proteus

Data Forum on Restoration Resilience

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25/11/2020

Welcome

Objectives of the Proteus Data Forum sessions

- A venue for direct communication between data users and technical experts
- Increase familiarity with Proteus resources
- Identifying common challenges & finding solutions

Logistics

- ***Frequency*** quarterly
- ***Scheduling*** AM & PM sessions (cancelled if fewer than 3 participants from 2 companies)
- ***Rules*** Chatham House rule for discussion, but presentation recorded
- ***Topics*** your suggestions are welcome!

Today

Making ecosystem restoration resilient to climate change

- The rationale for developing the restoration resilience layer
- Methodology used to create the layer
- Intended use of the layer, including relevance to the private sector
- Dataset availability

Interactive discussion (poll + Q&A)

- Menti.com - 35 47 61 2

Restoration Resilience

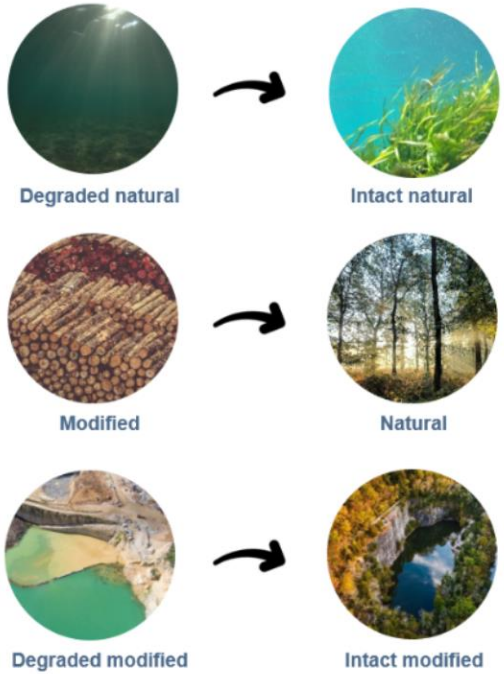
Hazel Thornton, Programme Officer

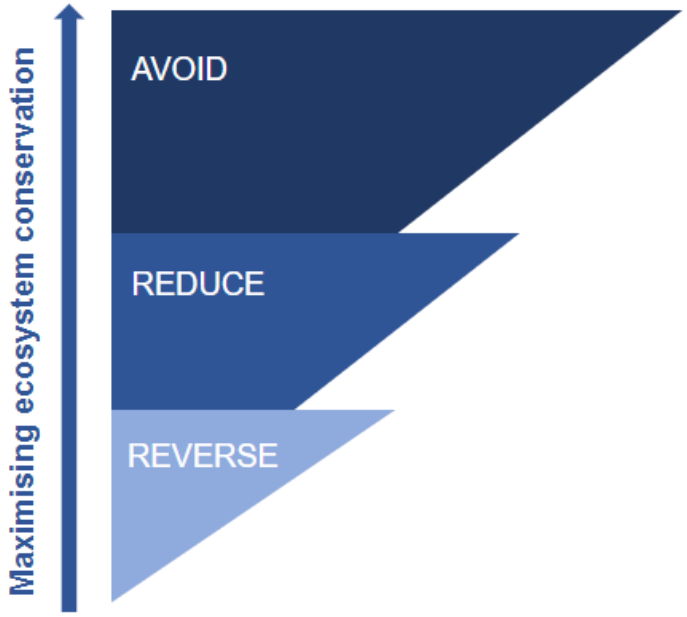
OVERVIEW

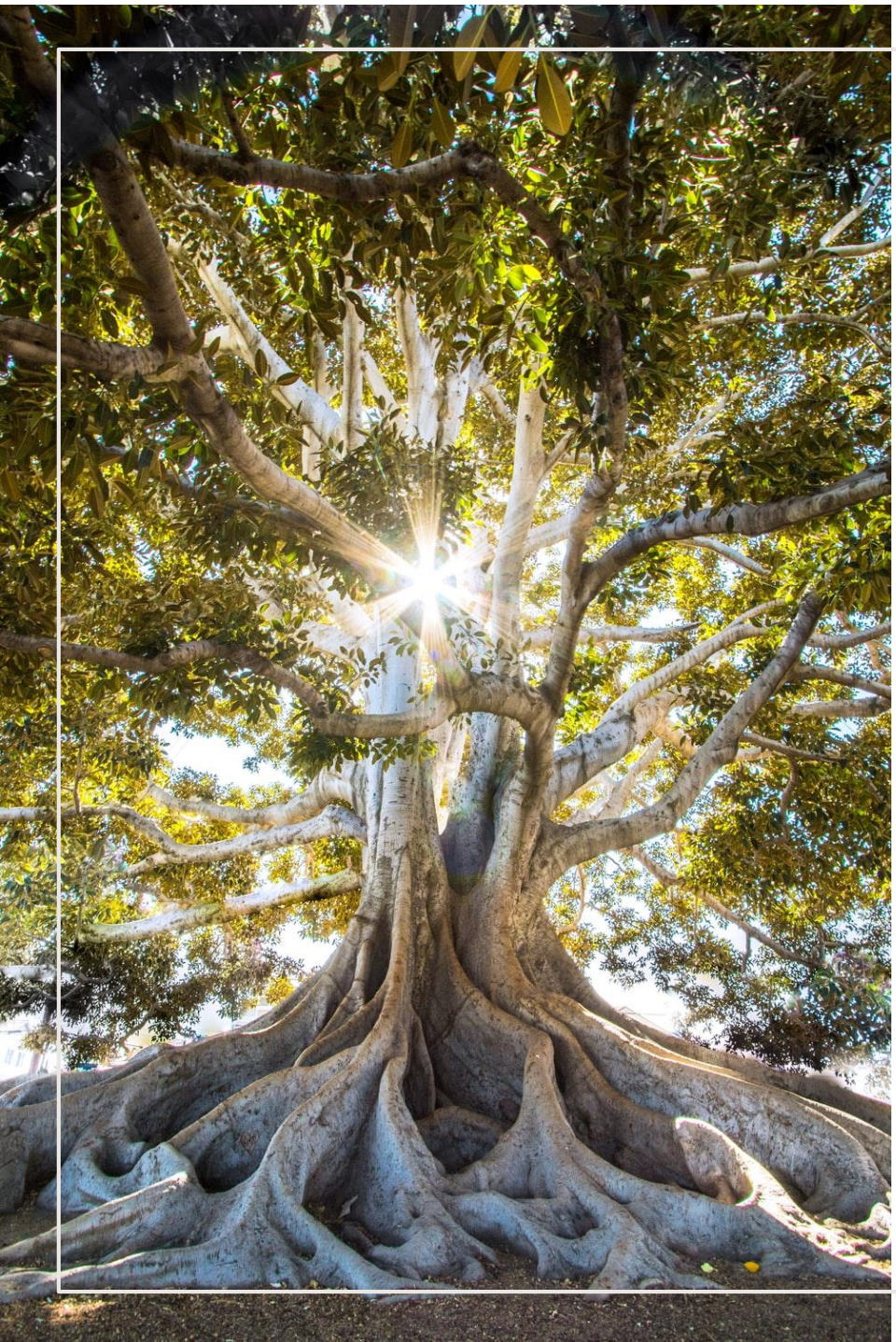
- Rationale
- Methodology
- Intended use of the layer
- Layer availability

ECOSYSTEM RESTORATION

Process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed







WHY RESTORE?

- **75%** substantially degraded land globally
- **3.2 billion people** affected by degradation
- **$4.5 trillion -** annual economic cost of biodiversity loss and ecosystem degradation
- Economic benefits of restoration exceed **10 times** the cost of investment

GLOBAL PRIORITY

ipbes
Science and Policy for People and Nature

SUSTAINABLE DEVELOPMENT GOALS

2021 2030 United Nations Decade of Ocean Science for Sustainable Development

Ramsar

Convention on Biological Diversity

UNFCCC

UNITED NATIONS DECADE ON ECOSYSTEM RESTORATION 2021-2030

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:

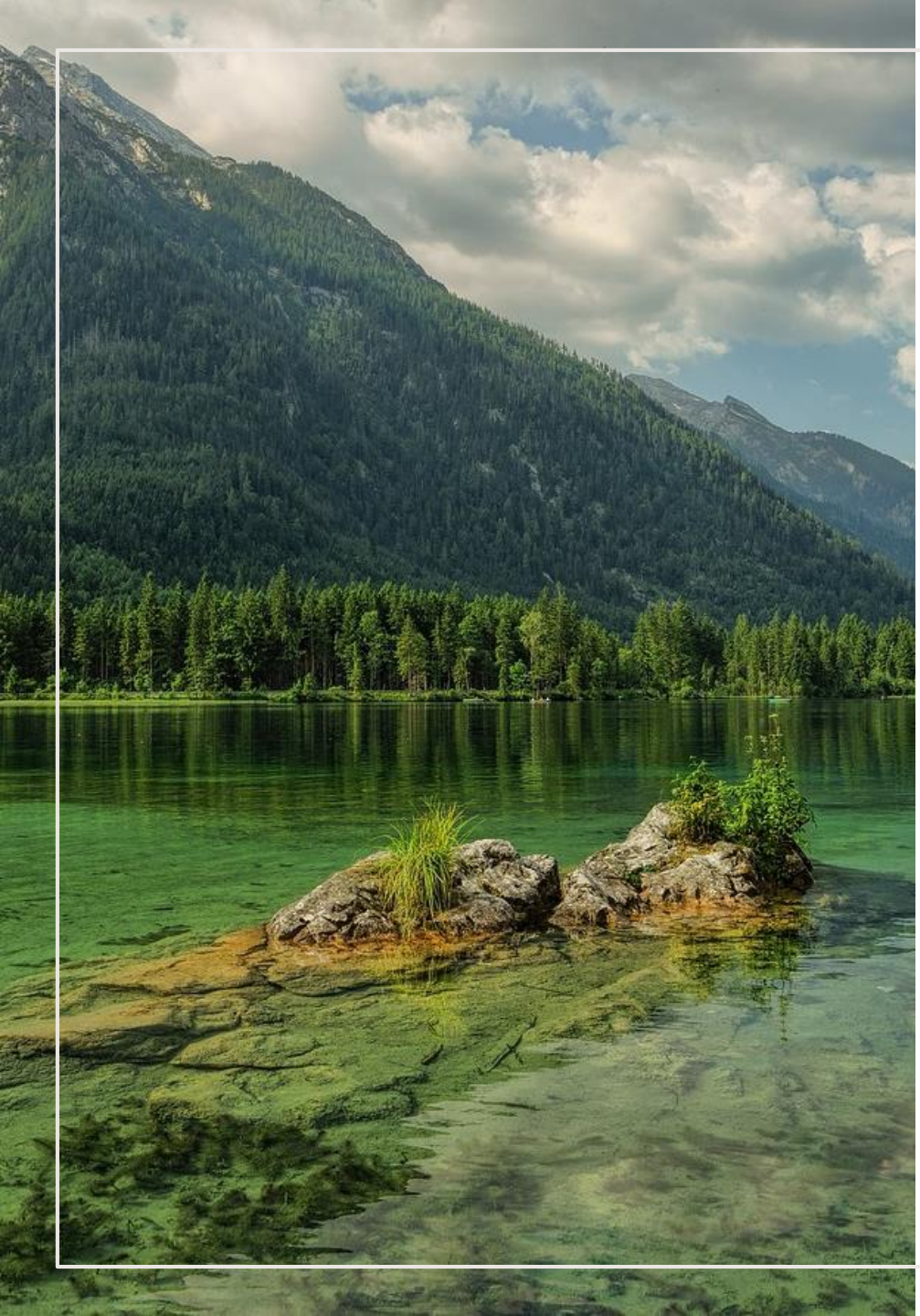
A world where – for the health & wellbeing of all life on Earth & that of future generations – we have restored the relationship between humans & nature, by increasing the area of healthy ecosystems, & by putting a stop to their loss, fragmentation & degradation.

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



WHY RESTORATION RESILIENCE?

- Climate change threats continue to rise
- Range of habitats & species likely to shift
- Long term process that must be sustainable
- Resources need to be effectively allocated

Methodology & Results

Sara Pruckner, Associate Programme Officer

THE LAYER

Potential ecosystem distribution

Restorable ecosystems

Climate threats

Scoping layer

THE LAYER

Potential ecosystem distribution

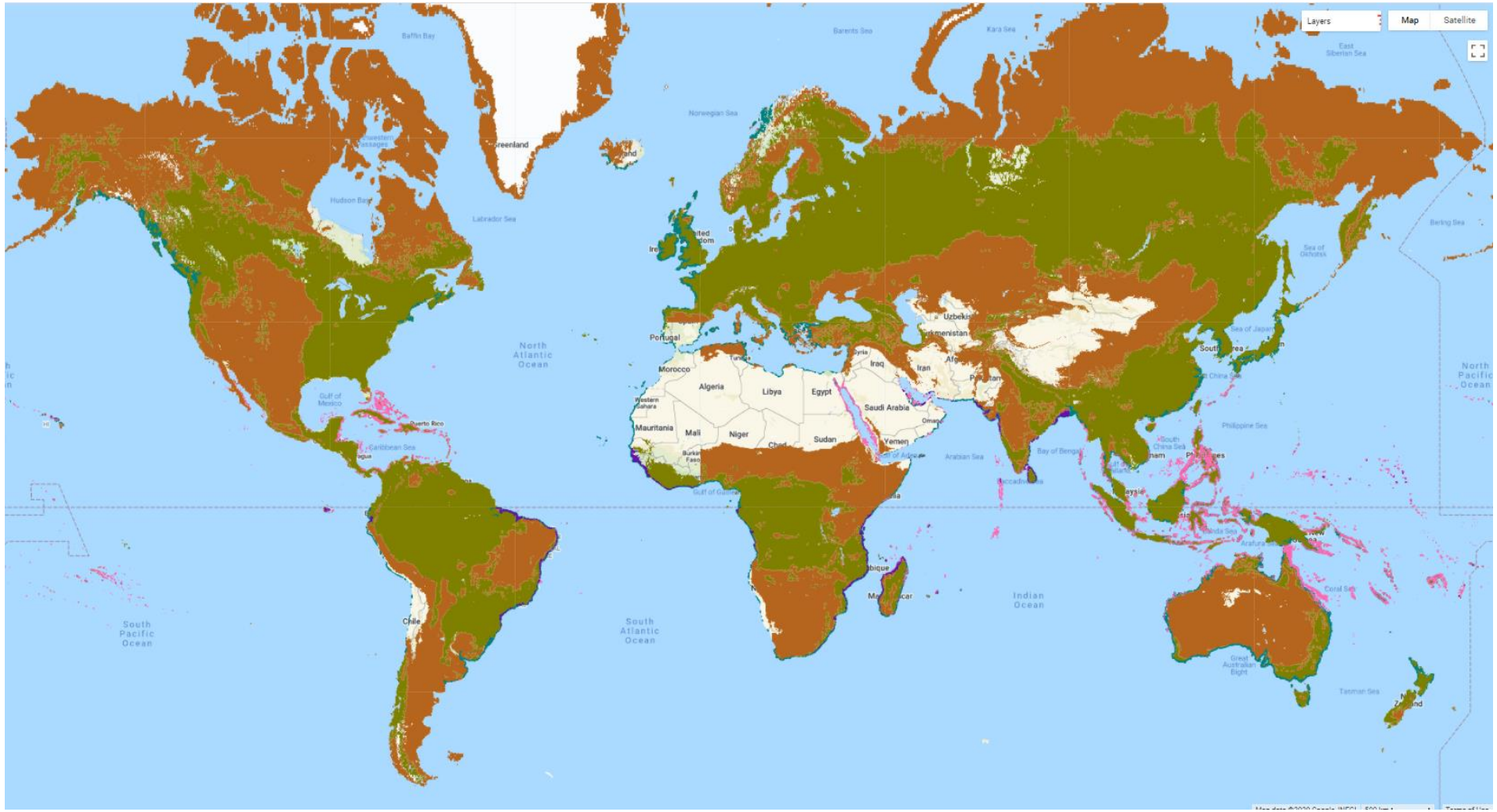
- Forests
- Grasslands
- Mangroves
- Corals
- Seagrasses

