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CHRIS WERNHAM/ BTO IMAGES

ERBFacility WG4 & cross-WG Virtual Meeting

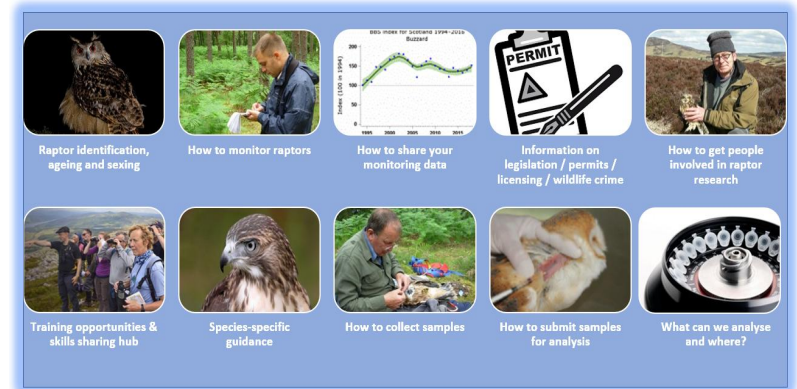
TAKING FORWARD A EUROPEAN RAPTOR SAMPLING PROGRAMME & THE ERBF 'ADVICE HUB'

ERBF Virtual Meeting – 22 April 2021

OBJECTIVES

- To update the ERBF network participants on development of the framework for a European Raptor Sampling Programme (ERSamP) and a web-based 'Advice Hub'.
- To inform about the existing structure and content of the Advice Hub – and seek suggestions, particularly on any gaps in the advice that we intend to provide.
- To seek discuss how best to disseminate the contents of the Advice Hub and encourage wide use of the guidance materials that it contains.
- To inform the ERBF network about our current state of knowledge of training and capacity building needs in relation to ERSamP across Europe, and seek to fill gaps in our knowledge by country.

ERBFacility Raptor Advice Hub

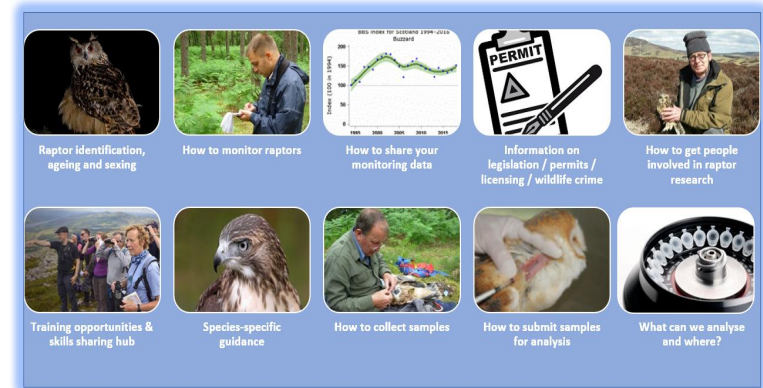


ERBF Virtual Meeting – 22 April 2021

OUTPUTS

- Compiled suggestions for additions/improvements to the Advice Hub and any offers from participants to help with final drafting of materials.
- Compiled suggestions for how best to ensure that the guidance contained within the Advice Hub is disseminated and adopted as widely as possible across Europe.
- Compiled suggestions on future training needs in relation to a future European Raptor Sampling Programme, including suggestions for where our current COST Action can help to deliver training before the end of the Action.
- **Chance after the meeting to provide more suggestions – advice hub and capacity review**

ERBFacility Raptor Advice Hub



ERBF Virtual Meeting – 22 April 2021



SCHEDULE FOR THE DAY

MORNING – Progress with ERSamP and an Advice Hub to support the sampling programme.

SESSION 1 – Structure and draft content of the Advice Hub and an example of the approach we have adopted to providing synthesized advice.

SESSION 2 – Think about how we might use some of the content of the Advice Hub to further encourage people from the 3 ERBF arenas (field, collections and analysis) to work more collaboratively in future; and how best to promote the Advice Hub.

AFTER LUNCH – Review of existing capacity across Europe to contribute to a future ERSamP and where are the most significant gaps (geographical and skills gaps for which training and capacity building would be most beneficial to support a Europe-wide future sampling programme)?

