
GEO
GROUP ON
EARTH OBSERVATIONS
GLOBAL
ECOSYSTEMS
ATLAS
MAPPING THE WORLD'S
ECOSYSTEMS FOR ACTION:
The Global Ecosystems Atlas
PRESENTER: David J. Patterson

Overview

- What is the Global Ecosystem Atlas?
- Which typology is used?
- Data / Atlas Development
- Applications

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The Global Ecosystems Atlas in a nutshell

A **trusted** comprehensive map of the world's ecosystems

Open, accurate and up-to-date information

Harmonized to the **IUCN Global Ecosystem Typology**

Support for **country engagement** to develop detailed national ecosystem maps

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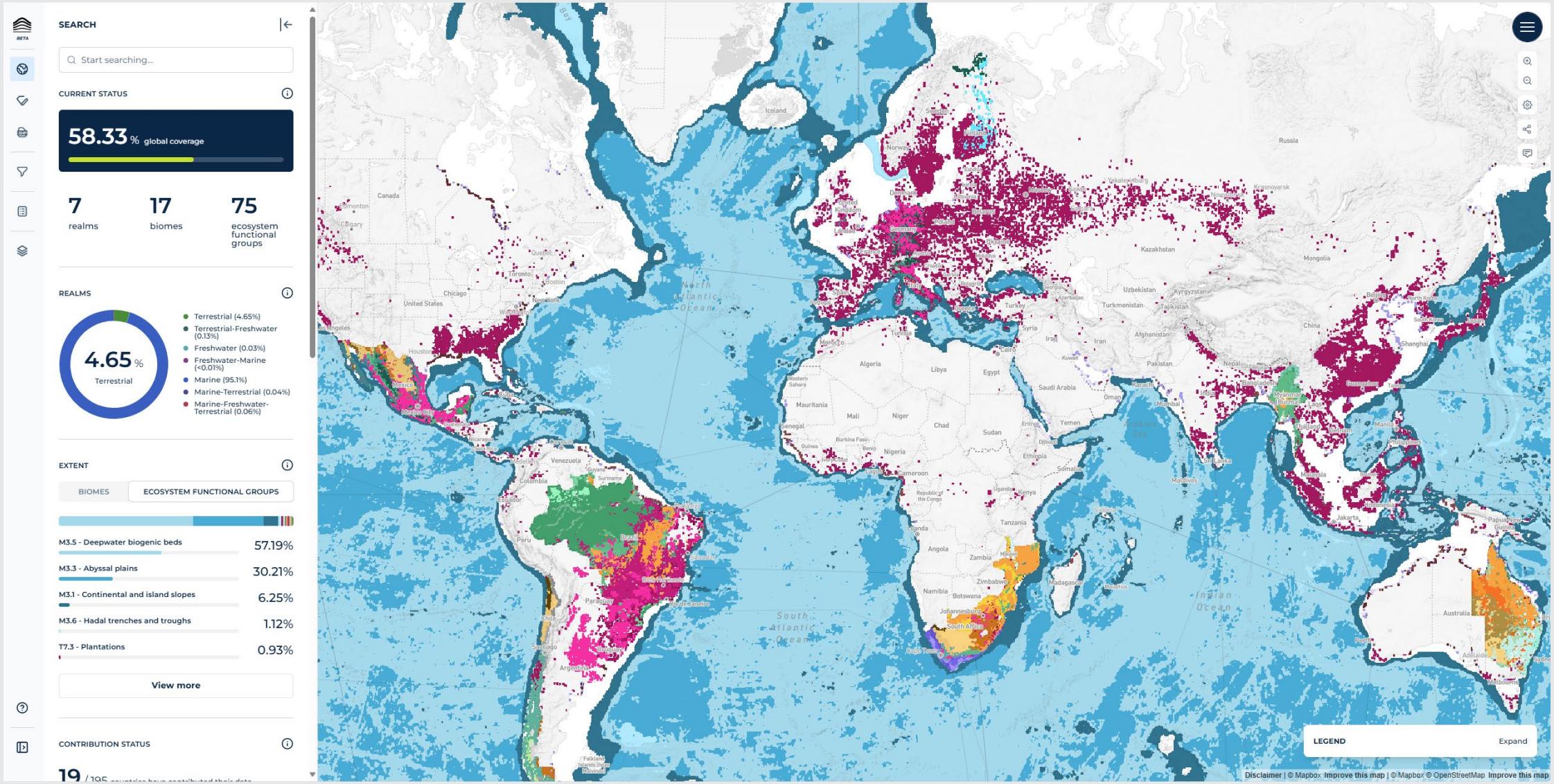

