

Working Group 4 - Field Arena

European
Raptor
Biomonitoring
Facility



Photo by Ben Darvill

Photo by Edmund Fellowes



WG4 Field Arena

Research Coordination Objective R3

To develop a framework, standards and protocols for a **European Raptor Sampling Programme (ERSamP)**

- The collection of the right samples from the right locations at the right times
- Standards and protocols to ensure harmonised sampling methods
- Standards and protocols to harmonise recording of relevant field data (to support interpretation of contaminant exposure data in terms of effects on raptors at individual and population levels = “contextual data)

WG4 Field Arena

Capacity-building Objective C3

To build capacity in the 'field arena' through networking and collaboration among field ornithologists, raptor collections and ecotoxicologists

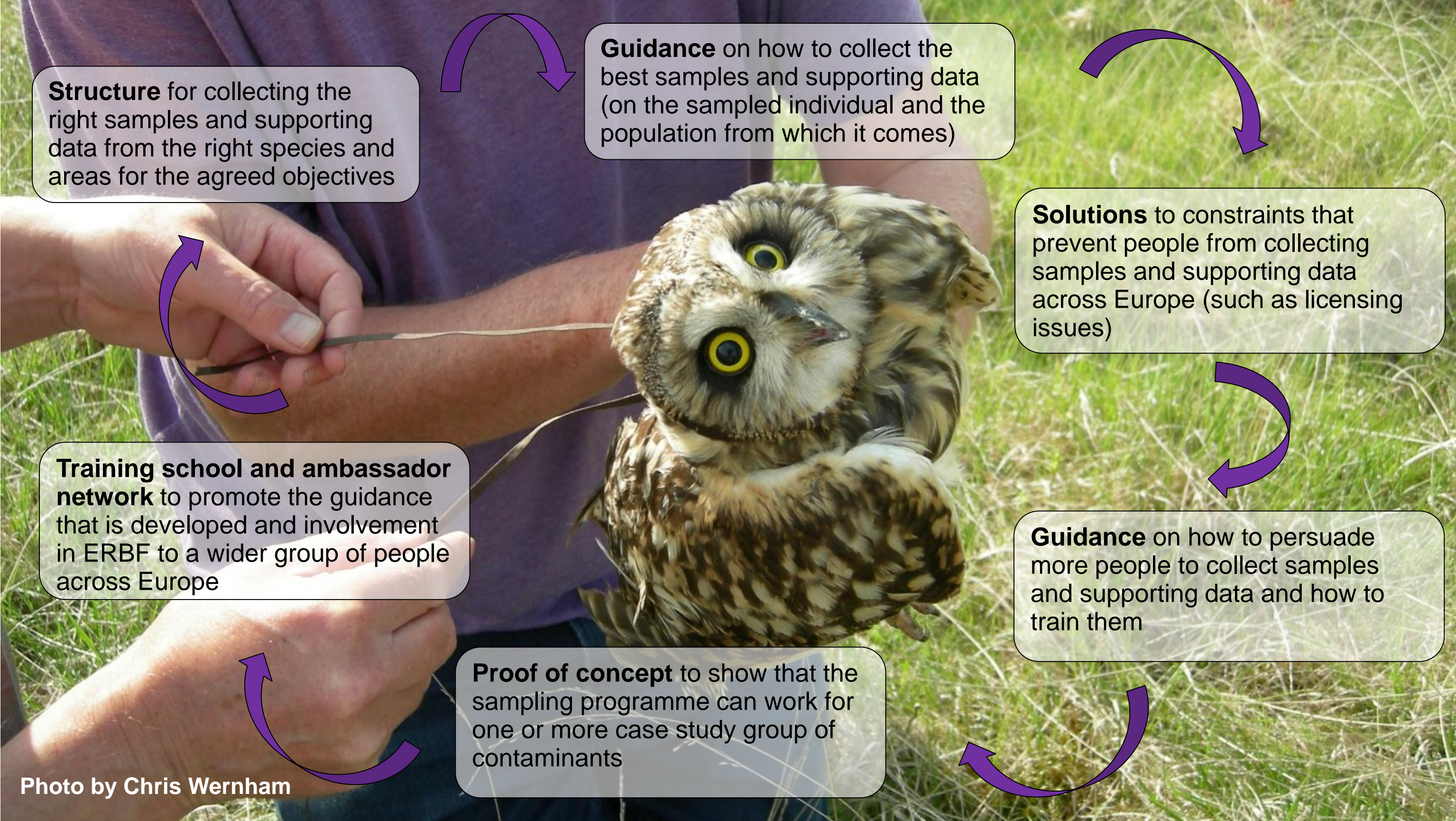
- stimulating and harmonising collection of raptor samples and contextual data on raptor reproduction, survival and other field data relevant to interpretation of data on contaminant exposure, in support of ERBioMS
- testing the sampling framework, standards and protocols in the field through networks of professionals and volunteers, to deliver proof of concept case studies.



