



Introduction

by Prof Stephen J. Hawkins,

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Chair of the BiodivERsA 2015-2016 call's Evaluation Committee

**Final Conference of the projects funded under 2015-2016 BiodivERsA Call
12th of November, Brussels**

*Thanks to BiodivERsA team for helping prepare this talk and
administering the programme so effectively*



Outline of talk

- Why BioDivERsA is so important
 - The Call
 - Major themes
 - Global change and its interaction with regional and local scale impacts on biodiversity, ecosystem functioning and service delivery (personal perspective)
 - Outcomes of the evaluation process and overview of funded projects
- 

THANKS!

Together with the European Commission, 24 national and regional funding organisations from 15 countries are contributing to the funding of this present joint call:

Belgium (Belspo)
Belgium (FWO)
Bulgaria (BNSF)
Estonia (ETAG)
France (ANR)
France (ADECAL)
France (Guadeloupe Region)
France (Guyana Region)
France (Réunion Region)
Germany (DFG)
Germany (PT-DLR)
Hungary (VM)

Lithuania (RCL)
Norway (RCN)
Poland (NCN)
Portugal (FCT)
Portugal (FRCT)
Romania (UEFISCDI)
Spain (GOBCAN)
Spain (MINECO)
Sweden (FORMAS)
Sweden (SEPA)
Switzerland (SNSF)
Turkey (MFAL)

+





ADDED VALUE OF THIS CALL & OF THE BIODIVERSA PROGRAMME



Why is BiodivERsA needed?

The scale of environmental and ecological processes is usually much greater than the resolution of legislative and statutory instruments – nature does not respect national boundaries, nor local administrative units (Hawkins AQC 2017 Opinion Piece)

- International conventions, platforms, panels and actions important drivers (CBD, OSPARCOM, CITES, RAMSAR, IPCC, IPBES etc)
- EU very important for delivery via policies and directives (WFD, MSFD, reformed CAP, reformed CFP etc)
- European projects and networks allow patterns, processes and impacts to be addressed at appropriate scales



Why is BiodivERsA needed?

- BIODIVERSA enables this science - but emphasizes delivery to society
- Projects take advantage on land and sea of European wide gradients of: climate, altitude, bathymetry, geology, soils, sediments, agricultural/aquaculture and fisheries pressures and practices, urbanization, pollution, cultural and economic differences and subsequent impacts
- How biodiversity and ecosystem functioning respond to these gradients in the context of global change
- Consequences for delivery of ecosystem goods and service
- Policy and management measures and societal engagement to ensure resilience



Schemes like BiodivERsA
address major
environmental
challenges at an
appropriate
transnational scale

WHAT WAS THIS CALL ABOUT?



TWO THEMES

CO-FUND CALL on

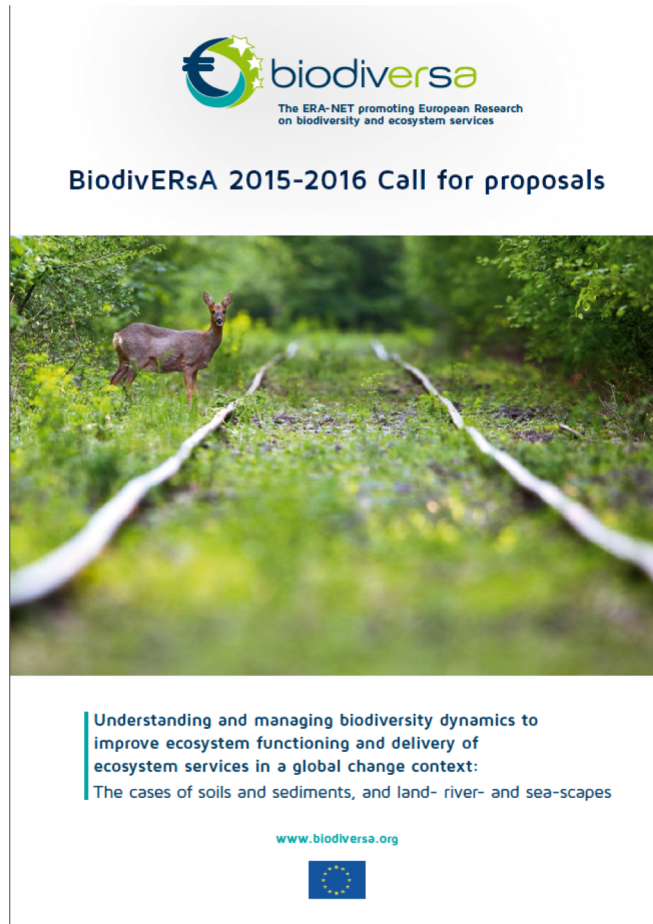
“Understanding and managing biodiversity dynamics to improve ecosystem functioning and delivery of ecosystem services in a global change context: the cases of

Theme 1) soils and sediments;

Theme 2) land- river- and sea-scapes (habitat connectivity, green and blue infrastructures, and naturing cities)”



2015-2016 CALL BROCHURE



**More statistics and more information
on the call process in the 2015-2016
Call brochure**

➤ **You can download it on the
BiodivERsA website
(<https://www.biodiversa.org/922>)**

Theme 1) soil and sediment biodiversity crucial for ecosystem processes and services:

- Carbon sequestration and storage
- Nutrient storage and recycling (N, P, Si, K, S, Se etc)
- Food security: soils for agricultural production and sediments for marine food webs and fisheries
- Water security – functioning and clean ecosystems
- Potential biotechnologies and products from microbes
- Pollution sink and site of bioremediation
- Erosion control on land, along catchments and the coast

and below-ground biodiversity and ecological processes are both scientifically interesting and a challenge for knowledge exchange, outreach and public engagement

KEYNOTE: George Kowalchuk, Taming the soil microbiome



The 2015 BiodivERsA CALL:

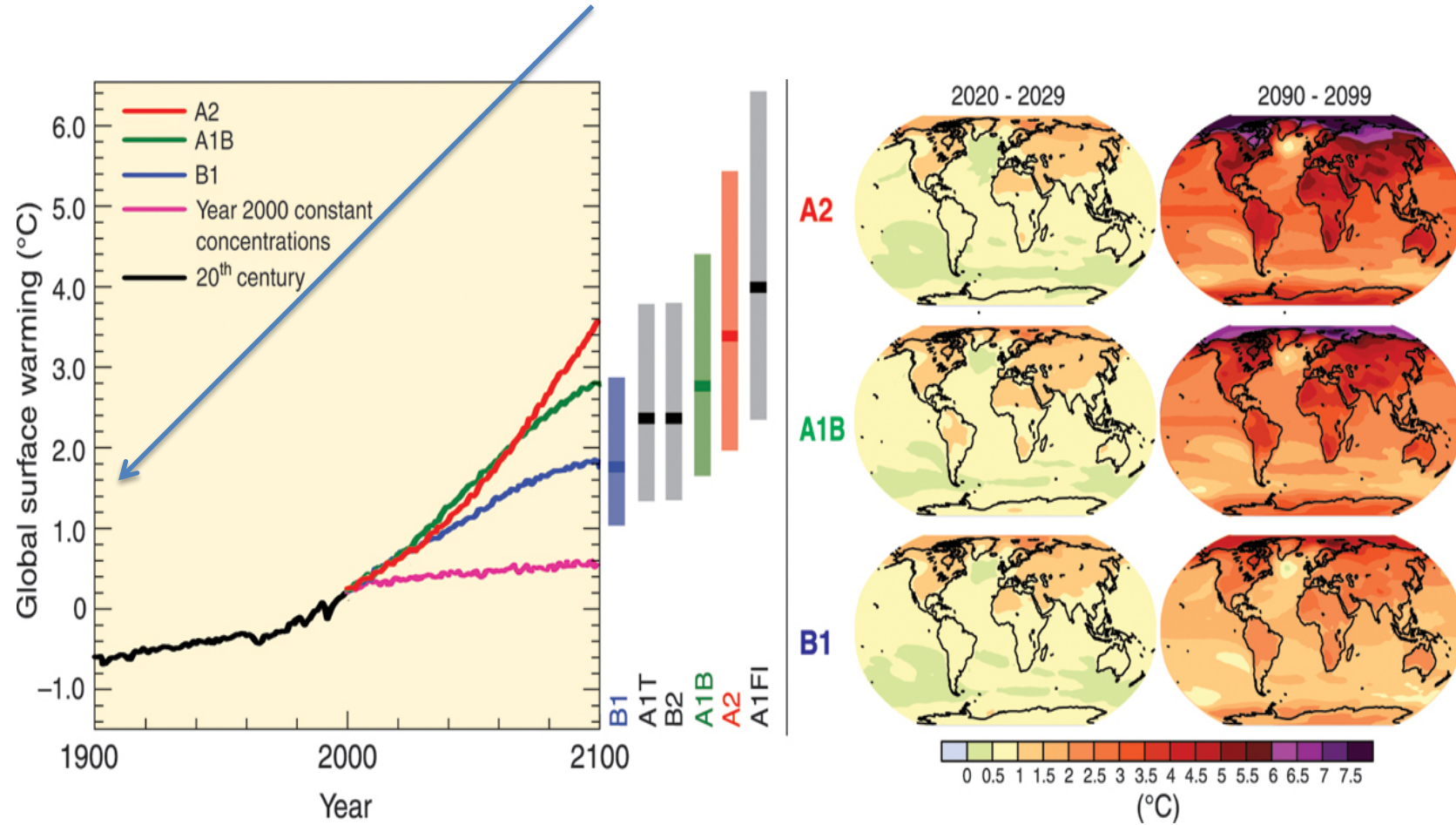
Theme 2) land- river- and sea-scapes (habitat connectivity, green and blue infrastructures, and naturing cities)

- Responses to climate change occur at these large European scales
- Understanding connectivity essential to understanding how species and habitats respond to climate change and whether they are at risk
- Interactions between global change and regional and local scale impacts need to be understood for management
- Artificial and highly modified habitats can both act as barriers to connectivity on land and sometimes assist connectivity – particularly in marine and fresh waters
- “Brownfield” sites and suburbs often oases of biodiversity in urban areas or agricultural landscapes dominated by monocultures
- Restoration and remediation techniques can be applied to degraded urban areas
- Working with nature can lead to greener and bluer cities
- Benefitting the health and wealth of citizens
- As well as biodiversity plus provisioning, regulatory, cultural and aesthetic services

