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European Biodiversity Partnership

BiodivMon Kick-off meeting

Improved transnational monitoring of biodiversity and ecosystem change for science and society

Tallinn - 17 April 2024

Co-funded by the European Union

Welcome words

Dr. ***Magnus Tannerfeldt,*** *Co-chair of Biodiversa+, FORMAS, Sweden*

Dr. ***Anu Noorma,*** *Director General, ETAG, Estonia*

BiodivMonTallinn

Posting about the BiodivMon kick-off on social media?

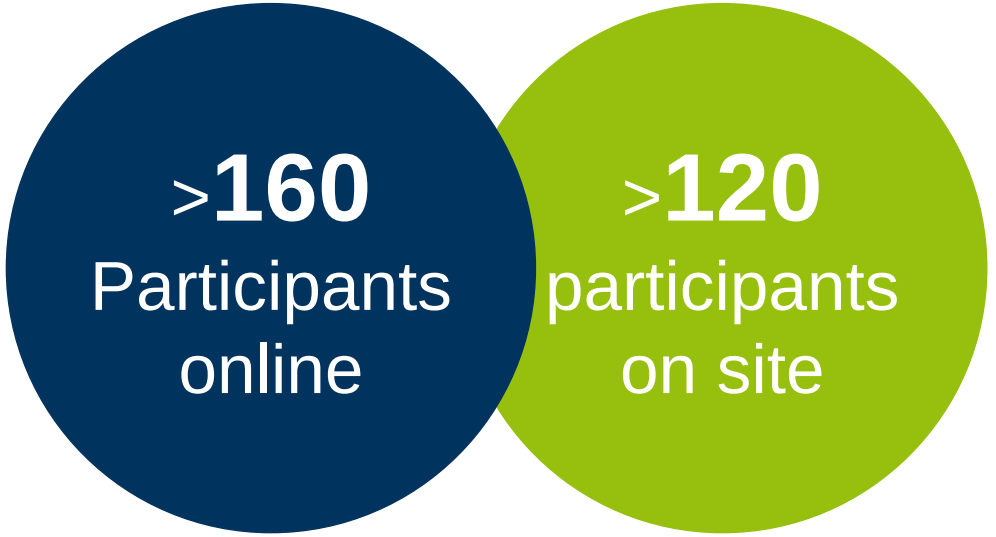
Don't forget to tag @BiodiversaPlus

Some general information

REC

- This meeting is being recorded
  → The recording and slides will be shared on the Biodiversa+ website 👉 biodiversa.eu

- We expect…



Agenda

9:00	Introduction
9:30	**KEYNOTE TALKS and PANEL DISCUSSION**
	Coffee break 10:45–11:25 EEST / 9:45-10:25 CEST
11:25	**FUNDED PROJECTS** – 1
	Lunch break 12:10–13:30 EEST / 11:10-12:30 CEST
13:30	**FUNDED PROJECTS** – 2
14:10	**BiodivERsA Prize for Excellence and Impact - GloBAM project**
14:20	**FUNDED PROJECTS** – 3
	Coffee break 15:05–16:00 EEST / 14:05-15:00 CEST
16:00	**FUNDED PROJECTS** – 4
16:50	**FOLLOW-UP** & life of funded projects: what is expected from funded projects?
17:05	**CAPACITY BUILDING** and collaboration for project communication
17:20	Concluding words

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Welcome words by the European Commission

***Bastian Bertzky**, **DG Research & Innovation** – Policy Officer*

***Caroline Pottier, DG Environment** – Research team leader in the unit "Green Knowledge And Research Hub, Life"*

General introduction to Biodiversa+ and our biodiversity monitoring activities

Magnus Tannerfeldt, *Biodiversa+ Co-chair, FORMAS, Sweden*

Léa Riera & Marie Pierrel, *task leaders in the Work Package on "promoting and supporting transnational biodiversity monitoring", OFB, France*

What is Biodiversa+?

- The **European biodiversity Partnership** co-funded by the European Commission under Horizon Europe
- **Supporting excellent research on biodiversity with an impact for policy and society**

Who is Biodiversa+ ?

Research actors

→ Ministries in charge of research

→ Research funding organisations

Policy actors

→ Ministries in charge of the environment

→ Environment protection agencies

41
Countries

83
Partners

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Portfolio of activities

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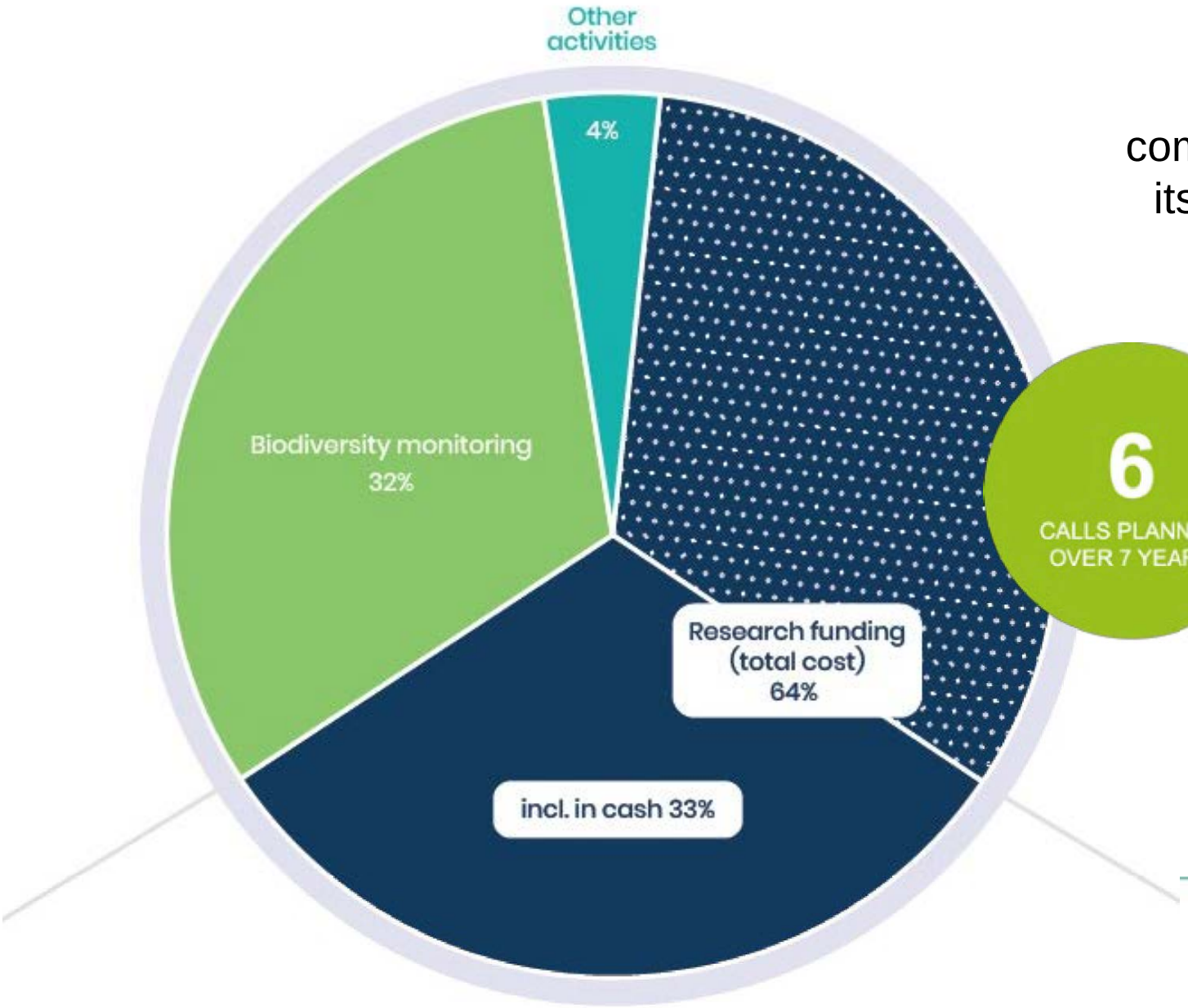
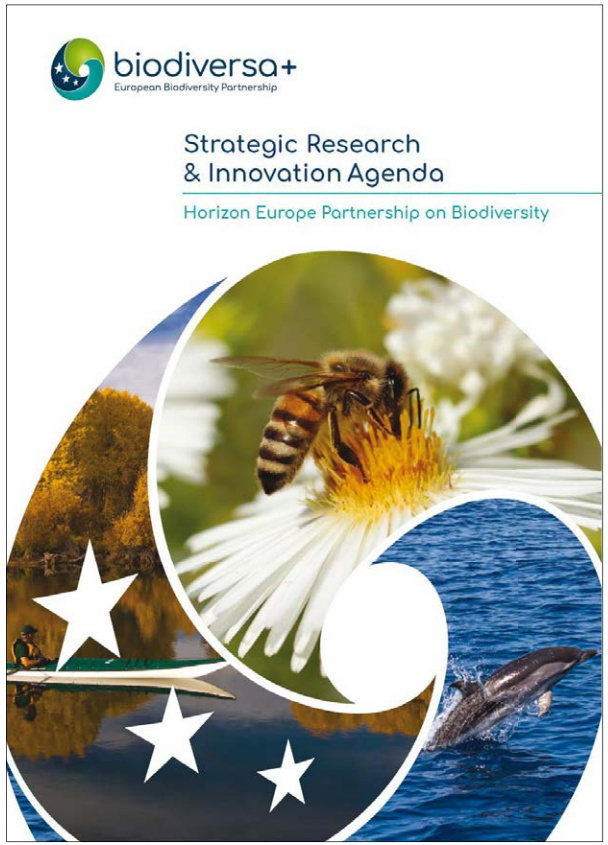
Portfolio of activities and budget amplitude

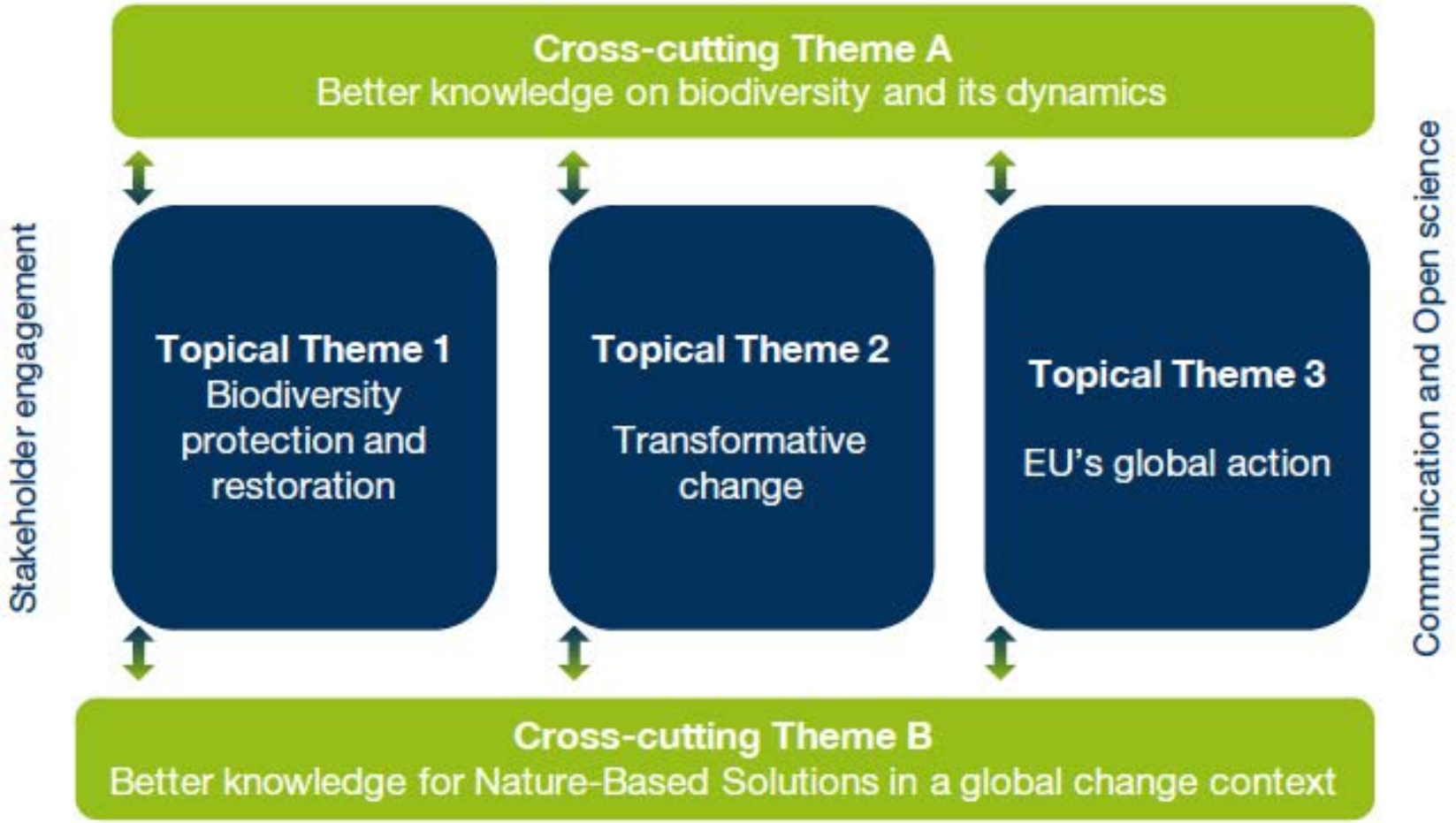


Budget of **>800 Mio€ over 7 years**, combining in-cash and in-kind resources from its Partners and including 165 Mio € by the European Commission

Co-funded by the European Union

The Biodiversa+ Strategic Research & Innovation Agenda





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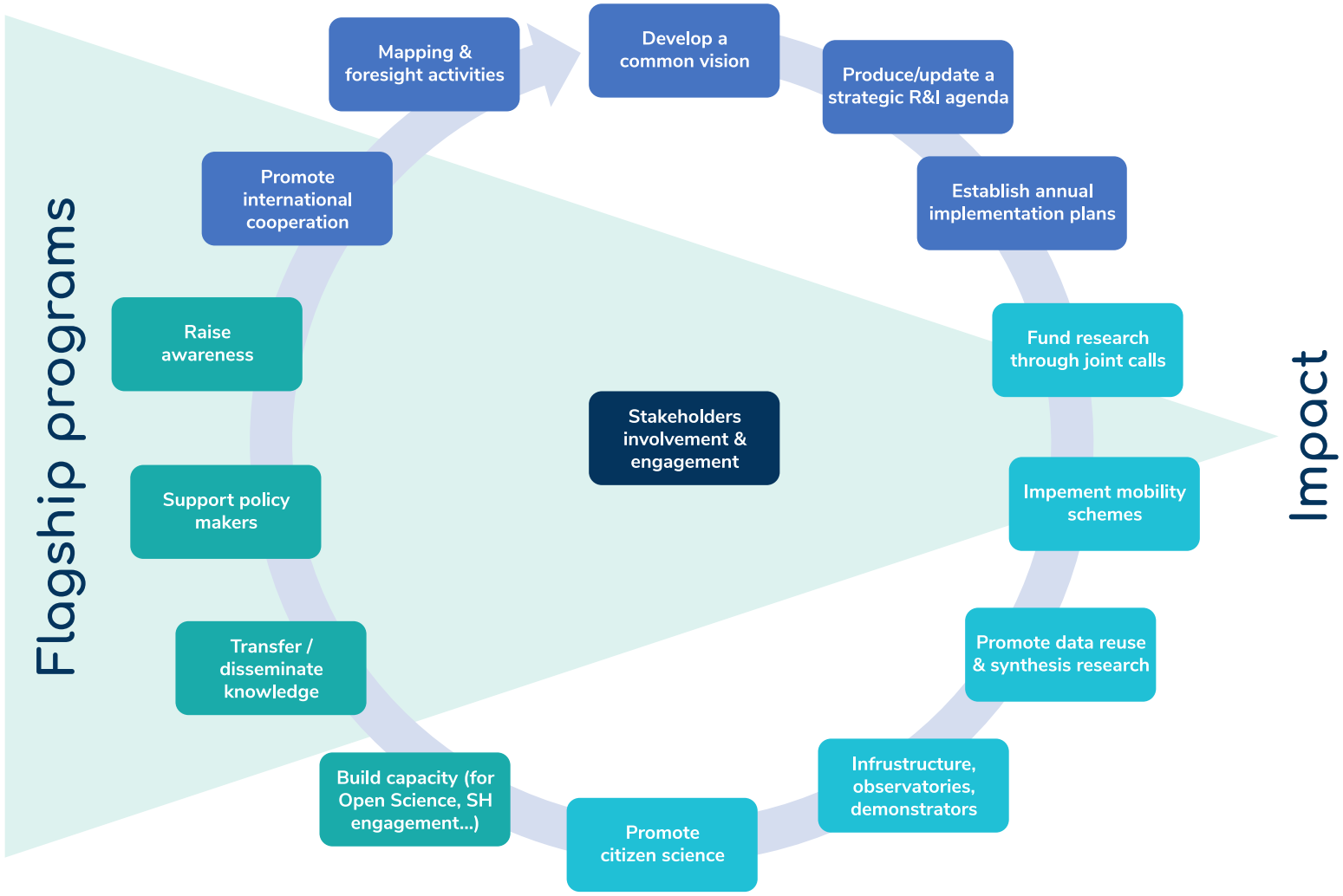
Eggermont H., Le Roux X., Tannerfeldt M. Enfedaque, J., Zaunberger, K. & Biodiversa+ partners (2021). Strategic Research & Innovation Agenda. Biodiversa+, 108 pp.

The Biodiversa+ flagship programmes

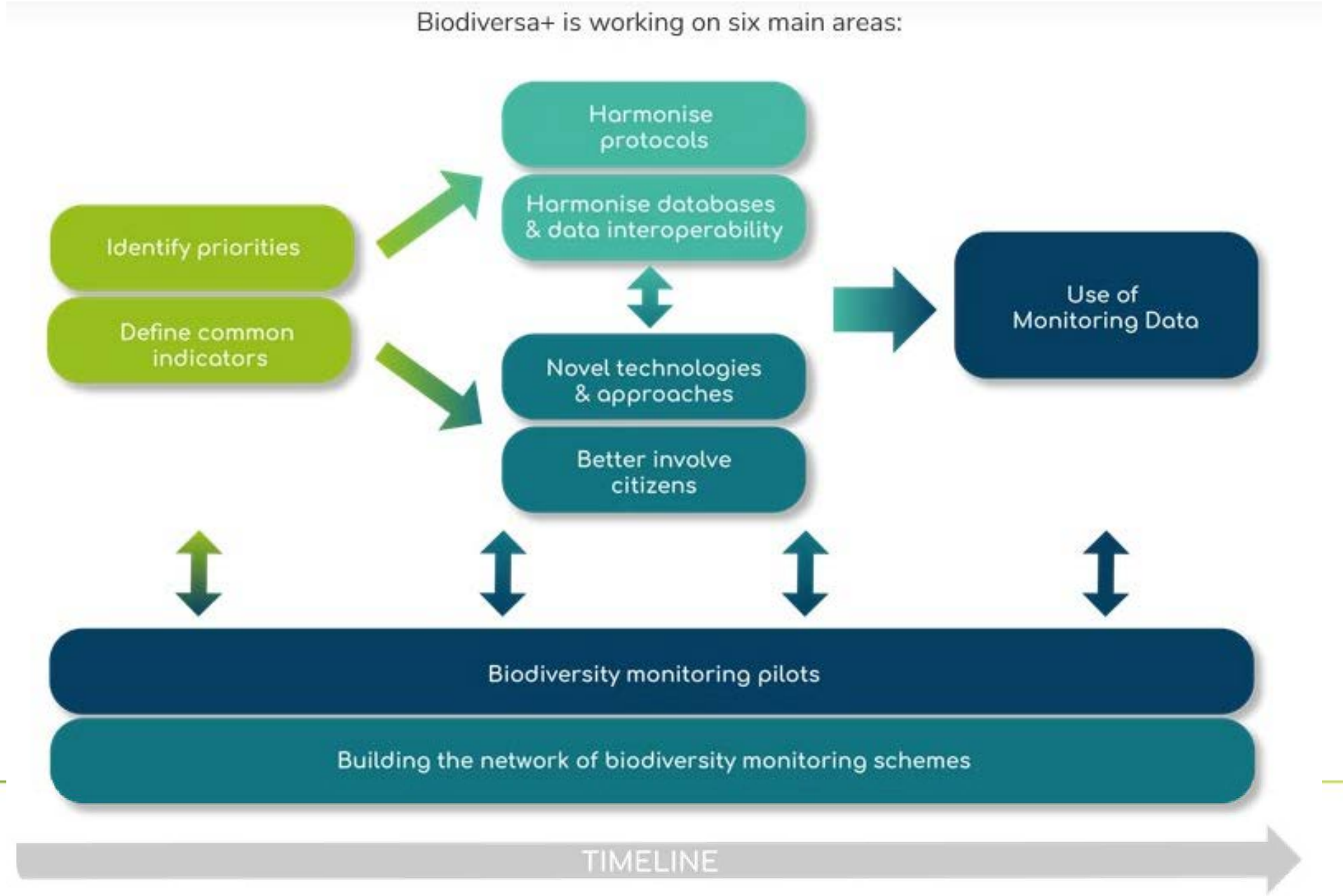
- **Protection**
  → *Sept. 2021 | Call*
- **Biodiversity monitoring**
  → *Sept. 2022 | Call*
- **Nature-based solutions**
  → *Sept. 2023 | Call*
- **Societal Transformation**
  → *Sept. 2024 | Call*



Building on existing and new initiatives

... and many more!

Biodiversa+ Work Package 2: Promoting and supporting transnational Biodiversity monitoring



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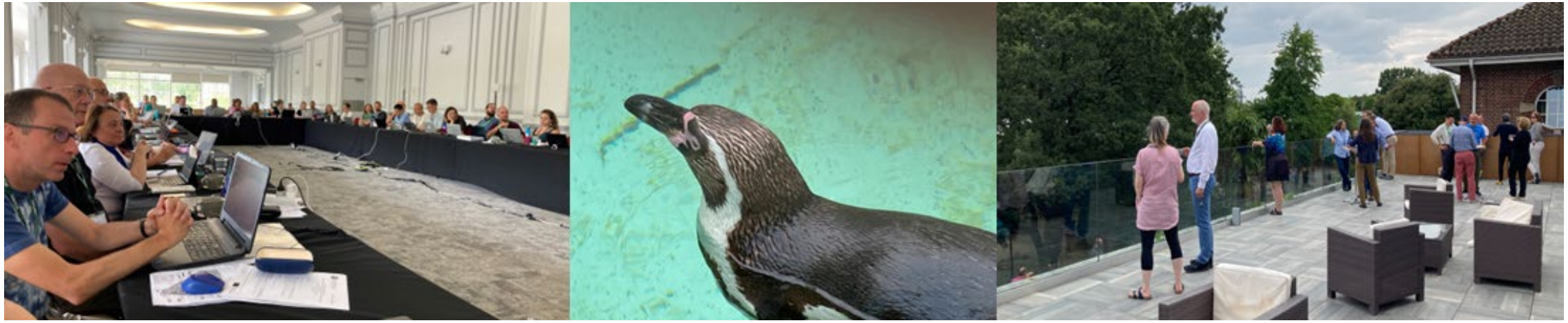


General impressions on the BiodivMon call

*By **Judy Fisher**, Fisher Research Pty Ltd Director, University of Western Australia Associate Professor & Policy/Management member of the BiodivMon Evaluation Committee*

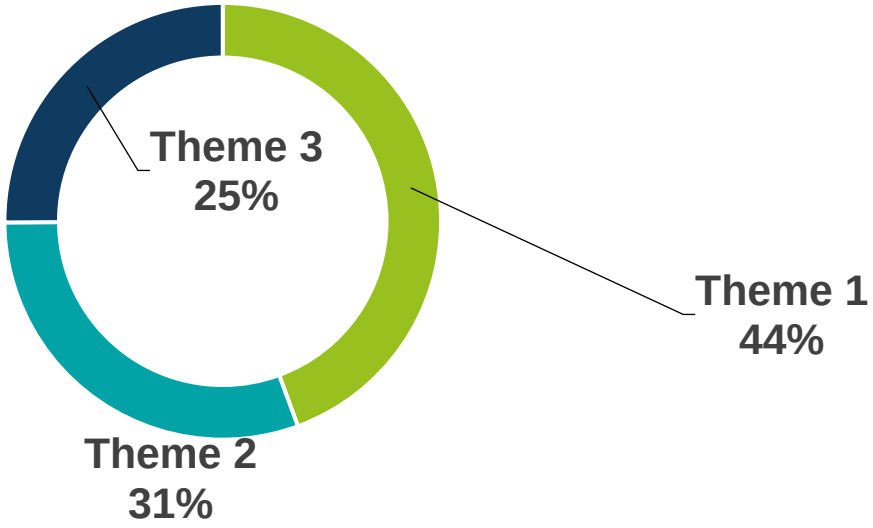
Overview of the results of the Call

Second Biodiversa+ joint co-funded call on
"Improved transnational monitoring of biodiversity and ecosystem change for science and society"

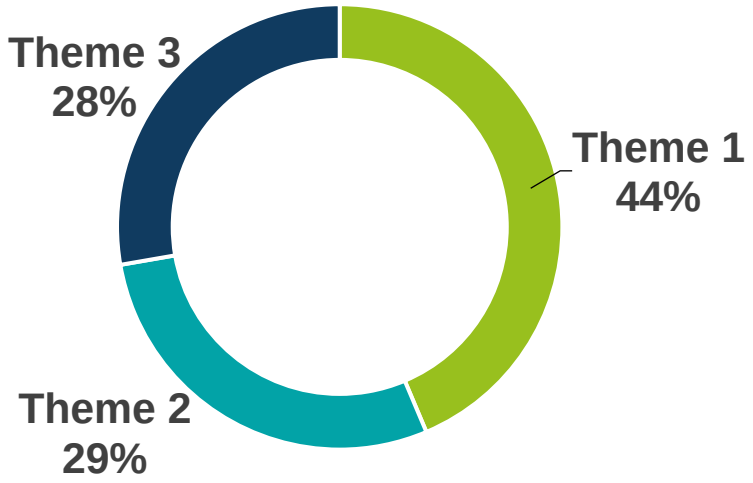
For over 46 Mio€

Studied themes

Submitted full proposals



Funded projects

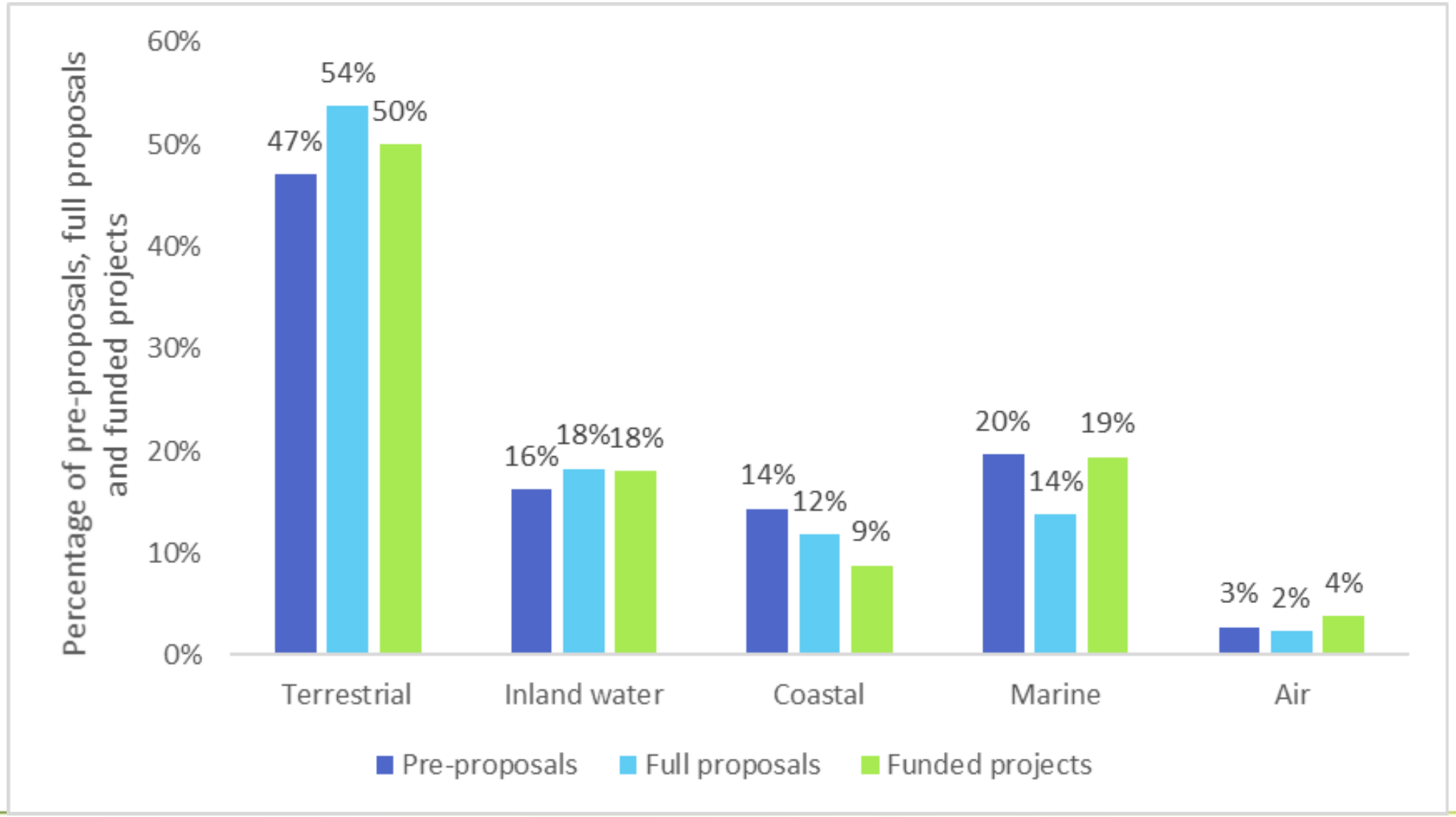


Theme 1: Innovation and harmonisation of methods and tools for the collection and management of biodiversity monitoring data.

Theme 2: Addressing knowledge gaps related to biodiversity status, dynamics, and trends in order to reverse biodiversity loss.

Theme 3: Making effective use of available biodiversity monitoring data

Studied environments



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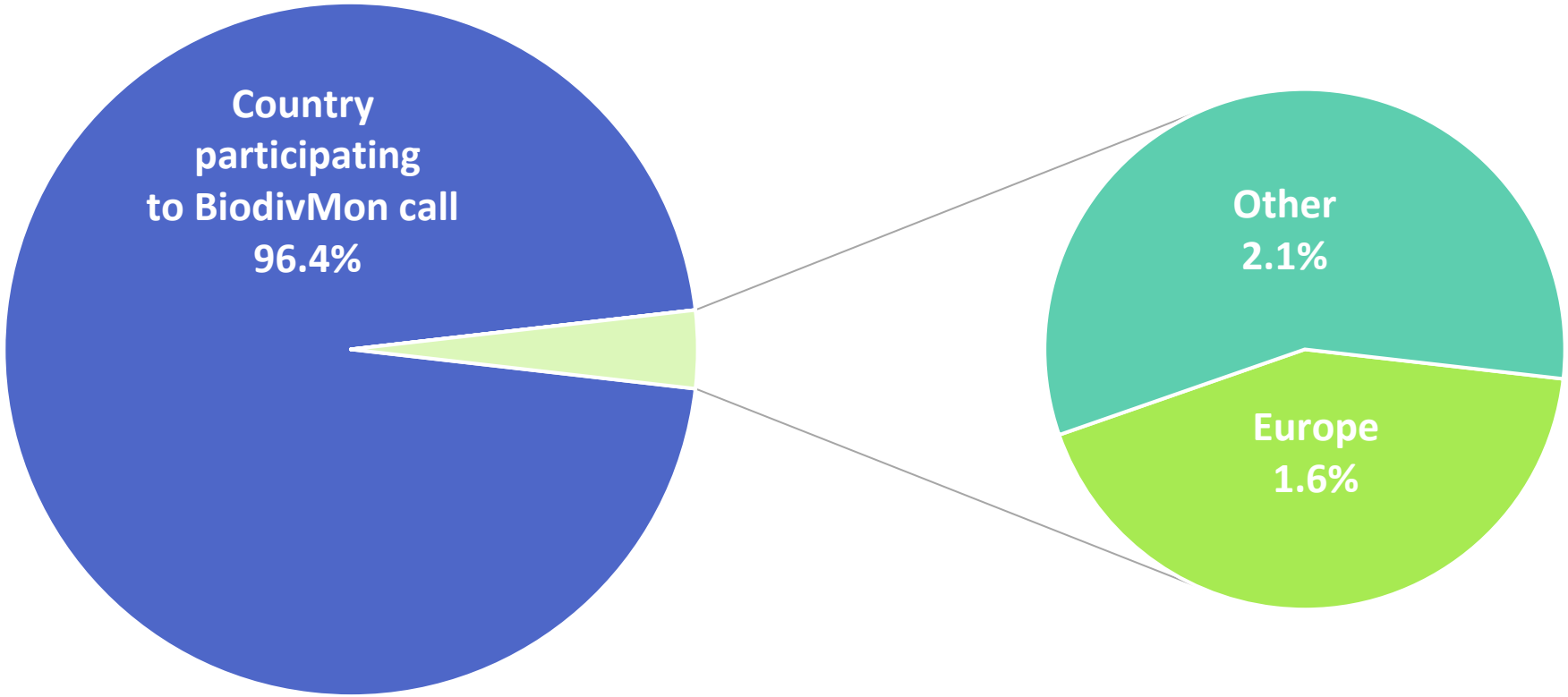
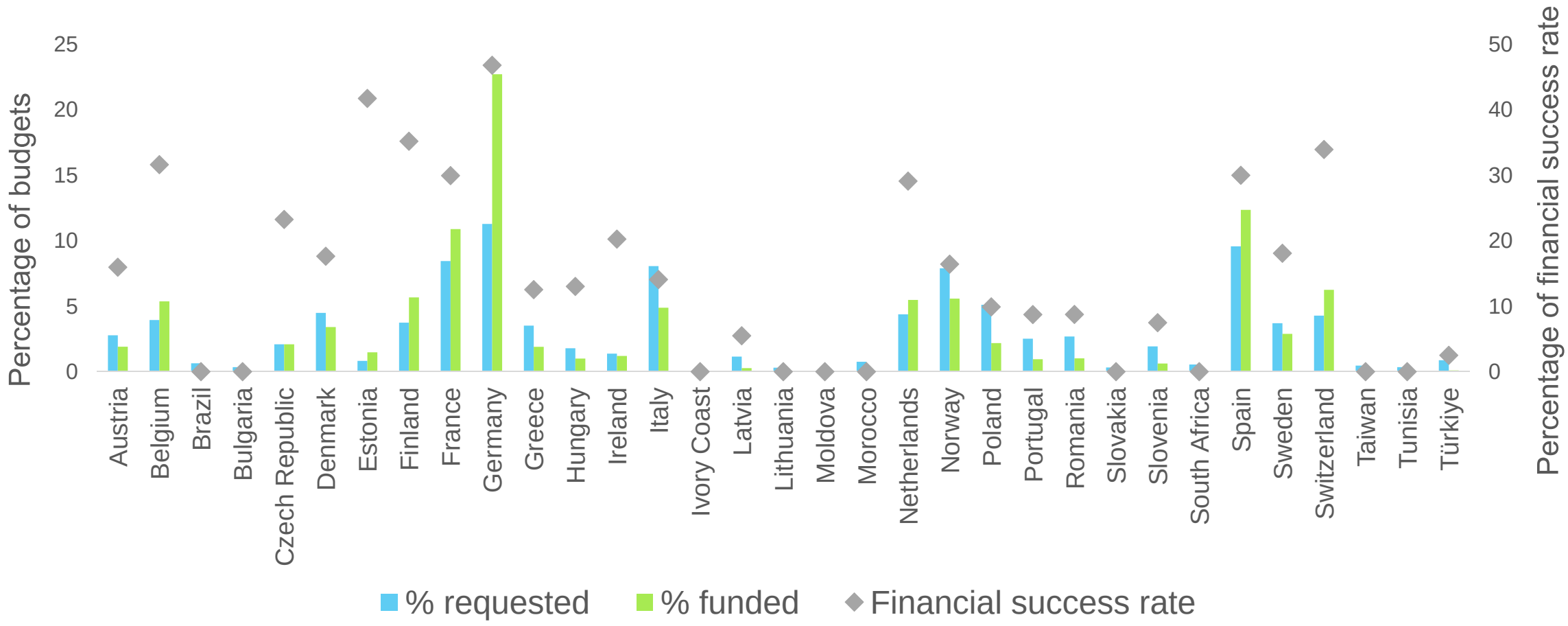
Origin of the applicants (step 1)



Comparison of budgets between step 1 and 2 and success rate



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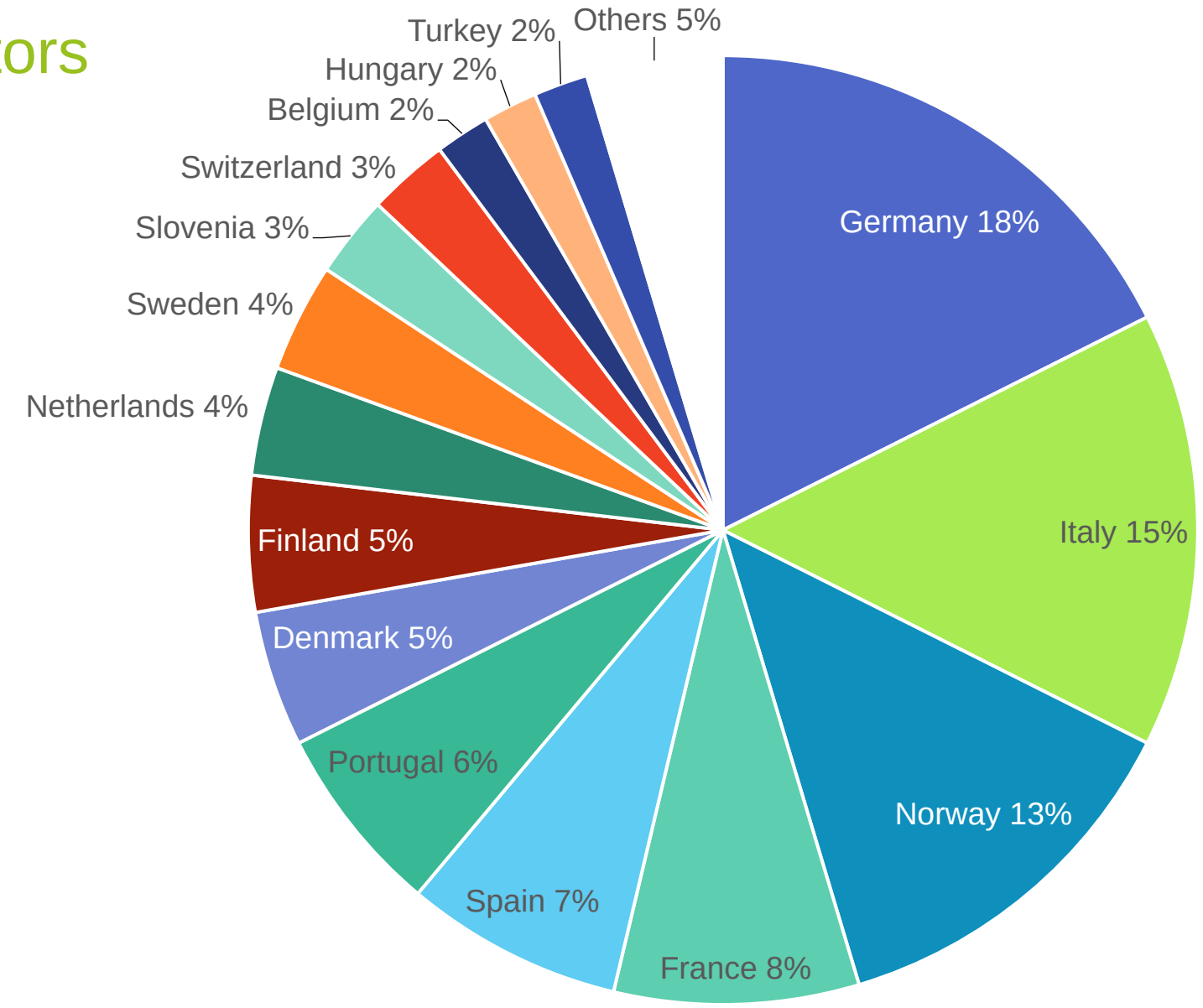
Origin of the coordinators

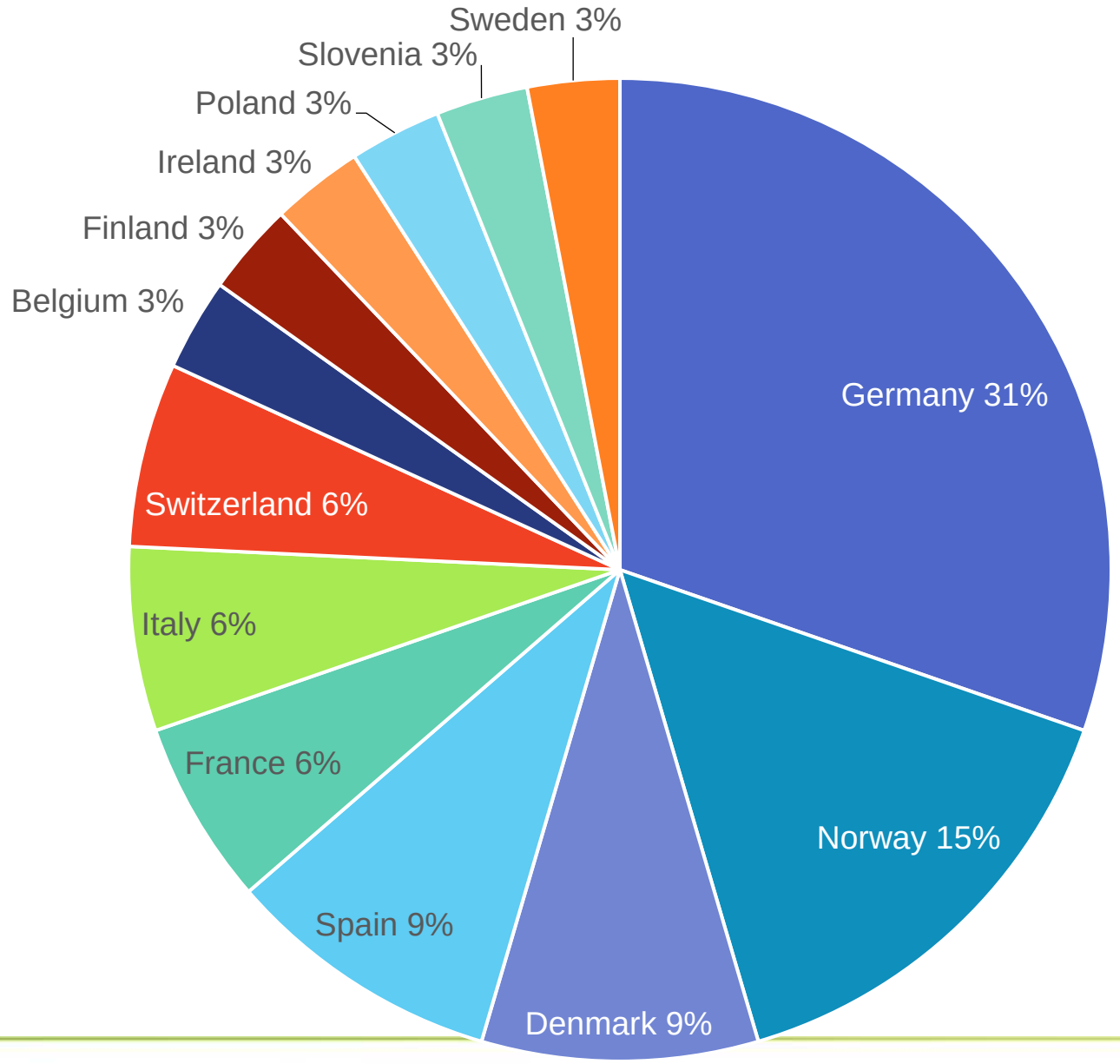
Submitted full proposals



Others =
Austria 0,93%;
Ireland 0,93%;
Ivory Coast 0,93%;
Poland 0,93%;
Romania 0,93%

Origin of the coordinators

Funded projects



Brochure of the Call

More information on the BiodivMon Call process and overview of the 33 projects in the Brochure

- **You can download it on the www.biodiversa.eu/links**

Examples of funded projects

ANTENNA – Making technology work for monitoring pollinators (DE, NL, DK, ES, GR, IE)

CoForFunc – Toward a biome-scale monitoring of the Congo basin FORest FUNCtional composition (FR, DE, ES, BE, CM, CG)

FunDive – Monitoring and mapping fungal diversity for nature conservation (DK, EE, ES, BE, IT, CZ, HU, DE, PT, FR, NO, FI, PL, CH, GR, NL)

Evaluation Committee Members - Countries of origins

Scientific

Australia, Austria
Canada, Colombia, Czech Republic
Germany
Ireland, Italy
Kenya
Mozambique
Poland, Portugal
Slovenia, Sweden, Switzerland
Taiwan, Türkiye
United Kingdom, United States of America

Policy/management

Australia
Colombia, Czech Republic
Denmark
Germany
Hungary
India, Italy
Kenya
Lebanon
Netherlands, Norway
Spain, Sweden
United Kingdom

Composition of the Evaluation Committee

28 Scientific EvC members

CHAIR. **Nathalie Pettorelli**, Zoological Society of London, UK

1. Kofi Akamani, Southern Illinois University, USA
2. Peter Arcese, University of British Columbia, Canada
3. Fernando Ascensão, Ce3C – Centre for Ecology, Evolution and Environmental Changes, Portugal
4. Clement Atzberger, University of Natural Resources and Life Sciences, Austria
5. Isabelle Aubin, Great Lakes Forestry Centre, Canadian Forest Service, Natural Resources Canada, Canada
6. Yu-Chung Chiang, National Sun Yat-sen University, Taiwan
7. Nicola Clerici, Universidad del Rosario, Colombia
8. Richard Gregory (step 1 only), Royal Society for the Protection of Birds /University College London, UK
9. Grant Hamilton, Queensland University of Technology, Australia
10. Stephanie Hampton, Carnegie Institution for Science, USA
11. Ferenc Jordan, University of Parma, Italy
12. Dave Kendal, University of Tasmania, Australia
13. Hojka Kraigher, Slovenian Forestry Institute SFI, Slovenia
14. Anne Magurran, University of St Andrews, UK
15. Frank Masese, Department of Fisheries & Aquatic Sciences, University of Eldoret, Kenya
16. Louise McRae, Zoological Society of London, UK
17. Lina Mtwana Nordlund, Uppsala University, Sweden
18. Zuzana Musilova, Czech University of Life Sciences in Prague, Czech Republic
19. Piotr Nowicki, Institute of Environmental Sciences, Jagiellonian University, Poland
20. Nessa O'Connor, Trinity College Dublin, Ireland
21. Michael Pocock, UK Centre for Ecology & Hydrology, UK
22. Natasha Ribeiro, Eduardo Mondlane University, Mozambique
23. Oguz Turkozan, Aydın Adnan Menderes University, Türkiye
24. Davnah Urbach, Global Mountain Biodiversity Assessment, Switzerland
25. Yeqiao Wang, University of Rhode Island, USA
26. Monika Wulf, Centre for Agricultural Landscape Research, Germany
27. Alexandra Zieritz, University of Nottingham, UKPA/IUCN, UK

**at Step 1 only*

Composition of the Evaluation Committee

25 Policy/management EvC members

CHAIR. **Simon Gardner**, UK

1. Mora Aronsson, Swedish University of Agricultural Sciences, Sweden
2. Johnny Berglund, County Administrative Board of Västerbotten, Sweden
3. Karma Bouazza, Lebanon Reforestation Initiative, Lebanon
4. Peter Bridgewater, The Australian National University, Australia
5. Claire Brown, UNEP World Conservation Monitoring Centre, UK Francisco
6. Miguel Cortés Sánchez, Centro de Estudios y Experimentación de Obras Públicas, Spain
7. Roberto Crosti, Institute for Environmental Protection and Research, Italy
8. Judy Fisher, Fisher Research Pty Ltd, Australia
9. Adriana Ford, Imperial College London, UK
10. Frederik Forsberg, SEGES Innovation P/S, Denmark
11. David Gutiérrez, Red Cantábra de De Desarrollo Rural, Spain
12. Colin Hindmarch, Independent Consultancy, UK
13. Katia Hueso-Kortekaas, ICAI / Comillas Pontifical University, Spain
14. Peter Koncz, Duna-Ipoly National Park Directorate, Hungary
15. Manuel Lago, Ecologic Institute, Germany
16. Maria Cecilia Londono Murcia, Instituto Humboldt / GEO BON, Colombia
17. Ivone Pereira Martins, European Environment Agency, Denmark
18. Vinod Bihari Mathur, National Biodiversity Authority of India, India
19. Angela Morgado (step 1 only), Nature Portugal Association (ANP) – Contact WWF Portugal, Portugal
20. Nicholas Ozor, African Technology Policy Studies Network, Kenya
21. Simona Polakova, Ministry of the Environment of the Czech Republic, Czech Republica
22. Christian Prip, The Fridtjof Nansen Institute, Norway
23. Sunandan Tiwari (step 1 only), ICLEI – Local Governments for Sustainability, World Secretariat, Germany
24. Wouter Vanneuville, European Environment Agency, Denmark Boetekees - FSC International, Netherlands

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**at Step 1 only*

Evaluation process at Step 1

STEP1: *Pre-proposal stage; closed 9 November 2022*

Eligibility check by Call Secretariat and Funding Organisations

EVALUATION COMMITTEE (EvC)
Each pre-proposal (5-page project description) was evaluated by :
- **2* scientific members**
- **2* policy/management members**

* one as rapporteur and one as reader

Evaluation Criteria

For Scientific EvC members

- **Fit to the scope of the call (Yes/No)**
- **Novelty of the research (1-5; threshold: 3)**

For Policy/Management EvC members:

- **Societal and policy impact** (incl. contribution to society and/or policy and Transnational added value) **(1-5; threshold: 3)**

Evaluation process at Step 2

STEP2: *Full proposal stage; closed 5 April 2023*

Eligibility check by Call Secretariat and Funding Organisations

EXTERNAL REVIEWERS

Each proposal was in evaluated by at least:
- **2 scientific external reviewers**
- **1 policy/management external reviewer**

EVALUATION COMMITTEE (EvC)

Each proposal (16-page project description) was evaluated by:
- **2* scientific members**
- **2* policy/management members**

* one as rapporteur and one as reader

Evaluation Criteria

For Scientific EvC members and external reviewers

- **Excellence** (incl. fit to thematic priorities and scientific excellence)**(1-5; threshold: 3.5) / weight 7**
- **Quality and efficiency of the implementation (1-5; threshold: 3) / weight 3**

For Policy/Management EvC members and external reviewers:

- **Impact** (incl. societal / policy relevance and approaches to stakeholder engagement) **(1-5; threshold: 3) / weight 6**

→ **Stricly following the ranking list, 33 projects recommended for funding by the call funders**

Outcomes

- **Reviewers brought a high level of expertise and collegiality**. There was a high degree of consistency between rapporteurs and readers in their evaluations for both Scientific and Policy Management Committees.
- The funded projects address topics across **all three non-exclusive themes** and will contribute knowledge **across diverse ecosystems**: terrestrial ecosystems, inland waters and coastal and marine ecosystems.
- The selected proposals are both **innovative** and **trans-disciplinary**, and will require close working relationships internationally as well as between scientists and stakeholder communities.
- The selected proposals will deliver **scientific research relevant to policy makers** at regional, national and international levels.