Restorable ecosystems

Climate threats

Scoping layer

POTENTIAL ECOSYSTEM DISTRIBUTION



THE LAYER

Potential ecosystem distribution

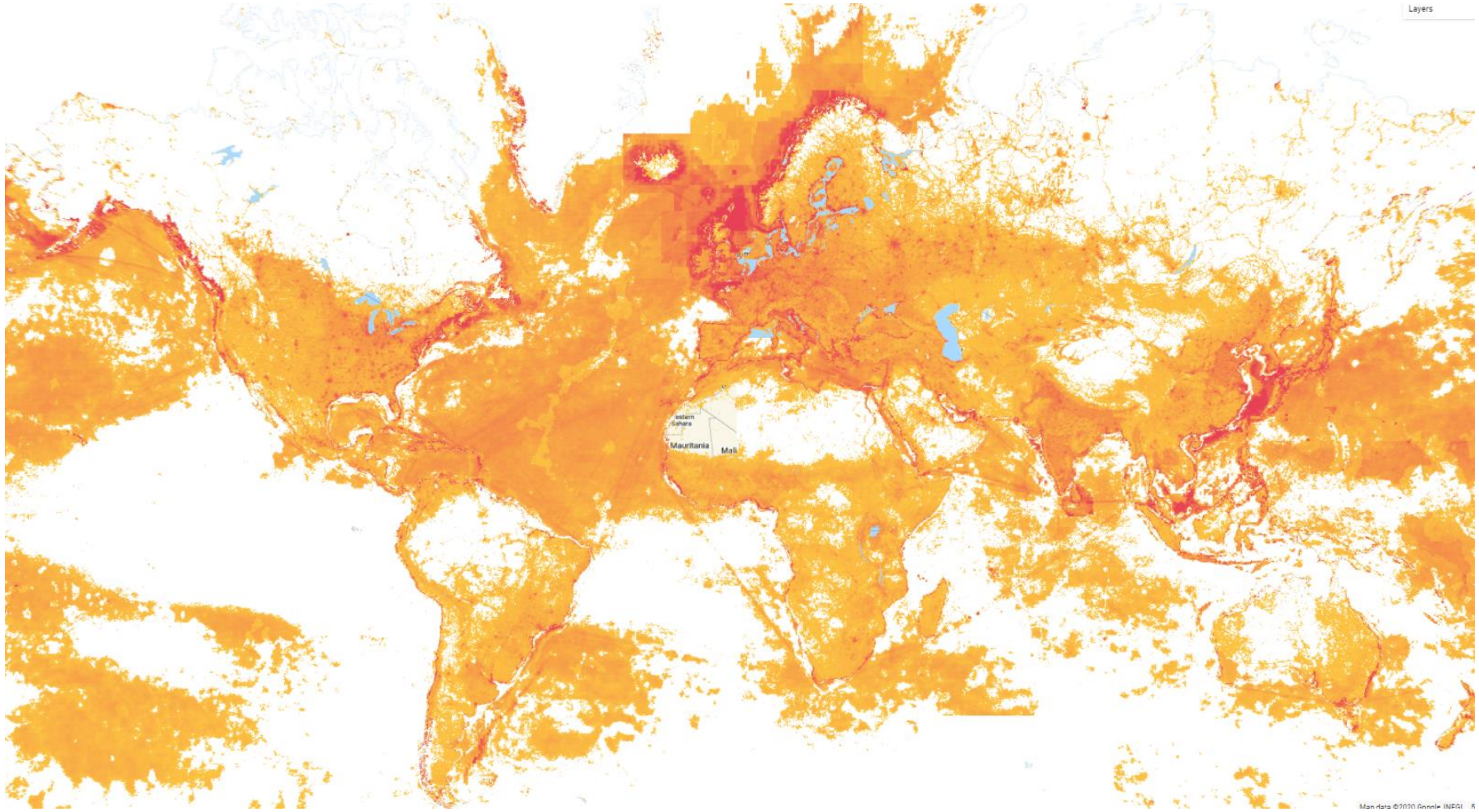
Restorable ecosystems

- Where ecosystems could be, but have disappeared
- Degraded ecosystems

Climate threats

Scoping layer

DEGRADED & MODIFIED AREAS



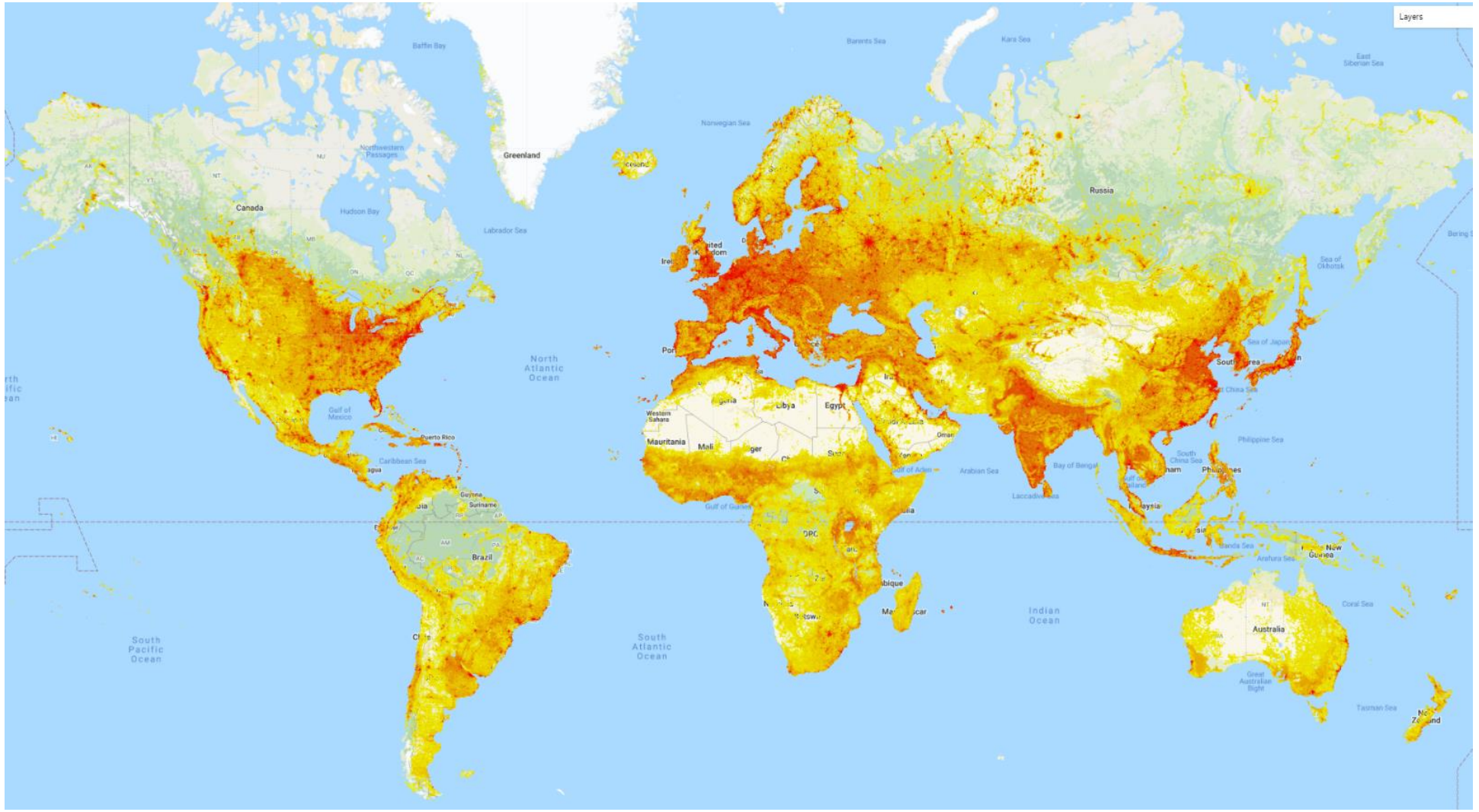
Degraded areas

Medium-High Impact

Very High Impact

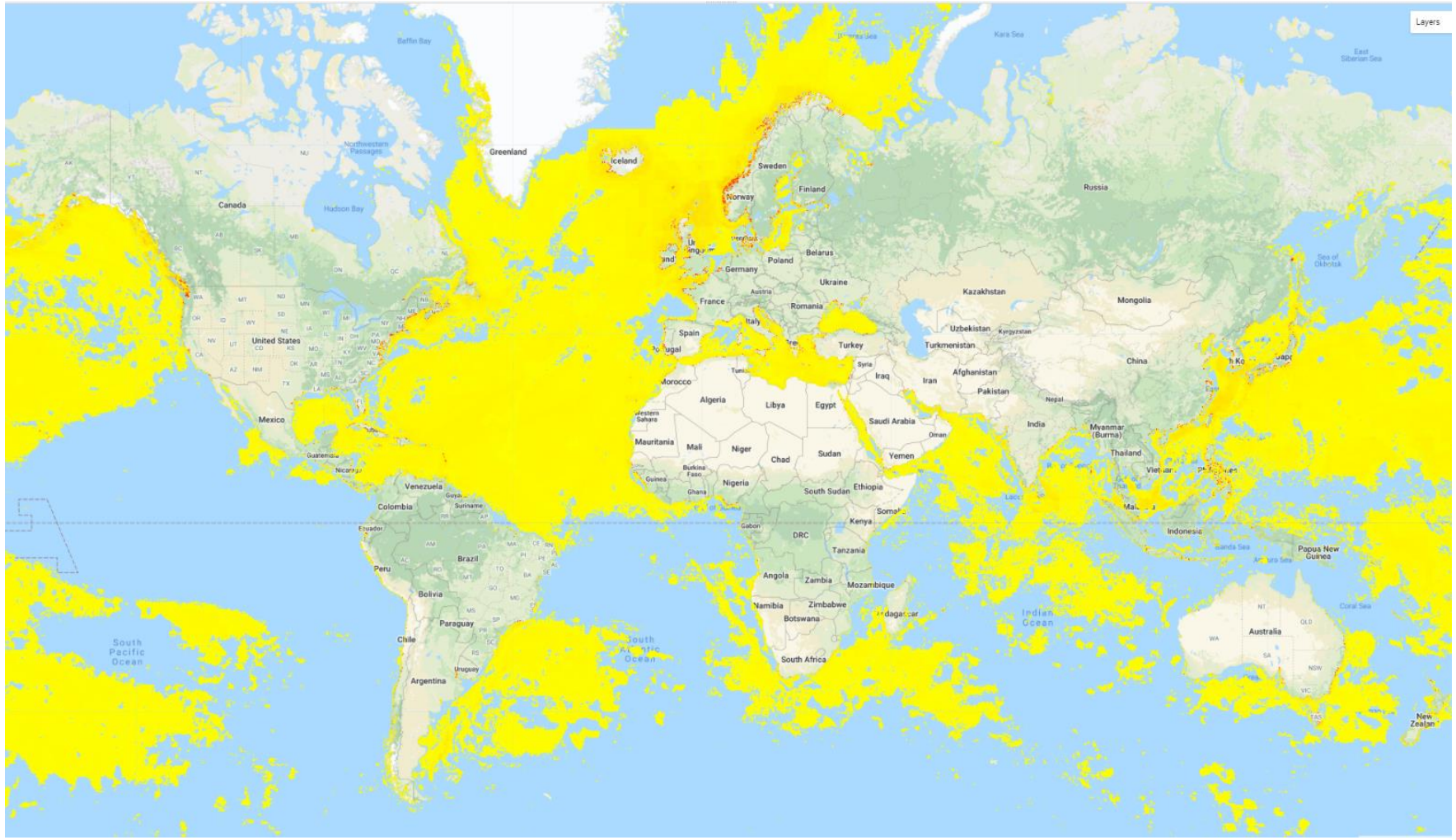
Intact areas

TERRESTRIAL HUMAN FOOTPRINT LAYER



Williams, Brooke et al. (2020), Change in terrestrial human footprint drives continued loss of intact ecosystems, Dryad, Dataset, https://doi.org/10.5061/dryad.3tx95x6d9