FINAL SESSION – How we can make closer links between the field and collections arenas in future to provide guidance and training, and reflections about the final stages of our COST Action work

A slightly updated programme is available at the link provided in the Zoom Chat box

ERBF Virtual Meeting – 22 April 2021

ORGANISING COMMITTEE

Chris Wernham (Lead WG4)

Rui Lourenço (Deputy Lead, WG4)

Al Vrezec (Vice Chair of ERBFacility
& WG4 Team)

Jovan Andevski (WG4 Team)

Arianna Aradis (WG4 Team)

Yael Choresh (WG4 Team)

Silvia Espín (WG4 Team)

Ulf Johansson (WG4 Team)

András Kovács (WG4 Team)

Pablo Sánchez Virosta (WG4 Team)

Stavros Xirouchakis (WG4 Team)





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EDMUND FELLOWES / BTO IMAGES

European Raptor Sampling programme (ERSamP)

PROGRESS SO FAR

Chris Wernham (BTO Scotland)

The challenge



- Environmental contaminants: € multi-bn costs to human and wildlife health
- EU objective (7EAP) - a non-toxic environment
- EU chemicals regulations – assess risk, impose risk mitigation measures (restrict/ban)
- Need biomonitoring data to:
 - enhance chemical risk assessment
 - enhance assessment of effectiveness of regulations
 - provide early warning of emerging contaminant problems

European Raptor Biomonitoring *Facility*— the title and the goal



‘Facility’ (from Latin *facilis* – ‘easy’)

- not an infrastructure, but a distributed grouping of key elements to facilitate enhanced European Raptor Biomonitoring

The goal

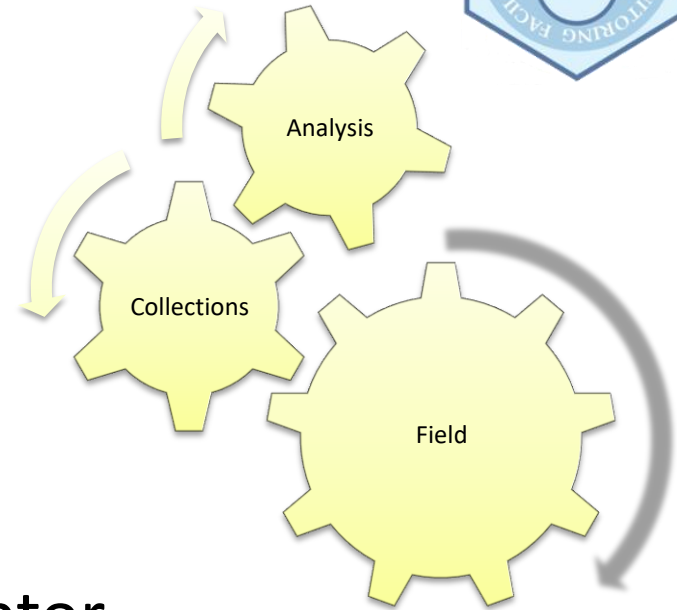
- Underpin generation and use of raptor biomonitoring for EU regulatory applications
- Use raptors as sentinel species to answer:
 - What are the environmental risks of specific chemicals?
 - Are chemicals regulations effective in reducing environmental exposure to contaminants?
 - Are there emerging contaminant problems requiring remedial action?
- Thereby:
 - Contribute to the EU goal of a non-toxic environment
 - Reduce contaminant tolls on human and wildlife health



The three 'Arenas'



- **Analysis (WG 1 & 2)**
 - labs, ecotoxicologists
- **Collections (WG 3)**
 - NHMs, ESBs, other collections
- **Field (WG 4)**
 - field ornithologists/ecologists, raptor conservationists





ERBFacility – who are we?



ERBFacility COST Action Leads
Guy Duke (Chair) & Al Vrezec (Deputy Chair)
(University of Oxford, UK) & (Institute of Biology, Slovenia)



Proof of Concept Study

Rafael Mateo
(IREC, Spain)
Rui Lourenço
(University of Évora)
Ana López Antia
(University of Antwerp)



Analysis Arena (WG1 & 2)

Antonio J García-Fernandéz
(University of Murcia, Spain)
Richard Shore / Lee Walker
(UKCEH, UK)



Collections Arena (WG3)

Paola Movalli
(Naturalis, Netherlands)



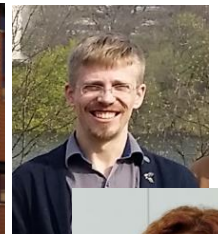
Field Arena (WG4)

Chris Wernham
(BTO Scotland)
Rui Lourenço
(University of Evora)



Other key people

Oliver Krone
(STSM Coordinator)
Madis Levits
(Communications Manager)
Nermina Sarajlić
(Assistant Communications
Manager)
Pablo Sánchez Virosta
(COST Action Administrator)



Capacity Building Objectives



R1 Analysis Arena: assess current analytical capacities, develop framework for a **European Raptor Biomonitoring Scheme (ERBioMS)**



R2 Collections Arena: assess current collection capacities, develop framework and protocols for distributed a **European Raptor Specimen Bank (ERSpeB)**



R3 Field Arena: assess current field capacities, develop framework, standards and protocols for a **European Raptor Sampling Programme (ERSamP)**



Research Coordination Objectives



C1 - Analysis arena

- Collaborative work on **ERBioMS**
- Piloting joint assessment and reporting
- Developing guidance on integrating reports with regulatory assessments



C2 - Collections arena

- Collaborative work on **ERSpeB**
- Constructing meta-database of samples/data
- Stimulating expansion of raptor collections



C3 - Field arena

- Collaborative work on **ERSamP**
- Stimulating/harmonising collection of raptor samples and contextual data
- Developing and field-testing sampling framework, standards and protocols



Extra funding for ERB Facility
 ERB Facility has been awarded an additional €48000 for the current Grant Period 2
[READ MORE](#)



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Missions

Three new Calls for STSMs, Grant Period 3 - EXTENDED DEADLINES 30 September 2019!

