



## Wildlife Disease & Contaminant Monitoring & Surveillance Network

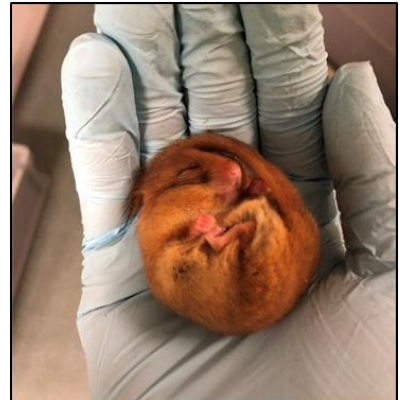
WILDCOMS newsletter number 29: Summer 2021 [www.wildcoms.org.uk](http://www.wildcoms.org.uk)

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

### WILDCOMS Scheme news

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

DRAHS has been busy assisting with a number of wildlife translocations during spring 2021. Georgina Gerard oversaw the management of a nine-week quarantine period for hazel dormice (*Muscardinus avellanarius*) at the Institute of Zoology, ZSL and wildlife veterinarian Dr Tammy Shadbolt conducted health examinations to check each animal was fit for release. In collaboration with People's Trust for Endangered Species (PTES), the Common Dormouse Captive Breeders Group (CDCBG), Wildwood Trust, Paignton Zoo, Natural England and the Back On Our Map (BOOM) project led by the University of Cumbria and Morecambe Bay Partnership, 30 hazel dormice were successfully released into the Arnside and Silverdale Area of Outstanding Natural Beauty in June.



Images (courtesy of DRAHS) above show a hazel dormice (top right), health examinations of hazel dormice (left) and hazel dormouse soft release cage (right).

DRAHS also assisted in the translocation of chequered skippers (*Carterocephalus palaemon*) from Belgium to Rockingham Forest also in June. Dr Tony Sainsbury was on hand to carry out health checks on the butterflies at the point of release.

DRAHS (ctd) has also been carrying out post-release health surveillance on pool frogs (*Pelophylax lessonae*) in the field in Norfolk. Health checks on the free-living frogs involved conducting veterinary health examinations and taking swabs to ensure that there is no evidence of the pathogen Bd (*Batrachochytrium dendrobatidis*) in the population. Further fieldwork is planned in order to carry out health checks on wart-biter crickets (*Decticus verrucivorus*) in the South Downs. Post-release health surveillance via post-mortem examinations continues for a number of project species for which DRAHS retains involvement including red kites (*Milvus milvus*) and corncrakes (*Crex crex*).

DRAHS team members Dr Helen Donald, Dr Claudia Carraro and Dr Sophie Common continue to work on a number of disease risk analyses (DRAs) for Guam kingfisher (*Todiramphus cinnamominus*), Madagascar cichlid (*Paratilapia polleni*), white-tailed sea-eagles (*Haliaeetus albicilla*) and hen harriers (*Circus cyaneus*). Dr Sophie Common gave a talk to the Royal Veterinary College Zoological Society about the work of DRAHS in June which was very well received.

### **Predatory Bird Monitoring Scheme (PBMS)**

Members of the PBMS contributed to the recently published 'Review of constraints and solutions for collecting raptor samples and contextual data for a European Raptor Biomonitoring Facility' as part of the COST Action ERBFacility (<https://erbfacility.eu/>).

The paper (<https://doi.org/10.1016/j.scitotenv.2021.148599>) identifies 31 constraints on running a long-term pan-European raptor biomonitoring programme that relate to legal requirements and restrictions, methodological challenges, skills shortages and spatial constraints in selecting a pan-European sentinel species. Maria Dulsat-Masvidal, the paper's lead author, and colleagues also propose solutions to the main constraints.

Lee Walker recently attended a meeting of the Government Oversight Group (GOG) which oversees the [UK rodenticide stewardship regime](#). Lee presented the findings of our most recent monitoring of anticoagulant rodenticide residues in barn owls and in red kites; the reports can be found [here](#). This work provides independent evidence as to whether there is any change in wildlife exposure to anticoagulant rodenticides that may be associated with stewardship.



### **Cardiff University Otter Project**

Interested in doing a Masters Research project with the Cardiff University Otter Project? Possible topics across a wide range: ecology, non-invasive population monitoring, environmental toxicology (contaminants), population genetics & genomics.

**Programmes:** [M.Res. in Biosciences](#) which includes a broad taught component covering core research skills across the bioscience disciplines, followed by an 8-month research project.

