



E-Zine
Winter 2015



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Not in this Bulletin...



News from the EWDA board



In 2014 the EWDA held elections to renew several key positions on the Board.

Lisa Yon is the newly elected Chair and will serve a term of two years. In her address to the members present at the Edinburgh conference, she indicated that in her goal to increase the EWDA membership, she would like to include ecologists and conservationists. She also wishes to continue to build links with the WDA and other sections through professional networks.

Erik Agren was re-elected as Co-Chair, and will serve a term of two years. This position includes assisting the Chair with communication, chairing the Time and Place Committee, and assuming the duties of the Chair in her absence.

I, Karin Lemberger, will be assuming the position of secretary and serve a term of four years. My role is to disseminate the information to the membership and serve as a relay to the other members of the board on various issues.

Rogier Bodewes is our new website coordinator and will be working on enhancing the website.

Lidewij Wiersma will follow in Marc Artois' footsteps and become Newsletter editor alongside Paul Duff.

Steven van Beurden is the new Student activities coordinator and will take over in assisting students with their endeavors, including the much anticipated EWDA student workshop to be held from March 26th to 29th, 2015, at the conference centre Les Pensières of the Fondation Mérieux, in Veyrier-du-Lac, France.

Vic Simpson was re-elected to his position of Research Advisor to the EWDA board.

Marie-Pierre Ryser will assume the position of Eastern countries communication alongside Karoly Erdelyi and continue efforts to reinforce membership in those regions.



Karin Lemberger
Vet Diagnostics, Lyon, France

Congratulations to our newly elected Board members !

The newly elected board has already addressed several important issues by polling the membership on some key issues prior to issuing formal statements. The first was a statement recommending the ban of veterinary use of diclofenac in Europe.

In November, the EWDA also issued a statement indicating that rapid intensification of wild bird surveillance in Europe is needed in response to recent outbreaks of highly pathogenic avian influenza virus H5N8.

President's corner



I have always been impressed at the friendly and welcoming nature of my colleagues in the EWDA, and was glad to become involved more formally in the organisation. As most of you know, I served on the Board as Secretary, from 2010-2014, and will now serve as Chair for the next two years.

It is one of my goals in the next two years to work to continue to encourage colleagues from a wide range of disciplines (including economists, mathematicians, ecologists, animal behaviourists, and conservationists) to take part in our organisation, as members, and as participants at our conferences. Further, I am a great proponent of multi-disciplinary research, and think we should all continue working to establish collaborations with colleagues in other disciplines to broaden the scope of our understanding of significant wildlife disease issues.

It has been a busy time for the EWDA in the past few months. We issued a formal statement in support of an EU ban on veterinary use of diclofenac, and have seen the European Medicines Agency acknowledge the wildlife risks associated with its use. Recent outbreaks of HPAI have served to underscore the vital importance of supporting Europe-wide wildlife disease surveillance.

It is increasingly important to coordinate our surveillance efforts across Europe. The APHAEA project (harmonised Approaches in Monitoring wildlife Population Health And Ecology and Abundance) is coming to a close this spring, and they are holding a satellite symposium and Final Consultation Workshop during the Third International One Health Congress (IOHC 2015), March 17-18, 2015, in The Netherlands.

Given the importance of linking wildlife disease surveillance at a global scale, I am hoping that we can work to build new links with our colleagues in other WDA sections.

The importance of monitoring and addressing disease in wildlife is increasingly being recognised, and I look forward to working together during this exciting time in our profession.



Lisa Yon, EWDA President
University of Nottingham



Severe *Treponeme*-associated Bacterial Hoof Disease in Southwest Washington Elk



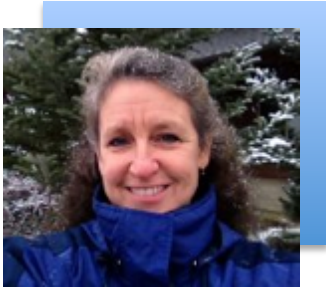
Sporadic reports of free-ranging elk (*Cervus elaphus*) with lameness and severely deformed or missing hooves have been received from southwest Washington since the mid-1990's. The number and geographic distribution of reports of the disease has expanded since then, and at this time is estimated to encompass a core area of approximately 10,500 km² (4,000 mi²).

A diagnostic investigation including radiology, routine bacteriology, virology, serology, and trace mineral analyses did not identify any significant underlying musculoskeletal or systemic disease. Subsequent histopathology and silver staining of lesions from affected hooves demonstrated the presence of deeply invasive spirochetes accompanied by significant inflammation. Immunohistochemistry, PCR, culture, and DNA sequencing have identified these spirochetes as *Treponema* spp. known to be highly associated with two infectious hoof diseases in domestic animals: bovine digital dermatitis (BDD) of cattle and contagious ovine digital dermatitis (CODD) of sheep.