WG4 Field Arena - Tasks



<p>T4.1 Develop framework for European Raptor Sampling Framework (ERSampP) (a) focal species & sample matrices (b) existing sampling coverage and gaps (c) opportunities to fill gaps (d) contextual data for interpretation of contaminant exposure</p>	<p>Grant Period 1-2 First draft by April 2019</p>
<p>T4.2 Review key constraints (legislative/practical) to activities (e.g. nest visits, transfer of samples between countries) for sampling and contextual data; identify how to resolve constraints</p>	<p>Grant Period 1-3 Mission by April 2019</p>
<p>T4.3 Develop best practice guidance and protocols for raptor sampling and contextual data capture; trial with one or more case study species from several European countries; review and amend as appropriate; disseminate guidance and protocols</p>	<p>Grant Period 2-3 Mission by April 2019 Vulture Task Group 2 Missions in 2019</p>
<p>T4.4 Expand stakeholder involvement in raptor sampling and contextual field data gathering - assessing potential; identifying ways to involve more professional and amateur ornithologists in raptor biomonitoring (working with NGOs and raptor ecologists in the network); developing guidance on recruitment and training</p>	<p>Grant period 3-4 Mission in 2019 Workshop in 2019 Training school</p>
<p>T4.5 Deliver proof of concept involving, for a case study focal species (or group of species), applying the framework, guidance and protocols to collect new raptor samples and contextual field data through existing and/or novel networks</p>	<p>Grant period 3-4 Workshop in 2019 Funding discussions Missions</p>



Structure for collecting the right samples and supporting data from the right species and areas for the agreed objectives

Guidance on how to collect the best samples and supporting data (on the sampled individual and the population from which it comes)

Solutions to constraints that prevent people from collecting samples and supporting data across Europe (such as licensing issues)

Training school and ambassador network to promote the guidance that is developed and involvement in ERBF to a wider group of people across Europe

Guidance on how to persuade more people to collect samples and supporting data and how to train them

Proof of concept to show that the sampling programme can work for one or more case study group of contaminants

Photo by Edmund
Fellowes



WG4 Field Arena STSM missions

WG4

- **Review of constraints for collection and sharing of raptor samples in Europe** – **Maria Dulsat**, IDAEA-CSIC Barcelona, Spain – hosted by **Rui Lourenco**, University of Evora, Portugal - dates (75 days)
- **Review of ringing effort in Europe** – **Abigail Maiden**, Northern Ireland Raptor Study Group – hosted by **Jari Valkama**, Finnish Museum of Natural History, Helsinki – Jan 2019 (10 days)
- **Review of protocols to inform best practice guidance for peregrine sampling** – **Lucie Michel**, University of Giessen, Germany – hosted by **Giacomo dell’Omo**, Ornis Italica, Rome, Italy – Jan-Apr 2019 (ECI) (3 months)



WG4 Field Arena

WG4 Team

Management of WG4 work programme

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WG4 Task Groups

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STSM Mission hosts

Giacomo Dell'Omo

Jari Valkama

Rui Lourenço

WG4 Corresponding members
including other WG Leads



A_ 09:12



Resources available & needed!
Benefits of getting involved!

Workshop Aims



- Consider the different types of contextual data and its value to inform contaminant studies
- Decide on the format and content of the best practice guidance we will develop for sample and contextual data collection (example work)
- Discuss and input to the work of the three ongoing STSM missions (make use of the expertise of people here)



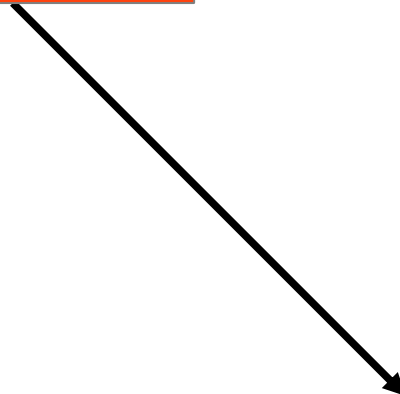
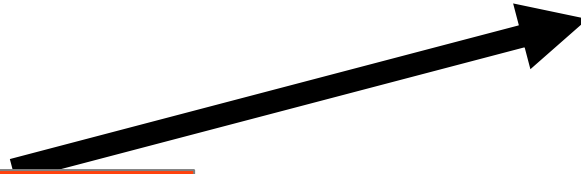
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ERSamP
European Raptor
Sampling Programme
(WG4 – field arena)

