



proteus

Restoration Potential Layer

Javier Fajardo, Programme Officer, UNEP-WCMC
Sarah Beard, Associate Programme Officer, UNEP-WCMC

1 DECEMBER 2022

WELCOME

Objectives of the Proteus Data Forum sessions

- A venue for direct communication between data users and technical experts
- Increase familiarity with Proteus resources
- Peer-to-peer learning between Proteus Partner companies
- Identifying common challenges & finding solutions

Logistics

- *Frequency* quarterly
- *Scheduling* AM & PM sessions
- *Rules* Chatham House discussion, but presentations recorded

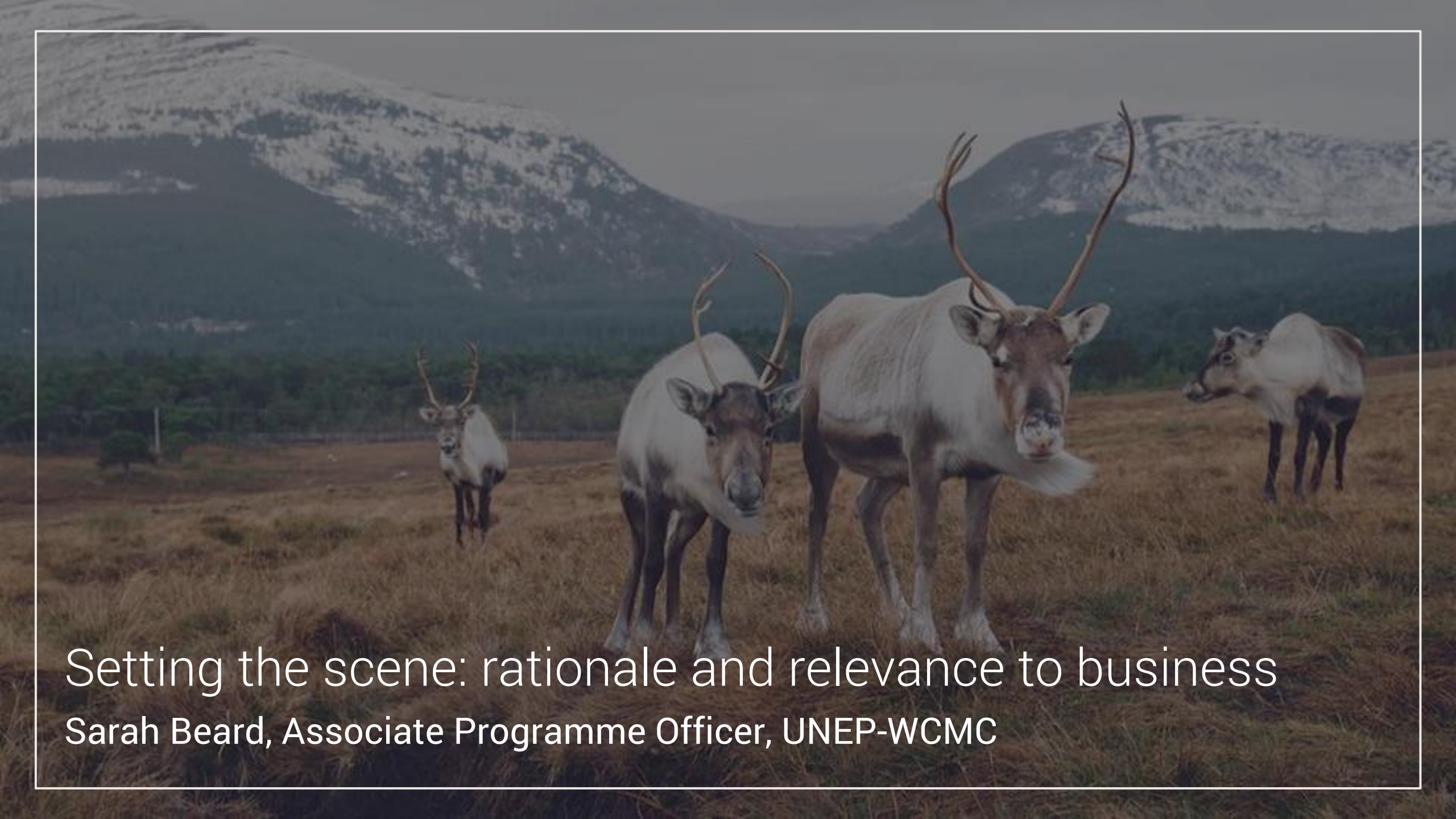
TODAY

Presentations: Restoration Potential Layer

- Setting the scene: rationale and relevance to business
- Methodology behind layer for Europe
- How to use the layer to prioritise restoration actions
- Next steps and future developments

