



Biodiversity Observation Network



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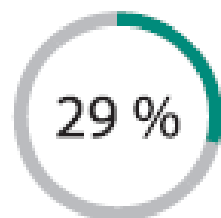
GEO Flagships

GEO BON GEO Biodiversity Observation Network	GEOGLAM GEO Global Agricultural Monitoring	GFOI Global Forest Observation Initiative	GOS4M Global Observation System for Mercury
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GEO Initiatives

AfriGEOSS Reinforcing Regional African Engagement	AmeriGEOSS	AOGEOSS Asia-Oceania GEOSS	Aquawatch	Climate Change Impact Observation on Africa's Coastal Zones	GEO-DARMA Data Access for Risk Management
EO4EA Earth Observations for Ecosystem Accounting	EO4SDG Earth Observations in Service of the 2030 Agenda for Sustainable Development	EuroGEOSS	GEO Carbon and GHG Initiative	GEOCRI GEO Cold Regions Initiative	GNSL GEO Geohazard Supersites and Natural Laboratories
GEO ECO GEO Global Ecosystem Initiative	GEO-GNOME Global Network for Observation and Information in Mountain Environments	GEOGLOWS GEO Global Water Sustainability	GEO Human Planet Initiative	GEOSS-EVOLVE	GEO YENER GEO Vision for Energy
GEO Wetlands Initiative	GDIS Global Drought Information System	GOS4POPS Global Observations System for Persistent Organic Pollutants	Global Urban Observation and Information	GWIS Global Wildfire Information System	Ocean and Society: Blue Planet

Types of Organizations Contributing to the GEO Work Programme



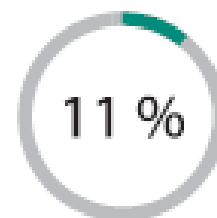
Academic



Governmental
(national & international)



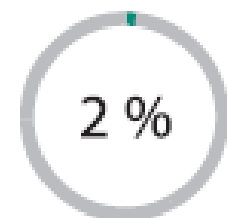
Intergovernmental



Commercial
(for profit)



Charitable
or not-for-profit



Governmental
(sub-national level)

The biodiversity crisis

REVIEW

doi:10.1038/nature09678

Has the Earth's sixth mass extinction already arrived?

Anthony D. Barnosky^{1,2,3}, Nicholas Matzke¹, Susumu Tomiya^{1,2,3}, Guinevere O. U. Wogan^{1,3}, Brian Swartz^{1,2}, Tiago B. Quental^{1,2,4}, Charles Marshall^{1,2}, Jenny L. McGuire^{1,2,3,4}, Emily L. Lindsey^{1,2}, Kaitlin C. Maguire^{1,2}, Ben Mersey^{1,4} & Elizabeth A. Ferrer^{1,2}

Palaeontologists characterize mass extinctions as times when the Earth loses more than three-quarters of its species in a geologically short interval, as has happened only five times in the past 540 million years or so. Biologists now suggest that a sixth mass extinction may be under way, given the known species losses over the past few centuries and millennia. Here we review how differences between fossil and modern data and the addition of recently available palaeontological information influence our understanding of the current extinction crisis. Our results confirm that current extinction rates are higher than would be expected from the fossil record, highlighting the need for effective conservation measures.



theguardian

home > environment > wildlife energy pollution climate change

Wildlife World on track to lose two-thirds of wild animals by 2020, major report warns

Living Planet Index shows vertebrate populations are set to decline by 67% on 1970 levels unless urgent action is taken to reduce humanity's impact

Damian Carrington
@dpcarrington

Thursday 27 October 2016 00:53 BST

32k Shares 1,694 Comments

Commitment for Biodiversity: Increasing Demand for Relevant and Accessible Biodiversity Data



