



Wildlife Disease & Contaminant Monitoring & Surveillance Network

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Policy relevance of the WILDCOMS monitoring schemes

Predatory Bird Monitoring Scheme (PBMS) contaminant monitoring covers marine, freshwater and terrestrial habitats at a UK scale. Our work provides underpinning scientific evidence that informs various national and international directives and policy initiatives. For example, our monitoring of Second Generation Anticoagulant Rodenticides (SGARs) provides the scientific evidence to evaluate the risk that SGARs pose to wildlife and the effect of national mitigation measures that may be required as part of product authorisation under the [Biocidal Product Regulation \(BPR, Regulation \(EU\) 528/2012\)](#). PBMS monitoring of a range of legacy and emerging persistent organic pollutants provides evidence of the effectiveness of the [REACH directive \(EC\) No 1907/2006](#) and [OSPAR](#) convention in controlling or banning emissions to the environment of harmful chemicals, while PBMS monitoring of mercury in sentinel wildlife species is a key means by which the impact in Britain of the The United Nations Environment Programme (UNEP) [Minamata Convention on Mercury](#) can be assessed. Further details on the policy relevance of PBMS monitoring is described on the [PBMS Policy Relevance webpage](#).

The **Clean Seas Environmental Monitoring Programme (CSEMP)**, previously known as the National Monitoring Plan (NMP) and the National Marine Monitoring Programme (NMMP), was initiated in the late 1980s to ensure that marine monitoring in the UK was undertaken in a co-ordinated way. The Programme aims to detect long-term trends in the quality of the marine environment by collecting high quality, standardised data while supporting research and development needs, to ensure that the UK meets temporal trend monitoring requirements for the Co-ordinated Environmental Monitoring Programme (CEMP) of the [Oslo and Paris Commission \(OSPAR\)](#) and supports compliance with EC Directives such as the Marine Strategy Framework Directive and the Water Framework Directive. Most samples for the Programme are collected during an annual multidisciplinary cruise in June/July, using [Research Vessel Cefas Endeavour](#). Fish, benthos, sediment and water samples are taken from a number of fixed and random stations in intermediate and open sea areas around England and Wales. Additional opportunistic samples are also collected to fulfil a multitude of monitoring commitments e.g. eutrophication, biodiversity, marine litter, etc.

The **Scottish Environment Protection Agency (SEPA) Lipophilic Strategy** monitors lipophilic (fat-loving) chemicals in the freshwater aquatic environment via sediment and freshwater fish. The need to monitor certain pollutants in sediment and biota is recognised under the [Water Framework Directive 2000/60/EC](#) (WFD) and its daughter directive [2008/105/EC \(Environmental Quality Standards Directive\)](#). The aims of the strategy include: to deliver environmental data that will ensure Scotland complies with the specific monitoring requirements of primary legislative drivers; facilitate compliance assessment for chemical substances for which biota standards are set and so allow assessment of water body chemical status under the WFD; inform state of environment reporting for Scotland's freshwater environments; detect temporal and spatial trends of contaminant concentrations and contribute to the assessment of WFD no deterioration objectives. Data generated through this biota and sediment monitoring network in the Lipophilic Strategy provides vital information on the

state of Scotland's freshwater environment which is not currently provided by SEPA's water monitoring programmes. The information complements other monitoring strategies and so leads to a holistic view of Scotland's environmental status with respect to chemicals.

The **Disease Risk Analysis and Health Surveillance Programme (DRAHS)** carry out disease risk analysis and health surveillance for wild animal translocations in England and through this enable Natural England to meet International Union for the Conservation of Nature, Species Survival Commission guidelines on the translocation of living organisms. For over ten years, we have carried out disease risk analysis prior to new translocations and ensured that the risk from disease has been considered before animals have been translocated for the first time. The results of post-release health monitoring are used to inform disease risk analysis and ensure mitigation measures are improved for future translocations. Species translocations that have been investigated through disease risk analysis include the red-barbed ant (*Formica rufibarbis*), short-haired bumblebee *Bombus subterraneus*, pool frog (*Pelophylax lessonae*), sand lizard (*Lacerta agilis*), adder (*Vipera berus*), smooth snake (*Coronella austriaca*), cirl bunting (*Emberiza cirlus*) and white-tailed sea eagle (*Haliaeetus albicilla*). DRAHS have used their experience in monitoring disease in translocated populations to devise an advanced method of disease risk analysis appropriate for free-living wild animal translocations ([Sainsbury and Vaughan-Higgins 2012](#)).



Pool frog courtesy of Jonathan Cracknell

Cardiff University Otter Project (CUOP) is a UK wide scheme monitoring otter populations and their health, and uses the otter as a sentinel for the health of the wider environment. CUOP is the only UK scheme monitoring a freshwater sentinel, and provides a unique 20 year archive of data and samples. The Eurasian otter is listed under Appendix II of the [Berne Convention](#), and Annex II and IV of the [EC Habitats Directive](#), which have strict legislative obligations to monitor and protect the otter. CUOP helps fulfil monitoring obligations, and works closely with other organisations (e.g. Trunk Roads Agencies) to guide the implementation of protection against roadkill, which remains the most significant recorded cause of death.