MARINE HUMAN FOOTPRINT LAYER



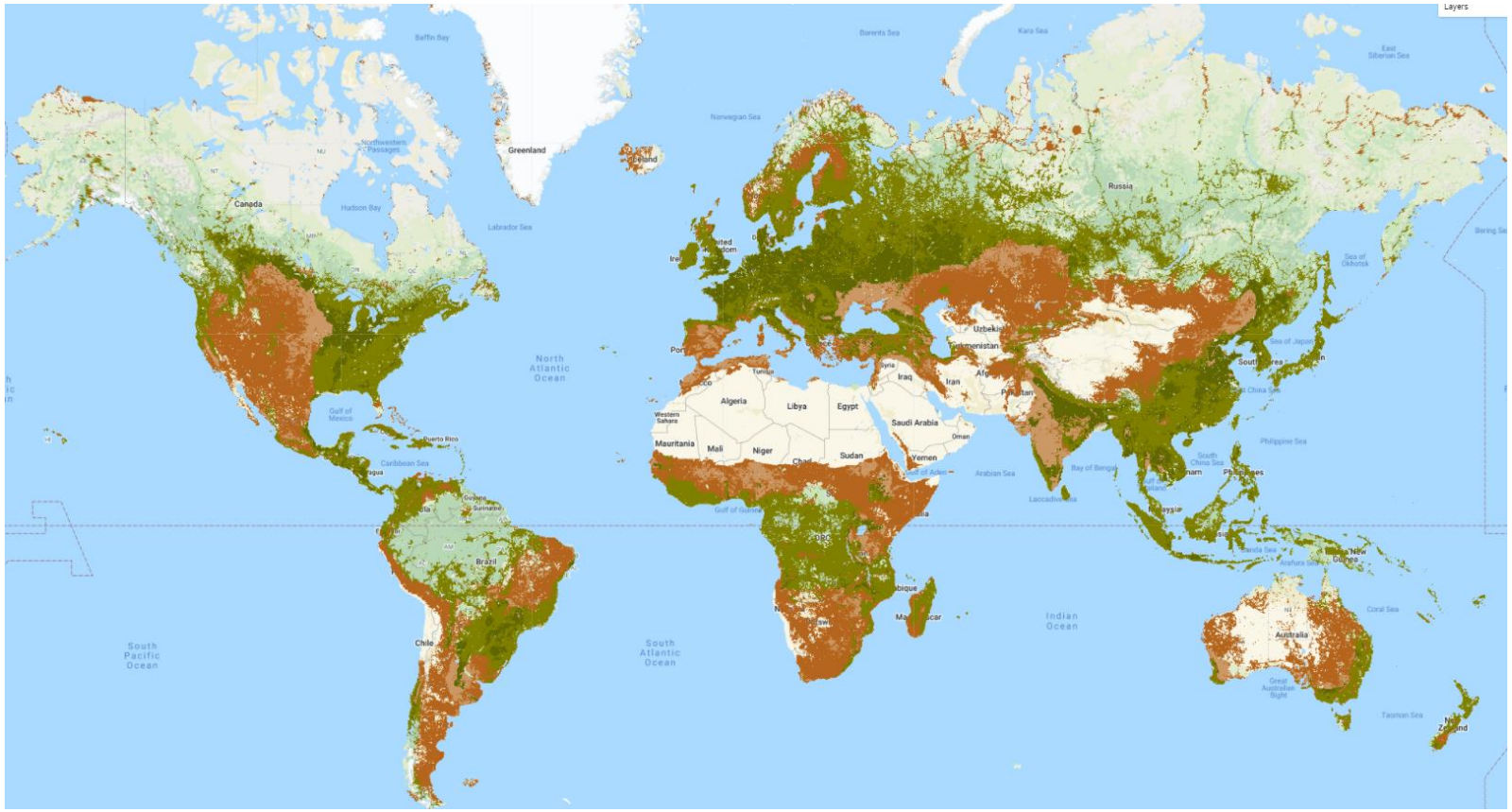
Legend

8.47 – Medium-High Impact

16 – Very High Impact

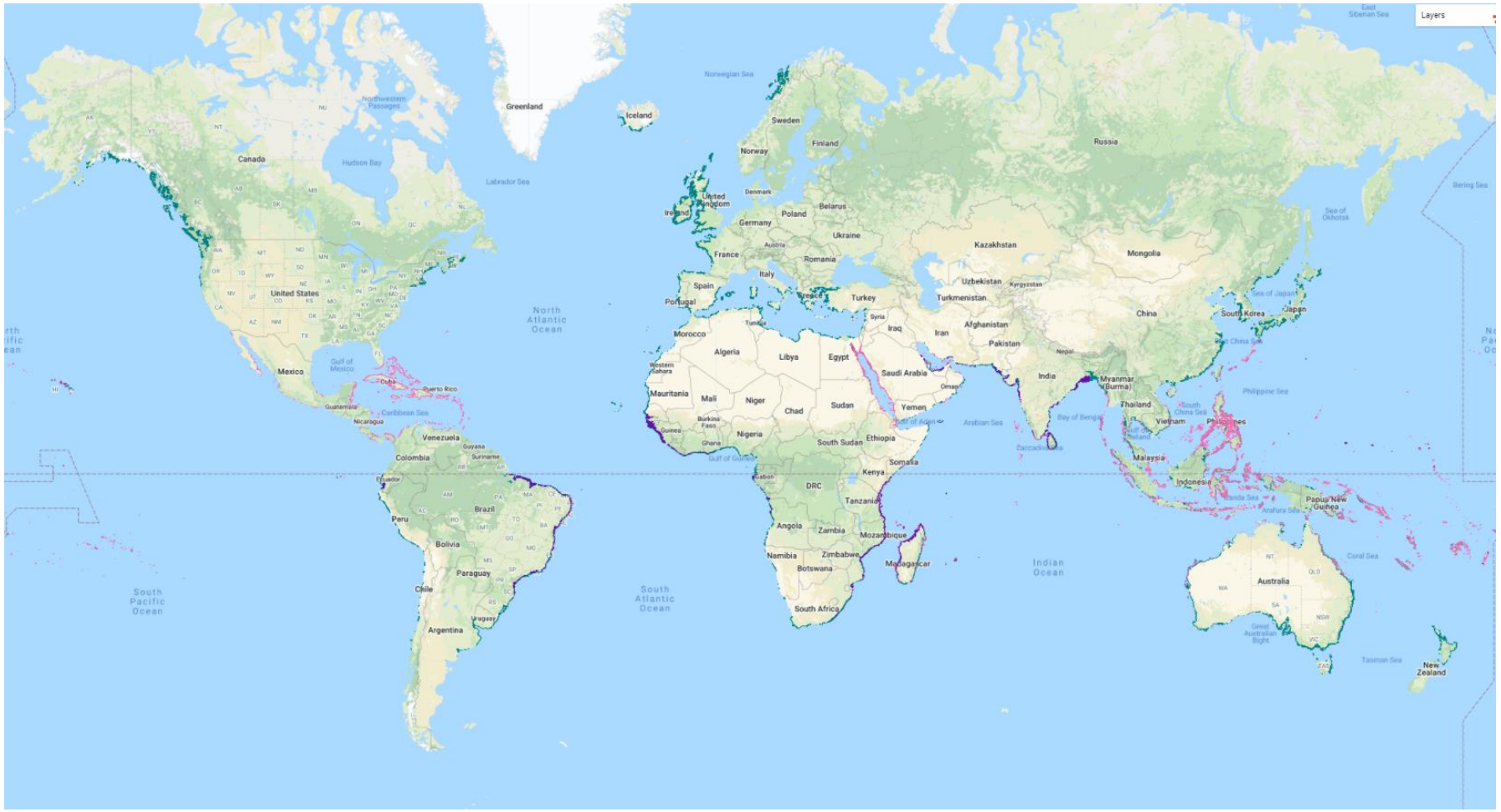
Halpern et al. A Global Map of Human Impact on Marine Ecosystems, 2008. Knowledge Network for Biocomplexity. doi:10.5063/F19C6VN5