Peer-to-peer discussion

- Q&A with presenters
- Feedback from Partners



Setting the scene: rationale and relevance to business

Sarah Beard, Associate Programme Officer, UNEP-WCMC

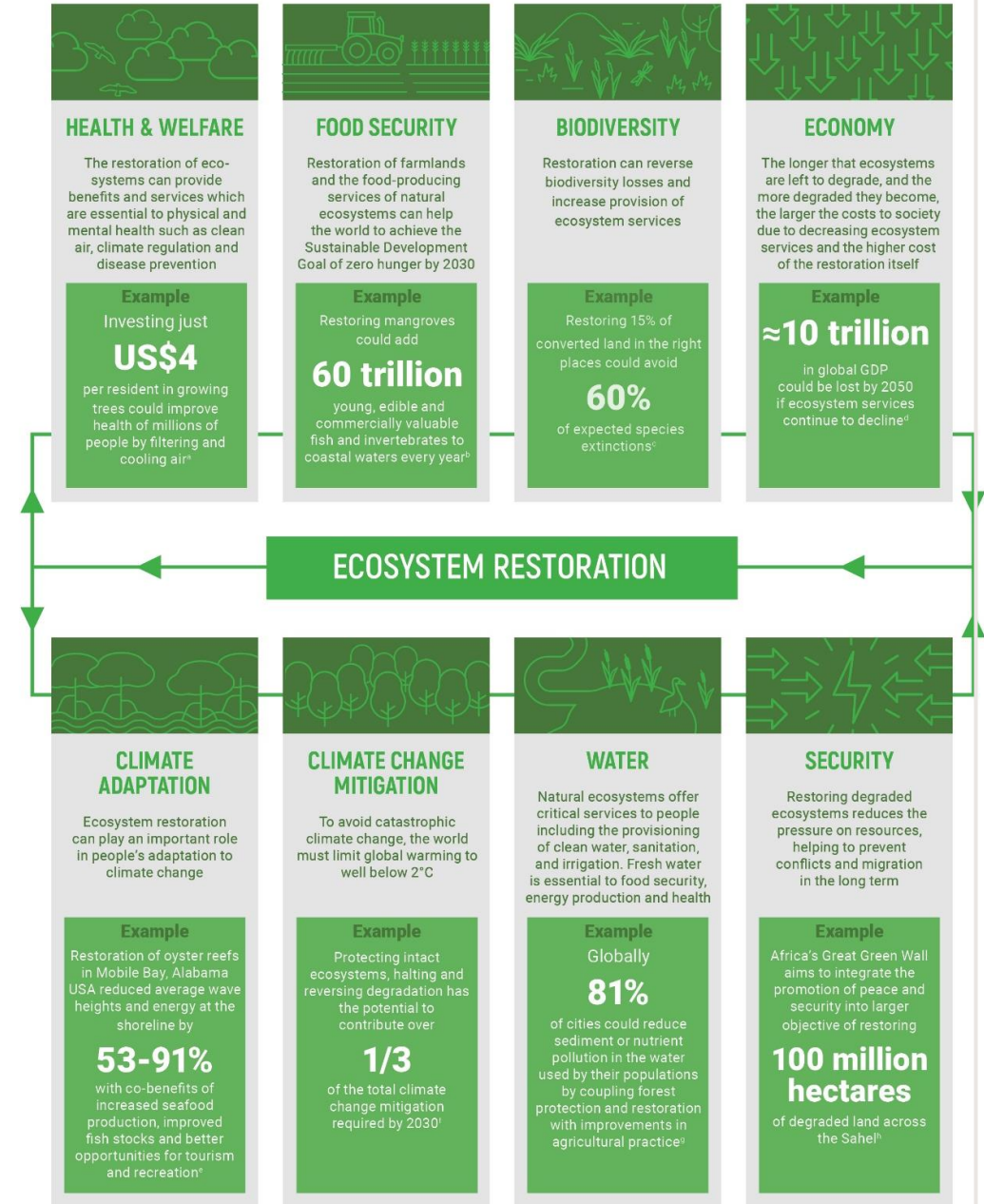
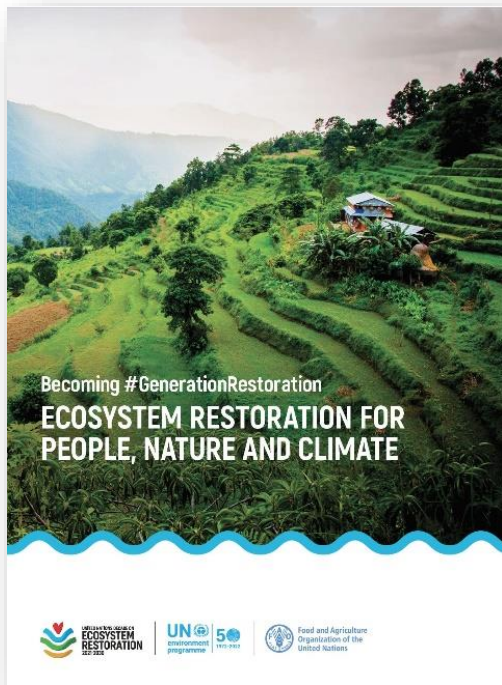
DEGRADED ECOSYSTEMS AFFECT ESSENTIAL SERVICES