Digital dermatitis emerged as a significant disease of cattle in the mid-1990s. According to a United States Department of Agriculture 2007 National Animal Health Monitoring System survey, BDD was found to be the primary cause of lameness in dairy cattle, accounting for 49-62% of all lameness cases within study herds. Contagious ovine digital dermatitis is not commonly reported in the United States, but has recently emerged as a major cause of lameness in sheep in the United Kingdom. While *Treponema* spp. are consistently associated with digital dermatitis lesions, especially in later stages, digital dermatitis is considered to be a polybacterial disease. It is believed that as yet unidentified bacteria or microbial consortia, as well as favorable environmental conditions, are required to initiate the disease.



Separation of hoof from coronary band and other deformities caused by treponema infection in US Elk



Kristin Mansfield

Washington Department of Fish and Wildlife, USA
Email: kristin.mansfield@dfw.wa.gov

Susan Han

Colorado State University, Fort Collins, USA

Nicolas Evans

University of Liverpool, UK

Clinically, the disease in elk closely resembles CODD of sheep, beginning with proliferative or ulcerative lesions at the coronary band; followed by under-running of the hoof horn; and ultimately sloughing of the hoof capsule. Elk appear to become infected at an early age, with potential lesions detected in calves at

8 months of age, and irreversible and chronic changes by 10 months of age (Fig. 1). Despite the apparently high prevalence of this disease in elk, veterinary practitioners in the local area have not reported an increase in infectious hoof disease in domestic livestock in these same regions.

For more information, visit the WDFW Elk Hoof Disease page: http://wdfw.wa.gov/conservation/health/hoof_disease/

The EWDA 2014 Conference in Edinburgh



It was great to welcome the EWDA to Edinburgh for their 11th European conference last summer. The many and varied contributions created a full conference programme that highlighted the multi- and inter-disciplinary nature of the EWDA. EWDA conferences are friendly affairs with friends and colleagues catching up on everyone's most recent findings and the latest news on current outbreaks. It was good to see the mathematical modellers out in force and making the most of the field data. Similarly the ecologists had an impact and it was good to see the start of significant efforts in characterising multiple infection relationships. Overlapping with the Edinburgh Festival there was plenty to do away from the conference centre, not least the conference dinner. It was at the conference dinner that Marc Artois was presented the prestigious WDA Ed Addison Distinguished Service Award and he was still smiling as he danced in to the night...it's always fun to see the carnage of a ceilidh with so many non-Scots! The successful conference was a collective effort by many, and too many to mention all by name. However, worthy of special mention are Elizabeth Mullineaux and Lesley Smith for their enthusiastic and tireless efforts. Thank you all for visiting us in Edinburgh.

Anna Meredith & Mike Hutchings
University of Edinburgh, UK



The harmonized monitoring program for wildlife diseases in Lombardy, Northern Italy



In Italy, as in the rest of Europe, changes in agricultural land use and in wildlife management practices have influenced the population dynamics of wildlife, often leading to an overabundance of some species in several areas.

In Lombardy, a Northern region lying between the Alps and the Po River, the interest in the surveillance of wildlife infectious diseases has grown considerably in recent years and organized monitoring control programs for wildlife diseases have been carried out. Based on previous health monitoring experiences and on the experts on wildlife diseases working at the Istituto Zooprofilattico Sperimentale della Lombardia e dell' Emilia Romagna (IZSLER), in December 2012 a regional monitoring program of wildlife diseases was adopted in order to standardize the diagnostic activities and to increase the knowledge on the health status of wild populations (http://www.izsler.it/izs_bs/allegati/3097/piano%20monitoraggio%20regionale.pdf). This is the second example (the first was activated few years ago in Emilia Romagna Region; <http://www.alimenti-salute.it/materiali.php?id=19>) of an integrated system of wildlife disease surveillance at the Regional level in Italy.

This surveillance has been implemented by harmonizing activities of important wildlife diseases, providing a common approach in all the areas of the Region involved in the surveillance. In addition, shared diagnostic protocols to obtain comparative data in order to design an epidemiological picture of each disease in the Region was applied at the IZSLER laboratories.



Mario Chiari

Antonio Lavazza

Istituto Zooprofilattico Sperimentale della Lombardia e dell' Emilia Romagna (IZSLER) "Bruno Ubertini"
E-mail: mario.chiari@izsler.it

All the activities included in the regional wildlife diseases monitoring program are technical-scientific and supported by the IZSLER, which is a Public Health Body. IZSLER's facilities include both the Main Office (headquarters in Brescia) and the Provincial Diagnostic Sections, units of national and international importance carrying out highly specialized activities in the fields of animal health, food hygiene and zootechnic hygiene. Some of these structures are identified as High Specialization Centres, nominated by the Ministry of Health (n°13) and by international Bodies, such as the Office International des Epizooties (n°6) and the Food and Agriculture Organization (n°1).