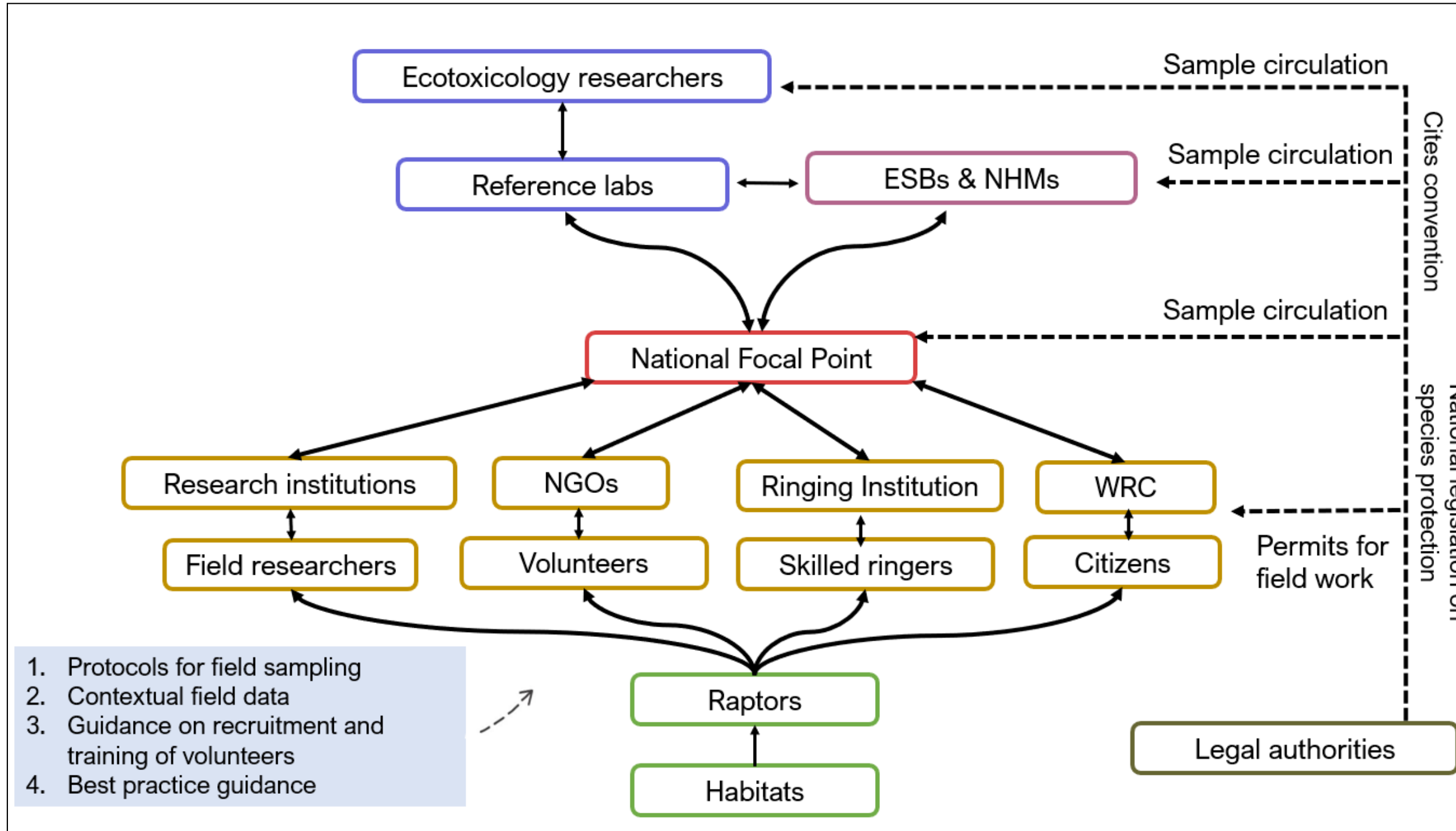
**National
focal
points?**

ERSpeB
European Raptor
Specimen Bank
(WG3 – collections arena)

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



European Raptor Sampling Programme (ERSamP)



➤ 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



Best practice guidance

ANNEX II
PROTOCOL FOR TAKING BIOLOGICAL SAMPLES IN THE FIELD FROM LIVE BIRDS, FOR TOXICOLOGICAL AND PARASITOLOGICAL ANALYSIS

Rupis VCE

INTRODUCTION

This protocol was basically prepared to support the research activities foreseen in the Rupis Project, such as the sampling of the captured birds within action D6. It can be also use for the presumably poisoned live animals entering into the wildlife recovery centres on Portuguese or Spanish side.

Although the project foresees only toxicological analysis we consider it to be important to include also parasitological samples/analysis that can also be easily collected while sampling for toxicology (only small additional effort is needed and the cost of these analyses is nearly insignificant compared to the cost of the toxicological analyses).