United Nations Decade on Biodiversity



Intergovernmental Platform on Biodiversity & Ecosystem Services

ipbes
Science and Policy for People and Nature



UNCCD

Convention on Biological Diversity

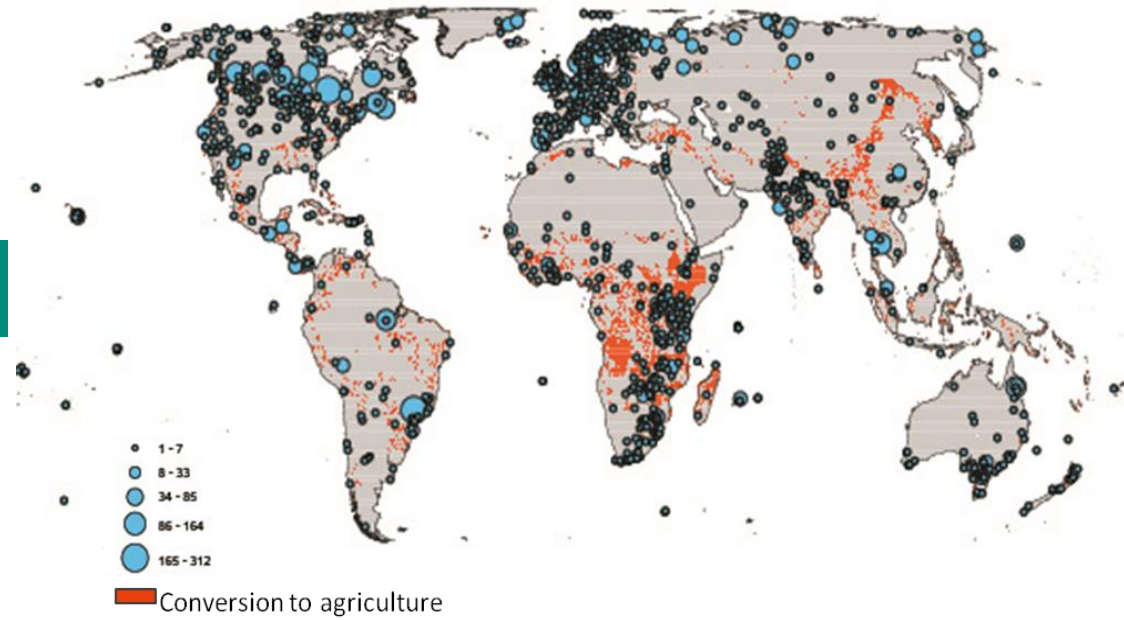
SUSTAINABLE DEVELOPMENT GOALS



One challenge of biodiversity change: Knowledge gaps

Living Planet Index Populations

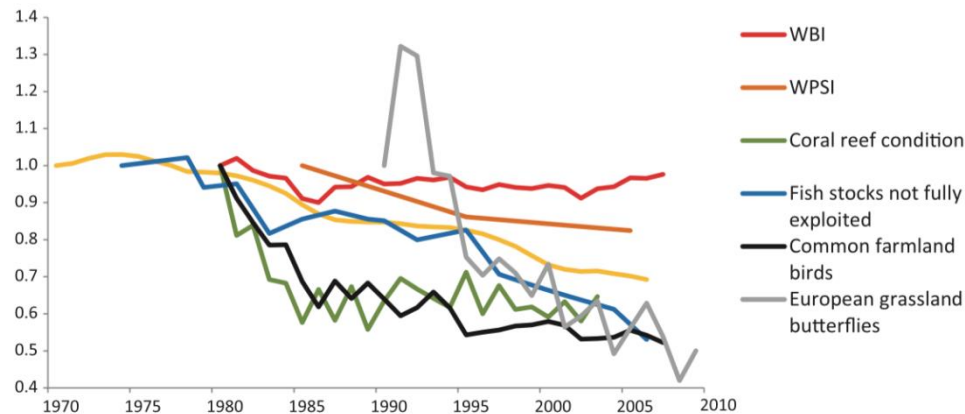
Spatial gaps



Temporal trends in biodiversity indicators

Taxonomic gaps

Temporal gaps