Wild boar & the MTB complex, something new

Mycobacterium microti Infection in Italian Wild Boar



In Italy, as in the rest of Europe, changes in agricultural land use and in wildlife management practices have influenced the population dynamics of wildlife, often leading to an overabundance of some species in several areas.

In Brescia Province (Lombardy Region, Italy), wildlife disease monitoring programmes were initially - in 1998 - implemented and organized by IZSLER following the request from the hunters' association as a consequence of the first outbreaks of European Brown Hare Syndrome. This attention guided us to plan both active and passive surveillance, with an effective collaboration with hunters (n. 27,139 in Brescia Province; hunting season 2012-13). At the beginning of each year, specific activities are established aimed to collect biological samples and epidemiological data, with the basic collaboration of hunters, rangers, public administration and hunting associations. In addition to the regional monitoring program, specific diagnostic protocols were developed for each host species, in particular for those that are under specific hunting planning, such as wild ungulates, hare, wild boar and red fox. This type of surveillance system led us to study the occurrence of *Mycobacterium microti* in wild boar.

M. microti has been recently described as a causative agent of tuberculosis-like lesions in wild boar, a reservoir species of *Mycobacterium tuberculosis* complex (MTBC) in some European Mediterranean ecosystems. During a five-year survey, retropharyngeal and mandibular lymph nodes of 3,041 hunted wild boars from six different districts of Brescia Province were macroscopically inspected. As required by regional and local hunting laws, hunters collected the heads and internal organs from all hunted wild boars, delivering them to the IZSLER laboratories. The sex and age of each animal were registered, as well as the animal abundance in each hunting district.



M. microti lesion in boar lymph node

Lesions compatible with tuberculosis (n. 190) were collected and analysed using a *gyrB* PCR-RFLP assay. *M. microti* was identified directly in 99 tissue samples (Prev = 3.26%; 95% CI: 2.67–3.97%). *Mycobacterium bovis* and other members of the MTBC, were not detected.

The probability of a boar being *M. microti* positive showed spatio-temporal variability, with a positive effect on the prevalence related to wild boar abundance and age. The hypothesized boar to boar transmission may be the result of the density-dependent characteristic of infectious diseases, as seen with microparasites, such as MTBC members, where a positive relationship between host abundance and the infectious prevalence in populations is demonstrated. The generalized increase in the European wild boar population, coupled with its sensitivity to *M. microti* infection, poses a future concern for the diagnosis, identification and management of MTBC members in wild boar.

For more information:

Boniotti, M. B. et al (2014). Detection of *M. microti* in wild boar from northern Italy. *Journal of clinical microbiology*, 52 (8), 2384, JCM-00440

Mario Chiari and
Antonio Lavazza



Workshop Report

African Swine Fever in Wild Boar



The workshop “African swine fever in wild boar” was held from 6 to 7 March 2014 at Uppsala, Sweden. It was organized in response to the recent incursion of African swine fever (ASF) into the European Union, namely in Lithuania and Poland. The organizers were the Wildlife Disease Association (European and Nordic sections) together with the Swedish National Veterinary Institute (SVA).

Despite the short notice, over 80 people from 17 European countries participated in the workshop. The expertise of the participants ranged from virology, pathology, and epidemiology to wildlife ecology, wildlife health, vaccinology, and mathematical modelling. The participants represented veterinary institutes, reference laboratories for ASF, animal health authorities, food safety authorities, wildlife health centres, and universities at the national level, as well as the European Commission (DG-SANCO and EFSA) and the OIE (ASF reference laboratory, Wildlife Health Working Group) at the international level. As well, hunters' associations, the food industry, the livestock industry, vaccine manufacturers, and private veterinary practitioners were represented.



The aims of the workshop were to:

- provide updates on ASF in wild boar;
- provide a forum for communication and networking on ASF;
- discuss practical implementation of guidelines for surveillance and control of ASF in wild boar.

The programme was divided into four sessions:

Session 1: ASF in domestic and wild suids: current situation

Session 2: ASF preparedness and management in general

Session 3: ASF prevention and management at the wild boar-pig interface

Session 4: Practical implementation of guidelines for prevention and management of ASF in wild boar in Europe

Sessions 1 to 3 consisted of multiple short presentations by European experts, followed by extensive panel discussions. Session 4 was introduced by the presentation “Guidelines on surveillance and control of African swine fever in feral pigs and preventive measures for pig holdings” by Silvia Bellini, DG-SANCO, and followed up by discussion in small break-out groups on different topics:

- Wild boar management
- ASF diagnosis and surveillance
- ASF prevention and management
- Research needs