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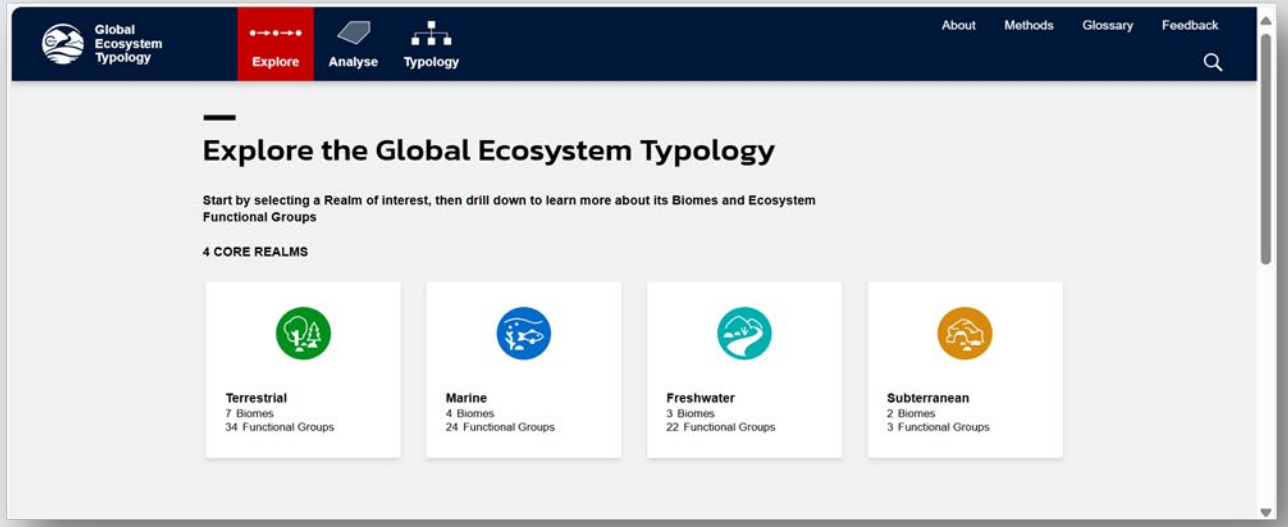
What Ecosystem Typology is used the Atlas?

- We use IUCN GET 2.1

A common ecosystem classification system for all ecosystem types across all realms
First published by the IUCN in 2020; updated in 2022.



Enables global synthesis and comparison between countries without replacing country-specific ecosystem classifications. Detail on national ecosystem types will be retained in the Atlas.

Global Ecosystem Typology

www.global-ecosystems.org

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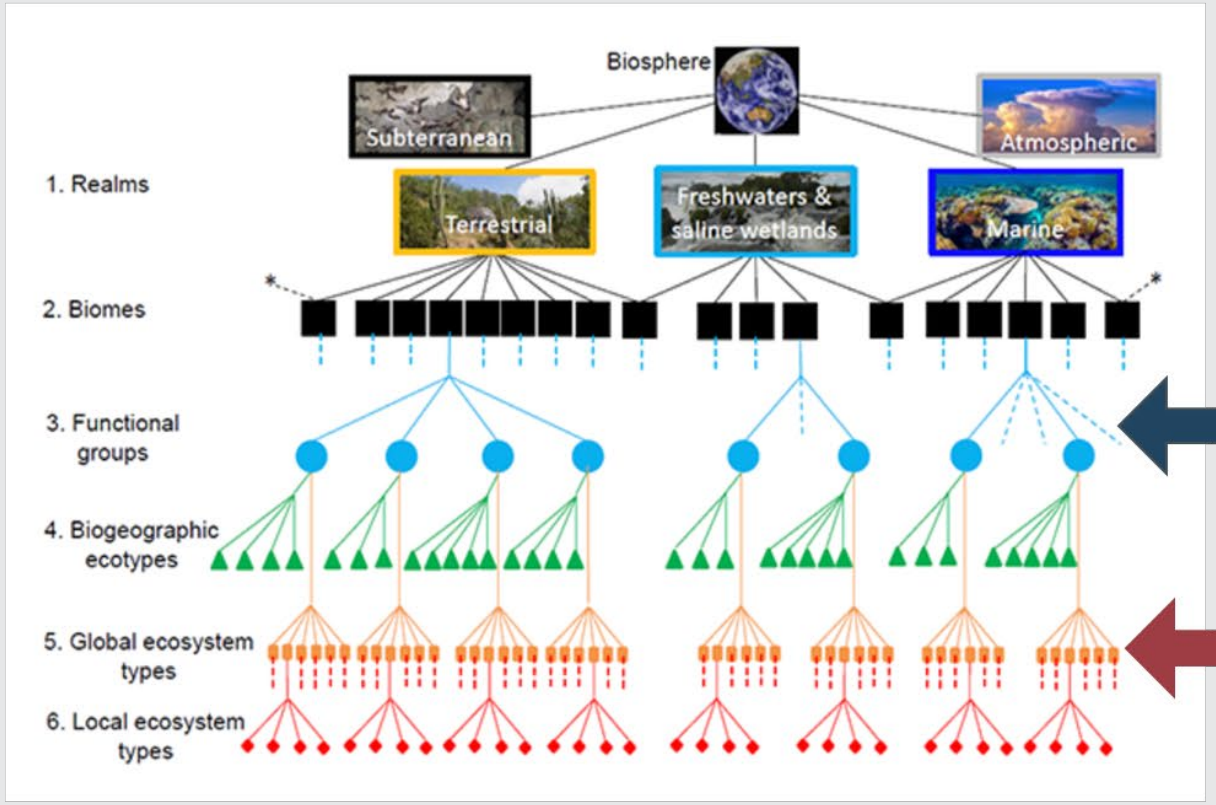
IUCN Global Ecosystem Typology



