The Role of Collections for Contaminant Monitoring in Raptors Across Europe – State of Play and Next Steps

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Introduction to the role and overall aims of WG1 & 2

Cost Proposal, Memorandum Of Understanding

3 needs
- (1) Enhancing evaluation of the effectiveness of regulation
- (2) Enhancing reliable risk assessment of chemicals.
- (3) Providing early warning of emerging contaminant problems

ERBFacility aims to meet these 3 needs → **using raptors as sentinels of environmental contamination**

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BUILDING ON EURAPMON LEGACY

- Inventory of current monitoring - contaminants, species, matrices (Gomez-Ramirez et al. 2014)
- Inventory of which raptor species are being monitored (Vrezec et al 2012)
- Identified best sample types and methods for monitoring different compounds (Espin et al. 2016)

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An overview of existing raptor contaminant monitoring activities in Europe

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RAP EU NOW

Research and Monitoring *for* and *with* Raptors in Europe

Ecotoxicology
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Tracking pan-continental trends in environmental contamination using sentinel raptors—what types of samples should we use?

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WG1 AND WG2 –KEY OBJECTIVES

Objective R1: To assess current capacities for pan-European raptor biomonitoring and develop a framework for a European Raptor Biomonitoring Scheme (ERBioMS), using priority raptor species and deliver proof on concept for pan-European assessment of contaminant exposure trends (and, where feasible, effects) in raptors.

- Focus on current capabilities to detect temporal and spatial trends in contaminant exposure and key areas of weakness (in the absence of coordination)

- Develop an ERBioMS framework capable of delivering pan-European surveillance and monitoring of key pollutants (EU chemicals law and relevant global and regional conventions)

WG1 AND WG2 –KEY OBJECTIVES

Objective C1: To build analytical capacities ("analysis arena") by developing networking and collaboration among ecotoxicologists and collaborating laboratories, as well as regulators and administrators.

- Collaborative work on objective R1
- Piloting joint assessment and reporting *(deliver proof of concept*)
- Develop *guidance* on how to integrate assessments with those of relevant regulatory bodies (e.g. ECHA, EFSA, UNEP)…….ie explore how to mesh with key stakeholders needs

WG1 and WG2: Monitoring priority contaminants, PPPs and biocides with raptors

WHY TWO WORKING GROUPS?

- WG1 focuses on REACH 'priority contaminants such as Hg and Pb, and engages in particular REACH, Minamata (Hg) and Convention on Migratory Species (Pb) stakeholders
- WG2 focuses on PPPs, biocides and NSAIDs and engages stakeholders in EU PPP, Biocides and Medicinal Products law
- Tasks divided as involve different contaminants and hence different laws/policies, agencies (WG1 is largely ECHA-related, WG2 largely EFSA-related) and, sometimes, researchers
- WGs will work closely together
  - common approaches
  - read-across (between types of compounds)
  - share ideas and methodologies

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WG1&2 TASKS: T1.1, T2.1 (Months 1-24)

Assess current capacities for pan-European raptor biomonitoring (assessment of exposure trends and, where feasible, effects) for 4-6 prioritised contaminants

THESSALONIKI MEETING

Candidates contaminants for review include:

(i) PCBs, FRs, and PFAS,
(ii) Toxic heavy metals (Hg and Pb)
(iii) Biocides (SGARs)
(iv) Veterinary drugs: Parasiticides, NSAIDs and livestock antibiotics

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WG1 and WG2 TASKS: T1.2, T2.2 (Months 18-36)

Develop framework for European Raptor Biomonitoring Scheme (ERBioMS) using priority species and matrices

THESSALONIKI MEETING

- Identify appropriate species (and read across methods for species within trophic guilds)
- Identify sample matrices based on (Espin et al 2016)
- Identify scientific methodology
- Relate to WG3 and WG4 (logistics)

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WG1 and WG2 TASKS: T1.4, T2.4 (Months 36-42)

Carry out pilot joint assessments and reporting for proof of concept

STIRLING MEETING

- Post-mortem collation of data including visceral gout
- **Poisoning network**
- Key chemical monitoring
- Relate to WG3 and WG4 (logistics)