- Negatively affecting well-being of 3.2 billion people
- Loss of biodiversity and ecosystem services = 10% of global GDP



^aFAO 2016a, ^bFoley et al. 2011, ^cUNCCD 2017, ^dFAO and UNEP 2020, ^eFAO and UNEP 2020, ^fLehner and Döll 2004, ^gDarrah et al. 2019, ^hReid et al. 2020, ⁱDudley et al. 2020, ^jUNCCD 2017, ^kRomeo et al. 2020, ^lIPCC 2019, ^mNOAA 2020a, ⁿIPBES 2019, ^oFAO 2016b, ^pJoosten 2009; Kirpotin et al. 2021, ^qBonn et al. 2016, ^rFAO 2020a, ^sUN Habitat 2020, ^tUN-Water, 2021

HEALTHY, RESTORED ECOSYSTEMS PROVIDE MANY BENEFITS



* Dasgupta 2021, ^b Worthington and Spalding 2018, ^c Strassburg et al. 2020, ^d Johnson et al. 2020, ^e Fodrie et al. 2017, ^f Griscom et al. 2019, ^g Abell et al. 2017, ^h Great Green Wall 2021

GLOBAL MOMENTUM



UNITED NATIONS DECADE ON
**ECOSYSTEM
RESTORATION**
2021-2030

Nature-based Solutions

“actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits” – UNEA-5, 2022

THE PROBLEM:
The objectives of the 2030 Agenda for Sustainable Development will not be achieved without large-scale restoration of degraded terrestrial, freshwater & marine ecosystems globally.

THE VISION:
A world where – for the health & wellbeing of all life on Earth & that of future generations – we have restored the relationship between humans & nature, by increasing the area of healthy ecosystems, & by putting a stop to their loss, fragmentation & degradation.

GOALS:

1. Enhancing global, regional, national & local commitments & actions to prevent, halt & reverse the degradation of ecosystems
2. Increasing our understanding of the multiple benefits of successful ecosystem restoration
3. Applying knowledge of ecosystem restoration in our education systems & within all public & private sector decision-making

BUSINESS CASE FOR RESTORATION

To achieve environmental compliance following the Mitigation Hierarchy.

For reporting their social and environmental performance in the context of the different monitoring frameworks (e.g. Global Reporting Initiative (GRI), Carbon Disclosure Project (CDP), etc).

For accessing innovative microfinance programmes and public funding de-risking tools such as guarantees and layered funds.

For boosting both environmental and social positive impacts throughout their value chains.

Restoration is often part of mandatory legal requirements. Companies must demonstrate compliance with national and inter-national legislation.

To mitigate risks associated with their dependencies on ecosystems for their productive/supply chains.

To achieve voluntary goals¹⁰ for halting and reversing ecosystem degradation, achieving no net loss and/or biodiversity net gain.

For accessing specialized networks and opportunities to integrate multistakeholder partnerships.

For helping to solve potential conflicts with the other actors at the landscape/seascape, minimizing trade-offs.

For positive reputation amongst consumers and customers.

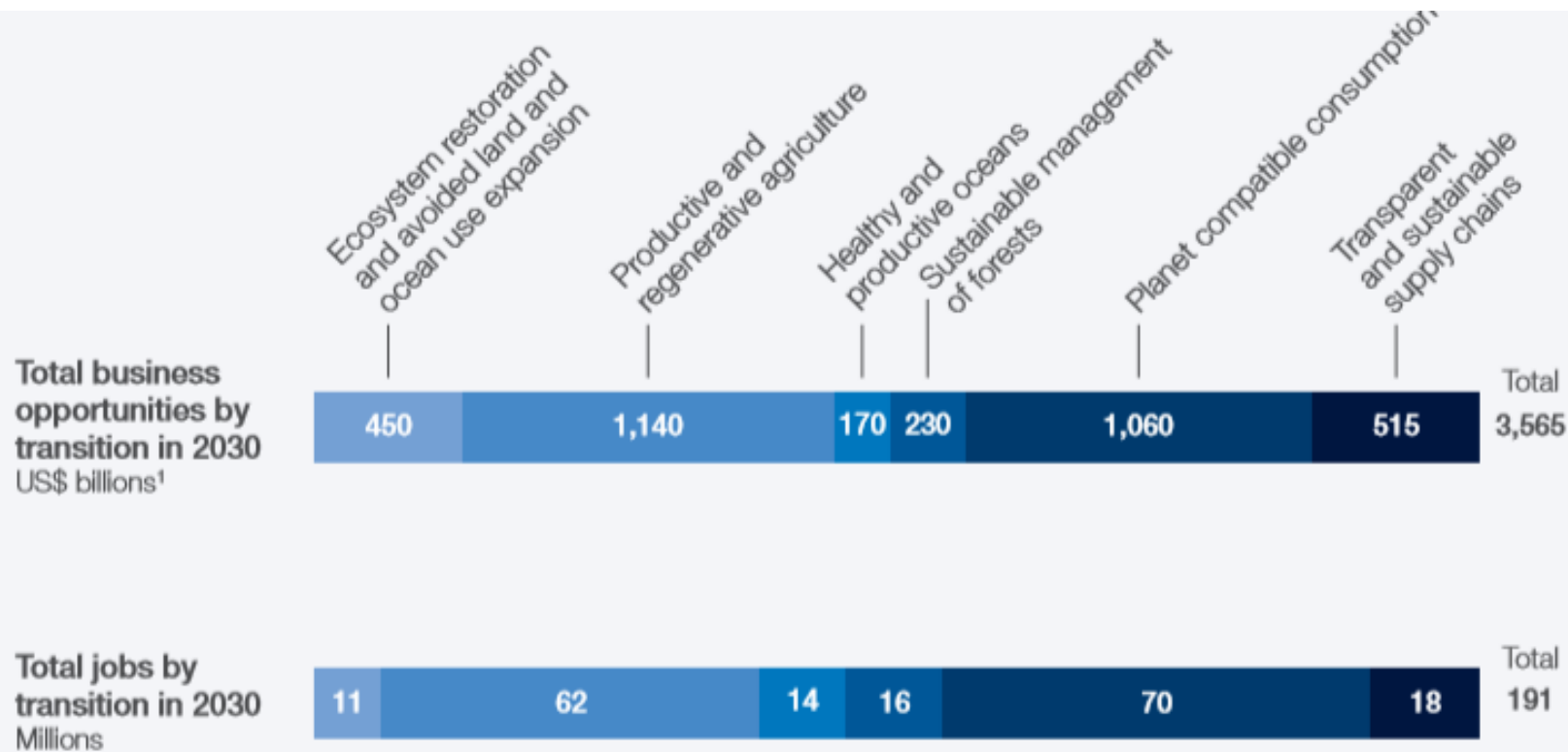
To generate economic gains due to new opportunities associated with the conservation, restoration, and sustainable management of ecosystems.

