14:00-15:00 Plenary 2: **I. Newton: Stopover ecology, migration-related mortality and population limitation in birds**
Chair: *E. Barba*
- 15:00-16:00 break & poster
- 16:00-18:00 Symposium 7: **Ecology of stopover and wintering**
Convenors: *E. Barba & P. Jones*
- J. Delingat*: Methods and models in stopover ecology
 - V. Salewski*: Palearctic migrants as members of Afrotropical bird communities – the case of the Willow Warbler
 - T. Fransson*: Extended fuelling in Garden Warblers close to the trans-Saharan passage
 - L. Lind*: Anti-predation behaviour during bird migration; the benefits of studying multiple behavioural dimensions
 - R. Robinson*: Putting on weight: the importance of timing and food supply
- 18:00-20:00 dinner
- 20:00-22:00 **parallel sessions**
- main hall:**
- Symposium 5: **Population models and migration**
Convenors: *M. Schaub & S. Baillie*
- K. Norris*: Large-scale processes in a migratory shorebird – the challenge for behavioural models

T. S. Sillett: Seasonal survival probabilities of long-distance migratory passerines: the importance of carry-over effects

P. H. Becker: Demography of the Common Tern: Variation of adult and subadult return rates

O. Feró: The effects of changing food distribution on the population dynamics of migratory birds: optimal annual routine simulations

side hall:

Symposium 3: **Habitat selection**

Convenors: *N. Chernetsov & E. Danchin*

Muhkin, A.: Habitat assessment by migrating passerines at landfall: the role of acoustic keys

Ktitorov, P.: Landscape-scale habitat-body mass relationships in the forest-dwelling songbird migrants

Friday, 18 February

08:30-09:30 Plenary 3: **R. Drent: Travel to breed: the link between migration and breeding**

Chair: *A. van Noordwijk*

09:30-10:00 break

10:00-12:00 Symposium 4: **Weather and bird migration**

Convenors: *O. Hüppop & F. Liechti*

F. Liechti: Birds flying with the wind - benefit or burden? - A review

S. Gauthreaux: Atmospheric trajectories and spring bird migration across the Gulf of Mexico

J. Prop: Weather and pre-migratory deposition of body stores in arctic-breeding geese

H. Schmaljohann: Passerine migration across the Sahara - Does wind decide on non-stop or intermittent flights?

J. Shamoun-Baranes: The identification and optimisation of parameters influencing soaring bird migration

12:00-13:30 lunch

13:30-14:30 Plenary 4: **F. Bairlein: Climate change and bird migration**

Chair: *E. Lehikoinen*

14:30-16:00 break & poster

16:00-18:00 Symposium 1: **Climate change and bird migration: pattern and processes**

Convenors: *T. Coppack & E. Lehikoinen*

F. Pulido: Do short- and long-distance migrants differ in their potential to adapt migratory behaviour to climate change?

A. P. Tøttrup: Changes in breeding area residence time of European migrants

J. Clark: Climate change and shifts in winter distribution of European breeding birds

P. Musil: Long-term changes in recovery distance of wintering water birds ringed in the Czech Republic

M. Žalakevičius: Spring arrival response in birds to climate change in eastern Europe

18:00-20:00 dinner

20:00-22:00 **parallel sessions**

main hall:

Oral session

Chair: *K.-M. Exo*

P. Tryjanowski: Changes in the timing of arrival of the White Stork in western Poland: the importance of nest quality

T. W. Sherry: Clinal geographic variation in the nesting behaviour of the American Redstart, with implications for structuring of breeding populations

R. L. Holberton: Habitats and hormones: understanding the endocrine aspects of migratory connectivity across the annual cycle

M. Griffiths: Eco-energetic differences in breeding and wintering areas of the Goldfinch, a partial migrant from Britain to Spain

R. Nathan: Using high-resolution atmospheric models to unfold fine-scale flight strategies of migratory birds

S. R. Baillie: Quantifying migration patterns and phenology at large spatial scales using internet-based surveys

side hall:

Round Table: **Climate change**

Convenor: *R. Robinson*

Saturday, 19 February

08:30-09:30 Plenary 5: ***M. Ramenofsky*: Behavioral and physiological conflicts in migrants: the transition between migration and breeding**

Chair: *L. Jenni*

09:30-10:00 break

10:00-12:00 Symposium 8: **Physiological conflicts in migrants (moult, migration, breeding)**

Convenors: *S. Jenni-Eiermann & U. Bauchinger*

Z. Barta: Optimal moult strategies in migratory birds

U. Bauchinger: Migrating with reproduction in mind: Constraints of time and body condition during long-distance spring migration

V. Kumar: Biological clocks help reduce the physiological conflicts in avian migrants

S. R. McWilliams: Flying, fasting, and feeding in birds during migration: a nutritional and physiological ecology perspective

