

## **News from Europe**

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### **Preliminary announcement for the ninth EWDA conference**

#### **On the Dutch island of Vlieland:**

##### **'The interface between wildlife diseases and public health'**

The next EWDA conference will be held from 6 to 10 September 2010 on the island of Vlieland, The Netherlands. Vlieland is a sparsely populated island of 12 x 2 km that lies between the North Sea and the Wadden Sea. The Wadden Sea is famous for its rich flora and fauna, and is a major stopover location for migrating waterbirds. Its landscape is made up of dunes, salt meadows, mud flats, beaches, polders and forests. Cars are forbidden except for the islanders, but the island is best explored by bicycle anyway.

Zoonotic wildlife diseases threaten not only wild animals, but through these also domesticated animals and humans. Emerging infectious diseases are known to arise for 75% from the animal reservoir, in which wildlife plays an important role. The conference central theme, 'The interface between wildlife diseases and public health', bridges animal and human health, and will therefore be of great interest for people from many different disciplines, ranging from both public health professionals and wildlife diseases specialists, to ecologists, biologists, epidemiologists et cetera.

The scientific committee is currently working on a programme that will cover different aspects of wildlife zoonotic diseases. Topics that will be addressed include the different pathogens (and their vectors) of present and future interest for wildlife, domestic animals and humans, and also related topics such as climate change and its impact on the ecology of certain species, human behaviour and altered risk for contact with reservoir/vector species, the impact of import of exotic species and migration of wildlife species.

Next to plenary sessions, different workshops will be organised. And of course, ample time for meeting friends and colleagues is scheduled, be it during the breaks or during excursions. Vlieland is the right place to get a breath of really fresh air. After this conference, your heart will be free of troubles while your head will surely be full of interesting new scientific knowledge.

Please, note this date in your agenda and watch the EWDA website, further information and the possibility to register and send your abstracts will follow soon!

For touristic information you can look at:

[www.waddenzee.nl](http://www.waddenzee.nl) or [www.vlieland.nl](http://www.vlieland.nl) , push the button for English text.

### Opportunity for workshops at EWDA 2010

The next EWDA conference will be held from 6 to 10 September 2010 on the island of Vlieland, The Netherlands. We have left Monday 6 September free for people who would like to organize workshops in conjunction with the EWDA conference. At the conference hotel, Hotel Seeduyn, which is perched on the dunes overlooking the North Sea, we have reserved six rooms with a capacity ranging from 30 to 112 people. People who are interested in organizing a workshop should apply to Thijs Kuiken (t.kuiken@erasmusmc.nl).

### Disease threats to the last Iberian lynxes

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The Iberian lynx is the most endangered felid in the world, with no more than 200 individuals living in two separate areas in Andalusia, Southern Spain. These lynx show low rates of exposure to infectious agents according to a previous study [1]. Thus, if a disease epidemic took place, it may lead the remaining lynx to extinction. Sympatric carnivores may act as reservoirs of some diseases and can also serve as sentinels of some others. From 2004 to 2006, and financed by the Andalusia Government, we sampled 200 carnivores (dead or alive) for evidence of contact with parasitic, infectious, and toxic agents. Included in the study were 26 free-living lynx. The other species were mainly free-roaming cats, rural dogs, red foxes (*Vulpes vulpes*), Egyptian mongooses (*Herpestes ichneumon*), and common genets (*Genetta genetta*). The study confirmed that the Iberian lynx has little contact with viral agents: antibodies against parvovirus (PV), FeLV, and CAV-1 were each detected in one lynx (4.5%). Active infections with parvovirus, *Ehrlichia* spp., *Mycobacterium bovis* (including a fatal case), *Leptospira interrogans*, *Leishmania infantum*, and *Cytauxzoon* spp. were confirmed. In contrast, 53% of the domestic cats were exposed to infectious agents (including FIV, FeLV, FCV, FCoV, CDV, *Ehrlichia* spp., or *Chlamydomphila* spp; seroprevalence range: 4.5–11.4%). We also found that 26% of necropsied cats had an active infection with some of these agents. Antibodies to CDV and PV were frequent in dogs (32% and 42%, respectively) and foxes (30% and 12%). Antibodies to and/or infections with *Ehrlichia* spp., *M. bovis* (including a disseminated case in a red fox [2]), *L. interrogans*, *Salmonella enterica*, *T. gondii*, *Neospora caninum* and *L. infantum* were detected in most of these species [3, 4, 5, 6]. We also carried out questionnaires to cat and dog owners in lynx areas that revealed that 14% of the dogs but none of the cats

had been vaccinated, and no cat had been neutered [3]. The lynx and the other carnivores also shared species of ticks and fleas [7], some of which were infected by infectious agents [8, 9, unpublished results]. The domestic cat may also be acting as reservoir of helminths, of particular relevance would be *Ancylostoma tubaeforme*, hookworm that parasitized 80% of adult cats and that may be pathogenic for lynx pups [10]. Finally, since some events, like the mining spill of Aznalcóllar, suggested that toxic agents may be affecting the Iberian lynx, carnivores were analyzed for the presence of toxins. The mean concentrations of heavy metals, metalloids and organochlorines were below those indicative of chronic intoxication in all the species [11, unpublished results]. All these results indicated that the Iberian lynx was far from safe from infectious and parasitic disease risks. Management actions are necessary to avoid a potential disease outbreak among sympatric carnivores that might affect the two remaining Iberian lynx populations. A campaign to control domestic carnivore populations (by vaccination, euthanasia, and/or neutering) would reduce the incidence of circulating pathogens. In addition, disease must be taken into account when planning lynx translocations or reintroductions.