For shared responsibility to promote social, climate and biodiversity positive impacts in the territory where they operate.

For contributing to a more sustainable management of nature resources.

Figure 1: Benefits of engagement of the private sector within the UN Decade.

DEMONSTRATION OF GAINS



1. Based on estimated savings or project market sizing in each area. These represent revenue opportunities that are incremental to business-as-usual scenarios. Where available, the range is estimated based on analysis of multiple sources. Rounded to nearest US\$5 billion.

SOURCE: Food and Land Use Coalition (FOLU); Business and Sustainable Development Commission (BSDC); The Nature Conservancy (TNC); World Resources Institute (WRI); McKinsey Global Institute (MGI); Market research; Literature review; AlphaBeta analysis





RATIONALE BEHIND THE RESTORATION POTENTIAL LAYER

- Considering restoration in decision making
- Stakeholder engagement and consultation
- Planning and implementation for multiple benefits
- Recognising and addressing trade offs
- Avoiding unintended consequences
- Information and tools
- Data (global, national, local, site)
- **Initial scoping**



Methodology behind layer for Europe
Javier Fajardo, Programme Officer, UNEP-WCMC

RESTORATION POTENTIAL IN EUROPE

Restoration priority of degraded natural areas based on their potential to maximize cobenefits for nature and people

