WILDCOMS newsletter number 28: Spring 2021 www.wildcoms.org.uk

The WILDCOMS newsletter is produced 3 or 4 times a year and reports recent newsworthy items and publications from member partners

WILDCOMS Scheme news

Scottish Raptor Health

A message from Gabriela Peniche: It is with some reluctance, that I have to let you all know that there will be a gap for news coming from the Scottish Raptor Health Study. I will have to put the project on hold until I can organise new funding to keep the collaborations going and to keep the project running and doing its job helping the conservation of raptors and the Scottish environment. However, although the lights aren't on, the elves (Gaby's multiple personalities) are still busy in the background preparing the publications and we will certainly keep you all informed as these come out. Keep yourselves safe, busy and keep the good news coming because although I will not be adding to them, I will still be enjoying them. Bye for now, Gaby
If you would like to support the project or have ideas for funding, please email *gpeniche@hotmail.com*

Disease risk analysis and health surveillance (DRAHS) project

In December DRAHS attended the Great Britain Wildlife Disease Surveillance Partnership meeting and reported on project news. In January Dr Tammy Shadbolt participated in an evening webinar titled 'Revealing the unseen – the amazing world of wildlife pathology' alongside colleagues at the Institute of Zoology. The event is available on YouTube at *https://youtu.be/aiucydgX1H8.*

DRAHS has continued working on a number of disease risk analyses (DRAs). In December Georgina Gerard completed a DRA for a translocation of Golden coin turtle for the Hong Kong government. The Guam kingfisher DRA is an ongoing project and Dr Claudia Carraro has been developing plans for a quarantined facility. In January 2021 Dr Claudia Carraro has started working on a DRA for a conservation translocation of Madagascan cichlid in the Amboaboa River, Madagascar. Details of the project can be found at *https://fishnetmadagascar.com*. Dr Claudia Carraro, Dr Sophie Common and Dr Tony Sainsbury assessed the risk from SARS-CoV-2 to the reintroduced pine marten population in England and outlined mitigation recommendations that fieldworkers should follow when undertaking conservation activities with reintroduced pine martens. DRAHS has now received funding to carry out DRAs on two proposed reintroduction programmes: White-tailed eagles in Norfolk and Hen harriers in Wiltshire. See Publications: Common et al., 2021, Shadbolt et al., 2021 and Gerard et al.

WIIS-Scotland

The results for incidents from quarter 4 of 2020 will be added to the SASA website during April 2021. The most recent results can be viewed *here*. The next update, for incidents from quarter 1 of 2021, is scheduled to be published during July 2021.

The WIIS-Scotland service was paused from 23rd March, the start of the first Covid-19 lockdown, until the end of June 2020. Despite that, the WIIS-Scotland team investigated 175 incidents and identified 15 cases of pesticide abuse that occurred during 2020. The details of the abuse cases will not be published until any follow-up investigations are complete.