1. Roelke et al. 2008. Exposure to disease agents in the endangered Iberian lynx (*Lynx pardinus*). *Eur J Wildlife Res* 54:171-178.
2. Millán et al. 2008. Disseminated bovine tuberculosis in a wild red fox (*Vulpes vulpes*) in southern Spain. *J Wildlife Dis* 44:701-706.
3. Millán et al. (in press). Disease threats to the endangered Iberian lynx (*Lynx pardinus*). *Vet J*. DOI:10.1016/j.tvjl.2008.04.005
4. Millán et al. (in press). Leptospirosis in wild and domestic carnivores in natural areas in Andalusia, Spain. *Vector-Borne Zoonot*. DOI: 10.1089/vbz.2008.0081
5. Sobrino et al. 2008. Characterization of widespread canine leishmaniasis among wild carnivores from Spain. *Vet Parasitol* 155:198-203
6. Millán et al. 2007. Prevalence of infection and 18S rRNA gene sequences of *Cytauxzoon* species in Iberian lynx (*Lynx pardinus*) in Spain. *Parasitology* 134:995-1001.
7. Millán et al. 2007. Ectoparasites of the endangered Iberian lynx and sympatric wild and domestic carnivores in Spain. *Med Vet Entomol* 21:248-254.
8. Márquez and Millán (in press). Rickettsiae in ticks from wild and domestic carnivores of Doñana National Park (Spain) and surrounding area. *Clin Microbiol Infect*.
9. Márquez et al. (in press). Detection and identification of *Bartonella* sp. in fleas (Insecta, Siphonaptera, Pulicidae) from carnivore mammals in Andalusia (Spain). *Med Vet Entomol*.
10. Millán and Casanova. 2007. Helminth parasites of the endangered Iberian lynx (*Lynx pardinus*) and sympatric carnivores. *J Helminthol* 81:377-380.
11. Millán et al. 2008. Levels of heavy metals and metalloids in critically endangered Iberian lynx and other wild carnivores from Southern Spain. *Sci Tot Environ* 399:193-201.

## Progress in tuberculosis control in Spanish wildlife

Bovine tuberculosis (bTB), caused by infection with *Mycobacterium bovis* and closely related members of the *M. tuberculosis* complex, is still a matter of concern in several European regions, particularly where wildlife reservoirs complicate disease eradication programmes in livestock.

In Spain, bTB has been reported in several wildlife hosts, including endangered species such as the Iberian lynx. The highest bTB prevalence is reported in wild boar: A recent survey in Doñana national park (southern Spain) confirmed *M. bovis* infection in 52% of 124 randomly sampled wild boar. Therefore, several research teams including IREC, VISAVET, NEIKER and UAB-CReSA are joining efforts to contribute in controlling bTB in Spanish wildlife. Funding is provided by EU-FP7 (TB-STEP grant), the Spanish Government and Spanish Regional Governments, and private funds such as Santander – M. Botín.

Recent research allowed (1) setting up new diagnostic methods to facilitate large-scale surveys and to improve bio-security in wildlife translocations; (2) discovering the most relevant wildlife bTB hosts, and means to estimate their densities; (3) identifying the main risk factors for wildlife bTB; and finally (4) starting research towards the development of a vaccination scheme for wild boar. Some relevant recent literature is listed below:

- Acevedo et al. 2008. Estimating red deer abundance in a wide range of management situations in Mediterranean habitats. *Journal of Zoology*
- Aurteneixe et al. 2008. Development and validation of an enzyme-linked immunosorbent assay for antibodies against *Mycobacterium bovis* in European Wild Boar. *BMC Veterinary Research*
- Ballesteros et al. 2009. Evaluation of baits for oral vaccination of European wild boar piglets. *Research in Veterinary Science*
- Ballesteros et al. 2009. Selective piglet feeders improve age-related bait specificity and uptake rate in overabundant Eurasian wild boar populations. *Wildlife Research*
- Balseriro et al. 2009. Bovine tuberculosis in roe deer. *Veterinary Record*.
- Fernández de Mera et al. 2008. Differential expression of inflammatory and immune response genes in mesenteric lymph nodes of Iberian red deer (*Cervus elaphus hispanicus*) naturally infected with *Mycobacterium bovis*. *Developmental and Comparative Immunology* 32: 85-91.
- Fernández-de-Mera et al. The effects of sex and age on phytohaemagglutinin skin-testing of deer. *New Zealand Veterinary Journal* 56: 71-73.
- Galindo et al. 2009. Gene expression profiles of European wild boar naturally infected with *Mycobacterium bovis*. *Veterinary Immunology and Immunopathology*
- Gortazar et al. 2008. Bovine Tuberculosis in Doñana Biosphere Reserve: The Role of Wild Ungulates as Disease Reservoirs in the Last Iberian Lynx Strongholds. *PLoS ONE* 3(7): e2776
- Lyashchenko et al. 2008. Animal-side serologic assay for rapid detection of *Mycobacterium bovis* infection in multiple species of free-ranging wildlife. *Veterinary Microbiology*
- Naranjo et al. 2008. Evidence of the role of European wild boar as a reservoir of tuberculosis due to *Mycobacterium tuberculosis* complex. *Veterinary Microbiology* 127: 1-9.
- Naranjo et al. 2008. Influence of methylmalonyl-CoA mutase alleles on resistance to bovine tuberculosis in the European wild boar (*Sus scrofa*). *Animal Genetics* 39: 316-320.

- Pérez de la Lastra et al. 2009. Expression of immunoregulatory genes in peripheral blood mononuclear cells of European wild boar immunized with BCG. *Veterinary Microbiology*
- Sobrino et al. 2008. Bovine tuberculosis in a badger (*Meles meles*) from Spain. *Veterinary Record*

### **PhD opportunity at IREC: risk assessment for vector-borne zoonotic diseases**

The Wildlife Disease Department at IREC ([www.uclm.es/IREC](http://www.uclm.es/IREC)) is looking for a highly motivated candidate to work on vector-borne zoonotic diseases (viral and bacterial pathogens; mosquito and tick vectors) in Spain, starting in July 2009. The successful candidate will develop skills in vector ecology, molecular biology and GIS. Please send CV and contact [Christian.Gortazar@uclm.es](mailto:Christian.Gortazar@uclm.es) for more information.

### **H5N1 HPAI events in wild birds in Europe (January – March 2009)**

During the first two months of 2009 there were no reported detections of H5N1 HPAI in Member States of the European Union (ADNS, 2009). However, during March H5N1 HPAI was detected from samples collected from a mallard duck (*Anas platyrhynchos*) that had been shot at Lake Starnberg, Bavaria, near Munich, Germany (OIE, 2009). The infected mallard duck was one of 39 wild birds that had been shot and sampled in January 2009. In total, the sampled birds comprised 35 mallards and four Canada geese (*Branta canadensis*); the samples from the other 38 wild birds were negative for influenza A virus infection.

The detection of H5N1 HPAI in wild bird species in Europe (2005 to date) has been most frequent from samples collected from wild birds found dead, and AI wild bird surveillance activities undertaken by EU Member States have shown that swans have been a key species in this regard (Hesterberg *et al.*, 2009). Several other wild bird species have also been involved in wild bird mortality incidents associated with the detection of H5N1 HPAI in different EU Member States, predominately various wild waterfowl species (ADNS, 2006; ADNS, 2007). In comparison, the detection of H5N1 HPAI from so-called 'healthy' wild birds in Europe has been much less common, with the most recent prior detection having been from a pochard (*Aythya ferina*) trapped and sampled on Lake Sempach in Switzerland in February 2008 (OIE, 2008). Globally, there have been other sporadic detections of H5N1 HPAI from 'healthy' wild birds species reported (includes: Chen *et al.*, 2006; Lvov *et al.*, 2006; Minta *et al.*, 2006), largely from regions where disease has been previously detected and/or established.

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### **Developing rabies outbreak in terrestrial wildlife species in North- East Italy**

Since October 2008 there have been cases of rabies in a roe deer (*Capreolus capreolus*), 2 badgers (*Meles meles*) and approximately 10 foxes (*Vulpes vulpes*) in Northern Italy. We understand that rabies vaccination in domestic animals commenced in October 2008 and fox, baited vaccination commenced more recently. We are grateful to Prof Ezio Ferroglio for this information but would appreciate any further information from Italy.

### **European Section**

Material for publication in *News from Europe* can include recent wildlife disease outbreaks and new diseases in Europe, short case and meeting reports; job and scholarship announcements. We encourage electronic submissions, and will help with the English language if required.

Please E-mail, fax or post submissions to, Paul Duff, VLA Diseases of Wildlife Scheme (VLADoWS), VLA Penrith, Merrythought, Calthwaite, PENRITH, Cumbria, CA11 9RR, United Kingdom, e-mail [p.duff@vla.defra.qsi.gov.uk](mailto:p.duff@vla.defra.qsi.gov.uk). Fax ++44(0)-1768-885314 /phone ++44(0)-1768-885295.