The results of the toxicological and parasitological analysis can provide important information regarding the physical condition of the animal but could also identify some unknown threat/problem.

The protocol is offering recommendations and guidelines for taking biological samples from birds (target species: Egyptian Vulture and Bonelli's Eagle) while capturing adults/immature or marking of juvenile birds at nests and provides information on the proper conservation and transport of these samples to the lab where the analysis will be performed.

IMPORTANCE OF THE QUALITY OF THE SAMPLES AND MEDICAL HISTORY

The most important in sufficient quantity related to the health obtained.

Rupis VCE

2. Sample collection: FAECES

- Collect fresh faeces. Try to discard the urea phase (the white or yellow content).
- Use a sealed, sterile container.
- Possible analysis:
 - Parasitology:
 - Microbiology: diverse bacteria species: Salmonella, Compylobacter, Escherichia coli O157.

3. Sample collection: BLOOD IN EDTA AND HEPARIN

- Take the sample by venepuncture, previously disinfect the area with 70% alcohol and wait at least 30 seconds.
- Fill in the sample tube with blood. Overturn smoothly 3-4 times for mixing the blood and the EDTA / heparin, to prevent lyse (blood cell destruction) of the erythrocytes.
- Recommended volume: 1 tube of 1 ml heparin to study toxicology: heavy metals, Non Steroid Anti-inflammatory Drugs (NSAIDs), antimicrobials and pesticides; 1 tube of 1 ml EDTA to study molecular diagnostics (PCR); 1 tube EDTA for haematology and sex determination (few blood drops in alcohol can also do); 1 tube heparin for biochemistry and proteinogram.
- Analysis from EDTA:
 - Sex determination
 - Molecular diagnostics (PCR): different microorganisms (bacteria, virus, parasites)
 - Metals: lead, cadmium.
 - Non-steroid anti-inflammatory NSAIDs
 - Antimicrobials
 - Pesticides



Peregrine Falco peregrinus

1. INTRODUCTION

The peregrine (peregrine falcon) breeds throughout most of Britain and Ireland (Gibbons et al., 1993; Banks et al., 2003, 2010; Hardy, 2007). The population is largely sedentary but birds occupying less productive home ranges may move elsewhere. In winter, populations across mainland Europe become progressively more migratory further east and north. Young peregrines in their first year can travel large distances but many remain close to their natal area (Ratcliffe, 2002). Some migrant peregrines from Scandinavia winter in the UK, although the numbers involved are unknown. Female peregrines are about one-third larger than the males but it is often difficult to separate the sexes, even when a pair is seen together. Females may be distinguished by their alarm call, which is generally lower in pitch than that of the male. Pledged young are paler and browner than the adults, with a distinctive pale brood patch. Pledged young are paler at one year old but most do not breed until the age of two.

For further information on the biology and ecology of Stirling-Aid (2012) provide comprehensive accounts.

Annual cycle

Breeding Activity	Peak Period	Range
Site occupation		All year (c)
Courship display	March to July	Early March
Egg laying		Mid-March
Incubation		Late April
fledging		July to August
Young in nest	Early April to late April	Early June
fledging	Early April to late May	Late April
fledging	Early May to late May	Early June
fledging	Late June to early July	July to August
Juvenile dispersal	August to September	

2. HABITAT, HOME RANGE, NESTS AND

2.1 Habitat

Peregrines need open areas with a plentiful supply of birds (Ratcliffe, 1993). A highly adaptable species, peregrine including cities. In winter, peregrines may occur in all frequenting estuaries and other areas with large concentrations of birds.

Contents

Foreword by Ian Newton
Preface
Acknowledgements
The authors
Editorial note

Part 1 Introduction

1. Introduction

ix x
xi xii
xiii xiv

1.1 Why monitor raptors? 1
1.2 The development of raptor monitoring in Britain and Ireland 2
1.2.1 Raptor Study Groups 3
1.2.2 The UK Raptor Working Group 4
1.2.3 The Scottish Raptor Working Group 5
1.4 International perspectives on raptor monitoring 6
1.5 The status of raptors in Britain and Ireland 6
A survey and monitoring guide for raptors 7

2. Survey, surveillance and monitoring

2.1 Defectors 10
2.2 Choice of survey methods 11
2.2.1 Courses of occupied home ranges and active nests 11
2.2.2 Alternative survey methods: transects and point counts 11
2.3 Surveys and monitoring in Britain and Ireland 12

3. Population estimates

3.1 Population estimates 16
3.2 Breeding birds 16
3.2.1 Occupied sites 17
3.2.2 Territorial sites 17
3.2.3 Breeding pairs 17
3.3 Non-breeding birds 17