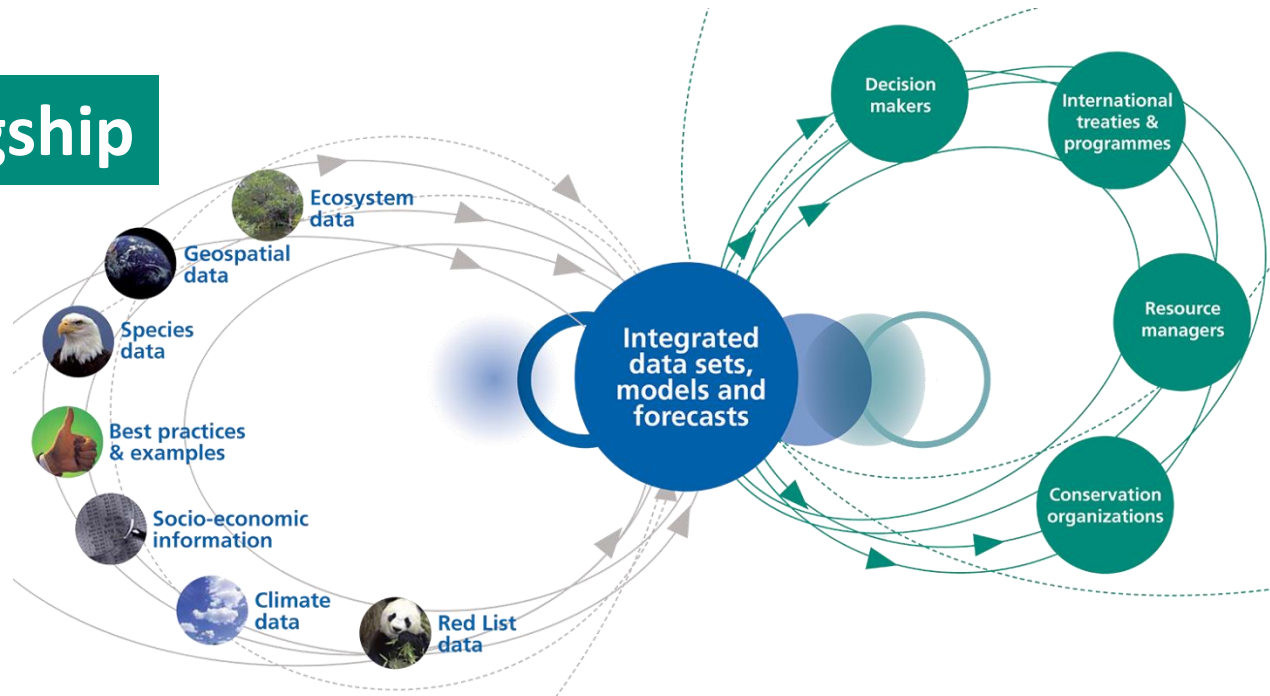


GEO BON in a nutshell

Mission

Improve the **acquisition**, **coordination** and **delivery** of biodiversity observations and related services to users including decision makers and the scientific community.

GEO Flagship



Vision

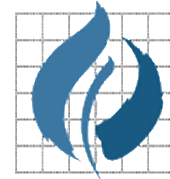
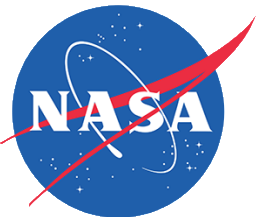
A **global biodiversity observation network** that contributes to effective **management policies** for the world's biodiversity and ecosystem services.