Keynote: Bill Slee, Green and blue infrastructure

Future predictions

Paris 2015 Summit < 2 degrees rise



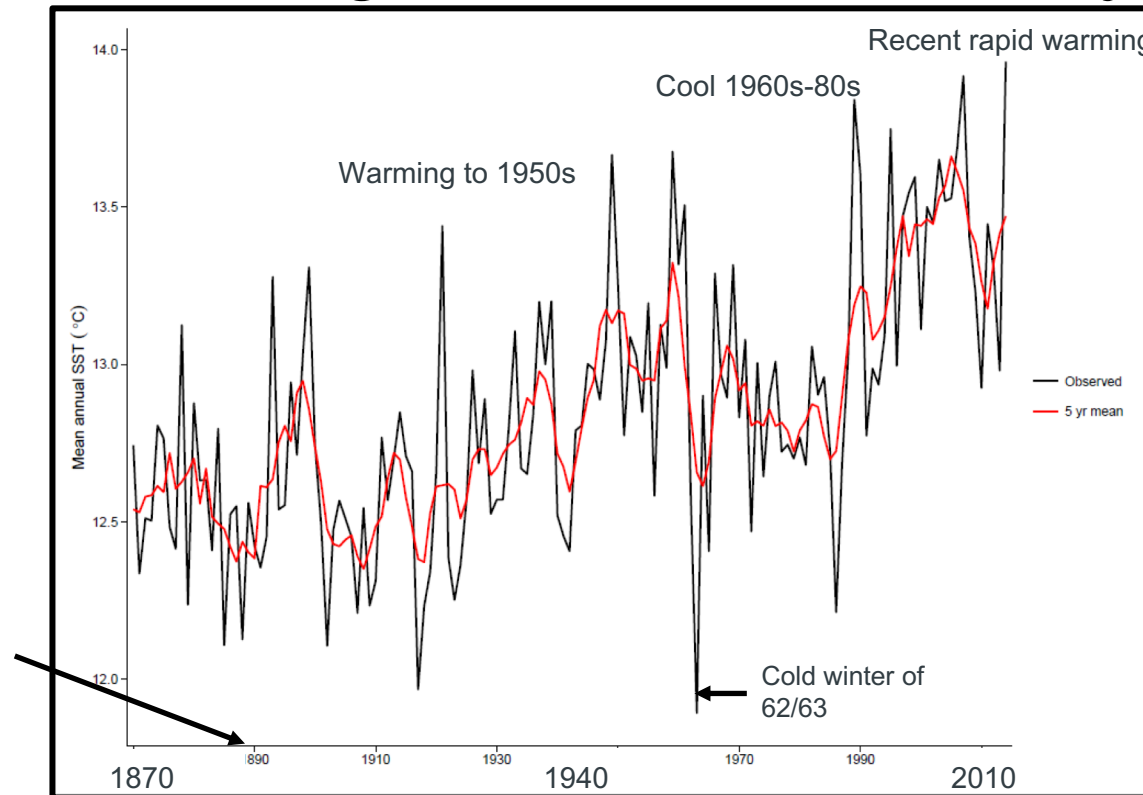
IPCC 2007 Synthesis report



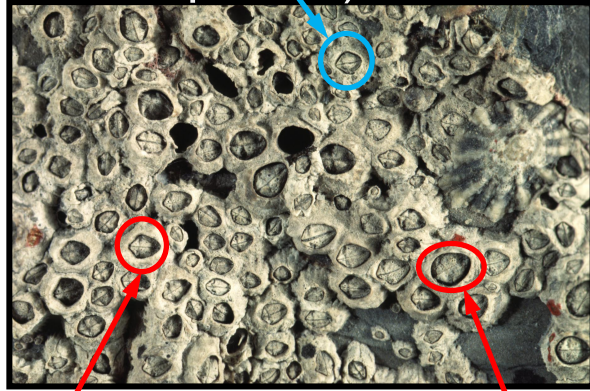
A Alternative hypotheses?



Climate change and coastal ecosystems



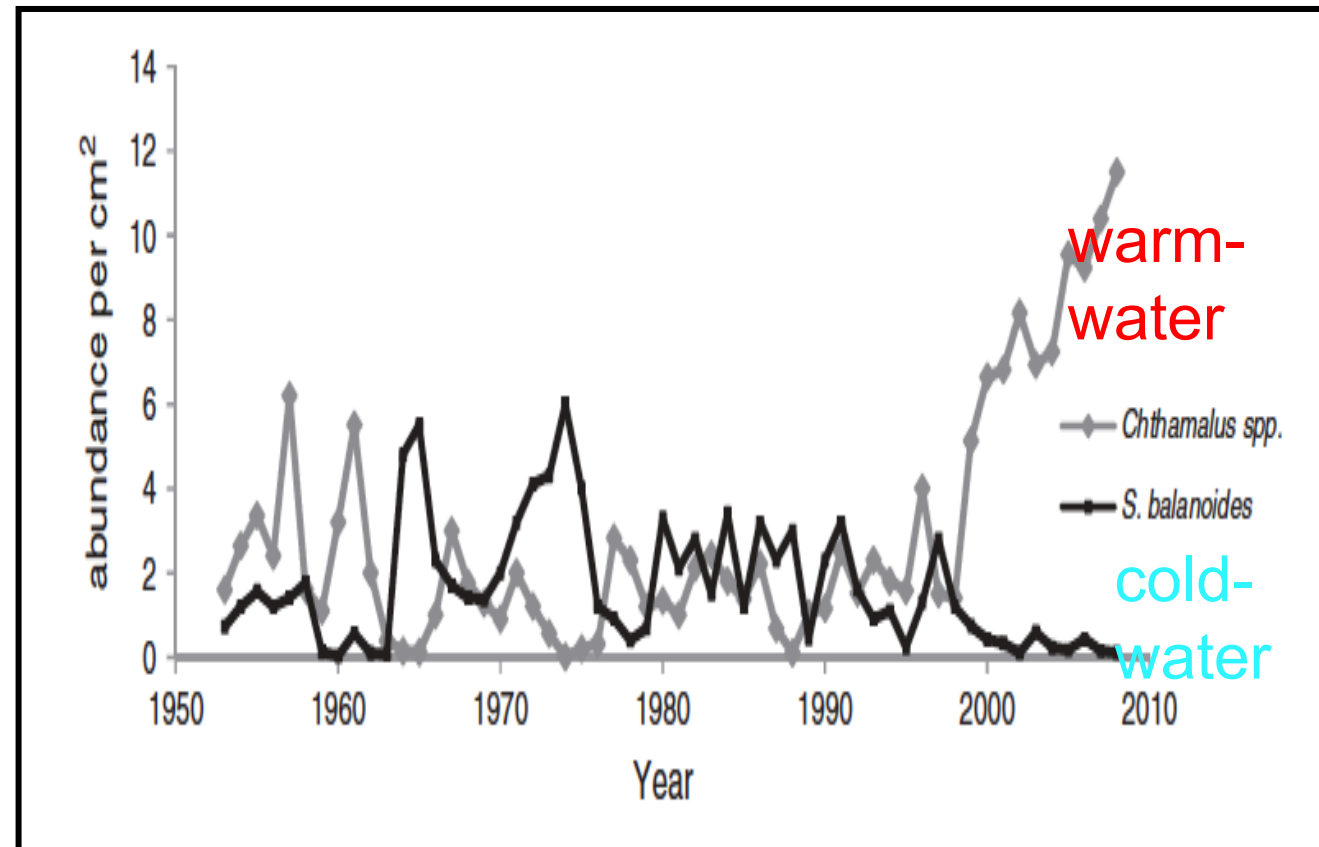
*Semibalanus
balanoides*
(northern cold-
water species)