- New Calls for STSMs Period 3
- GP2 STSMs 2018-19
- STSM reports
- Call for one STSM for (Collection Arena) (closed)
- Summer 2018 Call (closed)

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About

Why raptors?
 Raptors are particularly suitable for monitoring persistent, bio-accumulative and toxic (PBT) substances because they are widespread, typically long-lived apex predators, which integrate contaminant exposure over time, over large areas and across a range of specialist and generalist food chains, are particularly sensitive to environmental contaminants and among the first organisms to exhibit readily observable responses.

Examples of contaminant problems revealed by raptors include heavy metal-induced immune system impairment, polychlorinated-biphenyl (PCB) induced impacts on reproduction (notably associated with lead shot in game and locally associated with non-steroidal anti-inflammatory drugs (NSAIDs)).



Who is involved?
 ERB Facility involves researchers working with analytical laboratories, curators of raptor collections in museums, specimen banks and research institutions, and field workers involved in raptor monitoring and conservation. We call these respectively the 'Analytical Arena', the 'Collections Arena' and the 'Field Arena'.

See [Governance](#) for details of who is involved.

Welcome

Welcome to the European Raptor Biomonitoring Facility COS1 Action [CA16224](#)

We are an open network of researchers and practitioners working towards coordinated Europe-wide monitoring of contaminants in raptors (birds of prey) with a view to supporting the implementation of EU chemicals regulations and thereby reducing chemical risks to raptors themselves, to the wider environment and to human health.

If you are interested to join us, please see the [Join ERB Facility](#)



White-tailed eagle *Haliaeetus albicollis*, MUI - Jacob Spilka - CC BY 2.0 via Wikimedia Commons



3 new Calls - one per Arena

ERB Facility has issued 3 new Calls for Short-Term Scientific Missions for Grant Period 3 (1 May 2019 to 30 April 2020).

ERB Facility is seeking applicants for up to 15 new Short-term Scientific Missions, from individuals who would like to play a key part in delivering the objectives of the Action, in order to putting in place:

- a European Raptor Biomonitoring Scheme, a distributed European Raptor Specimen Bank and a European Raptor Sampling Programme, a shared database of analytical standards and protocols for analyses and sampling, best practice guidance for sampling, proof of concept for pan-European assessments and harmonised sampling.

Who are we looking for?

Applicants may have experience in one or more of these arenas, for example in the analysis of contaminants in raptors, the storage of raptor samples in collections, and/or the gathering of raptor samples and related data (e.g. population/reproduction data) from the field.

Missions typically require skills in collating, reviewing and analysing information, and in engaging with contacts across Europe to build on their knowledge and expertise. Applicants will benefit from experienced Host Institutions, and will be involved in work that should lead to technical reports and/or scientific publications and allow them to develop their networks of contacts across Europe. Mission-holders are typically invited to attend Action meetings to present and discuss their work.

What will ERB Facility do?

ERB Facility will undertake next generation biomonitoring in Europe by delivering complementary frameworks for a European Raptor Biomonitoring Scheme, a distributed European Raptor Specimen Bank and a European Raptor Sampling Programme, a shared database of samples, harmonised standards and protocols for analyses and sampling, best practice guidance for sampling, proof of concept for pan-European assessments and harmonised sampling.

ERB Facility will help answer:

- Is EU chemicals legislation effective in reducing environmental exposure to contaminants in Europe?
- What are the environmental risks of specific chemicals? and
- Are there emerging contaminant problems needing remedial action?

In this way, ERB Facility will improve effectiveness evaluation, risk assessment and early warning in relation to regulation of priority substances, plant protection products, biocides, veterinary products and heavy metals.

ERB Facility is timely and relevant given the shift to chemicals regulation from national to EU level and EU policy for a non-toxic environment. ERB Facility fills a key gap in wildlife biomonitoring and complements recent European developments in human biomonitoring.

See [Aim and Objectives](#) for further information.

What raptor samples are used?

Biomonitoring involves no harm to raptors. It makes use of existing specimens and samples in environmental specimen banks, natural history museums and other collections. These derive from birds found dead in the wild. Where samples from live birds are needed, this involves non-invasive sampling methods (e.g. regurgitated pellets, feathers, etc.) and to collect more relevant pellets, typically during raptor to museum visits.