Flagship of GEO – The Group on Earth Observations

A Global, Coordinated, Comprehensive and Sustained System of Observing Systems
 "Countries have borders, Earth Observations don't"



A Global Partnership



Convention on Biological Diversity



ITC
UNIVERSITY OF TWENTE.



iDiv



GBIF



UNIVERSITY OF AMSTERDAM



ECOSCOPE
PÔLE DE DONNÉES
Observation pour la Recherche
sur la Biodiversité



International Long Term Ecological Research



USGS
science for a changing world



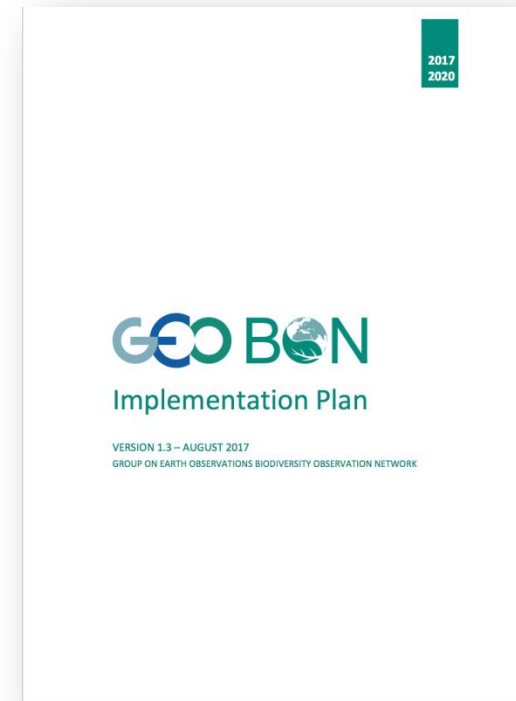
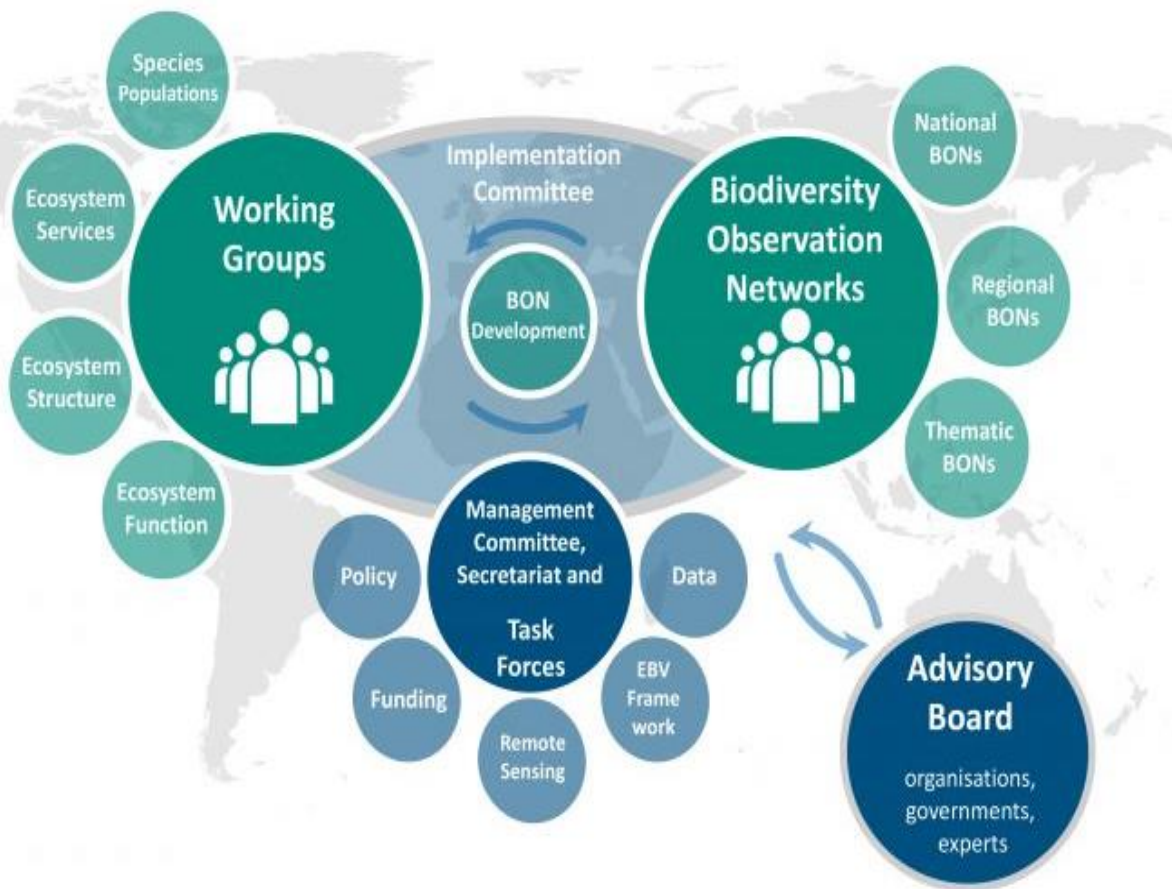
esa