In conjunction with another WILDCOMS partner (PBMS), CUOP monitors a range of legacy and emerging chemical pollutants in the freshwater environment, providing evidence of the effectiveness of the [REACH directive \(EC\) No 1907/2006](#), and helping inform river basin management of chemical status under the [Water Framework Directive](#). Monitoring of lead (Pb) levels has provided clear evidence of the successful implementation of [Directive 98/70/EC](#) of the European Parliament, banning the marketing of leaded petrol.

The **National Fish Tissue Archive** collects samples that can be used to test for compliance with new environmental quality standards. The Priority Substances Directive under the [Water Framework Directive](#) (European Union, 2000) was updated last year (European Union, 2013). The previous version (European Union, 2008) focused on monitoring pollution only in the water phase with the exception of three chemicals (mercury, hexachlorobenzene and hexachlorobutadiene), for which monitoring of prey rather than water was recommended. The 2013 update essentially makes biota monitoring compulsory, adding a further eight biota standards to the existing three and specifying fish as the organism to be studied.

In the UK there is currently no routine monitoring of fish for chemical pollutants, however, annual samples of roach have been collected by the National Fish Tissue Archive from a number of sites since 2007 (ongoing). Over time these can be used to measure current pollution and to establish trends. Demonstrating improving trends, where standards have been failed, is an important part of the Water Framework Directive.

In a recent study from the Fish Tissue Archive ([Jürgens](#)



Collecting samples for the Fish Tissue Archive courtesy of Monika Jürgens and Andrew Johnson

[et al., 2013](#)), 79 % of the fish samples analysed failed the EU environmental quality standard (EQS) for mercury of 20 µg/Kg fresh weight, although concentrations were lower than in many other studies from the literature. The EQS for PBDEs has been set so low that every fish exceeded it by orders of magnitude.

The **Wildlife Incident Investigation Scheme (WIIS)** is a monitoring tool to inform the pesticide approval process, which is managed by the Chemicals Regulation Directorate within the HSE. It reports on incidents that might involve pesticides and the death or illness of wildlife, pets or beneficial invertebrates, such as honeybees and bumblebees within the UK. The WIIS will also identify and penalise those who deliberately or recklessly misuse and abuse pesticides. The work of the [WIU](#) at Fera and [SASA](#) provides the analytical evidence for WIIS and their results can be found [here](#) and are due to be updated during July 2014. The work of these organisations on WIIS pre-dates pesticide legislation, but was initially formally recognised within [The Food and Environment Protection Act 1985](#) and [The Control of Pesticides Regulations 1986](#) (as amended). However, nearly all plant protection products are now covered by [European Legislation \(Regulation \(EC\) No 1107/2009\)](#), which is implemented in the UK by [The Plant Protection Products Regulations 2011](#). The results of these schemes also include mortality and exposure incidents with anticoagulant rodenticides which are covered by the [Biocidal Product Regulation \(BPR, Regulation \(EU\) 528/2012\)](#). The WIIS and PBMS provide the UK with a unique evidence base to establish and monitor effectiveness of any mitigation measures that may be required within this regulation.

Scheme News

DRAHS have contributed to a publication on the identity of coccidian parasites in red and grey squirrels and their geographical distribution. Coccidia are known to be pathogenic (disease-inducing) in red squirrels ([Ball et al., 2014](#)).

Several WILDCOMS schemes worked with [Project Splatter](#) at an event at the Natural History Museum in London, as part of Universities Week. The week-long event aimed to highlight the relevance of university research to the public, and showcased a wide diversity of exhibits. 'Are you a #Splatterspotter' described how reports of wildlife road kill by the public can be used to quantify environmental contaminants – linking to WILDCOMS schemes – while also helping monitor invasives, and helping conserve rare species. For a flavour of the wide diversity of research showcased at the event, see a [video](#), or read a [blog](#) about the event and the importance of both public engagement and government funding for research, by Nicola Dandridge, Chief Executive of Universities UK.



The **PBMS** was involved in compiling a Europe-wide inventory of monitoring programmes that measure contaminant residues in birds of prey ([Gómez-Ramírez et al., 2014](#)). This work was part of the European Science Foundation Research Network Programme (EURAPMON) and the inventory can be downloaded from the [EURAPMON website](#).

WILDCOMS news

WILDCOMS was highlighted in the new Defra evidence strategy "[Making the most of our evidence: A strategy for Defra and its network](#)", published in June. The WILDCOMS case study is on page 14.

A workshop on poisoning of African vulture populations was held recently in Spain. For information please see the [WILDCOMS website news item](#).

CONTACT US: If you would like to see a particular topic in the "spotlight" section of the WILDCOMS quarterly bulletin, or would like to contact us about other WILDCOMS related matters, please e-mail the WILDCOMS coordinator, Dr Gloria Pereira (mdgds@ceh.ac.uk).