*Chthamalus
montagui* *Chthamalus
stellatus*
(southern warm-
water species)

From
Mieszkowska *et al.* 2014 *Journal of
Marine Systems*

Intertidal organisms as indicators of responses
to climate fluctuations
recent rapid change

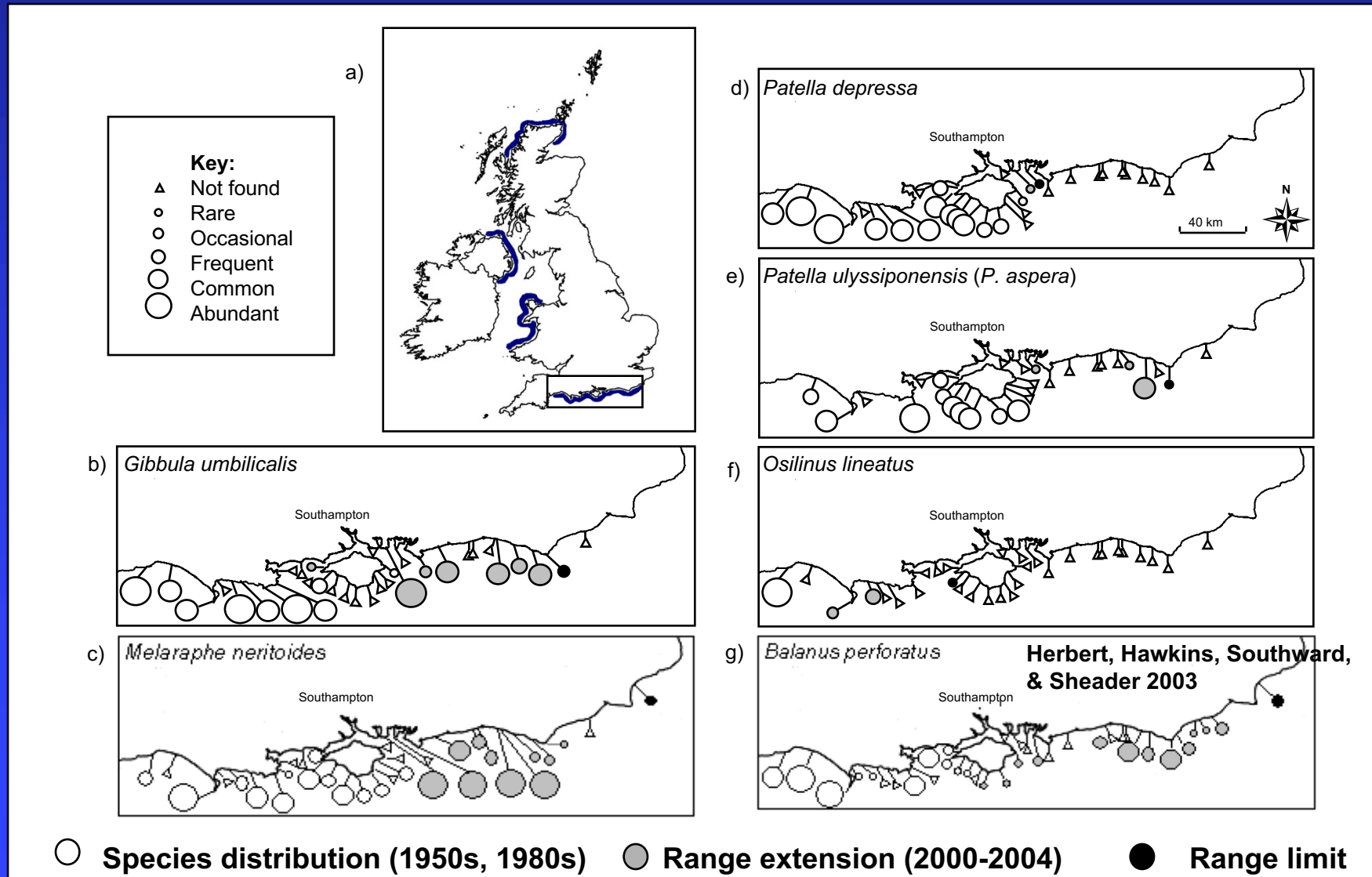


Not just warming – rising and stormier seas



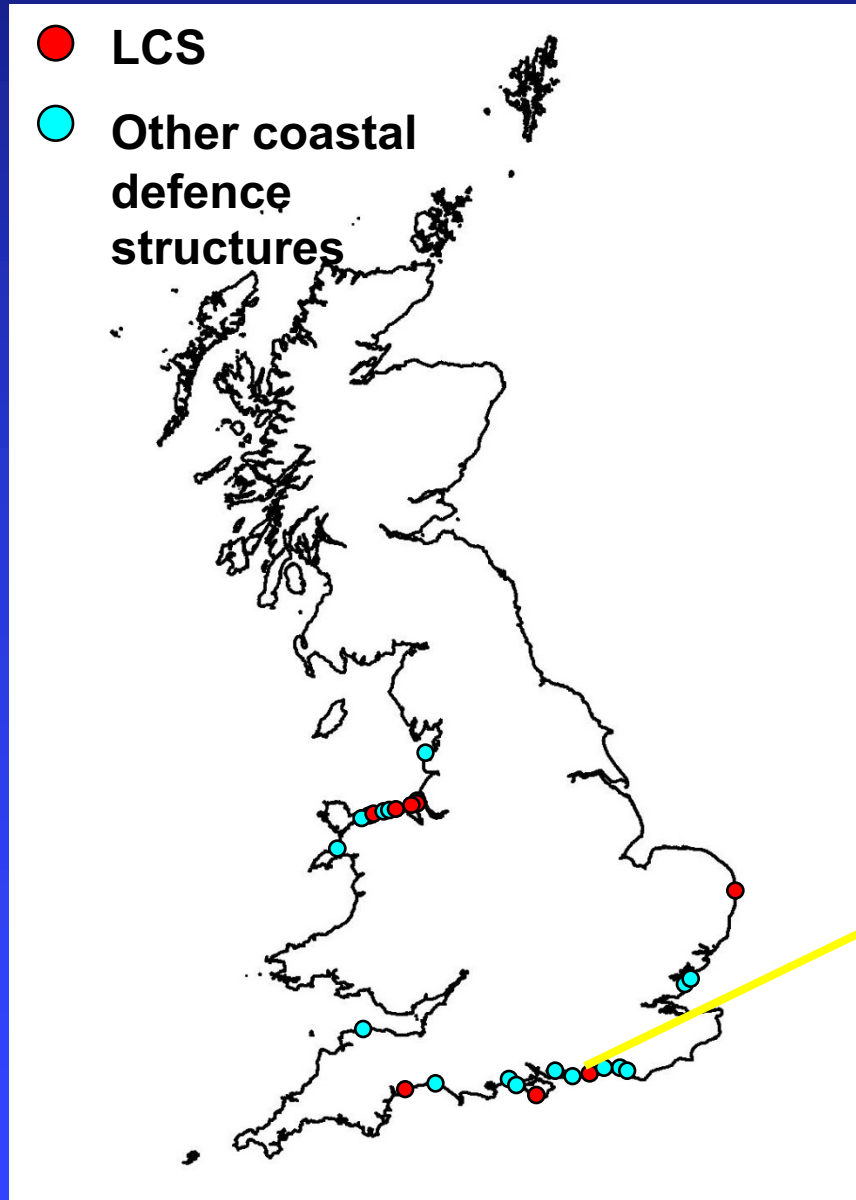
Adaptational responses leading to hardening of coasts

Range edge distribution of intertidal species in the English Channel (summer 2004-2005)



Hawkins, Mieszkowska, Moschella new data, 2004-2005

Broad-scale modification of coastline



**Elmer defence
scheme**

Habitat enhancement

Drill-cored rock pools at Tywyn, Wales




Eco-design to ensure adaptational measures are environmentally-sensitive

WHAT WERE THE RESULTS OF THIS CALL?

**We will hear about that today
and tomorrow**

An overview of the large portfolio of projects (in total 26) – in terms of environments, research area, organisms etc. and how they cover the topics and how they link science with society and policy



122
full proposals
submitted

26
projects
funded

For over
33Mio€

~21%
success
rate

26 FUNDED PROJECTS

9 projects funded under Theme 1

- BIO-TIDE
- BIOINVENT
- CLIMARCTIC
- DIGGING_DEEPER
- REPEAT
- SOILCLIM
- SOILFOREUROPE
- SOILMAN
- URBANMYCOSERVE

SOIL & SEDIMENTS

17 projects funded under Theme 2

- BEARCONNECT
- BIOGEA
- BIOVEINS
- CROSSLINK
- ENABLE
- FUNGREEN
- GREENFUTUREFOREST
- IMAGINE
- INFRAGECO
- MARFOR
- ODYSSEUS
- OSCAR
- PERCEBES
- RESERVEBENEFIT
- SPONFOREST
- URBANGAIA
- WOODNET