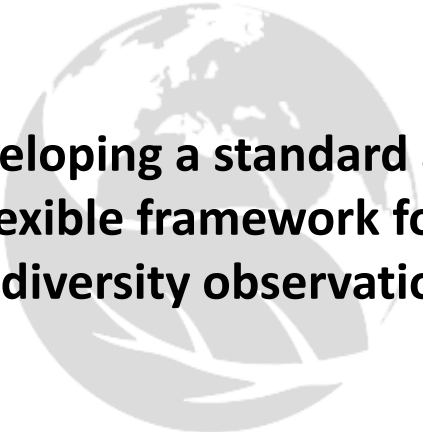
SASSCAL
Southern African Science Service Centre for Climate Change and Adaptive Land Management



Structure and governance



GEO BON core focus



Developing a standard and flexible framework for biodiversity observations



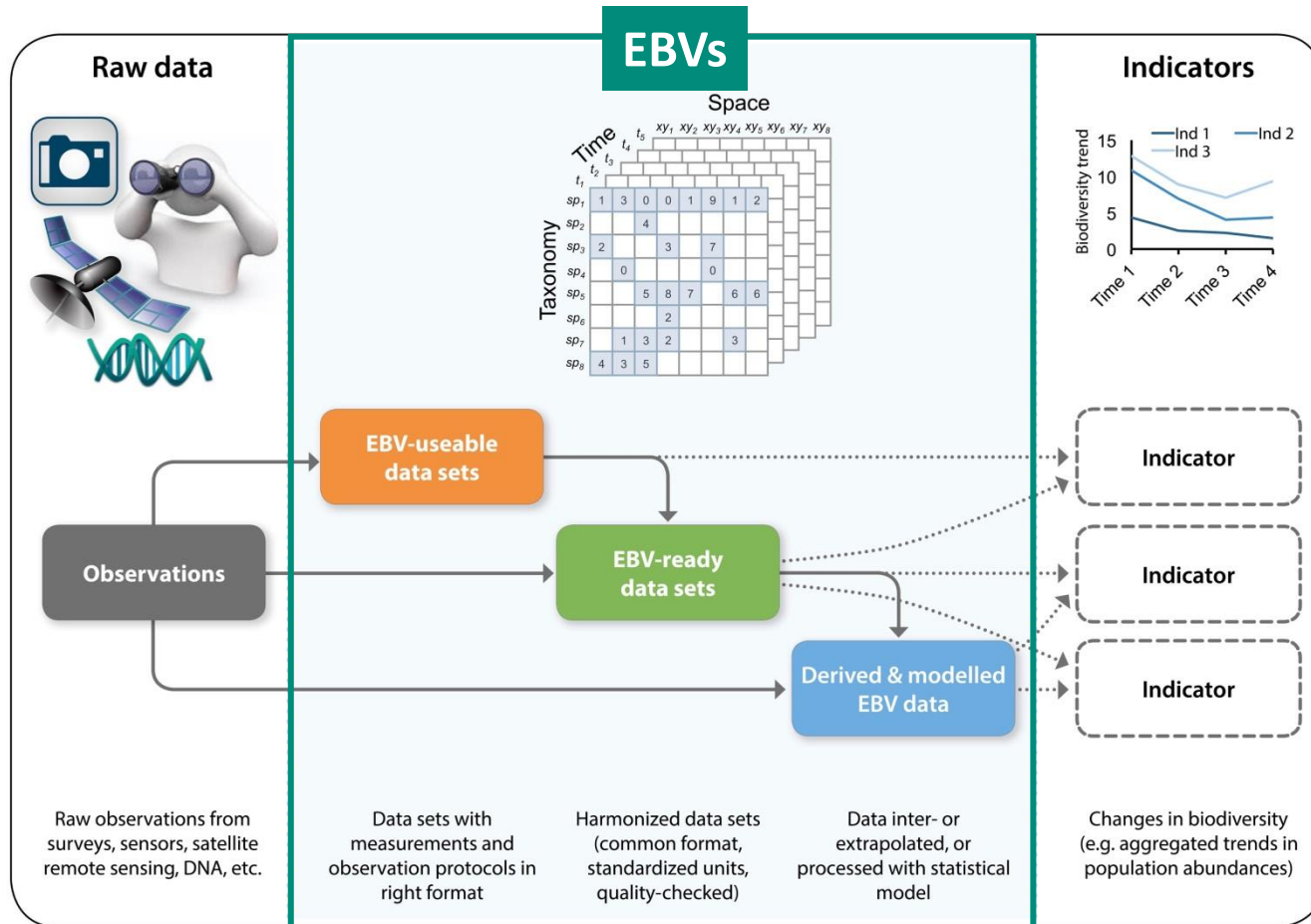
Supporting the development of Biodiversity Observation Networks