BUCCAREST MEETING

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WG1 and WG2 TASKS: T1.3, T2.3 (Months 12-48)

Deliver a network of collaborating laboratories capable of delivering pan-European surveillance and monitoring

THESSALONIKI, MADRID MEETINGS
AND
THIS MEETING

- Develop an agreed list of priority compounds/compound groups
- Assess potential for monitoring using species and matrices selected by task
- Establish the scope of activities that could be undertaken and timeliness, quality control and potential for sample exchange between laboratories and collections

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WG1 and WG2 TASKS: T1.5, T2.5 (Months 30-48)

Deliver training and guidance in pan-European surveillance and monitoring using raptors

- Refine technical specs for ERBioMS, for assessment of priority contaminants, PPPs etc
- Training School: Contaminant monitoring with raptors
- Development, with key stakeholders, proof of concept reporting frameworks

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Completed Short Term Scientific Missions

- Lead monitoring in raptors around Europe – L Monclús Anglada, Jan ‘19
- Review of the detection of veterinary pharmaceuticals in avian scavengers in Europe - M. Herrero Villar, Apr ‘19
- Presence, concs. and (bio)-analytical methods currently available for emerging and legacy organic contaminants in raptors – S. González Rubio, Apr ‘19
- Identification of candidate raptor species and sample matrices – A. Badry, Aug ‘19

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Upcoming Short Term Scientific Missions

Assessment of standardisation and harmonization of **quality control of analytical datasets and their required metadata to achieve pan-European monitoring**

Reference WGs1&2/GP4/STSM1

- Literature review and meta-analysis
- Focus on toxic metals, such as lead or mercury, and anticoagulant rodenticides encouraged
- Others, like POPs, flame retardant, etc also considered.

Host Country: ES, UK, DE, FR, NO, NL

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Upcoming Short Term Scientific Missions

Methods for forensic analysis of Phosphine, cyanide and glycos

Reference WGs1&2/GP4/STSM2

- Remain underreported in the monitoring of mortalities
- Review analytical techniques for these groups of chemicals
- Define those more convenient for the current analytical capacities in European laboratories
- Set up these methods in a wildlife toxicology laboratory for their dissemination to other labs.

Host Country: ES, FR

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Upcoming Short Term Scientific Missions

Scoping the analytical capacity available within ERBF to carry out the PoC

Reference WGs1&2/GP4/STSM3

- Logistical coordination: sample collection, data gathering and analyses
- Organization of different toxicology laboratories
- Analysing samples in one of these labs
- Coordination of the databases.

Host Country: ES, EE, UK, DE, FR,, NL

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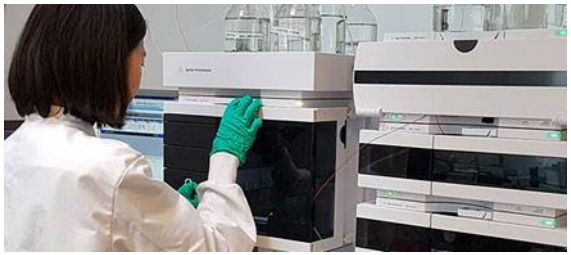
Upcoming Short Term Scientific Missions

Review of analytical methods/techniques for monitoring

Reference WGs1&2/GP4/STSM4

- Review analytic methods for research and monitoring pollutants in avian species
- Dataset of matrix, method, and references
- Core parameters like sample size, levels of detection (LOD) and quantification (LOQ)



Host Country: ES, EE, UK, DE, NO, NL

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Upcoming Short Term Scientific Missions

- Require Trans-National travel
- Covers Travel and Subsistence Costs
- 90 days duration

STSMs	Spain	Estonia	UK	Germany	France	Netherlands	Norway
1 – Quality control	✓		✓	✓	✓	✓	✓
2 – Phosphine etc.	✓				✓		
3 – Analysis for PoC	✓	✓	✓	✓	✓	✓	✓
4 – Monitoring Methods	✓	✓	✓	✓		✓	✓

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