



Wildlife Disease & Contaminant Monitoring & Surveillance Network

WILDCOMS newsletter number 18: Summer 2017 www.wildcoms.org.uk

The WILDCOMS newsletter reports newsworthy articles and recent publications from the schemes involved in the WILDCOMS network.

Scheme news

The Cardiff University Otter Project team, and new projects

Each year the Otter Project takes on undergraduate students as part of a professional training year (PTY) scheme. Esme Burrows and Gareth Davies have just completed their PTY year and have contributed to research projects on micro-plastics, and macro-parasites respectively.

The Project also welcomes European students on Erasmus programmes. This year, Sergio Bedmar Castillo (a graduate from the University of Córdoba in Spain) is helping our postdoc Eleanor Kean with research on otter diet. By examining spraint samples collected in the 1980s, 1990s and 2015-16, Sergio is looking at how diet has changed with time – which will help inform research on trophic acquisition of contaminants.

Anne-Fleur Brand (a recently graduated veterinarian from the Netherlands) is currently doing a master's in Toxicology and Environmental Health. She is working with postdoc Juliet Hynes in a collaborative project with Predatory Bird Monitoring Scheme, quantifying metallotoxins in otters and their links to health.

GB Wildlife Disease Surveillance Partnership Quarterly Reports

Please find below links to the quarterly reports of GB wildlife disease surveillance produced by the GB Wildlife Disease Surveillance Partnership:

2017 reports: <https://www.gov.uk/government/publications/wildlife-disease-surveillance-reports-2017>

2016 reports: <https://www.gov.uk/government/publications/wildlife-disease-surveillance-reports-2016>

2015 reports: <https://www.gov.uk/government/publications/wildlife-disease-surveillance-reports-2015>

2014 reports: <https://www.gov.uk/government/publications/wildlife-disease-surveillance-reports-2014>

Previous wildlife disease surveillance reports are available on the archived AHVLA web pages on the National Archive website: <http://webarchive.nationalarchives.gov.uk/20140707141401/http://www.defra.gov.uk/ahvla-en/category/publications/disease-surv/surv-reports/>

The GB Wildlife Disease Surveillance Partnership is made up of the following organisations:

- Animal and Plant Health Agency (APHA) (formerly AHVLA)
- Scotland's Rural College (SRUC)
- Institute of Zoology (IoZ)
- National Wildlife Management Centre of APHA (formerly part of FERA)
- The Centre for Environment, Fisheries and Aquaculture Science (CEFAS)
- The Wildfowl and Wetlands Trust (WWT)
- Natural England (NE)
- Forestry Commission England (FCE)

PBMS data featured in Campaign for Responsible Rodenticide Use (CRRU) code of practice



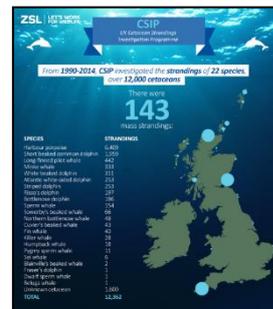
Data on residues of second-generation anticoagulant in UK barn owls between 1983 and 2015 was highlighted in a recent CRRU booklet for gamekeepers that covers best practice for use of these compounds.

To download booklet: <http://www.thinkwildlife.org/crru-downloads/crru-rat-control-and-game-management/?wpdmdl=16514>

UK Cetacean Strandings Investigation Programme (CSIP) Since the start of the CSIP in 1990, data on over 12,000 stranded cetaceans have been recorded in the UK and nearly 3,500 necropsies have been carried out, producing one of the world's largest research datasets on strandings and causes of mortality. The underlying causes of stranding events are not always clear and in particular, the role that human activity may play in either directly or indirectly causing strandings has often been called into question.

Post-mortem examination of stranded animals carried out by the CSIP provides unique insights into causes of death, diseases, environmental contaminant levels, reproductive patterns, diet and other aspects of the general health of cetacean populations in UK waters.

[More info.](#)



Animal & Plant Health Agency (APHA)

Safeguarding with science: Avian influenza. In the first of a series of videos highlighting how APHA safeguard with science, Prof Ian Brown, APHA's Head of Virology, talks about avian influenza (bird flu) and the work done in APHA's international reference laboratory at Weybridge.