5 Realms (level 1)

25 Biomes (level 2)

110 Ecosystem functional groups (level 3)

Ecosystem types e.g. in national ecosystem classifications (level 5/6 - developed "bottom-up")

- Ecosystem functional groups don't replace more detailed national ecosystem types
- Typically, several national ecosystem types will fall within one EFG

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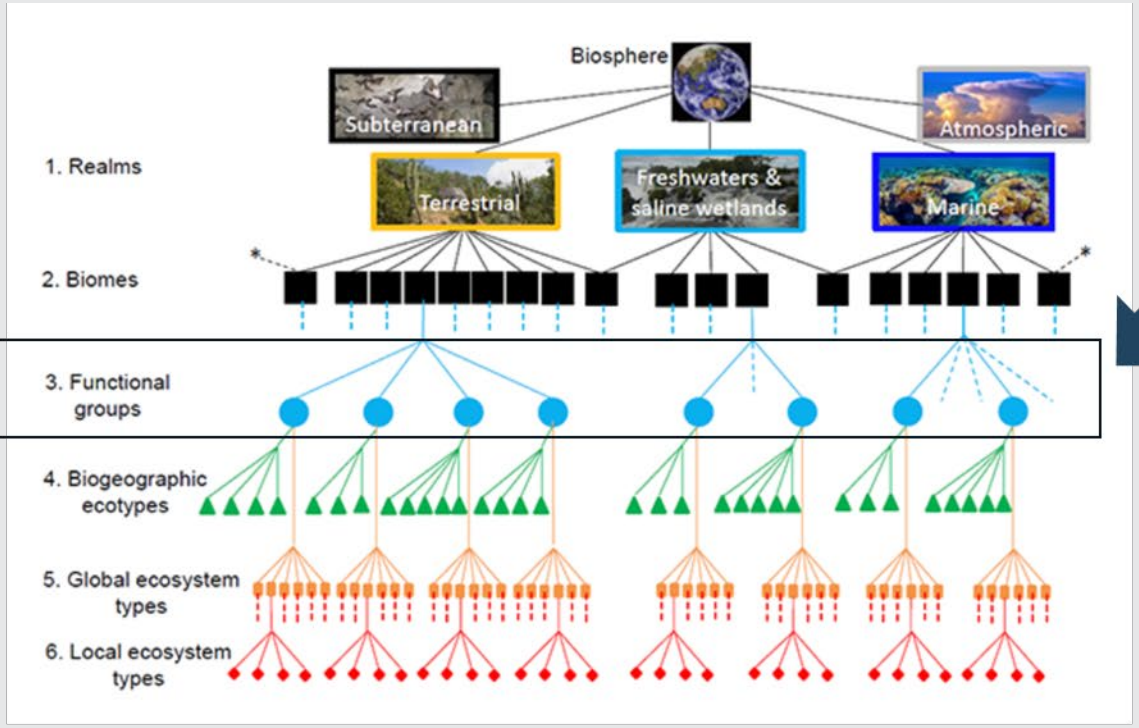

Ecosystem functional groups

- Allow for harmonised global reporting and comparison that is manageable…
- …while still providing enough detail to be meaningful from a biodiversity perspective

- EFGs should not replace more detailed national ecosystem types
- Typically, many national ecosystem types will fall within one EFG

