



LIFE APEX - Systematic use of contaminant data from apex predators and their prey in chemicals management

LIFE17 ENV/SK/000355



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Project description:

Background

EU regulations seek to identify and mitigate the risks of environmental exposure of people and wildlife to harmful chemicals. However, there are more than 60 000 chemicals in use in Europe and risk assessment is a laborious process that is often hampered by a lack of data. There is a fundamental need to improve and speed up the prioritisation of persistent, bioaccumulative and toxic (PBT) compounds for detailed risk assessment. PBT chemicals are not readily degraded and have the potential to accumulate along the food chain.

Apex predators are particularly well suited to contaminant monitoring for risk assessment and management for several reasons: they strongly bioaccumulate PBT chemicals; they integrate contaminant exposure over time and over relatively large areas; most species are relatively easily collected and sampled; and populations can be easily monitored and quantified. Targeted analysis can reveal which compounds are the most prevalent and occur in the highest concentrations in apex predators and can provide a powerful means of identifying and prioritising risk from the whole gamut of environmental chemicals, and provide early warning of potential risk. Monitoring of residues in apex predators and their prey can show the effectiveness of risk mitigation measures and can also identify the emergence of substitute chemicals which may present similar levels of hazard.

Objectives

The LIFE APEX project aims to enable regulators of chemicals to make more systematic use of monitoring data from apex predators and prey. This will reduce exposure to harmful substances and protect human health and the environment.

Data from apex predators and prey samples will be used to detect the presence of chemical contaminants in the environment, help pick the most relevant substances for further hazard assessment, assess the impact and effectiveness of substance risk mitigation measures, and define predominant chemical mixtures in the environment.

To support and sustain regulatory take-up of these applications, the project team will assess relevant resources and capacities for replication and transfer and engage key partners. It will also enhance quality assurance of sampling, processing, archiving and analysis of apex predator and prey samples and resulting data, and make it easier to access and compare those samples and data. The project involves partners in Germany, Greece, Italy, the Netherlands and the United Kingdom, as well as the coordinating beneficiary in Slovakia.

LIFE APEX directly relates to EU chemical regulations, namely REACH Regulation and the Regulation on Biocides. It also indirectly supports the implementation of several other policies, including the Regulation on Persistent Organic Pollutants, Birds Directive and Water Framework Directive.

Expected results:

- Inventory of collections of apex predator and prey samples;
- Review and guidance documents on quality assurance criteria, measures and protocols for sampling, processing and archiving of apex predator and prey samples; analysis of chemical contaminants in apex predators and prey; and assessment of the quality of species contaminant data;
- A well-populated European database, including a samples module with data from at least 75 natural history museums; a target analyses data module; and a non-target screening data module (the latter two together containing more than 1 million data entries);
- A list of chemicals in apex predator and prey samples, including lists of predominant mixtures and the top 300 contaminants, as well as a guidance document for assessing the PBT properties of contaminants found;
- Guidelines and a framework for monitoring terrestrial pollutants to assess the success of pan-European mitigation actions;
- Protocols for regulatory applications, take-up by the European Chemicals Agency and competent authorities in Member States; and
- A video and at least four peer-reviewed publications of key methods and applications to help disseminate the results to chemicals regulators.

Results

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Environmental issues addressed:

Themes

Risk management - Risk assessment and monitoring
Industry-Production - Chemicals

Keywords

pollutant analysis, pollutant monitoring, monitoring, chemical industry, pollution control, risk management, risk assessment

Target EU Legislation

- Chemicals & Hazardous substances
- Regulation 850/2004 - Persistent organic pollutants (amended by Regulations 756 and 757/2010) (29 ...
- "Regulation 1907/2006 - Registration, Evaluation, Authorisation and Restriction of Chemicals (REA ...

Natura 2000 sites

Not applicable

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Beneficiaries:

Coordinator	Environmental Institute, s.r.o.
Type of organisation	Research institution
Description	Environmental Institute, s.r.o. (EI) is an environmental management, research and consulting company whose experts have participated in many national and international projects funded by both the public sector and private enterprise. EI's main current research focus is on assessing the environmental risks of emerging substances to help ensure that the requirements of the Water Framework Directive ('good ecological status of water bodies') are met.

Partners

Umweltbundesamt / German Environment Agency, Germany Stichting Naturalis Biodiversity Center, The Netherlands Natural Environment Research Council, United Kingdom Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V., Institute for Molecular Biology and Applied Ecology IME (Fraunhofer IME), Germany Università degli Studi di Firenze - Dipartimento di Chimica "Ugo Schiff", Italy National and Kapodistrian University of Athens (Ethniko Kai Kapodistriako Panepistimio Athinon), Greece

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Administrative data:

Project reference	LIFE17 ENV/SK/000355
Duration	01-SEP-2018 to 31-AUG -2022
Total budget	3,353,413.00 €
EU contribution	2,012,047.00 €
Project location	Schleswig-Holstein(Deutschland) Hamburg(Deutschland) Niedersachsen(Deutschland) Bremen(Deutschland) Nordrhein-Westfalen(Deutschland) Hessen(Deutschland) Rheinland-Pfalz(Deutschland) Baden-Württemberg(Deutschland) Bayern(Deutschland) Saarland(Deutschland) Berlin(Deutschland) Brandenburg(Deutschland) Mecklenburg-Vorpommern(Deutschland) Sachsen(Deutschland) Sachsen-Anhalt(Deutschland) Thüringen(Deutschland) Anatoliki Makedonia, Thraki(Ellas) Kentriki Makedonia(Ellas) Dytiki Makedonia(Ellas) Thessalia(Ellas) Ipeiros(Ellas) Ionia Nisia(Ellas) Dytiki Ellada(Ellas) Sterea Ellada(Ellas) Peloponnisos(Ellas) Attiki(Ellas) Voreio Aigaio(Ellas) Notio Aigaio(Ellas) Kriti(Ellas) Piemonte(Italia) Valle d'Aosta(Italia) Liguria(Italia) Lombardia(Italia) Trentino-Alto Adige(Italia) Veneto(Italia) Friuli-Venezia Giulia(Italia) Emilia-Romagna(Italia) Toscana(Italia) Umbria(Italia) Marche(Italia) Lazio(Italia) Campania(Italia) Abruzzo(Italia) Molise(Italia) Puglia(Italia) Basilicata(Italia) Calabria(Italia) Sicilia(Italia) Sardegna(Italia) Groningen(Nederland) Friesland(Nederland)

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Noord-Brabant(Nederland) Limburg(Nederland)
Utrecht(Nederland) Noord-Holland(Nederland)
Zuid-Holland(Nederland) Zeeland(Nederland)
Bratislavsky kraj(Slovakia Slovensko) Zapadne
Slovensko(Slovakia Slovensko) Stredne
Slovensko(Slovakia Slovensko) Vychodne
Slovensko(Slovakia Slovensko)
Extra-Regio(Slovakia Slovensko) Associated
Slovakia (SK)(Slovakia Slovensko) North(United
Kingdom) Yorkshire and Humberside(United
Kingdom) East Midlands(United Kingdom) East
Anglia(United Kingdom) South East (UK)(United
Kingdom) South West (UK)(United Kingdom)
West Midlands(United Kingdom) North West
(UK)(United Kingdom) Wales(United Kingdom)
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