Shown as a ranking and a map

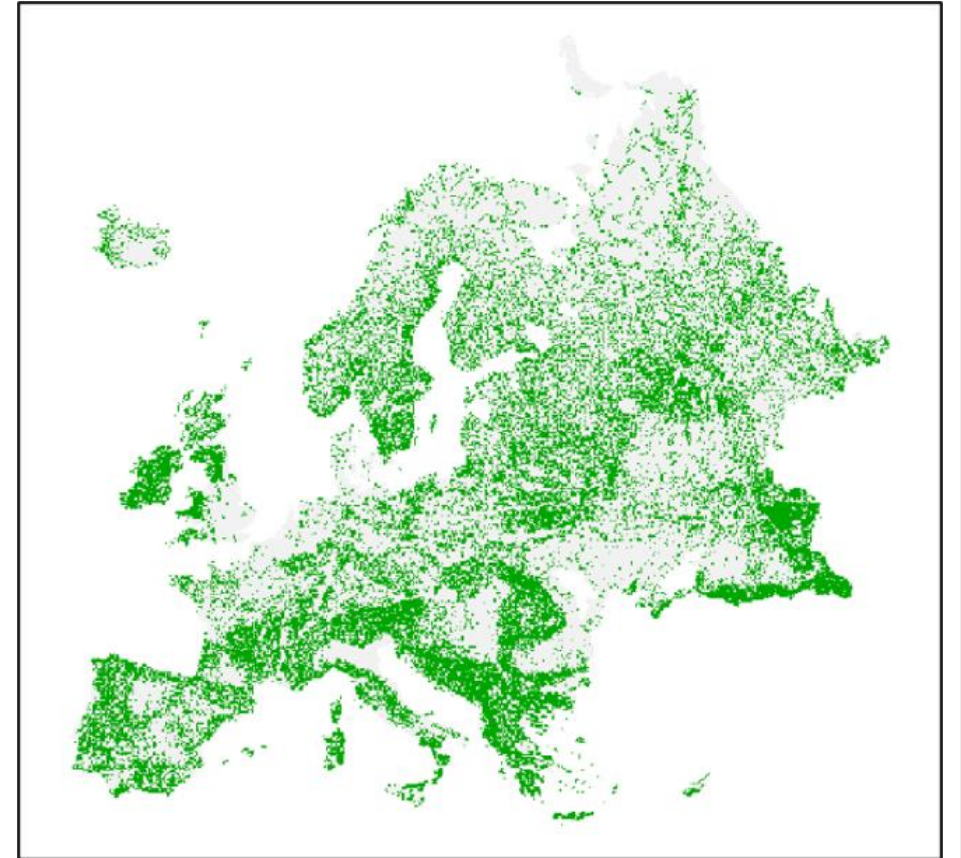


RESTORATION POTENTIAL IN EUROPE

"Restoration priority of degraded natural areas based on their potential to maximize cobenefits for nature and people"

Focal area: Europe's land area

- Area not under current anthropogenic use (excludes croplands, pasturelands, cities, etc), with moderate signs of human impact
- Represents 40% of land
- Varies spatially, different % in different countries





SPATIAL ANALYSIS APPROACH

- Spatial prioritization – Using Systematic Conservation Planning and the *Prioritizr* tool to map the patterns of restoration priority
- General workflow:
 1. Identify where are the needs to restore biodiversity and NCPs - Data collection
 2. Set up the prioritization algorithm in *Prioritizr* (define restoration targets, weights, ...)
 3. Map restoration priorities with *Prioritizr*.
 4. Explore restoration priorities (analyse efficiency, target achievement, ...)

1. DATA - LOCATION OF RESTORATION NEEDS

Spatial data to show potential gains from restoration

Gains for biodiversity



Species conservation: restore areas with highest potential **species' richness**



Ecosystem conservation: restore **ecoregions** with smaller remnant extent



Key habitat conservation: restore degraded area in **KBAs**, **Ramsar** sites, and **salt marshes**