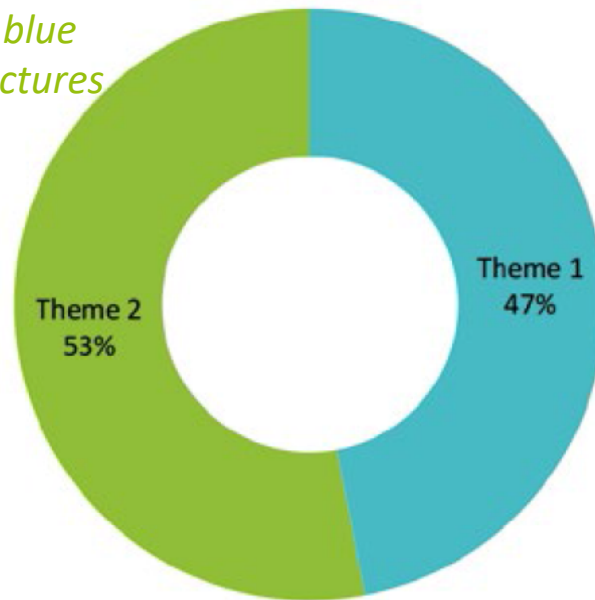
GREEN & BLUE INFRASTRUCTURES



STUDIED THEMES

Submitted proposals

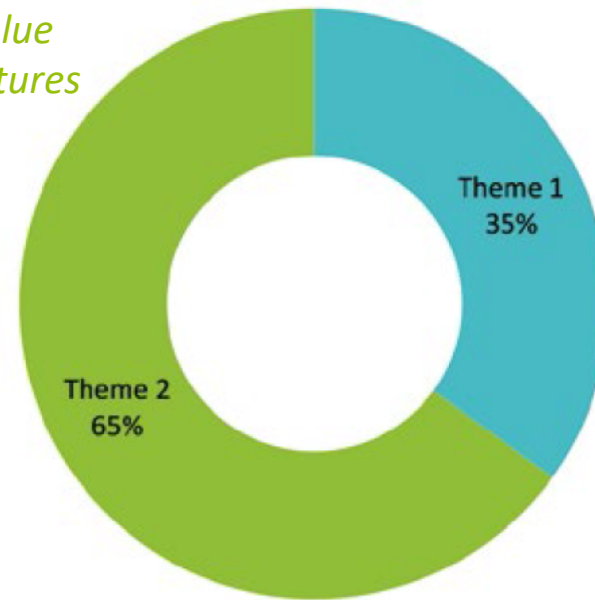
*Green & blue
infrastructures*



*Soil &
sediments*

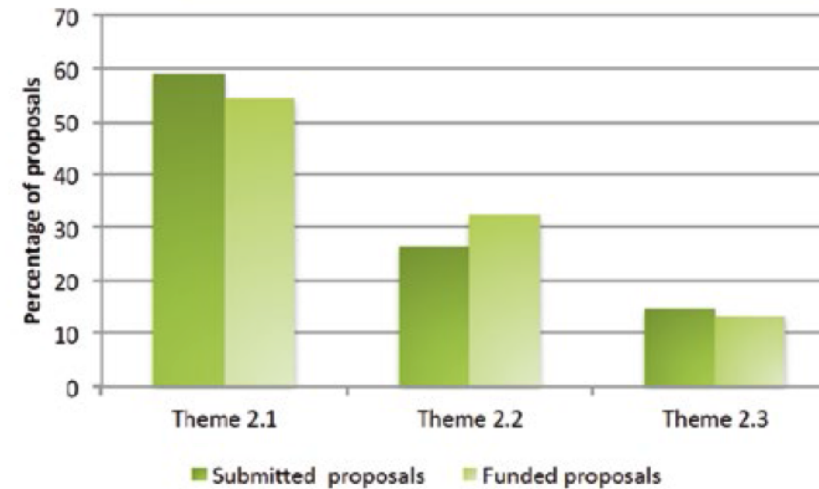
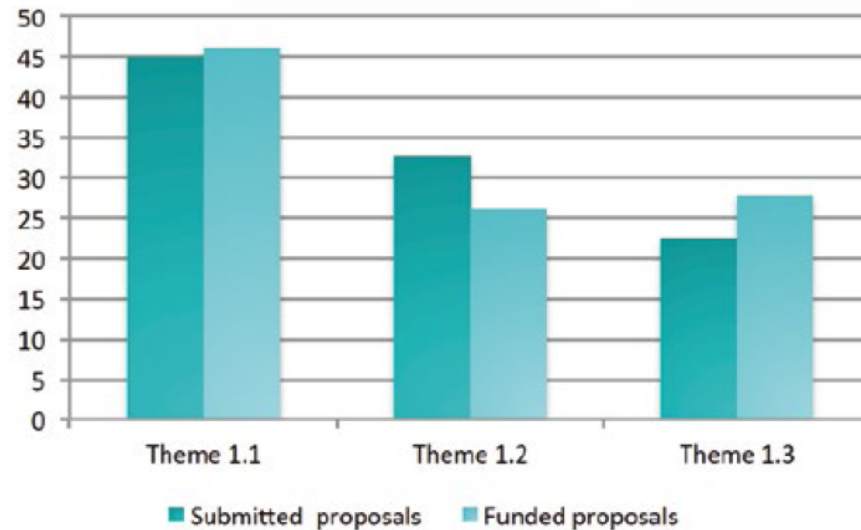
Funded proposals