3-year transnational research projects

Outcomes

- BiodivMon research outcomes will provide transnational and societal evidence to support Policy and National and European **implementation of the Kunming Montreal Global Biodiversity Framework** which states:

  "Success requires:
  →political will
  →stakeholder input to policy
  →recognition at the highest level of government
  →cooperation by all levels of government and all actors of society"

- Successful project proponents for BiodivMon have incorporated processes for **strong transnationality** and **stakeholder involvement** throughout research development, implementation and dissemination which can provide research outcomes incorporating these key success factors to assist Europe and National countries to successfully implement the GBF.

Added value of science–society-policy collaborations from BiodivMon

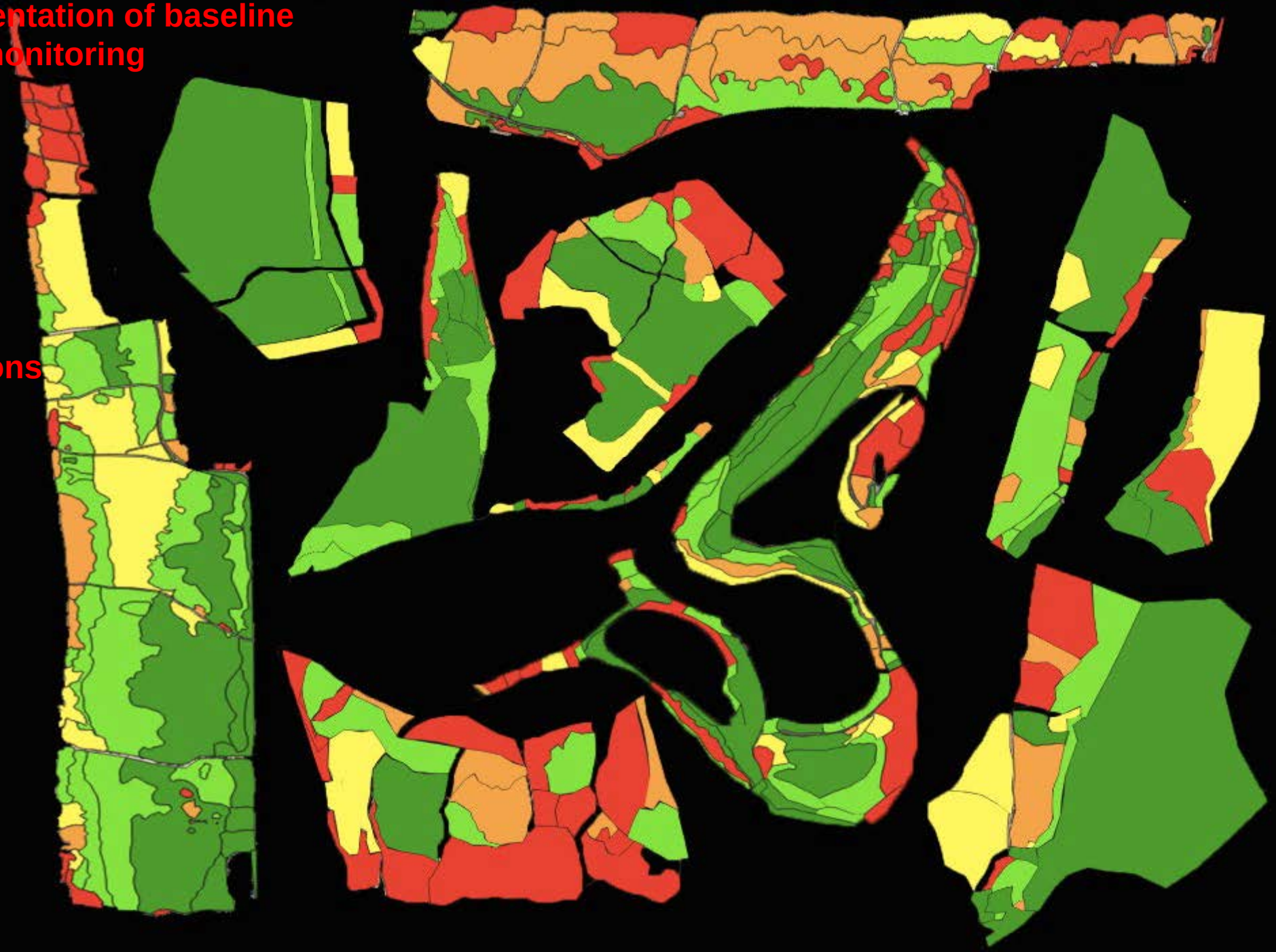
Accurate and coordinated Biodiversity Monitoring is critical to ensure countries can implement the Targets of the Kunming Montreal Global Biodiversity Framework

To **enable** this, it is critical that **policy makers, stakeholders and society understand**:

- **why** monitoring is important
- **how they can contribute** to the rapidly expanding science of biodiversity monitoring
- **the needs for biodiversity monitoring to effectively implement new legislation**
- the rapidly growing **demands for biodiversity outcomes**, such as **nature positive and natural capital** which require **robust and accurate biodiversity monitoring, which is easily understood and implemented across a diversity of expertise levels**
- **governance and decision-making requirements** for accurate and repeatable biodiversity monitoring
- biodiversity monitoring outcomes which can be **easily and visually understood without deep scientific knowledge**
- **The BiodivMon funded projects through their policy/society components add these values**

Visual representation of baseline biodiversity monitoring variety of ecosystems Perth Western Australia

Stakeholder communications



EUROPABON
Europa Biodiversity Observation Network

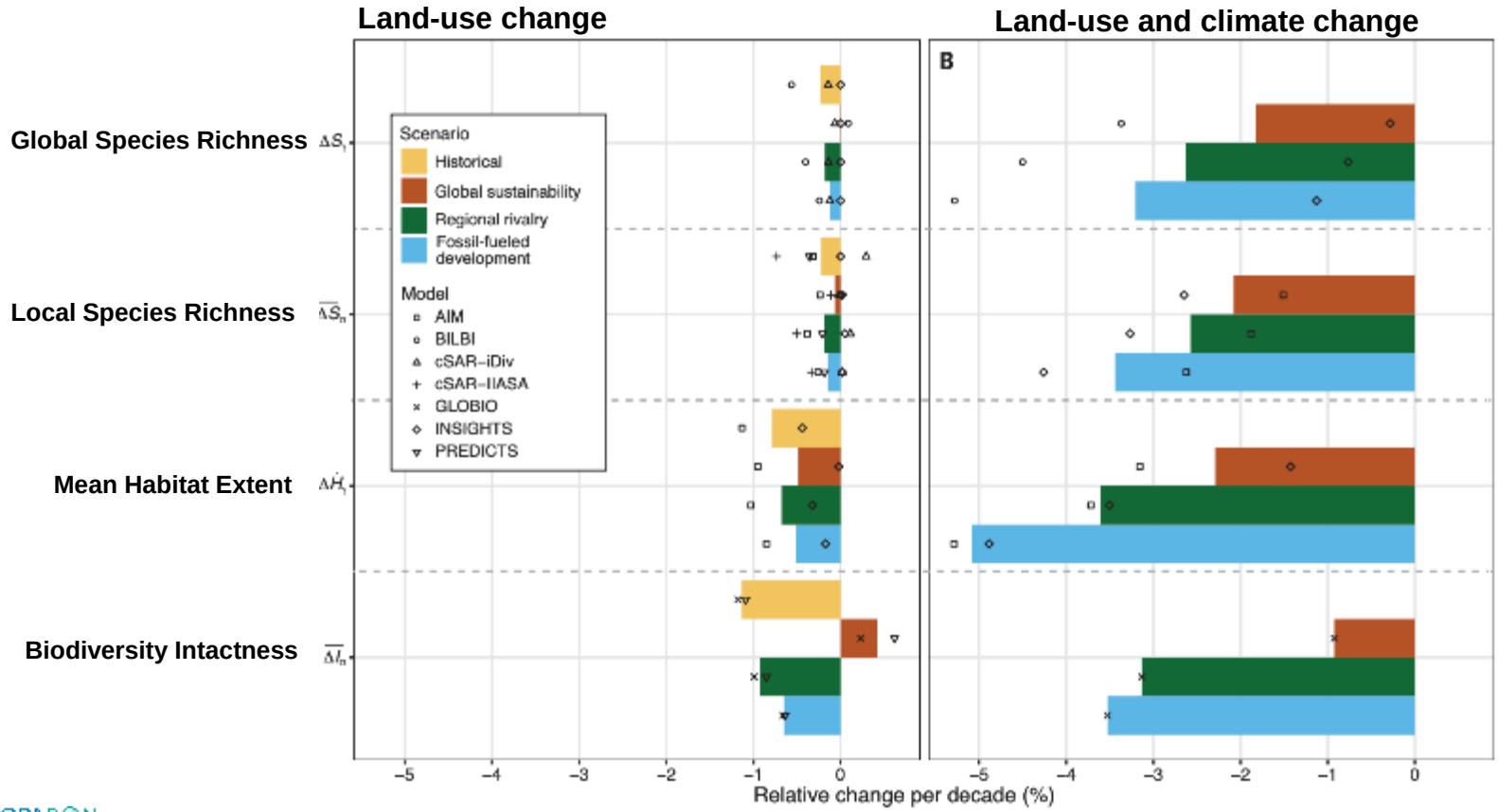
Co-designing the European Biodiversity Observation Centre and Network

Henrique M. Pereira et al.

17 Apr 2024,Biodiversa+ Kick-off meeting of the BiodivMon Call , Tallin

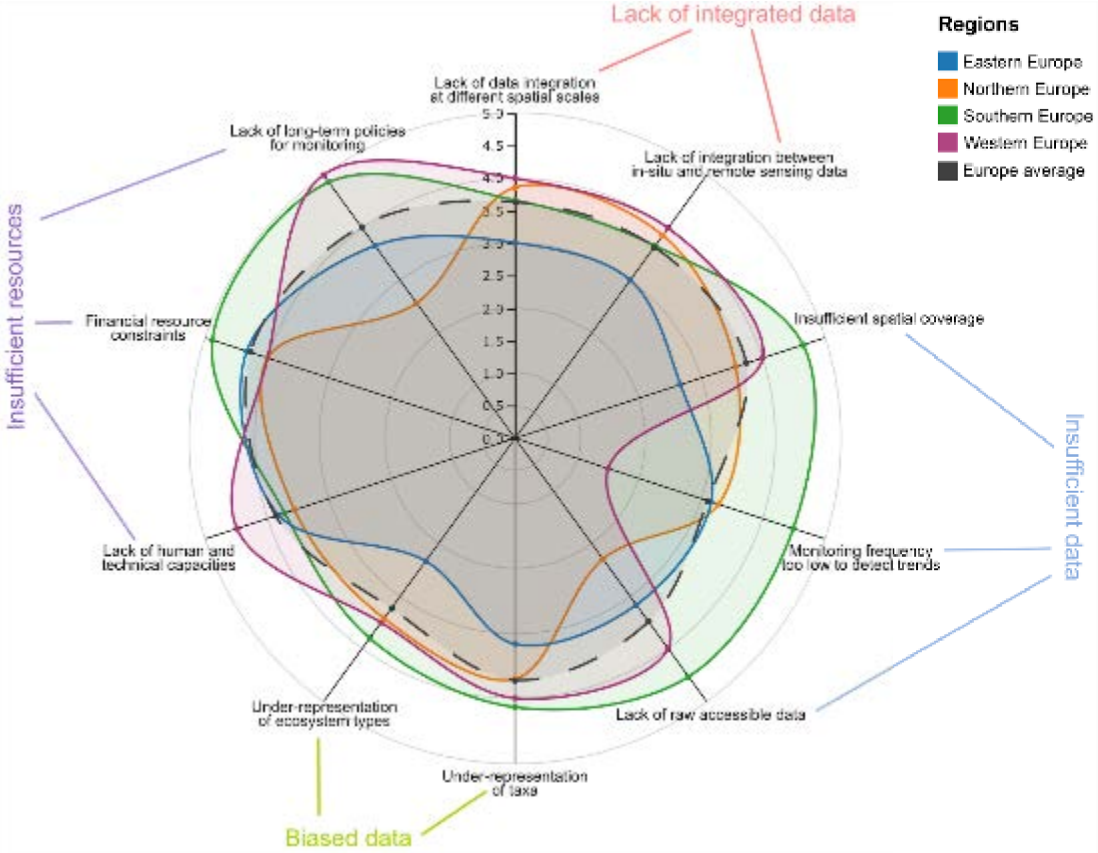
This project receives funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101007492.

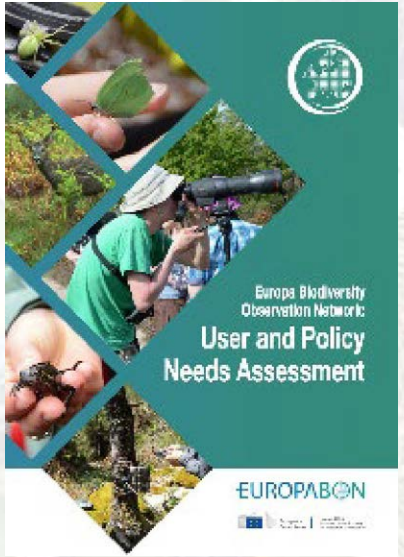
Global historical trends in biodiversity (1900–2015) and future scenarios (2015–2050)



Pereira, H.M. *et al* (in press) *Science*

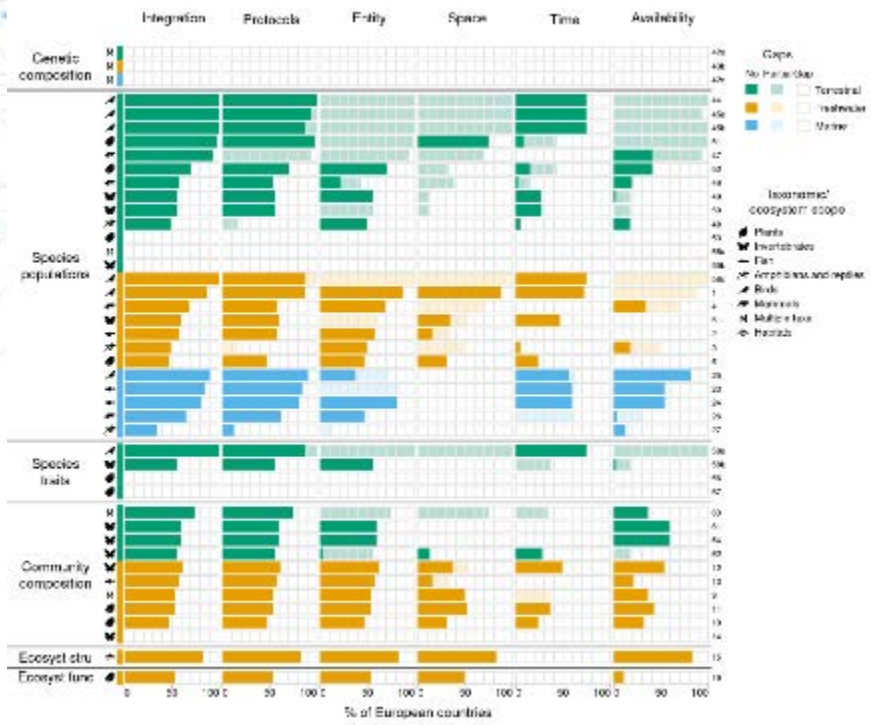
The problem with biodiversity data



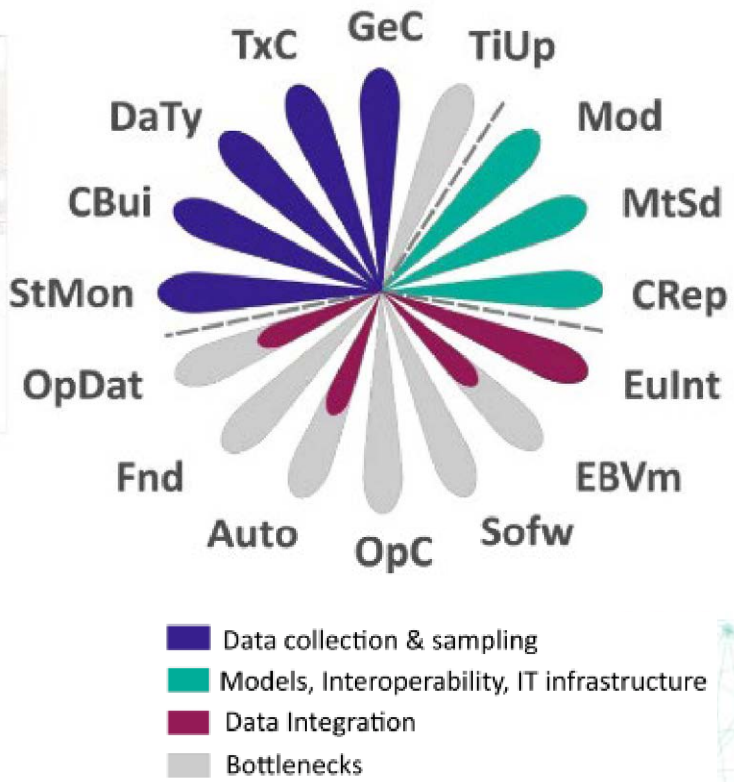


EUROPABON

Assessing existing biodiversity monitoring



Bird monitoring



Report on gaps and important new areas for monitoring in Europe:
https://preprints.arphahub.com/article/103657/
Identification of current monitoring workflows and bottlenecks:
https://preprints.arphahub.com/article/103765/

Designing a Biodiversity Observation Network with Essential Biodiversity Variables

Monitoring design

(1) How to design sampling?

(2) What models to use?

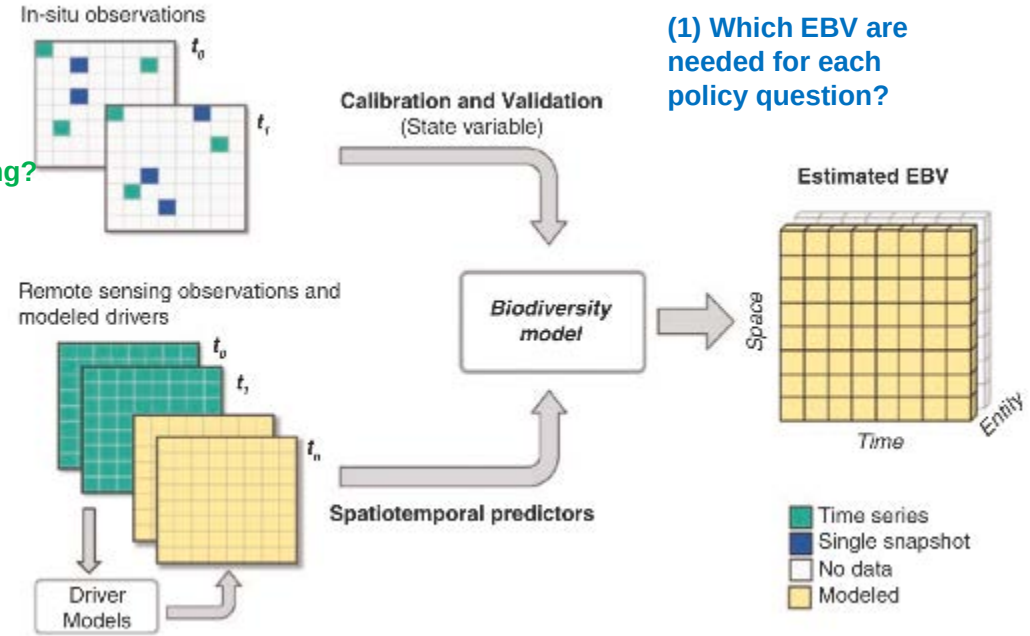
EBV Selection

(1) Which EBV are needed for each policy question?

EBV Specification

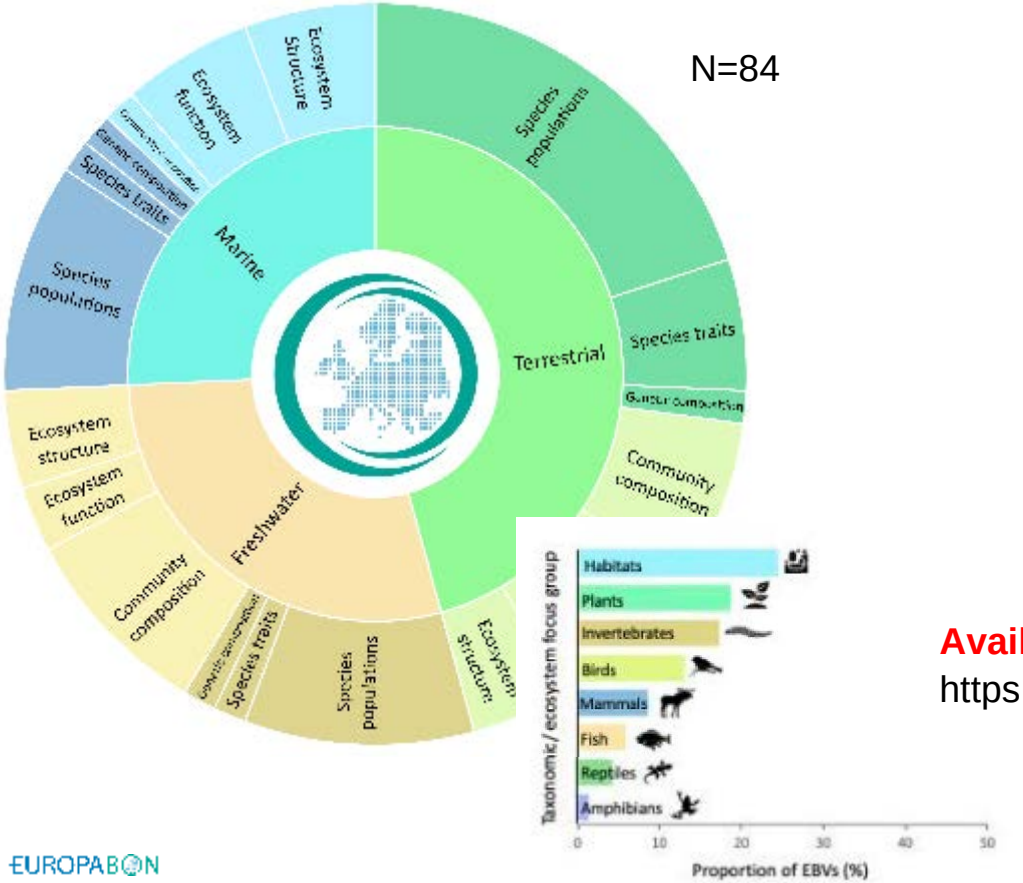
(1) What taxa and ecosystems?

(2) What is the desired spatial and temporal resolution of EBV?



Fernández ... Pereira (2020) in Remote Sensing of Plant Biodiversity

A balanced EBV selection: realms, EBV classes, taxa



Species level variables mostly addressing questions **about status of species of conservation interest** (Habitats, Birds Directives), and some species groups for which enough interest exists.

Ecosystem level variables mostly addressing questions about **trends in ecosystem condition and restoration,** across a range of taxonomic groups.

Some species level variables and some ecosystem level variables important to estimate **ecosystem services, ecosystem risks, and status of invasive species**

Available on GitHub

https://github.com/EuropaBON/EBV-Descriptions/wiki

EUROPABON

EBV workflows

1 Data collection & sampling

Existing monitoring methods

- Structured surveys (e.g. transects counts) or opportunistic observations
- Trait or DNA sampling (e.g phenology records)
- Airborne or satellite remote sensing (e.g. radar, hyperspectral, LiDAR)

National or EU-wide monitoring initiatives

- PanEuropean Common Bird Monitoring Scheme (PECBMS)
- Water Information System for Europe (WISE)
- Copernicus Land Monitoring Service

Emerging tools

- Digital sensors (e.g. cameras, sound devices)
- Citizen science apps
- eDNA sampling (e.g. soil, water)

2 Data integration

Standardizing field data

- Standardized sampling & data entry protocols
- Data aggregation & harmonization
- National or EU-wide integration nodes

Data exchange and automation

- Data transfer mechanisms (e.g. APIs) and exchange formats
- Automated, end-to-end data streams

Computational integration

- Centralized data repositories
- Data access and machine readability
- Integration of ground truth and remote sensing data (training points)

3 Modelling

Statistical modelling & extrapolation

Regression & machine learning (e.g. species distribution models)

Models for trend analysis & forecasting

Biodiversity change indicators

Short-term ecological forecasts

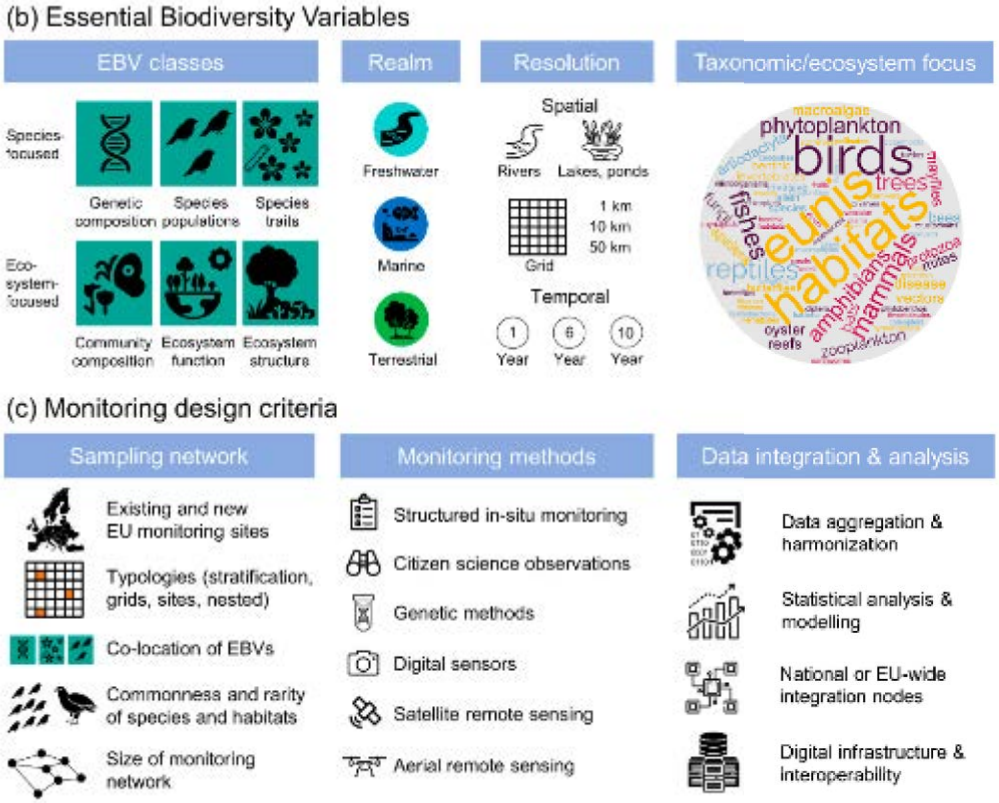
Artificial Intelligence

AI for species detection, tracking, classification & segmentation

Spatiotemporal ensemble modelling

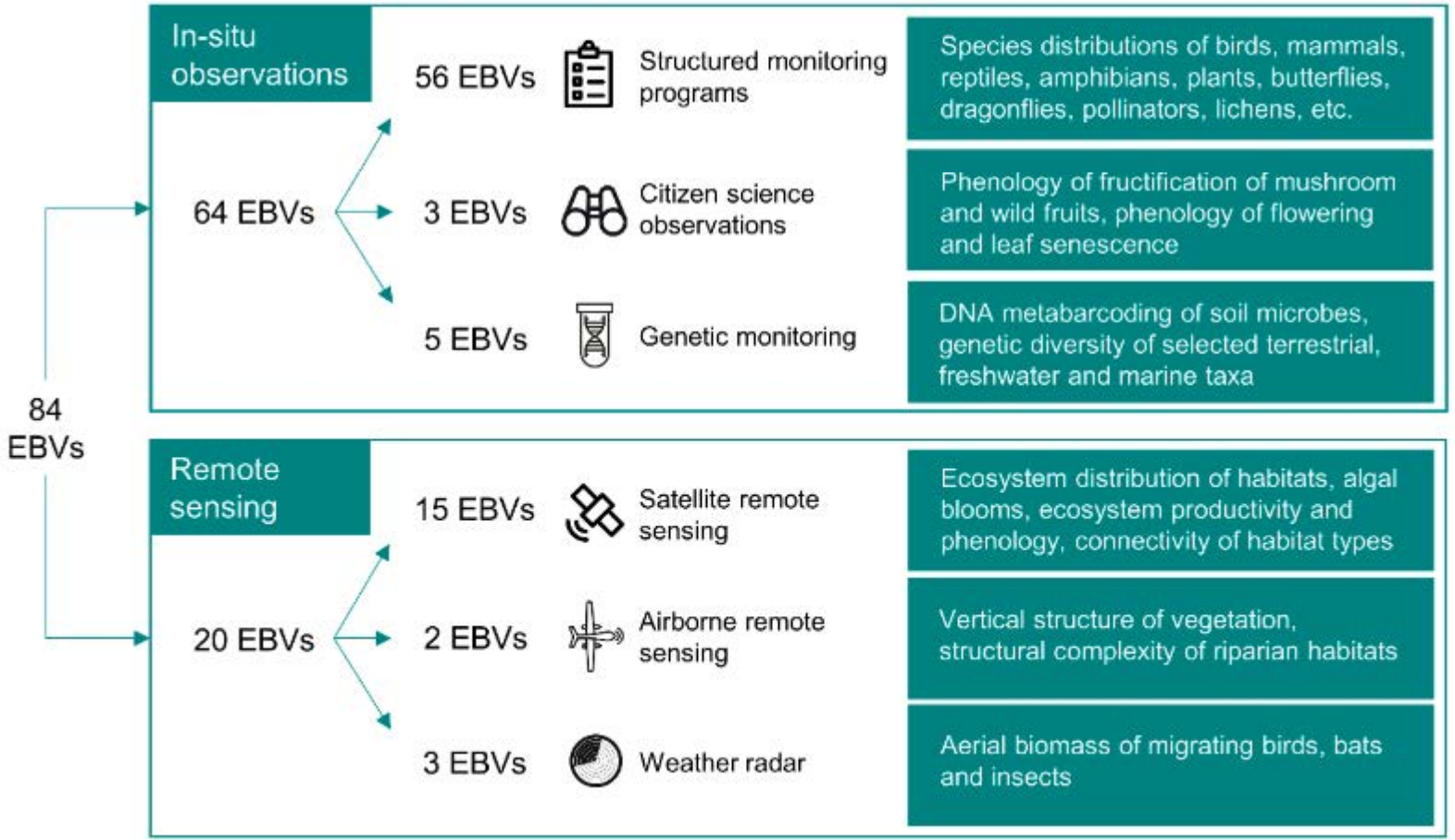
Multi-model comparison, parameter optimization, meta-learners

Data collection and sampling



Kissling et al (in prep)

How to collect the data



Where to collect the data

a) Nearly non-monitored EBV's (<20% EU-MS)

Genetic composition
- Genetic diversity of selected freshwater taxa
- Genetic diversity of selected marine taxa
- Genetic diversity of selected terrestrial taxa

Species populations
- Species distributions of lichens (as indicators of pollution)
- Species abundances of selected terrestrial disease vectors
- Species abundances of selected terrestrial crop pests
- Distributions of marine turtle species nesting grounds

Community composition
- Ecological Quality Ratio (EQR) of freshwater zooplankton

Species traits
- Phenology of fructification of mushrooms and wild fruits
- Phenology of flowering and leaf senescence

b) EBVs with major monitoring gaps (20-60% EU-MS)

Species populations
- Species distributions of amphibians and freshwater reptiles
- Species distributions of terrestrial reptiles
- Species distributions of freshwater mammals
- Species distributions of marine mammals
- Species distributions of all terrestrial mammals
- Species distributions of terrestrial priority invertebrates and key pollinators
- Species abundances of selected terrestrial mammals
- Species abundances of terrestrial migratory birds
- Species abundances of butterflies

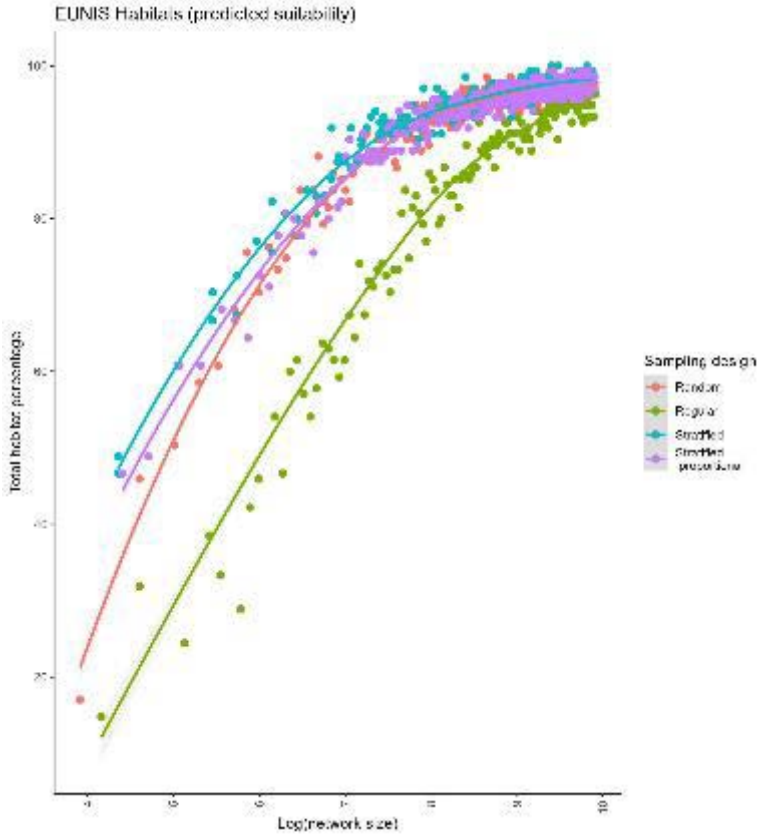
Species traits
- Phenology of the emergence of butterflies

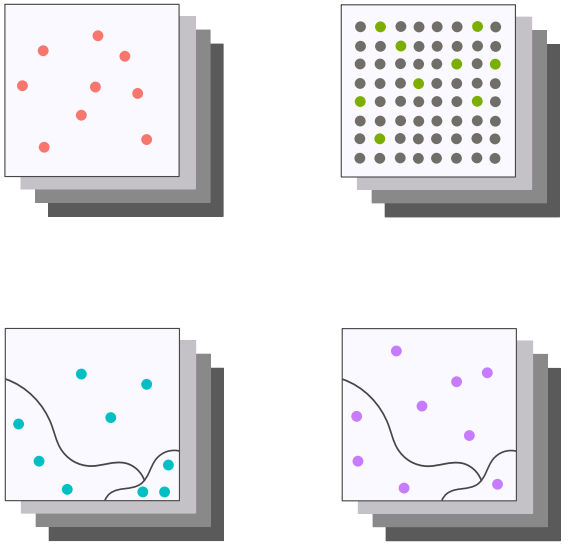
Community composition
- Community abundance and taxonomic diversity of pollinator insects
- Aerial biomass of migrating birds, bats and insects

c) Highly monitored EBVs (60-80% EU-MS)

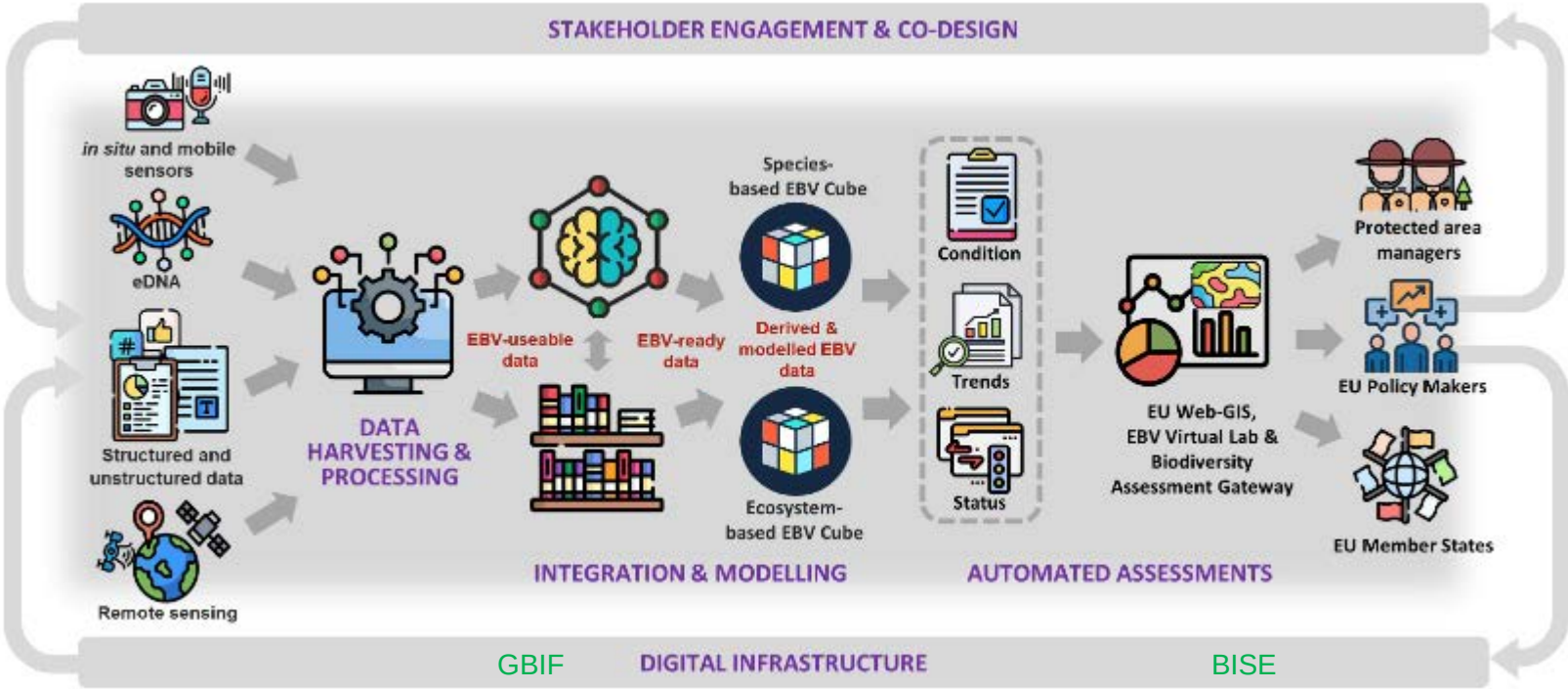
Candidates for co-monitoring across a network of European sites

Assessing different spatial distributions of monitoring sites

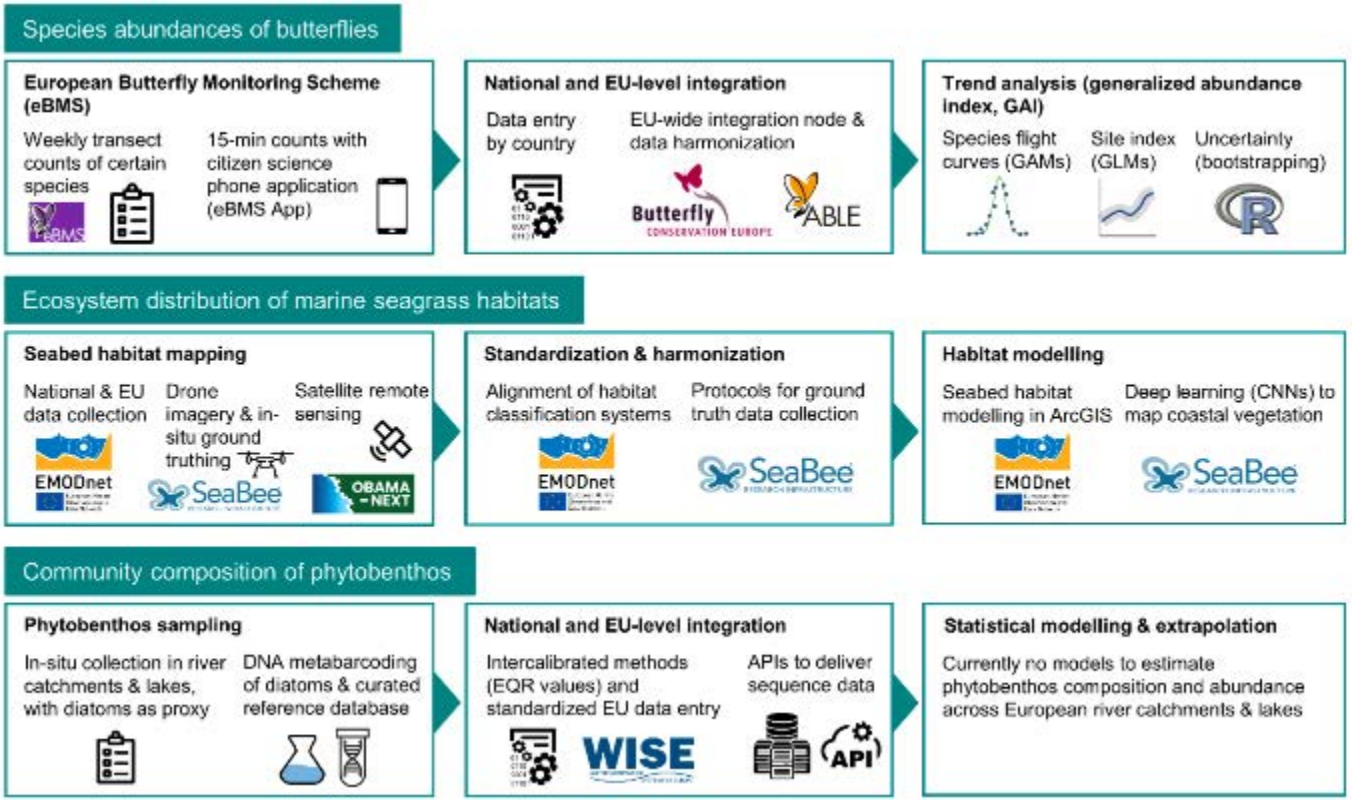




Data integration and modelling



Implementing EBV workflows across realms

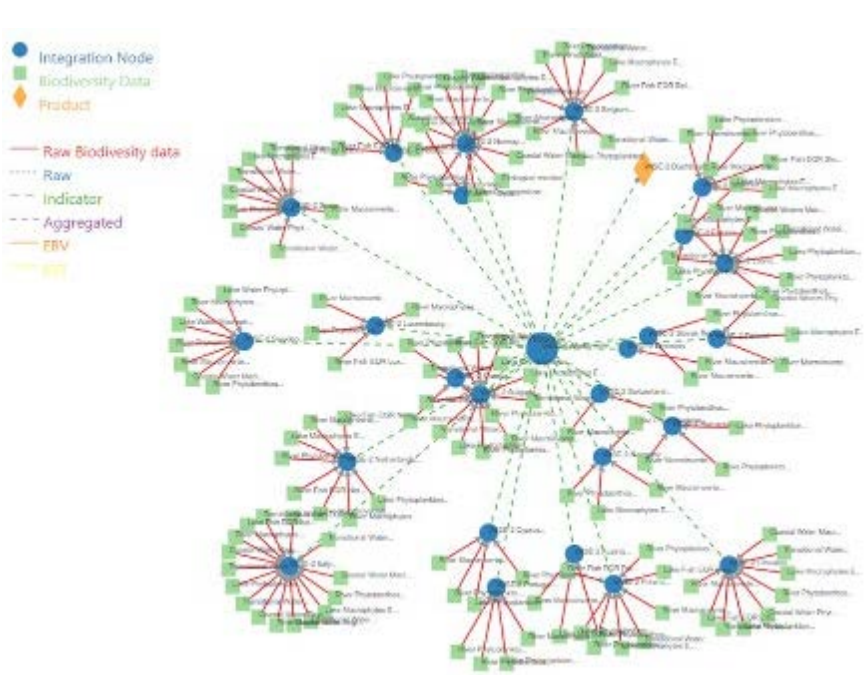


EUROPABON

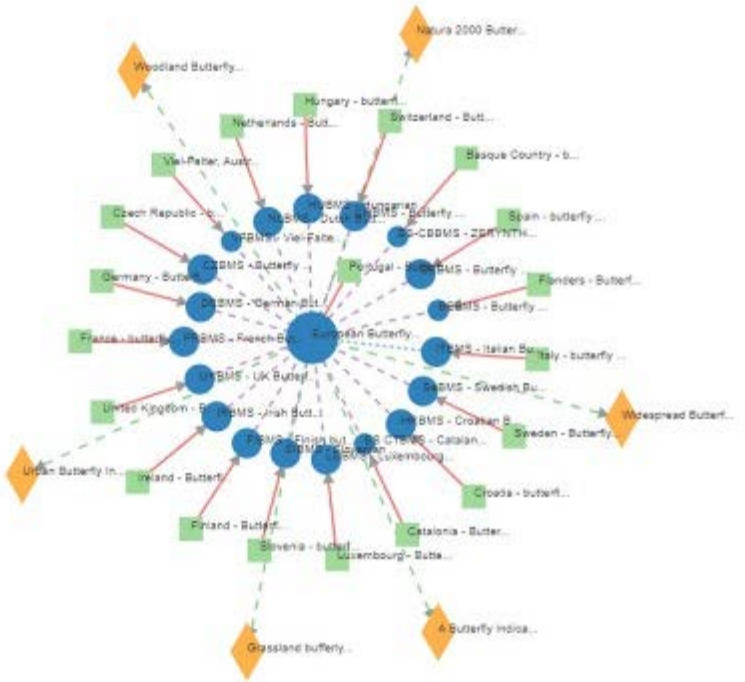
Kissling et al (in prep)

Different approaches to integration

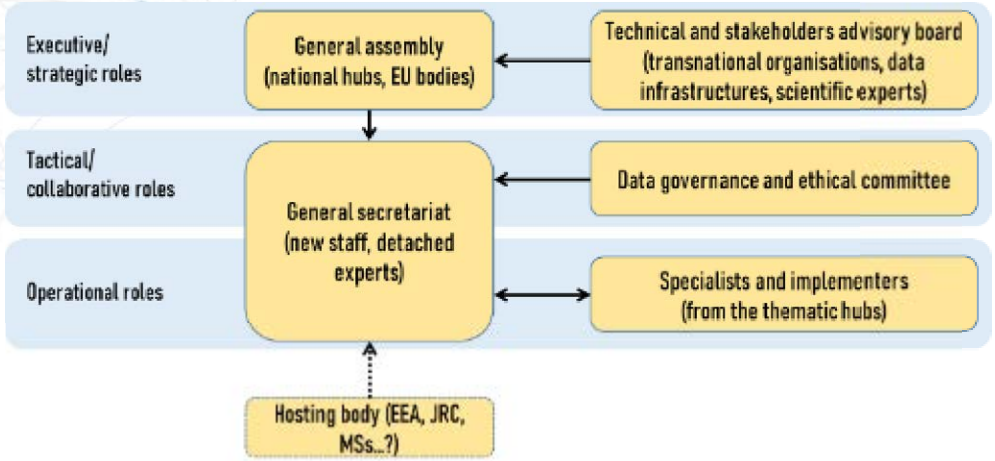
Freshwater monitoring

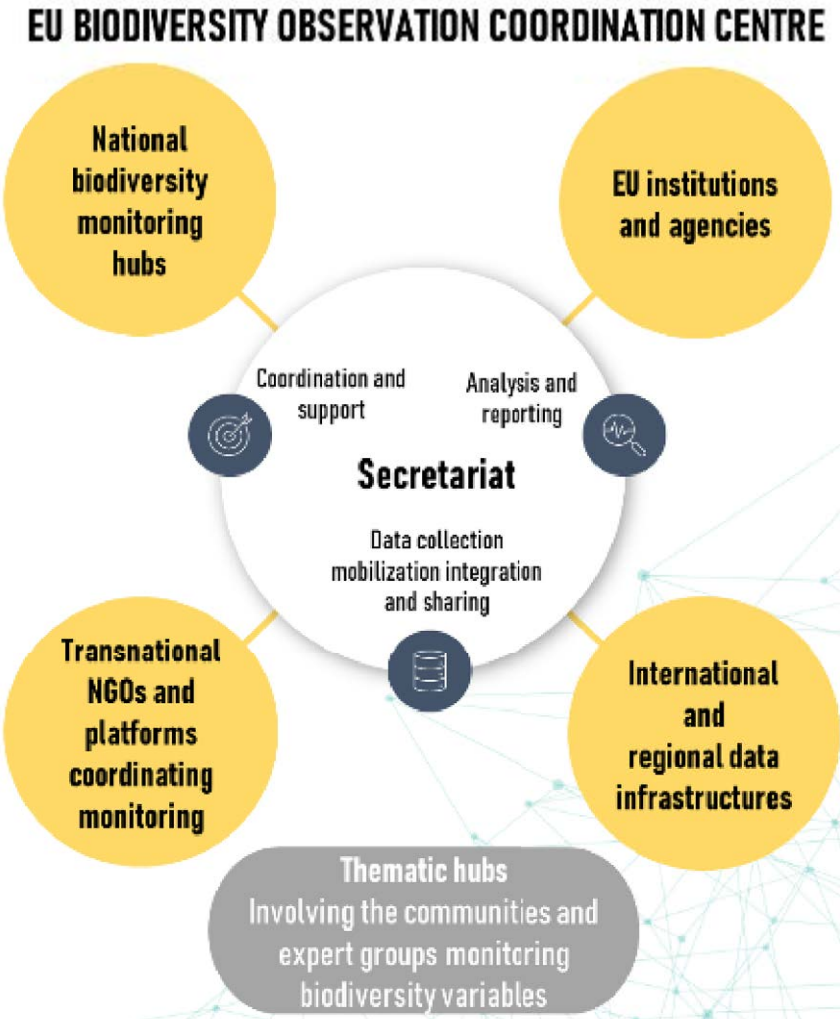


Butterfly monitoring



The EBOCC


Executive/
strategic roles
General assembly
(national hubs, EU bodies)
Technical and stakeholders advisory board
(transnational organisations, data
infrastructures, scientific experts)
Tactical/
collaborative roles
General secretariat
(new staff, detached
experts)
Data governance and ethical committee
Operational roles
Specialists and implementers
(from the thematic hubs)
Hosting body (EEA, JRC,
MSs...?)