Gains in nature's contributions to people



Climate change mitigation: **carbon in vegetation biomass**



Water quality regulation



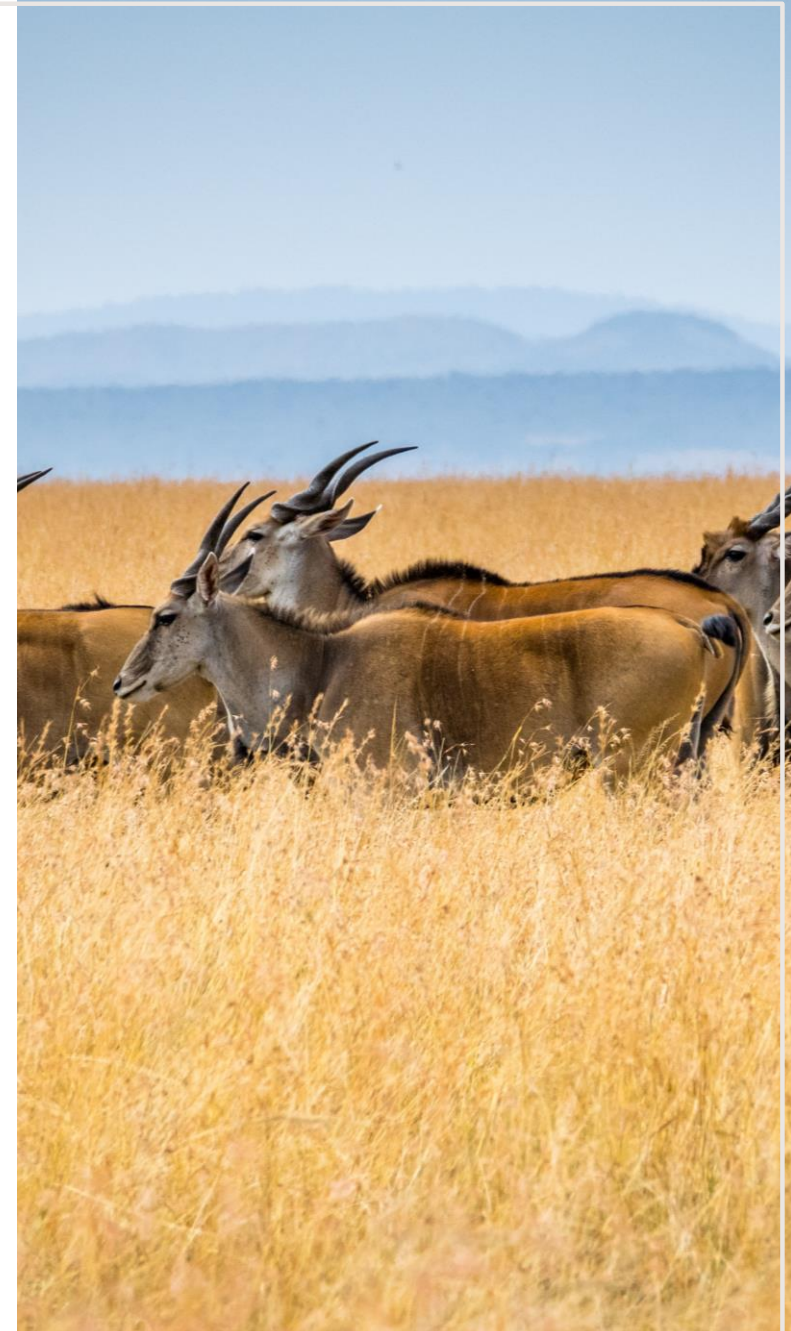
Pollination potential



Coastal protection



Recovery of habitat of **plant species with documented human use** (medicine, decoration, materials, genetic resource, etc)



2. MAPPING RESTORATION PRIORITIES

- Using a Systematic Conservation Planning to rank degraded areas according to the potential benefit of restoring them for nature and people.
- **Prioritizr** incorporates an algorithm that analyses all the data simultaneously to identify the areas that, if restored, would deliver the maximal total benefit.
- **Prioritization algorithm settings:** *Minimum shortfall* objective “meet target of species and ecosystems and secure as much as possible from other layers, within an area”.



3. WHAT DRIVES PRIORITIES?

A definition of weights and targets to each biodiversity and NCP feature, and their spatial pattern and overlap (i.e., priority is higher in sites that contribute towards the target of more features).

Biodiversity targets

Restore as much as possible:

- areas with high potential species richness
- areas within degraded KBAs or Ramsar sites
- degraded coastal habitats (salt marshes, estuaries)

Restore more area within ecoregions that currently have smaller remnant extent

NCP targets

Restore as much as possible:

- areas with higher carbon sequestration potential
- areas with higher deficits of water quality regulation, pollination, and coastal protection

Restore distribution area of potential occurrence of plant species with documented human use

Importance weighted between biodiversity–NCPs and across countries

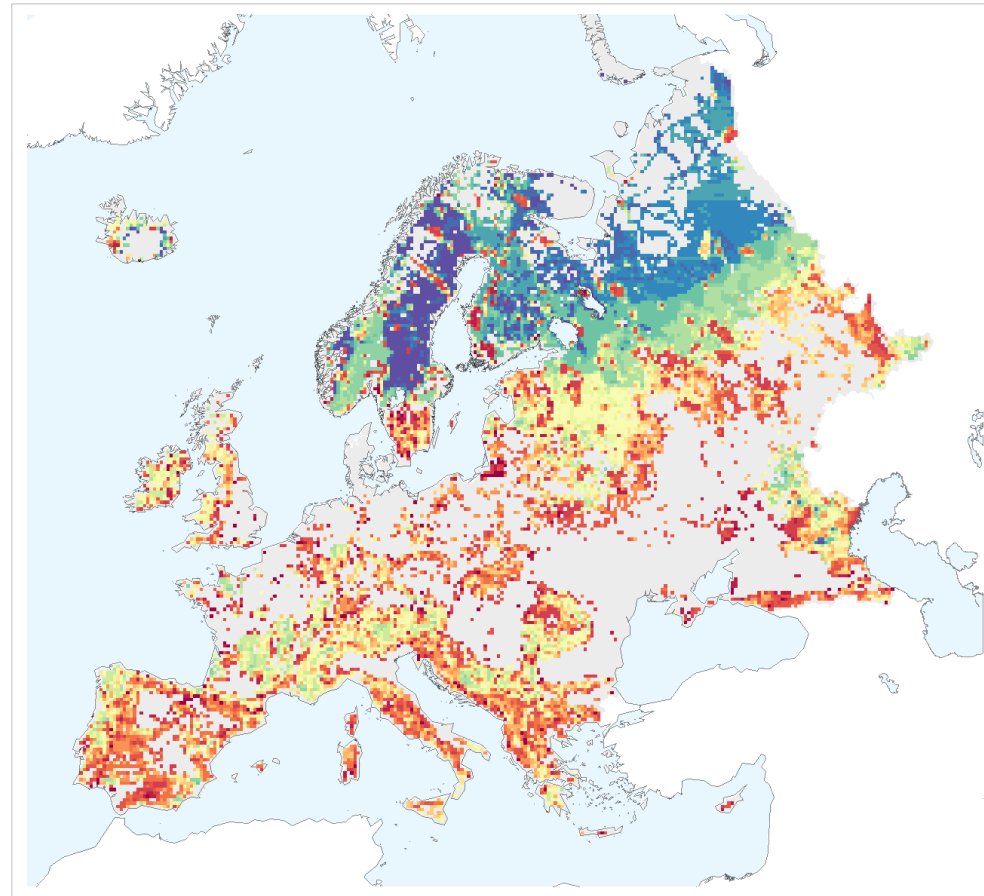


A close-up photograph of a green praying mantis perched on a leaf. The mantis is facing right, with its head turned slightly towards the viewer. Its raptorial front legs are visible, showing the spines and segments. The background is a soft, out-of-focus green, suggesting a natural outdoor setting. The entire image is framed by a thin white border.