Garden Wildlife Health (GWH)

Snake fungal disease detected in wild European snakes. A recent study published in [Scientific Reports](#) confirmed Snake fungal disease (SFD) for the first time in wild European snakes. SFD is an emerging disease of conservation concern known to affect wild snakes in eastern North America that was first detected in 2006.



Ophidiomyces ophiodiicola is the causative agent of SFD and the disease results in skin lesions. Screening of wild snake carcasses and moulted skins from the three native snake species in Great Britain confirmed SFD in grass snakes (*Natrix natrix*) and also a dice snake (*Natrix tessellata*) from the Czech Republic. Genetic studies confirmed the fungus from European and North American wild snakes are distinct. Further work is required to understand the individual and population

level impact of this pathogen for European wild snakes. **Grass snake image courtesy of Mihai Leu**

Garden Wildlife Health Day. On June 1st 2017 Garden Wildlife Health held an event at the David Attenborough Building in Cambridge to celebrate the renewal of the Garden Wildlife Health project's funding by the [Esmée Fairbairn Foundation](#).



The day involved talks on all aspects of Garden Wildlife Health's work to date, as well as the vital work being undertaken by our partners, the [BTO](#), [RSPB](#) and [Froglife](#), in supporting the project, and championing wildlife-friendly gardening practises.

With over 60 people in attendance from our partner and forum organisations, as well as members of the academic, wildlife rehabilitation, conservation, animal, trade and government communities, we discussed ways to help raise awareness of the project amongst members of the public, increase collaborations between forum organisations and continue to communicate our findings to the world at large.

The Garden Wildlife Health team (image courtesy of ZSL): Shinto John, Helle Hydeskov, Vicky Wilkinson, Becki Lawson and Katharina Seilern-Moy.

Wildlife Incident Investigation Scheme (WIIS)

Fera Science Ltd have undertaken a digital refresh with a clear goal of improving the breadth and clarity of information available for stakeholders and customers. Fera state that...“ This new focus has helped us to significantly increase engagement across our pesticide based services and the support we can offer this sector with more relevant, up to date information. An example of this work is the well-respected pesticide analysis surveys we carry out to aid intelligence with big data leading to well informed decision making for the agricultural sector, further advocating our commitment to do our bit in feeding the world sustainably. Our improved website design has resulted in improved clarity of information, more up to date with a wider offering of services we can provide as well as beneficial layout improvements to improve legibility. It is vital and extremely important to us that our stakeholders have access to information about the Wildlife Incident Investigation Scheme (WIIS), it's purpose & strategies, as well as crucial contact



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information with guidance on how to report potential misuse of pesticides in the required detail, so together we can act swiftly.”

Fera’s new look website is available here: <https://fera.co.uk> and the link to the WIIS page here: <https://www.fera.co.uk/wildlife-incidents>

Wildlife Incident Investigation Scheme Scotland (WIIS Scotland)

The results of WIIS Scotland investigations are reported quarterly: <http://www.sasa.gov.uk/wildlife-environment/wildlife-incident-investigation-scheme-wiis/wiis-quarterly-reports>

Disease Risk Analysis and Health Surveillance (DRAHS)

DRAHS carried out a disease risk analysis on conservation translocations of wart-biter cricket (*Decticus verrucivorus*) in 2015. The species derives its name from the ancient Swedish medical practice of using them to eat skin warts. Wart-biter cricket numbers in the UK have been affected by habitat change and are considered to be endangered and only found at five sites in southern England, three of which are in Sussex. Translocations to Deep Dean in East Sussex commenced in 2015 and 121 adults have been released to date and ZSL have carried out health monitoring and disease risk management to reduce the effects of translocation on health. Encouragingly the first progeny from released wart-biter crickets were seen in July this year, after an absence at the site for 40 years. The project partners include Natural England, South East Water, Buglife and ZSL. Photo: A wart-biter cricket being released at Deep Dean.



