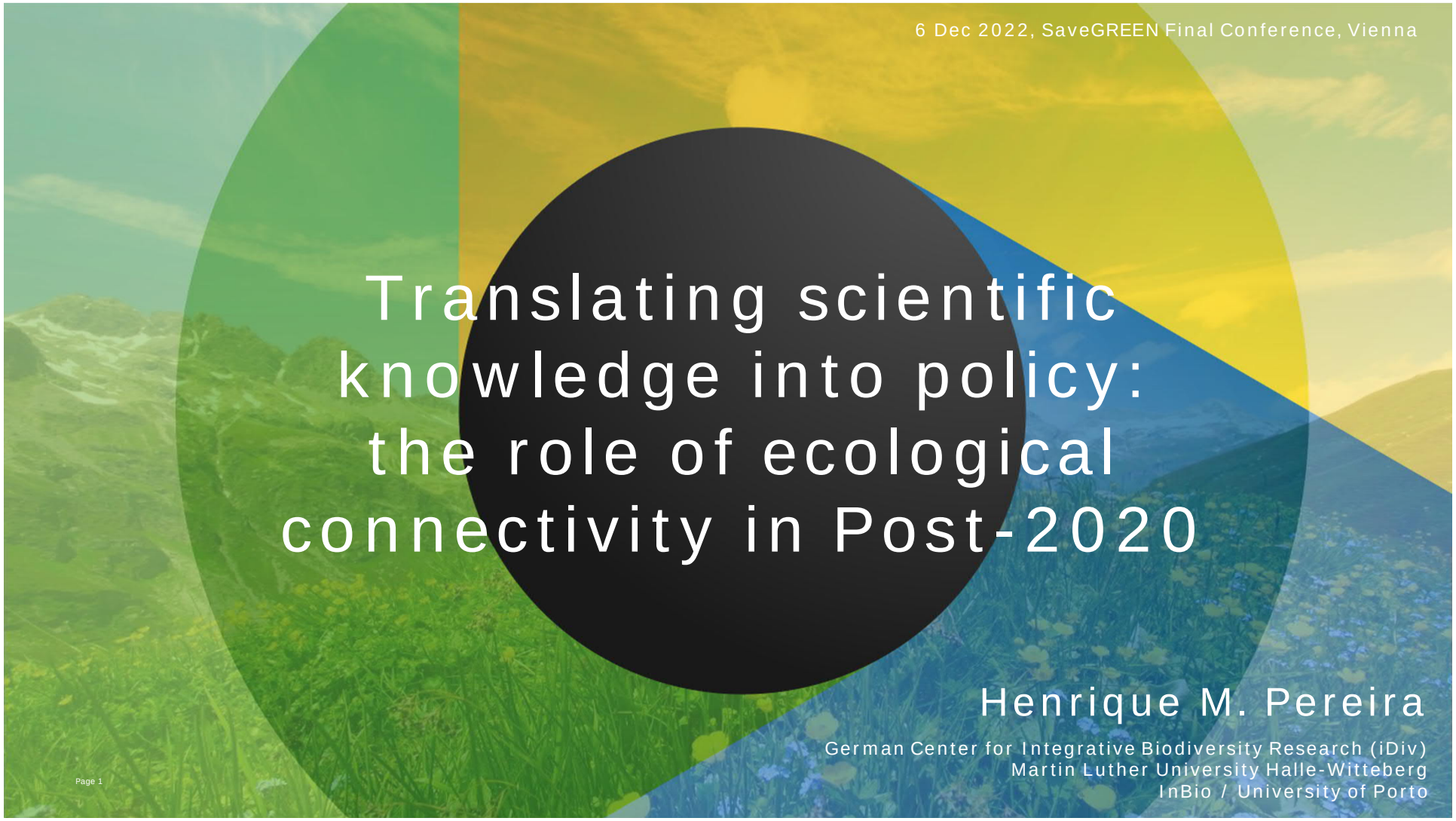
6 Dec 2022, SaveGREEN Final Conference, Vienna
Translating scientific knowledge into policy: the role of ecological connectivity in Post-2020
Henrique M. Pereira
German Center for Integrative Biodiversity Research (iDiv)
Martin Luther University Halle-Witteberg
InBio / University of Porto
Page 1