The formal description of the Action is given in the ERB Facility Memorandum of Understanding, available on the COS1 website [here](#).

Forthcoming Events

WC4 Meeting: Building capacity for contaminant sampling and collection of supporting monitoring data for raptors across Europe.
 17 September 2019 - 09:00

Latest News

GM2, MC3 and WC4 Meetings held in Florence
 10 March 2019

WCs 1, 2, 3 & 4 Meeting concludes in Thevauxville
 6 February 2019

WC3 Meeting held in Brussels
 30 January 2019

Additional €48000 budget approved for ERB Facility
 4 December 2018

ERB Facility 2018 Strategic Meeting
 15 October 2018

ERB Facility 2018 Strategic Meeting
 15 August 2018

ERB Facility Management Committee approves GP2 WP5
 12 June 2018

First ERB Facility General Meeting held
 1 March 2018

<https://erbfacility.eu/>

European Raptor Biomonitoring Facility



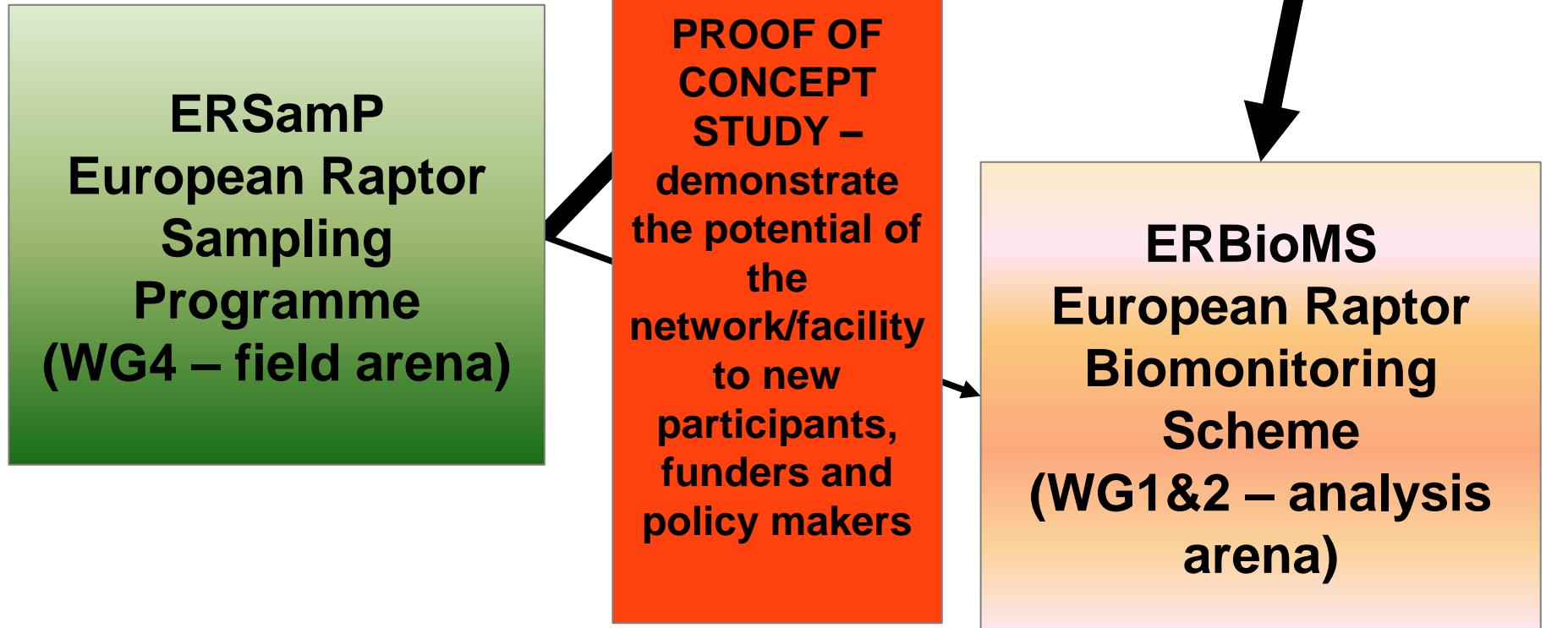
How does it all link together and how is it coordinated?