RESTORABLE TERRESTRIAL ECOSYSTEMS



- Forest
- Forest – now cropland
- Grassland
- Grassland – now cropland

RESTORABLE MARINE ECOSYSTEMS



Seagrass

Mangroves

Coral reefs

THE LAYER

Potential ecosystem distribution

Restorable ecosystems

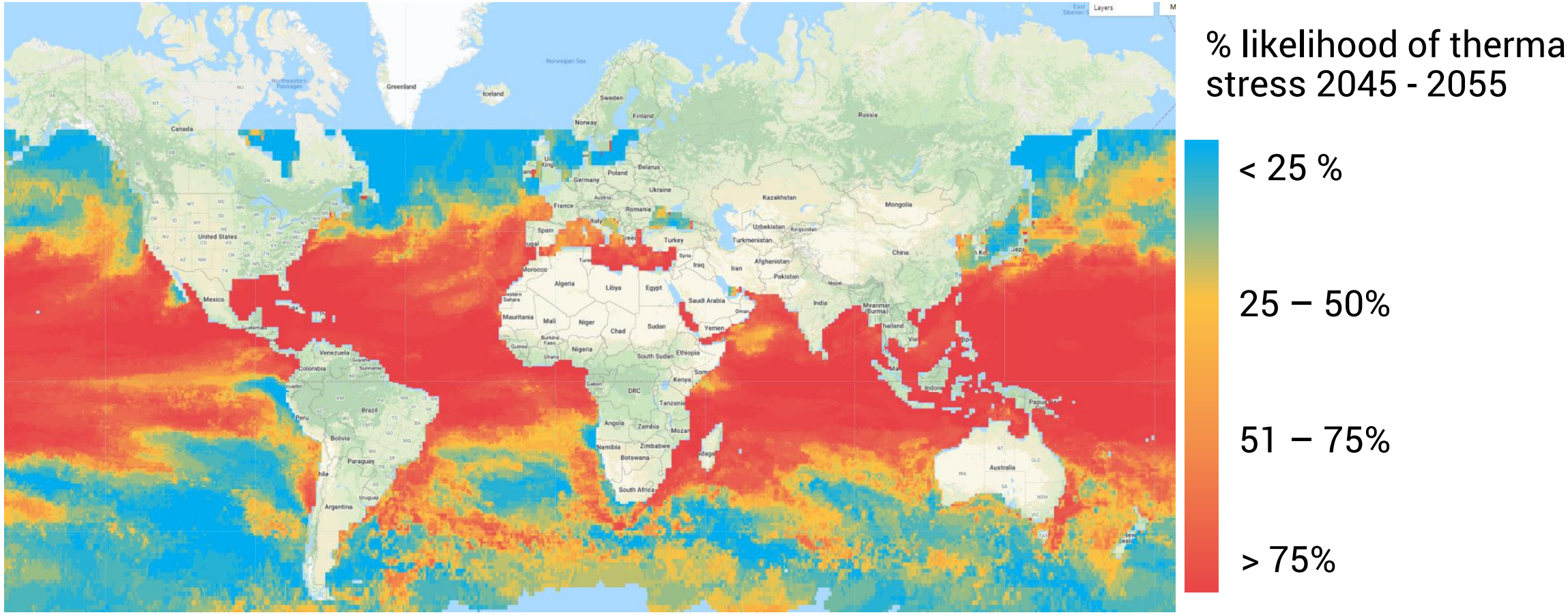
Climate threats

Which threats will likely:

- Affect selected ecosystems
- Lead to potential habitat shifts
- Increase by 2050

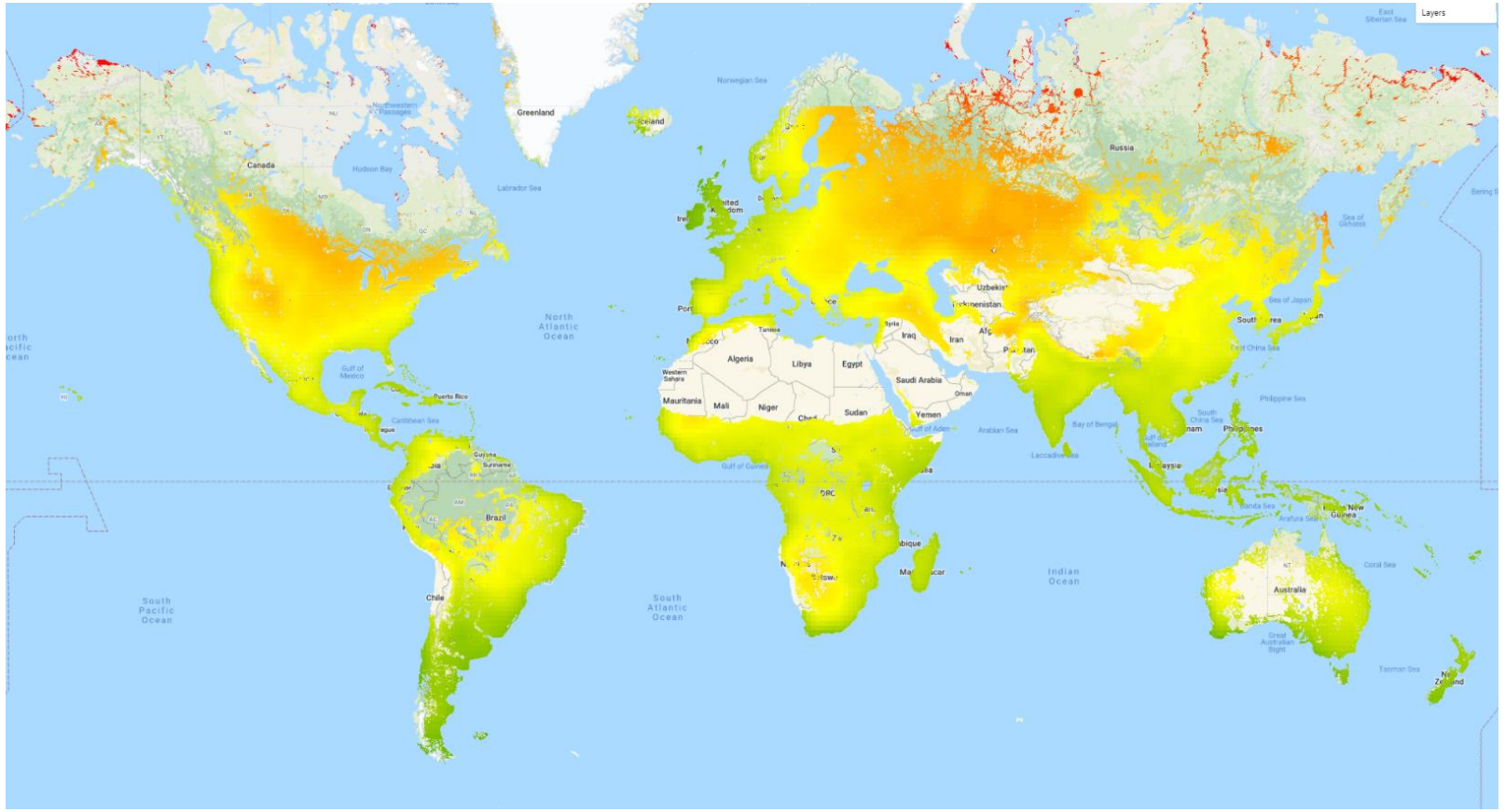
Scoping layer

CLIMATE CHANGE IMPACTS – MARINE THERMAL STRESS



Reefs at Risk Revisited, World Resources Institute, 2011

CLIMATE CHANGE IMPACTS – MEAN ANNUAL AIR TEMPERATURE CHANGE



Degree Celsius change
2039 - 2060

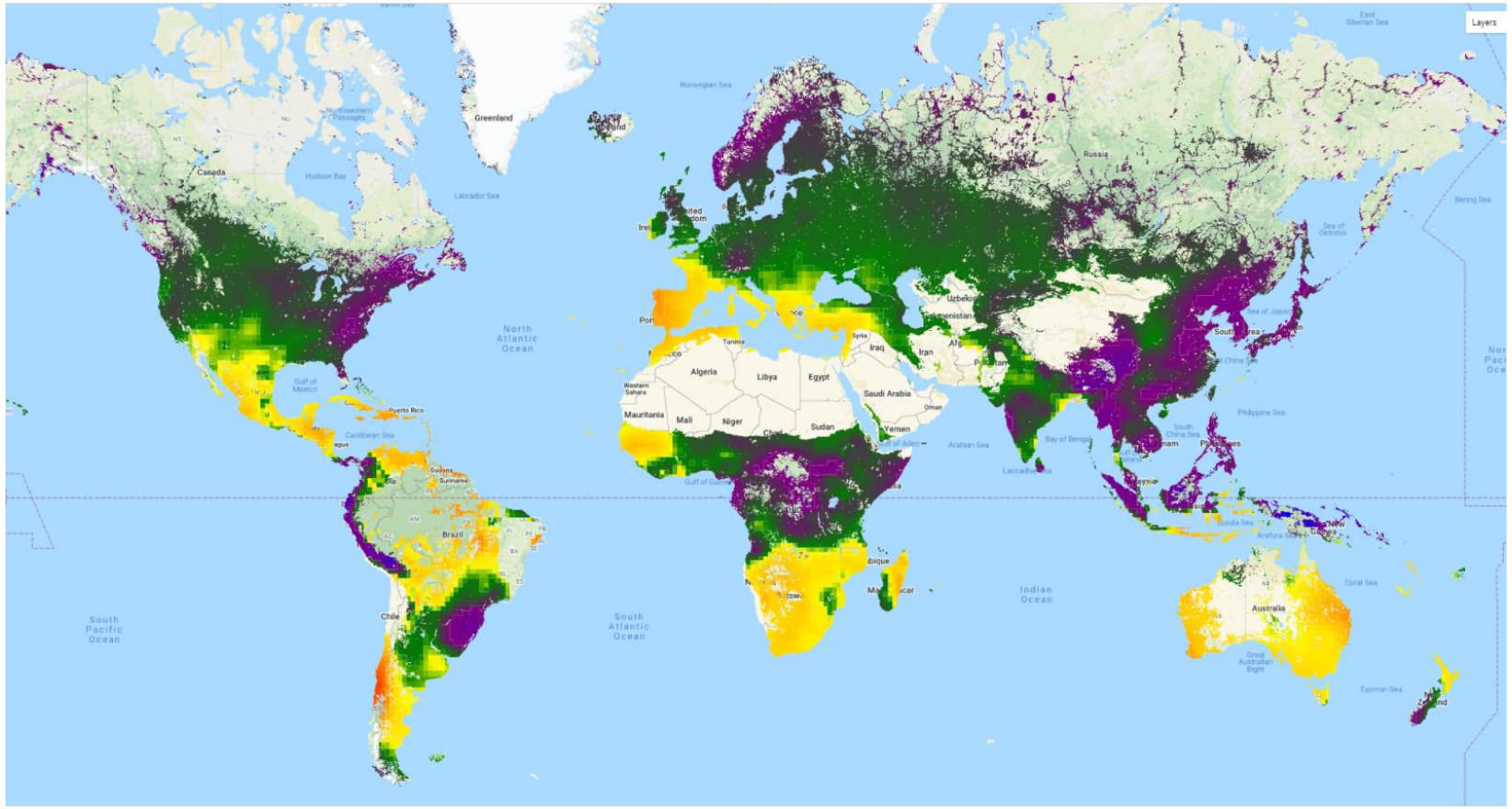
0 °

4 °

> 8°

Multi-Model Ensemble from the National Center for Atmospheric Research (NCAR), funded by the National Science Foundation (NSF)