A timeline of biodiversity targets

Opening of the CBD
Convention for Signature

Goal for 2020 established

1992

2002

2010

2020

UNITED NATIONS DECADE ON
ECOSYSTEM
RESTORATION
2021-2030

2010 Goal established

"...achieve by 2010
a significant reduction
of the current rate of
biodiversity loss"

Post-2020 Framework

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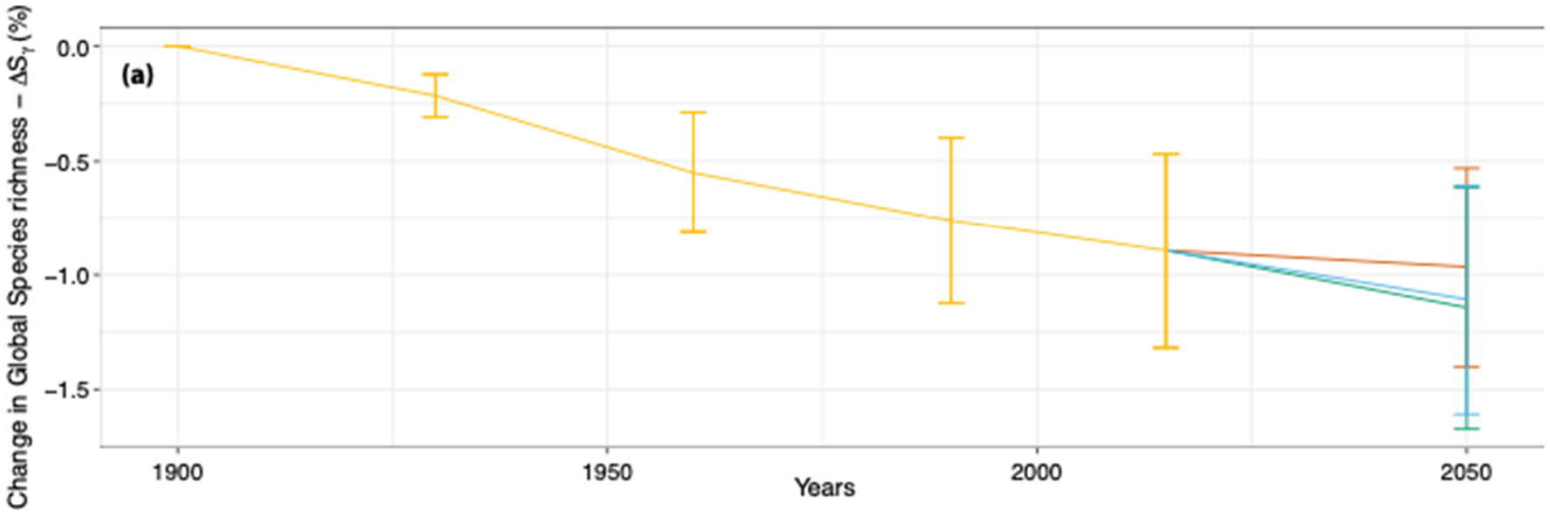
At the same time...



Pereira et al (in prep)