Thijs Kuiken

Erasmus MC, Rotterdam



News from the EWDA Student Chapter



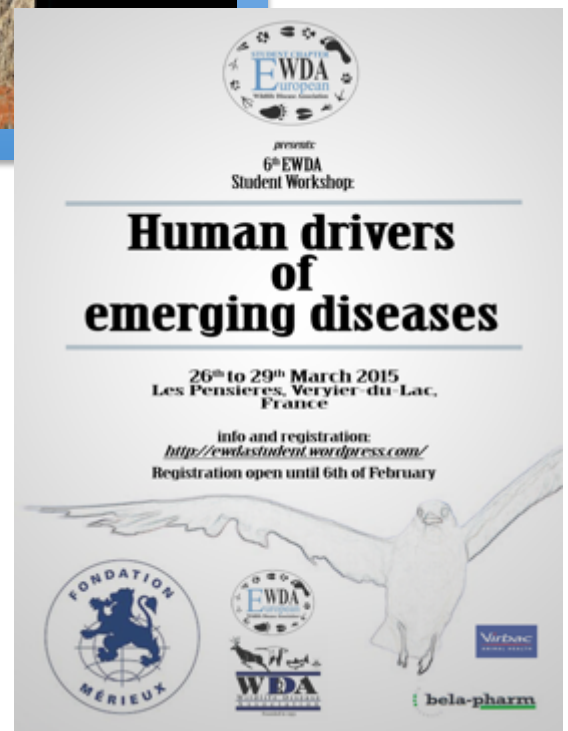
The Student Chapter (SC) is buzzing like a beehive. Preparations are being made for the upcoming 6th EWDA Student workshop entitled “Human drivers of emerging diseases” to be held 26-29th March 2015 in Annecy, France. The SC board is very excited about it! For more details, please visit our website <http://ewdastudent.wordpress.com>. Applications are open until February 6th!

The SC has also boosted its country representative program; we are delighted to announce our new active country representatives in 12 different countries worldwide. They have been promoting wildlife science through creation of networks connecting students and mentors. Spain, Portugal and UK have developed facebook groups/pages. Check them out to keep updated. Their efforts have been successful, with 69 new members since January 2014, which puts the counter at 226 current student members!



We arranged a “country representative award”: The goal was to reward the best event, organized at the country representative’s university, which would promote the aims of the EWDA and opportunities in wildlife disease research. We received three excellent applications from Friederike Pohlin (Austria), Miguel Veiga (Portugal) and Cecilia Tegner (Sweden). The choice was difficult but finally we decided on Miguel Veiga (Portugal) as our winner. He organized an introductory seminar about the EWDA and set up the 3rd FAUNA conference (250 students). His prize? Free workshop attendance at the upcoming EWDA Student workshop. The SC board looks forward to seeing him and all the other students there!

**Catharina Vendl, Jenny Lithner,
Lidewij Wiersma and
Estelle Rousselet**



The unprecedented global spread of highly pathogenic avian influenza H5N8 virus in domestic and wild birds



Wild birds of the order Anseriformes (ducks, geese and swans) and Charadriiformes (gulls, terns and waders) are the natural reservoir for most low pathogenic avian influenza (LPAI) viruses. Parts of the genome of these LPAI viruses have shown to be moved over long distances along migratory flyways (Koehler et al. 2008, Dusek et al 2014, Lewis et al 2013, Hill et al 2012). LPAI viruses of the H5 and H7 subtype can evolve into highly pathogenic avian influenza (HPAI) viruses upon introduction into poultry.



Josanne Verhagen
Erasmus MC, Rotterdam

HPAI viruses of the H5N8 subtype have been detected in domestic birds in China since 2010, and have spread towards South Korea, Japan, Europe and for the first time North America in 2014 (OIE website). These HPAI H5N8 viruses are derived from HPAI H5N1 viruses that have been causing poultry outbreaks mainly in southeastern parts of Asia since 2003. Wild migrating birds may be involved in the spread of this HPAI H5N8 virus. So far, HPAI H5N8 virus has been detected in at least 16 migratory bird species of the order Anseriformes (duck, goose, swan), Gruiformes (crane, coot) and Charadriiformes (gull), in Asia, Russia, Europe and North America, and increased number of detections coincided with fall migration (OIE website). In addition, high seroprevalence of H5N8-specific antibodies have been detected in several duck species in South Korea (Jeong et al. 2014). Wild bird surveillance activities are ongoing to better understand the epidemiology of this particular lineage of HPAI H5 viruses.

64TH ANNUAL INTERNATIONAL CONFERENCE of the
Wildlife Disease Association
Novotel Twin Waters Resort,
Twin Waters, Sunshine Coast,
Queensland, Australia
July 26th - 30th, 2015



HOSTED BY THE WILDLIFE DISEASE ASSOCIATION AUSTRALASIAN SECTION

<http://www.wda2015.org/registration/>



3RD INTERNATIONAL ONE HEALTH CONGRESS
15-18 MARCH 2015 | AMSTERDAM | THE NETHERLANDS

<http://www.iohc2015.com>



Report on outbreak of mortality associated with infection with avian influenza A/H10N7 virus among harbor seals



Wild birds Avian influenza A viruses cross the species barrier occasionally, with the avian influenza A/H5N1 virus and influenza A/H7N9 virus as major examples of bird-to-human transmission. Avian influenza A viruses can also cross the species barrier to other species, like pinnipeds.