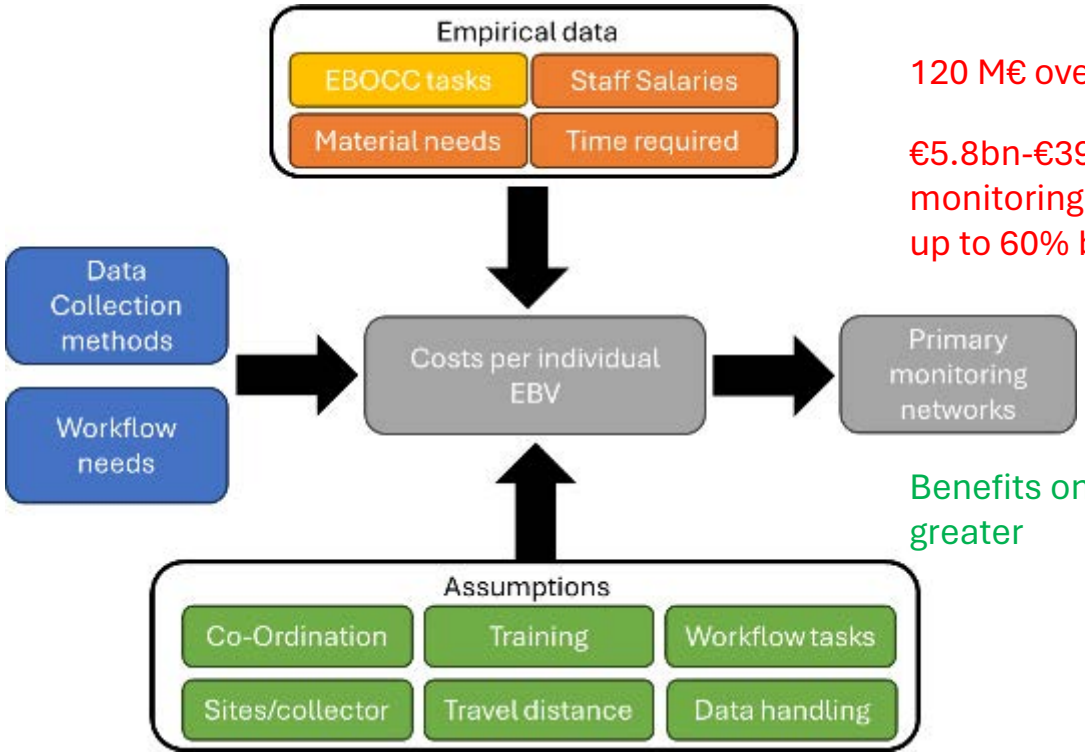

EU BIODIVERSITY OBSERVATION COORDINATION CENTRE
National biodiversity monitoring hubs
EU institutions and agencies
Coordination and support
Analysis and reporting
Secretariat
Data collection mobilization integration and sharing
Transnational NGOs and platforms coordinating monitoring
International and regional data infrastructures
Thematic hubs
Involving the communities and expert groups monitoring biodiversity variables

Prioritisation of tasks for the EBOCC

Coordination and support functions	• *Support coordination between Member States and institutions* • Collaborate and engage with external knowledge holders • Capacity building on data exchange, analysis and standardization	• Other capacity building (e.g. data collection, design of monitoring schemes, new techniques, financing options)
Data collection, mobilization, integration and sharing	• *Data mobilization, integration and harmonisation* • Data infrastructure and tools • Develop data access and data sharing policies	• *Improved sampling designs and standardization of data collection*
Analysis and reporting to support stakeholders	• Gap analysis, both on monitored data and on information	• Statistical analysis and visualization • FAIR principles and justice/transparency

- EBOCC urgent tasks for >80 EBVs proposed by EuropaBON would cost **120M€ for 5 years**.
- **Not** part of this cost estimate: data collection + associated costs by Member States or other organisations

Costing the implementation of the EBOCC



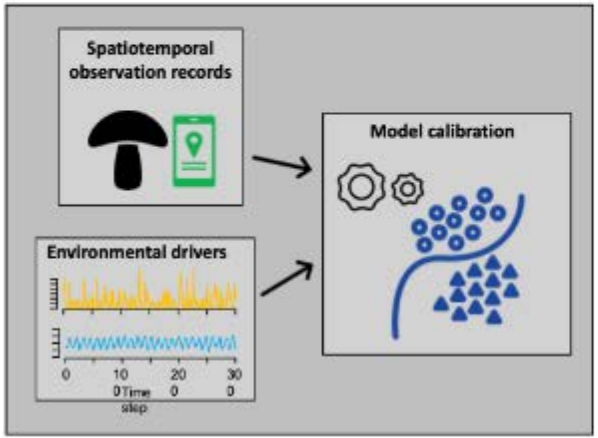
120 M€ over 5 years for coordination

€5.8bn-€39bn over 10 years for monitoring implementation (savings of up to 60% by co-locating sites)

Benefits one order of magnitude greater

Bring biodiversity monitoring benefits to society

Forecasts of the fructification of wild mushrooms



Capinha et al (in press) Bioscience

Find more about EuropaBON at

THANK YOU

@EuropaBON_H2020

All deliverables and papers available as a RIO Collection

iDiv

MARTIN-LUTHER UNIVERSITÄT HALLE-WITTENBERG

europabon.org

Sustained monitoring of marine biodiversity and ecosystems to distinguish global change from regional and local scale impacts – 100 years of observations in the English Channel

Prof Steve Hawkins

Biodiversa+ Advisory Board

Marine Biological Association

 # BiodivMonTallinn

University of Southampton

Sustained monitoring of marine biodiversity and ecosystems to distinguish global change from regional and local scale impacts - 100 years of observations in the English Channel

Steve Hawkins[1,2,3,4,6,7], Nova Mieszkowska[1,3], Louise Firth[4,6,7,10], Sally Keith[5], Roger Herbert[4,5], Paula Moschella[1,4], Mauricio Orostica[7], Martin Genner[1,8], David Sims[1,4], Heather Sugden[7,11], Pip Moore[1,6,11] Stuart Jenkins[1,7] Mike Burrows[1,2,3,9]

Ghosts of Fischer-Piette, Crisp, Southward, Lewis

Marine Biological Association

1 MBA, 2 Manchester 3 Liverpool, 4 Southampton, 5 Bournemouth,6 Plymouth, 7 Bangor Universities, 8 Bristol, 9 SAMS 10 Cork, 11 Newcastle

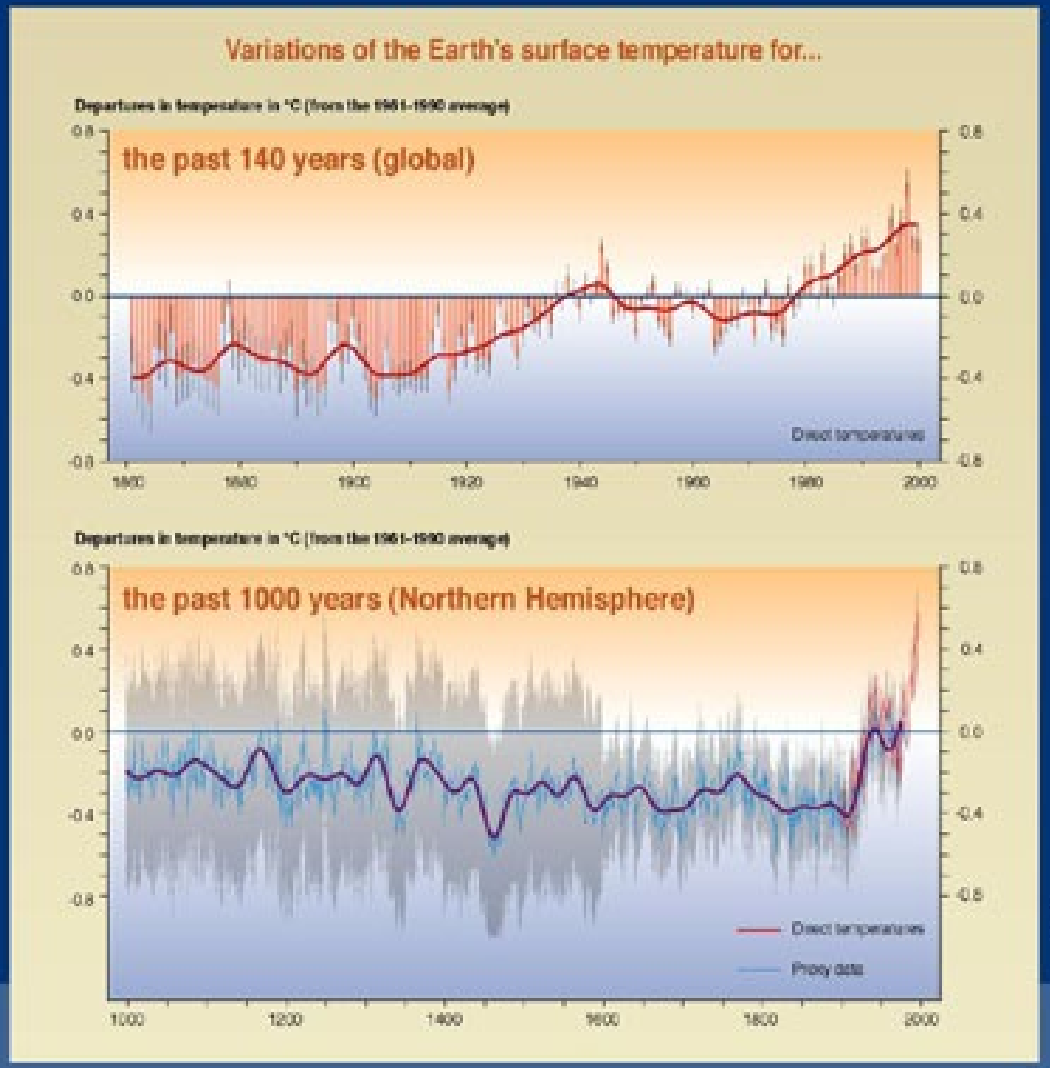
University of Southampton

Outline of Talk

- Twin crises of climate change and biodiversity loss

Global temperature trend

World is getting warmer



But not a straight line…

SYR - FIGURE 2-3

IPCC
INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

WMO UNEP

Local artisanal to global industrial ocean use

Sardines (pilchards)

Short-supply chains

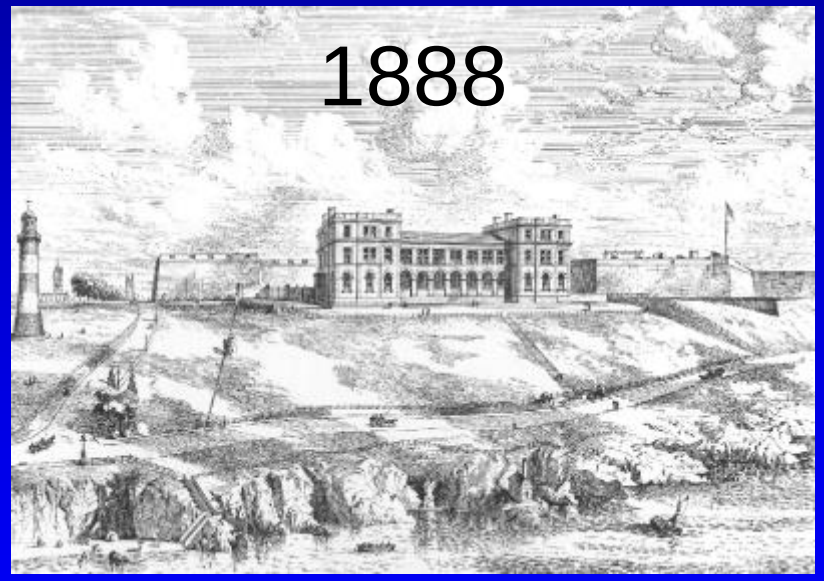
West Cornwall 1890s

From old postcards

Outline of Talk

- Twin crises of climate change and biodiversity loss
- The MBA: sustaining observations for over 100 years
- Fluctuations and recent rapid change in the English Channel
- Sensitivity of marine biodiversity of the British Isles and Ireland to climate change
- Interactions fishing and climate – bottom fish
- Rocky shores as sentinels to detect change
- Take home messages – managing interactions of climate change with regional and local scale impacts for resilience of biodiversity

The Marine Biological Association of the UK



Long-term observing/monitoring

MBA Time Series: English Channel

Western Channel Observatory from 2007 PML/ MBA/SAHFOS – 2015 now in hiatus

Temperature and Salinity	E1	1902-1987, 2002-
Nutrients	E1	1921-1987, 2002-
Phytoplankton	E1	1903-1987, 2002-
Primary production	E1	1964-1984
Zooplankton	E1, L5	1903-1987, 1995-1998,2002-
Planktonic larval fish	E1, L5	1924-1987, 1995-1998,2002-
Demersal fish	L4	1913-1986, 2001-2015
Rocky Intertidal organisms	various	1950-1998, 1997/2001-2024
Infaunal benthos (intermittent)	L4	1922-1950, 2003
Epifaunal benthos (intermittent)	L4	1899-1986, 2005-

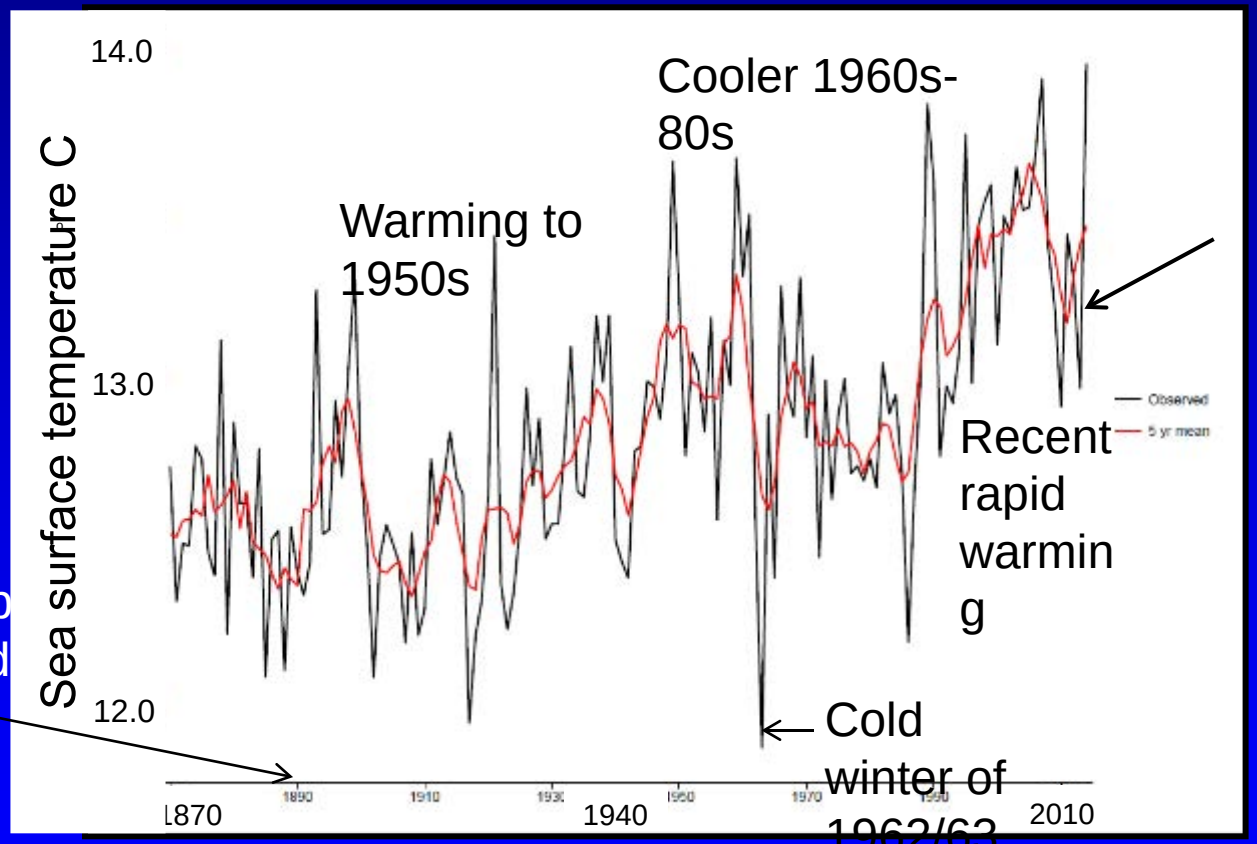
PML time series:plankton & hydrography at L4 since 1987

n.b. There are many gaps in these series,

Defra & Agg. levy funded restarts in red

Reviewed in Southward et al., Adv. Mar. Biol. 47:1-105, 2004

Climate fluctuations and recent change off Plymouth



Recent cold winters

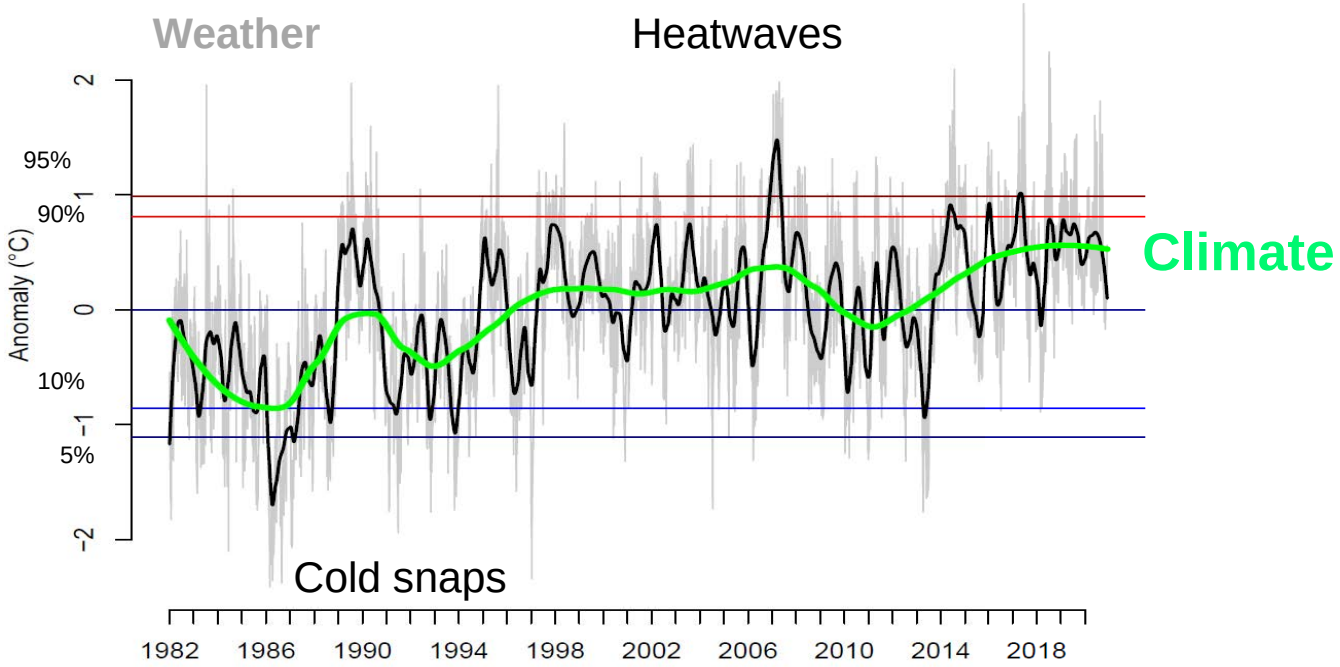
MBA lab founded 1888

Mean annual sea surface temperature (SST) 1870 - 2014 off Plymouth, UK

(Data source: Meteorological Office Hadley Centre; collected by MBA/PML)

> Disturbance frequency – not only temperature but storms and precipitation

Increased frequency of **extremes**

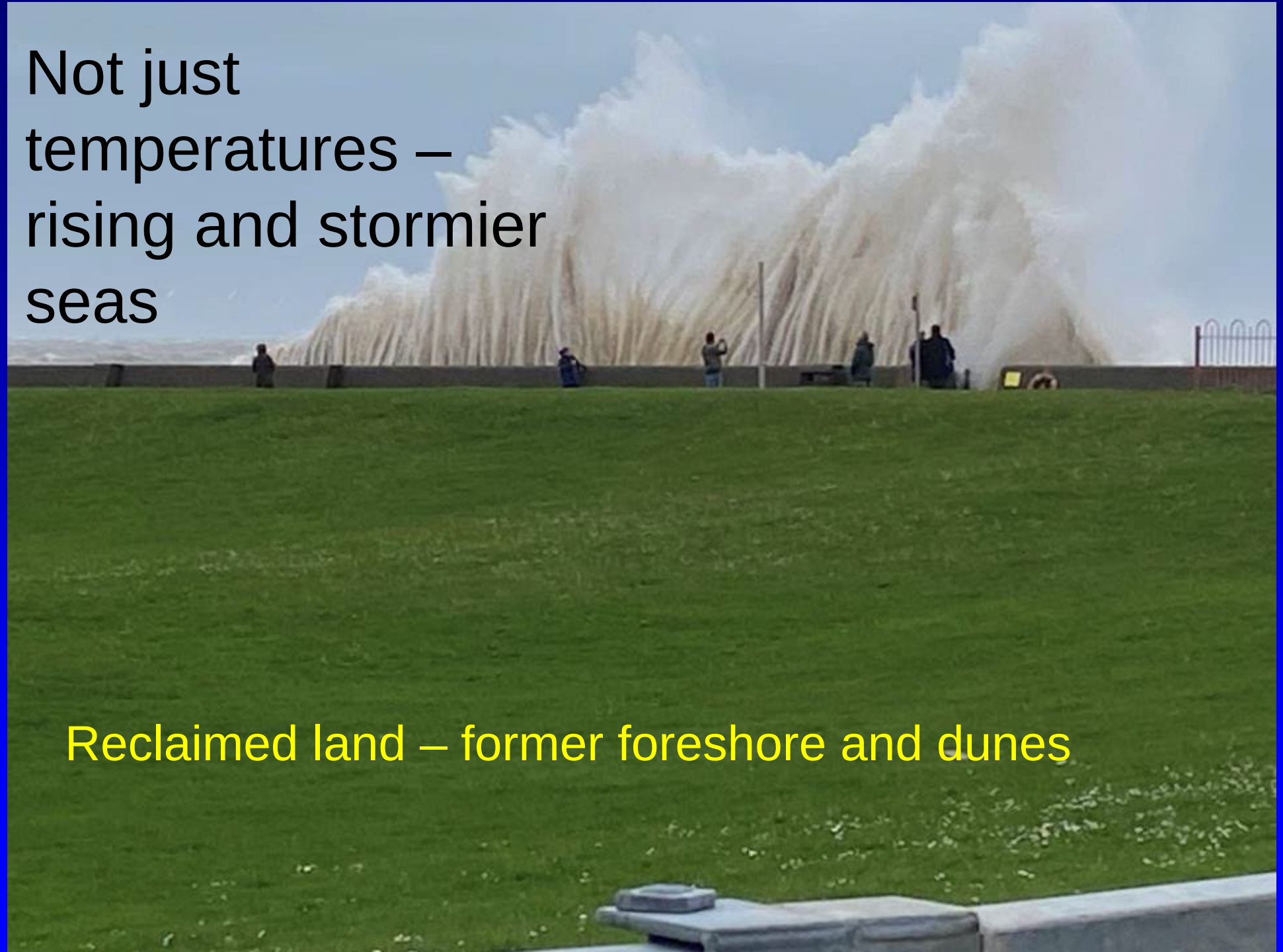


The SST daily anomaly values for off Plymouth, UK derived from daily SST averaged across 49-53N and 6W to 0E. From https://coastwatch.pfeg.noaa.gov/erddap/. Anomalies were calculated as the difference between daily SST and average SST for that day of the year

based on Hawkins, Burrows and Mieszkowska 2022 Global Change Biology

Commentary article on Extreme heatwave drives topography-dependent patterns of mortality in a bed-forming intertidal barnacle, with implications for associated community structure AV Hesketh, CDG Harley

Global Change Biology 29 (1), 165-178 – about the 2021 extreme heatwave.

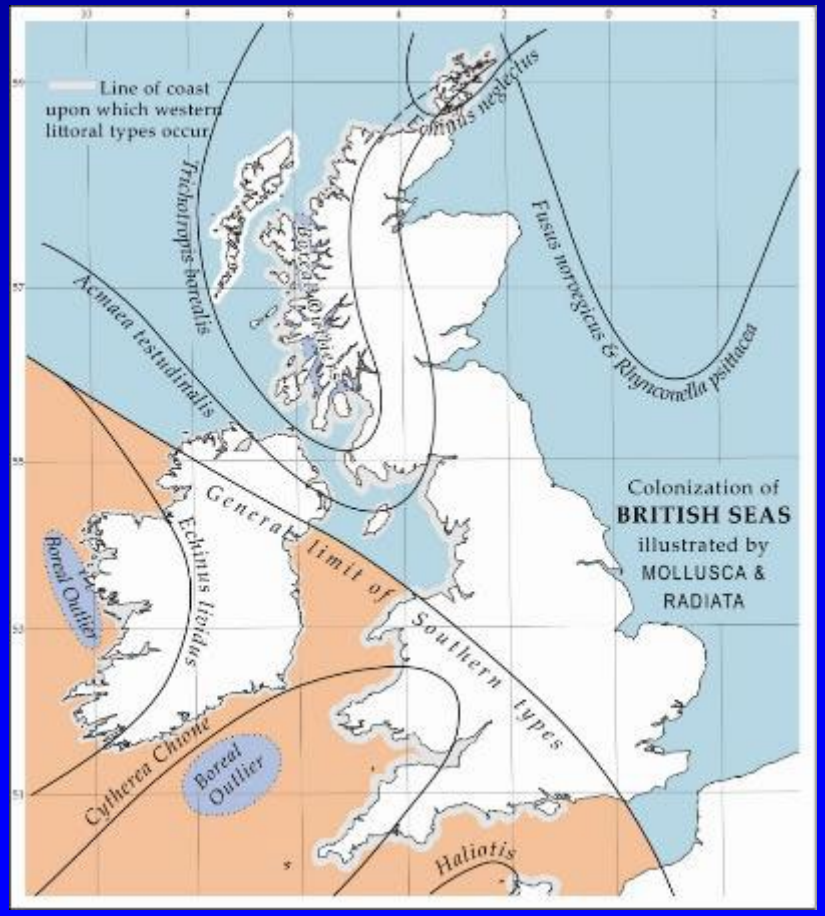

Not just temperatures – rising and stormier seas
Reclaimed land – former foreshore and dunes

Why are the British Isles & Ireland sensitive?

Britain and Ireland straddle a biogeographic boundary, resulting in species with northern and southern biogeographic distributions co-existing.

Also multiple range limits

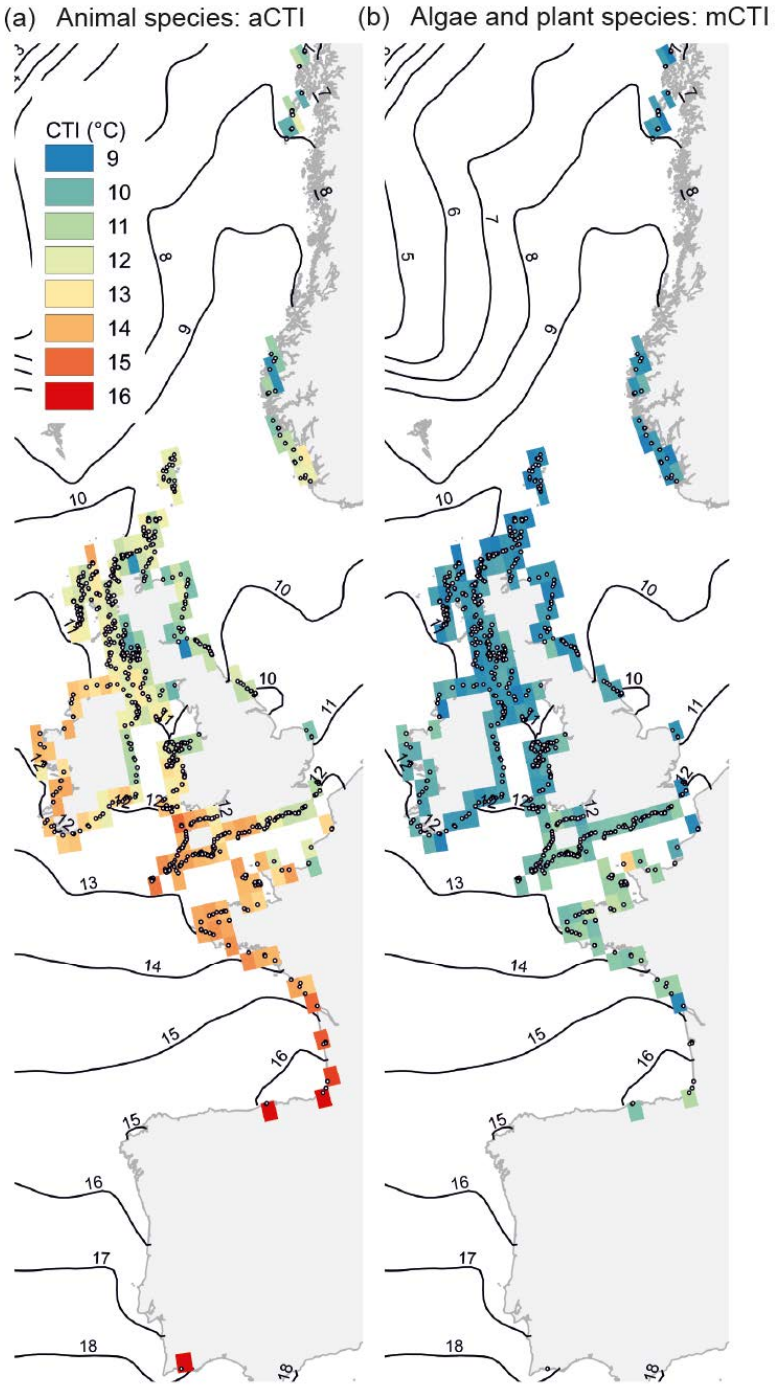
From Forbes 1858



Forbes, 1858. A.K. Johnson's Physical Atlas.

Reproduced in Hiscock et al 2004 Aquatic Conservation

Hiscock, K., Southward, A., Tittley, I., Hawkins, S.J., 2004. Effects of changing temperature on benthic marine life in Britain and Ireland. *Aquatic Conservation, Marine and Freshwater Ecosystems*, 14: 333-362



A more quantitative version of Forbes 1858

Using Community Temperature Index for 60-70 regularly surveyed species

Burrows, M. T., Hawkins, S. J., Moore, J. J., Adams, L., Sugden, H., Firth, L., & Mieszkowska, N. (2020). Global-scale species distributions predict temperature-related changes in species composition of rocky shore communities in Britain. *Global Change Biology*, *26*(4), 2093–2105. https://doi.org/10.1111/gcb.14968

Interaction of overfishing and climate:

bottom fish

From standard MBA research trawls from 1900s

-with many gaps….

Data archaeology

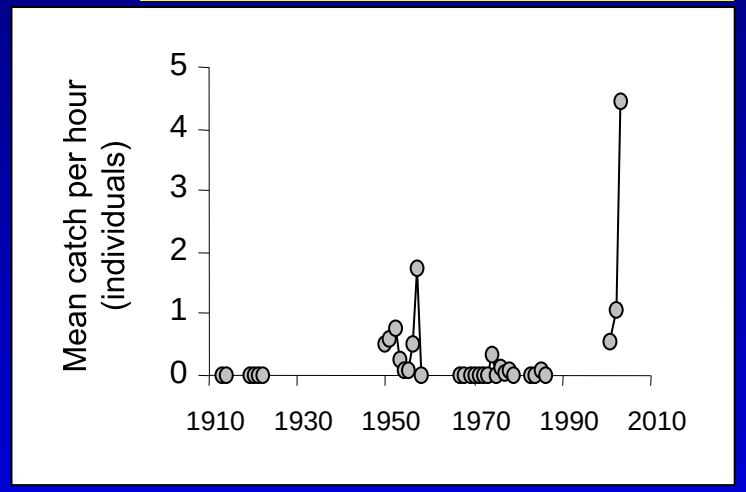
- Old notebooks, hard copy data sheets, magnetic tapes, very floppy discs
- Fishing log of crew member of RV *Sarsia* (1950s -1970s)
- Restart in 2001
- Data rescue and re-use for new policy needs (Hawkins et al 2013, Marine Policy)

Sims et al 2001Proc Roy Soc B (Squid Phenology), J Anim Ecol 2004 (Flounder migrations).

Genner et al 2004 Proc Roy Soc B, 2010 Global Change Biology (fish assemblages); Genner et al 2010 J. Plankton Res (fish larvae)

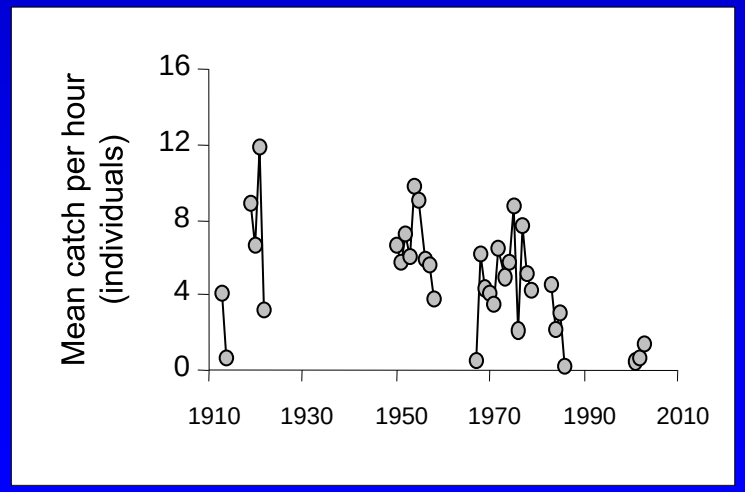
Plymouth inshore demersal fisheries

Climate change



Breams (Family Sparidae)

Warm water family of fish



Rays (Family Rajidae)

Vulnerable to overfishing: low fecundity, slow growth

Fishing pressure

Genner et al., unpublished

MBA Trawls: fewer large fish species in catches due to fishing

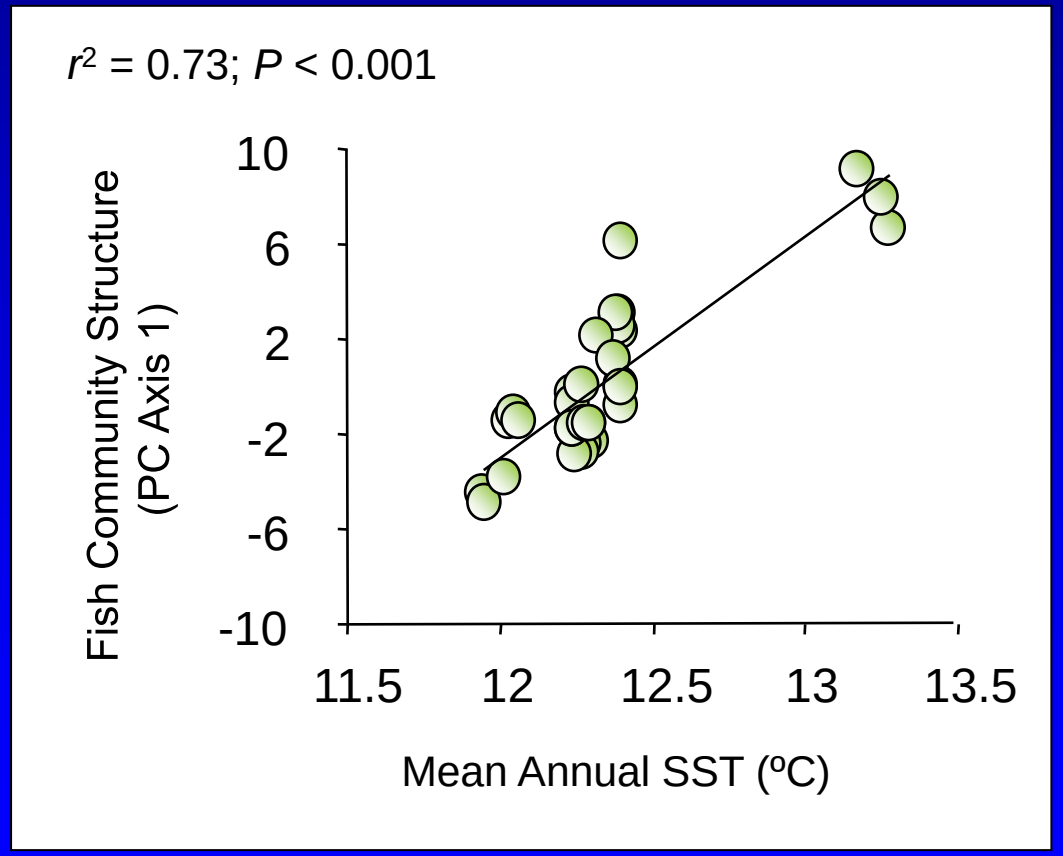
October 1963

November 2001

August 2006

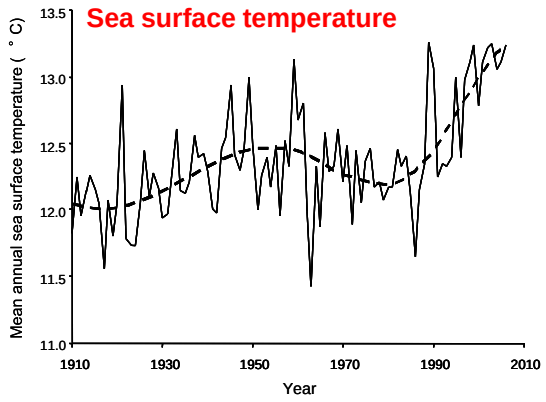
Sharpest declines seen in large species:
skate & ray, brill, conger eel

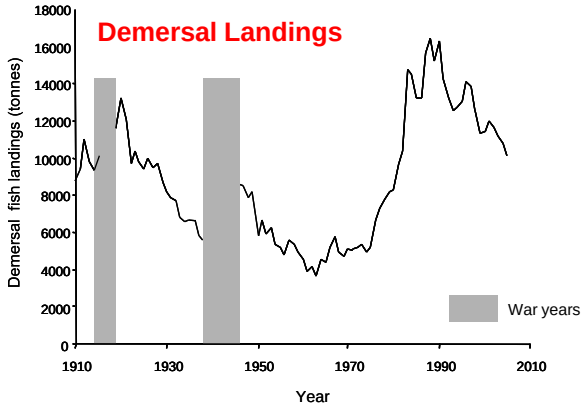
PC1, an index of community-level change, correlates with sea temperature

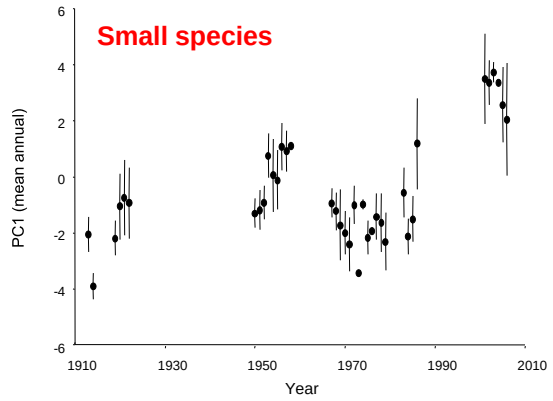


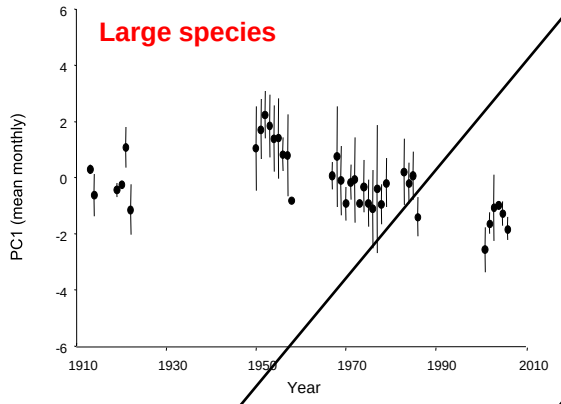
Genner *et al.* (2004) *Proc. R. Soc. London B 271:* 655-661

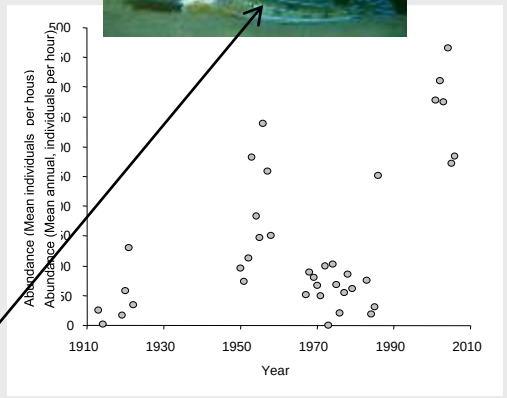
English Channel fish assemblages

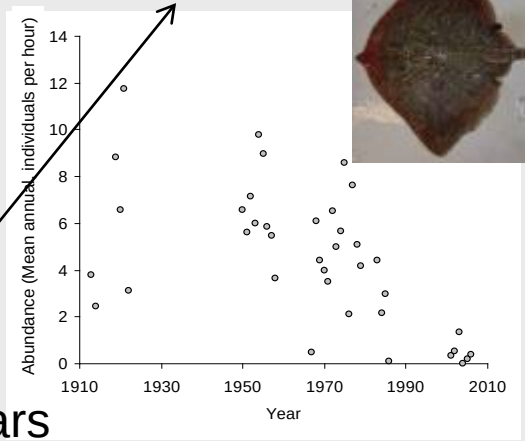












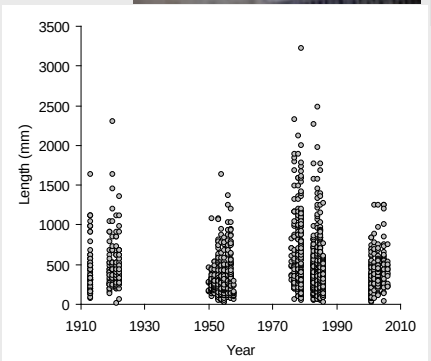
Small species – follow climate change
Large species - abundance declines over the last 50 years