4. Breeding season parameters

4.1 Home range and territory 19
4.2 Nest sites, nesting ranges and alternatives 19

Raptors: a field guide for surveys and monitoring

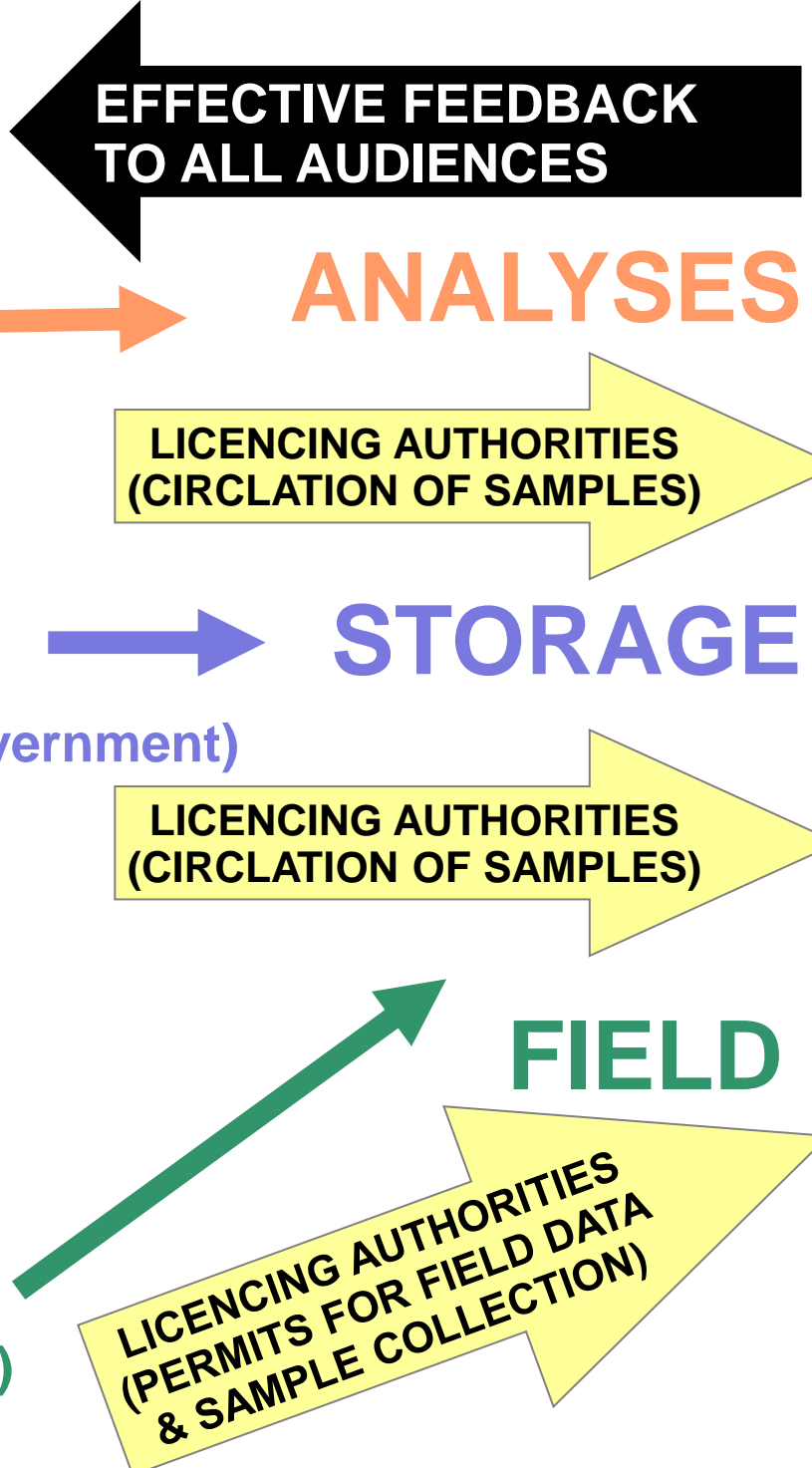
'Contextual Data'