DRAHS monitored the health of 21 captive-bred hazel dormice (*Muscardinus avellanarius*) between April and June 2017 prior to their release into a Warwickshire woodland. The aim of the monitoring is to detect non-native parasites that the dormice might harbour, and to ensure that the dormice are in good health to contend with the release process. Historically the captive hazel dormouse population has been in contact with non-native species which

represents a continuing risk of disease to free-living populations, and suspected non-native parasites have been detected and eliminated prior to release. After a period of soft-release in woodland cages, the dormice were released on 1st July 2017, the 27th dormouse reintroduction since 1992. The programme is a collaboration between the Peoples Trust for Endangered Species, Natural England, Paignton Zoo and Environmental Park, Warwickshire Wildlife Trust and the Common Dormouse Captive Breeders Group. Photo: Dormouse under anaesthesia for health examination (ZSL).

Jenny Jaffe gave a presentation on Disease Risk Analysis in Conservation Translocations, aimed at those interested in using translocations to help conserve native species at the British and Irish Association of Zoos and Aquaria (BIAZA) Native Species Working Group conference at Paignton Zoo and Living Coasts Torquay on 28th June 2017.

Scottish Raptor Health Study



We are fast approaching the mark of 100 Scottish raptors examined! Thanks to all submitters, I have received birds of 12 different species and assessed the reasons behind their deaths.

The field season was a success and with the support from SRSRG, Royal Society for the Protection of Birds (RSPB) and Forestry Commission members we obtained blood samples and cloacal swabs from 32 golden eagle chicks. Biochemistry and haematology tests will help assess the

health of live chicks together with the examination of four chick carcasses found dead in nests. Bloods, as per post mortem examinations tissues, will be screened for chemicals, contaminants and heavy metals. Respiratory infection, large burden of respiratory parasites, low level of calcification in



bone were some of the reasons contributing to these deaths. Findings together with laboratory blood profiles and parasitology cultures are helping create a better understanding of golden eagle nestling health in Scotland.

News

The [British Veterinary Zoological Society](#) will be holding its [first annual 3 day conference in October 2017](#) at ZSL London Zoo with lecture streams on zoo animal health, wildlife health, exotic pet health, veterinary nursing and a student careers session. Conference registration is open via [online booking system](#). Please note the early bird deadline for conference registration is 13th August 2017.

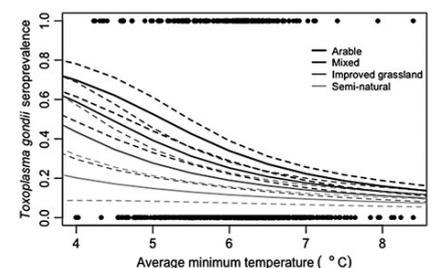
Impact of myxomatosis and RHDV2 on rabbits.

Rabbits are an important part of the British fauna, shaping its landscape in some places and acting as a major source of food for a range of other iconic British animals and birds e.g. fox, stoat and buzzards. Rabbit numbers were recovering after the initial myxomatosis outbreak in the 1950s until the mid-1990s when another disease, Rabbit Haemorrhagic Disease Virus, (RHDV) and especially a new variant (RHDV2) has probably been responsible for numbers of rabbits in some areas being decreased by over 95%. Samples are required to ascertain the status of these diseases in the UK. Eye lids from rabbits with myxomatosis or small (2-5gm) parts of livers from rabbits which have recently died of no known cause are required to ascertain the status of these diseases in the UK and can be sent in sealed containers (e.g. old film containers) to Brian Boag, The James Hutton institute, Invergowrie, Dundee, DD2 5DA giving date and postal code or OS grid reference of where the rabbits were found. PS I am retired and may not be able to respond to all who do send in samples.

New publications

Cardiff University Otter Project have used the Eurasian otter as a model to assess the potential effect of climate, land cover and biotic factors on the seroprevalence on a parasite of global importance, *Toxoplasma gondii*, in British wildlife. We found that *T. gondii* antibodies were in 25.5% of otters, found dead, mainly as road-kill, in England and Wales between 2004-2010. We identified that land cover and temperature are key determinants of *T. gondii* infection risk, with more infection in arable areas, and lower infection where temperatures are higher.