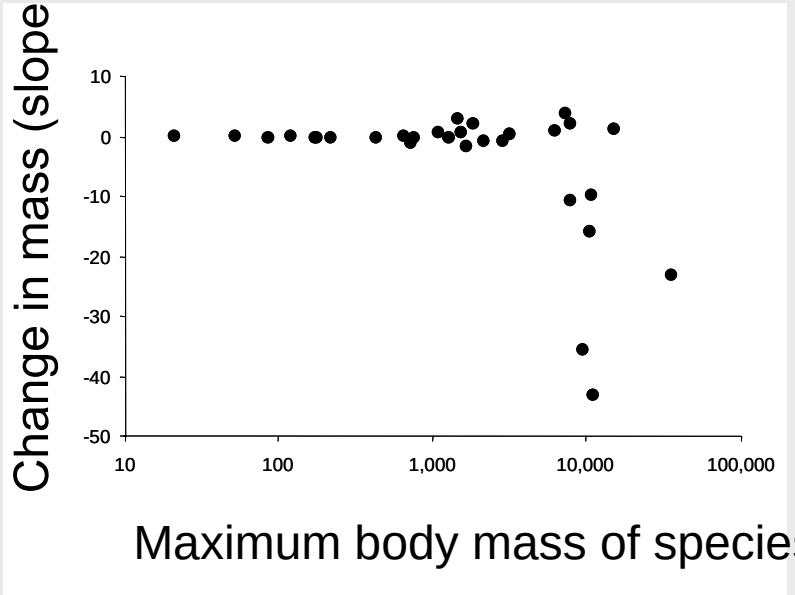
Co-funded by DEFRA (projects MF0727 and MF0730; 2000-2003)
Genner et al GCB (2010)

English Channel fish sizes 1913-2006

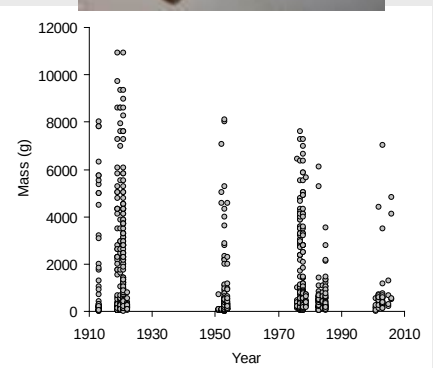
Plaice

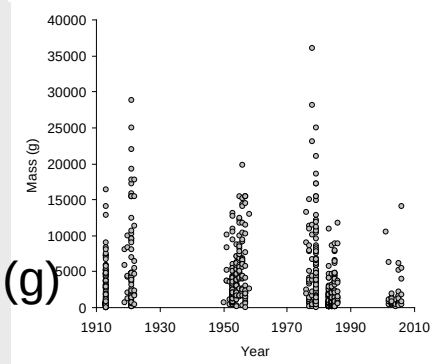
Small and medium species – no change
Large species – fewer large individuals





Rays





John Dory

Monkfish

Genner et al GCB (2010)

Fish populations in the English Channel

- **Massive changes in bottom assemblage composition over 100 years**
- **Interaction of climate & fishing driving changes in demersal fish**
- **Climate influenced advance of southern species**
- **Overfishing over-rides climate in bigger fish spp**
- ***Also - Good evidence of climate responses of pelagic species : cold-water Herring to warm-water pilchard(sardine) switches back to 13th century (Southward et al. 1988 JMBA, Hawkins et al 2003 STOTEN)***

SHIFTS IN RANGE and CHANGES IN ABUNDANCE ON ROCKY SHORES – a sentinel system for the seas

Update on Hawkins et al 2009 MEPS, 2019 (CUP book on Interactions in Marine Benthos, Chapter on NE Atlantic)

Rocky shores as sentinels for monitoring global change and its interaction with regional and local scale impacts

- Easily accessible and sampled as 2- dimensional
- Local patterns well-described and processes well-understood from experimental ecology (fruit-fly of ecology) Hawkins et al 2020 JMBA 100
- NO major taxonomic problems in Europe, good ID guides
- Excellent baselines from 1940s and 1950s
- N and S pairs of species
- INEXPENSIVE
- Changes on the shore reflect those offshore (Southward et al 1995; 2004)

Rocky shore: long-term & broadscale surveys

- Building on surveys of Crisp, Southward and Fischer-Piette in 1940s and 1950s – questions on biogeographic patterns and causes
- Time-series by Southward (1950s-1987), Hawkins (1980-2024), Mieszkowska, Hawkins et al (2001-2024 Marclim), on shores in South-west England - questions on climate fluctuations and more recent anthropogenic climate change

MarClim resurvey locations (2000s and to date)

•Building on the Crisp and Southward baseline from 1950s

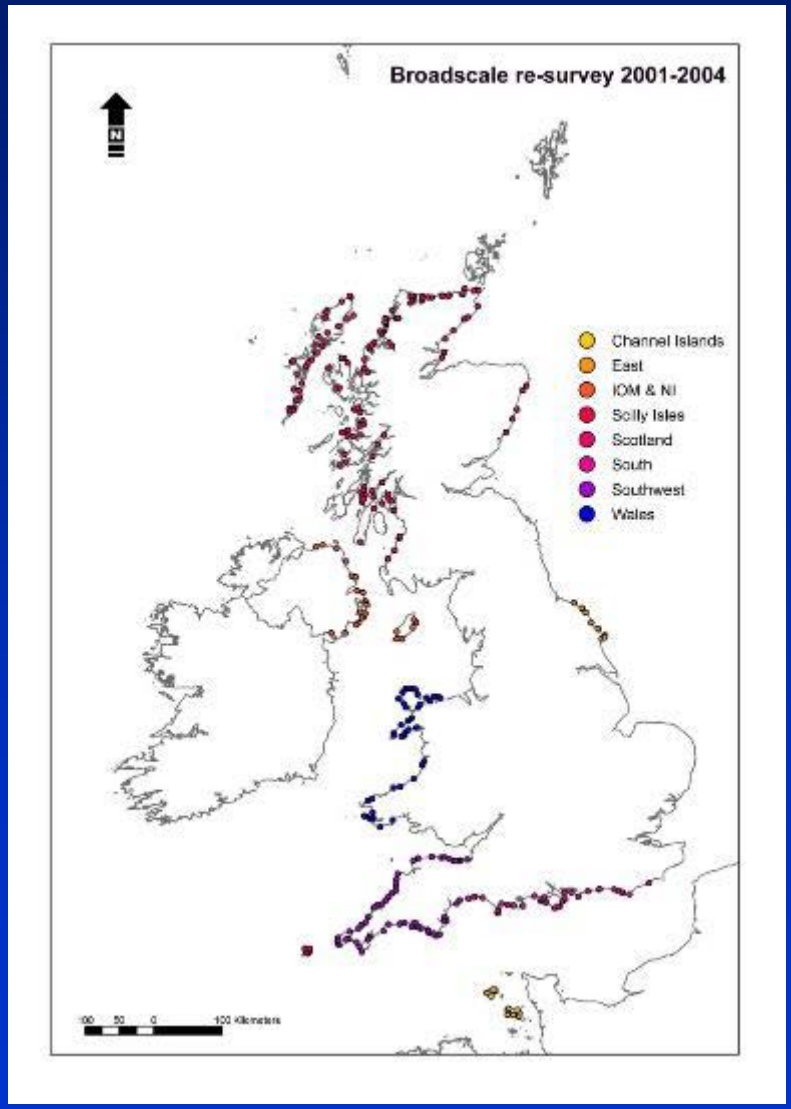
•over 400 sites surveyed

• sites beyond range edges

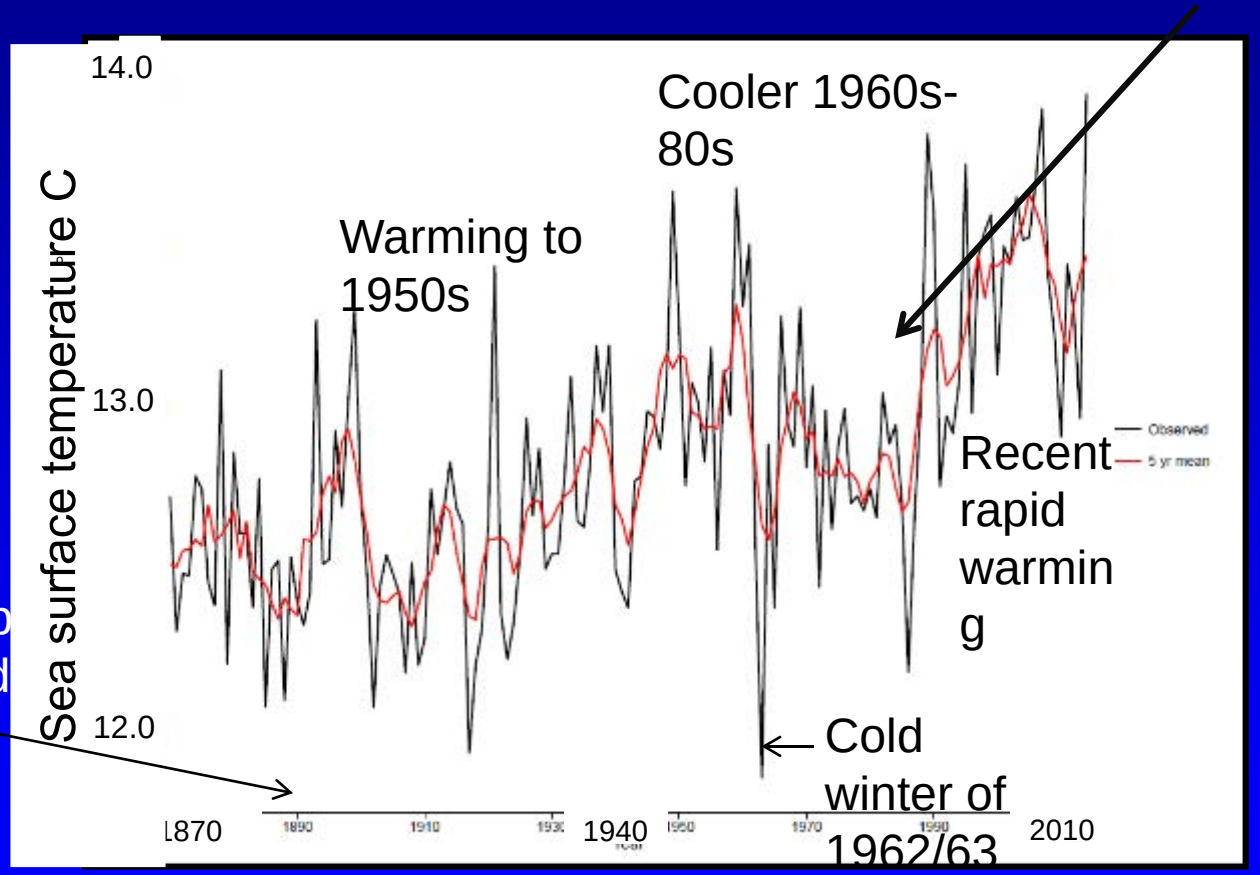
• Irish team established 2003

• 70 Irish sites surveyed by Crisp and Southward in 1950s re-visited in 2003-2005

• intercalibration in N. Ireland of UK and Irish teams



Rapid warming from late 1980s onwards



Mean annual sea surface temperature (SST) 1870 - 2014 off Plymouth, UK

(Data source: Meteorological Office Hadley Centre; collected by MBA/PML)

1950s baseline – Crisp and Southward 1958 JMBA

Chthamalus stellatus

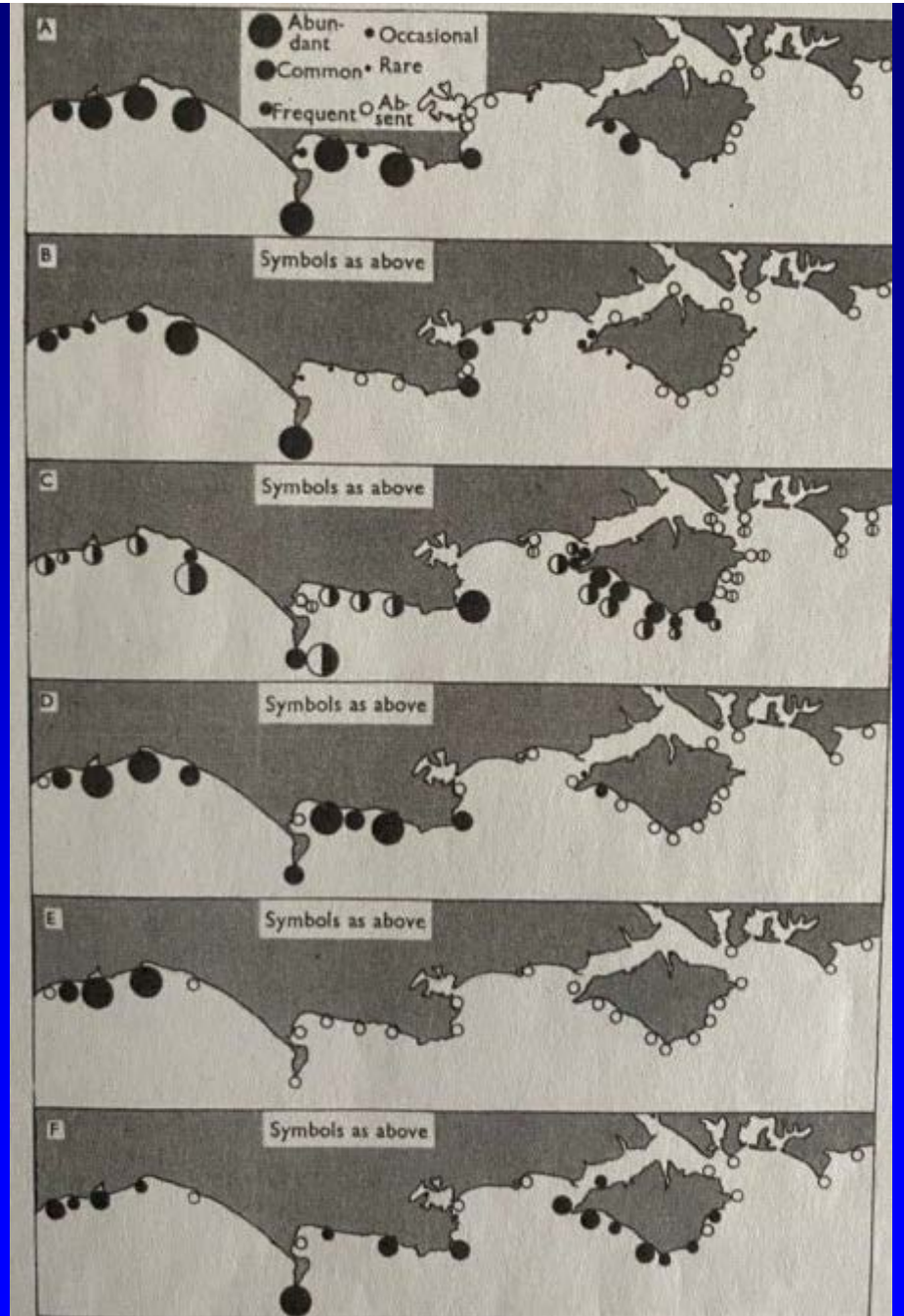
Balanus perforatus

Patella aspera & P. depressa

Gibbula umbilicalis

Monodonta lineata

Littorina neritoides



Pd

Pa

1950s baseline – Crisp and Southward 1958 JMBA

Chthamalus stellatus

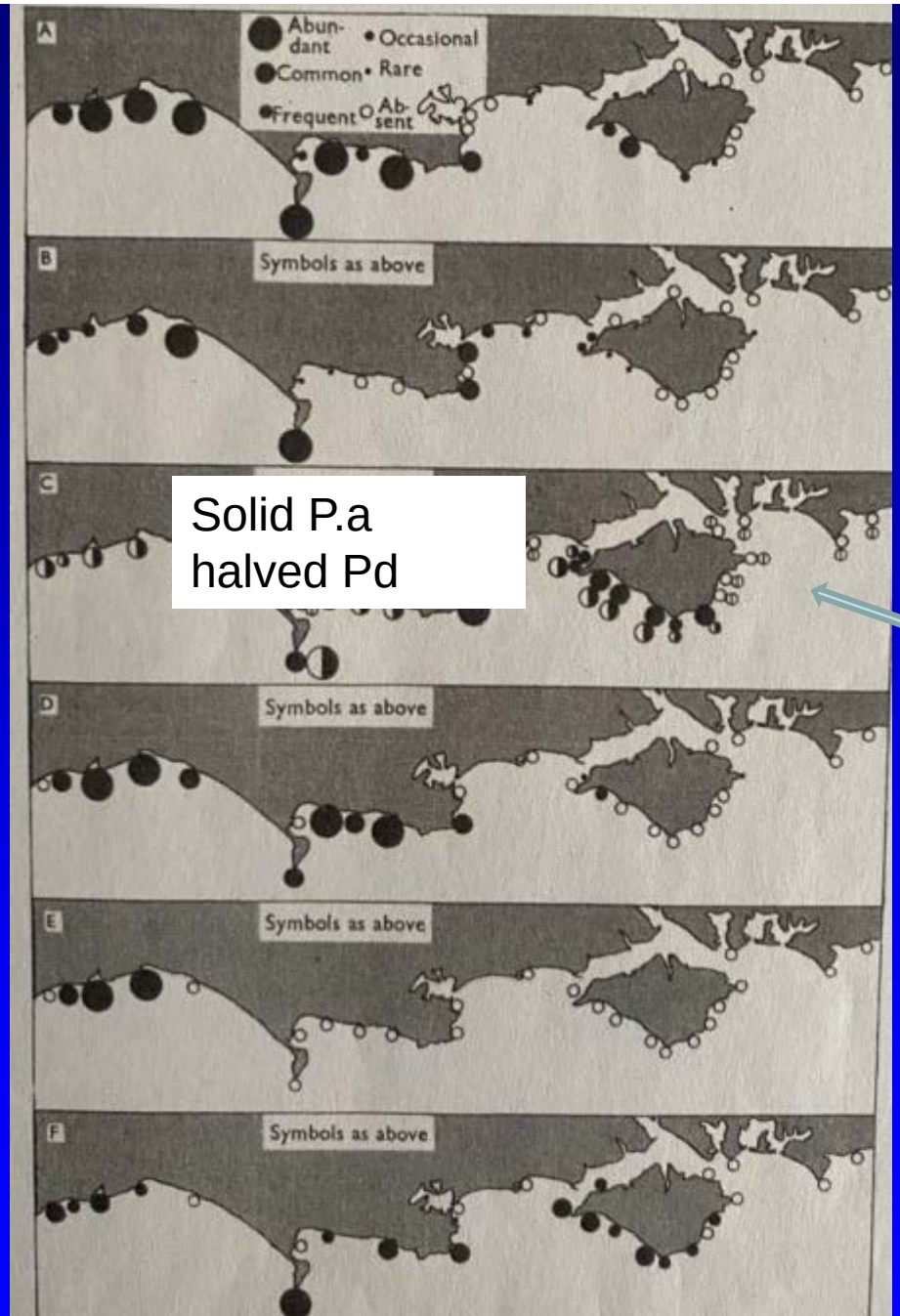
Balanus perforatus

Patella aspera & P. depressa

Gibbula umbilicalis

Monodonta lineata

Littorina neritoides



Solid P.a halved Pd

No real changes up to early 1980s in most species in terms of range.

Range edges between Portland and Isle Of Wight (mostly)

1950s baseline – Crisp and Southward 1958 JMBA

Chthamalus stellatus

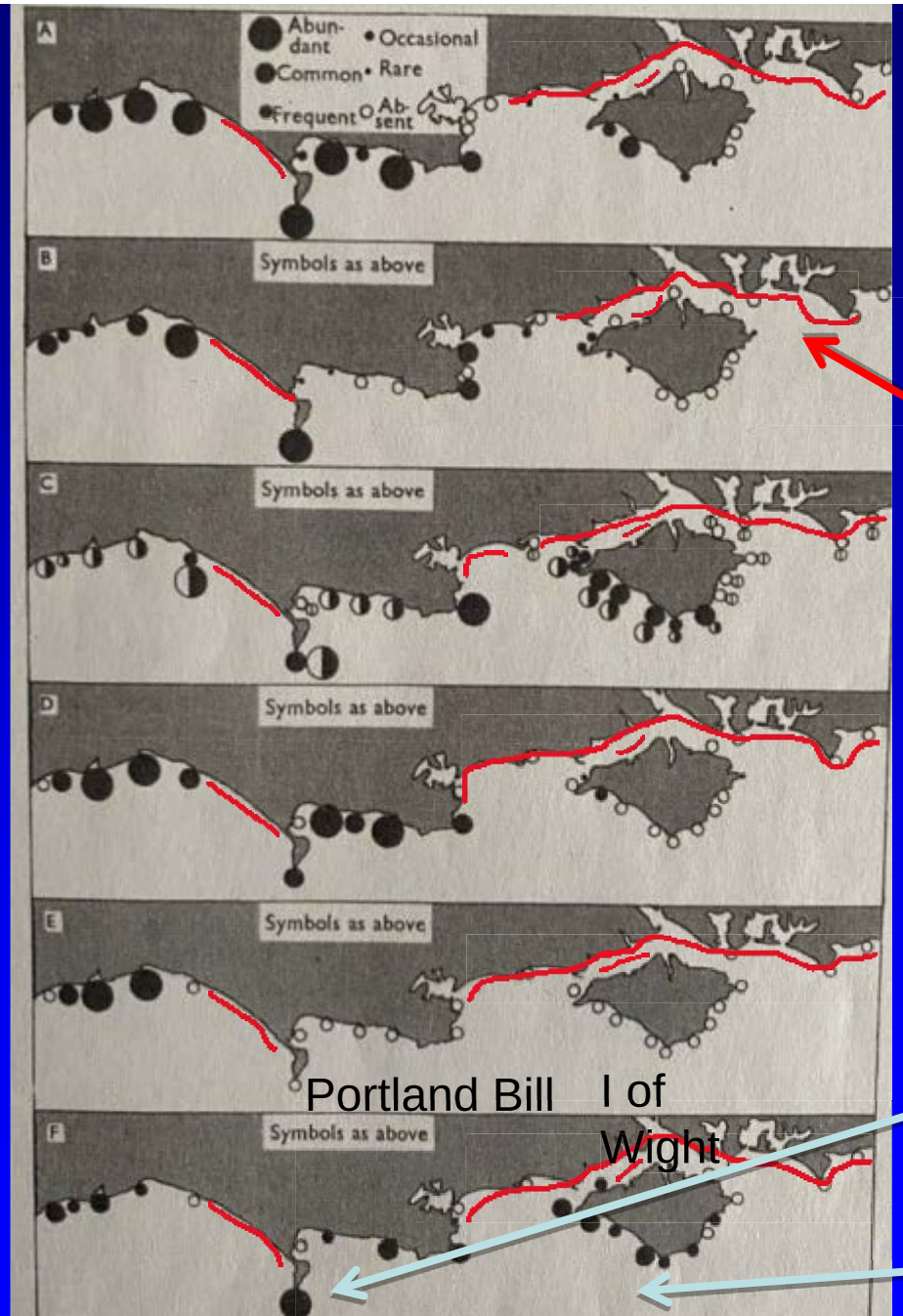
Balanus perforatus

Patella aspera & P. depressa

Gibbula umbilicalis

Monodonta lineata

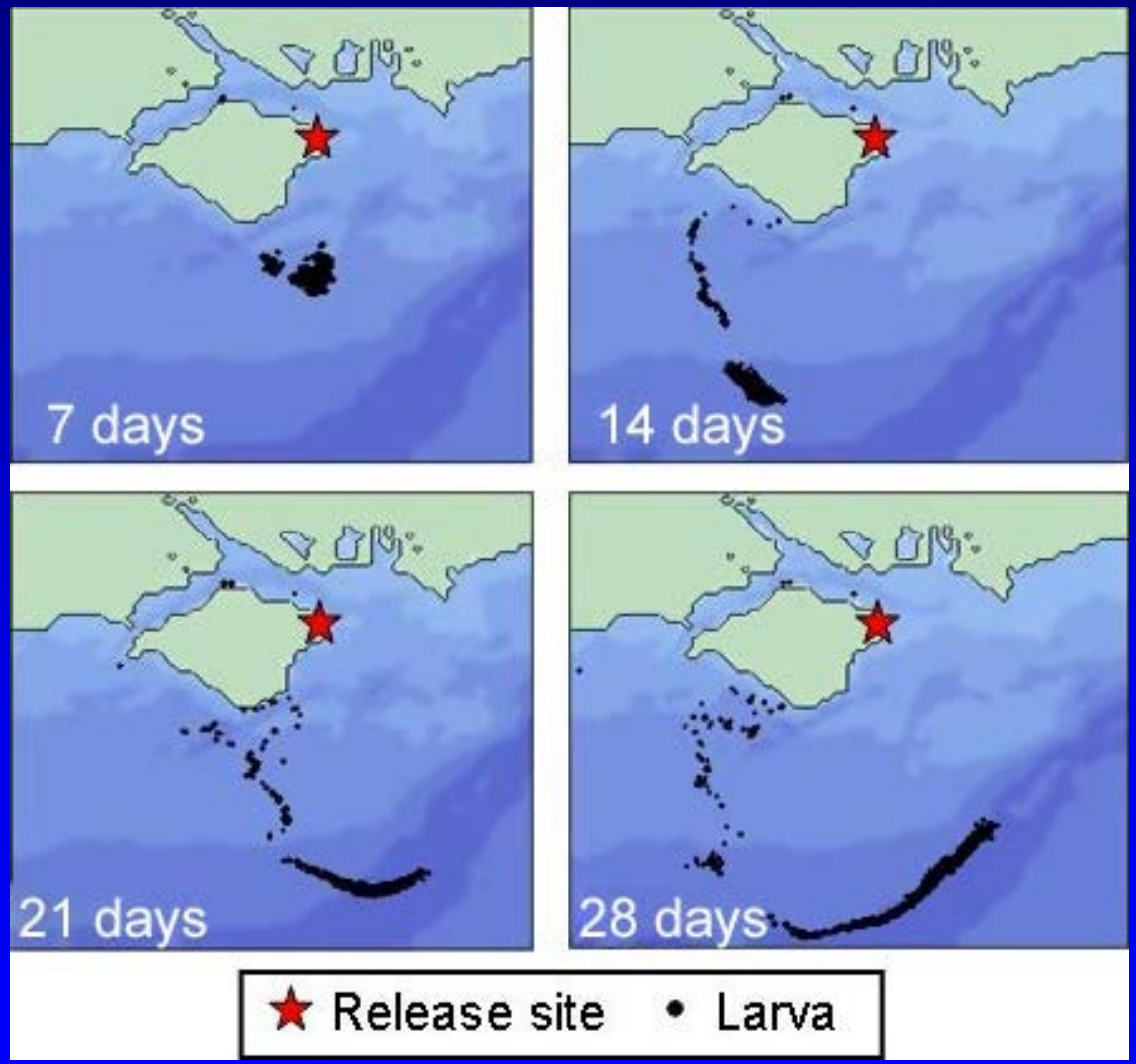
Littorina neritoides



Unsuitable soft habitat – only artificial e.g. piers and sea walls.

Hydrographic barriers at Portland and off Isle of Wight

The Isle Of Wight as a barrier



Work by Sally Keith at Bournemouth

Hydrodynamic models of larval release – Keith et al 2011 Diversity and Distributions

1950s baseline – Crisp and Southward 1958 JMBA

Chthamalus stellatus, split into two species, *C.stellatus* and *C.montagui* in 1976 by Southward

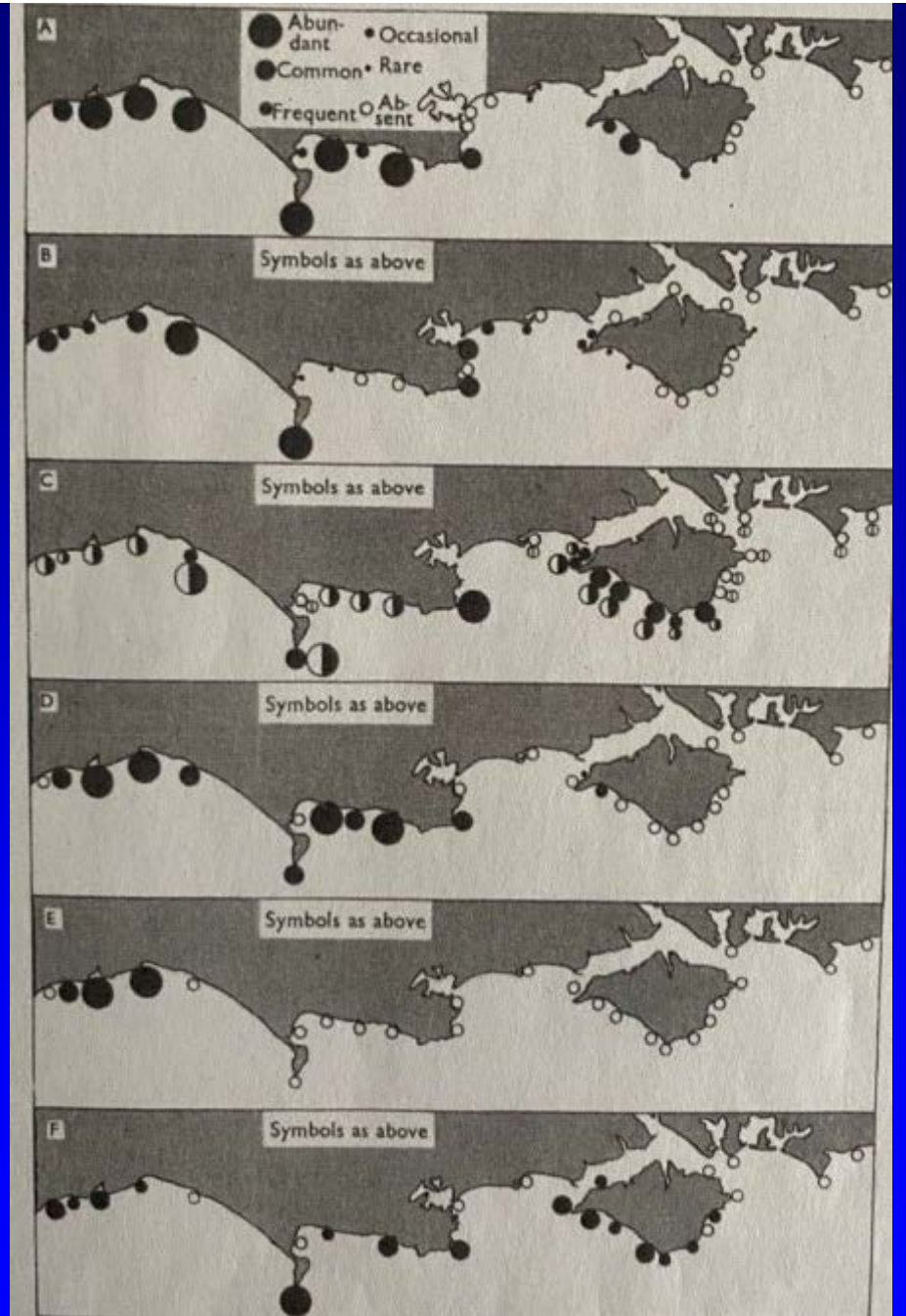
Balanus perforatus now Perforatus perforatus

Patella aspera (now P.ulyssiponesis) & P. depressa

Gibbula umbilicalis (now Steromphala)

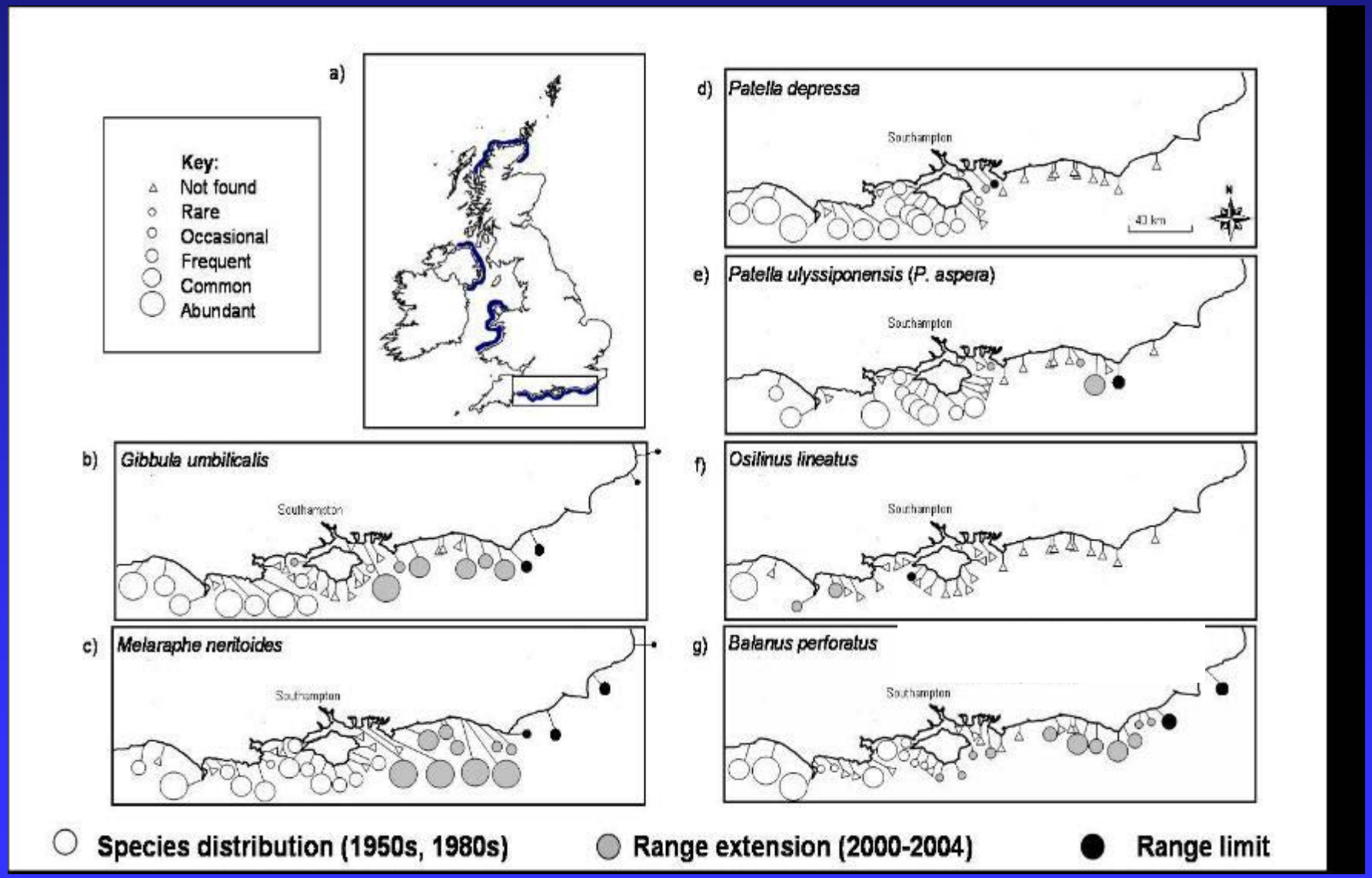
Monodonta (Osilinus and then Phorcus) lineata

Littorina (now Melaraphe) neritoides



What's changed other than the names of most species?

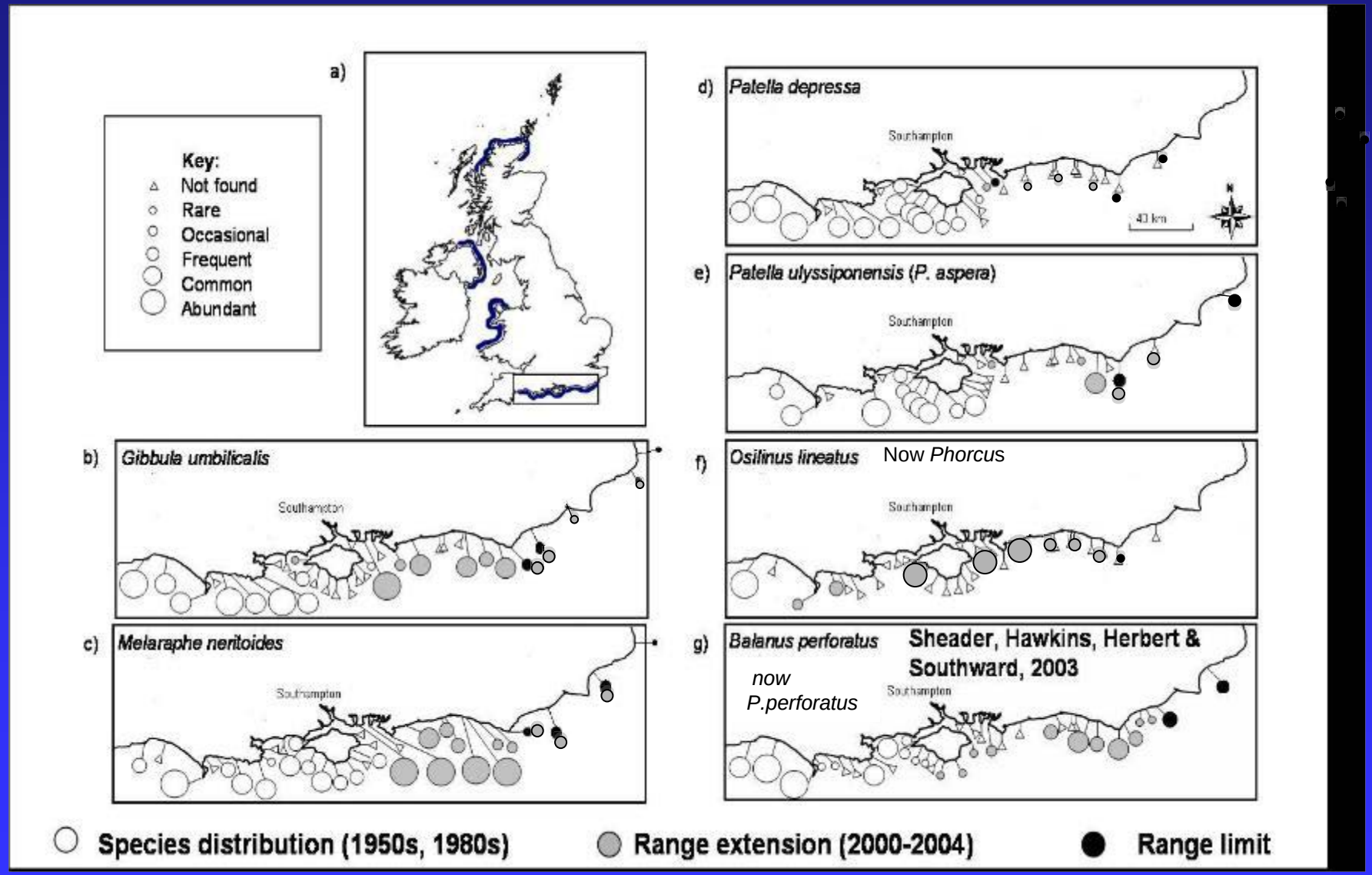
Range edge distribution of intertidal species in the English Channel (summer 2004-2006)



1980s) 2004)

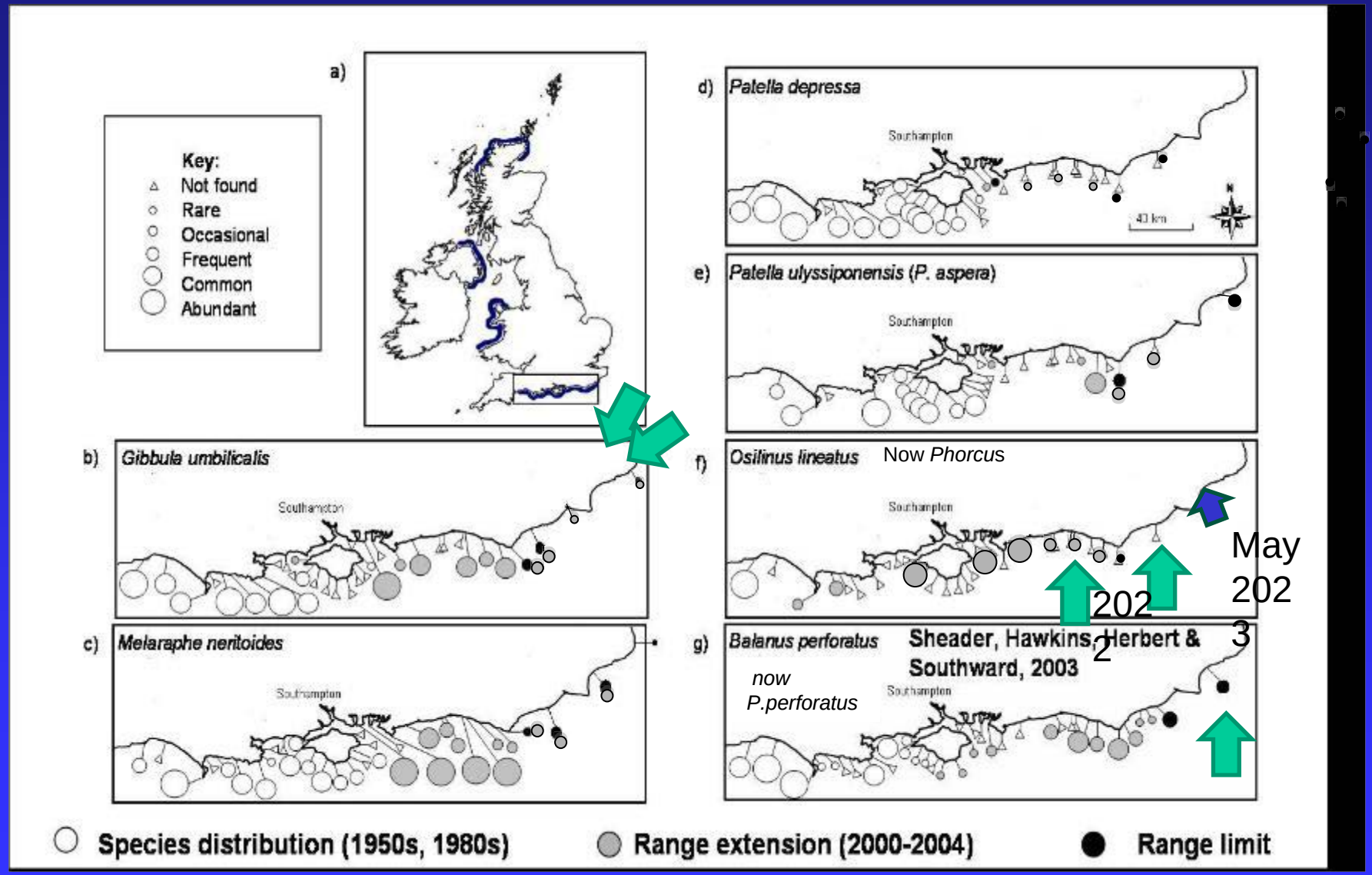
Hawkins, Mieszkowska, Herbert, Moschella new data, 2006

Range edge distribution of intertidal species in the English Channel (2010-2020)



1980s) Hawkins, Mieszkowska, Herbert, Moschella new data, 2010-20

Range edge distribution of intertidal species in the English Channel (2020-2022 and 23)



1980s) Hawkins, Mieszkowska, Herbert, Moschella, new data, 2010-20

1950s baseline – Crisp and Southward 1958 JMBA

Chthamalus stellatus, split into two species, *C.stellatus* and *C.montagui* in 1976 by Southward

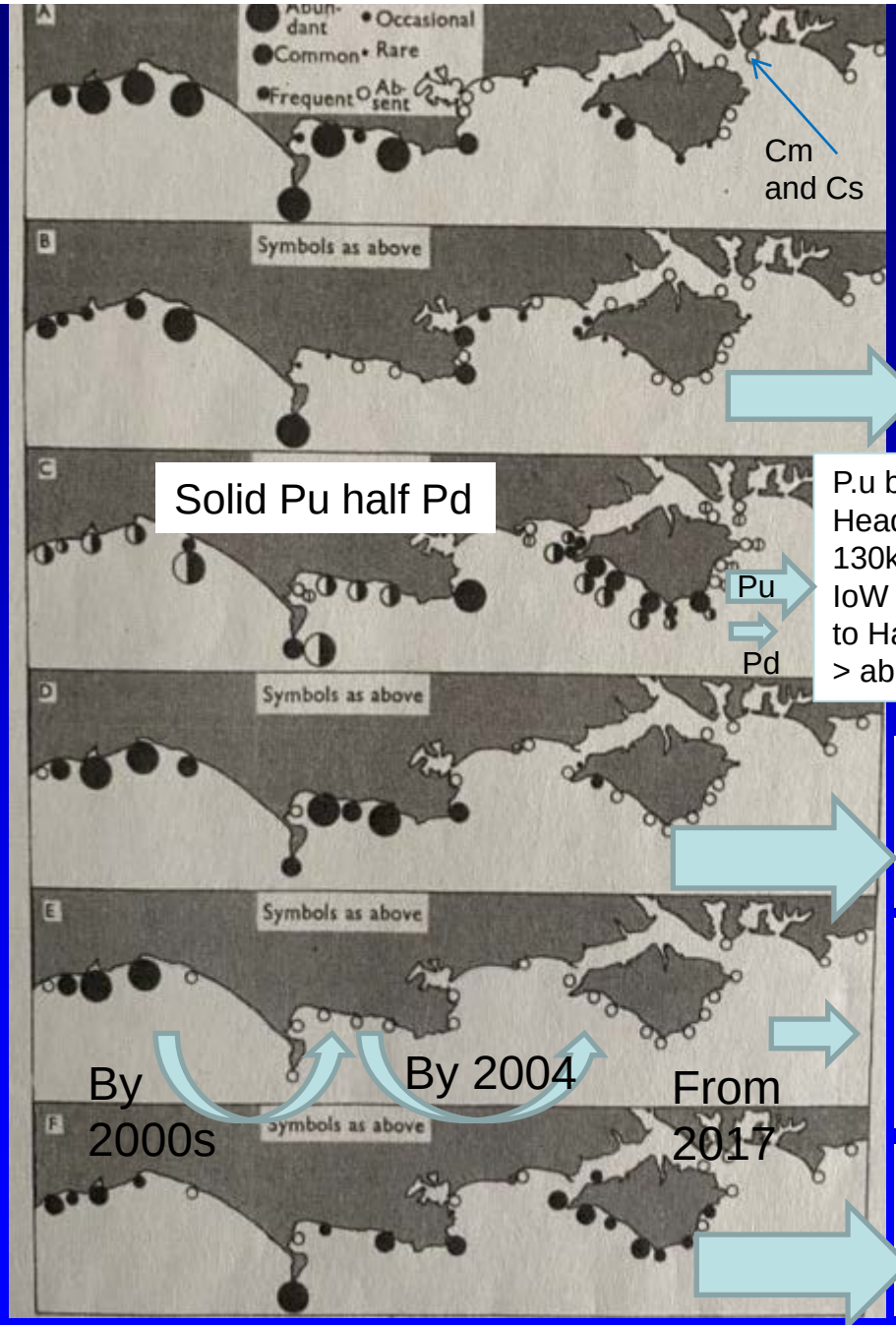
Balanus perforatus now *Perforatus perforatus*

Patella aspera (now *P.ulyssiponesis*) & *P. depressa*

Gibbula umbilicalis (now *Steromphala*)

Monodonta (*Osilinus* and then *Phorcus*) *lineata*

Littorina (now *Melaraphe*) *neritoides*



No major change in range but more abundant Herbert et al 2007 MEPS, 2009 JMBA

Major range extension by early 2000s – 150km
Herbert et al, 2003 JMBA

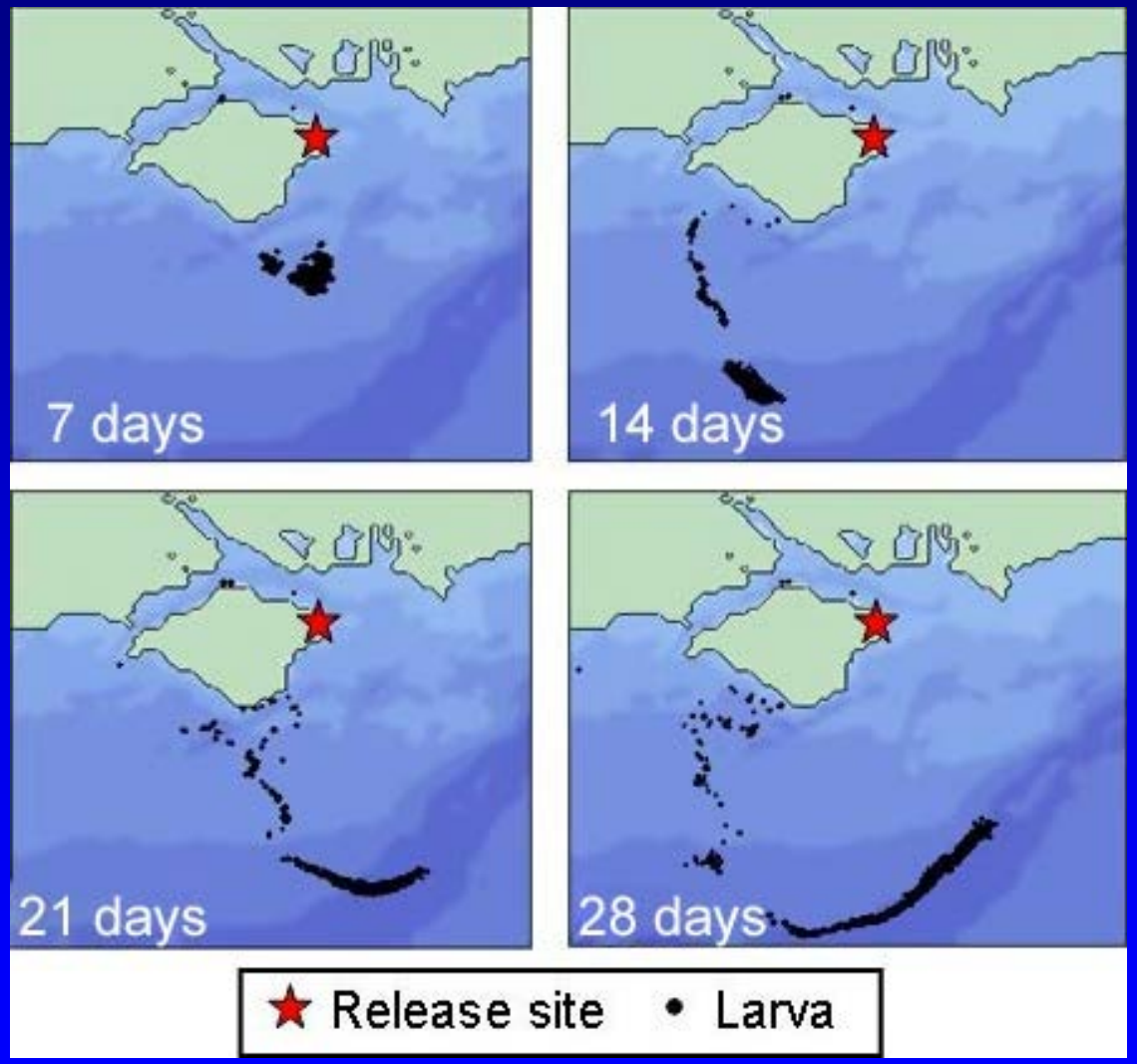
P.u breeding pops east to Beachy Head (100 km, individuals beyond 130km); P.d. breeding pops along IoW to Southsea (20km), individuals to Hastings since 2010(130km). Both > abundance within range.