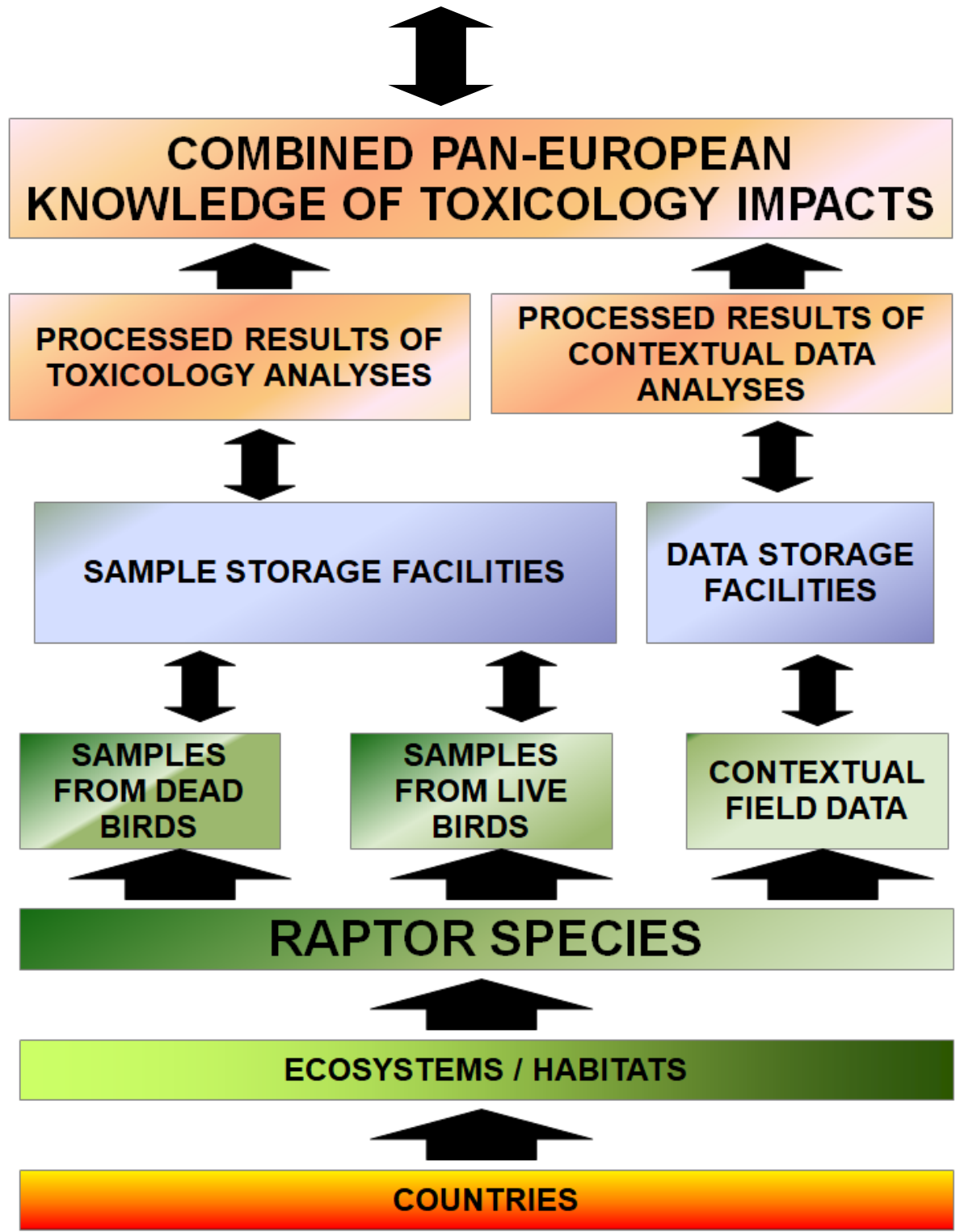
INVOLVEMENT OF PEOPLE & ORGANISATIONS

Which participants must we involve?

- Research institutes (academic / government / NGO)
- Ecotoxicology researchers
- Reference banks
- NGOs
- National Ringing Offices / EURING
- Research institutes (academia / government)
- Specimen collections
- Volunteers (amateur naturalists)
- Skilled ringers and nest recorders
- Field researchers (academia)
- Other volunteers (citizen scientists)



INFORMATION USERS



European Raptor Sampling Programme – ERSamP FRAMEWORK

PARTICIPANT	ROLE	KEY NODE
Volunteers / amateurs (within NGOs?)	Sample and contextual data collection	
Ringers	Sample and contextual data collection	
Field researchers	Sample and contextual data collection	
National ringing offices	Coordinate ringers	
NGOs	Coordinate volunteers	
Research institutes (academia)	Coordinate field research	
Natural history museums	Field collection; sample storing	
National focal points / key national contacts ("Ambassadors")	Centralize information and samples, send to SpeBanks and RefLabs; distribute feedback	YES
Specimen banks	Receive and store samples, send to RefLabs	YES
Reference labs	Centralize and analyse samples	YES
Ecotoxicology researchers	Data analysis, dissemination of results	
National legal authorities	Field work permits, sample circulation	
DG Env	International sample circulation	

KEY DECISIONS FOR THE ERB Facility

Priority contaminants to study?

National or centralised hubs for analysis?

Reference labs?

Standard analyses of contextual data?

Constraints on transport and solutions?

National hubs and / or centralised storage?

Most useful types of contextual data?

Most useful sample materials?

Priority raptor species and habitats?

Ideal sampling coverage across Europe?