*Green & blue
infrastructures*

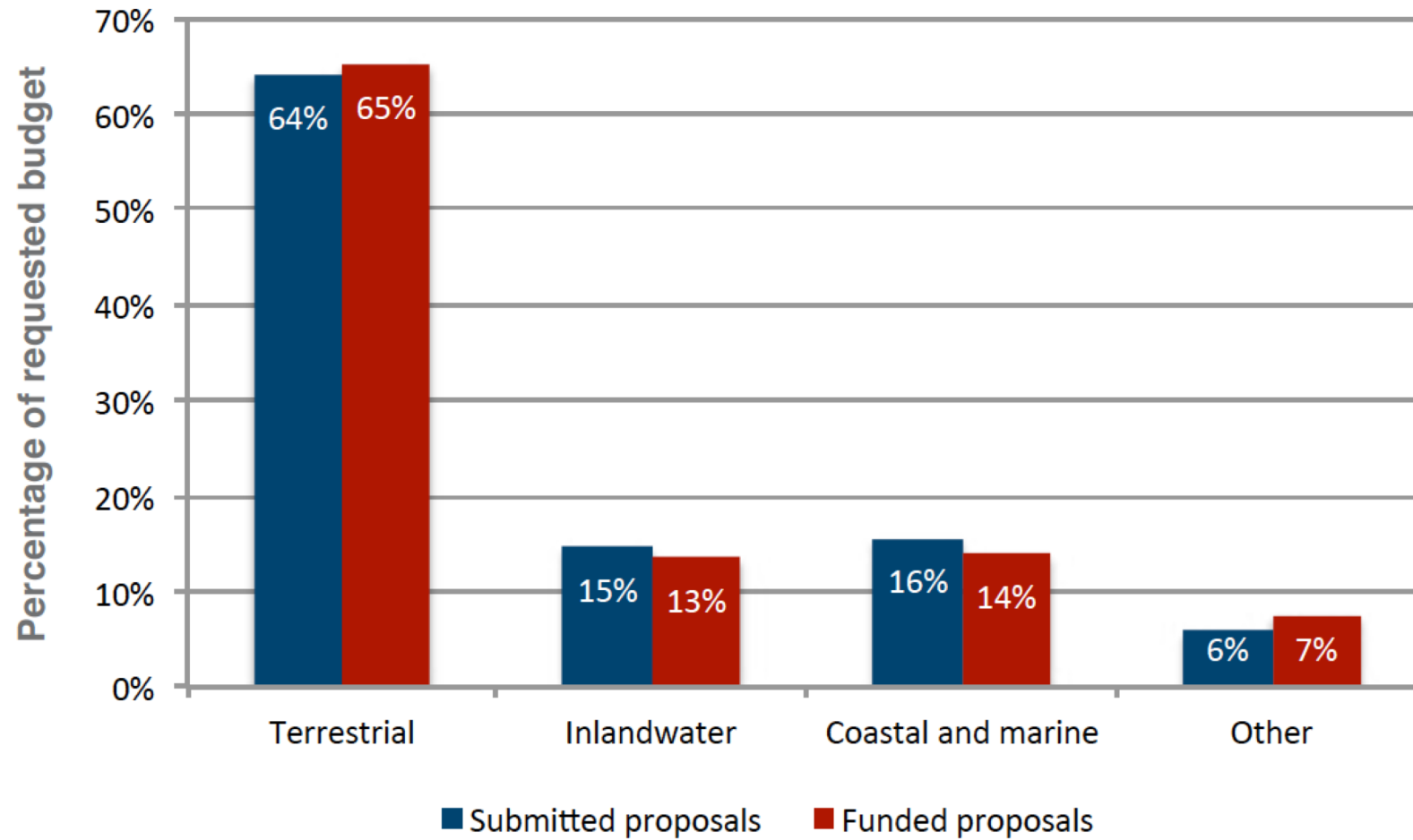


*Soil &
sediments*

STUDIED SUB-THEMES



STUDIED ENVIRONMENTS





26 TOP-RANKED FUNDED PROJECTS

BEARCONNECT - Functional connectivity and ecological sustainability of European ecological networks - a case study with the brown bear

BIO-TIDE - The role of microbial biodiversity in the functioning of marine tidal flat sediments

BIOGEA - Testing BIOdiversity Gain of European Agriculture with CAP greening

BIOINVENT - Generic bio-inventory of functional soil microbial diversity in permanent grassland ecosystems across management and climate gradients

BIOVEINS - Connectivity of green and blue infrastructures: living veins for biodiverse and healthy cities

CLIMARCTIC - Climate change impacts on Arctic soil and lake microbiomes

CROSSLINK - Understanding cross-habitat linkages between blue and green infrastructure to optimize management of biodiversity, ecosystem services and multiple human uses

DIGGING_DEEPER - Agro-ecosystem diversification: digging deeper

ENABLE - Enabling green-blue infrastructure in complex social-ecological regions - system solutions to wicked problems

FUNGREEN - Functional connectivity and green infrastructure



26 TOP-RANKED FUNDED PROJECTS

GREENFUTUREFOREST - Scenarios for a sustainable future forest green infrastructure

IMAGINE - Integrative Management of Green Infrastructures Multifunctionality, Ecosystem integrity and Ecosystem Services: From assessment to regulation in socio-ecological systems

INFRAGECO - Inference, fragmentation, genomics and conservation

MARFOR - Functional Variability and Dynamics of Responses of Marine Forests to Global Change

ODYSSEUS - Between Scylla and Charybdis - managing connectivity for freshwater fish

OSCAR - Optimising the configuration of woody riparian buffer strips along rivers to enhance biodiversity and ecosystem services

PERCEBES - Tools for the transition to spatial management of coastal resources: the stalked barnacle fishery in SW Europe.

REPEAT - REstoration and prognosis of PEAT formation in fens – linking diversity in plant functional traits to soil biological and biogeochemical processes

RESERVEBENEFIT - Evaluating and managing connectivity in a network of Marine Protected Area to maintain genetic diversity and deliver fish beyond protected limits



26 TOP-RANKED FUNDED PROJECTS

SOILCLIM - Managing soil biodiversity and ecosystem services in agroecosystems across Europe under climate change

SOILFOREUROPE - Predicting European forest soil biodiversity and its functioning under climate change

SOILMAN - Ecosystem services driven by the diversity of soil biota – understanding and management –

SPONFOREST - Unravelling the potential of SPONtaneous FORest ESTablishment for improving ecosystem functions and services in dynamic landscapes

URBANGAIA - Managing urban Biodiversity and Green Infrastructure to increase city resilience

URBANMYCOSERVE - Understanding and Managing Urban Ectomycorrhizal Fungi Communities to Increase the Health and Ecosystem Service Provisioning of Urban Trees

WOODNET - Connectivity patterns and processes along a gradient of European landscapes with woody vegetation and spatial heterogeneity

Overview of disciplines mobilized in the 26 funded projects

Strongly rooted in ecology and conservation

but diverse other disciplines in natural, fisheries, health, agricultural and social sciences plus technology