Producing Policy Relevant Outputs

Earth System Science product development : the Essential Biodiversity Variables

EBVs: Minimum set of measurements, complementary to one another, that can capture major dimensions of biodiversity change.



Users

National Governments



CBD



Acquisition, Mobilization and Integration of biodiversity observations



Genetic Composition

e.g. Allelic diversity



Species Populations

e.g. Species distribution



Species Traits

e.g. Body size, phenology



Community Composition

e.g. Species interactions



Ecosystem Structure

e.g. Ecosystem extent



Ecosystem Functions

e.g. Disturbance

Developing a standard and flexible framework for biodiversity observations

GEO BON
GEO BON TECHNICAL SERIES

1

Guidelines for Standardised
Global Butterfly Monitoring



GEO BON
GEO BON TECHNICAL SERIES

2

An Essential Biodiversity Variable Approach
to Monitoring Biological Invasions:
Guide for Countries



Michele Walters
Robert J. Scholes
Editors

Open
Access

The GEO
Handbook on
Biodiversity
Observation
Networks

GEO BON

EXTRAS ONLINE

Springer Open

Building a Network of National, Regional and Thematic BONs

Contribute to the **collection** and **analysis** of **harmonised biodiversity observations**, the development of integrated and interoperable **biodiversity monitoring programs**, the development of **data standards**.

National and Regional BONs

BON Endorsement



Supporting the development of BONs – Capacity building and knowledge exchange

GEO BON

BON IN A BOX Latinoamerica Region



BON IN A BOX



Improving
Capacity for
Biodiversity
Conservation

BON in a Box (Biodiversity Observation Network in a Box) is a customizable and continually updated toolkit. It provides access to the latest biodiversity observation design, data collection protocols, and data management, analysis and reporting tools. It serves as a technology transfer and capacity building mechanism to ensure you have access to the best and most up-to-date tools and technologies for building a biodiversity observation system.

BON in a Box connects tools users and developers to promote ongoing tool improvements and the development of new tools. The goal is to **lower the threshold for the start-up or enhancement of a biodiversity observation networks** and support more effective conservation actions through the improved supply of quality biodiversity data. BON in a Box is a Group on Earth Observations – Biodiversity Observation Network initiative and the development of this Latin American regional version was led by Colombia's Alexander von Humboldt Institute.