Constraints on fieldwork and solutions?

ANALYSES

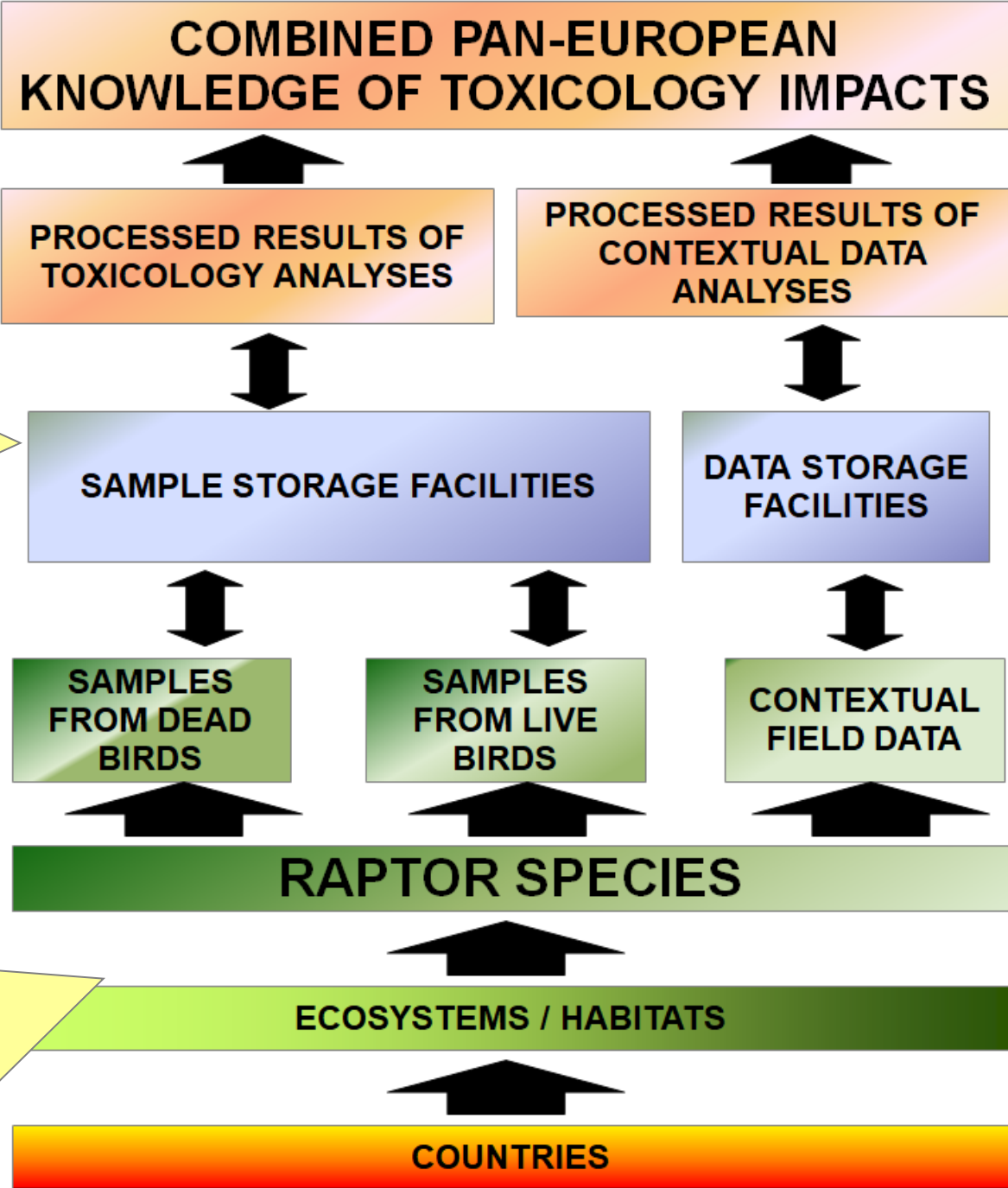
LICENCING AUTHORITIES
(CIRCULATION OF SAMPLES)