ERSpeB
European Raptor Specimen Bank
(WG3 – collections arena)

ERSamP
European Raptor Sampling Programme
(WG4 – field arena)

PROOF OF CONCEPT STUDY –
demonstrate the potential of the network/facility to new participants, funders and policy makers

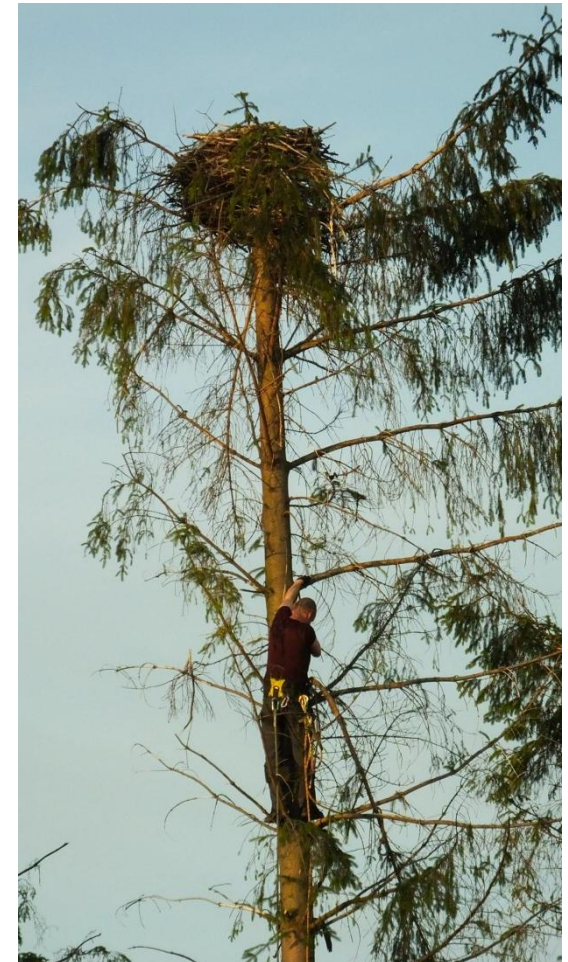
ERBioMS
European Raptor Biomonitoring Scheme
(WG1&2 – analysis arena)



European Raptor Sampling Programme



- Out COST Action aims to develop a framework, standards and protocols for a European Raptor Sampling Programme (ERSamP)
- This will provide for collection of **the right raptor samples from the right locations at the right times** to feed into the European Raptor Biomonitoring Scheme
- Standards and protocols will ensure **harmonised** sampling methods and harmonised recording of relevant field data (termed '**contextual data**')



ERSamP – Samples and ‘contextual data’



Samples for contaminant analyses might include:

- Whole dead birds (carcasses - particular organs useful for different types of compounds and integrating exposure results over different time periods)
- Samples from live birds (adults, nestlings e.g. blood, feathers)
- Other samples – eggs, eggshells, moulted feathers, faeces, pellets



EURASIAN SPARROWHAWK AT THE NEST/ JOHN HARDING

ERSamP – Samples and ‘contextual data’



‘Contextual data’ includes:

- Essential information relating to the individual bird from which the sample is derived (e.g. age, sex, location, condition at the time of sampling etc)
- Other valuable information from the population of raptors from which samples are obtained (e.g. population trends, reproductive parameters and trends, dietary information, survival rates and trends, information on movements/migration)

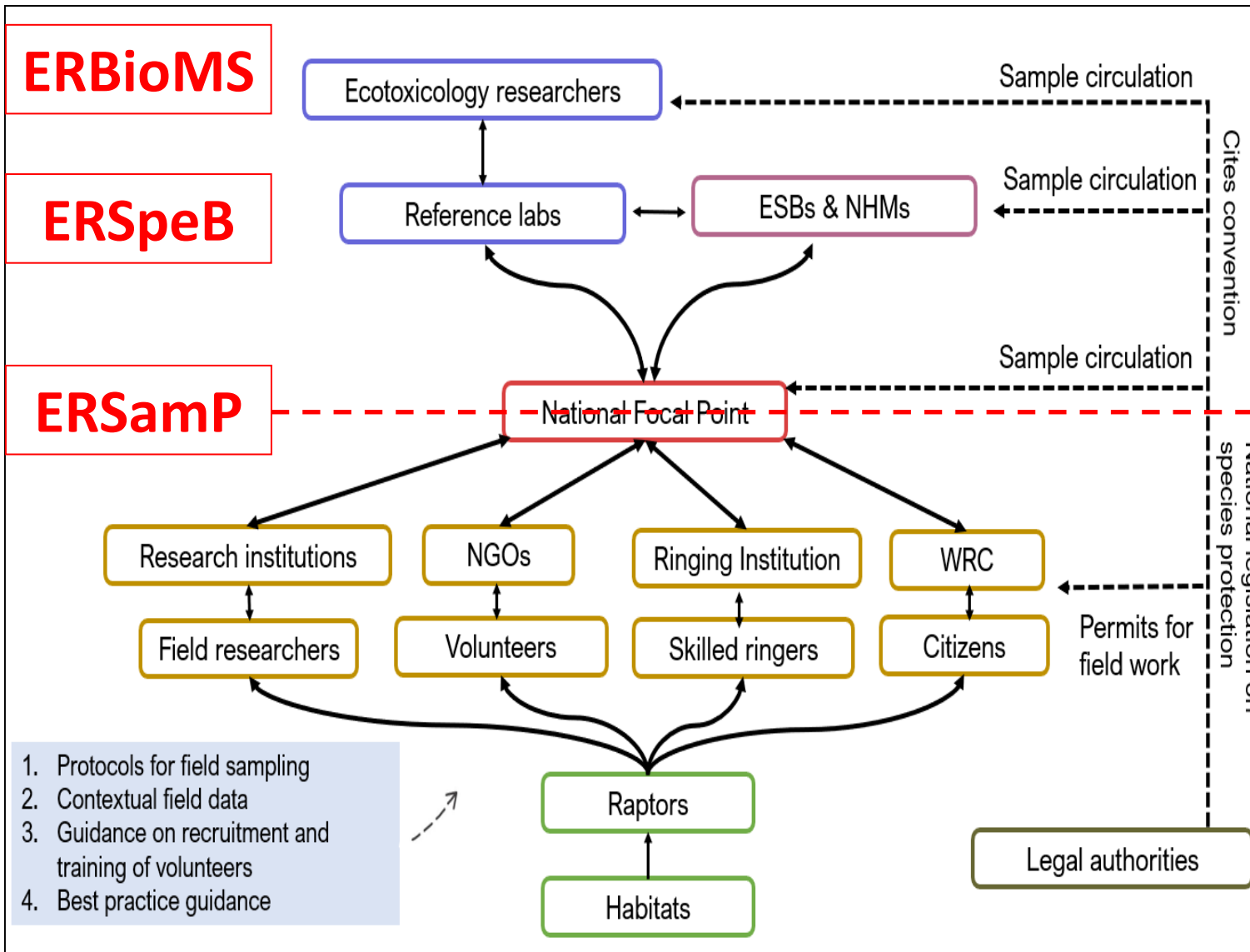
This other information is important because it can