[M.Sc. in Global Ecology and Conservation](#), which includes broad range of theoretical and practical training in ecological theory and research, and a 4-month research project.



#### Opportunities for Research 2021-22 Cardiff University's Masters Programmes

Interested in doing a research project with the Otter Project? Please consider these Masters programmes!  
We have vacancies for Masters projects during 2021-22, offering a wide range of experience in research.

**Programmes:**

- **M.Res. in Biosciences** which includes a broad taught component covering core research skills across the bioscience disciplines, followed by an 8-month research project.  
<https://www.cardiff.ac.uk/study/postgraduate/research/programmes/programme/biosciences-mres>
- **M.Sc. in Global Ecology and Conservation**, which includes broad range of theoretical and practical training in ecological theory and research, and a 4-month research project.  
<https://www.cardiff.ac.uk/study/postgraduate/taught/courses/course/global-ecology-and-conservation-msc>

We welcome research students on either Masters programme, supervised by Dr Elizabeth Chadwick and Dr Frank Haller.

The Cardiff University Otter Project (<http://www.cardiff.ac.uk/otter-project>) is a nationwide scheme that has been collecting otters found dead for post mortem examination for 27 years. The otter is a European protected species, a sentinel of freshwater health. Data and samples are used in a wide range of research, while information on carcass locations is used to guide conservation. We investigate contaminants, disease, population biology and genomics across the UK and beyond. Our biobank holds tissue samples from >3000 individual otters spanning England and Wales.

**About the research:**  
Your research project can utilise the sample archive and associated metadata to address a wide range of potential questions, depending on your interests, e.g:

- **Population genetics and non-invasive monitoring of UK otters.** Projects could have a laboratory based, field based, or bioinformatic focus, and might explore changes in UK wide population structure or trends, local variation in family units, or development and application of novel genomic markers such as Y chromosome microsatellites and SNPs.
- **Quantification of contaminant concentrations (e.g. toxic heavy metals)** from otter samples and analysis of spatial, temporal and biotic drivers of contamination.

These examples are illustrative of the range of research that may be undertaken; students with their own ideas for projects are also encouraged.

**Applications:** Please see the M.Res. / M.Sc. weblinks for details of how to apply to each programme.

Please also contact to Dr Elizabeth Chadwick ([ChadwickE@cardiff.ac.uk](mailto:ChadwickE@cardiff.ac.uk)) and Dr Frank Haller ([HallerF@cardiff.ac.uk](mailto:HallerF@cardiff.ac.uk)) to discuss potential research projects, sending CV and cover letter. Deadline: asap. Both programmes consider applications on a rolling basis, until filled. Programmes start in September 2021.



**CARDIFF UNIVERSITY**  
PRIFYSGOL  
CERDDYDD

## WIIS-Scotland

The results for incidents from quarter 1 of 2021 will be added to the SASA website in mid-July 2021. The published results for 2020 can be found [here](#).

The WIIS-Scotland team is contributing to the European Raptor Biomonitoring Facility (ERBF) Proof of Concept (PoC) for pan-European monitoring in raptors. The team has been busy testing liver tissue from a number of tawny owls for the presence of second generation anticoagulant rodenticide (SGAR) residues. More information about the PoC can be found [here](#).



## 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)

## Can you help?

### Input to 'Potential pathways of lead exposure to European mammals from ammunition and fishing weights' required

**Project Information:** Lead introduced to the environment through sport/game hunting-ammunition and fishing weights has the potential to negatively impact the mammals within those ecosystems. Lead exposures from these sources and the lead poisoning it causes have been well researched in European bird species, however information on the risk pathways and exposure for mammals is poorly documented.

MSc student Louise Chiverton has compiled a spreadsheet of the potential risk pathways posed to mammals by lead ammunition and fishing weights using feeding ecology literature and reports of exposure globally. The project is timely due to EU consideration of the risks from these lead sources within the context of EU chemicals regulation REACH. Louise is asking additions for her spreadsheet – please see the [WILDCOMS news](#) item for more information or contact Louise at [lchiverton20@rvc.ac.uk](mailto:lchiverton20@rvc.ac.uk).