Supporting the development of BONs – BON development process

ENGAGEMENT



- ① Create an Authorizing Environment
- ② Establish design and implementation team

ASSESSMENT



- ③ User needs assessment and choice of regional assessment units
- ④ Inventory of data, tools and platforms

DESIGN



- ⑤ Focal Ecosystems, Conceptual Models, EBVs and Primary Observations
- ⑥ Data collection Methods
- ⑦ Sampling Framework
- ⑧ Data management, Analysis and Reporting



Design and implementation team



Scientific community



Decision and Policy makers

IMPLEMENTATION



Policy relevant outputs: Supporting users' reporting needs



EBV based indicators: Integrating in situ and remote sensing observations for open access & real-time indicators

SHI Species Habitat Indices



Essential Biodiversity Variables:
Species distributions
Ecosystem extent and fragmentation

BHI Biodiversity Habitat Index



Essential Biodiversity Variables:
Ecosystem extent and fragmentation
Taxonomic diversity

SPI Species Protection Index



Essential Biodiversity Variables:
Species distributions
Ecosystem extent and fragmentation

PARC Protected Area Representativeness & Connectedness (PARC) Indices



Essential Biodiversity Variables:
Ecosystem extent and fragmentation
Taxonomic diversity

GERI Global Ecosystem Restoration Index



Essential Biodiversity Variables:
Ecosystem extent
Net primary productivity

SSII Species Status Information Index









Essential Biodiversity Variables:
Species distributions
Taxonomic diversity



Policy relevant outputs: Supporting users' reporting needs

SUSTAINABLE DEVELOPMENT GOALS

Candidate EBV classes

	2.4	Ecosystem structure
	2.5	Ecosystem function Genetic composition
	3.D	Species populations
	6.3	Ecosystem function
	6.6	Species Populations Ecosystem Structure
	11.3	Ecosystem Structure
	14.4	Species Populations
	14.5	Ecosystem Structure
	15.1, 15.2,	Ecosystem Structure Species Populations Ecosystem Function
	15.3, 15.4,	
	15.5, 15.7,	
	15.8, 15.c	



MBON
Marine Biodiversity
Observation Network

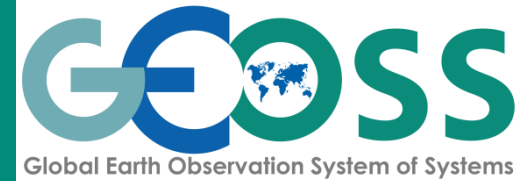
Indicator 14.5.1.
Coverage of protected areas
in relation to marine areas



Target 14.2
Prototype product to
integrate EO, OBIS data,
local surveys



Delivery of biodiversity related products to end-users



BETA

EBV SPATIAL BROWSER

GROUP ON EARTH OBSERVATIONS

Basemaps

- Basemap Light Carto
- GlobalBaseMap DigitalGlobe

Overlays

- WDPA
- Tree Cover Loss 2014

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EBV

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Capture major dimensions of biodiversity change, complementary to one another and to other environmental change observation initiatives. EBVs cover the different dimensions of biodiversity change. They are temporally sensitive by having the ability to detect change. Most important, they are relevant, scalable, feasible and biological.

Based on a consensus process among a diverse body of experts, GEO BON proposes 6 EBV Classes with relevant EBV Candidates. You can view for 4 EBV classes a selection of datasets that closely align to the EBVs framework concept. Our team is continuously updating this list as more datasets become available. If you would like to suggest additional datasets to be included in this dynamic list please contact us at info@geobon.org

Please find more information about EBVs on www.geobon.org/ebvs

- +
EBV class: Species populations
- +
EBV class: Species traits
- +
EBV class: Ecosystem function
- +
EBV class: Ecosystem structure

WORK IN PROGRESS

geobon.org | OpenStreetMap, CARTO



Thank you

For more information:

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