- (a) improve interpretation of contaminant analyses and/or
- (b) through monitoring, provide early warning of contaminant threats to populations



SHORT-EARED OWL NESTLING / NEIL MORRISON

ERSamP – Structure (people)



➤ The collection of the right samples from the right locations at the right times

➤ Standards and protocols to ensure harmonised sampling methods and recording of contextual data

ERSamP – Structure (functions)



OVERALL MANAGEMENT STRUCTURE (ERBFacility)

KNOWLEDGE EXCHANGE NETWORK
(ERBioMS)

SAMPLE HOLDING NETWORK
(ERSpeB)

Ecotoxicology
analyses

Interpretation of
contaminant
results and
contextual data

Short-term

Longer-term

Co-ordination and Advice Hub
(country specific, collaborating institutions, Ambassadors and/or
National Coordinators)

SAMPLE AND CONTEXTUAL DATA COLLECTION NETWORK (ERSamP)

Collection
of carcasses

Samples
from live
birds (e.g.
blood)

Nest-based
samples and
data requiring
licences (e.g.
eggs)

Other monitoring
information
(contextual data)
not requiring
licences

- The collection of the right samples from the right locations at the right times
- Standards and protocols to ensure harmonised sampling methods and recording of contextual data
- **Acknowledges that organisations and individuals may carry out more than one function**

The ERSamP framework – work areas



- **Importance** - Why take part in the sampling programme? What are the motivations of, and potential benefits to, all the types of participants who we need to take part?
- Overview of the **players** across Europe – current capacities and constraints
- **Priority species** for collection in relation to the European Raptor Biomonitoring Scheme (ERBioMS) + **priority tissues** + sampling 'design' (WG 1&2 – Badry *et al.*)
- **Guidance** on gathering specimens and 'contextual data'
- **Capacity building** needs and how to address **constraints**



ERSamP - Review of 'actors' and their needs



“To be or not to be (sampled and monitored), that is the question”!

“ACTORS”

- Different groups and types of people that we need to encourage to take part in the different parts of the sampling programme or to collect or store different types of samples and data
- We may also refer to them as “players”, “audiences”, “interest groups” or “participants”
- Examples: bird ringers; raptor nest monitoring volunteers; professional researchers; vets; wildlife rehabilitation staff; citizen scientists who do bird survey work; members of the public who send in carcasses; museum curators; NGOs who coordinate survey volunteers; specimen banks



ERBF FLORENCE (March 2019)



Group 1 – Carcass collection

Group 2 – Live (blood) sampling

Group 3 – Population monitoring data



What types of people could do it?

What are their motivations for fieldwork? What would put them off?

How are they currently coordinated? / How do we reach them?

What guidance and training would they need to take a more active role in ERSamP?

What feedback will they need to keep them engaged? What benefits?

Which key people and organisations should we get involved?