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Atlas Data and Development

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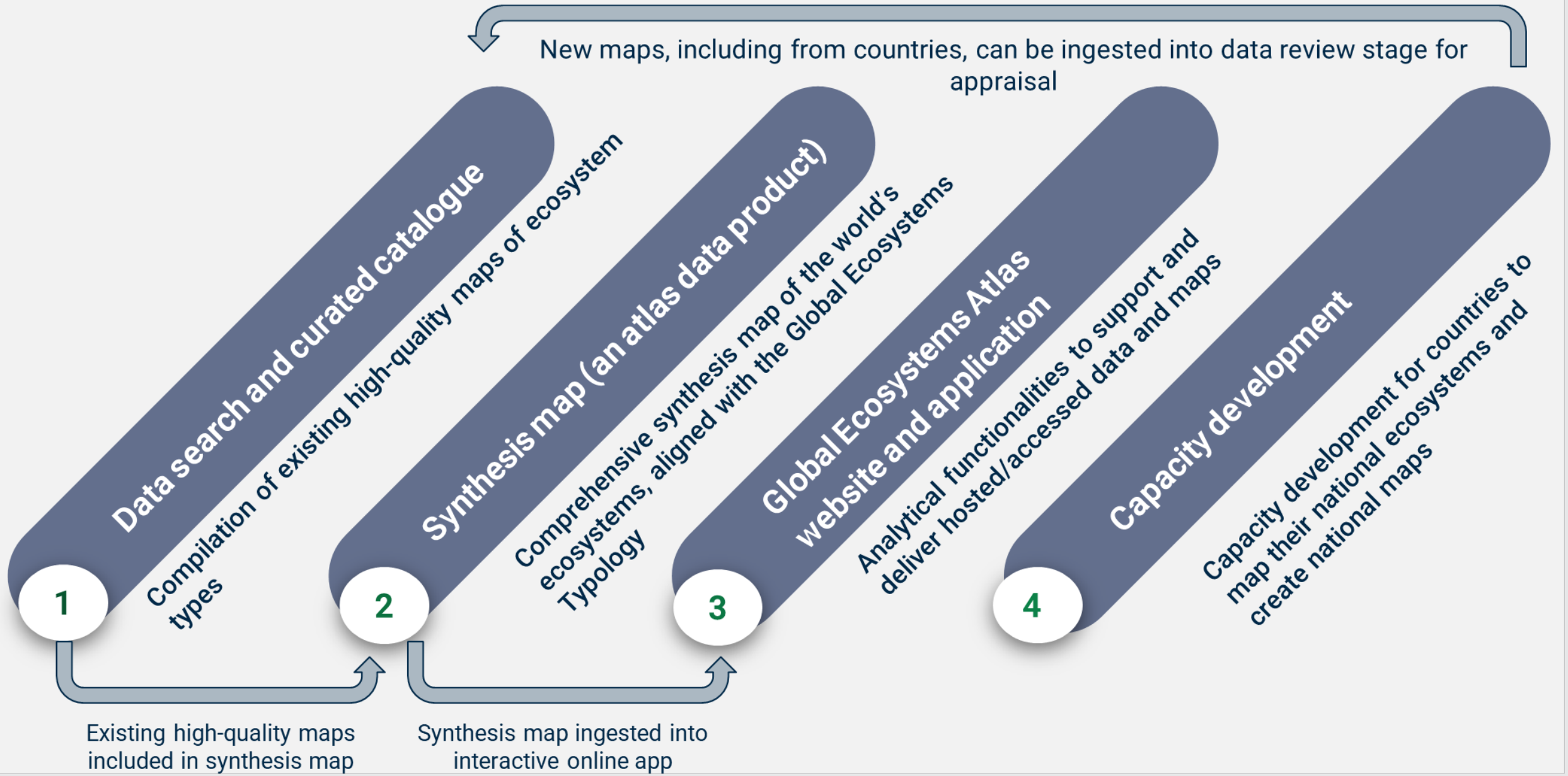
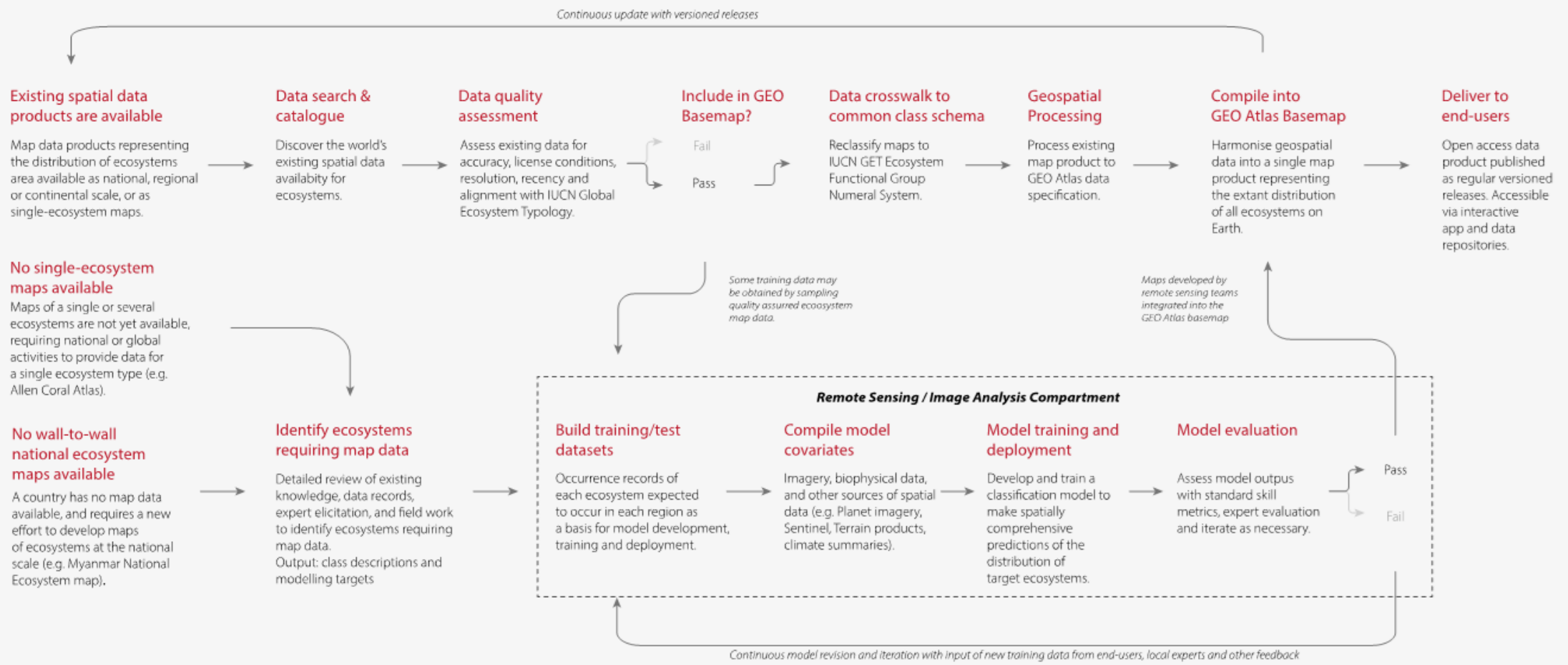
Atlas Development