In March 2014, increased numbers of dead harbor seals (*Phoca vitulina*) were noted from the west coast of Sweden. In total, 425 carcasses were reported in the Kattegat and Skagerrak seas from March through October (Zohari et al, 2014). In addition, during June 16- August 13, a total of 152 harbor seals were found dead on the shore of the small island of Anholt, Denmark (Krog et al, 2015) and approximately 1400 dead harbor seals were found in the coastal waters of Schleswig-Holstein in Germany (Bodewes et al, 2015).



Necropsies were performed on dead animals by various investigation teams. Macroscopic and microscopic findings ranged from a severe acute necrosuppurative bronchopneumonia to acute necrotizing bronchitis and adenitis with occasionally mild interstitial pneumonia. Culture of the lungs of a seal from Sweden revealed the presence of *Escherichia coli*, while in the lungs of the seals from Denmark high numbers of *Pseudomonas aeruginosa* were detected.

In addition, tissue samples were tested for the presence of phocine or canine distemper virus and influenza A virus by (real-time) RT-PCRs. Phocine or canine distemper virus was not detected, while the lungs of the majority of the investigated animals tested positive for influenza A virus as reported by three laboratories (Zohari et al, 2014, Krog et al, 2015, Bodewes et al, 2015). Additional analysis revealed the presence of an influenza A virus of the H10N7 subtype, most closely related to influenza A viruses detected in wild birds. This virus has not been reported in seals previously. In the autumn of 2014, the H10N7 virus was also detected in specimens collected from dead seals that were found along the coast of the Netherlands. Various analyses are ongoing, including the epidemiology of this virus among seals and its zoonotic potential.

Rogier Bodewes
Erasmus MC, Rotterdam



harmonised Approaches in monitoring wildlife
Population Health, And Ecology and Abundance

Satellite Symposium “Geographical coordination of wildlife health surveillance”
During the Third International One Health Congress (IOHC 2015),
March 17, 2015, The Netherlands
www.aphaea.org/Aphaea-Satellite-Symposium

Batrachochytrium salamandrivorans endangers European salamanders



The infectious disease chytridiomycosis is considered one of the major drivers of global amphibian population declines and extinctions. The classical cause of this disease (*Batrachochytrium dendrobatidis*) has resulted in global amphibian declines, infecting a wide variety of species across the three amphibian orders.

Recently, a second highly pathogenic chytrid fungus (*B. salamandrivorans*) emerged as a novel cause of amphibian chytridiomycosis, and has resulted in rapid declines in populations of European fire salamanders. Experimentally exposing 35 species from the three amphibian orders to controlled doses of zoospores showed that colonization by *B. salamandrivorans* is limited to salamanders and newts whereas none of the anuran and caecilian species became infected. Alarmingly, 41 out of 44 of the Western Palearctic salamanders (Salamandridae and Plethodontidae) rapidly died after infection with *B. salamandrivorans*.



Ulcerations caused by *Batrachochytrium salamandrivorans* in a fire salamander



An Martel

The pathogen likely originated and remained in co-existence with a clade of salamander hosts for millions of years in Asia. Our infection experiments indicated three Asian salamanders as potential reservoirs and a screening of more than 5,000 amphibian samples from across four continents suggests long term endemism in Asia. Due to globalization and lack of biosecurity, the fungus has recently been vectored into naïve European amphibian populations, where it is currently causing biodiversity loss. Monitoring of European amphibian populations is highly warranted in order to detect new outbreaks in an early stage.

An Martel and Frank Pasmans
Faculty of Veterinary Medicine
Ghent University, Belgium



Health and disease in translocated wild animals will be held at the Zoological Society of London on 14-15th May 2015 and will discuss translocations in a range of species and implications for disease management. For more information: <http://www.zsl.org/science/whats-on/health-and-disease-in-translocated-wild-animals>



CONFERENCE

August 29th – September 2nd 2016
in Berlin



Dear colleagues,

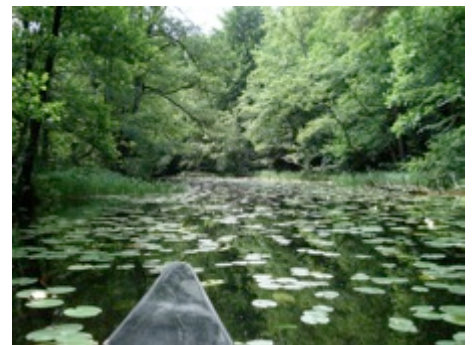
We would like to cordially invite you to the 12th European Wildlife Disease Association Conference in 2016. It will take place from August 29th to September 2nd 2016 in Berlin, Germany, and we are expecting a stimulating program with many interesting scientific presentations and we trust you will like the entertaining location of Berlin.