ERBF Working Group 4 FLORENCE (March 2019)



TYPES OF PEOPLE

- ✓ Vets
- ✓ Trained ringers
- ✓ Nest monitoring volunteers
- ✓ Professional ecologists
- ✓ Wildlife rehab centres
- ✓ Road ecology network
- ✓ Public citizens
- ✓ Hunters
- ✓ Police, rangers & authorities

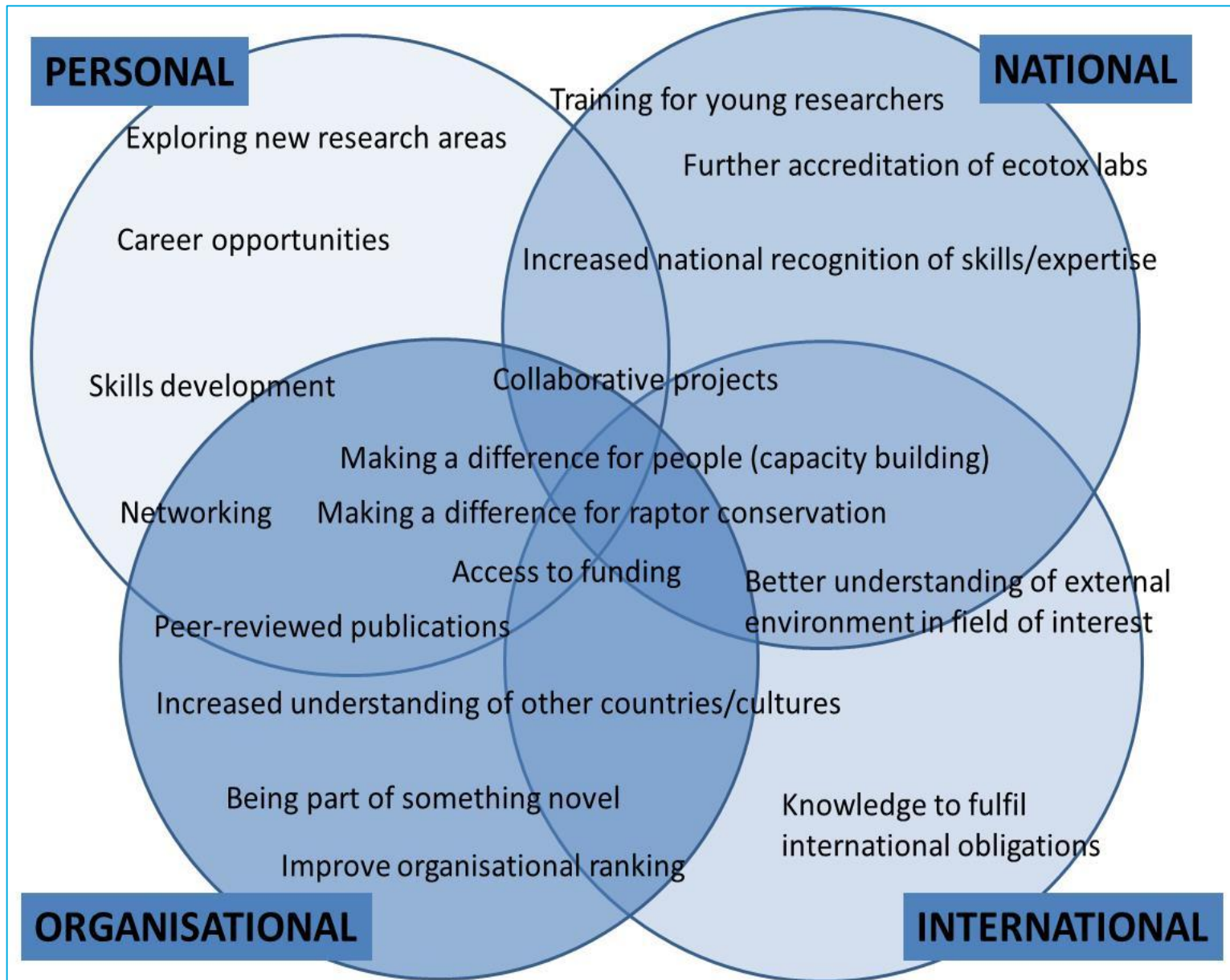
MOTIVATIONS

- ✓ Professional job
- ✓ Fun – their hobby
- ✓ Commitment to conservation
- ✓ Passion for raptors and other wildlife
- ✓ Career experience
- ✓ Contribute to something useful
- ✓ Interest in science
- ✓ Challenge and excitement of finding new nest sites

WHAT DO THEY NEED?