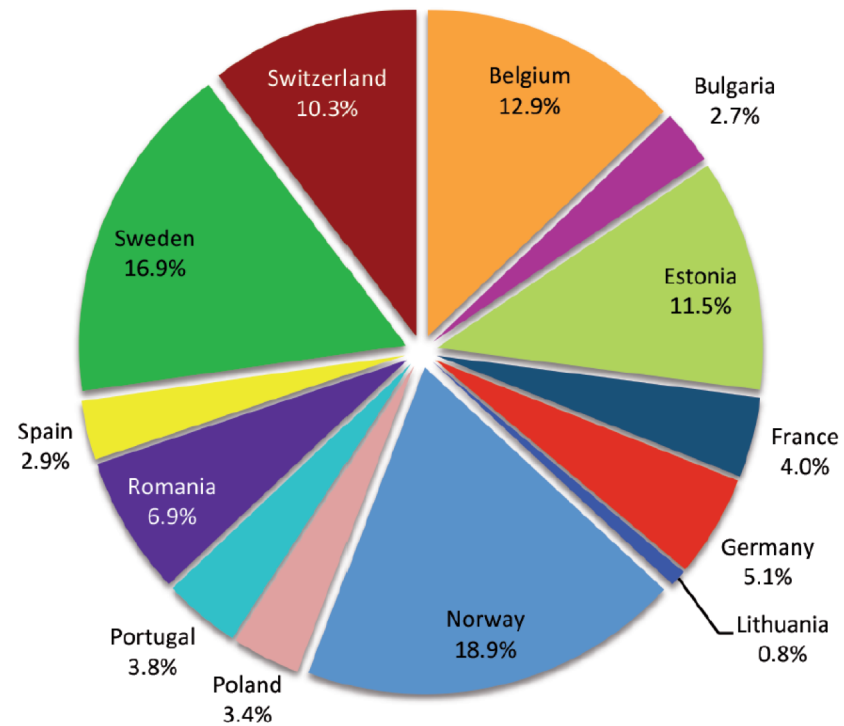
Ecology	14	9%
Conservation Biology	13	8%
Landscape ecology	12	8%
Biology of interactions	6	4%
Spatial planning and urban dev	6	4%
Agriculture	5	3%
Economics	5	3%
Genomics	5	3%
Microbiology	5	3%
Population Biology	5	3%
Population Genetics	5	3%
Sociology of the Environment	5	3%
Urban Ecology	5	3%
Biogeochemistry	4	3%
Ecophysiology	4	3%
Flow of energy and matter	4	3%
Forestry and forest sciences	4	3%
Marine Biology	4	3%
Political sciences	4	3%
Biogeography	3	2%
Hydrobiology	3	2%
Hydrology	3	2%
Physical Geography	3	2%

Plant Protection	3	2%
Plant Sciences	3	2%
Crop Production	2	1%
Fisheries Science and Technology	2	1%
Information sciences and computing	2	1%
Law	2	1%
Pedology	2	1%
Phylogeography	2	1%
Bioclimatology	1	1%
Ecotoxicology	1	1%
Evolutionary Biology	1	1%
Geochemistry	1	1%
Livestock Systems	1	1%
Mammalogy	1	1%
Management sciences	1	1%
Meteorology	1	1%
Mycology	1	1%
Oceanography	1	1%
Public Health and Environment	1	1%
Remote Sensing	1	1%
Theoretical Biology	1	1%

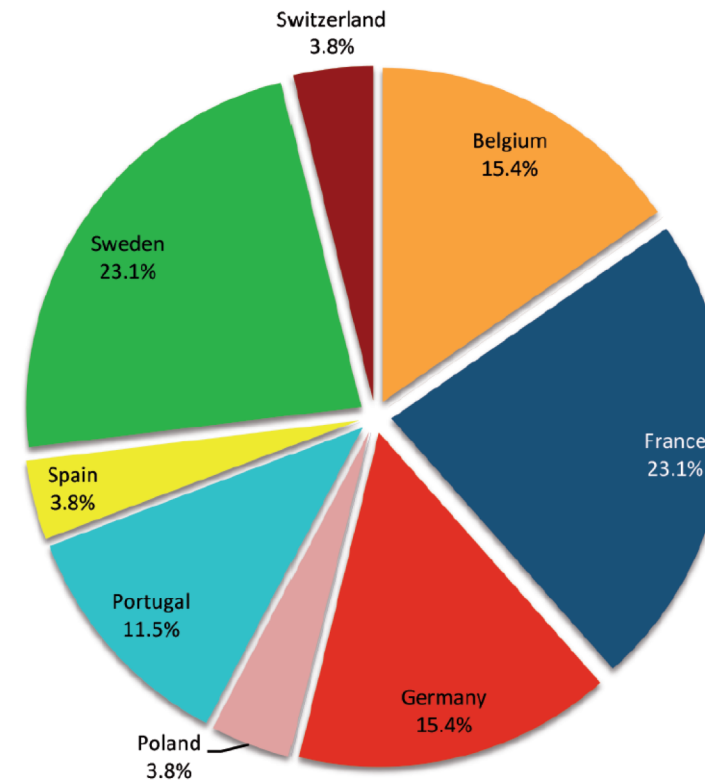
A call that promoted **transdisciplinary research...**

A call that allowed **transnational research collaboration**...

Awarded budget to successful proposals
(value normalized by community size)



Coordination of funded proposals





Outcomes & lessons

- Schemes like Biodiversa address major environmental challenges at an appropriate transnational scale
- Only the very best science with high societal relevance was funded
- Successful projects benefitted from the resources made available by Biodiversa (e.g., handbooks and web based resources)
- These projects are creating a community of scientists well versed in knowledge exchange and translation of their science to society
- Some excellent scientific publications contribute to enhancing the European Research Space
- There will be “top down” policy outcomes as well as “bottom up “ engagement with and participation by practitioners and the public
- Biodiversa ensures that the best science is delivered to society
- These 26 (21% success) funded projects are making a real difference

From the kick-off meeting

Last words from Marina Von Weissenberg:

- The importance of the science policy interface cannot be underscored enough.
- The balance of good science and social and political relevance requires the balance of good knowledge of both in an evaluation.

From the kick-off meeting

Last words from Marina Von Weissenberg:

- The importance of the science policy interface cannot be underscored enough.
- The balance of good science and social and political relevance requires the balance of good knowledge of both in an evaluation (*and in project delivery*).

We think we achieved that with the projects selected.... Now over to the projects

**We will now hear how well
the projects have worked
(today)
and discuss emerging lessons
and issues for policy and
practice (today and
tomorrow)**