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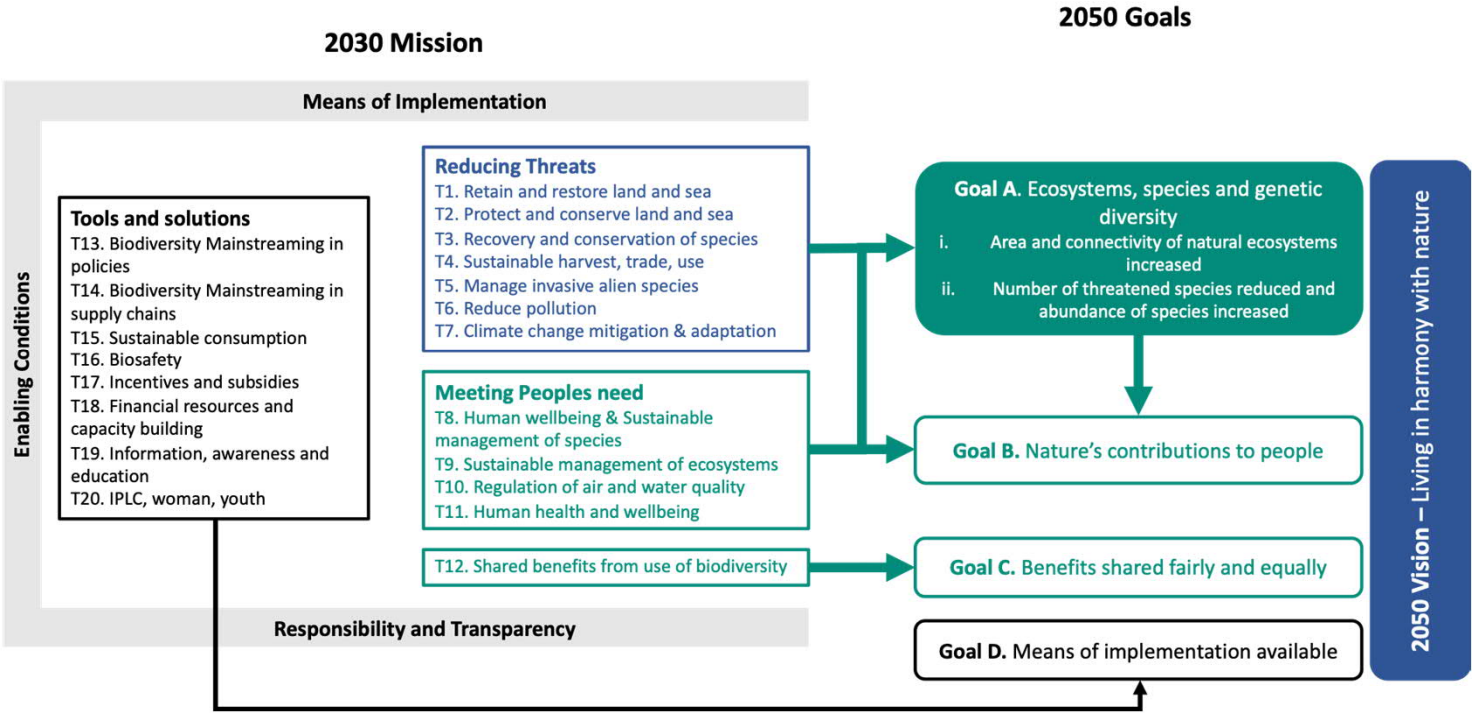
New ambitious targets: The Post-2020 Framework

Convention on Biological Diversity



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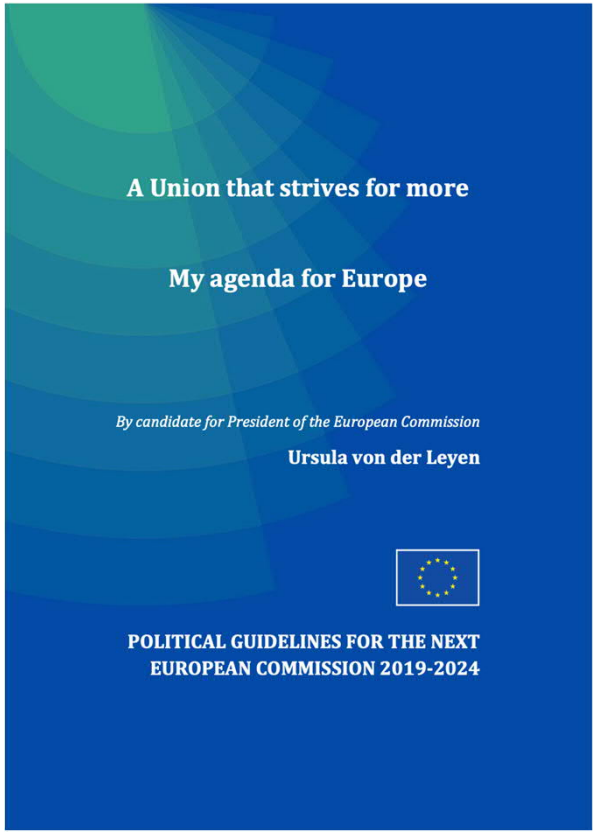
And in Europe biodiversity takes the center stage

Climate change, biodiversity, food security, deforestation and land degradation go together. We need to change the way we produce, consume and trade. Preserving and restoring our ecosystem needs to guide all of our work. We must set new standards for biodiversity cutting across trade, industry, agriculture and economic policy