CLIMATE CHANGE IMPACTS – MEAN ANNUAL PRECIPITATION CHANGE



Precipitation surplus

No significant change

Precipitation deficit

Multi-Model Ensemble from the National Center for Atmospheric Research (NCAR), funded by the National Science Foundation (NSF)

THE LAYER

Potential ecosystem distribution

- Forests
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- Corals
- Seagrasses

Restorable ecosystems

- Where ecosystems could be, but have disappeared
- Degraded ecosystems

Climate threats

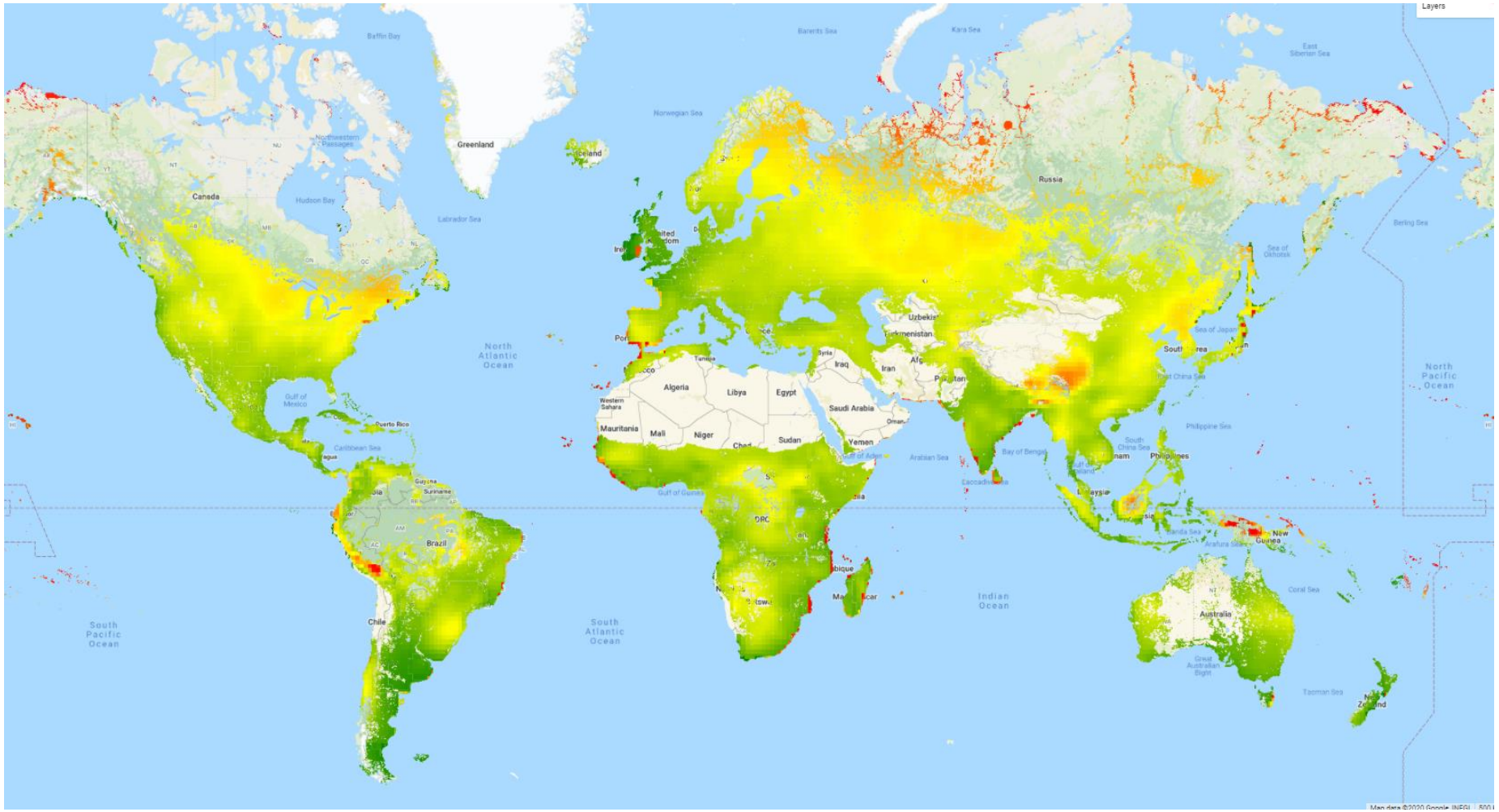
Which threats will likely:

- Affect selected ecosystems
- Lead to potential habitat shifts
- Increase by 2050

Scoping layer

- Screen global areas for potential restoration areas
- Assess climate change risk in any restorable area
- Target local research