The city of Berlin represents one of Europe's historical hot spots and its inhabitants originate from more than 180 different nations allowing a truly multicultural atmosphere – ideally enjoyed in late summer days.

Alongside to Berlin's city life over one third of its metropolitan area is covered by forest or public green, water bodies add this up to 40% of "green space". No wonder that a significant number of wildlife species - over 50 mammal and 180 bird species - utilize the city as their habitat.

For more outdoor green experience: The Wednesday afternoon excursion will introduce you to the UNESCO biosphere reserve "Spree Forest", located one hour southeasterly from Berlin. Famous for its small streams and swampy forests it homes black storks, white-tailed sea eagles, fish otters and beavers, just to name a few.



A post-conference tour to one of Germany's National Parks will soon be announced. The conference is hosted by the Leibniz Institute for Zoo and Wildlife Research in Berlin (www.izw-berlin.de). For enquiries please contact Anke Schumann or Gudrun Wibbelt at: EWDA2016@izw-berlin.de. Further information will follow soon at the conference website: <http://www.izw-berlin.de/EWDA-Conference-European-Wildlife-Disease-Association.html>

Save the date: 12th European Wildlife Disease Association Conference 2016,
August 29th – September 2nd 2016, Berlin, Germany

3 Reasons why wildlife disease scientists need biomathematics and statistics



Wildlife disease systems are dynamic:

Mathematical models are ideal tools for exploring the implications of dynamic interactions between hosts and pathogens. Recent work with colleagues in the EU FP7 WildTech project shows that dynamic fluctuations in population size (inevitable in wildlife) reduce the power of wildlife disease surveillance. Models for specific systems, e.g. TB in badgers, quantify these effects and could be used to improve surveillance design.

Wildlife disease systems are difficult to observe:

Modern computational statistical methods allow greater scope than ever to extract maximal information from available data. For example, they can be used to parameterise the dynamic models used above, or to exploit information on the kinetics of diagnostic test responses to infer historic epidemic trends, even from cross-sectional data.

Wildlife disease systems are complex systems:

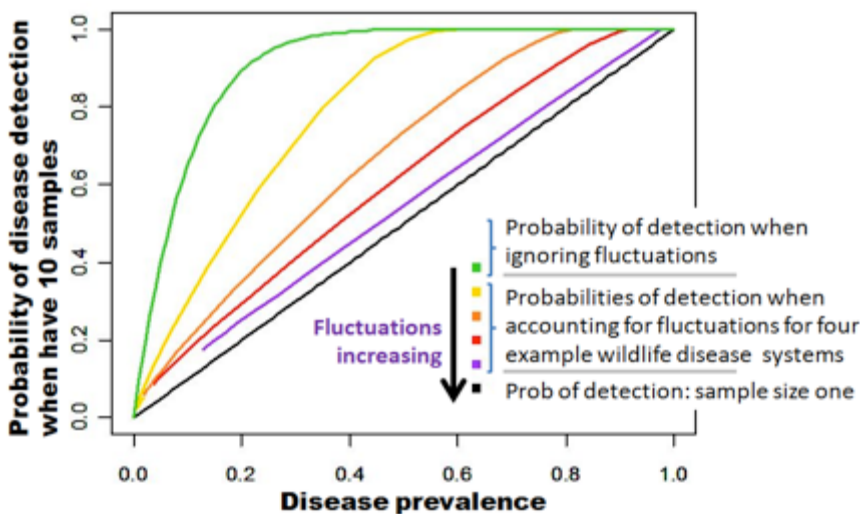
A hallmark of complexity is the emergence of unanticipated effects from interactions between system components. Mathematical modelling can identify and analyse emergent phenomena such as the perturbation effect, whereby host responses to population reduction counter-intuitively lead to increased levels of disease. Recent models suggests that such responses will reduce, if not reverse, the efficacy of population reduction as a means of control, across a wide range of wildlife disease systems.



Glenn Marion

Biomathematics & Statistics Scotland (BioSS)
Edinburgh, Scotland

Effect of population fluctuations on probability of disease detection



Application of systems approaches, combined with modern mathematical and statistical tools, and crucially the expertise of wildlife disease scientists, has the potential to transform current understanding, and hence our ability to monitor and control wildlife disease. However, these potential benefits will only be realised through development of long term, mutually beneficial, collaborations involving mathematicians, statisticians and wildlife disease scientists.