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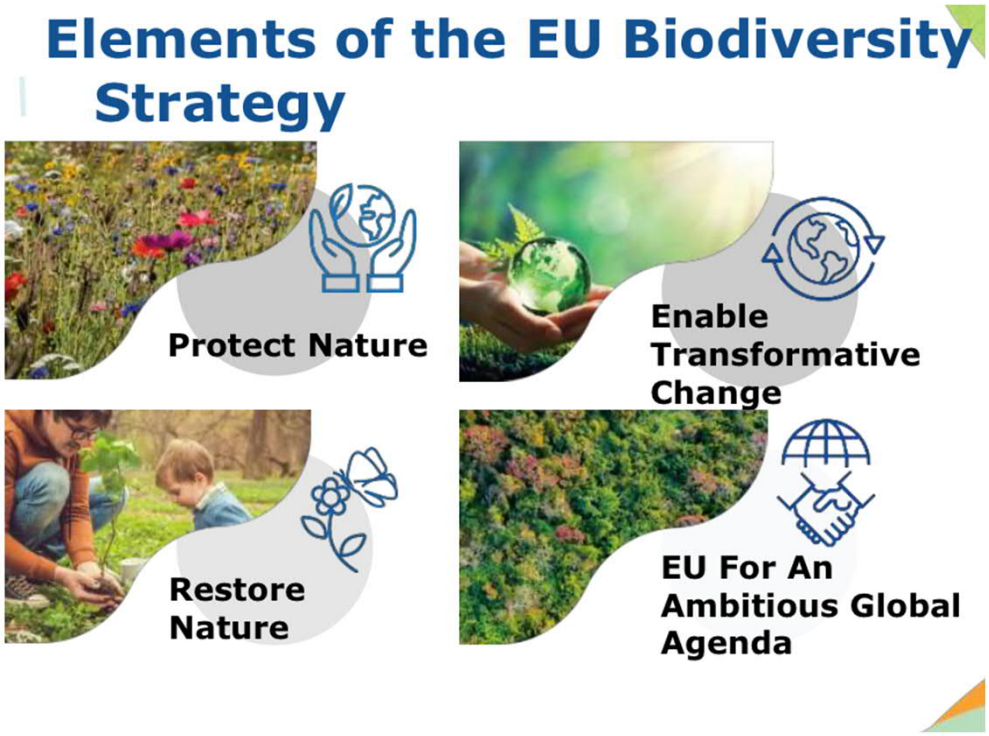
EU Biodiversity Strategy 2030



EUROPEAN COMMISSION

Brussels, 20.5.2020
COM(2020) 380 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

EU Biodiversity Strategy for 2030

Bringing nature back into our lives

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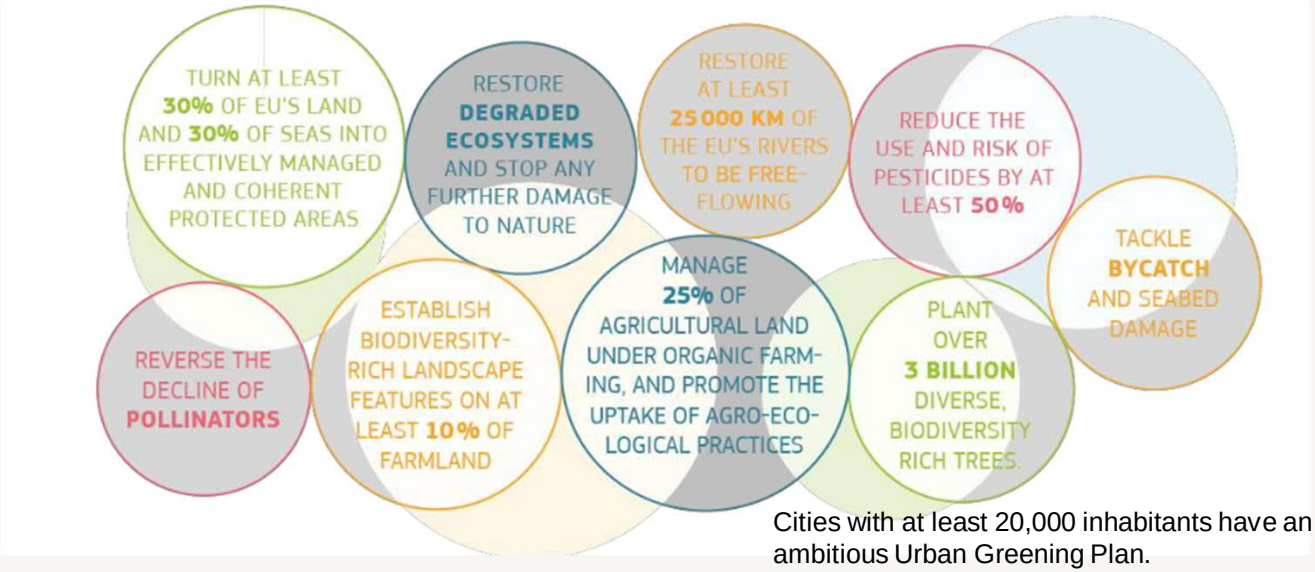
The EU Biodiversity Strategy for 2030