P. L. Pap: Breeding time and sex-specific health status in the Barn Swallow

12:00-13:30 lunch

13:30-14:30 Plenary 6: ***A. Hedenström*: Mechanics of bird migration**

Chair: *Y. Leshem*

14:30-16:00 break & poster

16:00-18:00 **parallel sessions****main hall:****Symposium 9: Macroecology and the study of bird migrations**Convenors: *C. Rahbek & W. Jetz**J. Rappole*: Why don't all birds migrate?*W. Jetz*: The global biogeography and environmental correlates of migratory behaviour in birds*N. Lemoine*: Species richness of migratory birds is influenced by global climate change*C. Rahbek*: Using potential distributions to explore determinants of Western Palaearctic migrant songbird species richness in sub-Saharan Africa*K. Thorup*: Does the migration programme constrain dispersal and range sizes of migratory birds?**side hall:****Symposium 2: Reaction norms**Convenors: *A. van Noordwijk & B. Helm**A. van Noordwijk*: Reaction norms as a framework to combine environmental and individual variability*B. Helm*: Reaction norm approaches to avian migration: candidate environmental factors*B. Bruderer*: Do nocturnal passerine migrants react as expected? – Autumn flight directions along the western Palaearctic flyway

- *H. van der Jeugd*: Timing of migration, breeding and moult in barnacle geese: relationships within and across populations

- *Ch. Marchetti*: Individual differences in behaviour in fledgling Blackcaps selected for high and low migratory activity

19:00-22:00 **conference dinner****Sunday, 20 February**08:30-09:30 Plenary 7: ***H. Dingle*: Animal migrations: Is there a common migratory syndrome?**Chair: *A. Hedenström*

09:30-10:00 break

10:00-12:00 Symposium 10: **Conservation of migrants**Convenors: *Y. Leshem & J. O'Sullivan**J. O'Sullivan*: Migratory birds and international law: does all the paper work?*Y. Leshem*: The Great Rift Valley: conservation of migrants on a mega scale*D. Barjaktarov*: Aspects of conservation of wetland birds within the protected natural objects in Serbia*L. Buurma*: Balancing flight safety, research and conservation: The Netherlands Bird Avoidance Model*B. J. Ens*: Parameterizing models of optimal migration for arctic-breeding waders

12:00-12:15 closing

Symposium 10
Conservation of migratory birds
Convenors: Yossi Leshem & Jon O'Sullivan

Barjaktarov, D.¹, Mitric, M.²

Aspects of conservation of wetland birds within the protected natural objects in Serbia

¹Natural History Museum, Njegoseva 51, Belgrade, Serbia; ²Directorate for the Environmental Protection, Dr Ivana Ribara 91, Belgrade, Serbia

Mergansers, grebes, ducks, geese and swans spend the winter on larger unfrozen rivers in Serbia, particularly the Danube. Numerous other wetland birds (herons, storks and ibises) are trans-continental migrants that during migration spend, time in various wetlands in Serbia, in order to rest and renew their energy supplies. A significant number of these stopover sites are on the list of areas important for birds (IBA – *Important Bird Areas*). Only three areas are protected as Special Nature Reserves and placed on list of Ramsar areas. The real role was estimated and significance of IBA areas in Serbia assessed as key localities of bird protection. In addition, the need for Serbia-Montenegro to ratify the agreement AEW (African-Euroasian Waterbird Agreement) and the importance of implementing conservation on a national level, due to the fact that the number of shot birds is increasing every year in protected areas (especially in places where there is a large concentration of migrating or wintering birds) were analysed. Data on ringed birds and their recoveries, as well as results of monitoring bird movements, were used in order to suggest the forming of a network of reserves where birds aggregate most often during migration, and to implement active conservation and strict control of hunting and hunting tourism, which are opposed to the international need for bird protection.

Buurma, L., Shamoun-Baranes, J., Belle, J. van

Balancing flight safety, research and conservation: The Netherlands Bird Avoidance Model

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The University of Amsterdam, the Dutch Centre for Field Ornithology and the Royal Netherlands Air Force have formed a unique collaboration to develop a 3D spatial and temporal model of bird densities under changing environmental conditions. The initial aim of this Bird Avoidance Model (BAM) is to support the prevention of collisions between aircraft and birds. Radar and visual observations of birds together with landscape information and meteorological data are being used as input into conceptual and data driven models. Currently the BAM is being designed as a set of sub models to be linked at a final stage. The sub models concern bird distribution (2D), local movements (2D), nocturnal migration (3D) and the altitude choice of birds under varying thermal conditions. Strong emphasis is put into the calibration of each model with field data. In return, predictions resulting from the BAM can be used to test fundamental biological questions and to refine future research. The flip side of the BAM is nature conservation. The same predictions used to reduce the impact of birds on aviation can be used to reduce the impact of human activities on birds. The predictions, methodological procedures, and the understanding of bird behaviour obtained during this study can be applied to conservation efforts, risk assessment studies, habitat management and mitigation measures.

Ens, B. J., Schekkerman, H., Tulp, I.

Parameterizing models of optimal migration for arctic-breeding waders

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Waders are prominent long-distance migrants and depend on a chain of wetlands for their survival. Wetlands are a threatened habitat and many countries, including the Netherlands, have signed international agreements to protect these chains of wetlands. Effective protection requires a tool to assess the consequences of habitat loss along the migration route. Optimality models of migration might provide such a tool. The dependency of reproductive success on time of arrival and condition at arrival on the breeding grounds is an important component in such optimality models of migration. Yet, this function is poorly known for arctic-breeding waders. We therefore organized expeditions to