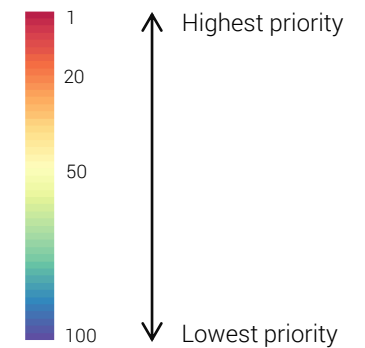
Mapped restoration priorities and how to use the layer

Javier Fajardo, Programme Officer, UNEP-WCMC

RANKING OF RESTORATION PRIORITY IN EUROPE PRELIMINARY LAYER



Restoration priority ranking

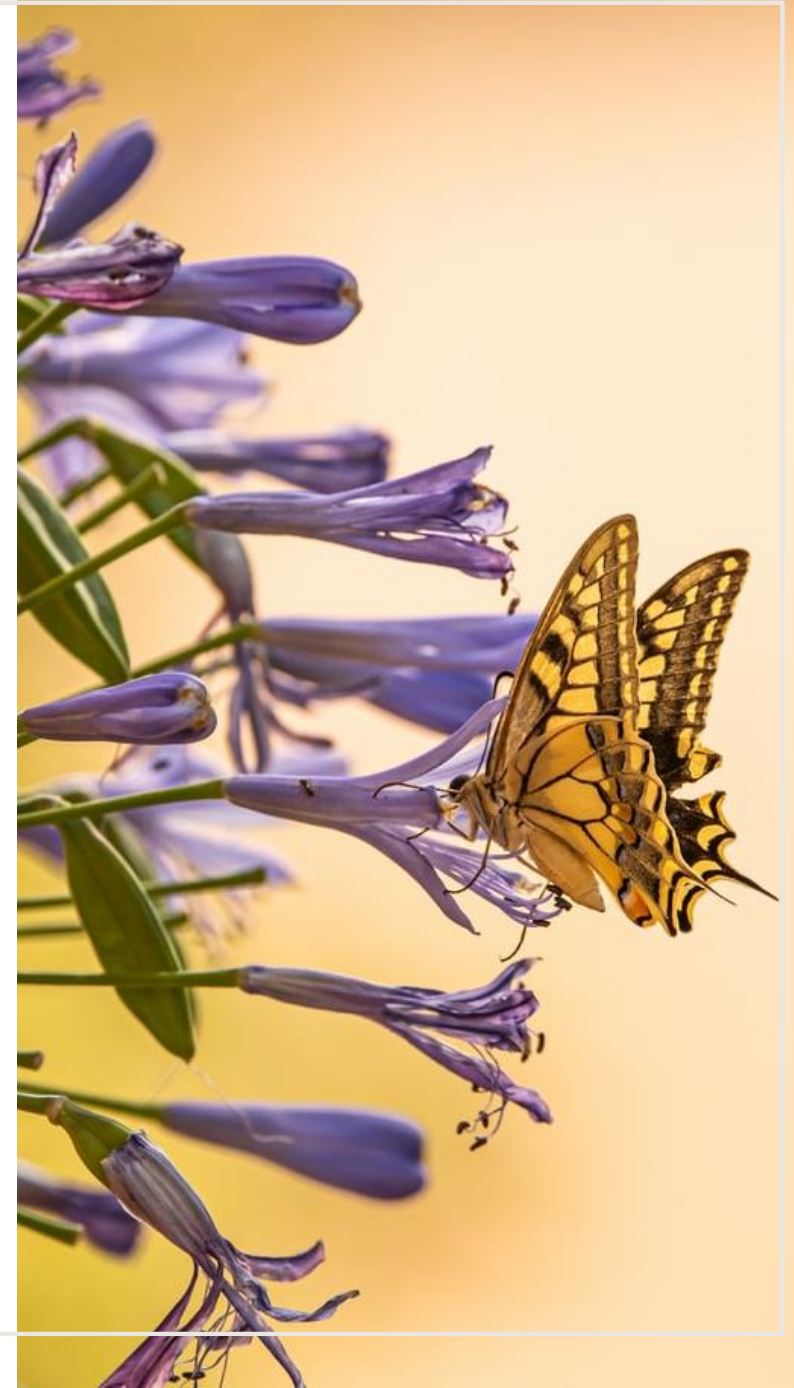


WHAT DOES IT SHOW?

- Locations within Europe with restoration priority, ranging from highest to lowest.
- Highest restoration priority means that restoring these areas is cost-efficient towards simultaneously maximizing benefits from biodiversity restoration and enhancing NCP delivery, from a continental perspective.

How to use this layer?