At least 1/3 strictly protected

Legally binding restoration targets in 2021



Cities with at least 20,000 inhabitants have an ambitious Urban Greening Plan.

Connectivity on the CBD post-2020 framework

Convention on Biological Diversity

Goal A

The integrity, connectivity and resilience of [all] [vulnerable and threatened natural] ecosystems are maintained, restored or enhanced, **increasing [or maintaining] [by at least 5 per cent by 2030 and [15] [20] per cent by 2050] the area, connectivity and integrity of the full range of natural ecosystems** [taking into account a natural state baseline] [and the risk of collapse of ecosystems is reduced by [--] per cent].

Target 1

Ensure that [all] areas are under [equitable participatory] [integrated biodiversity-inclusive] spatial planning [or other effective management processes], [addressing land and sea use change] [[retaining all]/[minimizing loss of] [intact ecosystems]] [critical and threatened ecosystems] [intact areas with high-biodiversity] [and other areas of high [biodiversity value[s]] [importance] [ecological integrity]], enhancing [ecological] connectivity and integrity, [minimizing negative impacts on biodiversity] [maintaining ecosystem functions and services] while [safeguarding]/[respecting] the rights of indigenous peoples and local communities [in accordance with the United Nations Declaration on the Rights of Indigenous Peoples and international human rights law.]

Target 2

Ensure that [at least] [20] [30] [per cent]/ [at least [1] billion ha] [globally] of [degraded] [terrestrial,] [inland waters,] [freshwater], [coastal] and [marine]] [areas] [ecosystems] are under [active] [effective] [ecological] restoration [and rehabilitation] [measures] [, taking into account their natural state as a baseline [reference]], [with a focus on [restoring] [nationally identified] [[priority [areas] [ecosystems]] such as [threatened ecosystems] and [areas of particular importance for biodiversity]]] in order to enhance [biodiversity and ecosystem functions and services] [[ecological] integrity, connectivity and functioning] and [biocultural ecosystems managed by indigenous peoples and local communities] [, increase areas of natural and semi-natural ecosystems and to support climate change adaptation and mitigation], [with the full and effective participation of indigenous peoples and local communities] [and through adequate means of implementation] .

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Connectivity on the EU nature restoration law

Article 4. Restoration of terrestrial, coastal and freshwater ecosystems

Member States shall put in place the restoration measures for the terrestrial, coastal and freshwater habitats of the species listed in Annexes II, IV and V to Directive 92/43/EEC and of the terrestrial, coastal and freshwater habitats of wild birds covered by Directive 2009/147/EC that are necessary to improve the quality and quantity of those habitats, including by re-establishing them, and to enhance connectivity, until sufficient quality and quantity of those habitats is achieved.

The restoration measures referred to in paragraphs 1 and 2 shall consider the need for improved connectivity between the habitat types listed in Annex I and take into account the ecological requirements of the species referred to in paragraph 3 that occur in those habitat types.

Article 7 Restoration of the natural connectivity of rivers and natural functions of the related floodplains

Member States shall make an inventory of barriers to longitudinal and lateral connectivity of surface waters and identify the barriers that need to be removed to contribute to the achievement of the restoration targets set out in Article 4 of this Regulation and of the objective of restoring at least 25 000 km of rivers into free-flowing rivers in the Union by 2030, without prejudice to Directive 2000/60/EC, in particular Articles 4(3), 4(5) and 4(7) thereof, and Regulation 1315/2013, in particular Article 15 thereof.