- ✓ Specific guidance & protocols
- ✓ Regular feedback suitable for the specific audience
- ✓ Accreditation, certificate of participation or rewards
- ✓ Funding for equipment or travel
- ✓ Acknowledgement or co-authorship of publications
- X Don't want too much paperwork
- X Don't want to duplicate effort (e.g. data submission)

Benefits of participating in ERB Facility (or as an Ambassador)



ERBFacility guidance and 'Advice Hub'



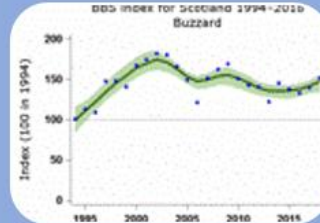
Goal: to develop good practice guidance and provide this and sign-post to other useful information to support a future functioning European Raptor Sampling Programme



Raptor identification, ageing and sexing



How to monitor raptors



How to share your monitoring data



Information on legislation / permits / licensing / wildlife crime



How to get people involved in raptor research



Training opportunities & skills sharing hub



Species-specific guidance



How to collect samples



How to submit samples for analysis



What can we analyse and where?

Click on the picture (CTRL + CLICK) to get additional information.

ERSamP – Review of constraints



- Maria Dulsat, Rui Lourenço *et al.* (in prep) – **A review of constraints and solutions for collecting raptor samples and contextual data for a pan-European contaminant monitoring scheme.**
- Based on questionnaire survey and expert advice from 74 respondents from 24 European countries considering 31 broad constraints in 4 groups (legal, methodological, spatial coverage, skills).
- Suggests workable solutions and therefore concludes that a long-term monitoring scheme relying on the collection of raptor samples is feasible!

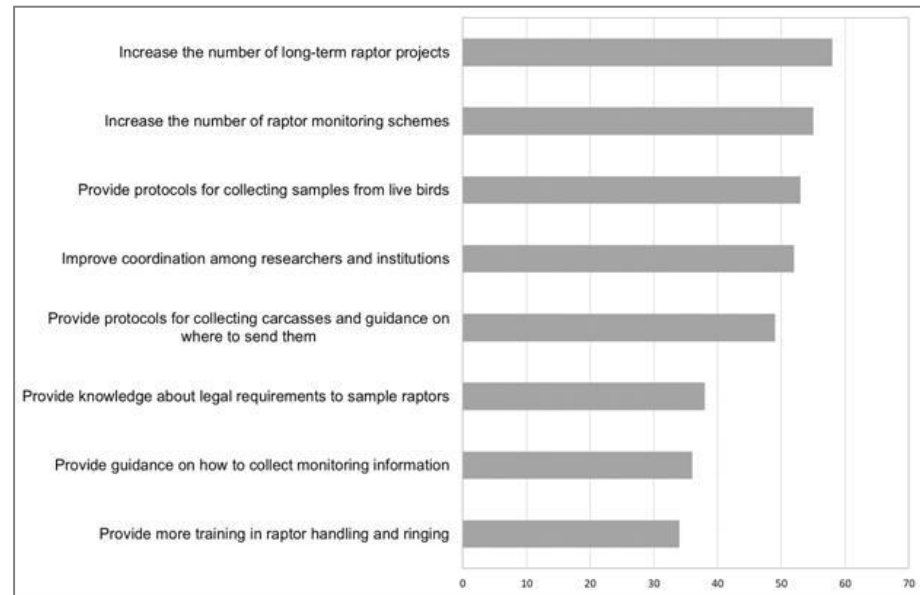


Figure 6

Frequency of the most important constraints for sampling raptors identified by respondents



ERBF WG4 Slovenia workshop (September 2019)

Review of existing field data and sample collection and storage capability by country

The workshop considered:

- All relevant actor types: ringers; nest monitoring; wildlife rehab centres; vets; public (carcass collection); volunteers (for visual survey work); professional ornithologists; museums/collections
- Strengths of current capacity and most significant gaps by country
- Focus on the likely Proof of Concept study species – **Tawny Owl** and Common Buzzard – to provide working examples of current capacity, gaps and constraints
- Problems with collecting carcasses (the main initial focus of the Proof of Concept)
- Feasible ways of improving each country's capacity to contribute to ERBF in future
- Examples of good practice available to share to assist future capacity building





Field Arena work – how you can still help!



- Review the **Advice Hub** and provide suggestions for additional sections, offer to write sections, send ideas for useful (preferably web-accessible) literature
- Share your ideas about how best to disseminate good practice guidance/the Advice Hub (recommend websites to which we could try to link to promote it to different audiences)
- Review the **capacity template(s)** for your own country, or provide a new template if your country has not been covered so far (so that our review is as comprehensive as possible)
- Opportunities for **short-term scientific missions or training schools** between now and (hopefully) April 2022 [subject to budget confirmation]

Thanks to the WG4 Team!

**Management of WG4
work programme**

Chris Wernham

Rui Lourenço

Jovan Andevski

Arianna Aradis

Yael Choresh

Silvia Espín

Ulf Johansson

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Pablo Sánchez Virosta

Al Vrezec

Stavros Xirouchakis

STSM holders and hosts

Maria Dulsat Masvidal

Abbie Maiden

Lucie Michel

Urška Ratajc

Giacomo dell'Omo

Rui Lourenço

Jari Valkama

**Everyone who has
participated in WG4
workshops**