### News from the Life Apex team [Life Apex newsletter continues on pages 6, 7 and 8.](#)

The AIM of Life APEX is to improve systematic use of chemical monitoring data from apex predators and prey for protecting human health and the environment. Life Apex involves making better and more cost-effective use of chemical monitoring data from the large, valuable but under-used resources from environmental samples in Europe's Environmental Specimen Banks, Natural History Museums and other research collections. The project makes use of state-of-the-art analytics (e.g. wide-scope target, suspect



and non-target screening) that allow for screening of several thousands of chemicals in each sample and prioritization of frequently occurring pollutants and their mixtures. For more information, please check out our new project video (<https://youtu.be/7y3zDawHDck>), our project webpage ([www.lifeapex.eu](http://www.lifeapex.eu)) as well as our Twitter account (@LifeAPEX1). [More...](#)

## News from our colleagues overseas

**Wildlife Health Australia** (WHA) is the coordinating body for wildlife health in Australia. We work nationally, with members located all across Australia, including Australian Antarctic Territory.

Our principal objectives support:

- A long-term sustainable wildlife health framework for Australia
- Capacity building in wildlife health across Australia through communication, education and training
- A national wildlife health network of technical expertise, extending across zoos, universities, private veterinary practices, wildlife carer groups, hunters and fishers, coordinated across federal and state government agencies and non-government organisations
- Australia's understanding of potential international wildlife health risks to our animals and people
- Wildlife health intelligence and decision making in Australia
- Prevention of, preparedness for and response to wildlife health and disease issues
- Maintenance of national wildlife health information datasets
- The advancement of the natural environment and the natural ecosystems across Australia.

(Cassowary image courtesy of Rick Stevens)



WHA engages a large and varied group of stakeholders, many of whom may have valuable information, expertise and experience with wildlife health issues, and can participate in discussions on these issues through WHA. WHA and our members are well positioned to assist in building national and regional capacity. By bringing together people, groups and agencies who work with or have an interest in wildlife health at many different levels of government, in the private and public sectors, WHA facilitates collaboration and information flow to support the health of Australia's unique and precious wildlife.

WHA has recently developed two national guidelines through a cooperative initiative with Australian governments and agencies, organisations and individuals with an interest in wildlife health in Australia.

The National Wildlife Biosecurity Guidelines is a resource to help frontline wildlife workers to understand disease risks, minimise disease spread and protect individual animals, people, and free-ranging wildlife populations. The Guidelines draw together information on best practice biosecurity measures that can be applied to every aspect of wildlife work carried out by researchers, wildlife carers, wildlife managers, veterinarians, volunteers and others. Good biosecurity helps to keep wildlife, people and domestic animals safe and healthy by minimising the impacts of disease on individual animals and wildlife populations.

The National Guidelines for Management of Disease in Free-ranging Australian Wildlife is a practical document that outlines the science of wildlife disease management and describes what options might be available to manage wildlife diseases in an Australian context. The Guidelines emphasise that wildlife disease management should be undertaken as a multidisciplinary, collaborative effort, with input from a wide range of experts and stakeholders including Indigenous people. Determining what to do when a disease affects large numbers of wildlife can be challenging; written in consultation with experienced

(WHA ctd.) disease managers and ecologists, the Guidelines draw together existing approaches and outline considerations for choosing the approach that is right for the situation.

National Wildlife Biosecurity Guidelines: [one-page summary](#) | [full guidelines](#).

National Guidelines for Management of Disease in Free-ranging Australian Wildlife: [one-page summary](#) | [full guidelines](#).

Find out more about Wildlife Health Australia: [www.wildlifehealthaustralia.com.au](http://www.wildlifehealthaustralia.com.au); we welcome members from across the world – sign up [here](#).

### Recent publications from the WILDCOMS schemes

**A review of constraints and solutions for collecting raptor samples and contextual data for a European Raptor Biomonitoring Facility**, 2021. Dulsat-Masvidal, M., Lourenço, R., Lacorte, S., D'Amico, M., Albayrak, T., Andevski, J., Aradis, A., Baltag, E., Berger-Tal, O., Berny, P., Choresh, Y., Duke, G., Espín, S., García-Fernández, A.J., Gómez-Ramírez, P., Hallgrimsson, G.T., Jaspers, V., Johansson, U., Kovacs, A., Krone, O., Leivits, M., Martínez-López, E., Mateo, R., Movalli, P., Sánchez-Virosta, P., Shore, R.F., Valkama, Y., Vrezec, A., Xirouchakis, S., Walker, L.A., Wernham, C. *Science of The Total Environment*, Volume 793, 2021, 148599, ISSN 0048-9697, <https://doi.org/10.1016/j.scitotenv.2021.148599>.