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Synthesis pipeline concept

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Reef Habitat
Benthic Map
Geomorphic Map
Reef Extent New!
Reef Satellite Imagery
Reference Layers
Labels
Marine Protected Areas
Maritime Boundaries
GLOBAL FOREST WATCH
MANGROVE SPECIES DISTRIBUTION
PLANET SATELLITE IMAGERY (TROPICS)
ESA World
European Space Agency
Home
Cookies Notice
Developed by ESA
In addition: many national and regional efforts
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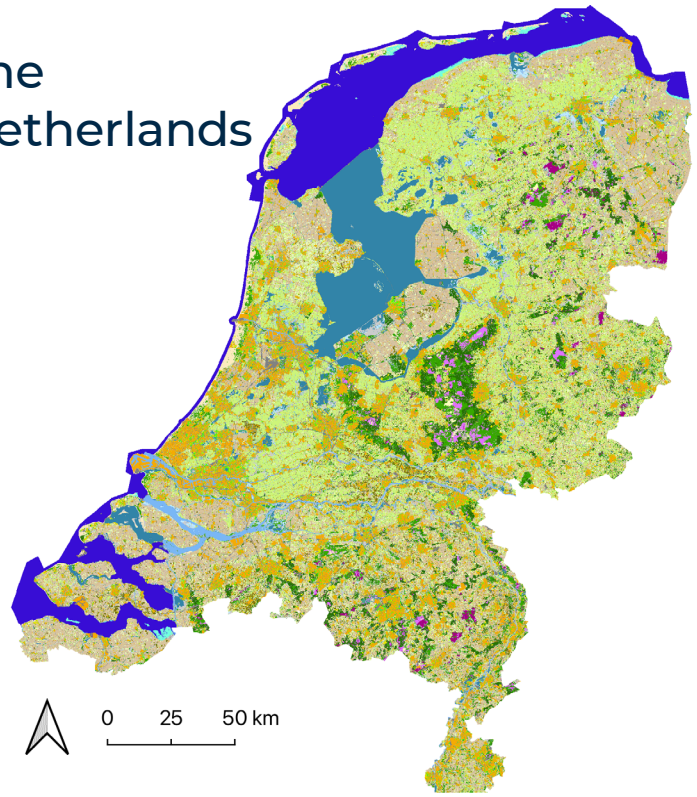
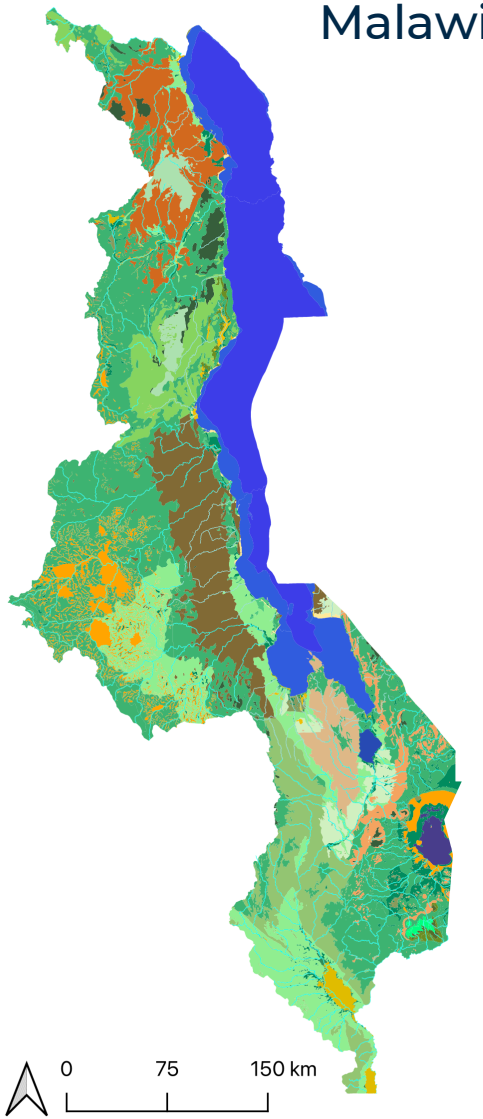
The Netherlands