Major spreader since early 2000s, now on N.Kent coast (250km)

Early 2000s beyond Portland, one IoW 2004. One individual Beachy 2017. Rapid increase since 2019 along to Hastings. Meiszkowska et al, 2008 JMBA

Now all around British Coast, on high shore artificial structures – spread into cooler N.Sea from North and East along Channel

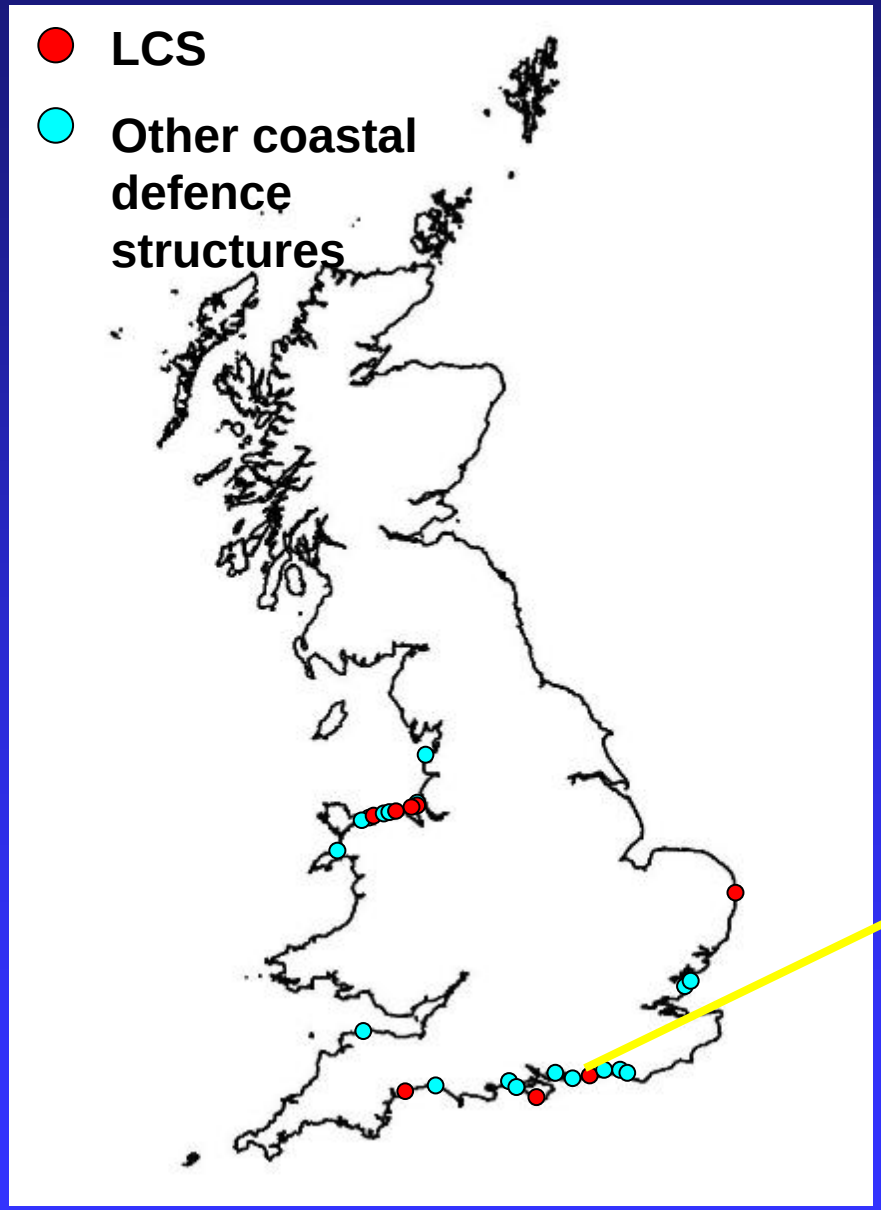
The Isle Of Wight as a hydrographic barrier



Work by Sally Keith at Bournemouth

Hydrodynamic models of larval release – Keith et al 2011 Diversity and Distributions

Broad-scale modification of coastline



Elmer defence scheme

Semibalanus balanoides (northern species)

Chthamalus montagui *Chthamalus stellatus*

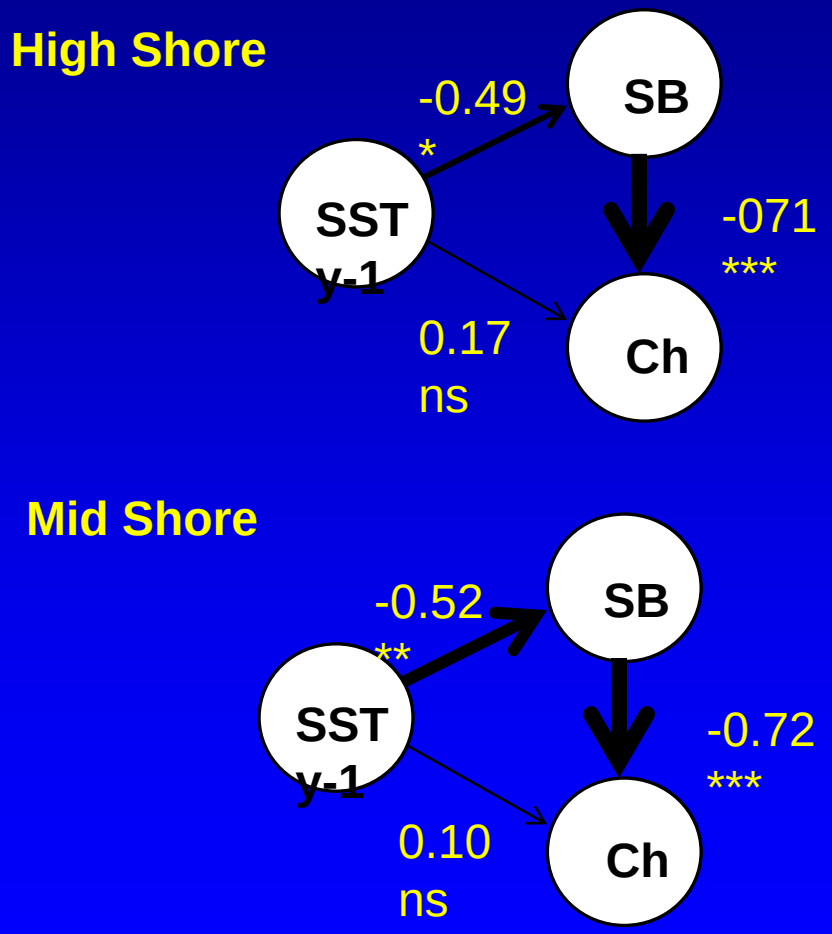
(southern species)

MBA time series: abundance of barnacles in S.W. England (8 sites south-west coast)

1997-2003 NERC small grant

Southward (1967, 1980, 1991) then Hawkins;

Is climate acting on each species directly or is climatic influence mediated by the presence of a competitor?



Causal Path Analysis

- SST the previous June directly influencing adult *S. balanoides* abundance only
- *S. balanoides* abundance influences adult Chthamalid abundance
- The influence of climate on Chthamalids is mediated by the presence of *S. balanoides*, the dominant competitor, in SW England

Model Output

Hypothesis 1

S. balanoides **recruitment driven by SST**

Hypothesis 3

S. balanoides **recruitment driven by SST**

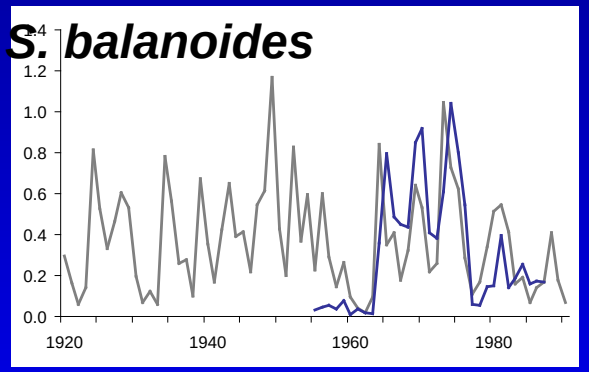
Interference competition between juvenile *S. balanoides* and Chthamalids

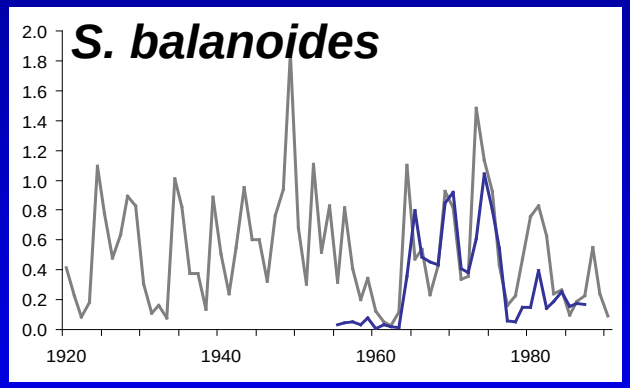
Historical abundance *S. balanoides*

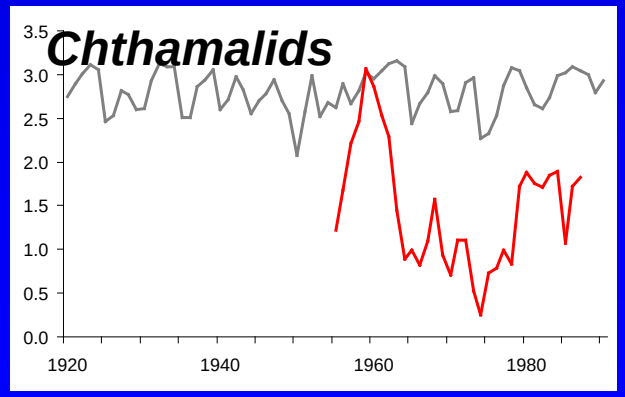
Model output

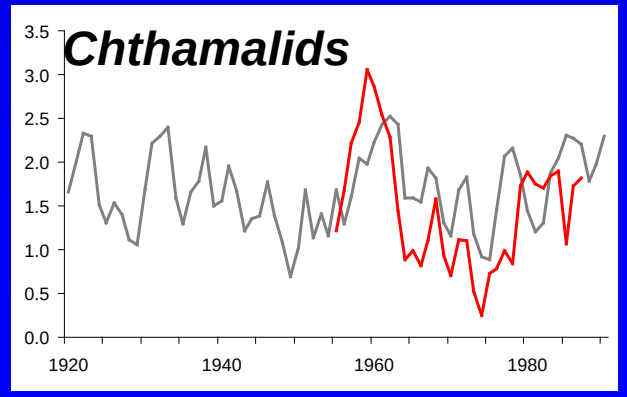
Historical abundance chthamalids

Adults per cm^2









Model output Hypothesis 3: 1955 - 2100

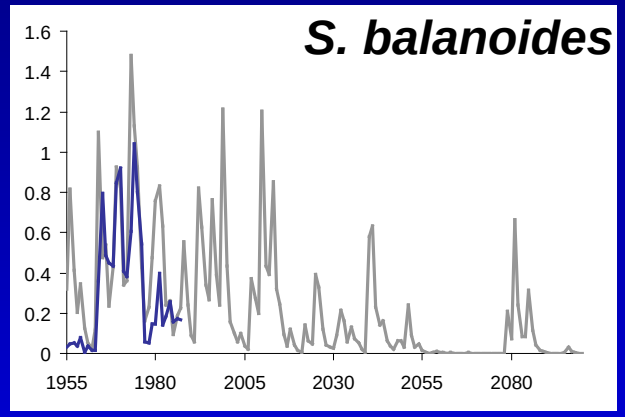
Low emissions

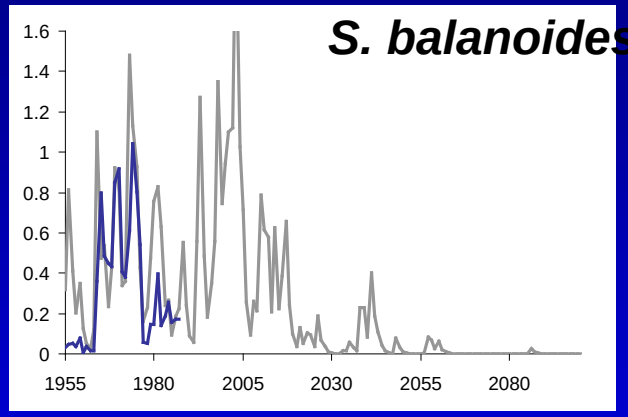
High emissions

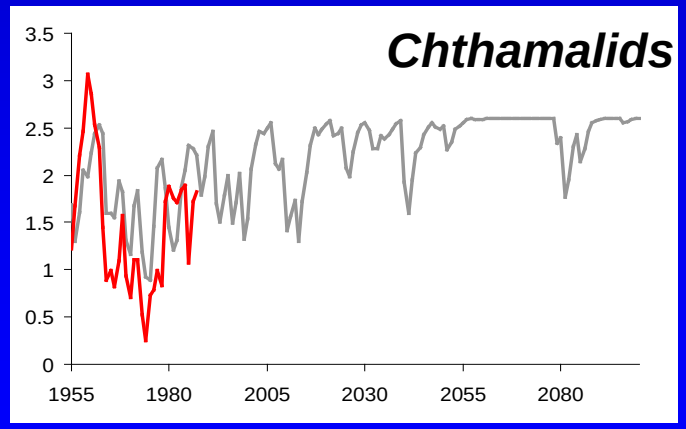
Historical abundance *S. balanoides*

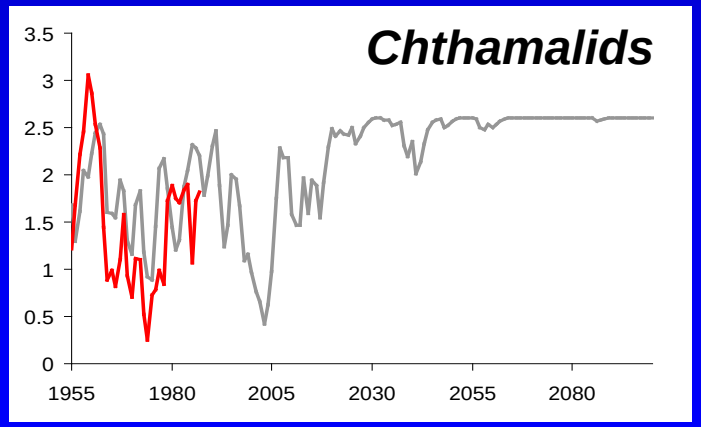
Model output

Historical abundance chthamalids







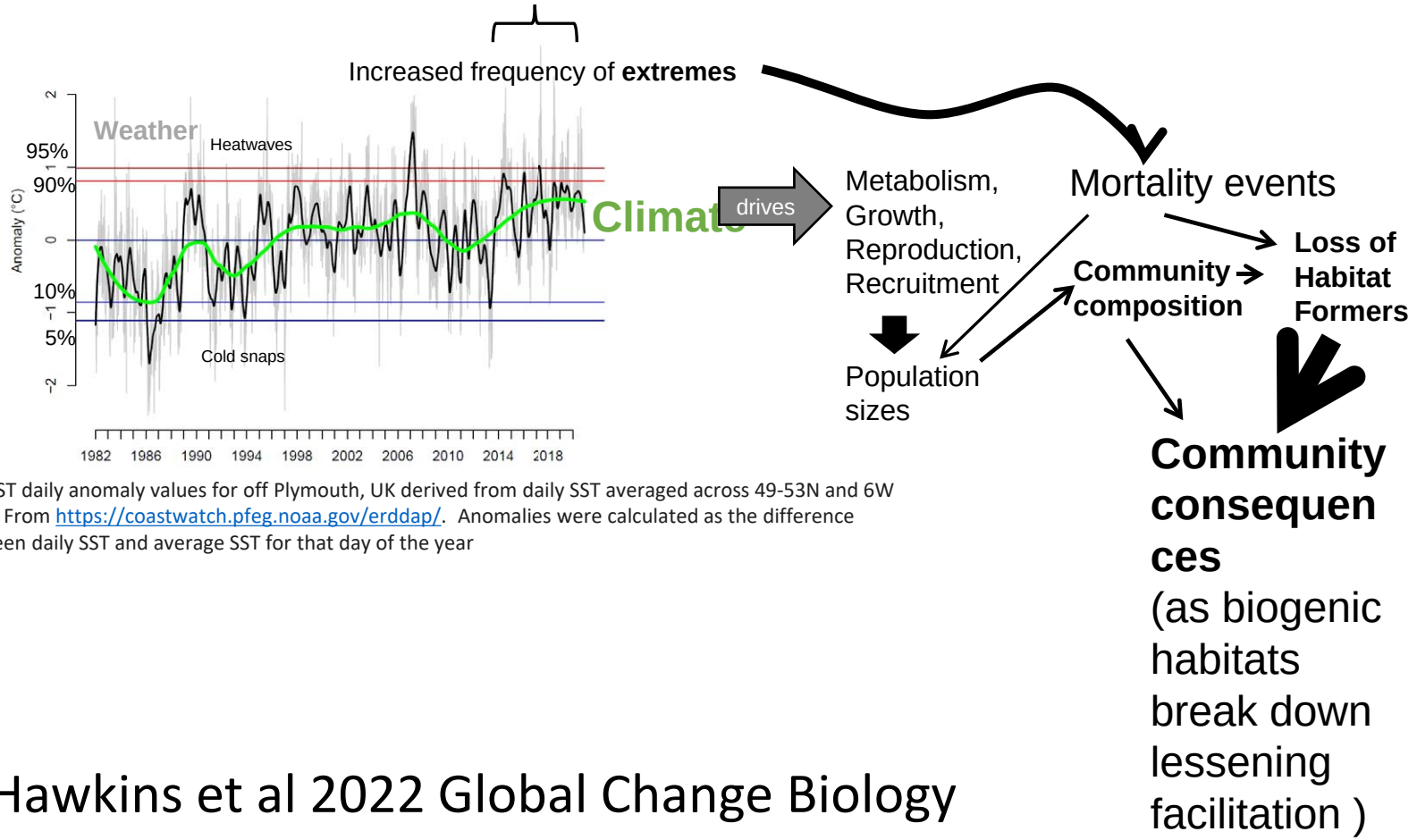


Poloczanska et al: Ecology 2008 NERC grant and MarClim project

Main messages

- Climate change is not a monotonic line
- Species responses are idiosyncratic – depending on life-histories, dispersal and habitat requirements, coastal hydrography
- Modified by biological interactions
- Ultimate factors such as temperature drive patterns but proximate effects like hydrographic barriers to dispersal very important

> Disturbance frequency – not only temperature but storms and precipitation



The SST daily anomaly values for off Plymouth, UK derived from daily SST averaged across 49-53N and 6W to 0E. From https://coastwatch.pfeg.noaa.gov/erddap/. Anomalies were calculated as the difference between daily SST and average SST for that day of the year

based on Hawkins et al 2022 Global Change Biology

Isle of Man July 2018 – top shore *Pelvetia* limited damage, *Fucus spiralis* badly affected throughout zone

Isles of Scilly, September 2020 *Pelvetia* damaged at top of zone, *F.spiralis* badly affected. Some damage to *F.vesiculosus* and *Ascophyllum* at top of zone

Artificial habitats seem particularly badly affected

Tackling the twin challenges of biodiversity loss and climate change needs the ability to separate climate driven change from regional and local scale impacts on biodiversity and ecosystems

We are stuck with climate change for the next 50 -100+ years due to inertia in the Earth-system, even as we rapidly switch to low-carbon economies

So for next 25-50 years up to net zero and beyond:

Manage interactions of climate change with those things we can control:

- Climate with global: non-native species (NZ leader in biosecurity)
- Climate with regional: overfishing and eutrophication, sediment loading
- Climate with local: pollution, inappropriate coastal development (habitat degradation)
- Ensure that climate change mitigation (renewables) and adaptation (sea-defences, flood barriers, reservoirs and irrigation) is biodiversity compatible

Hawkins, 2012 Aquatic Conservation, Hawkins et al 2013 Marine Policy, 2022 GCB

Things to discuss over the day?

- Question/issue driven – otherwise busy work
- Need for strategic sustained observing/monitoring to inform statutory monitoring and defining GES
- Build on what you have
- Use new techniques but blend with classics and intercalibrate
- In parallel experimental research and modelling to understand changes and make forecasts (predictions??)
- One size fits no-one – tailored to aims and questions
- Need careful survey design to ensure rigour and power
- Engaging citizens – but with care and consideration
- Never too late to start a time-series or repeat a broadscale survey….

TIME SERIES ARE VERY FRAGILE – no-one likes funding long-thin science

Panel discussion

Moderation by Magnus TANNERFELDT, Co-Chair of Biodiversa+, FORMAS (Sweden)

Panellists:

- **Judy FISHER**, Fisher Research Pty Ltd Director, University of Western Australia Associate Professor & Policy-management member of the BiodivMon Evaluation Committee
- **Simon GARDNER,** Policy-management Co-Chair of the BiodivMon Evaluation Committee, Independent Consultancy, UK
- **Henrique PEREIRA**, Professor of Biodiversity Conservation at iDiv, University of Halle-Wittenberg (Germany),Invited Chair at CIBIO, University of Porto (Portugal)
- **Steve HAWKINS**, Marine Biological Association of the UK, Plymouth, Emeritus Professor in the School of Oceanand Earth Science, University of Southampton, NOC Southampton, Scientific member of the Biodiversa+ AdvisoryBoard (United Kingdom)

Let’s take a break!

#BiodivMonTallinn

Posting about the BiodivMon kick-off on social media?

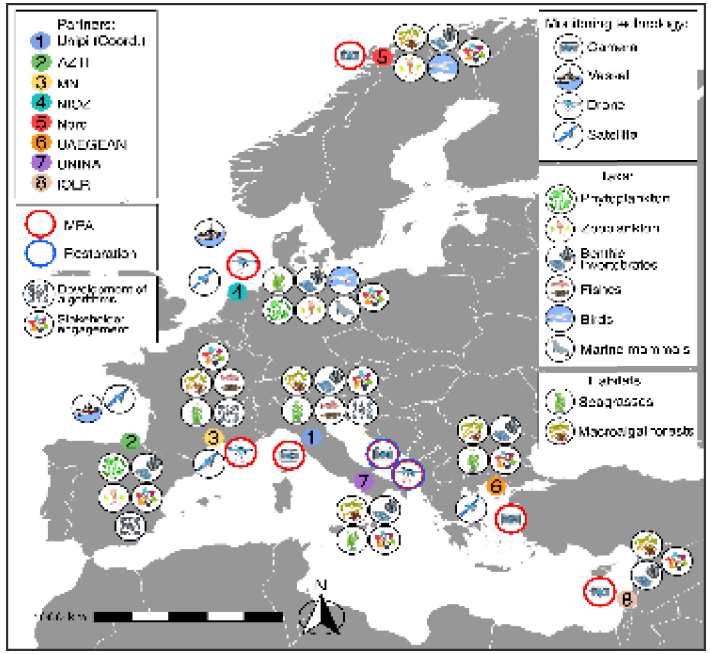
Don't forget to tag @BiodiversaPlus

Funded projects presentation – Session #1

- BioBoost+, Lisandro BENEDETTI-CECCHI
- CAMBioMed, Sylvaine GIAKOUMI
- DNASense, Francisco NASCIMENTO
- EMPHATIC, Raul VALENTE
- MOOBYF, Annette BRECKWOLDT
- NorTrack, Sarah MCLEAN
- WOBEC, Hauke FLORES

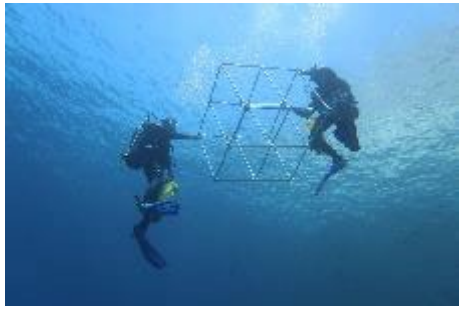
BioBoost+ - Boosting the Frequency and Scale of Marine Biodiversity Monitoring Using Digital Imagery and Artificial Intelligence

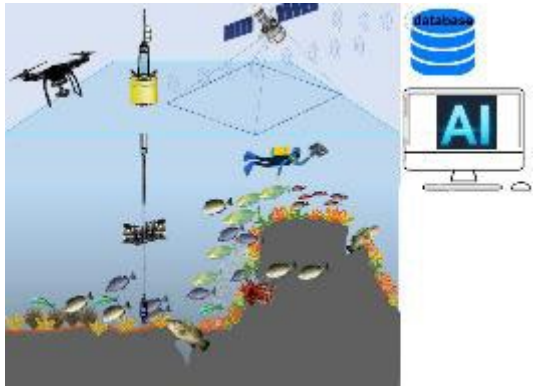
By Lisandro Benedetti-Cecchi
(lbenedetti@biologia.unipi.it)



UNIPI: L. Benedetti-Cecchi
AZTI: Josean Fernandez
MN: David Mouillot
NIOZ: Myron Peck
NORD: Mark Costello
UAEGEAN: Stelios Katzanevakis
UNINA: Simonetta Fraschetti
IOLR: Gil Rilov

BioBoost+





Objective

Improve non-invasive, cost-effective, and high-frequency sampling and identification of marine plants and animals

Impact

Improved biodiversity monitoring will allow a better understanding of large-scale phenomena, improve the capacity to predict the impacts of multiple stressors, and to develop better indicators of marine ecosystem health.

Approach

State-of-the-art AI technology & digital imagery

Taxa

Habitat-forming species, indicator species (ecological and economic importance, e.g., coastal fish, lobsters, shorebirds), invasive species, and understudied groups.

Where

European regional seas from the Mediterranean to Norwegian Seas; focus on habitat restoration projects and Marine Protected Areas (MPAs).

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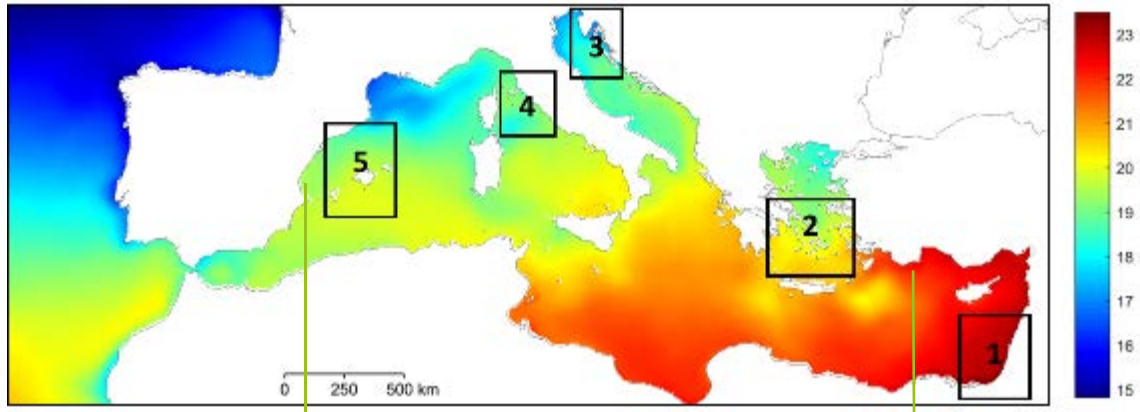
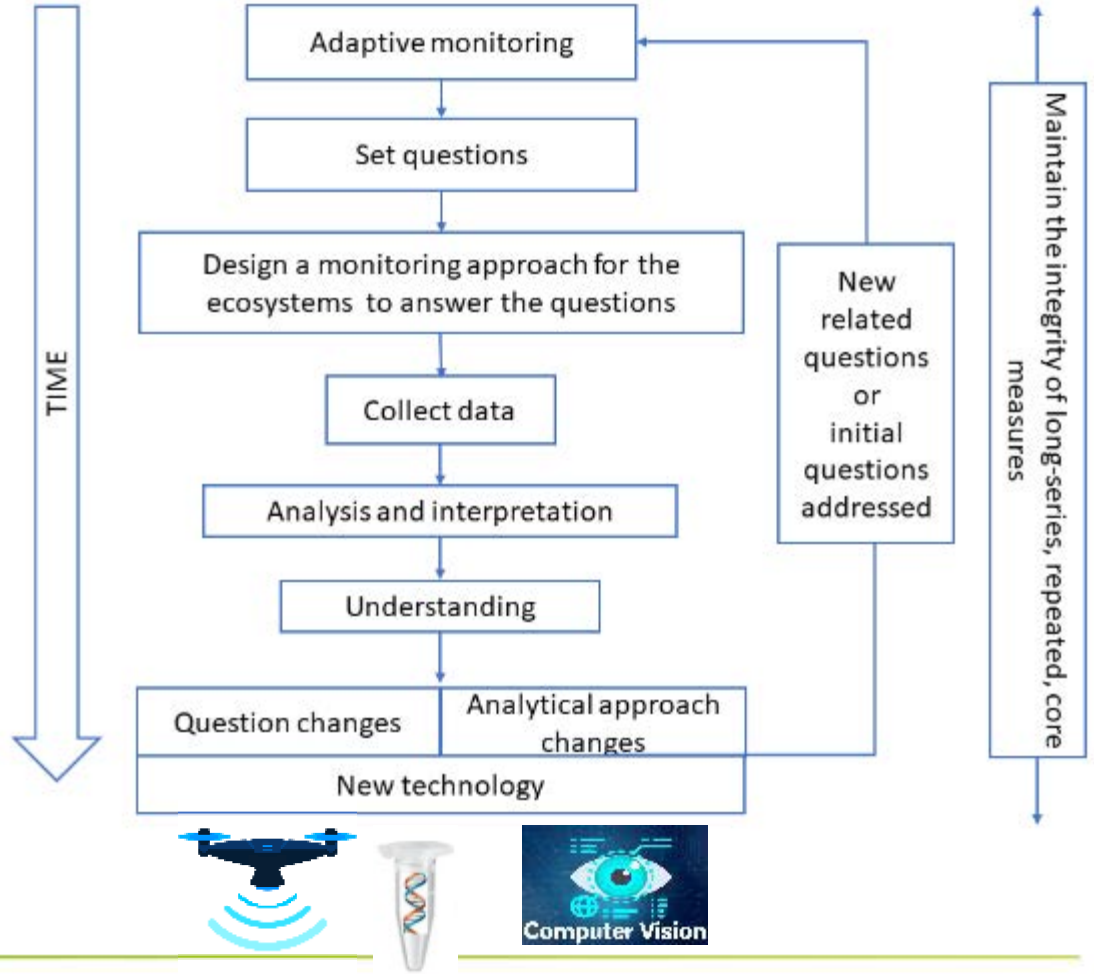
CAMBioMed: Coordinated and Adaptive Monitoring of Biodiversity change across Mediterranean rocky ecosystems

By *Sylvaine Giakoumi*,

Stazione Zoologica Anton Dohrn (Italy), University of the Aegean (Greece), CSIC (Spain), Delft University of Technology (Netherlands), University of Pisa (Italy), University of Vigo (Spain), Israel Oceanographic & Limnological Research Institute, Institute Ruder Boskovic (Croatia), Stockholm University (Sweden)

Develop an adaptive monitoring framework with stakeholders and propose a novel toolkit for monitoring changes in Mediterranean rocky ecosystems





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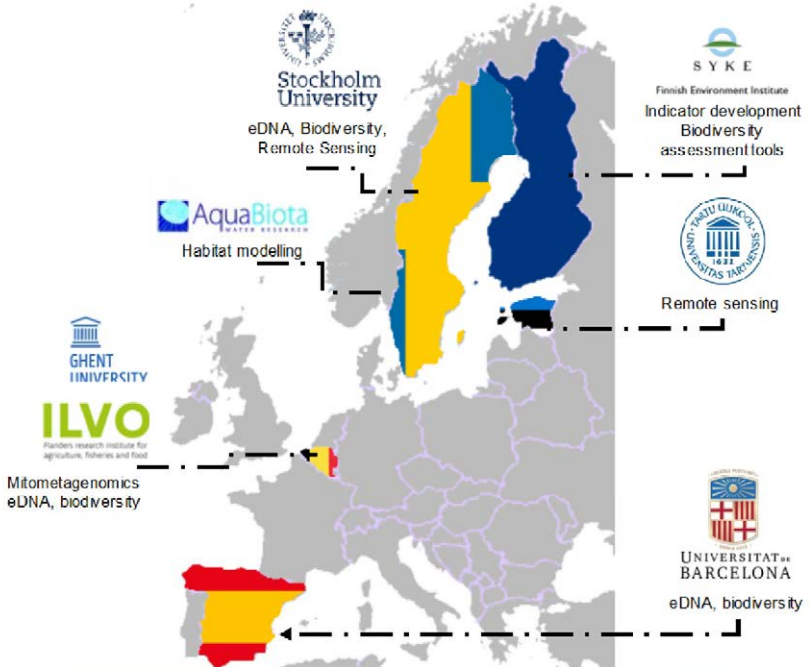
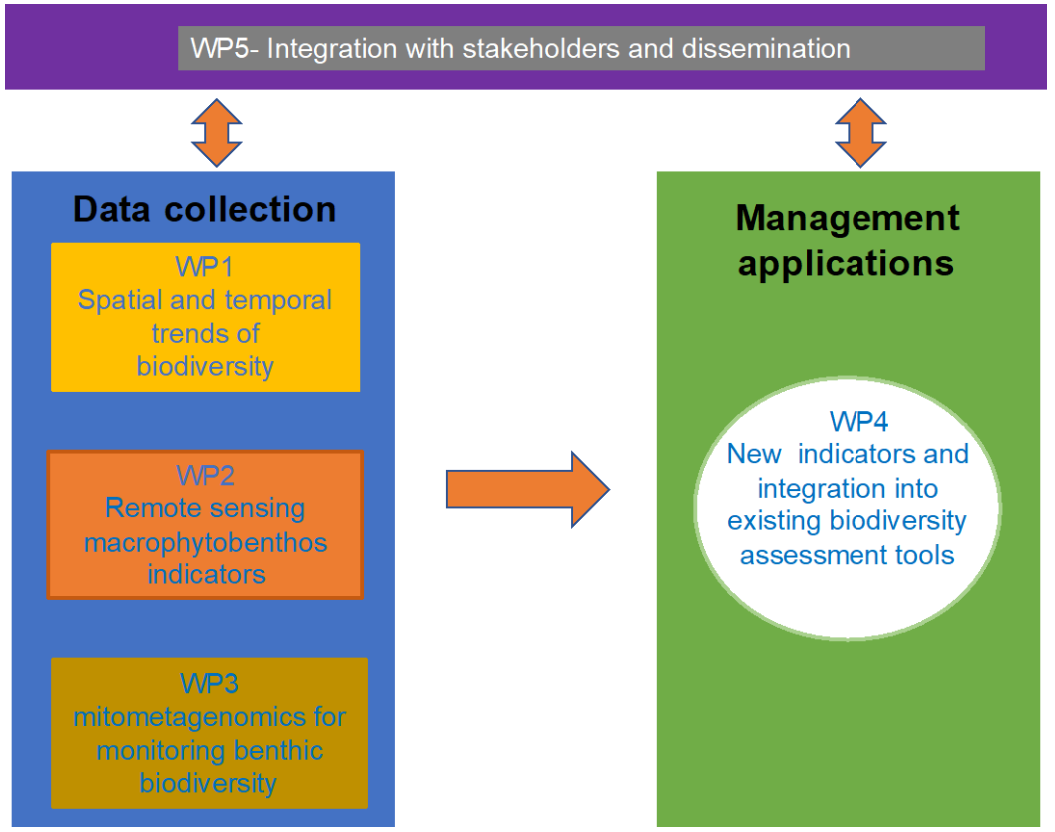
From gene to landscapes: development of environmental impact assessment tools for marine biodiversity monitoring using eDNA and remote sensing techniques- (DNASense)

By *Francisco Nascimento, Stockholm University, Sweden*



How can we capitalize on new technologies to assess marine biodiversity?

© Cienpies Design&Communication



EMPHATIC – eDNA, Microbiomes, Photogrammetry and Hormones – Assessment Techniques in Cetaceans

By ***Raul Valente***

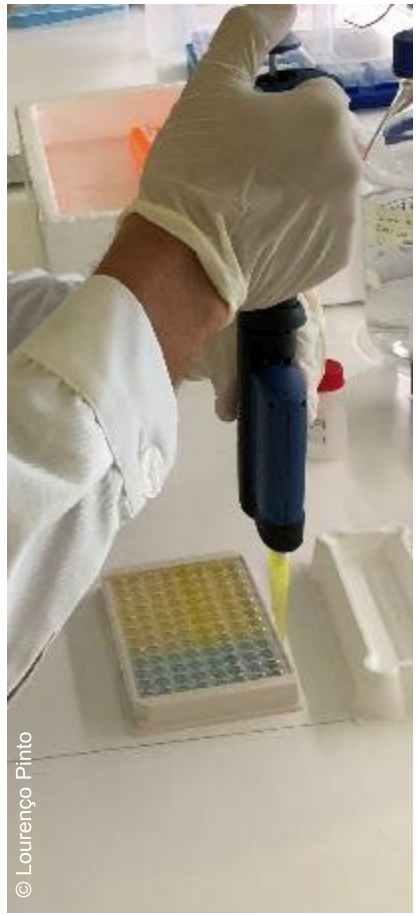
Save our **Oceans** and make **Earth** a better place

EMPHATIC

eDNA

Blow sampling

Photogrammetry



Analytical Methodologies

Necropsy

Public awareness

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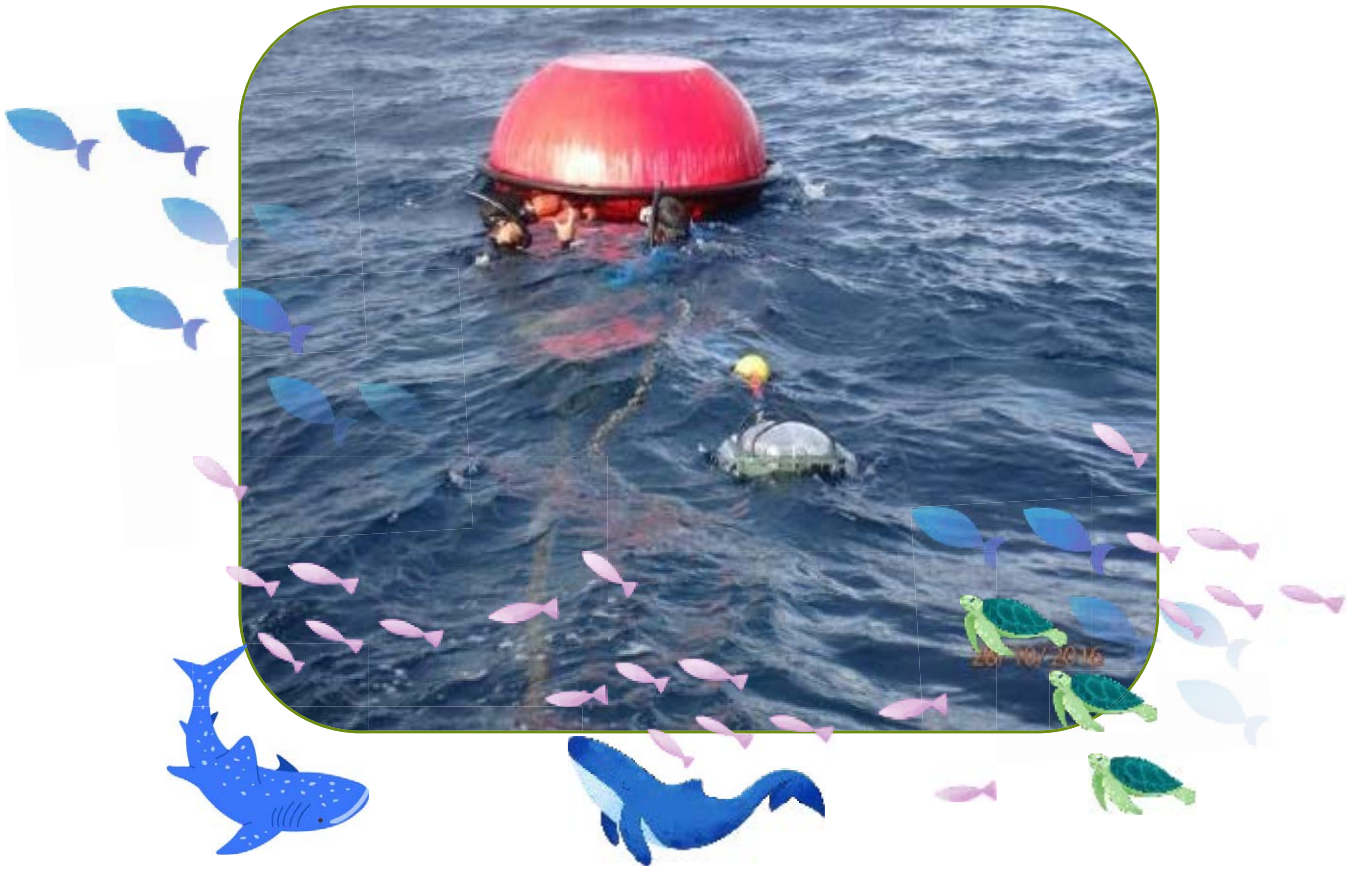
MOOBYF
(Monitoring Open Ocean BiodiversitY with Fishers)

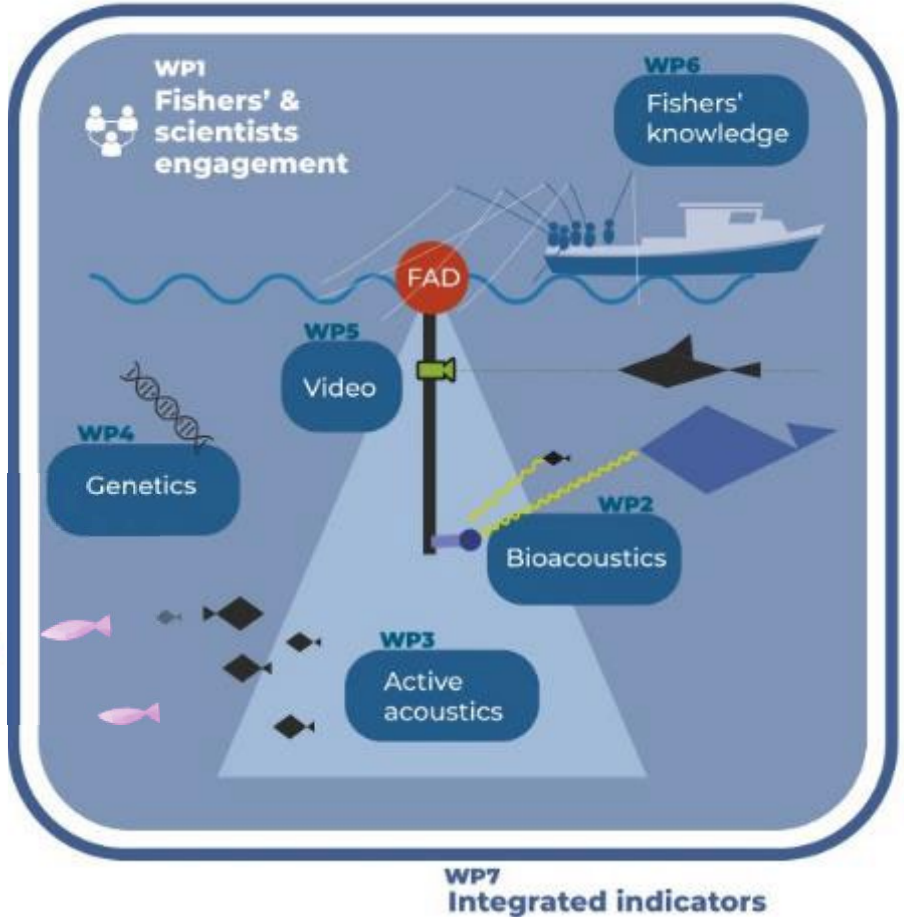
By Dr. Annette Breckwoldt (ZMT Bremen, Germany)

EU Research Institutes	Subcontracted Partners
IRD - MARBEC/SENS (Manuela Capello – F) Université de Liège (Eric Parmentier – BELG) CNR (Marco Andrello – IT) ZMT (Sebastian Ferse, Annette Breckwoldt – D) University of Padova (Leonardo Congiu – IT)	BRIN (Wudianto Wudianto – IND) MRC (Ahmed Riyaz Jauharee – MLDV)

