Wildlife Disease & Contaminant Monitoring & Surveillance Network

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The WILDCOMS newsletter (produced 3 or 4 times a year) reports recent newsworthy items, publications from member partners and items of interest about wildlife ecology from the UK and overseas. WILDCOMS is funded by NERC and delivered by UKCEH as part of the UKCEH UK-SCAPE National Capability Programme (grant number NE/R016429/1)

WILDCOMS network news

WILDCOMS partners feature in Monitoring Workshop

Representatives from six members of the WILDCOMS network presented and contributed to discussions at a recent national workshop on contaminants monitoring in the terrestrial wildlife. The workshop, funded and organised by Natural England discussed standards, brought together approximately 50 representatives of academic and governmental organisations with an interest in monitoring contaminants in the terrestrial environment.

Jon Barber from CEFAS, presented a summary of the work of the cetacean strandings investigation programme, and a second presentation on the approaches and methods for using non-target surveillance analysis to identify emerging contaminants of concern.

Lee Walker (UKCEH), Chloe Farrington (Uni of Cardiff), Tony Sainsbury (Institute of Zoology), and Libby Barnett (Fera Science) gave summaries of the Predatory Bird Monitoring Scheme, the Cardiff University Otter Project, Disease Risk Analysis and Health Surveillance, and Wildlife Incident Investigation Scheme, respectively.

First day discussion session led by Lee Walker included:-

- What sampling and data design is needed to address progress towards UK Government 25 Environment Plan objectives (contaminants – H4);
- Data and sample Archiving standards (incl. storage and transfer) – this included presentation by Jacky Chaplow (Data archiving approaches and standards within UKCEH) and Sophie Common (The proposed sample archiving for Eurasian beaver, IoZ);
- Sample supply management; and
- Samples analytical methods.

A second day of discussions led by Natural England and the Environment Agency focussed on:-

- Long term terrestrial monitoring, data and evidence priorities;
- Data standards, quality assurance and reporting; and
- Data ethics of monitoring and biomonitoring of chemicals in the terrestrial environment.

The results of this workshop will be reported by UKCEH with contributions from attendees of the workshop.

For more on 'H4: Exposure and adverse effects of chemicals on wildlife in the environment' see the Defra area of the UK Government website *https://oifdata.defra.gov.uk/8-4-1/* **and the Defra 25 year plan is at** *https://oifdata.defra.gov.uk/*

WILDCOMS Scheme news

GB Wildlife Disease Surveillance Partnership - reports are published quarterly.

To access the latest reports see: *https://www.gov.uk/government/publications/wildlife-gb-disease-surveillance-and-emerging-threats-reports*.

The GB Wildlife Disease Surveillance Partnership is made up of the following organisations: Animal and Plant Health Agency (APHA), 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) and Forestry England (FE).

Predatory Bird Monitoring Scheme (PBMS)

A paper entitled 'Making use of apex predator sample collections: an integrated workflow for quality assured sample processing, analysis and digital sample freezing of archived samples' has been published in Chemosphere. The paper is an output of the EU funded LIFE APEX project *https://lifeapex.eu/* that the PBMS was involved with.

The paper highlights:

- Identifying regulatory needs for using predator monitoring data in risk assessment.
- Assessing the status quo of quality assurance measures in European sample collections.
- Workflow for quality assured sampling, processing, and analysis of archived samples.
- Focus on comprehensive chemical analysis such as non-target and suspect screening.
- Digital sample freezing of high-resolution chromatograms in databases.

To access the paper see *https://doi.org/10.1016/j.chemosphere.2022.136603*

Also *"Hold the Date"* as just before Christmas on the afternoon of Friday Dec 9th - UKCEH will again host the annual Richard Shore Memorial Lectures featuring key aspects of Wildlife tox and monitoring. Confirmed speakers include Alastair Burn, formerly of Natural England giving his reflections on the use of monitoring for chemicals management, Lee Walker giving an update on the work of the vertebrate ecotoxicology team at UKCEH, and an early career researcher (to be confirmed). A full announcement and invitation will follow.