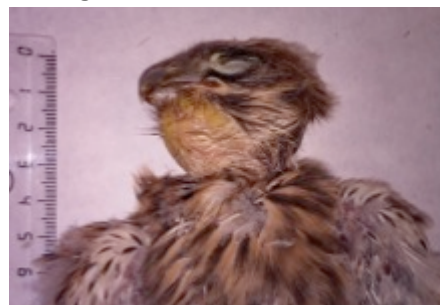
New findings about avian trichomonosis in Spain: New genotypes and a new species from scavenging birds of prey



Recently, two studies had been published about findings of oropharyngeal trichomonads in wild birds from Spain.

One of them describes a new species (*Trichomonas gypaetini*) found only in necrophagous birds of prey (Egyptian vultures, *Neophron percnopterus* and cinereous vultures, *Aegypius monachus*). Sixteen isolates were recovered both from admissions at wildlife recovery centers and free living wild birds during scientific ringing campaigns carried out in Spain. None of the birds displayed macroscopical gross lesions of avian trichomonosis. A genetic and morphological study was done to characterize the isolates. The highest similarity for two ribosomal genetic markers (ITS1/5.8S/ITS2 and SSU) was found with *T. vaginalis* and *T. stableri* strains, in contrast with other *T. gallinae* genotypes. Morphologically, trophozoites displayed distinct features from those of *T. gallinae*, with a smaller cell body size and a longer axostyle projection.

The other study surveyed the percentatge of infection from admissions of the main wildlife recovery centers of Spain from 2011 to 2013. Results indicated that globally, 20.3% of the birds were positive at culture, with 26% of them displaying pathognomic gross lesions. Goshawk (*Accipiter gentilis*) and rock pigeon (*Columba livia*) showed the higher values of infection (74.5% and 79.4%). No finch species were found positive during the study. Five different genotypes were reported, two of them widely distributed between raptors and prey species. Two of these new genotypes isolated from asymptomatic goshawk nestlings and European turtle doves (*Streptopelia turtur*), respectively, were first reports. Phylogenetic studies indicated that these new genotypes had higher similarity with *T. canistomae* strains than with other *T. gallinae* isolates.



Common kestrel with gross lesions of trichomonosis

Analysis of risk factor was performed on the survey. The genotype of the parasite was found as the main risk factor in relation to the development of gross lesions of avian trichomonosis. In addition, birds of prey with a generalist diet, non-strictly ornithophagous (like common kestrels, *Falco tinnunculus* or buzzards, *Buteo buteo*), had a greater risk to develop disease when infected than ornithophagous ones (like peregrin falcon, *Falco peregrinus* or goshawk). This fact can be due to the lack of immunity, with less contact with the parasite than strict-ornithophagous ones. Furthermore, the type of host (bird of prey or prey species, like columbids) was another factor than influences the development of gross lesions.

Maria Carmen Martínez Herrero

Universidad CEU Cardenal Herrera
University of Valencia, Spain



Prof Maria Gómez Muñoz (left)
Maria Martínez Herrero (right)

For further information and details, here are the links to the abstracts:

<http://link.springer.com/article/10.1007%2Fs00436-014-4165-5>

<http://www.tandfonline.com/doi/abs/10.1080/03079457.2014.967660>

Other Items of Interest to EWDA members



Wild Resources for the WDA Australasian Section

In keeping with the stated goal of increasing our links with the other WDA sections, we would like to draw your attention to a number of resources available through the Australasian section. You can find the link to the Australasian website, along with the links to the websites of the other WDA sections, under the 'WDA and Sections' page of the EWDA website (<https://sites.google.com/site/ewdawebbsite/wda-and-sections>).

In addition, you may also be interested in subscribing to the Wildlife Health Australia Digest (<https://www.wildlifehealthaustralia.com.au/AboutUs/Becomeamember.aspx>), which releases weekly updates. The digest includes information on wildlife health news in Australia and New Zealand, overseas/Promed Mail postings of relevance to wildlife, publications and resources on wildlife health, employment opportunities, postgraduate opportunities, and a listing of upcoming events.

A number of key items from the newsletter (mainly jobs, events and key resources) are also posted on the section's resources web page

(for which there is an RSS feed: <https://www.wildlifehealthaustralia.com.au/Resources.aspx>)

There are a few other publications produced by the section which may be of interest:

1. BatStats - see the bottom of Bat Health Focus Group web page: <https://www.wildlifehealthaustralia.com.au/ProgramsProjects/BatHealthFocusGroup.aspx>
2. Animal Health Surveillance Quarterly (<http://www.animalhealthaustralia.com.au/elibrary>)
3. Over 100 Fact Sheets providing brief information on what is and isn't known about wildlife health conditions in Australia: <https://www.wildlifehealthaustralia.com.au/FactSheets.aspx>

We hope you enjoy exploring these resources, and that they serve to keep you well-informed about the activities of the active and growing Australasian section.