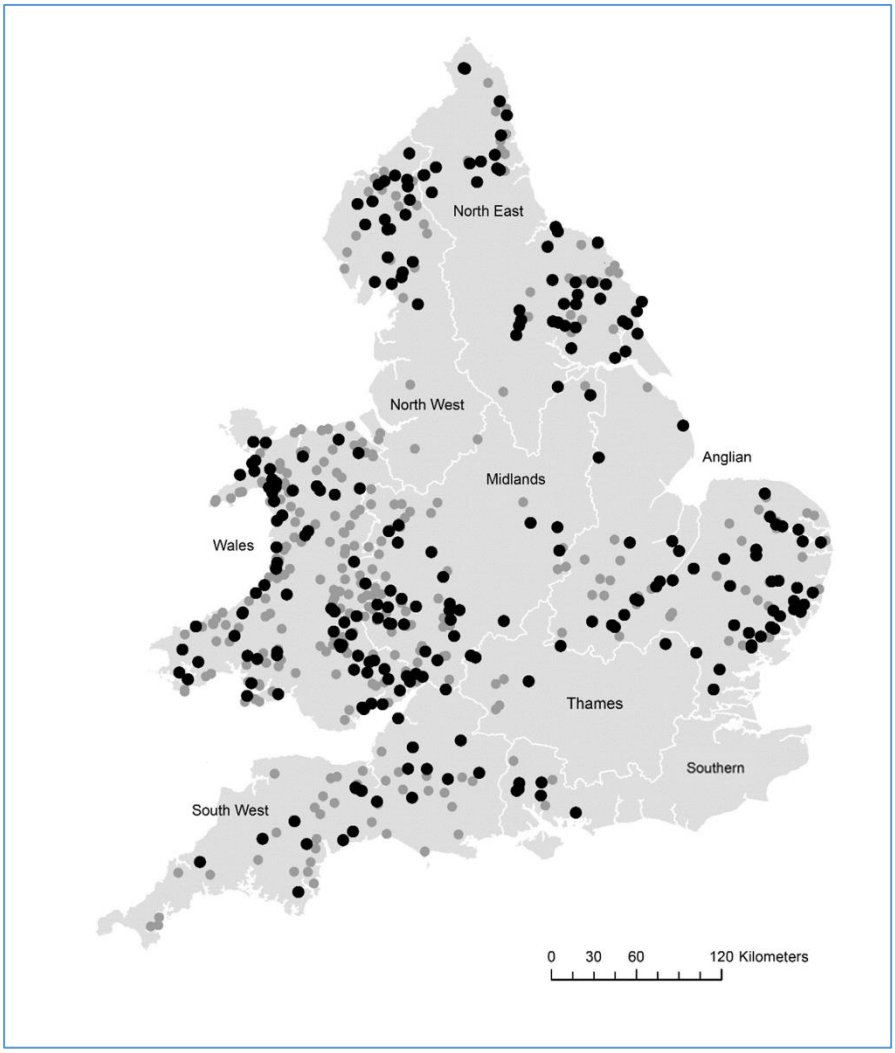
Cardiff University Otter Project

New Otter Project publication: ***Persistent pollutants exceed toxic thresholds in a freshwater top predator decades after legislative control.***

Polychlorinated biphenyls (PCBs) and organochlorine (OC) pesticides are known to have affected wildlife at both the individual and population level. In freshwater systems specifically, dramatic declines in Eurasian otter (*Lutra lutra*) populations across Europe were linked to exposure of these persistent organic pollutants (POPs) between the mid-1950 and 70s. This study examined PCB and OC concentrations in otter livers between 1992 and 2009. It demonstrates that while legislative action has been effective at decreasing concentrations of some of these compounds, declines were not seen in all, and concentrations found were a cause for concern in some areas. PCBs, DDT (and derivatives), dieldrin and HCB were all detected in at least 80% of the 755 otter livers sampled. Concentrations of ΣDDT and dieldrin in otter livers declined across the UK, but there was no significant time trend for ΣPCB-TEQ (WHO toxic equivalency) or HCB. A decline was seen in the majority of PCB congeners, but not all, with the lack of a decline in ΣPCB-TEQ due to high between year variability in the non-ortho congeners (77, 126 and 169) which have much higher toxic equivalency factors than the more frequently detected mono-ortho congeners (105, 118 and 156). Of the 464 otters used to calculate ΣPCB-TEQ, 38% exceeded a TEQ threshold (77 ng TEQs/kg liver wet weight, based on mink kit survivability), this exceedance was spatially widespread (as shown in the image below). In general, higher concentrations were found in the midlands and eastern regions, and lowest concentrations in western regions. Concentrations of PCBs and HCB in otters increased near the coast, potentially reflecting higher pollutant levels in estuarine systems.

Decades after legislative controls, concentrations of these legacy pollutants still pose a risk to otters and other freshwater predators, with spatially widespread exceedance of thresholds above which reproduction or survival has been reduced in related species. This paper highlights the need to continue monitoring contaminants in top predators.

The analysis of otter livers was possible due to funding from the Environment Agency. We thank members of the public and organisations for the collection of otter carcasses, which enables the continuation of our research into contaminants and other areas of otter ecology (see our *website* for details). This research was carried out over many years, and it is testament to a lot of hard work and dedication from *Dr Eleanor Kean* that we can share this paper. The work would not have been possible without Rob Strachan's consistent support of Cardiff University Otter Project, particularly his role in securing core funding and carcass collections, or without Richard Shore's guidance and support with respect to ecotoxicological analysis and interpretation. The loss of both remains a source of great sadness to all who knew them. See Publications: Kean et al., 2021.



Distribution of otters in which a toxicity threshold for dioxin-like PCB congeners was exceeded (2000-2009). The total TEQ value for PCB congeners 77, 105, 118, 126, 156 and 169 was summed. Individuals in which the sum was greater than published toxicity threshold of 0.077 mg TEQs/kg liver wet weight (Zwiernik et al., 2011) are shown in black, those below threshold in grey.