Member States shall remove the barriers to longitudinal and lateral connectivity of surface waters identified under paragraph 1 of this Article, in accordance with the plan for their removal referred to in Article 12(2), point (f). When removing barriers, Member States shall primarily address obsolete barriers, which are those that are no longer needed for renewable energy generation, inland navigation, water supply or other uses.

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Why haven't we reached past biodiversity targets?

Table 1 | Deficiencies in current implementation of the Aichi targets and recommendations for more effective implementation of the post-2020 GBF

Challenges	Limitations	Recommendations
1. Inadequate national policy responses	The majority of national targets in NBSAPs across different countries are not well aligned with the Aichi targets. Efforts to embed commitments into legal and policy instruments for effective implementation of the Aichi targets are broadly lacking across countries.	The global targets established under the post-2020 GBF are the minimum national targets of parties (Fig. 2). Each party is obligated to implement all new global targets that are relevant to them. The minimum national targets are the most basic requirements for parties to achieve the 2050 vision and obligations of the CBD. Parties, subnational governments, corporations and stakeholders present voluntary commitments to enhance the ambition of the post-2020 GBF and account for their different circumstances.
2. Funding shortages	Biodiversity financial resources have been inadequate at all levels.	Biodiversity financial resources are mobilized for a substantial increase from all sources. Biodiversity-related economic instruments can be developed including payments for ecosystem services, biodiversity-relevant taxes, fees and charges.
3. Science–policy knowledge gaps	Knowledge gaps exist in social sciences and transdisciplinary research, and in the integration of scientific, Indigenous and local knowledge, limiting the understanding of the conditions, synergies and tradeoffs among conservation efforts. Lack of existing indicators hinders measuring and tracking progress towards the Aichi targets.	Science–policy interfaces at different levels are strengthened to integrate scientific, Indigenous and local knowledge to support decision-making. More scientific and suitable indicators are studied and created to measure national and global biodiversity targets.
4. Imperfect review mechanisms	The performance of specific parties' implementation of obligations under the CBD and the global targets is rarely reviewed by the COP.	A compliance and accountability mechanism is created to review specific parties' implementation of the post-2020 GBF based on standardized monitoring systems. The review mechanism is also established for voluntary commitments from different non-state actors to record their contribution to biodiversity targets.

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Xu, …. Pereira (2021) Nature Ecol Evol

It’s not (only) about the targets:
a framework for effective implementation of post-2020

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Perino, Pereira et al (2021) Con Letters

Identify stakeholders and actions democratically

Table 1. An overview of competing frames for the relationship between the conservation movement, people, and science

Stakeholder engagement	Dominant period	Distribution of responsibility	Orientation toward knowledge/values
Rural people as the problem	before 2000	local communities are responsible for the degradation of ecosystems and the loss of biodiversity urban citizens and scientists act to prevent rural extractive behavior	scientists and conservationists (typically from urban backgrounds) prove how ecosystems should be managed to protect biodiversity and are source of correct environmental values
Rural people as the solution	2000–2020	local communities are the best managers of landscapes and the guardians of biodiversity urban communities are the main drivers of biodiversity loss through their remote impacts	scientists should study ILK and incorporate it in their understanding of ecosystems and learn from traditional value systems
Biodiversity democracy	after 2020	both local communities and urban communities are key stakeholders and responsible actors for ecosystems and rural landscapes	a diversity of values and preferences for nature across stakeholders needs to be incorporated in democratic decision making on rewilding scientific ecological knowledge and ILK are applied toward developing and implementing solutions