Co-funded by the European Union

Using Fish Aggregating Devices (FADs) as scientific platforms to observe the open ocean in collaboration with fishers in Indonesia, the Maldives & Mayotte





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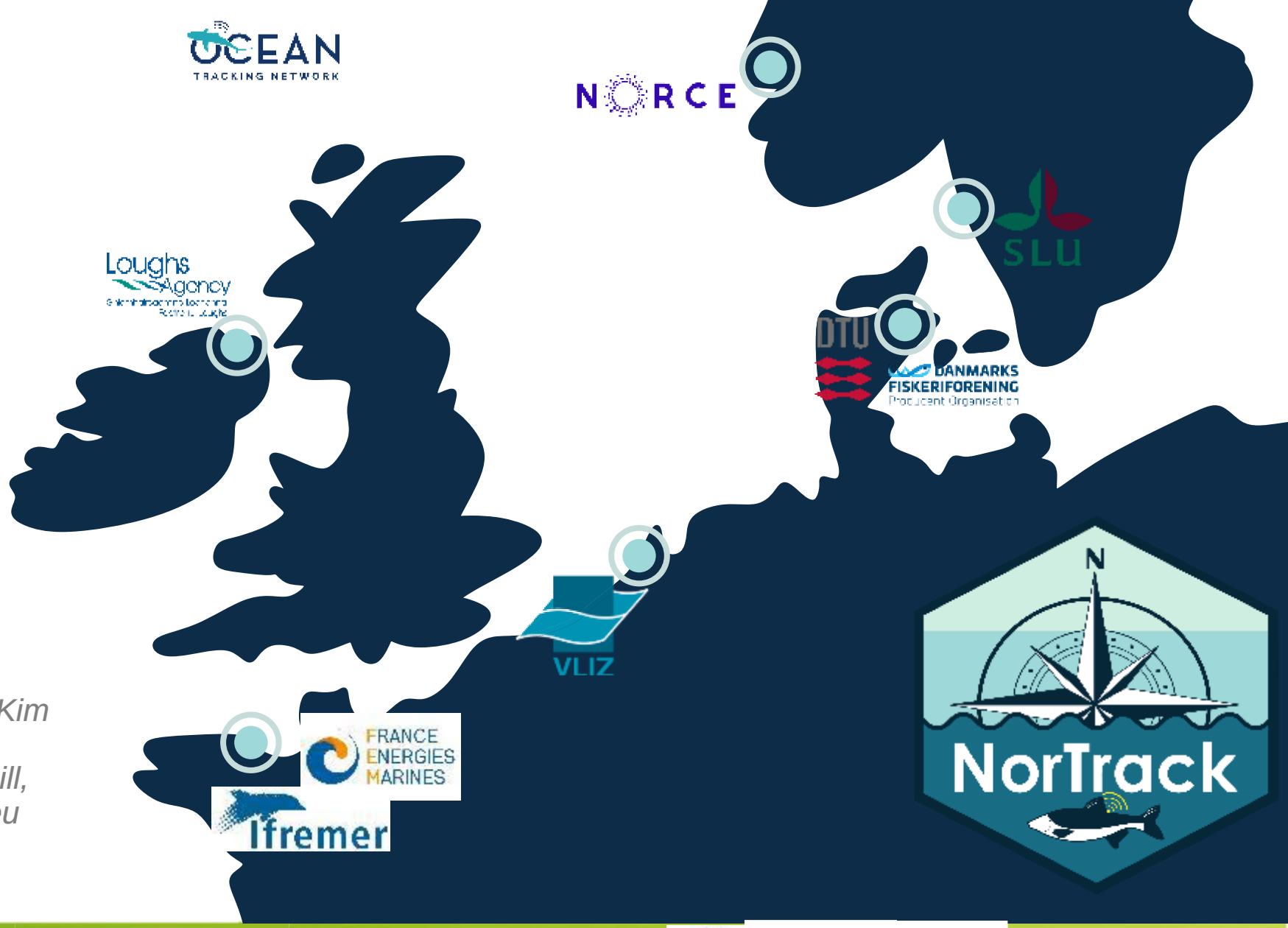
NorTrack: the Northeast Atlantic Marine Tracking Network

By *Sarah McLean*

Our team *Kim Aarestrup, Saron Behre, Kim Birnie-Gauvin, Lydie Couturier, Gustav Hellström, Robert J. Lennox, Ross McGill, Claudia Meneses, Jan Reubens, Mathieu Woillez*



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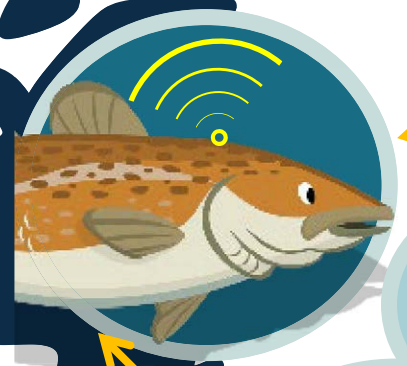
www.biodiversa.eu

epa Environmental Protection Agency
Innovationsfonden
belspo
The Research Council of Norway
OFB Office Français de la Biodiversité
anr agence nationale de la recherche
Rymdstyrelsen Swedish National Space Agency

We share the Northeast Atlantic with its biodiversity

- Biodiversity needs
- Human needs
- NorTrack

Acoustic telemetry

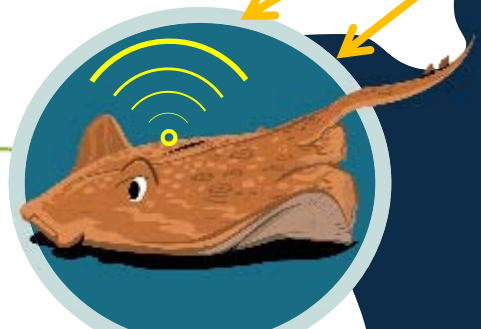


Threats

Needs

Policy

MPAs



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WEDDELL SEA OBSERVATORY OF BIODIVERSITY AND ECOSYSTEM CHANGE
WOBEC

Weddell Sea Observatory of Biodiversity and Ecosystem Change (WOBEC)

By *Hauke Flores*

AWI
Hauke Flores

Universität Rostock
Heike Link

Stockholm University
Susa Niiranen

Università degli Studi di Padova
Chiara Papetti

Norsk Polarinstitutt
Sébastien Moreau

rijksuniversiteit groningen
Jacqueline Stefels

UiT The Arctic University of Norway
Karley Campbell

natural sciences .be
Anton Van de Putte

Institute of Oceanology Polish Academy of Sciences
Josef Wiktor

WAGENINGEN UNIVERSITY & RESEARCH
Fokje Schaafsma

Claire Christian

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Bundesministerium für Bildung und Forschung

MUR

NWO Netherlands Organisation for Scientific Research

Rymdstyrelsen Swedish National Space Agency

belspo

Ministry of Agriculture, Nature and Food Quality

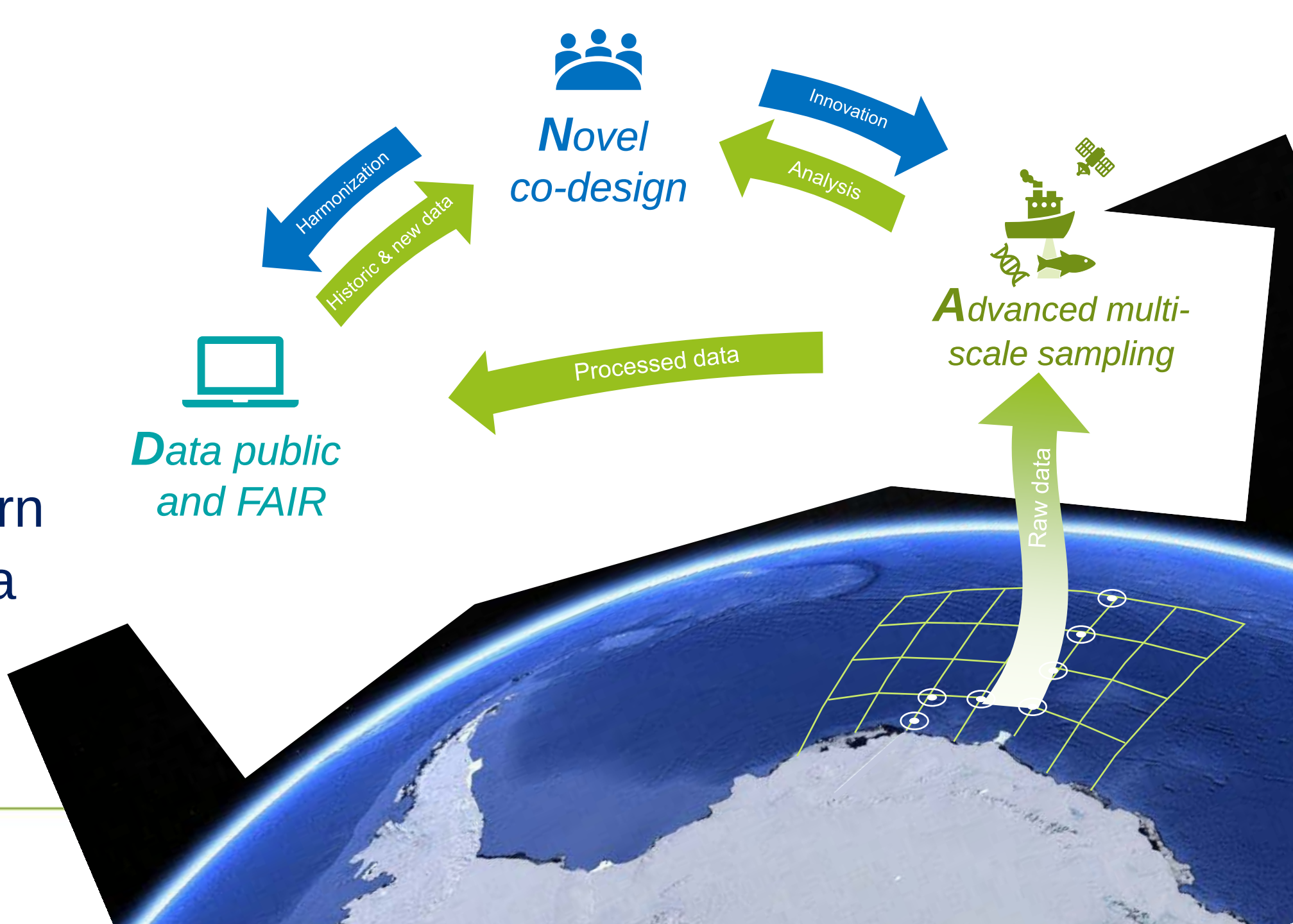
National Science Centre Poland

The Research Council of Norway

WEDDELL SEA OBSERVATORY OF BIODIVERSITY AND ECOSYSTEM CHANGE

WOBEC

"*DNA*" of a long-term observatory in the Eastern Weddell Sea



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Panel discussion

moderated by Mora ARONSSON, Swedish University of Agricultural Sciences (Sweden)

- BioBoost+, Lisandro BENEDETTI-CECCHI
- CAMBioMed, Sylvaine GIAKOUMI
- DNASense, Francisco NASCIMENTO
- EMPHATIC, Raul VALENTE
- MOOBYF, Annette BRECKWOLDT
- NorTrack, Sarah MCLEAN
- WOBEC, Hauke FLORES

Time for lunch

Let’s start again at 1:30

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Posting about the BiodivMon kick-off on social media?

Don't forget to tag @BiodiversaPlus

Funded projects presentation – Session #2

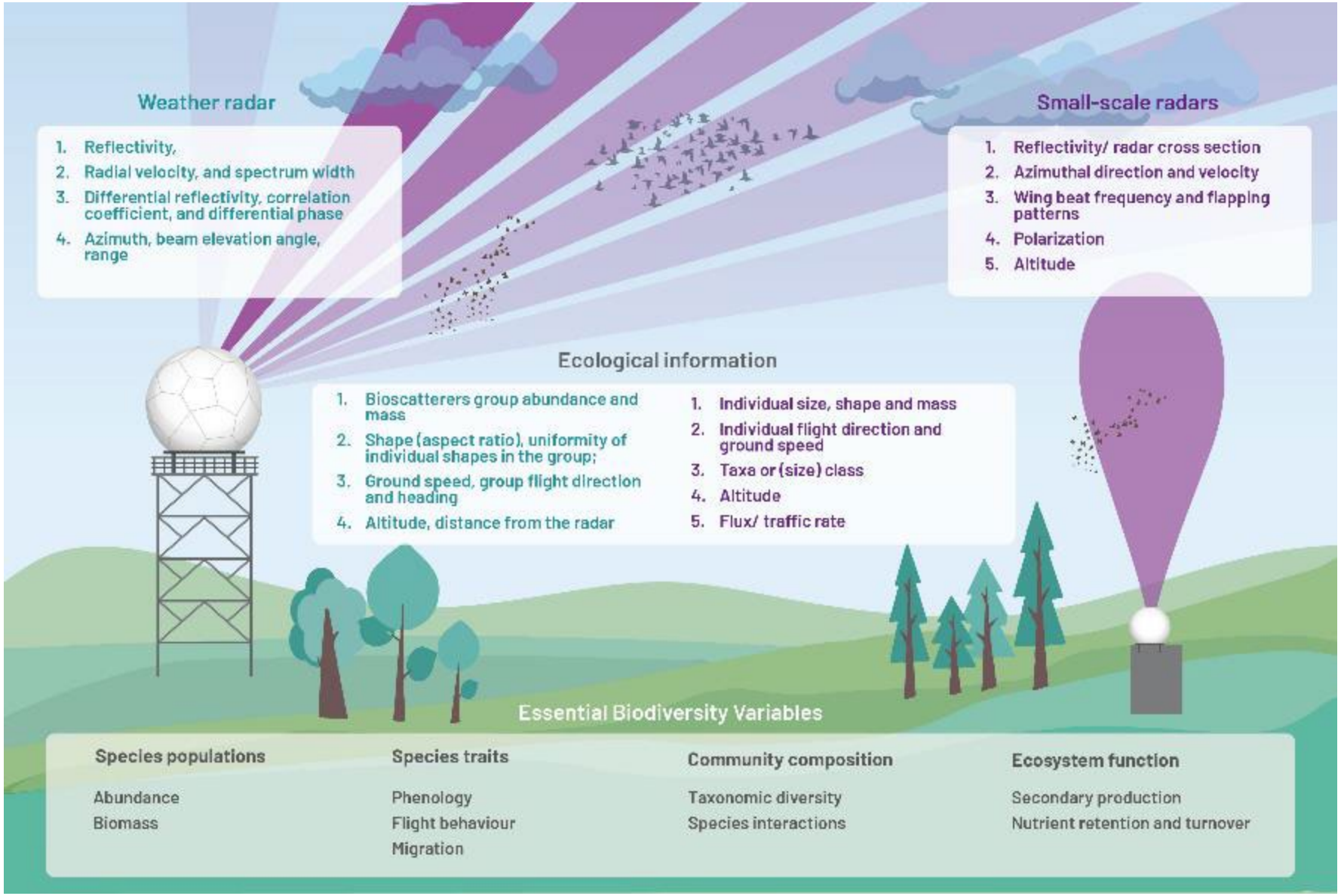
- HiRAD, Silke BAUER
- SEAGHOSTS, Raül RAMOS
- TABMON, Carolyn ROSTEN
- DESTRESS, Jes Jessen RASMUSSEN
- DNAquaIMG, Florian LEESE
- IMPACT, Rachel PATERSON
- MoSTFun, Andreas BRUDER
- Sub-BioMon, Maja ZAGMAISTER
- TRANSPONDER, Thomas DAVIDSON

Harmonizing and **i**ntegrating **R**adar-based approaches for monitoring **A**erial bio**D**iversity

By **Silke Bauer** – Federal Institute for Forest, Snow and Landscape Research (WSL) Switzerland

Judy Shamoun-Baranes, Bart Kranstauber, Bart Hoekstra – University of Amsterdam
Peter Desmet, Pieter Huybrechts – Institute for Nature and Forest, Belgium
Nadja Weisshaupt – Finnish Meteorological Institute, Finland
Eva Knop, Benjamin Rutschmann – Agroscope, Switzerland

Felix Liechti – Swiss Birdradar Solutions, Andrew Farnsworth – Actions @EMBF, Isabel Metz – DLR, Hans van Gasteren – Royal Netherlands Airforce, Thibault Desert – Meteo France, Birgen Haest, Baptiste Schmid – Swiss Ornithological Institute



HiRAD

- Portal for access to, and
- Software tools for analysis of radar-data
- Harmonization
- Proof of concept biodiversity monitoring: birds and insects
- Tools and products for stakeholders

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SEAGHOSTS

Winged ghosts wandering the oceans:

the global spatial ecology and conservation of the world's smallest and elusive seabirds, the storm petrel

By *Raül Ramos (Universitat de Barcelona)*

16 partners

*Universitat de Barcelona & Universitat de les Illes Balears from **Spain (2x)***
*FCiências-Lisbon & Okeanos-Azores from **Portugal (2x)***
*Università degli Studi di Palermo, di Milano & ISPRA from **Italy (3x)***
*Hellenic Ornithological Society from **Greece***
*Bretagne Vivante from **France***
*University College Cork from **Ireland***
*Aarhus University from **Denmark***
*Justus Liebig University Giessen from **Germany***
*Norwegian Institute for Nature Research from **Norway***
*South Iceland Nature Research Centre from **Iceland***
*World Seabird Union from **USA***
*Environment and Climate Change Canada from **Canada***

FCT Fundação para a Ciência e a Tecnologia
GSRI General Secretariat for Research and Innovation
Innovation Fund Denmark
DFG Deutsche Forschungsgemeinschaft
The Research Council of Norway

Spatial distribution and trophic ecology of poorly researched taxa, the storm petrels

- Understanding the **ANNUAL DISTRIBUTION**, migratory connectivity and at-sea behaviour of storm petrel populations **INHABITING EUROPEAN SEAS**
- Establishing the **CONSERVATION UNITS** for the storm petrels that breed in **EUROPE**
- Evaluating impacts of **HUMAN ACTIVITIES AT SEA**
- Practical toolkit for **IMPROVING CONSERVATION of storm petrels** at colony sites

SEAGHOSTS

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TABMON

Towards a Transnational Acoustic Biodiversity Monitoring Network

Project leaders

Benjamin Cretois
Norwegian Institute for Nature Research

Carolyn Rosten
Norwegian Institute for Nature Research

Ricard Marxer
CNRS, Toulon University, Aix Marseille University

Hervé Glotin
CNRS, Toulon University, Aix Marseille University

Dani Villero
Catalonia Technical Forest University

Julia Stahl
SOVON

Dan Stowell
Naturalis Biodiversity Center, Tilburg University

Julia Wiel
Norwegian Institute for Nature Research

Gerard Bota
Catalonia Technical Forest University

Lluís Broton
Catalonia Technical Forest University

Jelle van Zweden
Stats. Netherlands

Daniel Kissling
University of Amsterdam

www.biodiversa.eu

The Research Council of Norway

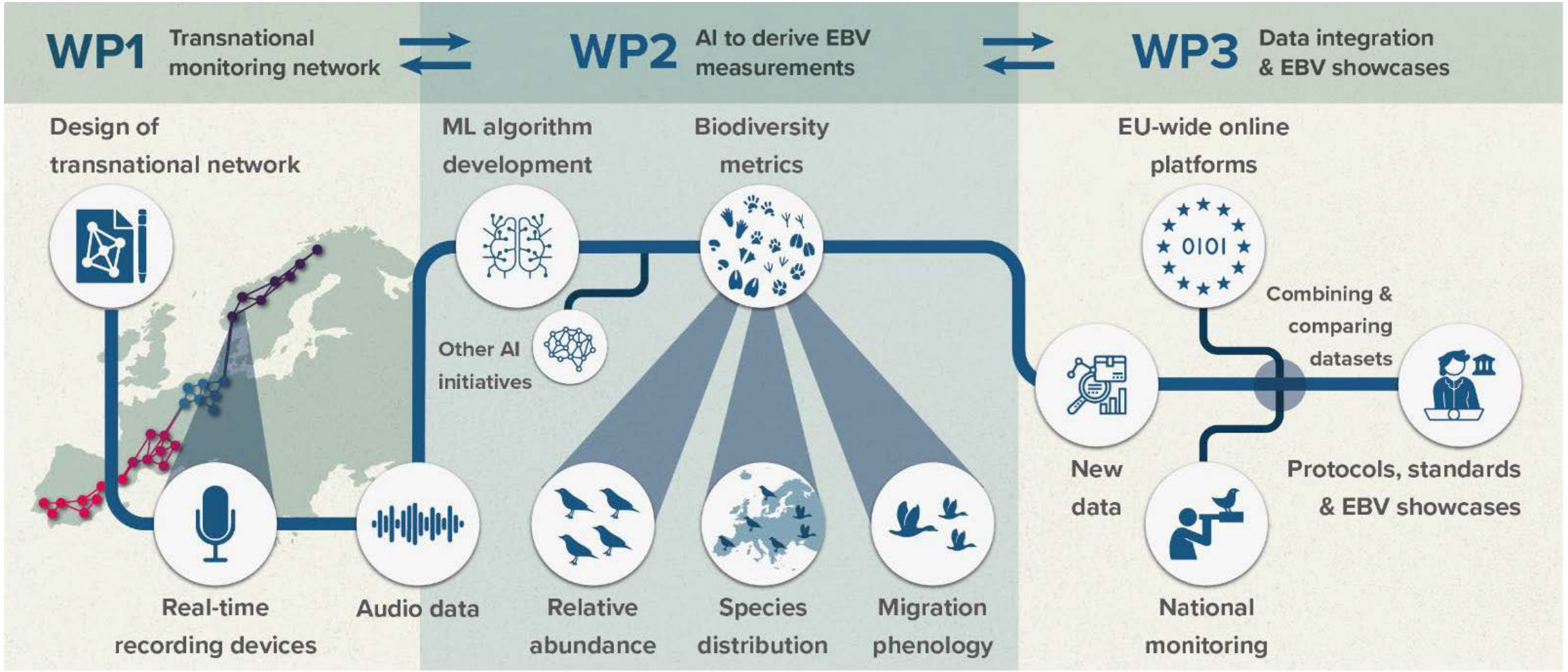
OFB OFFICE FRANÇAIS DE LA BIODIVERSITÉ

anr

NWO

Agencia Estatal de Investigación

TABMON main objectives



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DESTRESS – DEciphering temporal trends and safe operating spaces for river biodiversity within the context of multiple STRESSors

By Jes Rasmussen (NIVA)

Project consortium:
Norwegian Institute for Water Research (NIVA) (Norway)
Prof Peter Haase (Senckenberg – Germany)
Prof Annemarie van Wezel (Uni Amsterdam – Netherlands)
Prof Anna Sobek (Uni Stockholm – Sweden)
Prof Dennis Trolle (Water iTech – Denmark)

The Research Council of Norway

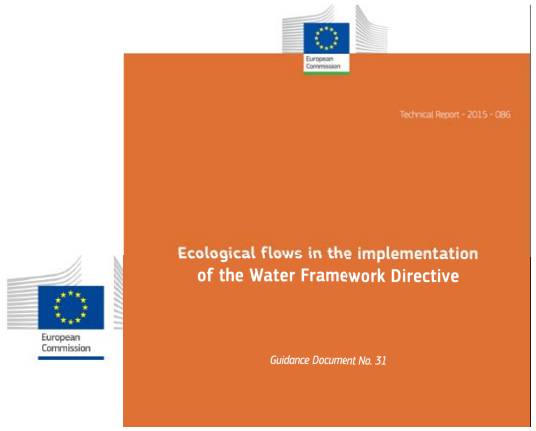
DFG Deutsche Forschungsgemeinschaft
German Research Foundation

NWO
Netherlands Organisation for Scientific Research

NATUR VÅRDS VERKET

Innovation Fund Denmark

The water cycle/circus



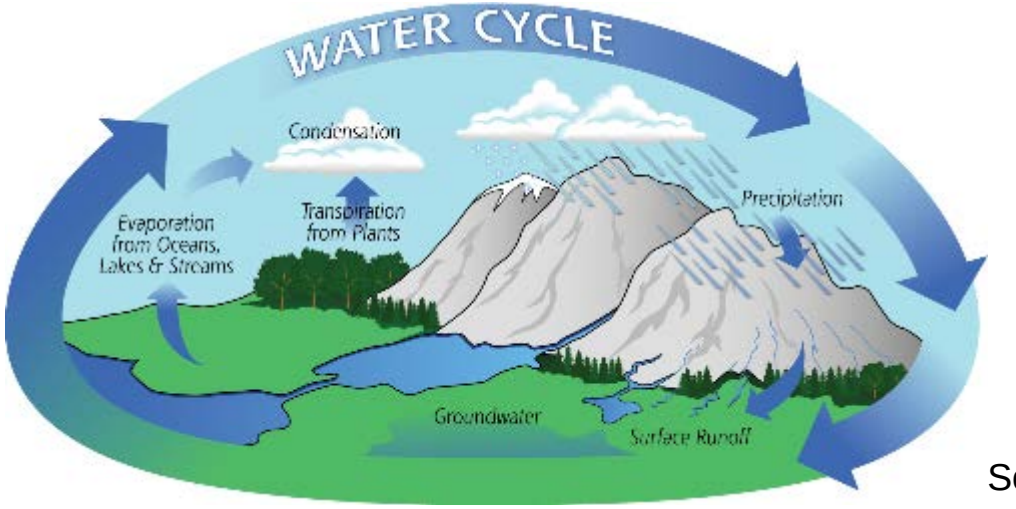
Implementation of e-flows in the EU
Final report

09020200/2022/869340/SFRA/ENV.C.1

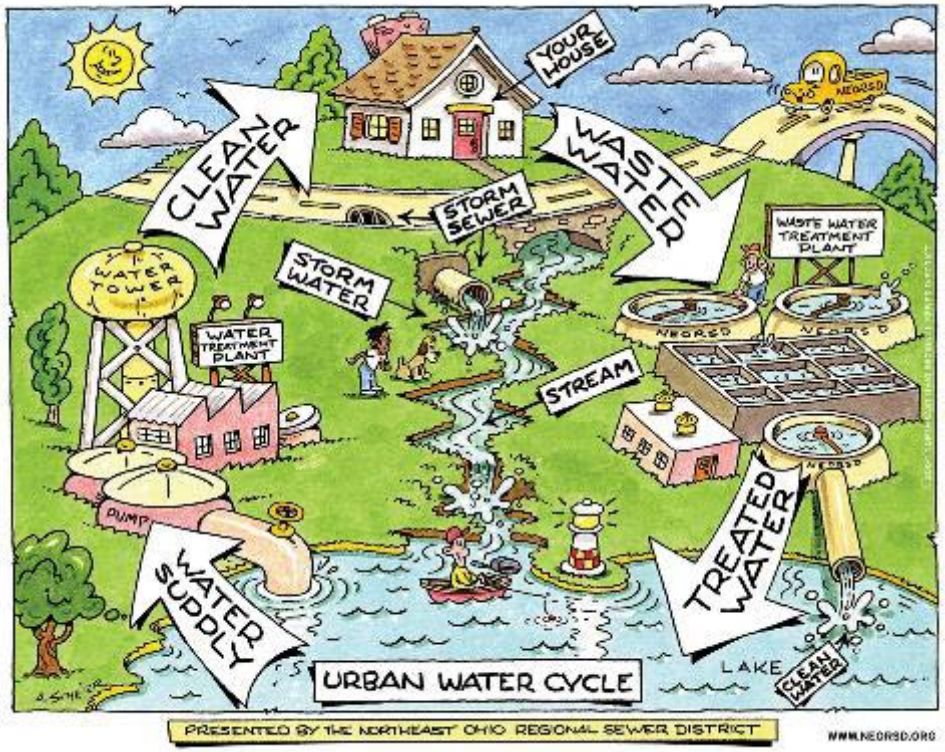
Framework Contract 'Water for the Green Deal' - Implementation and development of the EU water and marine policies

Specific Contract "Support to the Commission on water quantity management – follow up to the Fitness Check of EU water law conclusions, EU Strategy on Adaptation to Climate Change and Common Implementation Strategy Work Programme for the water directives (2022-2024)"

Ecologic Institute, Fresh Thoughts Consulting GmbH , Milieu Consulting
September 2023



Source: NASA.GOV



Source: Neorsd.org

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DNAqualMG

DNAqualMG - Innovating transnational aquatic biodiversity monitoring using high-throughput DNA tools & automated image recognition

By Florian Leese (University of Duisburg-Essen, Germany)

BOKU, University of Natural Res., Vienna
AU, Aarhus University
INRAE, French National Inst. for Agriculture, Food, Env.
UCD, University College Dublin
UNFSM, University of Nis
CUAS, Carinthia Univers. of Applied Sciences
SYKE, Finnish Environment Institute
BGBM, Botanical Garden & Botanical Museum Berlin
CIBIO, Research Centre in Biodiversity & Gen. Resour.
SLU, Swedish University of Agricultural Sciences
MU, Masaryk University
JYU, Univers. of Jyväskylä
UDE, University of Duisburg-Essen (coordinator)
UniLodz, University of Lodz

Consortium

Transnational freshwater biodiversity monitoring in increasingly challenging times? Pareto Optimization!

© KC Green

1. **Use & refine what exists:** Water Framework Directive (2000/60/EC) – fully operational across countries
2. **Add innvative novel methods:** Focus on those that can be scaled at reasonable costs
   - **DNA-based** monitoring
   - AI-based **image recognition**
3. **Test, validate, develop roadmap:** Link biomonitoring & biodiversity monitoring for freshwater systems in Europe involving relevant stakeholders

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IMPACT
Integrated Monitoring of Parasites in Changing Environments

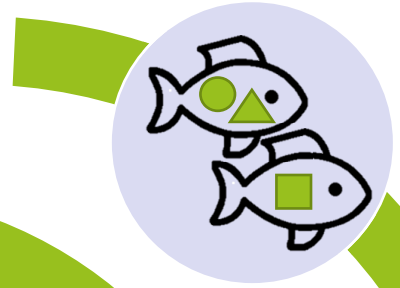
IMPACT: Integrated Monitoring of Parasites in Changing Environments

*By **Rachel Paterson** – Norwegian Institute for Nature Research, NO*

***Isabel Blasco-Costa** - Muséum d'Histoire Naturelle de la Ville de Genève, CH*
***Joëlle Salomon Cavin** - University of Lausanne, CH*
***Tomáš Scholz** - Biology Centre of the Czech Academy of Sciences, CZ*
***Bernd Sures & Florian Leese** - University of Duisburg-Essen, DE*
***Juan Antonio Balbuena** - Universitat de València - Estudi General, ES*
***Katie O'Dwyer** - Atlantic Technological University, IR*
***David Thieltges** - NWO I - Royal NIOZ, NL*
***Christian Selbach** - UiT The Arctic University of Norway, NO*

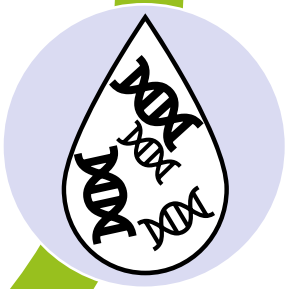
The Research Council of Norway
Swiss National Science Foundation
T A C R
DFG Deutsche Forschungsgemeinschaft
AGENCIA ESTATAL DE INVESTIGACIÓN
epa Environmental Protection Agency
NWO

Parasites
in biodiversity monitoring & policy



Status & trends

Genetic diversity



eDNA

Governance & society

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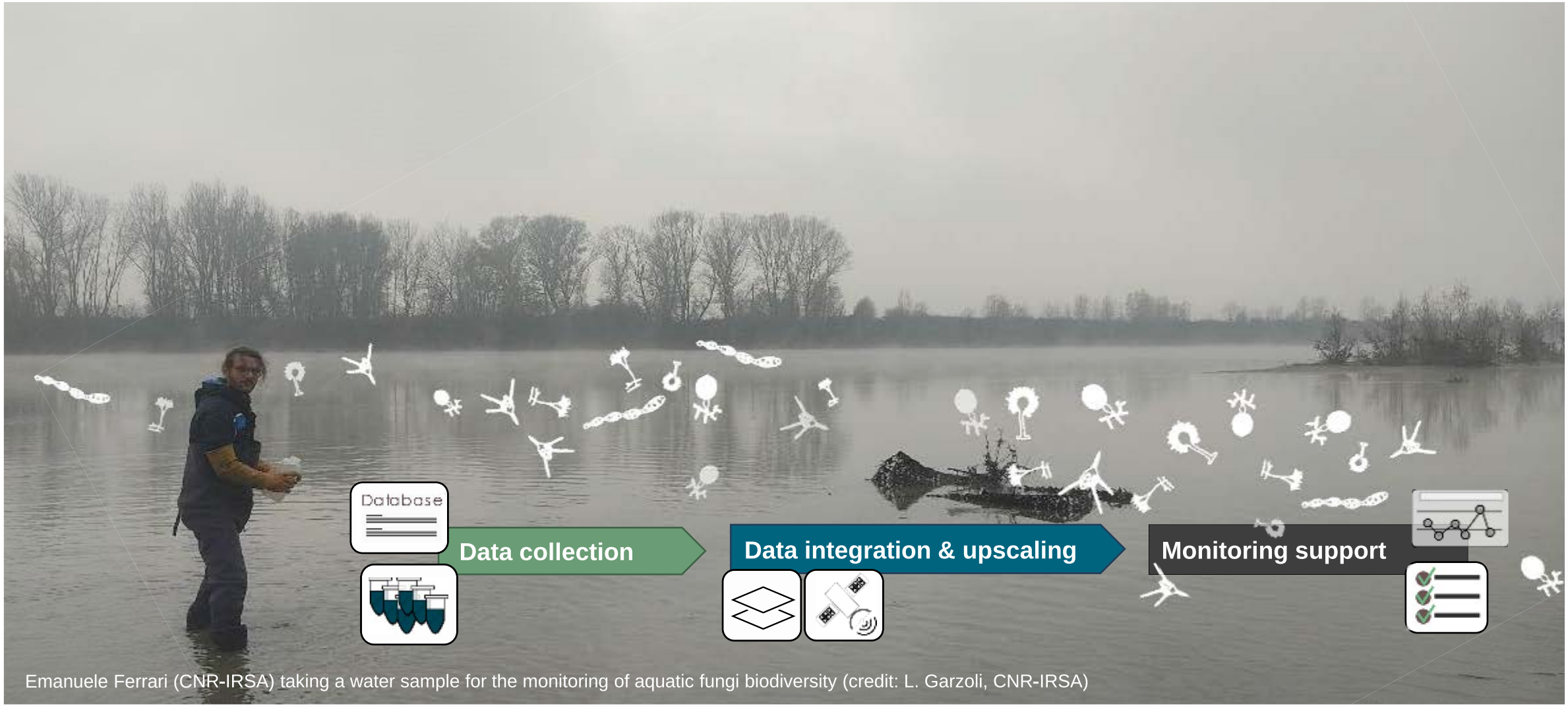
MoSTFun: Monitoring Strategies and Tools to address knowledge gaps on **aquatic Fungal biodiversity**

SUPSI (CH)	*Andreas Bruder, Isabel Fernandes, Red Calore*
GEO BON (CA)	*Katie Millette*
CNR-IRSA (IT)	*Laura Garzoli, Ester Eckert, Emanuele Ferrari, Diego Fontaneto, Stefano Mammola, Michela Rogora*
IGB Stechlin (DE)	*Hans-Peter Grossart, Solvig Pinnow, Jason Woodhouse*
SLU (SE)	*Jennifer Anderson, Blaize Denfeld*
UiT (NO)	*Teppo Rämä*
ICM-CSIC (ES)	*Albert Reñé, Esther Garcés*
Uni of Tartu (EE)	*Veljo Kisand, Kristel Panksep, Victoria Prins, Leho Tedersoo*
NINA (NO)	*André Frainer*
GCSS (USA)	*Monika Böhm, Catia Canteiro*

THE ARCTIC UNIVERSITY OF NORWAY • UIT •
NINA
TARTU ÜLIKOOL 1632 UNIVERSITAS TARTUENSIS
University of Applied Sciences and Arts of Southern Switzerland
SUPSI
SLU SWEDISH UNIVERSITY OF AGRICULTURAL SCIENCES
MYCOLOGY & MICROBIOLOGY CENTER
IGB Leibniz Institute of Freshwater Ecology and Inland Fisheries
INDIANAPOLIS ZOO GLOBAL CENTER for SPECIES SURVIVAL
Institut de Ciències del Mar
Consiglio Nazionale delle Ricerche
GEO BON Group on Earth Observations Biodiversity Observation Network

Swiss National Science Foundation
MUR
DFG Deutsche Forschungsgemeinschaft
NATURVÅRDSVERKET
The Research Council of Norway
Eesti Teadusagentuur Estonian Research Council

Have you seen AQUATIC FUNGI recently?



Emanuele Ferrari (CNR-IRSA) taking a water sample for the monitoring of aquatic fungi biodiversity (credit: L. Garzoli, CNR-IRSA)

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Project webpage

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Sub-BioMon - Developing and testing approaches to monitor subterranean biodiversity in karst

By Maja Zagmajster

PARTNER ORGANISATIONS:

University of Ljubljana, Biotechnical Faculty, Dept. of Biology, SubBioLab, **Slovenia**

Université Libre de Bruxelles, Faculty of Sciences, Depr. for Biology of Organisms, **Belgium**

University of L'Aquila, Dept. of Life, Health and Environmental Sciences, **Italy**

Eötvös Loránd University, Dept. of Systematic Zoology and Ecology, **Hungary**

Romanian Academy Cluj Branch, "Emil Racovita" Institute of Speleology, Cluj Napoca**, Romania**

National Museum of Natural History Luxembourg, **Luxembourg** (self-financed partner)

REPUBLIC OF SLOVENIA
MINISTRY OF HIGHER EDUCATION, SCIENCE AND INNOVATION

MUR

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ufiscdi

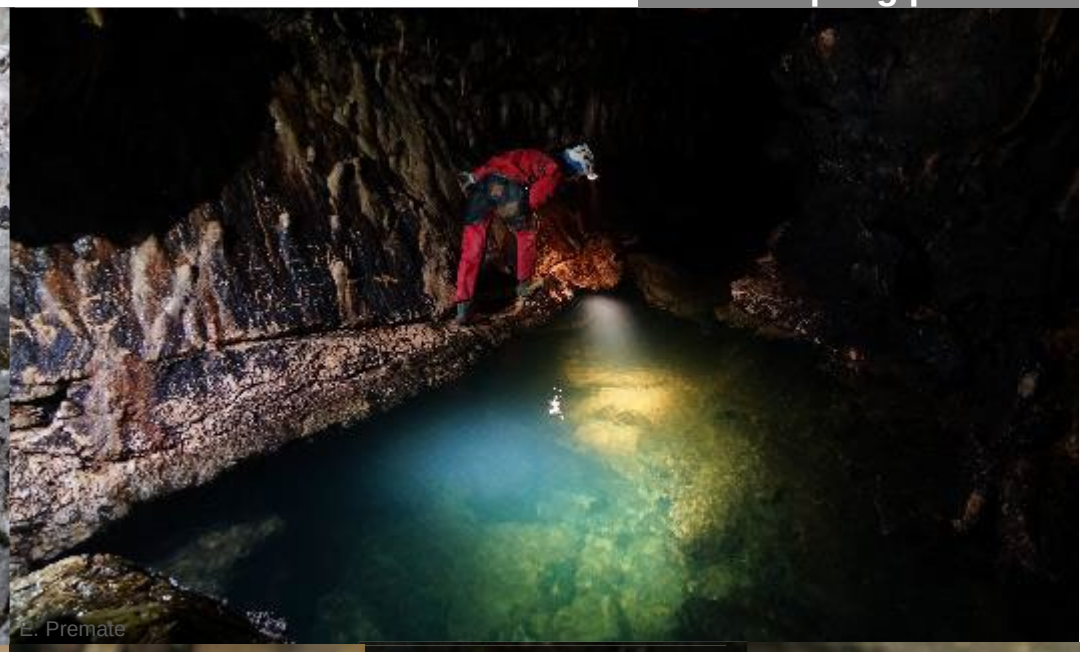
NATIONAL RESEARCH, DEVELOPMENT AND INNOVATION OFFICE

The subterranean species of karst areas in Europe represent an important part of the continent's biodiversity. The Sub-BioMon will provide the much-needed scientific basis for standardized biological monitoring of this hidden natural treasure.

Selection of monitoring sites

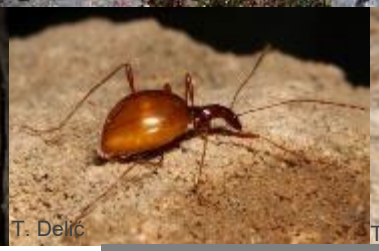
M. Zagmajster

Field sampling protocols



E. Premate

E. Lunghi



T. Delić

T. Delić

T. Delić

T. Delić

T. Delić

Species identification and detection (DNA barcoding, eDNA)

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TRANSPONDER

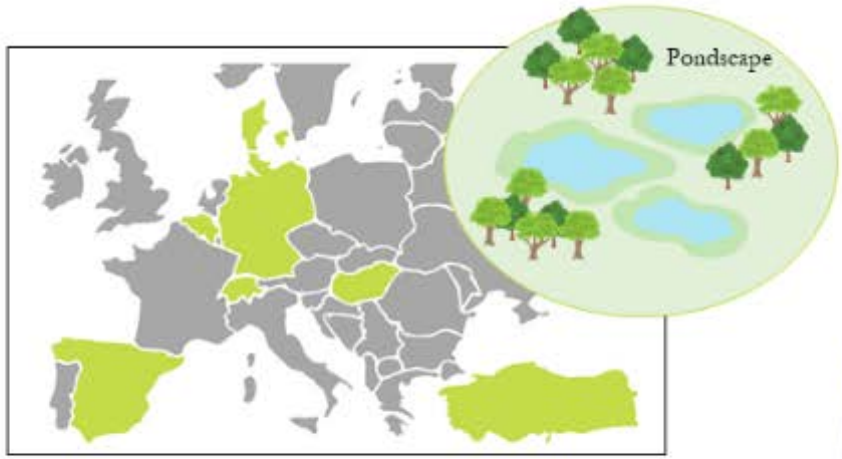
TRANSnational biodiversity and ecosystem assessment approaches for PONDscapes in EuRope

By *Thomas Davidson*

Aarhus University, Denmark; KU Leuven, Belgium; University of Vic, Spain; Haute Ecole Spécialisée de Suisse Occidentale, Switzerland; IGB, Germany; Centre for Ecological Research, Hungary; Middle East Technical University, Turkey; WWF Deutschland

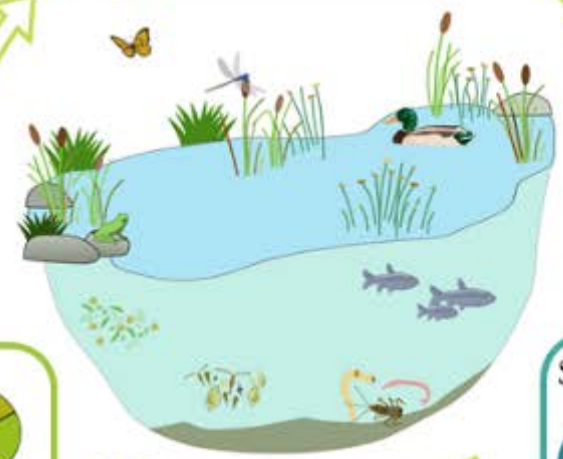
TRANSPONDER

TRANSnational biodiversity and ecosystem assessment approaches for **POND**scapes in **E**u**R**ope



Objectives

1. Optimization of sampling protocols
2. New methods for biodiversity monitoring
3. Developing automated methods
4. Public engagement via citizen science
5. Developing new monitoring protocols
6. Network of stakeholders



Highlights on ponds:

- ✓ High abundance
- ✓ Biodiversity hotspot
- ✓ Dense network
- ✗ Underrepresented
- ✗ Lack of standardised monitoring approaches

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Panel discussion

moderated by Wouter VANNEUVILLE, European Environment Agency (Denmark)

- HiRAD, Silke BAUER
- SEAGHOSTS, Raül RAMOS
- TABMON, Carolyn ROSTEN
- DESTRESS, Jes Jessen RASMUSSEN
- DNAquaIMG, Florian LEESE
- IMPACT, Rachel PATERSON
- MoSTFun, Andreas BRUDER
- Sub-BioMon, Maja ZAGMAISTER
- TRANSPONDER, Thomas DAVIDSON

The Biodiversa+ Prize for Excellence and impact Highlight on the GloBAM project

*By **Frédéric Lemaitre**, Operational Manager for Society and Policy Impact, FRB (France)*

Funded projects presentation – Session #3

- ANTENNA, Oliver SCHWEIGER
- BIG_PICTURE, John LINNELL
- ENABLElocal, Florian SCHNEIDER
- FunDive, Jacob HEILMANN-CLAUSEN
- MonitAnt, Heike FELDHAAR
- SEPPI, Tiffany KNIGHT
- SoilRise, Martin POTTHOFF
- WildINTEL, Nuria Selva FERNANDEZ

ANTENNA - Making Technology work for Monitoring Pollinators

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NWO
Netherlands Organisation for Scientific Research

Fundación Biodiversidad

AGENCIA ESTATAL DE INVESTIGACIÓN

Quentin Geissmann

Koos Biesmeijer

Jessica Knapp

Trinity College Dublin
The University of Dublin
Ireland

AARHUS UNIVERSITY
Denmark

Naturalis Biodiversity Center
The Netherlands

UFZ HELMHOLTZ
Germany

Oliver Schweiger

Ignasi Bartomeus

CSIC
Spain

POLITÉCNICA
Spain

Javier Galeano Prieto

UNIVERSITY OF THE AEGEAN
Greece

Thomas Tscheulin

Our framework

Improve and test new monitoring technologies (WPs1,2)

Computer vision

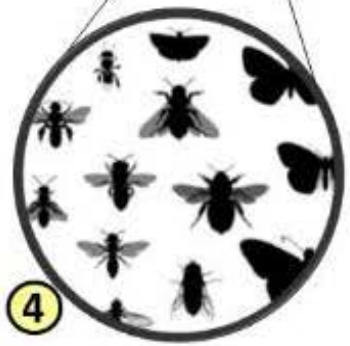
1

- ✓ High temporal frequency
- ✓ Cameras with weather sensors
- ✓ Enhanced by AI
- ✓ Allows near-term predictions

Advanced habitat characterisation

2

support



3 *Automated sorting and barcoding*

4 *Traditional sampling methods*

Integrative modelling (WP3)

Stakeholder involvement

1 + 2 + 4

- ✓ Near real-time modelling
- ✓ Early warning systems
- ✓ Identification of uncertainties

Large-scale implementation (WPs4,5)

Near-time interactive pollinator map and forecasting tool

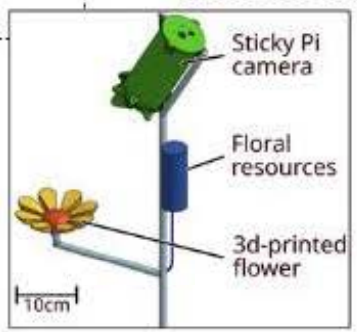
Science-policy impact

EU PI Biodiversity Strategy Nature Restoration Law

Autonomous pollinator camera trap ready for citizen scientists

- ✓ Ready-to-use technology
- ✓ Pipelines for upscaling

Automated sorting platform



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BIG_PICTURE: Developing data management and analytical tools to integrate and advance professional and citizen science camera-trapping across Europe.

By *John Linnell*

17 partner institutions from Norway, Sweden, Germany, France, Spain, Belgium, the Netherlands, Italy, Slovenia, Poland

Funded by the respective National Agencies within the Biodiversa+ consortia.