A list of further Otter Project publications can be found on their *website.*

GB Wildlife Disease Surveillance Partnership - reports are published quarterly.

To access the latest report see: *https://www.gov.uk/government/publications/wildlife-gb-disease-surveillance-and-emerging-threats-reports-2020* and *previous 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)

Predatory Bird Monitoring Scheme (PBMS)

Work continues at the *UKCEH* Lancaster site despite the devastating loss of Prof. Richard Shore and the Covid-19 pandemic. Richards's roles have been taken on by *Lee Walker* and *Dr. Claus Svendsen*.

Elaine Potter has been working hard to manage the day to day running of the scheme with help from Bev Dodd, and Jacky Chaplow manages the website and social media.

New PBMS report published 'Second generation anticoagulant rodenticide (SGAR) residues in barn owls 2019'.

The compounds detected most frequently in barn owls that died in 2019 were bromadiolone, brodifacoum and difenacoum. Overall, 87% of the owls had detectable liver residues of one or more SGAR, similar to that in earlier years. Comparing 2019 to baseline years (2006 to 2012) there was also no change in (i) the percentage of owls with residues of flocoumafen and difethialone; (ii) the ratio of owls with high to low concentrations for brodifacoum, bromadiolone, difenacoum and summed SGAR residues; and (iii) concentrations of difenacoum, bromadiolone and summed SGAR residues. There was an increase in concentrations of brodifacoum residues in owls in 2019. *PBMS reports | The Predatory Bird Monitoring Scheme (ceh.ac.uk)*

Behind the scenes at the Natural History Museum's bird collection

Dr Alex Bond, Senior Curator in Charge of Birds, The Natural History Museum.

Nestled in the small market town of Tring in the Chilterns is a lesser-known branch of the Natural History Museum. Founded as the private museum of Walter Rothschild in the late 19th century, it was left to the NHM on his death in 1937 and for the last 50 years has housed the bird collection, as well as six Victorian natural history public galleries. The collection numbers about 1 million specimens, ranging from ostrich skeletons to hummingbird eggs, woodpecker nests to bird-of-paradise skins, covering about 95% of the world's bird species. While most of the collection dates from before 1950, new specimens are still added every year (and specimen donations are welcome!). Since 2019, we've partnered with the Predatory Bird Monitoring Scheme to exchange material so that tissue samples of raptors can contribute to ongoing monitoring, and the specimens can be deposited in the museum and looked after for centuries to come. Every specimen tells a story of a species in a place and at a time, whether it is a blackbird from Lincolnshire in 2020 or a penguin from one of Ernest Shakleton's voyages of Antarctic discovery. Scientific visitors are welcome by appointment only, and for public gallery opening hours, tours, and events, visit *www.nhm.ac.uk/tring.* The images (© Trustees of the Natural History Museum, London) show a Huia (*Heteralocha acutirostris*) preserved in spirit (from New Zealand, they are now extinct) and the clay nest of an ovenbird (Furnariidae).

Recent publications from the WILDCOMS schemes

Common, S, Shadbolt, T, Walsh, K, Sainsbury, AW. (2021) The risk from SARS-CoV-2 to bat species in England and mitigation options for conservation field workers. Transboundary and Emerging Diseases. DOI: 10.1111/tbed.14035.

Gerard, G, Carraro, C, Sainsbury, AW. Disease Risk Analysis for the Conservation Translocation of Golden Coin Turtles (*Cuora Trifasciata*) from Kadoorie Farm and Botanical Garden to Release Sites in Hong Kong. Zoological Society of London 199pp.

Kean EF, Shore RF, Scholey G, Strachan R and Chadwick EA (2021) Persistent pollutants exceed toxic thresholds in a freshwater top predator decades after legislative control. *Environmental Pollution.* 272: 116415. DOI: *https://doi.org/10.1016/j.envpol.2020.116415*

Shadbolt, T, Pocknell, A, Sainsbury, AW, Egerton-Read, S, Blake, DP. (2021) Molecular identification of *Sarcocystis wobeseri*-like parasites in a new intermediate host species, the white-tailed sea eagle (*Haliaeetus albicilla*)'. Parasitology Research. *https://doi.org/10.1007/s00436-021-07103-0.*

Lee A. Walker, Elaine D. Potter, Jacky S. Chaplow, M. Gloria Pereira, Darren Sleep, Alexander G. Hunt, and Richard F. Shore. Second generation anticoagulant rodenticide residues in barn owls 2019 *Microsoft Word - Stewardship-2019-owls_FINAL (ceh.ac.uk)*

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