**Risks of poorly planned conservation translocations**, 2021. Shadbolt, T., Sainsbury, A.W., Bernhard, J.F.T. *Vet Record*. <https://doi.org/10.1002/vetr.373>.

### Contact us

To see a particular topic in the WILDCOMS newsletter, contact us about WILDCOMS related matters or subscribe/unsubscribe from our mailing list please email [wildcoms@ceh.ac.uk](mailto:wildcoms@ceh.ac.uk) or [Contact us](#).

For detailed information about WILDCOMS and the schemes involved, navigate to [www.wildcoms.org.uk](http://www.wildcoms.org.uk).

The UKCEH [Privacy policy](#) sets out the basis on which any personal data we collect from you, or that you provide to us, will be processed by us.

### Don't miss the Life Apex newsletter (below)

# Life APEX (2018-2022)

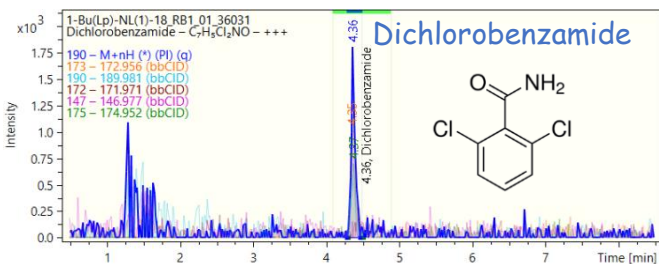


## Systematic use of chemical monitoring data from apex predators & prey LIFE17 ENV/SK/000355

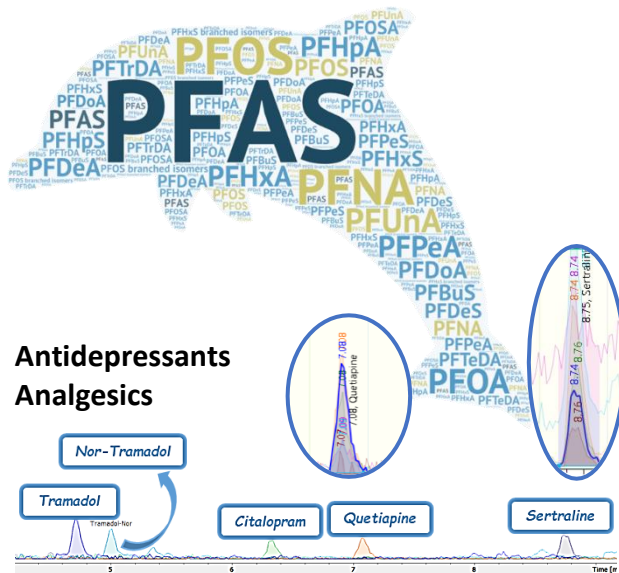
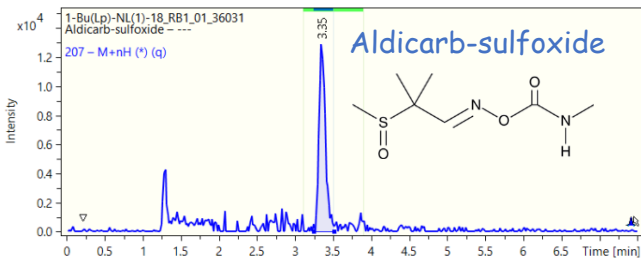
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### Tier 1 – Screening study (2015-2018) in UK, the Netherlands, Sweden and Germany