BIG_PICTURE: Sharing camera-trap data to improve wildlife monitoring

Data

Professional and citizen data

Tools

Artificial Intelligence

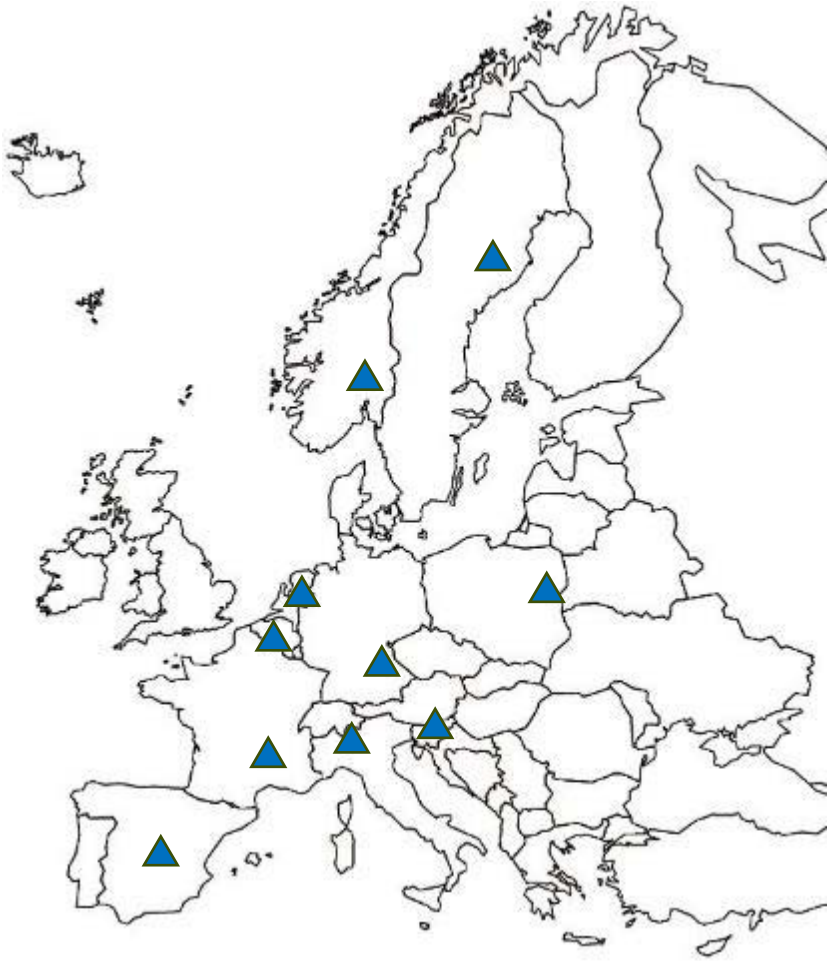
Digital Infrastructure

Statistical analysis

Outcomes

Efficiency
Large scale coverage

Improved wildlife monitoring



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ENABLE local

Enabling use of biodiversity monitoring data in local conservation management

By *Florian D. Schneider, ISOE – Institute for social-ecological research*

Institute for Social-Ecological Research

Florian D. Schneider, Deike Lüdtke, Marion Mehring

CzechGlobe
Global Change Research Centre AS CR, v.v.i.

Julia Mildorfova Leventon, David Stella, Eliška Tichopádová, Simona Zvěřinová, Tomáš Badura

LUND UNIVERSITY

Maj Rundlöf, Maria von Post, Henrik Smith, Hakim Abdi

Enabling use of biodiversity monitoring data in local conservation management

- project goal: facilitating data flows (horizontally and vertically) to enable evidence based decision making
- transdisciplinary approach: integrating stakeholder perspectives in three case studies

Foto: Petr – stock.adobe.com

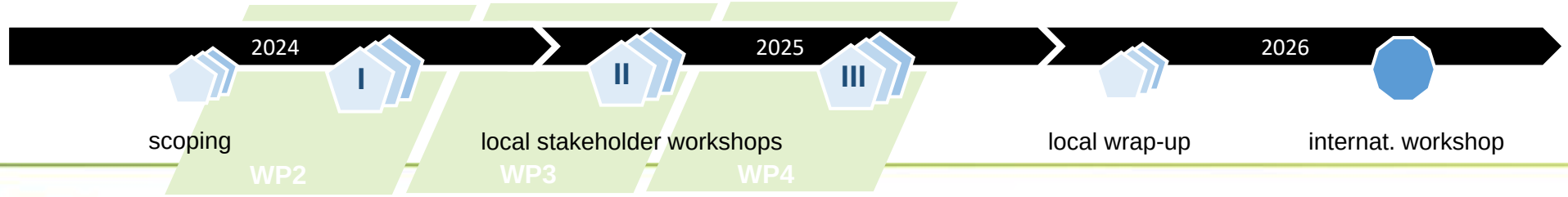
Biosphere reserve Křivoklátsko (CZ)

Foto: Maj Rundlöf – Lund University

Hotspot areas for threatened solitary bees on sandy soils (SE)

Foto: Arthur Scholz – stock.adobe.com

Extensive orchard meadows (DE)



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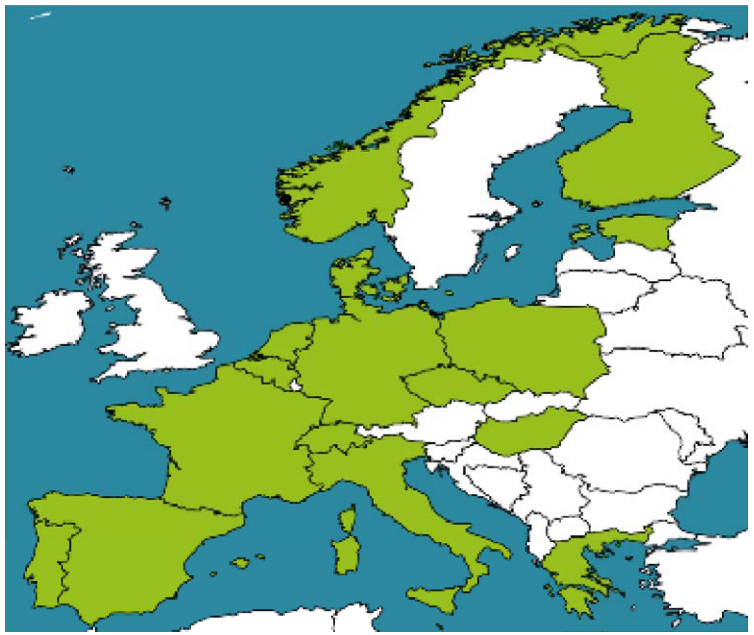
FunDive

FunDive - Monitoring and mapping Fungal Diversity for nature conservation

By Jacob Heilmann-Clausen
University of Copenhagen

26 partners
18 countries



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GSRI General Secretariat for Research and Innovation
TACR Technology Agency of the Czech Republic
fwo Research Foundation Flanders
FCT
Swiss National Science Foundation
NWO Netherlands Organisation for Scientific Research
Academy of Finland
National Science Centre Poland
MUR
The Research Council of Norway
Innovation Fund Denmark
anr
DFG Deutsche Forschungsgemeinschaft

FunDive in a nutshell

Empower & involve citizen scientists

Fine-tune eDNA based sampling

Picture recognition apps

Recording & sequecing missions

Clavulina	Symbiotroph	Ectomycorrhizal	OTU93
Inocybaceae	Symbiotroph	Ectomycorrhizal	OTU78
Laccaria	Symbiotroph	Ectomycorrhizal	OTU1159
Scleroderma	Symbiotroph	Ectomycorrhizal	OTU201
Thelephoraceae	unassigned	Undefined	OTU248
Tomentella	Symbiotroph	Ectomycorrhizal	OTU1480
Tomentella	Symbiotroph	Ectomycorrhizal	OTU58
unclassified	unassigned	Undefined	OTU61
unclassified	unassigned	Undefined	OTU148

unite community
a non-profit association

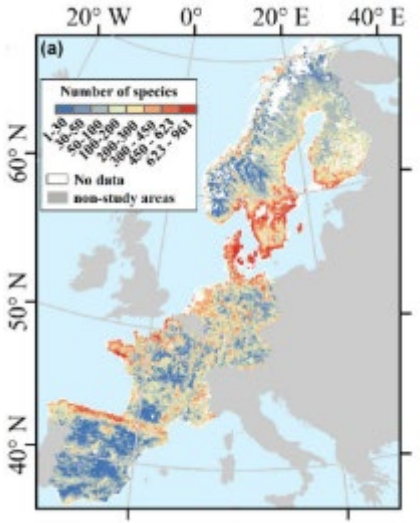
DNA barcoding and annotation

GBIF

Evaluate conservation status

The Global Fungal Red List Initiative

NATURA 2000



Investigate biodiversity patterns

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FunDive

https://fun-dive.eu/

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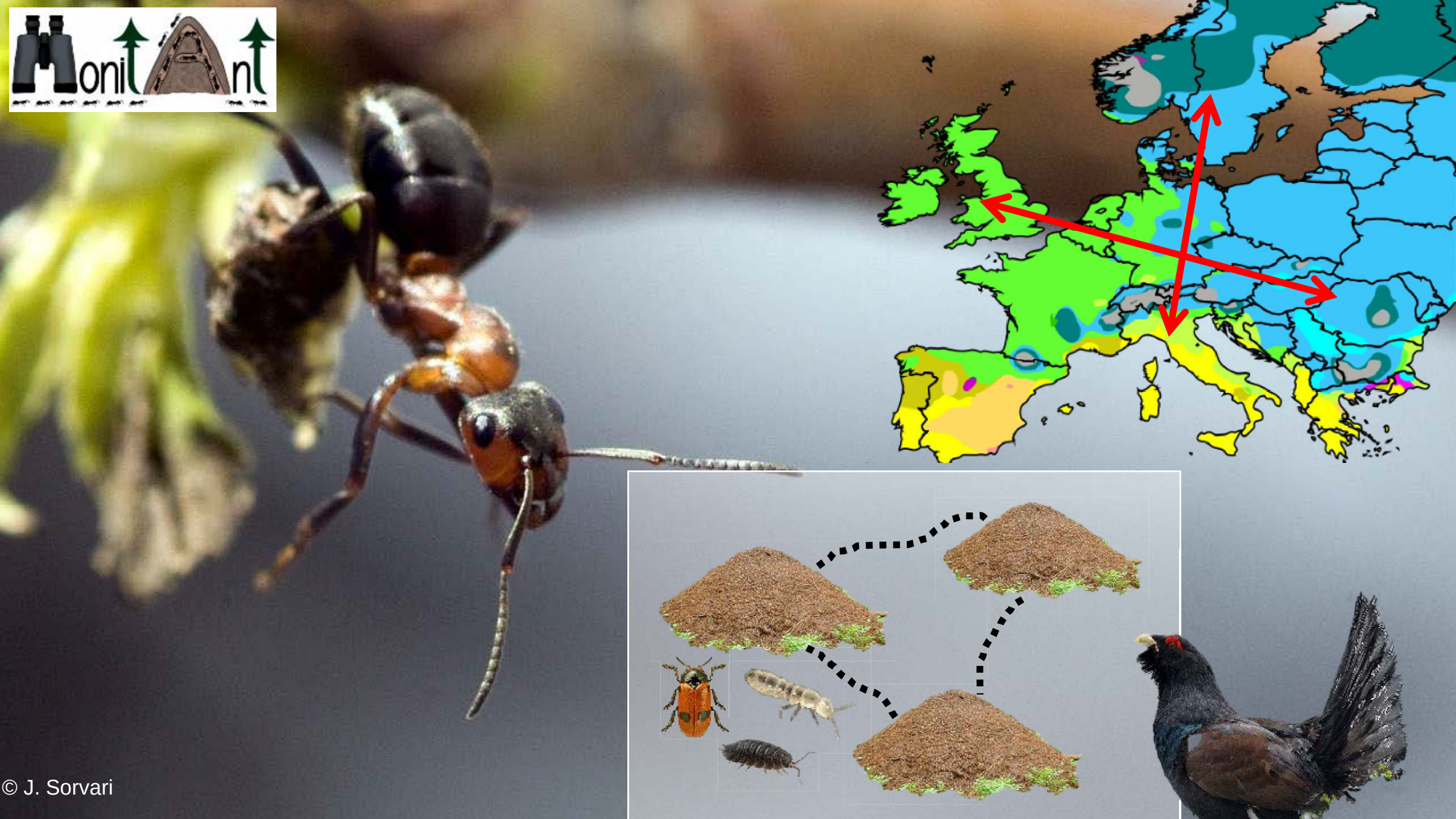
MonitAnt: Developing a European-level **Monitoring** strategy for mound-building *Formica* **Ant**s and symbiont communities residing in nest mounds

By Heike Feldhaar (U Bayreuth, Germany)

Wouter Dekoninck (RBINS, Belgium), Elia Guariento (EURAC, South Tyrolia)
Balint Marcó (U Cluj-Napoca, Romania), Thomas Parmentier (U Gent, Belgium)
Elva Robinson (U York, UK), Giacomo Santini (U Firenze, Italy),
Jouni Sorvari (LUKE, Finland), Jiri Tuma (CAS, Czech Republic)

DFG Deutsche Forschungsgemeinschaft German Research Foundation
ACADEMY OF FINLAND
fwo Research Foundation Flanders Opening new horizons
ufiscdi
VDI|VDE|IT
TACR Technology Agency of the Czech Republic
BOZEN



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Standardized European monitoring of plant-pollinator interactions (SEPPI)

Tiffany Knight (Germany)

Hans Jacquemyn (Belgium)
Jana Jersakova (Czech Republic)
Anu Eskelinen (Finland)
Peter Batáry (Hungary)
Ramona Viterbi (Italy)
Natalia Timus (Romania)
Viesturs Melecis (Latvia)

DFG Deutsche Forschungsgemeinschaft German Research Foundation

Bundesministerium für Bildung und Forschung

Latvian Council of Science

fwo Research Foundation Flanders Opening new horizons

Ministry of the Environment Finland

ACADEMY OF FINLAND

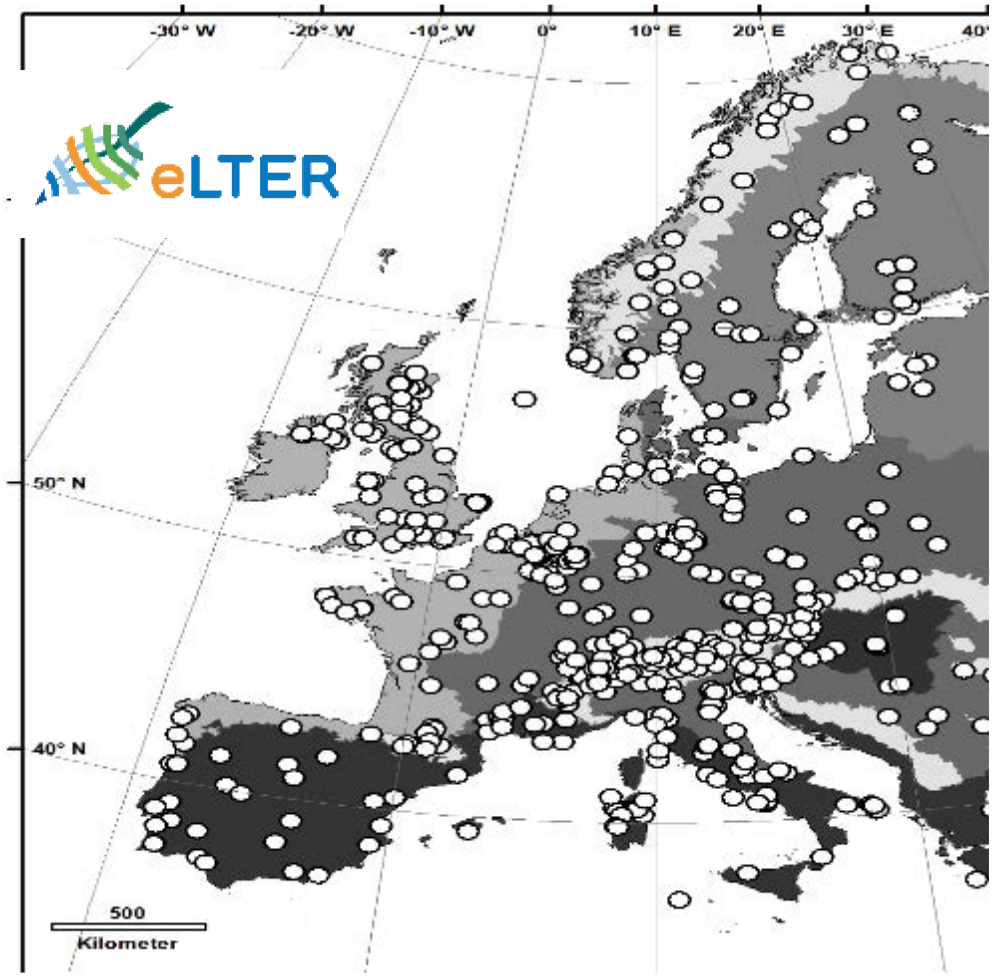
MUR

T A C R Technology Agency of the Czech Republic

UEFISCDI

National Research, Development and Innovation Office

Vision: transform monitoring of pollinators, pollination



Does it work?

…to detect spatial changes in:

- Pollinator biodiversity
- Pollinator composition
- Pollination

Is it cost effective?

Does it create actionable knowledge?

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SoilRise
Monitoring of Soilbiota by Citizen Science

SoilRise –
Raising awareness for soil biodiversity and multiplying monitoring by student-based Citizen Science

Martin Potthoff

GEORG-AUGUST-UNIVERSITÄT GÖTTINGEN

Martin Potthoff
Oliver Gailing
University of Göttingen

Pia Euteneuer
Johann Zaller
Boku Vienna

BOKU UNIVERSITY

Daniel Cluzeau
Kevin Höffner
University of Rennes1

Annegret Nicolai
Morgane Herve
Living lab Clef
Plelan-le-grand

Agnieszka Józefowska
University of Agriculture Krakow

Olaf Schmidt
University College Dublin

UCD DUBLIN

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Bundesministerium für Bildung und Forschung
VDI VDE IT

FWF Österreichischer Wissenschaftsfonds

epa

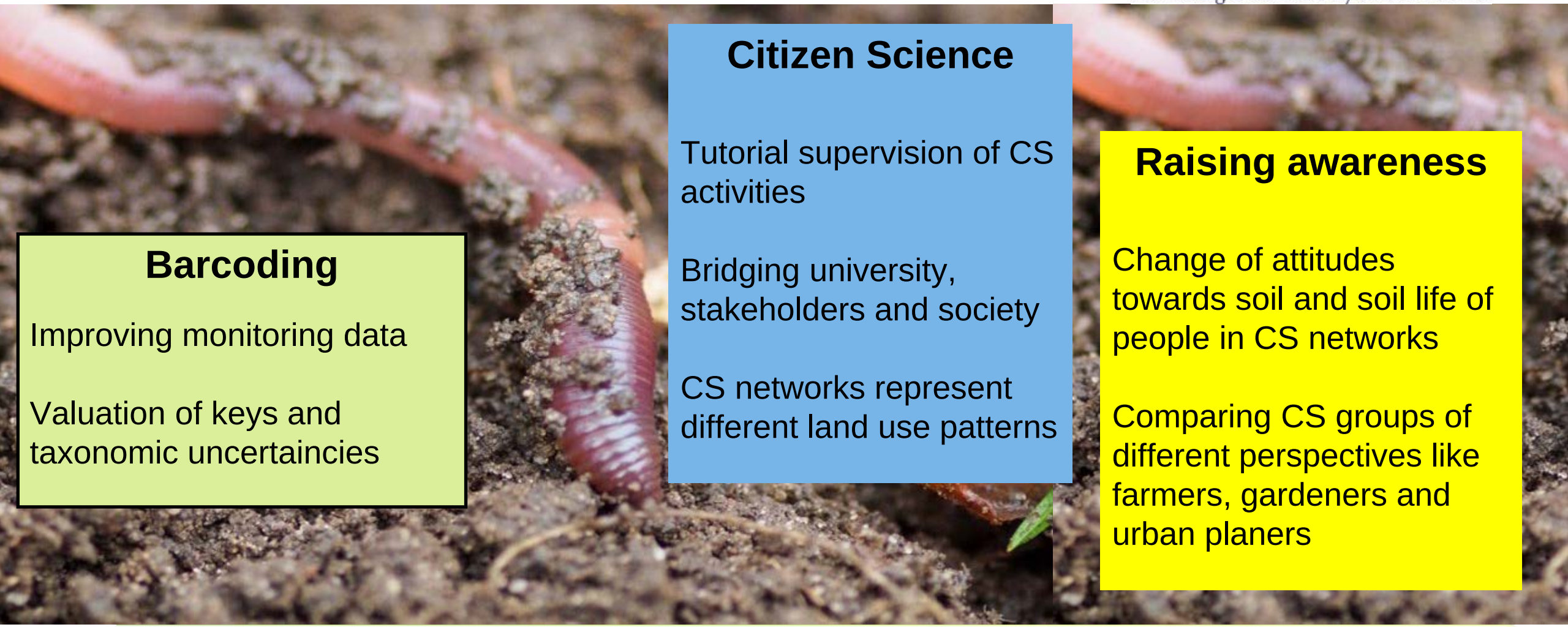
ANR

NARODOWE CENTRUM NAUKI

European Commission

SoilRise

Monitoring of Soilbiota by Citizen Science



Barcoding

Improving monitoring data

Valuation of keys and taxonomic uncertaincies

Citizen Science

Tutorial supervision of CS activities

Bridging university, stakeholders and society

CS networks represent different land use patterns

Raising awareness

Change of attitudes towards soil and soil life of people in CS networks

Comparing CS groups of different perspectives like farmers, gardeners and urban planers

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WildINTEL- Building a scalable WILDlife monitoring system by integrating remote camera sampling and artificial INTELligence with Essential Biodiversity Variables

By ***Nuria Selva***

Institute of Nature Conservation PAS · Universidad de Huelva · University of South-Eastern Norway · iDiv German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig · Ministerio de Ciencia, Innovación y Universidades · CSIC · Gbif.es · Massachusetts Institute of Technology


N. Selva


J. Calzada

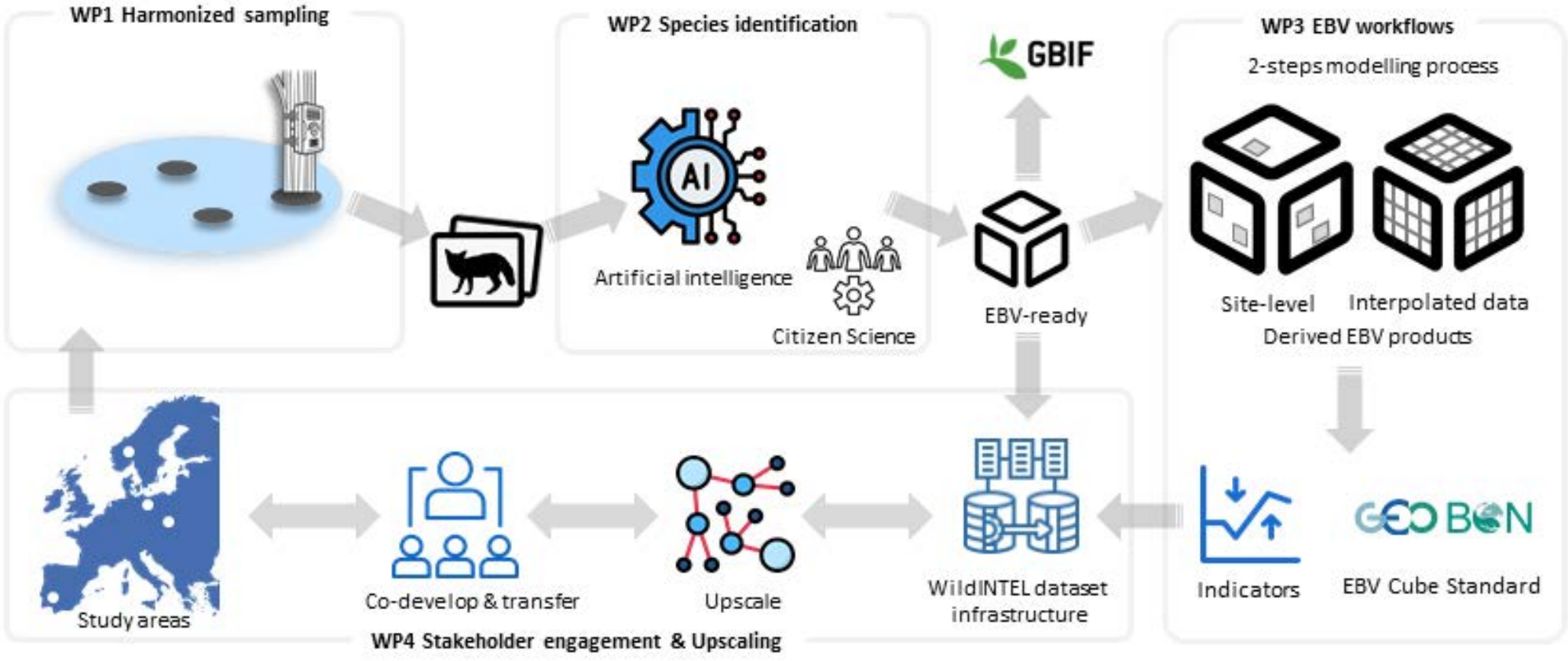

A. Zedrosser


N. Fernández


F. Pando


S. Beery

Building a scalable wildlife monitoring system by integrating remote camera sampling, citizen science, AI and hierarchical modelling for the semi-automated production of Essential Biodiversity Variables (EBVs)



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European Biodiversity Partnership

Panel discussion

moderated by Alexandra ZIERITZ, University of Nottingham (United Kingdom)

- ANTENNA, Oliver SCHWEIGER
- BIG_PICTURE, John LINNELL
- ENABLElocal, Florian SCHNEIDER
- FunDive, Jacob HEILMANN-CLAUSEN
- MonitAnt, Heike FELDHAAR
- SEPPI, Tiffany KNIGHT
- SoilRise, Martin POTTHOFF
- WildINTEL, Nuria Selva FERNANDEZ

Let’s take a break!

#BiodivMonTallinn

Posting about the BiodivMon kick-off on social media?

Don't forget to tag @BiodiversaPlus

Funded projects presentation – Session #4

- BioMonI, Holger KREFT
- CoForFunc, Raphaël PELISSIER
- ForBioMon, Kris VERHEYEN
- Forest-Web-3.0, Robert LEWIS
- GINAMO, Christina HVILSOM
- GRASS4FUN, Pablo Garcia PALACIOS
- METAPLANTCODE, Birgit GEMEINHOLZER
- MiDiPeat, Krista PELTONIEMI
- MOTIVATE, Ute JANDT

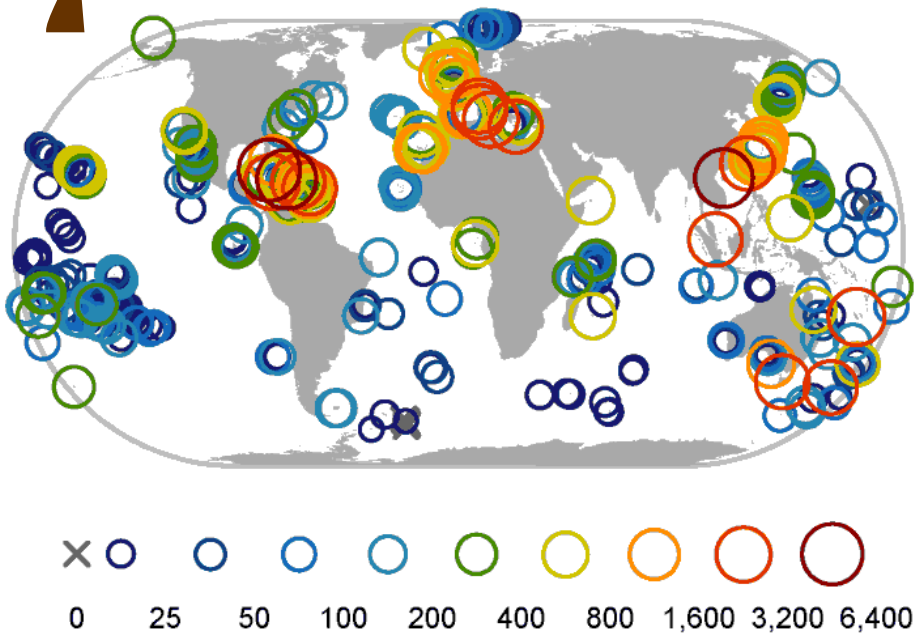
BioMonI: Biodiversity monitoring of island ecosystems

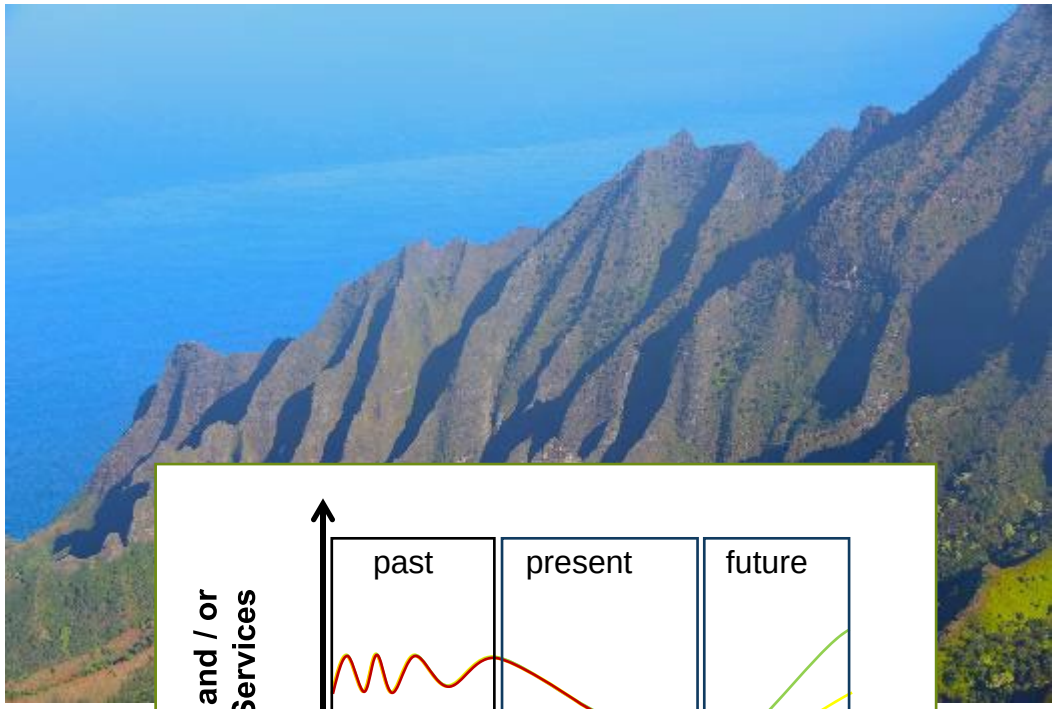
by Holger Kreft, University of Göttingen, Germany

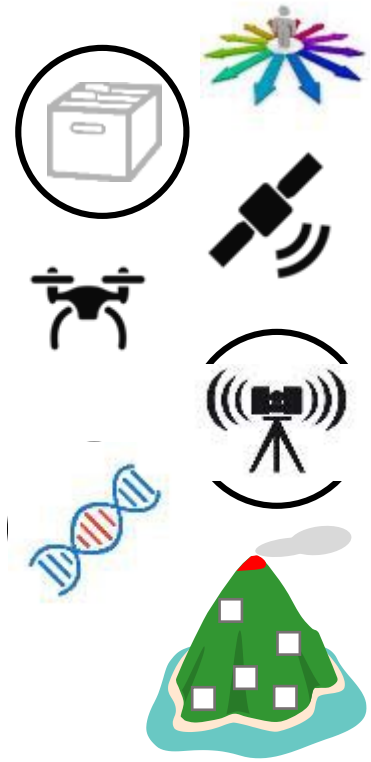
University of Vienna, Austria; University of La Réunion, France; Universidade dos Açores, Portugal; University of La Laguna, CSIC, Spain; University of Neuchatel, Switzerland;

BioMonI: Biodiversity monitoring of island ecosystems

Insular plant diversity







Islands
Outstanding biodiversity & imminent threats

Expected outcomes
Historical archives
BioMonI-Plots
Optimized protocols
Scaling-up
Future scenarios

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Website: https://coforfunc.eu/
X-Twitter: @CoForFunc

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European Biodiversity Partnership

CoForFunc – Toward a biome-scale monitoring of the Congo basin forest Functional composition

By Raphaël Pélissier (IRD-AMAP Lab, Montpellier, France)

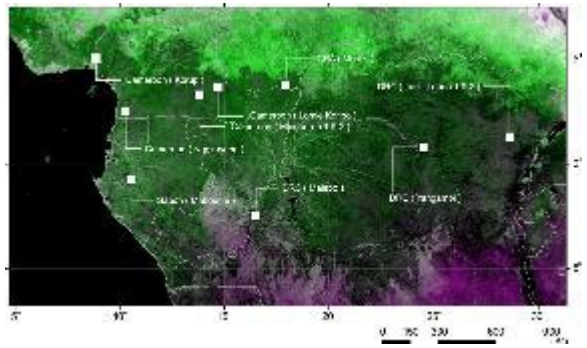
4 Funded European partners

4 Non-Funded African partners

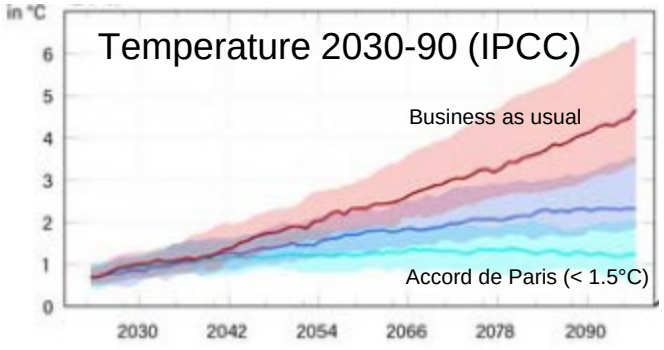
(Cameroon, Rep. Congo, Dem. Rep. Congo + collab Gabon)

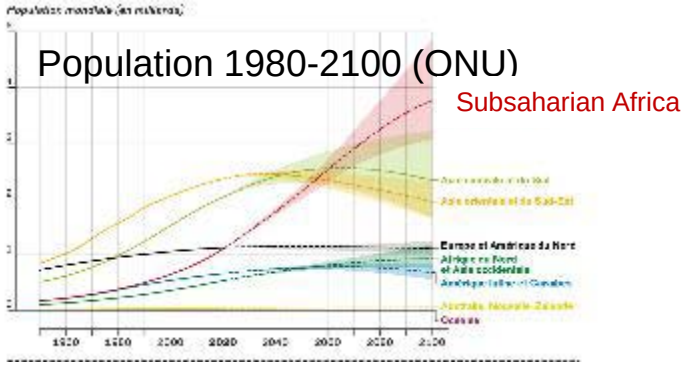
Context & Hypothesis

Accelerating **socio-environmental changes** in Central Africa …

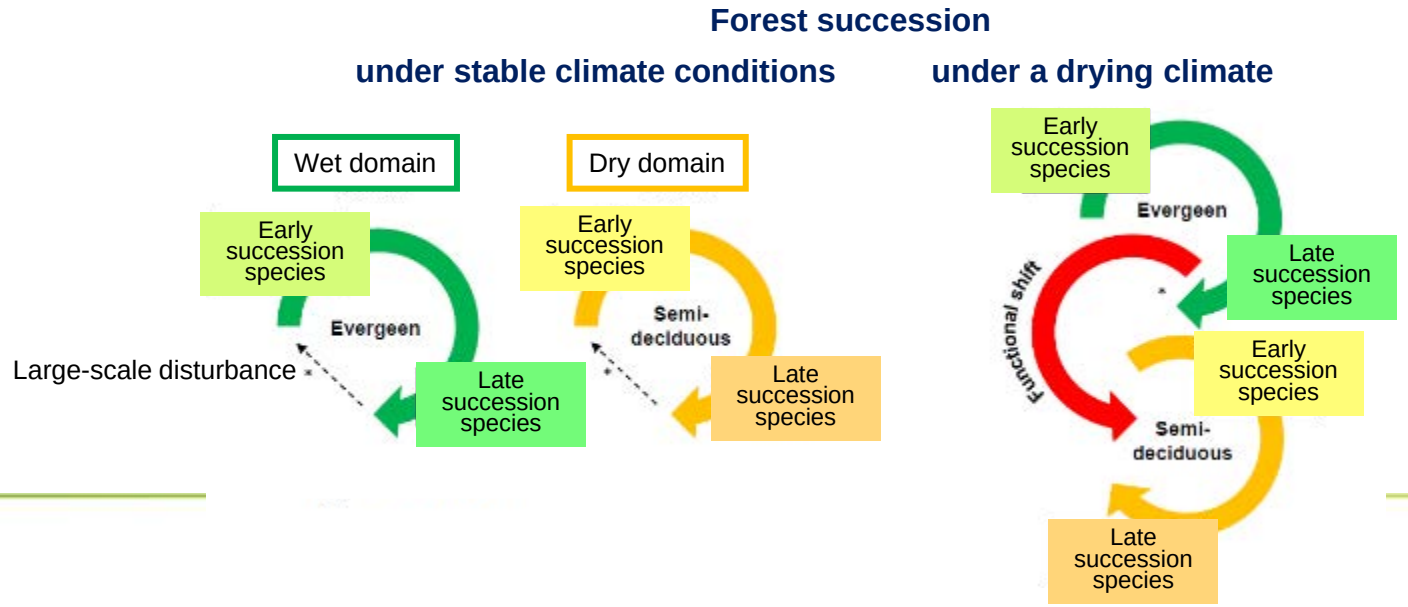


Bastin *et al.* 2015





… are expected to cause **functional shifts** in forest composition



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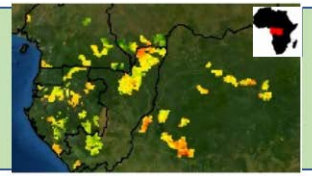
Objective & Organisation

Monitor **tree functional diversity** of the Congo Basin Forests to support the biome-scale assessment of their **vulnerability to global change**

WP1. Gather and share existing data on tree functional diversity

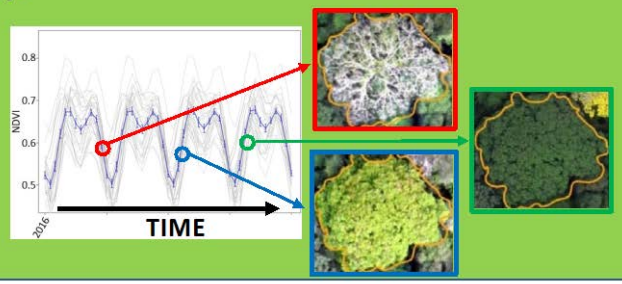
Data compilation, curation and harmonization



Validation

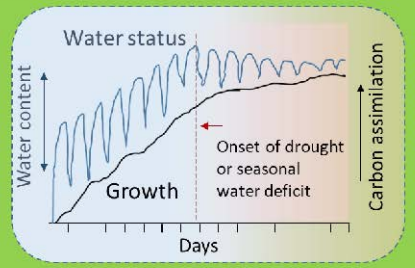
Data

WP2. Characterize tree phenology from repeat drone surveys

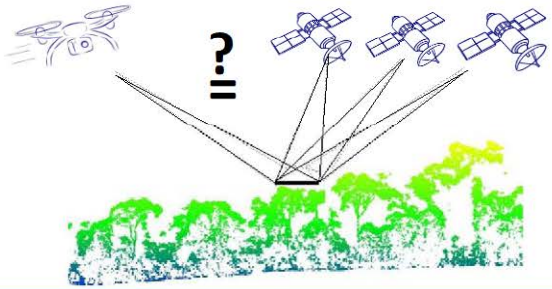


6 phenological observatories

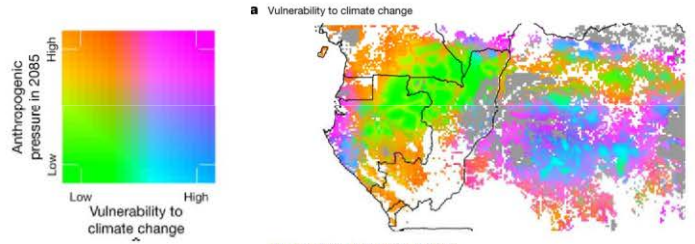
WP3. Monitor tree growth from in-situ ecophysiology measurements



WP4. Upscale Ecosystem Functional Properties from space-borne sensors



WP5. Phenology-related EBV and projection onto expected change scenarios to assess vulnerability



Réjou-Méchain *et al.* 2021

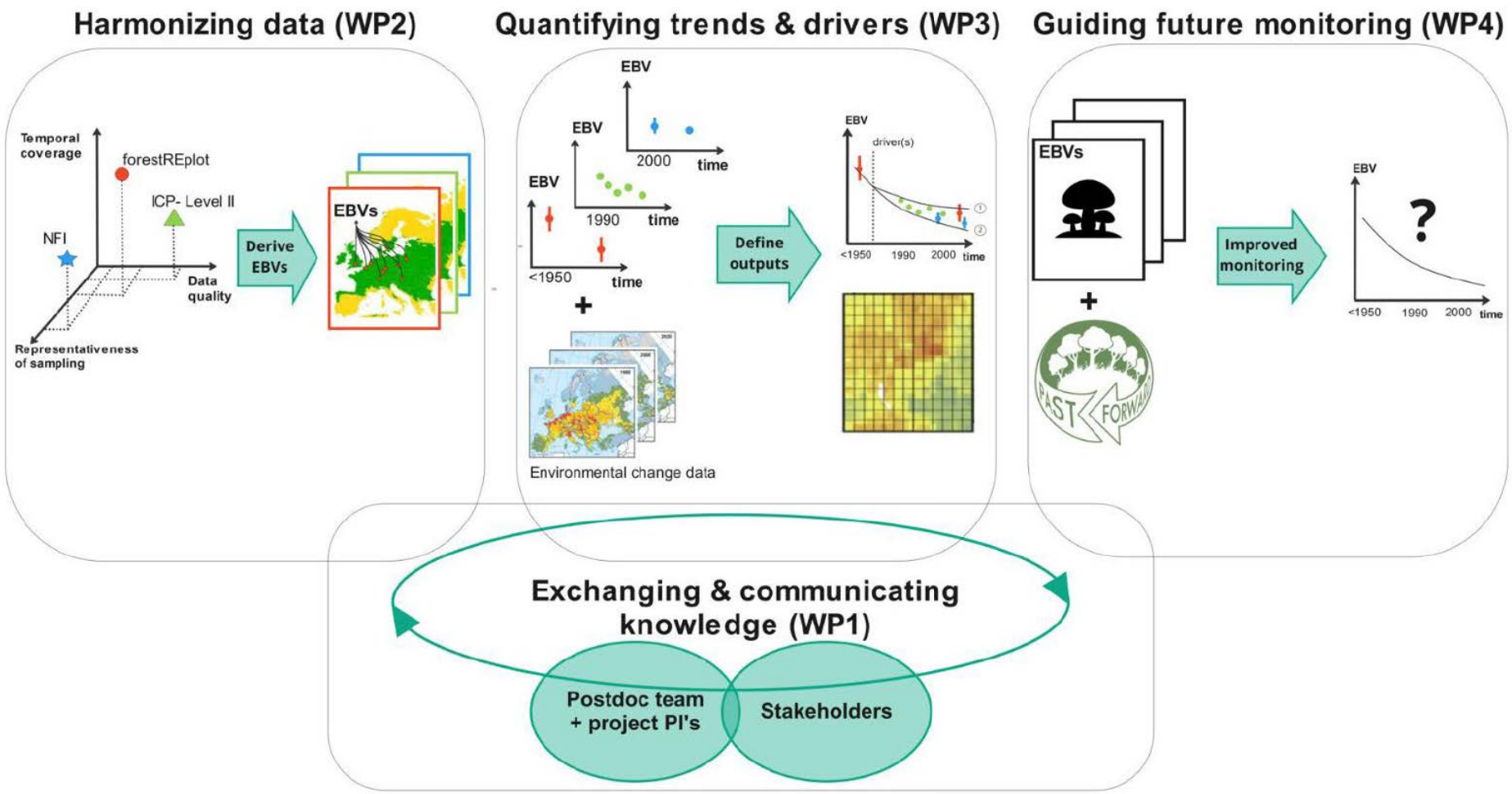
biodiversa+
European Biodiversity Partnership

ForBioMon: Boosting FORest BIOdiversity MONitoring in Europe through smart combination of existing data

By ***Kris Verheyen (UGent, BE)***

and by Lander Baeten, Pieter De Frenne, Haben Blondeel (UGent, BE), Markus Bernhardt-Römermann, Liping Wei (Friedrich Schiller University Jena, GE), Tord Snäll, Eva Lindberg (SLU, SE), and Radim Hédl, Peter Tkáč, Péter Szabó, Jiří Malíček (Czech Academy of Sciences, CZ)

Boosting FORest BIOdiversity MONitoring in Europe through smart combination of existing data



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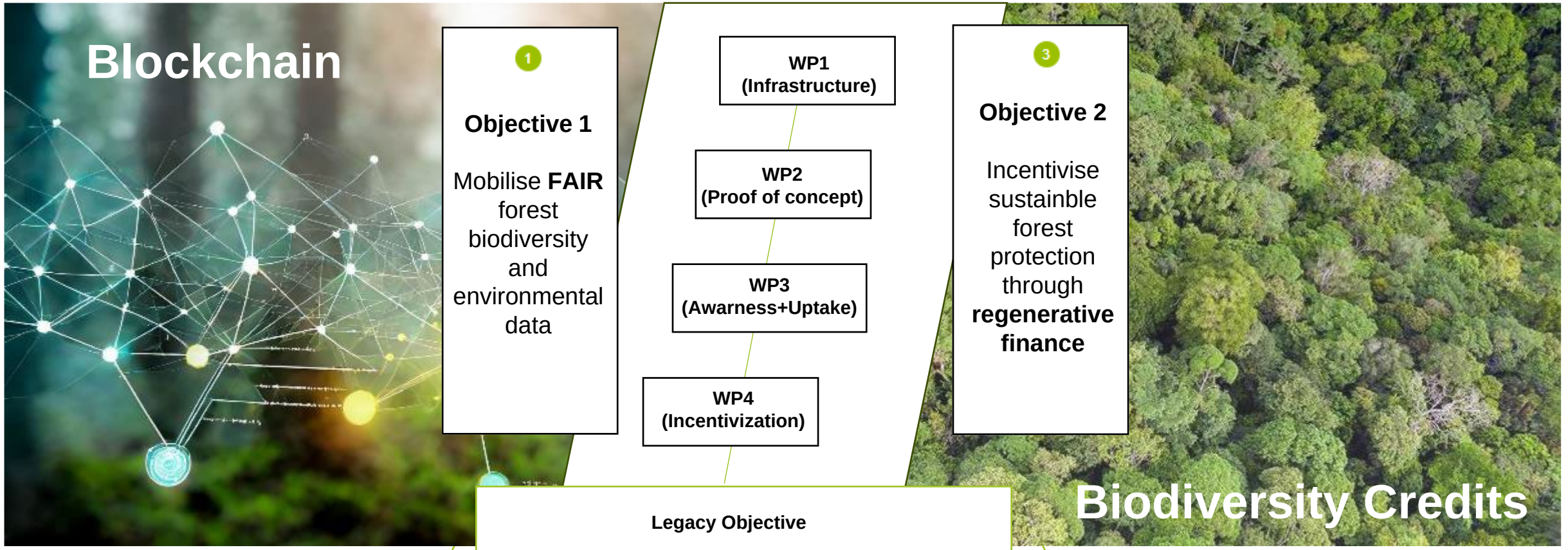
European Biodiversity Partnership

Forest-Web-3.0: Mobilising, harmonising and incentivising forest biodiversity and environmental monitoring data through Web 3.0 technology

By *[Robert John Lewis]*

Robert Lewis, Sigrid Engen, Vegard Gunderson: Norwegian Institute for Nature Research NINA: Norway
Jonas Lembrechts: University of Antwerp: Belgium
Chunli Li, Kjell-Erik Marstein: University of Bergen: Norway
Arildo Dias, Katherine von Stackelberg, Juri Sildam: Single Earth, Estonia

Forest-Web-3.0



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1 Innovation and harmonisation of methods and tools for the collection and management of biodiversity monitoring data.