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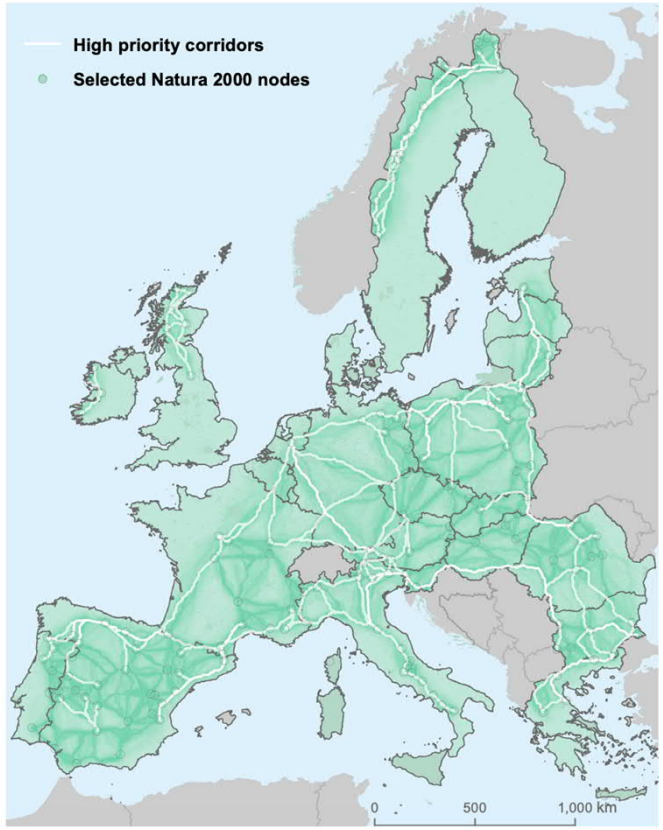
Dotson and Pereira (2022) One Earth

Draw on the best available science

- What does connectivity mean?
  - How do species perceive and use landscapes?
- What is the role of connectivity on maintenance of ecosystem services, by instance in relation to green infrastructure?



Fernández … Pereira (2019)
Boosting Ecological Restoration for a Wilder Europe

NATURA CONNECT

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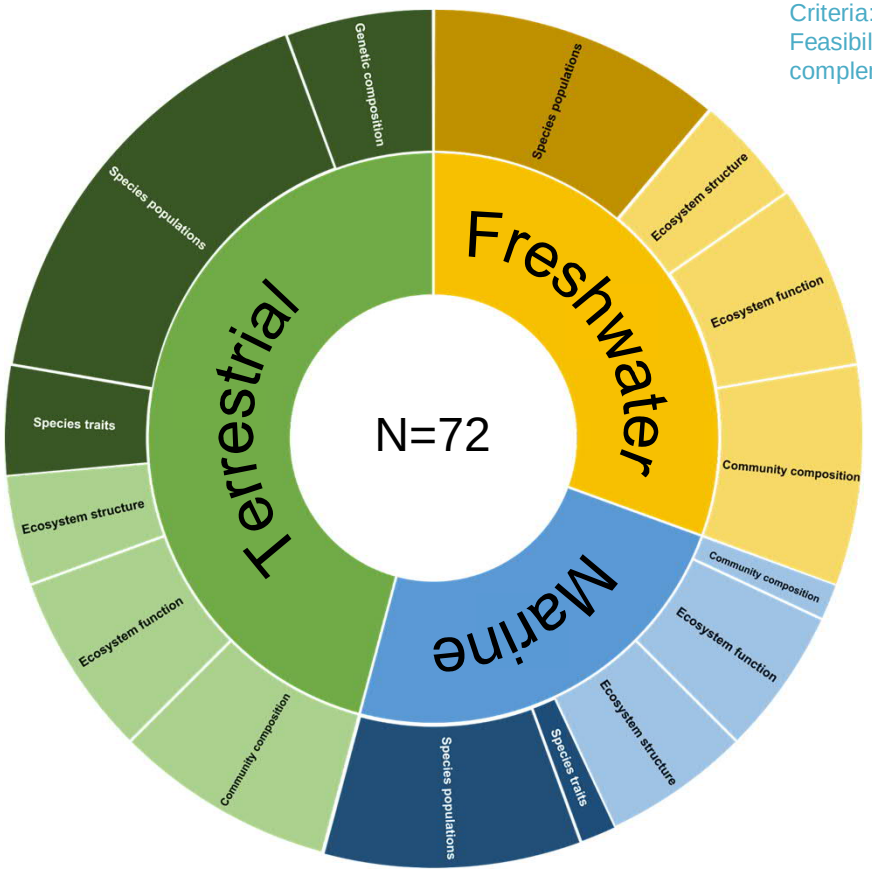
Monitoring with Essential Biodiversity Variables

EUROPABON



Criteria:
Feasibility, policy relevance, balance across taxa and realms, complementarity, irreducibility

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, risks, and status of invasive species**

https://github.com/EuropaBON

Thanks