#### Herbicide - Buzzards

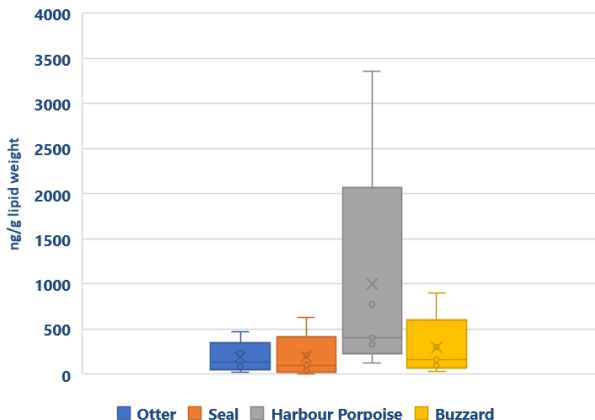


#### Insecticide - Buzzards

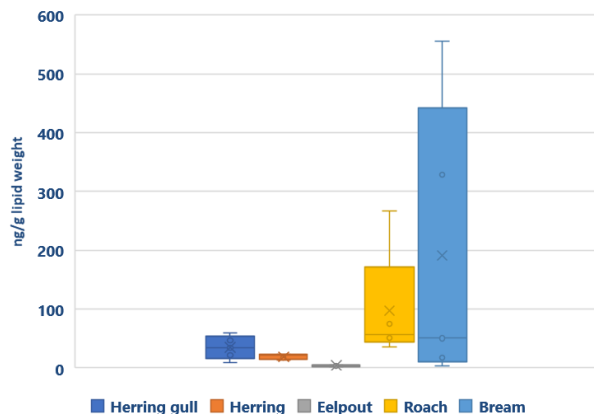


### ➤ Tier 1 – Screening study – PentaBDE = Σ(BDE-28, -47, -99, -100, -153, -154)

#### Predators

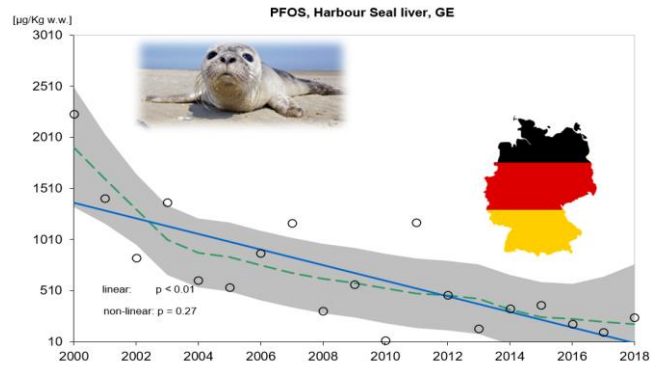
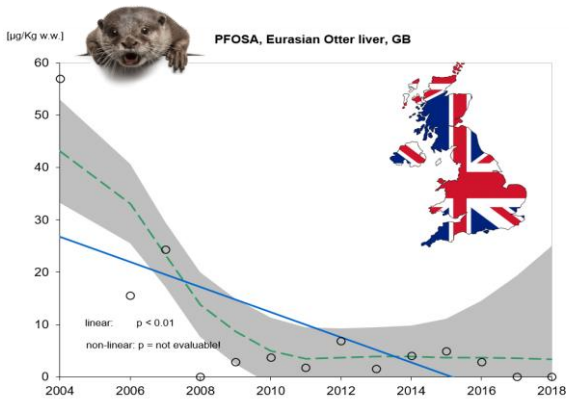


#### Prey



- PentaBDE is regulated under the Stockholm Convention and is a priority hazardous substance under the Water Framework Directive due to PCB-like properties
- As expected, PentaBDE concentrations showed higher values in predator (liver) than in prey (muscle)

## Tier 2 – Time trend analysis (2000-2018) of contaminants in apex predators and prey



Among per- and polyfluoroalkyl substances (PFAS), perfluorooctanesulfonamide (PFOSA) shows a declining trend in livers of otters from the UK. Similar trends were observed for perfluorooctanesulfonate (PFOS) in harbour seals from Germany.

## Tier 3 – European-wide analysis of apex predators and prey (++ongoing++)

### Marine mammals:

- Seals:
  - Germany, Scotland, Belgium, Poland, Norway (Svalbard)
- Harbour porpoise:
  - Ukraine, Scotland, Norway
- Dolphins:
  - Spain, Scotland, Italy

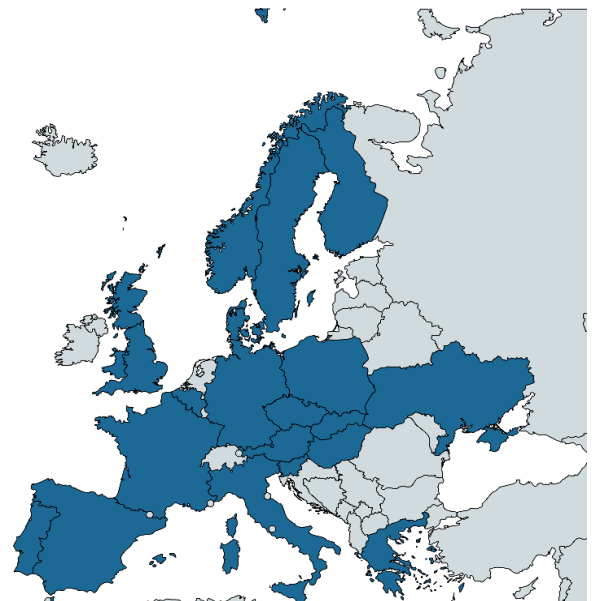
### Eurasian Otters:

- Italy, France, Austria, England, Wales, Denmark, Czech Republic, Hungary

### Common Buzzards:

- Slovakia, Greece, Germany, Spain, Portugal, Finland, France, Italy, Sweden, Slovenia

■ Tier 3 sample origins



## Use of raptor chemical monitoring data to assess impact and effectiveness of risk management measures at national and European scale

64 buzzard liver samples were shipped from The Netherlands and UK to the University of Florence and are now undergoing analysis for PCBs, PDBEs and Dechlorane Plus (DP) (which have been subject to chemical management measures the last few decades). Second Generation Anticoagulant Rodenticide (SGAR) analysis has started for the UK, where these biocides are subject to a stewardship initiative aiming to reduce exposure in wildlife. Mercury (Hg) analysis will follow the SGAR analysis in the new year, Hg is subject to the international Minamata convention which aims to reduce the levels of Hg in our environment



Results from study will be used to simulate the impact that within-year pooling of samples has on the provision of representative country-scale data for the detection of changes, over time, in average residue concentrations, with a view to assessing the power of monitoring with pooled samples. Knowledge on the power of monitoring with pooled samples has the potential to inform the design of cost-effective monitoring (with raptors) of the effectiveness of chemical management measures



## Strategy for prioritizing the Life Apex substances

### 1. Filter by Chemical Regulations of Interest

### 2. Consideration of frequency of appearance: substances present in at least 10% of samples

- Exclusion of point sources and coverage of wide/spatial distribution
- Identification of relevant contaminants that are not covered by current assessment methods (e.g. binding to proteins, mobile properties) or would need to be subjected to a risk-based assessment

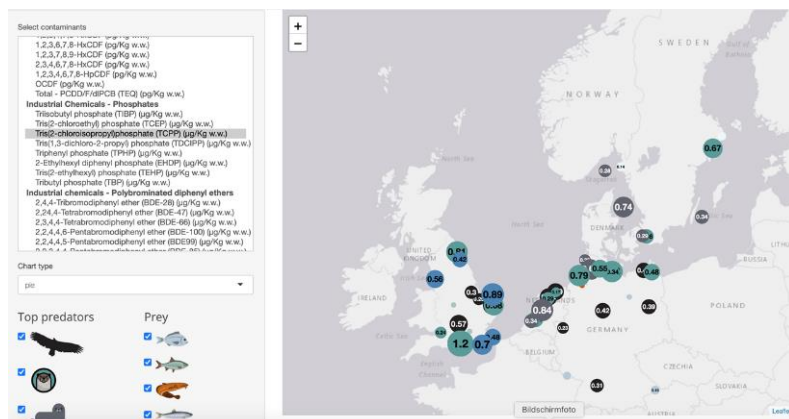
### 3. Applying the JANUS tool (*in silico* PBT assessment)

- Exclusion of substances that are certainly not PBT (PBT score 0-0.3), focus on substances with unclear (PBT score 0.35 - 0.7) and high PBT probability (PBT score > 0.7)

### 4. Manual PBT screening of non-regulated REACH chemicals:

- Exclusion of substances that already regulated (i.e. identified as SVHC, POP, restricted (Tier 1))

- Manual screening of substances with high PBT JANUS score with regard to intrinsic substance properties as well as uses and exposure information
  - Use of PBT screening criteria according to REACH Annex XIII in REACH dossiers
- ### 5. Manual PBT screening biocides (PPP & Pharmac.: If desired, not filtered in step 1)
- PBT screening of PPPs, Pharmac. & biocides with input from other departments at UBA
- ### 6. Result: Substance lists were reduced to substances that might need regulatory follow up and can be divided into three categories
- 1.) Classical PBT Substances
  - 2.) Classical Risk Substances (PEC/PNEC > 1)
  - 3.) Exposure Mismatch (predicted vs detected levels)



Accessibility of analytical results through online tools and novel databases.

### Digital sample freezing platform:

Stores chromatograms and allows for retrospective screening of compounds in each sample

## Contact us

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University of Athens



German Environment Agency



UK Centre for Ecology & Hydrology



University of Florence