- Annual cropland
- Temporary grassland
- Permanent cropland
- Natural Cropland
- Sown pastures and modified grassland
- Natural and semi-natural grassland
- Natural forest and tree lines
- Production forest
- Other forest
- Heathland
- Driftsand
- Bogs
- Eutrophe and mesotrophe fens
- Rivers and canals
- Lakes reservoirs
- Coastal dunes and beaches
- Coastal salt marshes
- Marine and transitional waters
- Settlement area
- Infrastructure
- Urban greenspace
- Sports and recreation sites

Malawi



- Afromontain rain forest with other forests and wetlands
- Afromontane rain forest
- Woodlands
- Inshore Lake
- Catchment Rivers
- Wetlands
- Lake Malawi
- Deciduous Forest and thicket
- Catchment Wetlands
- Edaphic grassland on drainage
- Wooded grassland
- Marsh Wetlands
- Lakeshore Rivers
- Lakeshore Wetlands
- Lake Chilwa
- Lake Malombe
- Lower Shire Swamp
- Miombo woodland on hills and rocky outcrops
- Ericaceous belt
- Woodland and scrub woodland
- Mosaic of montane grassland and afromontane forest
- Lakeshore Catchment Rivers
- North Zambezian undifferentiated woodland
- Open Miombo hills
- Shoreline Sandy Areas
- Tall Miombo
- Transition Woodland
- Zambezian miombo
- Zanzibar-Inhambane transitional lowland rain forest
- Zanzibar-Inhambane transitional rain forest

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The Atlas Basemap

A single data layer representing the **known distribution of ecosystems, synthesizing best available data** from existing national, regional and global maps and new mapping efforts – at 100m resolution.

Global Ecosystems Atlas basemap

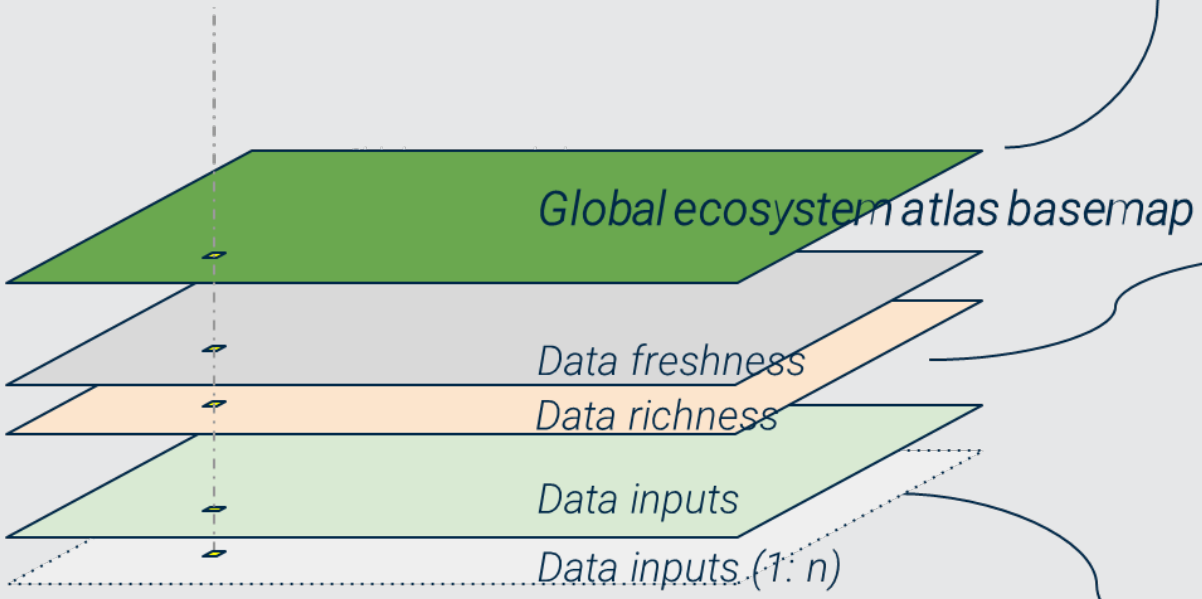
Single data layer (e.g. raster)