3 Making effective use of available biodiversity monitoring data.

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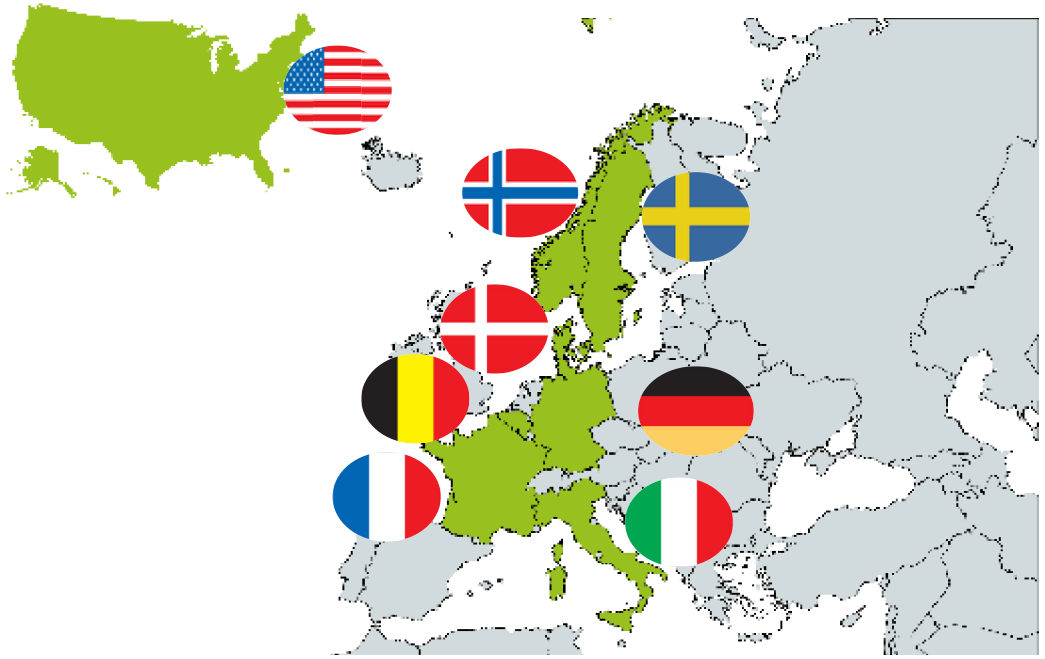
GINAMO



Genetic Indicators for NAture MOnitoring

Dr. Christina Hvilsom, Copenhagen Zoo

on behalf of the consortium:

Prof. Joachim Mergeay, Research Institute for Nature and Forest (INBO)
Prof, Linda Laikre, Stockholm University
Prof. Gernot Segelbacher, University Freiburg
Dr. Joost Raeymaekers, Nord University
Dr. Alex Kopatz, Norwegian Institute for Nature Research (NINA)
Dr. Myriam Heuertz, National Research Institute for Agriculture, Food and the Environment (INRAE)
Dr. Peter Galbusera, Royal Zoological Society of Antwerp
Dr. Cristiano Vernesi, Fondazione Edmund Mach
Prof Annica Sandström, Luleå University of Technology
Dr. Sean Hoban, The Morton Arboretum


GINAMO
QUALITY OF THE DECISION
=
Quality of Thinking
X
Levels of Acceptance

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European Biodiversity Partnership

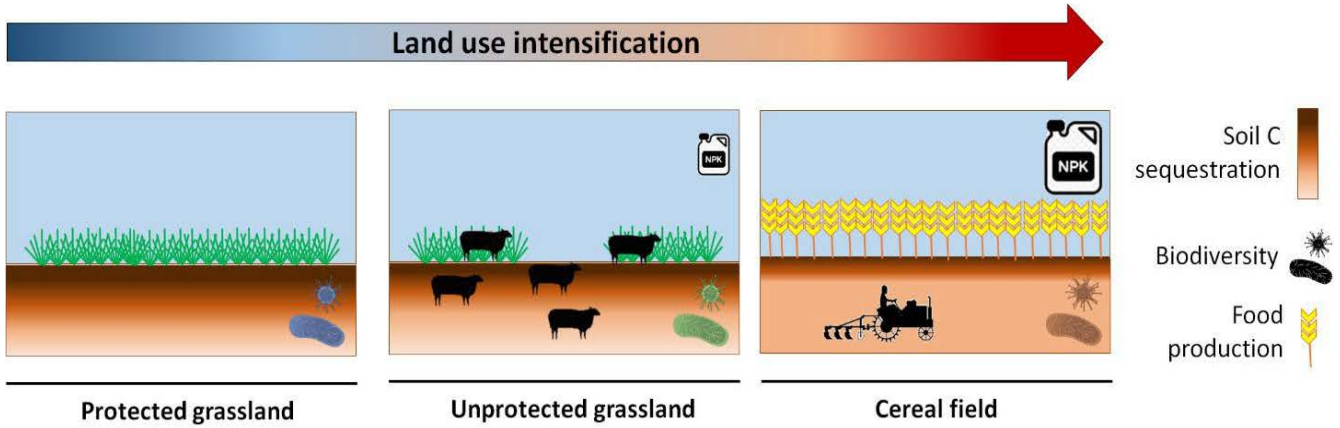
GRASS4FUN
Monitoring the contribution of European grasslands to the conservation of soil biodiversity and ecosystem function under multiple global change stressors

Spain ***Germany*** ***Switzerland*** ***Netherlands*** ***France*** ***Portugal***

coordinator

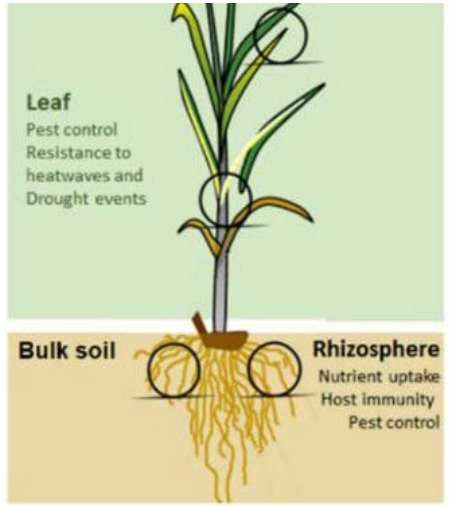
IRNAS
ICA Instituto de Ciencias Agrarias
CSIC
Universität Leipzig
Bundesministerium für Bildung und Forschung
Agroscope
Swiss National Science Foundation
University of Amsterdam
NWO Netherlands Organisation for Scientific Research
INRAE
Co-financé par
République Française
OFB
Universidade de Coimbra
FCT Fundação para a Ciência e a Tecnologia

Soil biodiversity, ecosystem function & global change in grasslands



Global Initiative of Crop Microbiome and Sustainable Agriculture

European-scale monitoring

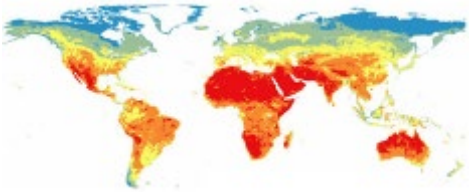


Plant microbiome

Ecosystem functions

Experiments

Modelling



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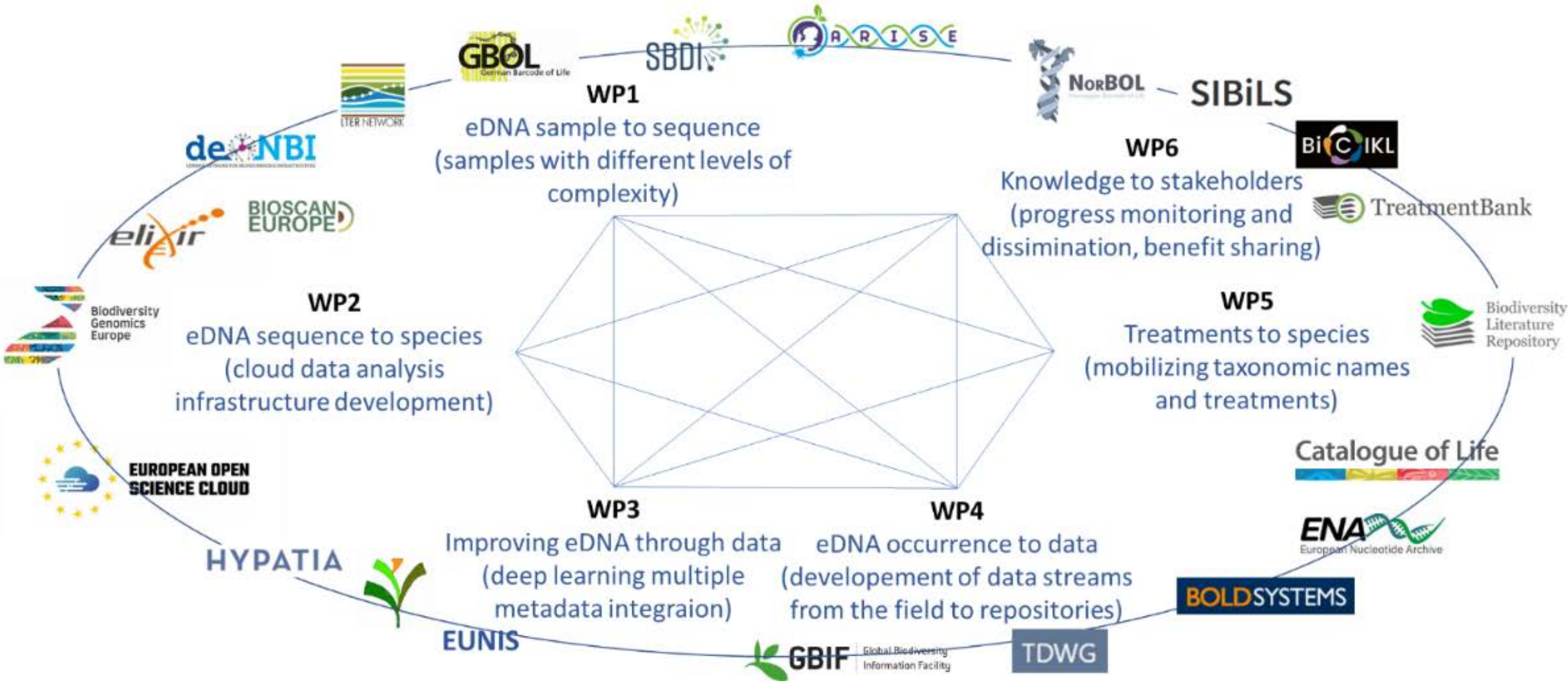
METAPLANTCODE - Harmonization of plant metabarcoding pipelines in Europe to support monitoring activities in the field of plants and their functional organismic networks

By Birgit Gemeinholzer



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MiDiPeat: Monitoring of peat microbial diversity through vegetation properties and its implication for carbon dynamics across European peatlands

By *Krista Peltoniemi*

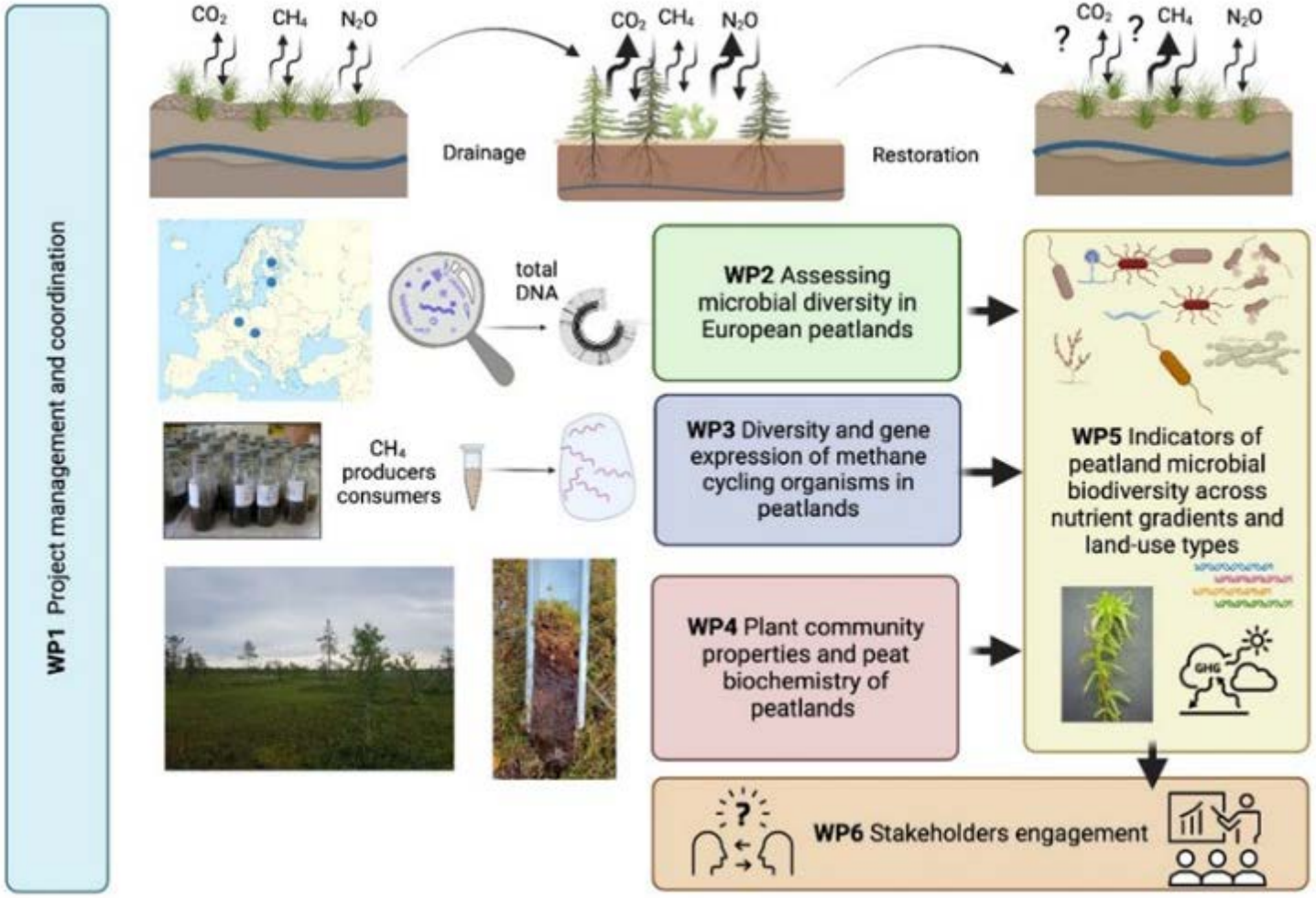
Natural Resources Institute Finland (Luke), Natural resources, Soil ecosystems, Helsinki, Finland

German Research Centre for Geosciences (GFZ), Helmholtz Centre Potsdam, Germany

University of Tartu (UTAR), Faculty of Science and Technology, Institute of Molecular and Cell Biology, Estonia

University of South Bohemia in České Budějovice (USB), Faculty of Science, Czech Republic

Objectives of the MiDiPeat



biodiversa+ European Biodiversity Partnership

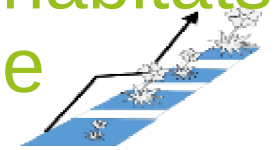
Luke Natural Resources Institute Finland

GFZ Helmholtz-Zentrum Potsdam

Tartu Ülikool Universitas Tartuensis 1632

Jihočeská univerzita v Českých Budějovicích
University of South Bohemia in České Budějovice

MOTIVATE: Monitoring Of Terrestrial habitats by Integrating Vegetation Archive Time series in Europe



biodiversa+
European Biodiversity Partnership

By *Ute Jandt*

Funding organizations:

ACADEMY OF FINLAND

AGENCIA ESTATAL DE INVESTIGACIÓN

Bundesministerium für Bildung und Forschung

DFG Deutsche Forschungsgemeinschaft German Research Foundation

FWF Der Wissenschaftsfonds.

Fundación Biodiversidad

MUR

TA CR Technology Agency of the Czech Republic

Consortium of 8 partners

Finland

Dr. Roger Norum , OULUN YLIOPISTO

Germany

Dr. Ute Jandt. Martin Luther University Halle-Wittenberg

Prof. Dr. Florian Jansen, University Rostock

Czech Republic

Prof. Dr. Milan Chytrý, Masaryk University

Austria

Prof. Dr. Franz Essl , University of Vienna

Italy

Prof. Dr. Francesco Maria Sabatini, Alma Ma Studiorum - University of Bologna, Italy

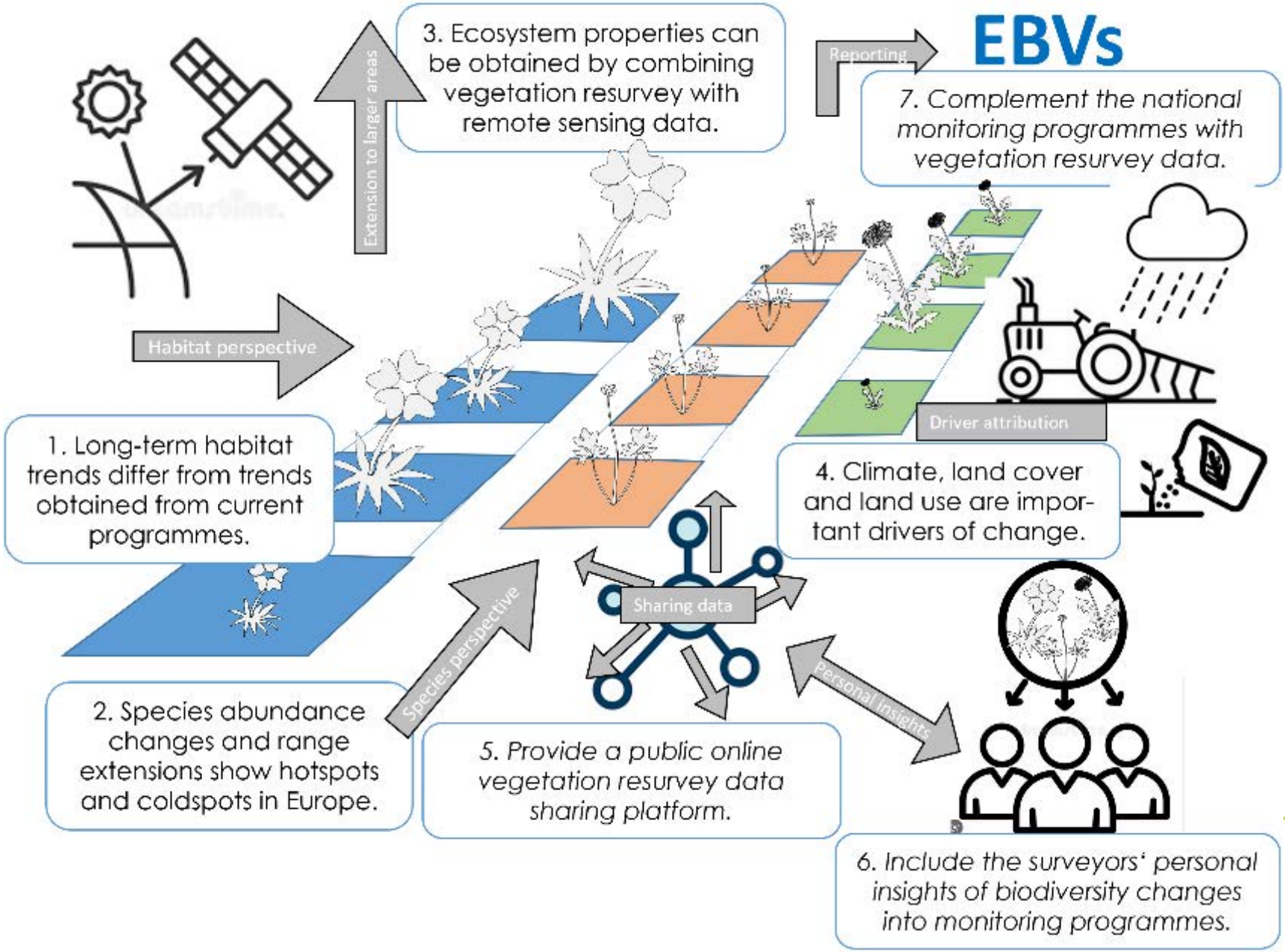
Prof. Dr. Marta Carboni, Università degli Studi Roma TRE

Spain

Prof. Dr. Borja Jiménez-Alfaro, University of Oviedo

MOTIVATE Monitoring Of Terrestrial habitats by Integrating Vegetation Archive Time series in Europe

Overarching hypotheses (WP 1-4) and general objectives (*WP 5-7 in italics*)



Workpackages

WP 1 Habitat trends

WP 2 Species trends

WP 3 Trends in habitat quality and ecosystem properties

WP 4 Attribution of drivers and scaling-up

WP 5 Vegetation resurvey database, data sharing platform and gap analysis

WP 6 Participation of experts and non-experts

WP 7 Involvement of national agencies

Panel discussion

moderated by Zuzana MUSILOVA, Czech University of Life Sciences (Czech Republic)

- BioMonI, Holger KREFT
- CoForFunc, Raphaël PELISSIER
- ForBioMon, Kris VERHEYEN
- Forest-Web-3.0, Robert LEWIS
- GINAMO, Christina HVILSOM
- GRASS4FUN, Pablo Garcia PALACIOS
- METAPLANTCODE, Birgit GEMEINHOLZER
- MiDiPeat, Krista PELTONIEMI
- MOTIVATE, Ute JANDT

Follow-up & life of funded projects: what is expected from funded projects?

*By **Mateusz SOBCZYK** and **Anna KOTARBA**, BiodivMon Follow-up Team, NCN (Poland)*

A few general information

- All 33 projects should have started now
  Start dates: between December 2023 & early April 2024 at the latest

- Within one project, all partners should preferably have the same start and end dates

- Projects' duration: **36 months**

Reminder: Biodiversa+ funds transnational projects. Even if you have slight difference in start/end dates within your project, you should still **act as a transnational project** and not as a mosaic of national projects.
A **real collaboration between research teams and integration of research carried out is expected**, and this should lead to co-publications between the different research teams, and more particularly between the different countries, involved in the project.

What to do in case of a change in your project?

- Any **important change** in the project (e.g. changes in the consortium) **has to be requested by the coordinator on behalf of the consortium**

- **What is the process to request a change?**
  1. Send a **short note explaining** the requested change to the BiodivMon Follow-up Team
  2. The **Call Steering Committee** will assess and take a decision on the request
  3. You'll be notified on the decision of the CSC by the BiodivMon Follow-up Team
  4. Each research partner should then contact her/his respective funding organisation to **finalise the process at the national/regional level** (e.g. PIs may need to submit a formal request at national level in line with their national/regional funding rules)

- **Important:**
  - The **coordinators** are the **main contact points** for the Follow-up Team
    → The coordinators are responsible to communicate the information given by the Follow-up team to their consortia and to coordinate their requests to the CSC via the Follow-up Team on behalf of the whole consortia.

Reporting: what do we expect

MID-TERM REPORTING: ~1 ½ year after the start dates of the projects

- Mid-term reports will be assessed by a Follow-up group (composed of experts)
- A summary of the review is sent to the coordinators, with recommendations or requests for clarifications, when needed.

Ca. Oct. – Dec. 2025

FINAL REPORTING: at the end of all the projects

- Final reports will be assessed by a Follow-up group (same as for mid-term reports as far as possible)
- A summary of the review is sent to the coordinators, with recommendations or requests for clarifications when needed.

A priori April 2027

- Autumn 2024 | Coordinators will receive the report templates from the follow-up team
- Ca. 2 month before the deadline | Coordinators will be reminded to submit your reports (using the online platform)
- Some national/regional funding organisations may also require specific reports

The follow-up toolkit, your reference documents

- You will be provided with a **follow-up toolkit** containing:
  - The **reporting** templates
  - **Logos** of all Call funding organisations, Biodiversa+ and European Commission, and instructions on how to use the Biodiversa+ logo
  - **Acknowledgment guidelines**

- When can you expect the toolkit?
  - **April 2024 |** Logos and acknowledgement guidelines (already sent)
  - **Autumn 2024 |** Reporting templates

A few words on acknowledgment requirements

FOR ALL WRITTEN MATERIALS, including papers published in scientific journals and policy briefs, indicate the following sentences:

*„This research was funded by Biodiversa+, the European Biodiversity Partnership, in the context of the **[Project Name]** project under the 2022-2023 BiodivMon joint call. It was co-funded by the European Commission **(GA No. 101052342)** and the following funding organisations: [Funding organisation 1], [Funding organisation 2]...”*

Please check with the relevant funding organisations if you need to indicate further details (e.g. ID number, acronym, etc.)

In addition, IN ANY VISUAL (PowerPoint, poster, social media visual, video, project’s website…) use the **Biodiversa+ logo** (see the guidelines in Tookit) & **EU emblem**, as well as the **logos of the relevant funding organisations**.

Upcoming opportunities

During your lifetime, you'll have several opportunities to network, participate to capacity building activities, etc.

A few examples

- 18 April 2024 | Networking & clustering Workshop
- 6-7 June 2024 | Data management and capacity building on Darwin Core Standard workshop **SAVE THE DATE**
- Autumn 2024 | Capacity building related to communication
- Autumn 2024 | Science policy interface capacity building workshop (including CBD processes)
- 2024-2026 | clustering workshop follow-up, citizen science master class trainings, summer school on science policy interface, IPBES and GBF/MEAs webinars, etc.
- 2027 | Final conference of your funded projects

Your main contact: the BiodivMon Follow-up team

- **Follow-up Team** is in charge of the follow-up of the BiodivMon funded projects
- It is based at **NCN**, Poland
- Main contact point: **Anna Kotarba & Mateusz Sobczyk** biodiversa.projects@ncn.gov.pl

NATIONAL SCIENCE CENTRE
POLAND

Capacity-building and collaboration for project communication

***Phong HOANG**, Communication officer, BELSPO (Belgium)*

Contact us!

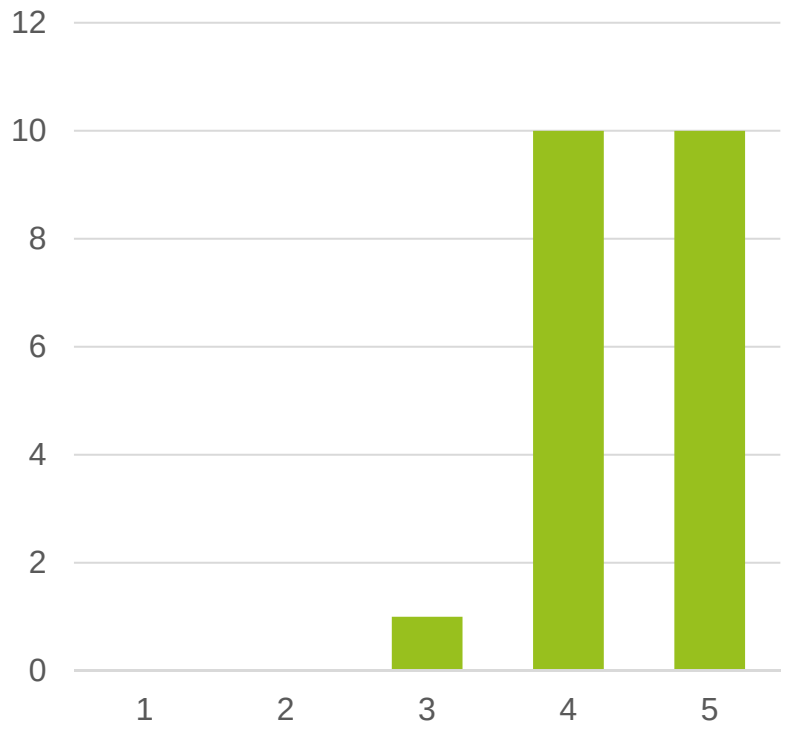
communication@biodiversa.eu

@BiodiversaPlus

Biodiversa+

Summary

- How important is communication?



Summary

- How important is communication?
- How to?

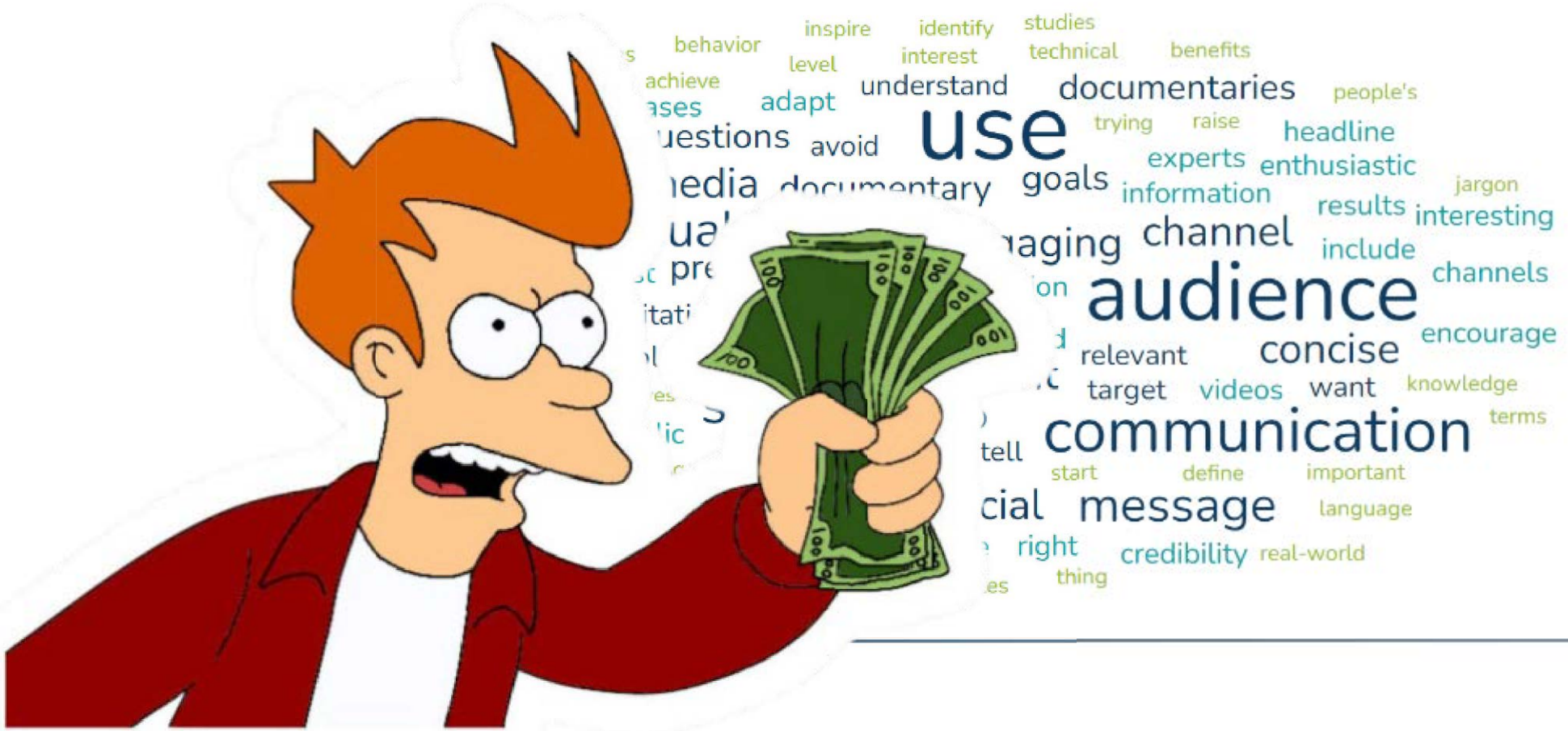
$$impact = significance + reach$$

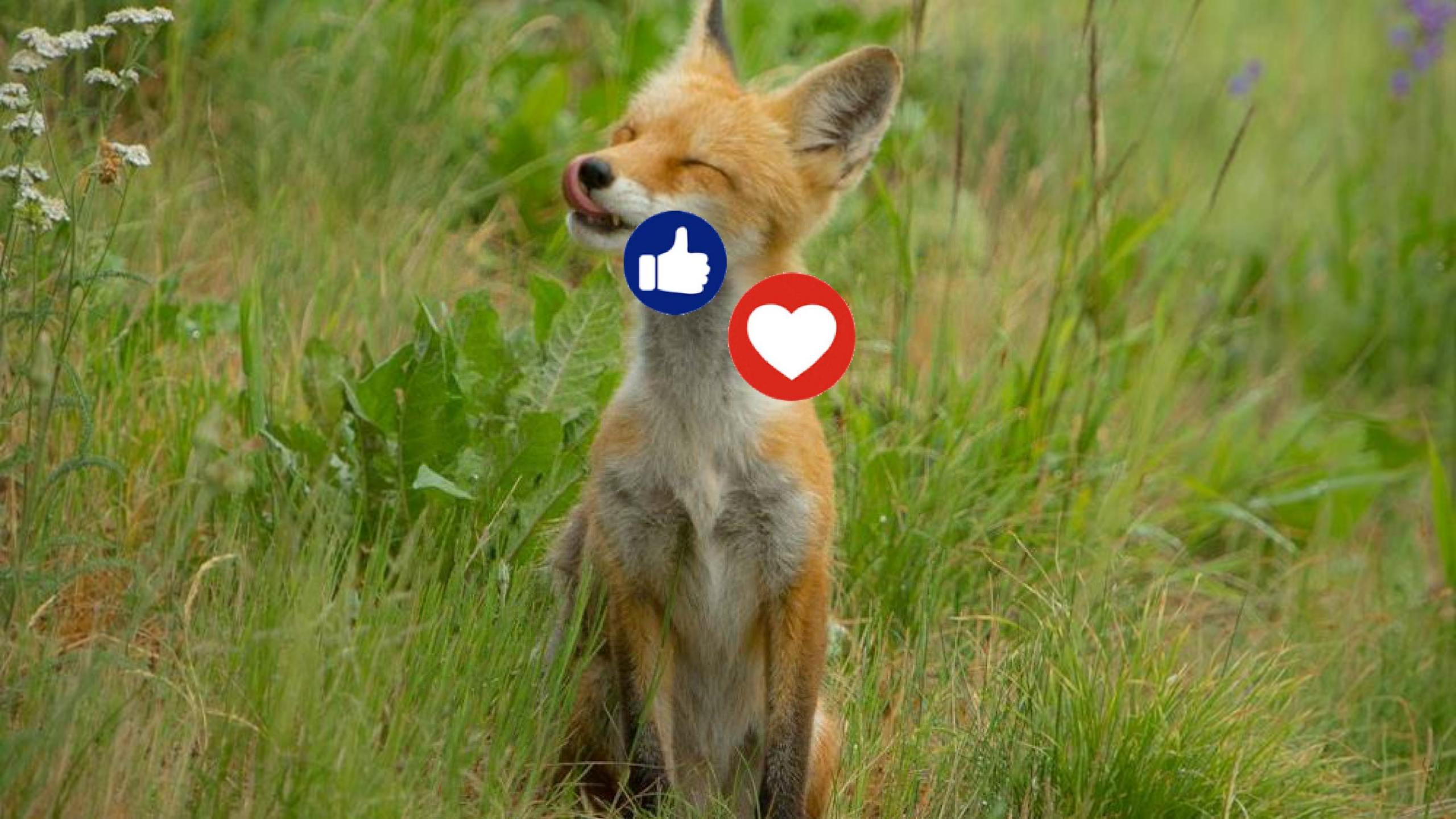
$$behaviour = motivation * ability * trigger$$

$$C(a) \in \{ Info(a) \cap Time(a) \cap Place(a) \cap Style(a) \cap Recipient(a) \} \mid a \in Attention\,;\ lim(a) \to 0$$

Summary

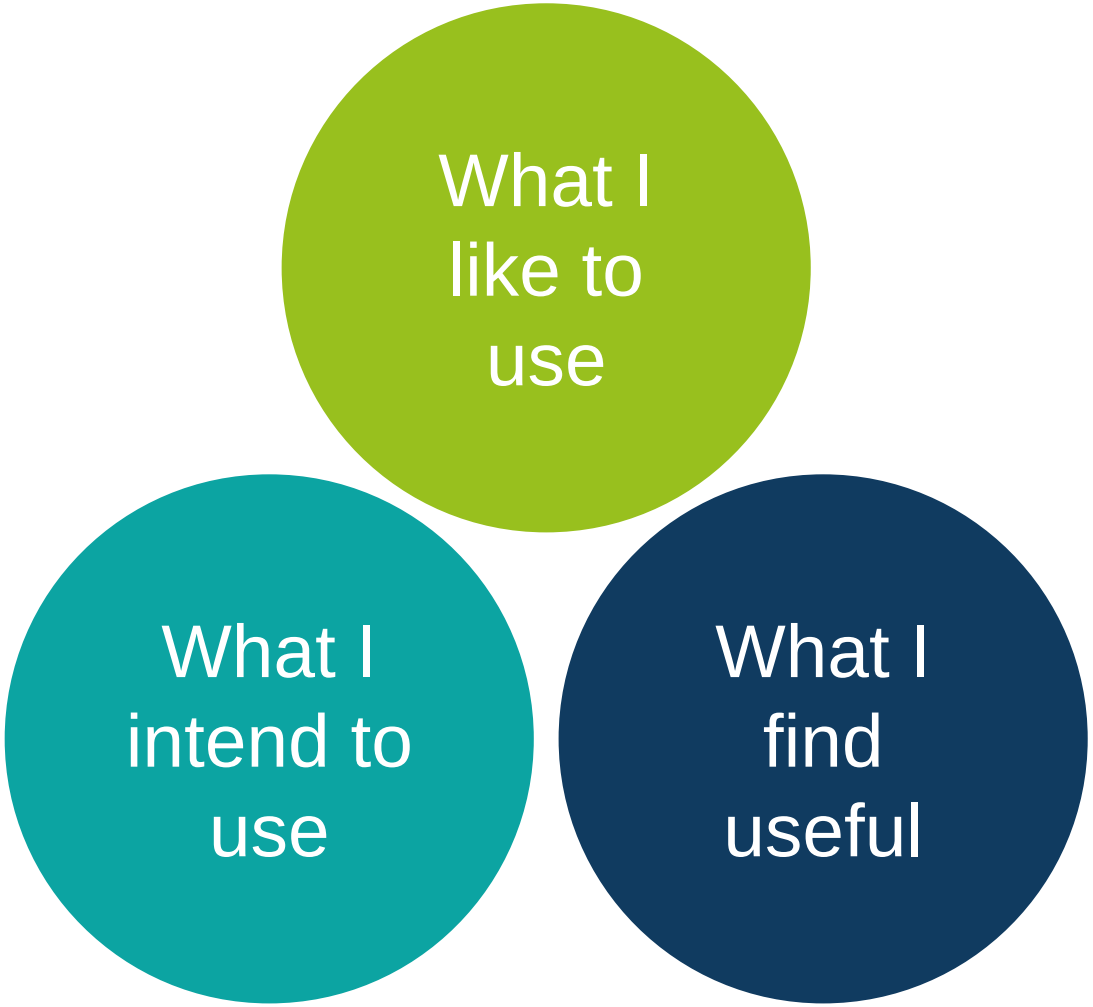
- How important is communication?
- How to?






PEEL SLOWLY AND SEE
Andy Warhol

Communication channels: A Venn diagram



Top goals

- Engage stakeholders and foster collaboration (95.2%)
- Influence policy or decision-making (76.2%)
- Increase awareness about project goals and activities (71.4%)

Primary target audiences

- Researchers/scientists (90.5%)
- Policymakers (76.2%)
- Practitioners (67.6%)

Challenges

- Time constraints (71.4%)
- Reaching the right audience (52.4%)
- Lack of training or resources (52.4%)

Paths?

- Guides and handbooks
- Intranet and Open access platform
- Networking effects (pooling, best practices, success stories...)

zenodo

Nextcloud

?!

Contact us!

communication@biodiversa.eu

@BiodiversaPlus

Biodiversa+

1. What? **Communication!**
2. So what? **It's important/hard/strategic/…**
3. Now what? **Think about it! Talk about it!**

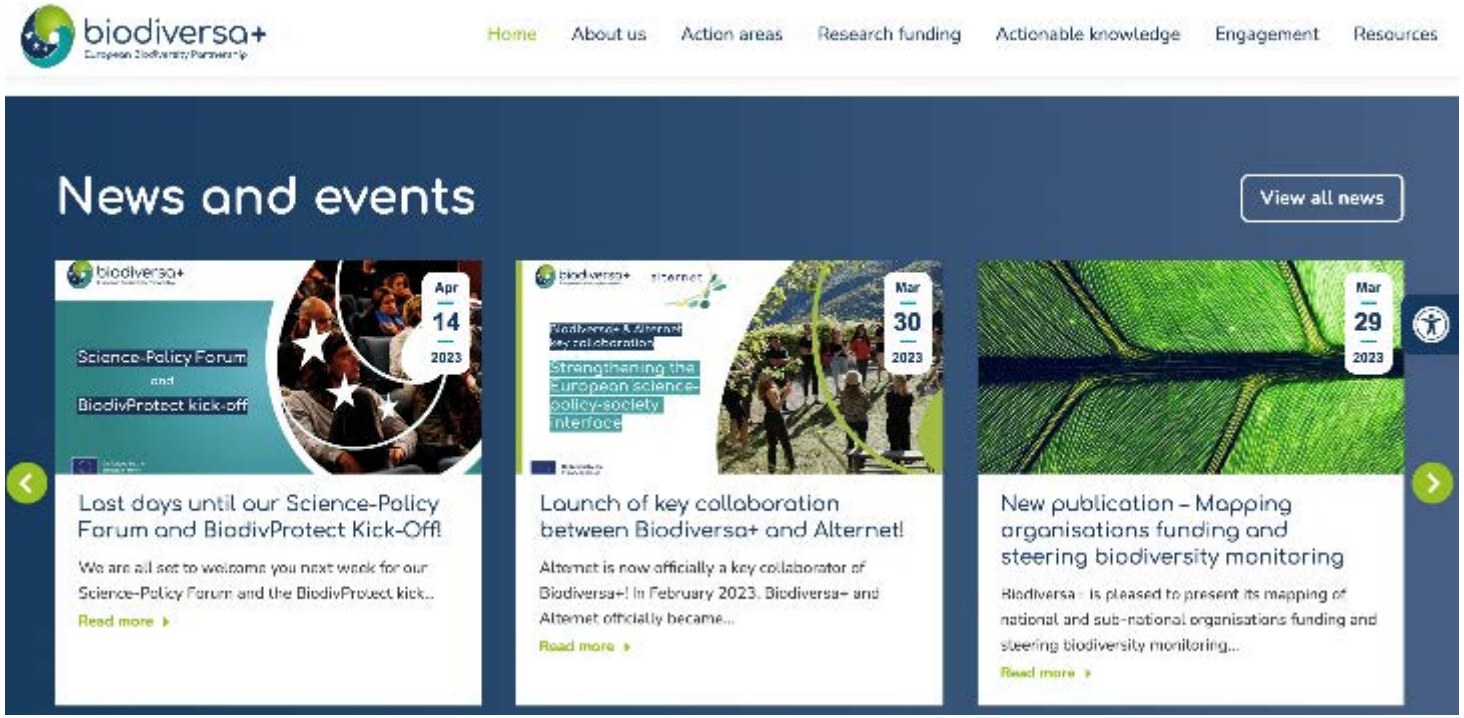
Concluding words

By **Magnus TANNERFELDT**, Biodiversa+ Co-Chair, FORMAS (Sweden)

& **Margit SUUROJA**, Biodiversa+ Networking and Clustering Task Leader, ETAG (Estonia)

Soon available on the Biodiversa+ website

- The **recording** of the webinar
- The **presentations**
  - → Should you disagree or need to make a change in your presentation before it's published, let the Follow-Up Team know by tomorrow



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Dinner Venue

Guided Tour 18:00 – 19:30 Visit of the Old Town (meeting point: Original Sokos Hotel Viru)

Dinner 19:30 (local time) Restaurant Peppersack, Vana Turg 6, Tallinn (medieval-experience in Old Town

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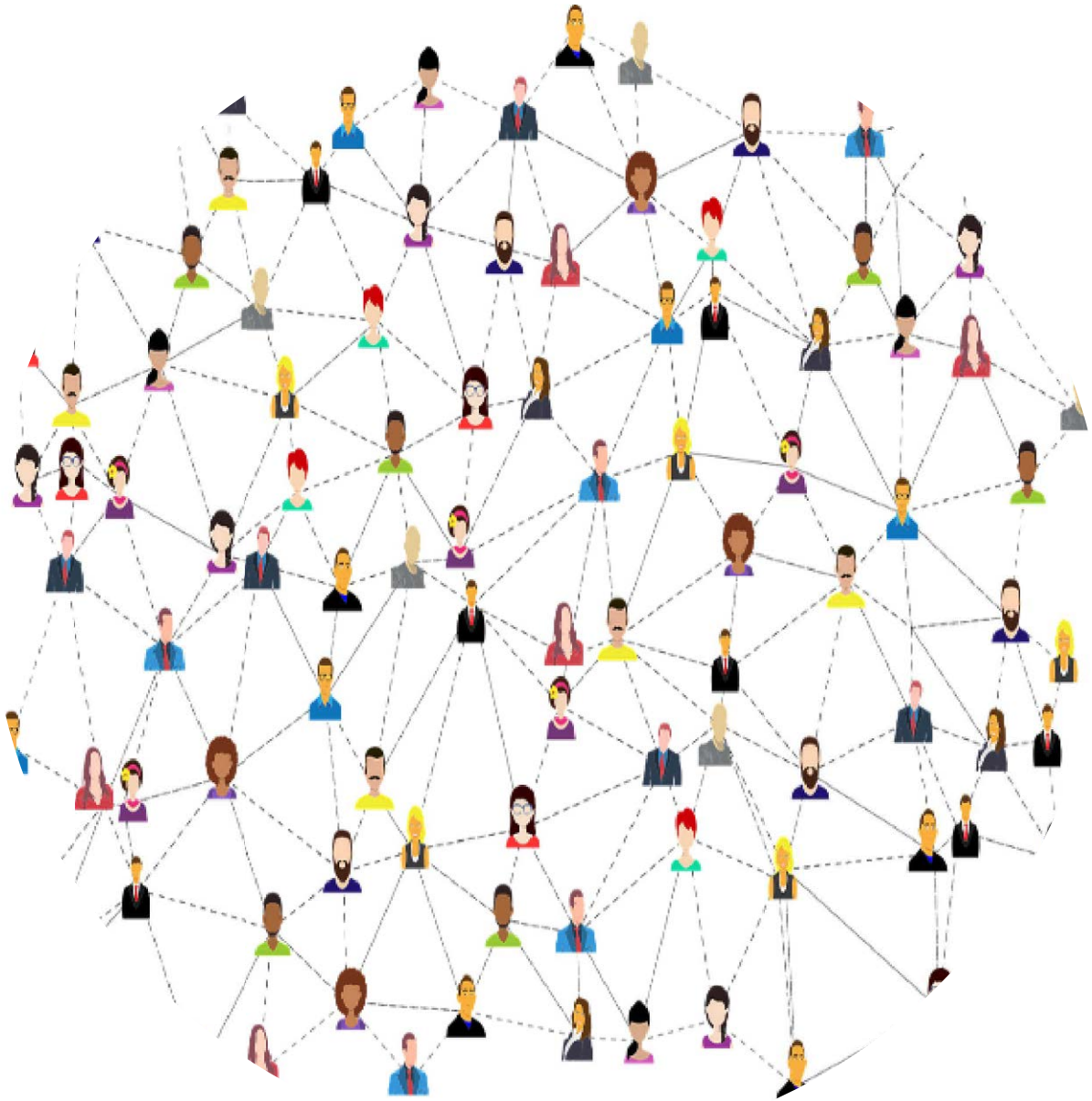
What's next ?

Tomorrow from 9:00 | Closed session for clustering & networking



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Thank you!

To download the BiodivMon call brochure

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