

# LIFE APEX - SYSTEMATIC USE OF CONTAMINANT DATA FROM APEX PREDATORS AND THEIR PREY IN CHEMICALS MANAGEMENT

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## HOW CAN LIFE APEX IMPROVE CHEMICAL MANAGEMENT IN EUROPE?

- ❖ **Four Demonstrators investigate novel, regulatory applications of chemical monitoring data from apex predators and their prey:**
  - detect presence of chemical contaminants in the environment;
  - facilitate selection of most relevant substances for further hazard (EU PBT) assessment; environment
  - assess impact and effectiveness of substance risk mitigation measures;
  - define predominant chemical mixtures in the environment.
- ❖ **Three Key Elements support regulatory uptake of these applications:**
  - relevant resources, capacities and partners for replication and transfer;
  - quality assurance of sampling, processing, archiving and analysis of apex predators and their prey;
  - access to and comparability of apex predators and their prey samples and related chemical monitoring data.
- ❖ **Demonstrators and Key Elements will be replicated and transferred across Europe.**
- ❖ **Active dissemination to optimise uptake by regulators and industry.**

## CUTTING EDGE CHEMICAL ANALYSIS

LIFE APEX organises the development and maintenance of various web-based databases for the collection and evaluation of data and information on contaminants in top predators and their prey.

### Target analysis for known environment contaminants

- e.g. mercury, brominated flame retardants, PCDD/F, dl- and ndl-PCBs, organochlorine pesticides, PFAA.

### Wide scope target analysis

- More than 2,500 compounds: biocides, industrial chemicals, plant protection products, pharmaceuticals, personal care products, illicit drugs - as well as their transformation products and metabolites.

### Suspect screening

- Samples will be investigated for the occurrence of more than 40,000 compounds using wide-scope suspect screening and the NORMAN Digital Sample Freezing Platform (NORMAN DSFP).

### Non-Target Screening

- Non-Target Screening prioritization approaches will be applied to reveal bioaccumulating substances based on their temporal trends and their spatial occurrence in the environment.

## MAKING USE OF EXISTING SAMPLES

### Tier 1: screening exercise

- First set of samples are retrieved from Environmental Specimen Banks, scientific collections and Natural History Museums in Germany, the Netherlands, Sweden and United Kingdom.
- Livers from common buzzard, European otter, harbour seal and filets from freshwater and coastal fish.

### Tier 2: temporal trend analysis

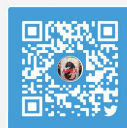
- Retrospective trend analysis for freshwater fish, otter and buzzard.

### Tier 3: replication and transfer

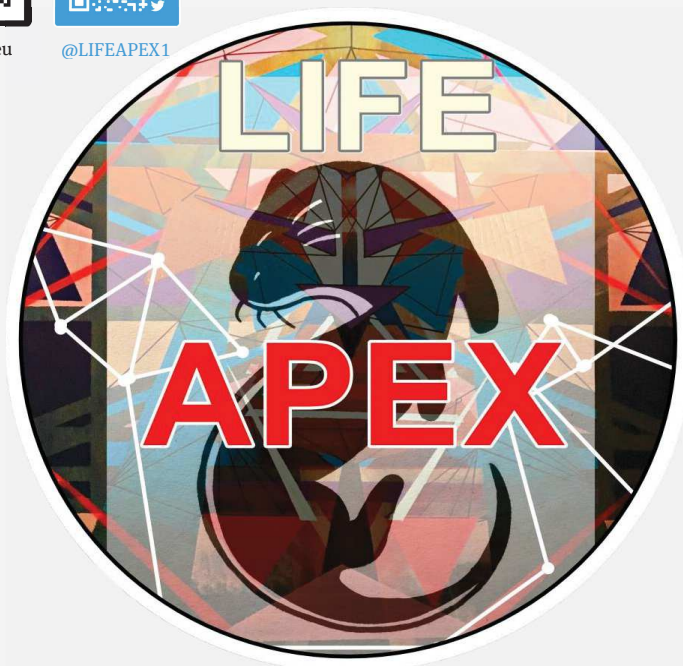
- Additional apex predator samples, which will be retrieved from Environmental Specimen Banks, scientific collections and Natural History Museums from all over Europe.



lifeapex.eu



@LIFEAPEX1



## ACCESS TO SAMPLE COLLECTIONS, CHEMICAL DATA AND SCREENING TOOLS

LIFE APEX organises the development and maintenance of various web-based databases for the collection and evaluation of data and information on contaminants in top predators and their prey.

### Life Apex Sample Catalogue

- Database of biota samples stored in Environmental Specimen Banks, scientific collections and National History Museums in Europe.

### LIFE APEX Chemical Occurrence Data

- Database of geo-referenced monitoring data on legacy pollutants and chemicals of emerging concern in biota.

### Suspect List Exchange

- Central Database to access various lists of substances for suspect screening and prioritisation, including list of LIFE APEX substances.

### Digital Sample Freezing Platform

- Database of mass chromatograms obtained by LC-HR-MS for retrospective screening of environmental samples.

## GETTING REGULATORS, INDUSTRY AND THE PUBLIC INVOLVED

### Open data

- Novel approaches to inform the public about environmental contaminants
- Sharing LIFE APEX data with NORMAN databases and IPCHEM

### Regulatory advisory board

- DG Environment, DG Joint Research Center, ECHA, EFSA, NIVA, RIVM, NGOs and CEFIC.



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