WIIS-Scotland

The results for incidents from quarter 2 of 2022 have been added to the SASA website and can be found *here*.

Disease risk analysis and health surveillance (DRAHS) by Dr Tammy Shadbolt

The Disease Risk Analysis and Health Surveillance (DRAHS) team at ZSL has had a busy fieldwork season post-pandemic. The team have provided disease risk management assistance and/or post-release health surveillance for a number of translocation projects including wart-biter crickets (*Decticus verrucivorus*), hazel dormice (*Muscardinus avellanarius*), pool frogs (*Pelophylax lessonae*), corncrakes (*Crex crex*) and red kites (*Milvus milvus*) in 2022. This year the translocation of chequered skipper butterflies (*Carterocephalus palaemon*) was hailed particularly successful. In collaboration with colleagues from Butterfly Conservation, Dr Tammy Shadbolt travelled to Belgium to the Ardennes Forest in search of chequered skipper butterflies to bring back for release into Rockingham Forest, England as part of a carefully organised translocation project.

The chequered skipper butterfly became extinct in England in 1976 due to loss of habitat. In 2018 the DRAHS team at ZSL completed a disease risk analysis (DRA) and wrote a disease risk management and post-release health surveillance (DRM PRHS) protocol to facilitate the first translocation of chequered skipper butterflies from Belgium, where they remain abundant, to England. Since then, the woodland at Rockingham Forest has been carefully managed through the Back from the Brink project to ensure that ride habitat remains ideal for the return of these butterflies.

Working closely with ecologists from the Research Institute for Nature and Forest, Belgium, the international team found a record number of butterflies. Dr Tammy Shadbolt carried out pre-transport veterinary health examinations and 50 individuals in optimal health were chosen for translocation. The butterflies were kept comfortable in specially regulated cool conditions for their journey to England. Veterinary health examinations were repeated pre-release to ensure each individual had coped well with the journey and there was minimal risk of introducing infectious agents to recipient populations. Attention to detail in the care of these butterflies resulted in all 50 chequered skippers being in excellent health at the point of release. Within 24 hours butterflies were seen taking nectar, mating with each other, and laying eggs in their new English woodland home.

As a consequence of translocations in 2018, 2019 and 2021 there is already evidence that English-bred chequered skippers are emerging each year in Rockingham Forest. Through this unique and carefully managed project the chequered skipper butterfly appears to have been brought back from extinction and be once again established in England for generations to come.

Searching for butterflies in the Ardennes Forest, Belgium

An international team of conservationists worked on the translocation project, Belgium. A male chequered skipper butterfly, Belgium

Cardiff Otter Project

New PhD student: Holly Hulme has recently joined the Otter Project on the *ECORISC CDT*. Following a 4-year career in the environmental sector, she is excited to pursue research in the field of chemical pollution. Using the otter and buzzard as a sentinel species, her thesis will explore ecosystem exposure to synthetic chemicals, at a landscape scale, and the potential implications for the affected communities.

The otter project has a newsletter with a new edition coming soon – *navigate here to subscribe.*

If you find a dead otter see: *https://www.cardiff.ac.uk/otter-project/found-an-otter*. The otter project relies on reports of otter carcasses by members of the public, organisations, the police and local authorities.

Wildlife Incident Investigation Scheme (WIIS)

WIIS makes enquiries into the death or illness of wildlife, pets and beneficial invertebrates that may have resulted from pesticide poisoning. The scheme has two objectives:

1. To provide information to the regulator on hazards to wildlife and companion animals (usually cats and dogs) and beneficial invertebrates (honeybees, bumble bees and earthworms) from pesticide use;
2. To enforce the correct use of pesticides, identifying and penalising those who deliberately or recklessly misuse and abuse pesticides.