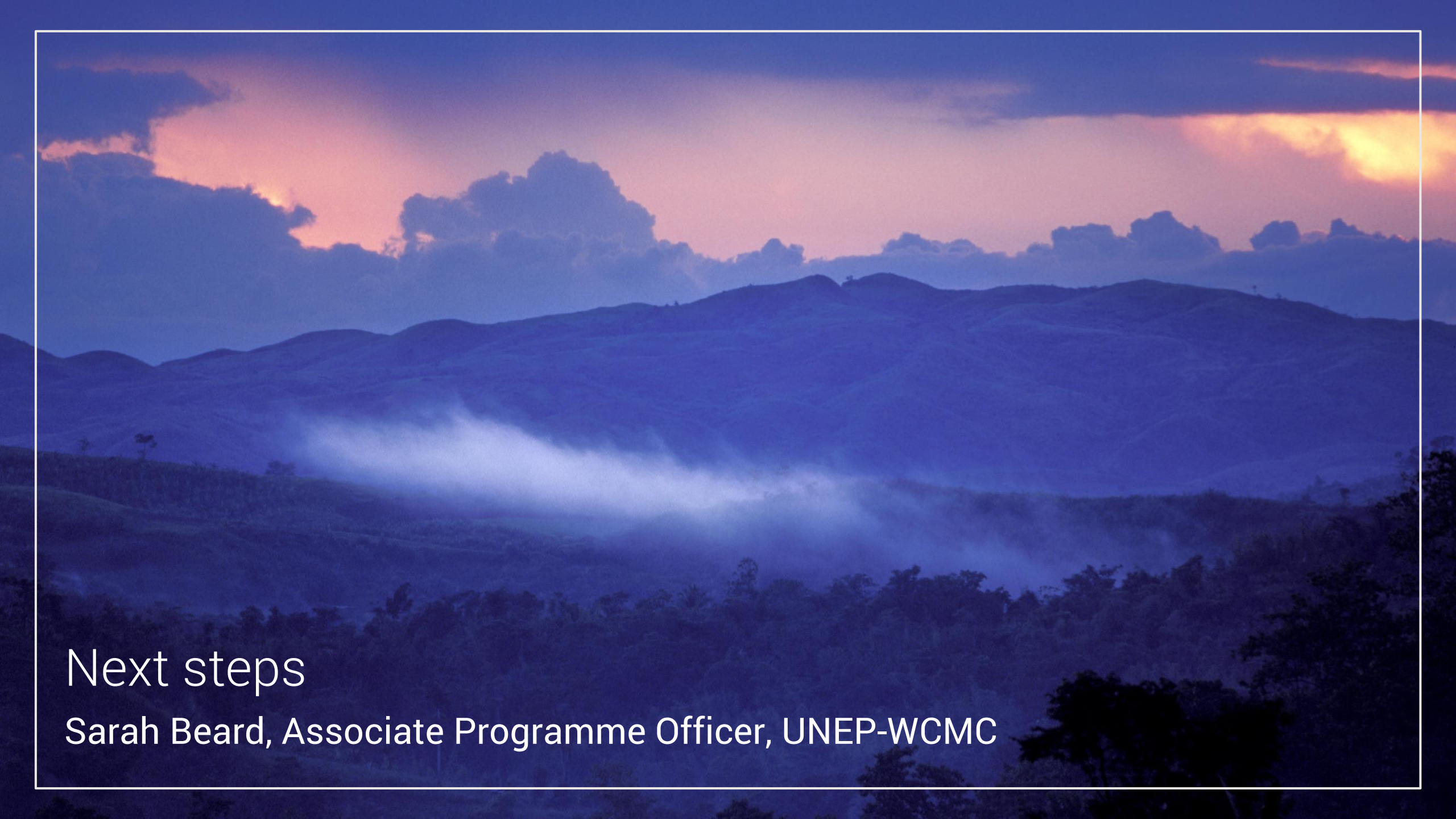
- The map may be used to identify areas where implementing restoration would deliver highest return on investment. Local scale assessments need to follow to decide restoration site, confirm potential and adapt to local needs, views and consent.





MAIN LIMITATIONS / CAVEATS

- This layer does not consider land tenure. Land governance should always be considered before decision making.
- The map reflects restoration priorities from a continental perspective and needs to be complemented with local information and higher resolution data before actioning.
- Benefits for species are based on richness of threatened species, potential for using species distribution in next region
- Only coastal areas (salt marshes, estuaries) were included (not fully marine habitats)
- Limited consideration of future climate change



Next steps

Sarah Beard, Associate Programme Officer, UNEP-WCMC

NEXT STEPS

- Adjust analysis based on feedback Proteus Partners are providing during this data forum
- Develop final layer of restoration potential for Europe
- Share layer and technical brief
- We welcome further feedback on experience of using the layer once it's been shared





Thank you

Any questions?



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FEEDBACK

Go to Menti quiz

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FEEDBACK QUESTIONS

1. Do you think this layer will be useful to your company and in guiding your restoration efforts? If so, how?
2. What would be your preferred region that we develop a restoration potential layer for next year? (please rank in order of preference)
 - Asia and the Pacific
 - Latin America and the Caribbean
 - North America
 - Africa
 - West Asia
3. How could we improve the next restoration potential layer we create?
4. Is there anything else that we should consider as we work to develop a restoration potential layer next year?

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