SNEAK PEEK: FINAL LAYER



Restoration Resilience

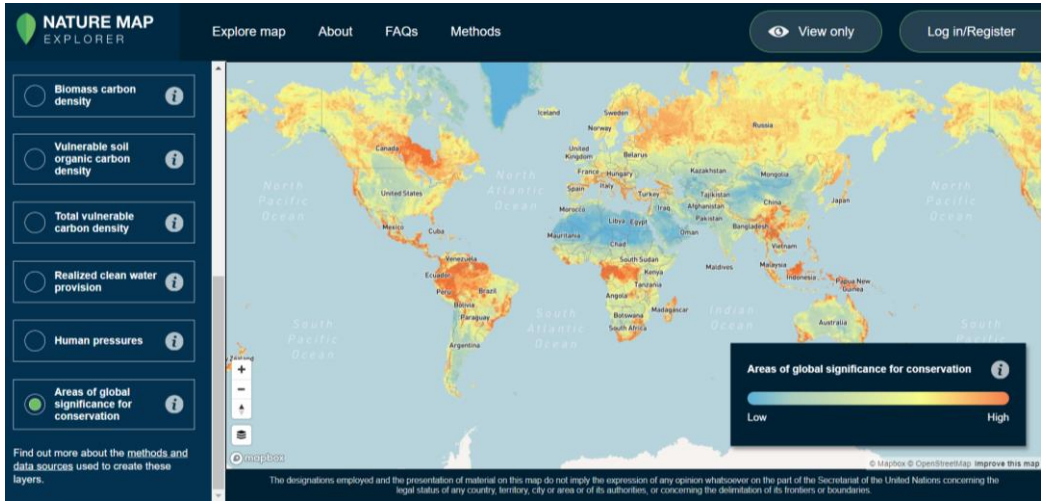
More Resilient

Vulnerable

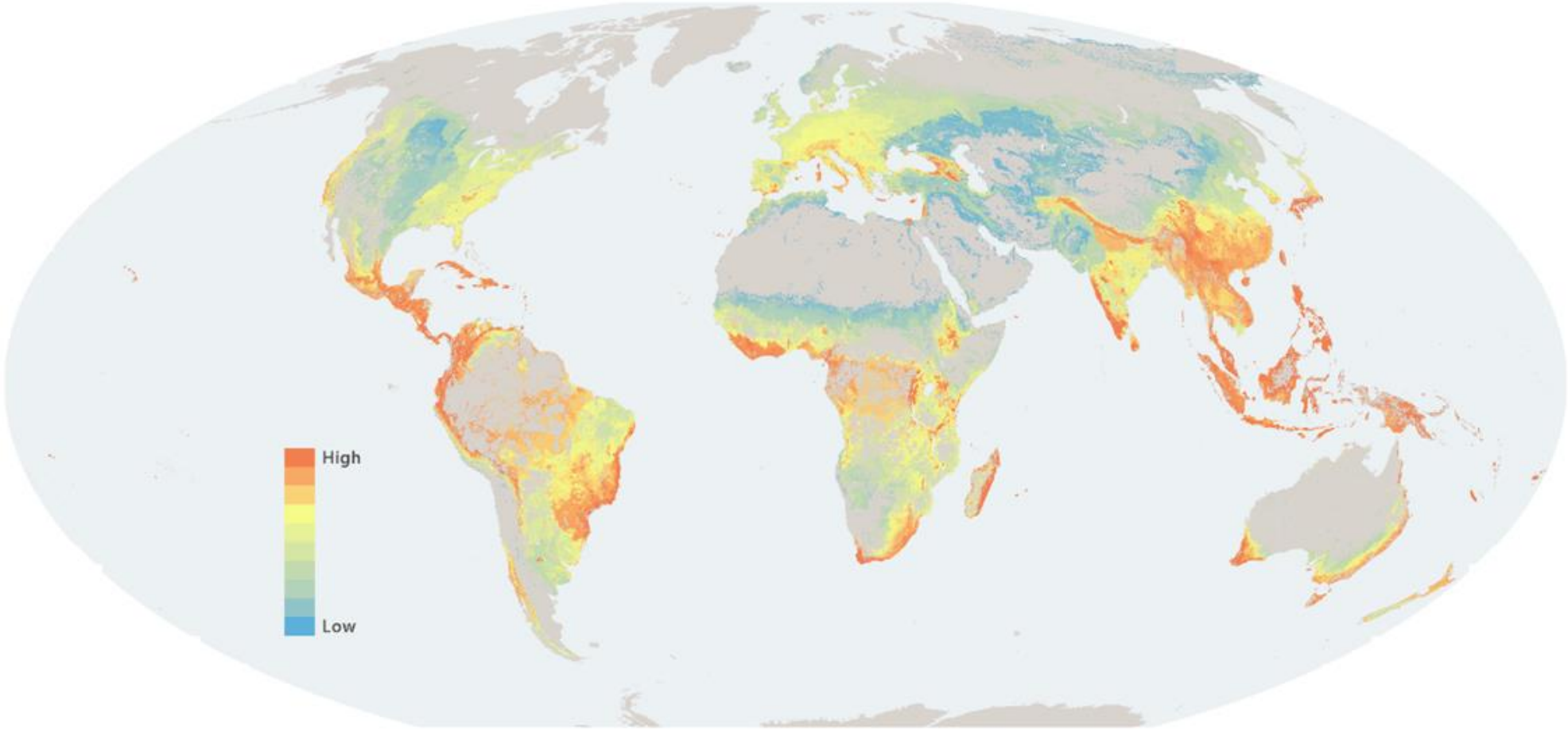
Very vulnerable

RELATED WORK: NATUREMAP

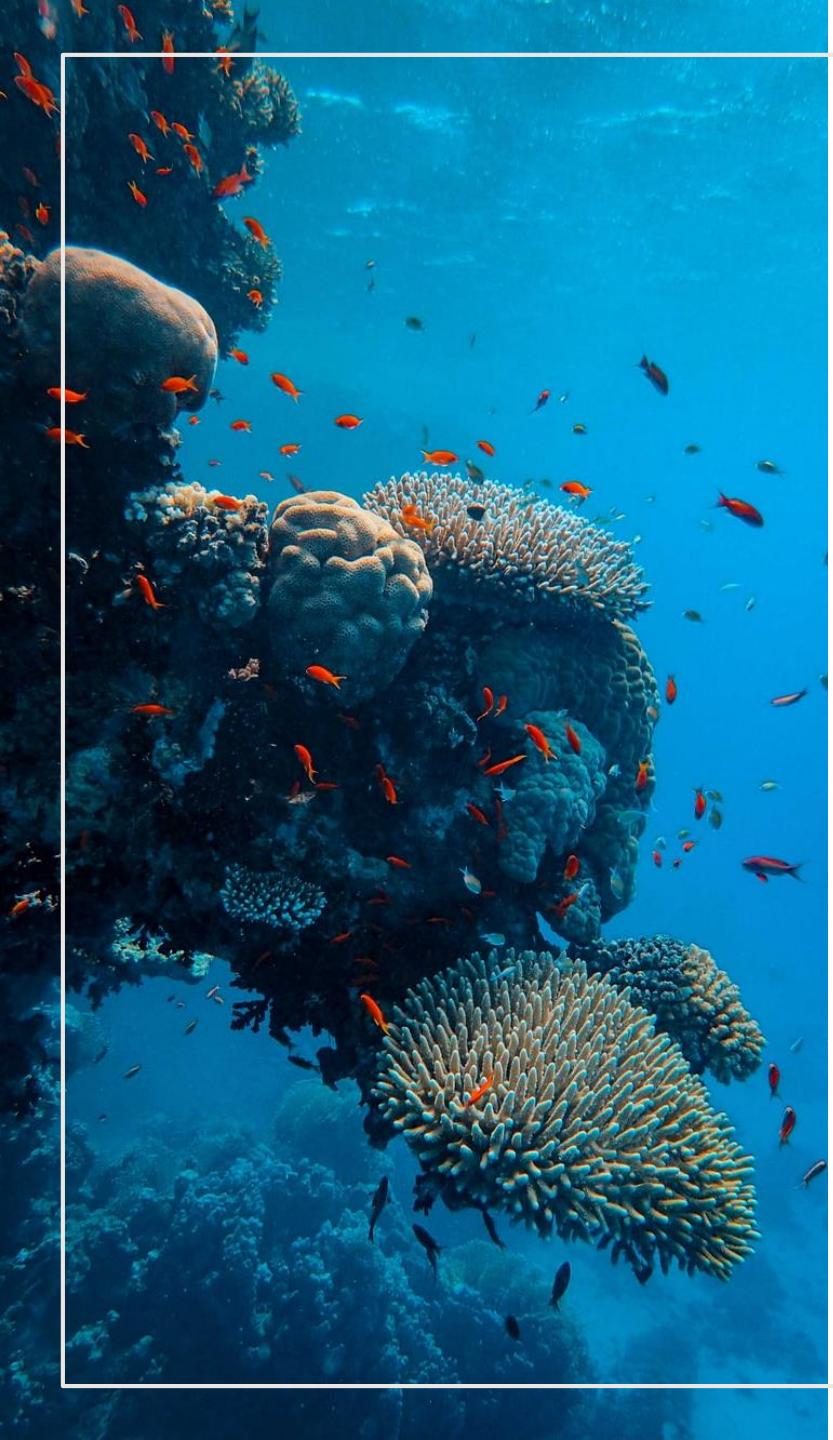
- New global maps of habitats, biodiversity, carbon & ecosystem services
- Incorporates newly available global biodiversity data
- Largest globally consistent spatial dataset on species ranges to date



NATURE MAP – RESTORATION PRIORITIES



Strassburg et al. (2020). Global priority areas for ecosystem restoration. *Nature* (in press).



HOW TO USE THE LAYER

- Global screening & scoping layer
- Decision-making to avoid restoration efforts affected by climate change
- Must be supplemented by local research before action can occur

TIMELINE & PLANNED OUTPUTS

September

- Data scoping and gathering

October

- Proteus Horizon Scan webinar
- Analysis of data and feedback
- Writing User Guide

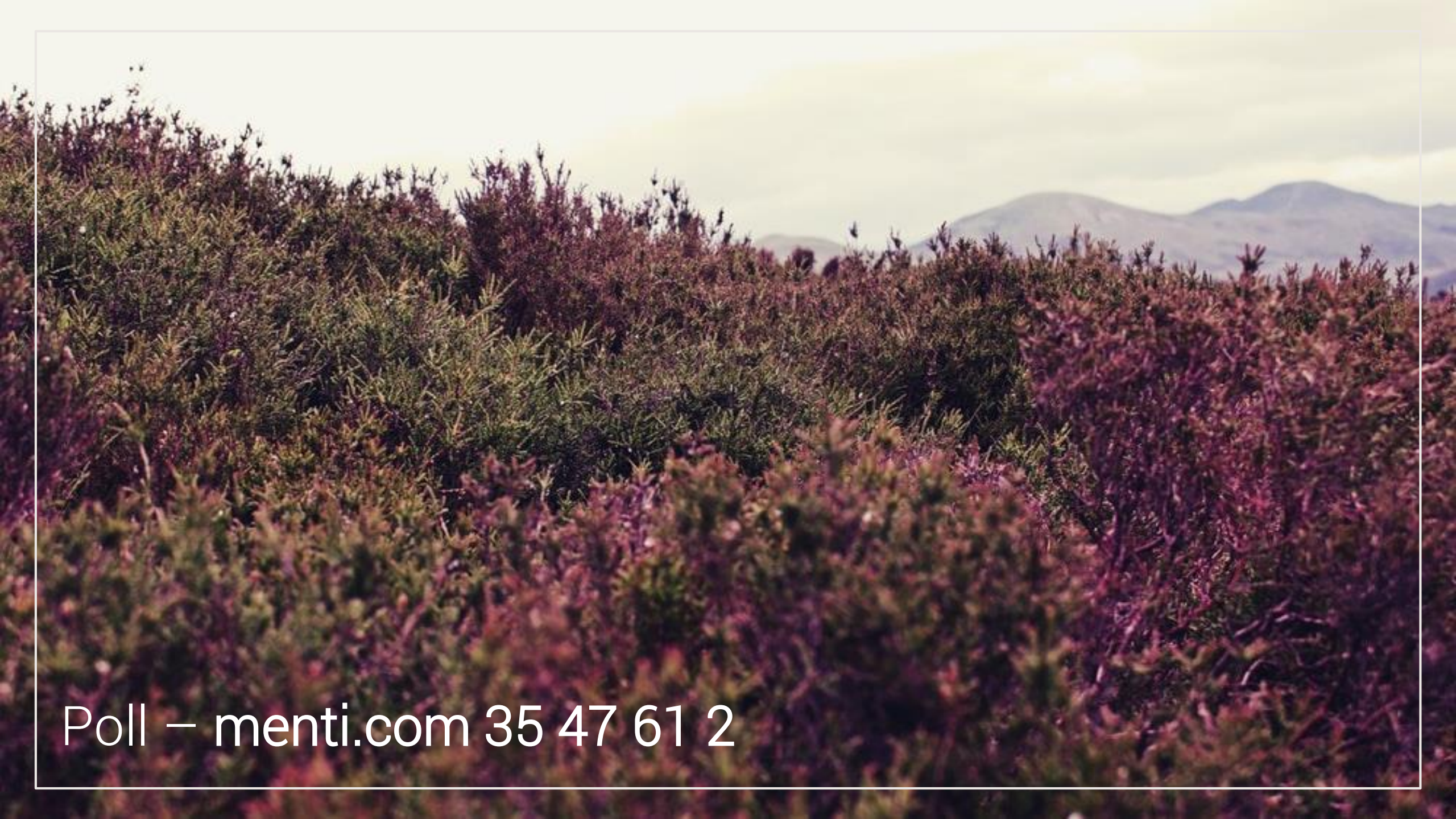
November

- Proteus Data Forum
- Gather final feedback
- Delivery of Technical Brief

December

- Quality Control & Quality Assurance
- Delivery of User Guide
- Publish Results


Thank you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Discussion

Contact

For password details for your company, and any other questions related to the Proteus Partnership please contact:

sebastian.bekker@unep-wcmc.org

UN environment programme WCMC

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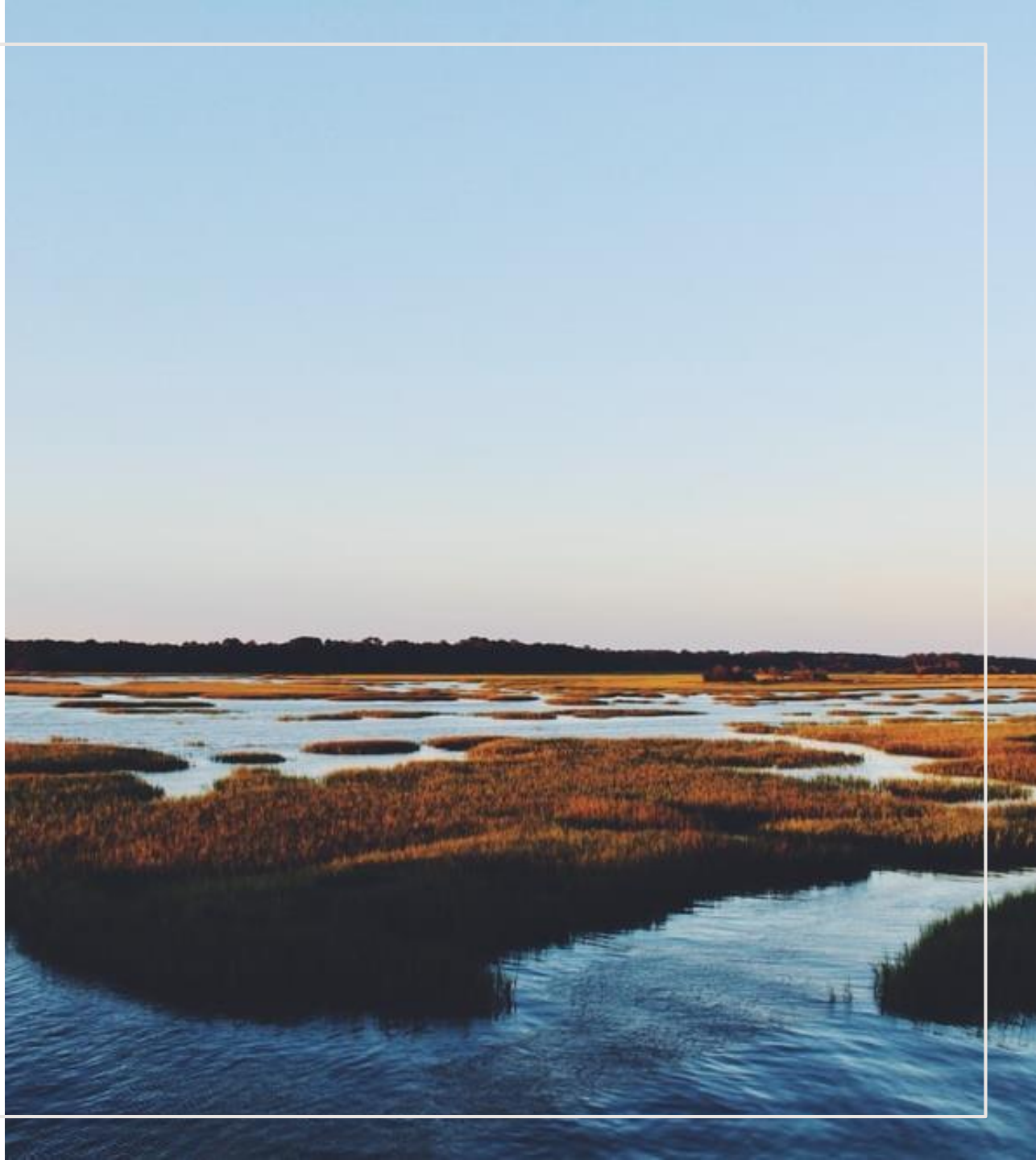

DISCUSSION POINTS

We would be interested to hear...

- How you might use this global layer?
- Your thoughts & feedback on this tool so far
- Your thoughts on the UN Decade on Ecosystem Restoration

Please do get in touch to discuss further

Proteus Data Forum webinar

Restoration Resilience

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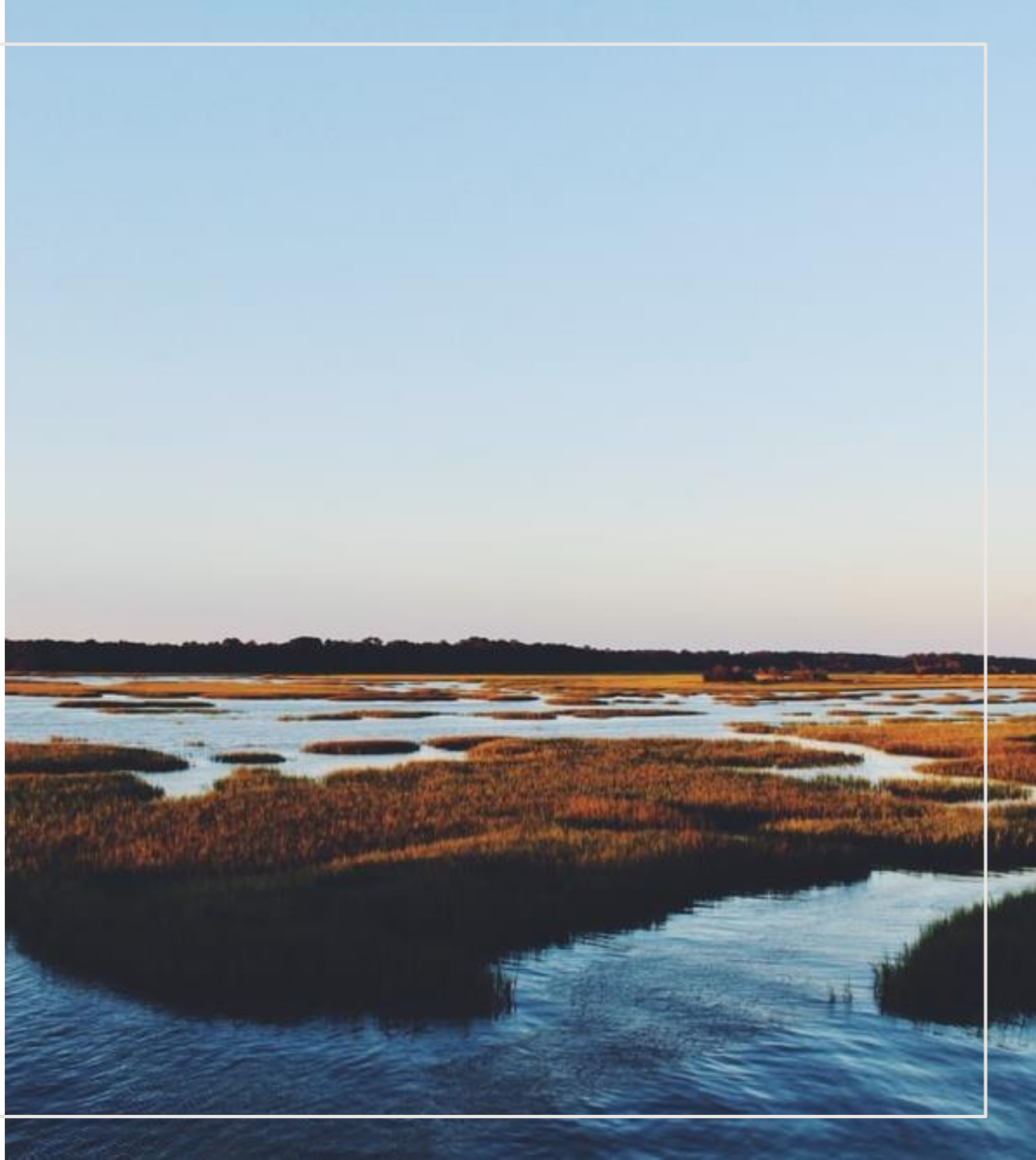

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