The basemap will represent the **current** distribution of ecosystems, updated regularly.

Basemap will also highlight data gaps on Earth where there are no spatial data on ecosystem distributions

Structure of the Basemap

Each basemap pixel will be allocated to one or more **ecosystem type**



Main data layer – the basemap

- Single data layer representing ecosystem functional groups
- Single time-step
- Best available data in terms of 'freshness', alignment to GET, resolution and accuracy

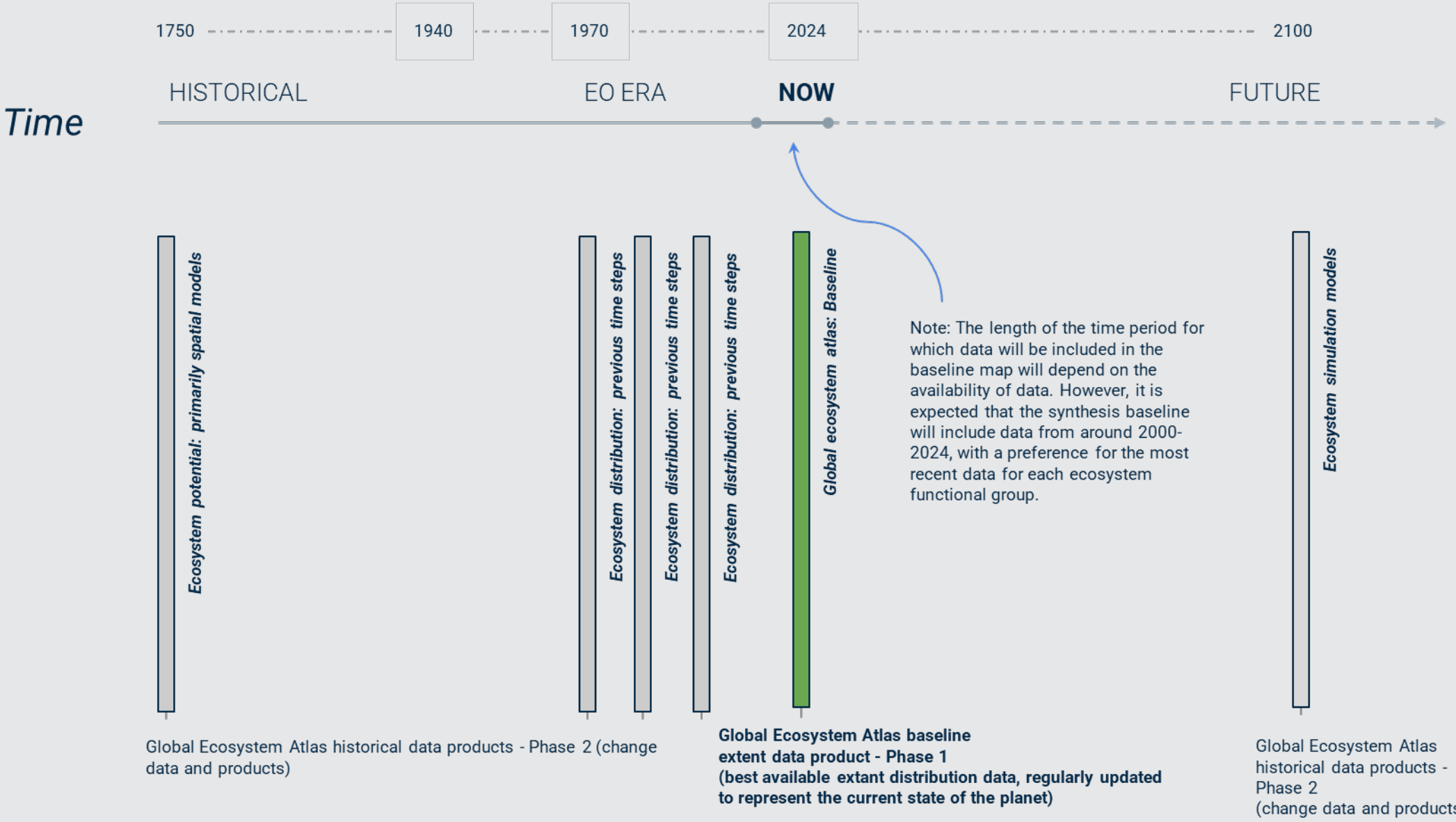
Contextual layers

- Multiple 'hidden' layers
- Data freshness - when was the data produced?
- Data richness - when multiple ecosystem types are mapped for a location
- Change layers / monitoring products and ecosystem condition products (future work)

