Max-Planck-Institut für Ornithologie

Max Planck Institute for Ornithology

Radolfzell Colloquia

Speaker invited by: Dept. Wikelski, Radolfzell

THURSDAY, DECEMBER 13, 2012, 13H, RADOLFZELL (VIDEOCONFERENCE in Seewiesen, house 4, lecture room)

Host - pathogen interactions in the Mallard: moving from populations to individuals and from genes to function

Prof. Jonas Waldenström, Linnaeus University, Sweden

Pathogenic microorganisms are a reality for all living animals, and infectious diseases shape the ecology and evolution of the host species they infect. Consequentially, hosts have evolved countermeasures in order to avoid being infected, or to clear infection once established. The severity of a disease is determined by the sum of the direct damage caused by the pathogen itself plus the collateral damage, including inflammation induced by the host's immune defenses. As a result, the outcome of an infection is linked to the host's immune status, which in turn depends on factors such as age and nutritional status (‚the pathogen–host–environment matrix'). Spatial-temporal variations in distribution and abundance of pathogens, vectors and hosts complicate the study of these interactions, as does the fact that most pathogens are able to infect more than one host species. In this talk I will present ongoing research on Mallards and viral diseases from a migratory stopover site in Sweden. Through a longstanding surveillence scheme conducted at the individual level, we can now address key issues in virus - host interactions and characterize not only spatial-temporal relationships but also how variation in immune genes governs susceptibility to disease.

Who is Jonas Waldenström?

.2005 PhD in Animal Ecology, Lund University, Sweden
2006 Assistant Professor, Zoonotic Ecology and Epidemiology, Kalmar University, Sweden
2008 Associate Professor, Medical Sciences, Uppsala University, Sweden
2008-present, Associate Professor, Linnaeus University, Sweden

Selected publications:

- Griekspoor, P., Colles, F.M., McCarthy, N.D., Hansbro, P.M., Ashhurst-Smith, C., Olsen, B., Hasselquist, D., Maiden, M.C.J. & Waldenström, J. Marked host specificity and lack of phylogeographic population structure of Campylobacter jejuni in wild birds. Molecular Ecology, In press.
- Guan, Y., Webby, R. Capua, I. & Waldenström, J. 2012. How to track a flu virus. Nature 483:535-536.
- Gunnarsson, G., Latorre-Margalef, N., Hobson, K. A., Van Wilgenburg, S. L., Elmberg, J., Olsen, B., Fouchier, R. A. M. & Waldenström, J. 2012. Disease Dynamics and Bird Migration – Linking Mallards Anas platyrhynchos and subtype diversity of Influenza A Virus in Time and Space. PLoS ONE, 7(4): e35679. [doi:10.1371/journal.pone.0035679].
- Latorre-Margalef, N., Gunnarsson, G., Munster, V.J., Fouchier, R.A.M., Osterhaus, A.D.M.E., Elmberg, J.,
- Olsen, B., Wallensten, A., Haemig, P.D., Fransson, T., Brudin, L. & Waldenström, J. 2009. Effects of influenza A virus infection on migrating mallard ducks. Proceedings of the Royal Society Series B 276: 1029-1036 [doi: 10.1098/rspb.20081501].
- Olsen, B., Munster, V. J., Wallensten, A., Waldenström, J., Osterhaus, A. D. M. E. & Fouchier, R. A. M. 2006. Global patterns of influenza A virus in wild birds. Science 312: 384-388. [doi:10.1126/science.1122438]

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