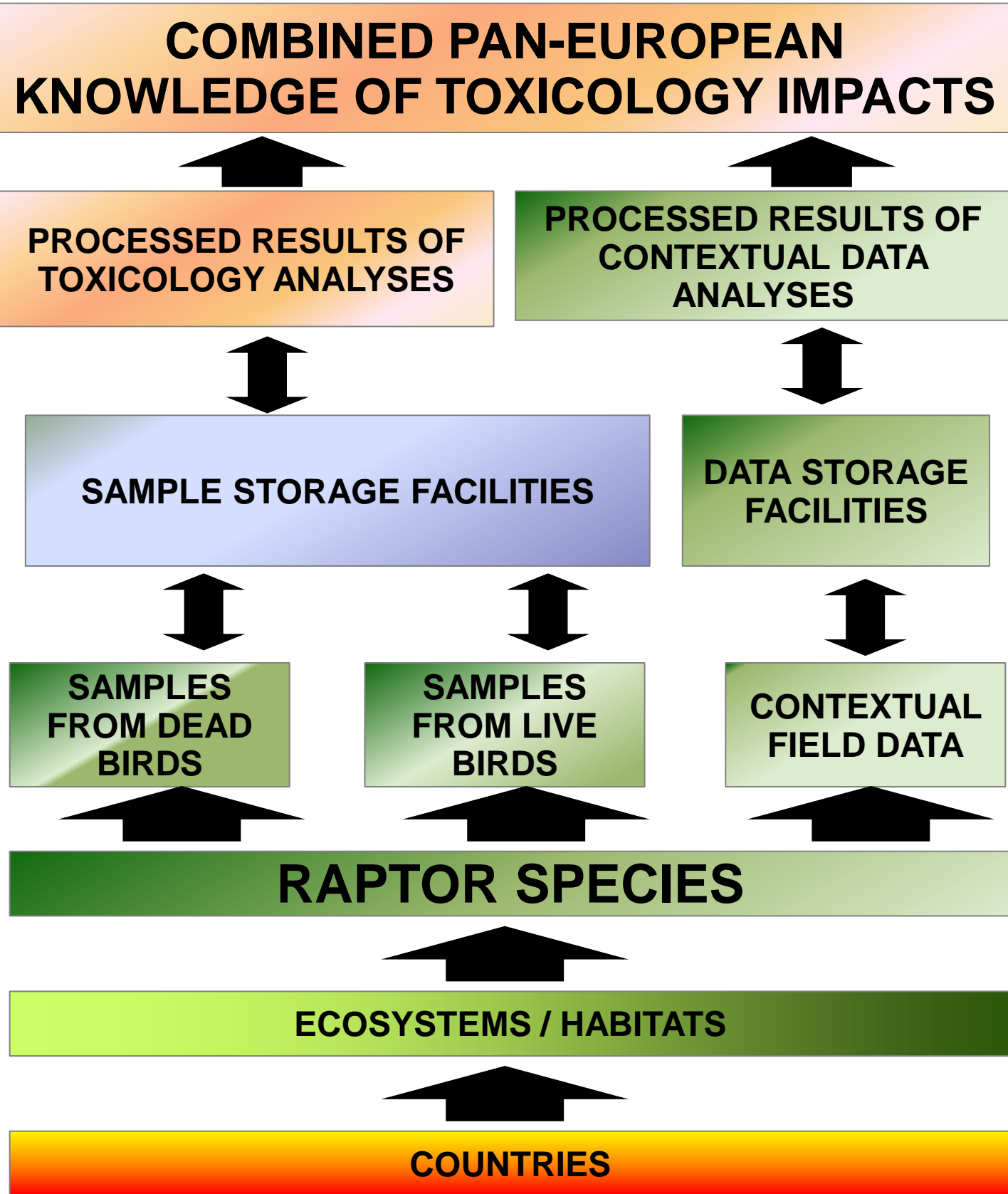
STORAGE

LICENCING AUTHORITIES
(CIRCULATION OF SAMPLES)

FIELD

LICENCING AUTHORITIES
(PERMITS FOR FIELD DATA
& SAMPLE COLLECTION)





WG4 FIELD ARENA

ERSamP

European Raptor Sampling Programme

COMBINED PAN-EUROPEAN KNOWLEDGE OF TOXICOLOGY IMPACTS

WG1&2

WG3

NATIONAL FOCAL POINTS FOR SAMPLE COLLECTION?

NATIONAL FOCAL POINTS FOR CONTEXTUAL DATA ANALYSIS?

WG1&2

WG3

CONSTRAINTS ON FIELD DATA COLLECTION & RECOMMENDED SOLUTIONS

RESEARCH INSTITUTES

NATIONAL RINGING CENTRES

NGOs

WHICH CONTEXTUAL DATA?

FIELD RESEARCHERS

SKILLED RINGERS & NEST RECORDERS

OTHER VOLUNTEERS

WHICH FOCAL SPECIES?

RAPTOR SPECIES

WHAT SAMPLING COVERAGE?

ECOSYSTEMS / HABITATS

COUNTRIES

- ERSamP**
- PROTOCOLS FOR FIELDWORK
 - GUIDANCE ON RECRUITMENT
 - GUIDANCE ON FEEDBACK
 - TRAINING OF FIELD VOLUNTEERS
 - GOOD PRACTICE GUIDANCE FOR FIELDWORK & ANALYSIS
 - PROOF OF CONCEPT CASE STUDIES