Input data (e.g. national ecosystem maps)

- Links to input data (if possible)
- Identify original name of ecosystem type
- Carry through metadata such as original developer, acknowledgement and accuracy

Handling the Issue of Time in the Basemap



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Applications

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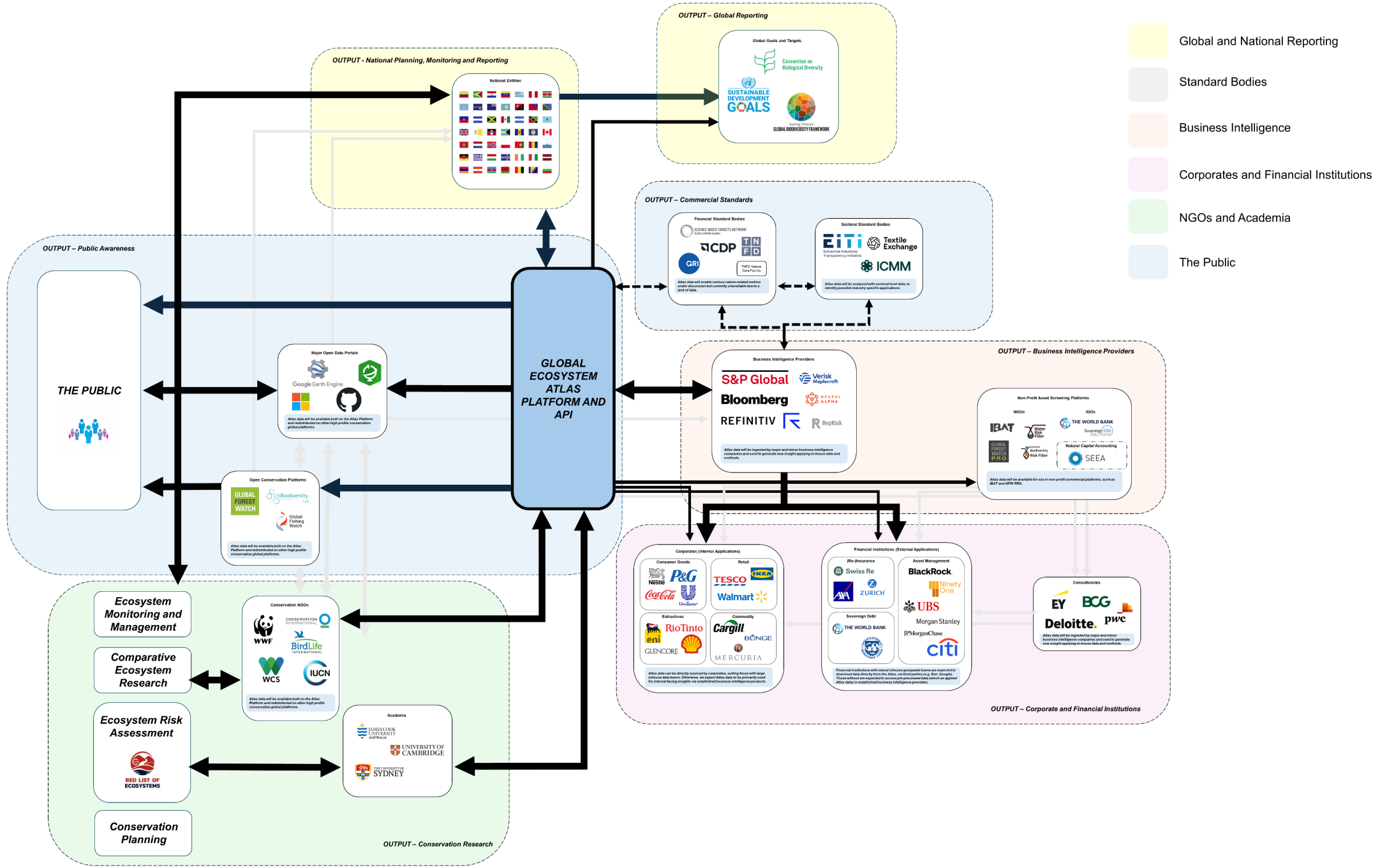

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