MSc in Wildlife Management

The School of Biology, Newcastle University is pleased to announce the arrival of a new MSc programme in Wildlife Management. The MSc Wildlife Management will provide advanced training in policy and science implementation in the UK. The course has been specifically designed to combine education in the theory, scientific principles and policy aspects of managing wildlife with skills applicable for employment. Graduates will gain a professionally focused postgraduate qualification that is directly relevant to a wide range of careers in the wildlife management or academic sector.

For further information please see the School website:

<http://www.ncl.ac.uk/biology/study/postgrad/WildlifeManagement.htm>

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Other Items of Interest to EWDA members: Books



Gorilla Pathology: with a Catalogue of Archival Biological Material

Elsevier Inc., the American-based publishing company, has offered a colleague and myself a Contract to produce a book and an accompanying catalogue, provisionally entitled “Gorilla Pathology: with a Catalogue of Archival Biological Material”. The Publisher intends to publish the Work under Elsevier's Academic Press imprint. This will be a monograph on the pathology and relevant implications for the health of gorillas, both in the wild and in captivity and is aimed at primatologists, veterinarians, biologists, osteologists and conservationists. It will be written by John Cooper and Gordon Hull, with contributions by Margaret Cooper and by colleagues in Africa.

The Catalogue of Archival Biological Material is largely the responsibility of Gordon Hull. Gordon is updating his existing catalogue of Gorilla specimens (which comprises more than 4,600 specimens in 424 institutions, chiefly museums and university departments) in 47 countries, but Gordon expects it to grow to more than 5,000 specimens by the time of publication. Most of the listed materials are skulls, skeletons and skins, but there are also some fluid-preserved specimens, casts, etc. The final Catalogue will also include information about the whereabouts of such material as histological sections and relevant paraffin blocks, cytological preparations, blood smears, material prepared for transmission (TEM) or scanning (SEM) electron-microscopy, samples for DNA (frozen and fixed, usually in alcohol) and (usually frozen) for toxicological and virological studies, radiographs, ultrasonographs and other images (e.g. CT and MRI), other clinical data (e.g. electrocardiograms and electroencephalograms) and clinical and post-mortem and laboratory records.

Please contact me if you or your colleagues have any data on gorillas that you would be willing to let us use, with acknowledgements of course, in this book. Your comments or suggestions on the project would also be much appreciated!

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Hunting Hygiene

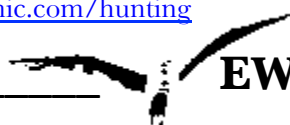
Authors: Sauli Laaksonen and Peter Paulsen. ©2015 - 304 pages - full-colour - hardback - ISBN: 978-90-8686-249-8. EUR 94 ex VAT/ EUR 99.64 inc VAT, free shipping when ordered from our website.

'Hunting hygiene' is an internationally unparalleled textbook introducing the basics of hunting hygiene. This concept includes the basic biology and ecology of game animals as well as game animal diseases and their causes. An important part of hunting hygiene is the identification and assessment of pathological alterations and the possible risks for humans caused by animal diseases, and how these risks can be diminished. Risk control begins with the practice of environmental and game animal management, animal health and hunting dog health care. Other essential parts of the subject are hunting methods, correct practices in game handling, slaughterhouse hygiene and safe preparation methods of game in the kitchen. 'Hunting hygiene' presents the tools to detect and assess diseases in game animals and the universally applicable principles of hygiene during hunting and handling meat from wild game, illustrated by numerous examples.

The content of this textbook is enlivened by unique photographs and Sauli Laaksonen's watercolour illustrations. The authors' exceptional insight into the topic combined with years of collecting material and extensive international collaboration make this book a riveting exploration into the concept of hunting hygiene.

'Hunting hygiene' is a textbook intended for hunters and educational institutes in the field. It is also suitable for biologists, veterinary surgeons, doctors and all readers interested in the diversity of nature. The book focuses on north and central Europe. 'Hunting hygiene' is primarily based on the Finnish book 'Metsästäjän Terveysoppi' written by Sauli Laaksonen. 'Hunting hygiene' meets the international demand that became obvious after the publication of 'Metsästäjän Terveysoppi' in 2013. More information can be found on our website:

www.WageningenAcademic.com/hunting



Don't forget to renew your EWDA/WDA membership for 2015 at

<http://www.wildlifedisease.org/wda/MEMBERAREA/JoinRenew.aspx>



There is a new option to donate to support the EWDA Student Chapter Workshop, all donations (no matter how small) are hugely appreciated!!

Acknowledgements

We would like to thank Marc Artois for his work as a Bulletin editor over many years. We would also like to thank Anna Meredith for organizing the wonderful EWDA conference in Edinburgh last year. Finally, we would like to thank all the contributors for their articles and their enthusiasm.

Disclaimer

The editors have tried to put this non-citable Bulletin together as carefully as possible, we apologise for any errors or omissions that we may have committed.



Do you have a contribution for our next newsletter? Get in touch with the ...

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