Fig. 2. Model predictions to show the probability of a *Toxoplasma gondii* infection in adult, male Eurasian otters (*Lutra lutra*) for different land uses (arable, mixed, improved grassland and semi-natural) as a function of average minimum temperature (°C).



Smallbone et al., 2017. East-West Divide: temperature and land cover drive spatial variation of *Toxoplasma gondii* infection in Eurasian otters (*Lutra lutra*) from England and Wales. *Parasitology*. Cambridge University Press, pp. 1–8. doi: 10.1017/S0031182017000865

Bobadilla et al. 2017. Using Qualitative Disease Risk Analysis for Herpetofauna Conservation Translocations Transgressing Ecological and Geographical Barriers. *Ecohealth* 14: S47-S60. doi: 10.1007/s10393-015-1086-4

Brown et al, 2017. Bringing back a healthy buzz? Invertebrate parasites and reintroductions: a case study in bumblebees. *Ecohealth* 14: S74-S83. doi: 10.1007/s10393-015-1093-5

Franklinos et al., 2017. Emerging fungal pathogen *Ophidiomyces ophiodiicola* in wild European snakes. *Scientific reports*, 7. doi:10.1038/s41598-017-03352-1.

Heys et al. 2017. Levels of Organochlorine Pesticides Are Associated with Amyloid Aggregation in Apex Avian Brains, *Environmental Science & Technology*. doi:10.1021/acs.est.7b00840

Johnson et al, 2017. An alternative approach to risk rank chemicals on the threat they pose to the aquatic environment, *Science of the Total Environment*, 599-600. doi:10.1016/j.scitotenv.2017.05.039

Johnson and Chen 2017. Does exposure to domestic wastewater effluent (including steroid estrogens) harm fish populations in the UK? *Science of the Total Environment* 589. doi:10.1016/j.scitotenv.2017.02.142

Lu et al. 2017. Persistent Organic Pollutants in sediment and fish in the River Thames Catchment (UK). *Science of the Total Environment* 576. doi:10.1016/j.scitotenv.2016.10.067

Maes et al. 2017. Microplastics Baseline Surveys at the Water Surface and in Sediments of the North-East Atlantic, *Frontiers in Marine Science*, 4. doi:10.3389/fmars.2017.00135

Maes et al. 2017. A rapid-screening approach to detect and quantify microplastics based on fluorescent tagging with Nile Red, Scientific Reports, 7. doi:10.1038/srep44501

Peniche et al. 2017. Protecting free-living dormice: molecular identification of cestode parasites in captive dormice (*Muscardinus avellanarius*) destined for reintroduction. Ecohealth 14. doi:10.1007/s10393-016-1108-x

Rideout et al. 2017. Which Parasites Should We Be Most Concerned About in Wildlife Translocations? Ecohealth 14. doi:10.1007/s10393-016-1132-x

Vaughan-Higgins et al. 2017. Biosecurity for translocations: ciril bunting (*Emberiza cirilus*), Fisher's estuarine moth (*Gortyna borelii lunata*), short-haired bumblebee (*Bombus subterraneus*) and pool frog (*Pelophylax lessonae*) translocations as case studies. Ecohealth 14. doi:10.1007/s10393-016-1150-8

Zhang et al. 2017. The relative risk and its distribution of endocrine disrupting chemicals, pharmaceuticals and personal care products to freshwater organisms in the Bohai Rim, China, Science of the Total Environment, 590-591. doi: 10.1016/j.scitotenv.2017.03.011

Zhang et al. 2017. Which persistent organic pollutants in the rivers of the Bohai Region of China represent the greatest risk to the local ecosystem? Chemosphere. doi:10.1016/j.chemosphere.2017.02.137

Contact us:

If you would like to see a particular topic in the WILDCOMS newsletter, contact us about other WILDCOMS related matters, or be added to our mailing list please e-mail the WILDCOMS coordinator Jacky Chaplow (<mailto:jgar@ceh.ac.uk>).

For detailed information about WILDCOMS and the schemes involved navigate to www.wildcoms.org.uk