Quarterly data for WIIS is available on the HSE pesticides website (*here*) and this currently includes investigations up to June 2022. The laboratory work to support WIIS in England and Wales has been exceptionally busy since 2020 with higher than typical numbers of submissions arriving at *Fera Science Ltd* for analytical testing. The expertise from Natural England, Welsh Government and the Animal Plant Health Agency is also critical to delivery of WIIS and other organisations such as the Police, RSPB, Private veterinary practices and courier services. Unfortunately, joint investigations with WIIS and other partners can highlight various offences that are perpetrated on some game estates (*here*).

Investigations by WIIS often involve the use of anticoagulant rodenticides and these have been implicated in many poisoning incidents and have also generated some publicity (*here*). These poisonings are usually categorised as "unspecified use", as the residues detected in affected animals may be acquired from many sources that were encountered at different places and at different times. Therefore, one rodenticide treatment may not be the only source of exposure for an affected animal. Due to concerns about the use of anticoagulant rodenticides there is a stewardship regime (*UK Rodenticides Stewardship Regime*) and coordinated data (from WIIS and *PBMS*) for species that are vulnerable to this exposure are reported *annually*. Anticoagulant rodenticide data are also included in the *25-year Environment plan*.

The WIIS relies on members of the public and other interested organisations to find and report suspicious incidents that usually involve the death of one or more animals. Anyone using anticoagulant rodenticides, should follow the Campaign for Responsible Rodenticide Use (CRRU) *Code of Best Practice*. There is a Freephone number (0800 321600) to report suspicious incidents to WIIS. Anyone who has information relating to bird of prey persecution should report it to their local police force by calling 101, or to Crimestoppers anonymously on 0800 555111.

Garden Wildlife Health

GWH focus on garden birds, amphibians, reptiles and hedgehogs. For this they count on the help of the public to submit reports of sick or dead wildlife of these species and to submit samples for analysis. To report death or illness in garden wildlife see *https://www.gardenwildlifehealth.org/*

GWH have produced a wealth of advice on creating a healthy environment for your garden. See *Amphibians*, *Birds*, *Hedgehogs*, *Reptiles* and *Wildlife friendly gardening*.




Recent publications from the WILDCOMS schemes

Habitat-use influences severe disease-mediated population declines in two of the most common garden bird species in Great Britain. Hanmer, et al., 2022. *Sci Rep* **12**, 15055. *https://doi.org/10.1038/s41598-022-18880-8*

Combining host and vector data informs emergence and potential impact of an Usutu virus outbreak in UK wild birds. Lawson et al., 2022. *Sci Rep*. 12(1):10298. *https://doi.org/10.1038/s41598-022-13258-2*

Evidence for overwintering and autochthonous transmission of Usutu virus to wild birds following its redetection in the United Kingdom. Folly et al., 2022. Transbound Emerg Dis. Oct 10. *https://doi.org/10.1111/tbed.14738*

The population genetics of the causative agent of snake fungal disease indicate recent introductions to the USA. Ladner et al., 2022. *PLoS Biol.* 20(6):e3001676. *https://doi.org/10.1371/journal.pbio.3001676*

Assessment of contaminants of emerging concern in European apex predators and their prey by LC-QToF MS wide-scope target analysis. Gkotsis et al., 2022. Environment International. *https://doi.org/10.1016/j.envint.2022.107623*

Long-term trends of second generation anticoagulant rodenticides (SGARs) show widespread contamination of a bird-eating predator, the Eurasian Sparrowhawk (Accipiter nisus) in Britain. Broughton et al., 2022. Environmental Pollution, Volume 314. *https://doi.org/10.1016/j.envpol.2022.120269.*

Using environmental monitoring data from apex predators for chemicals management: towards better use of monitoring data from apex predators in support of prioritisation and risk assessment of chemicals in Europe. Treu al., 2022. Environ Sci Eur 34, 82. *https://doi.org/10.1186/s12302-022-00665-5.*

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