The monitoring framework from the scientific perspective, overview and gaps

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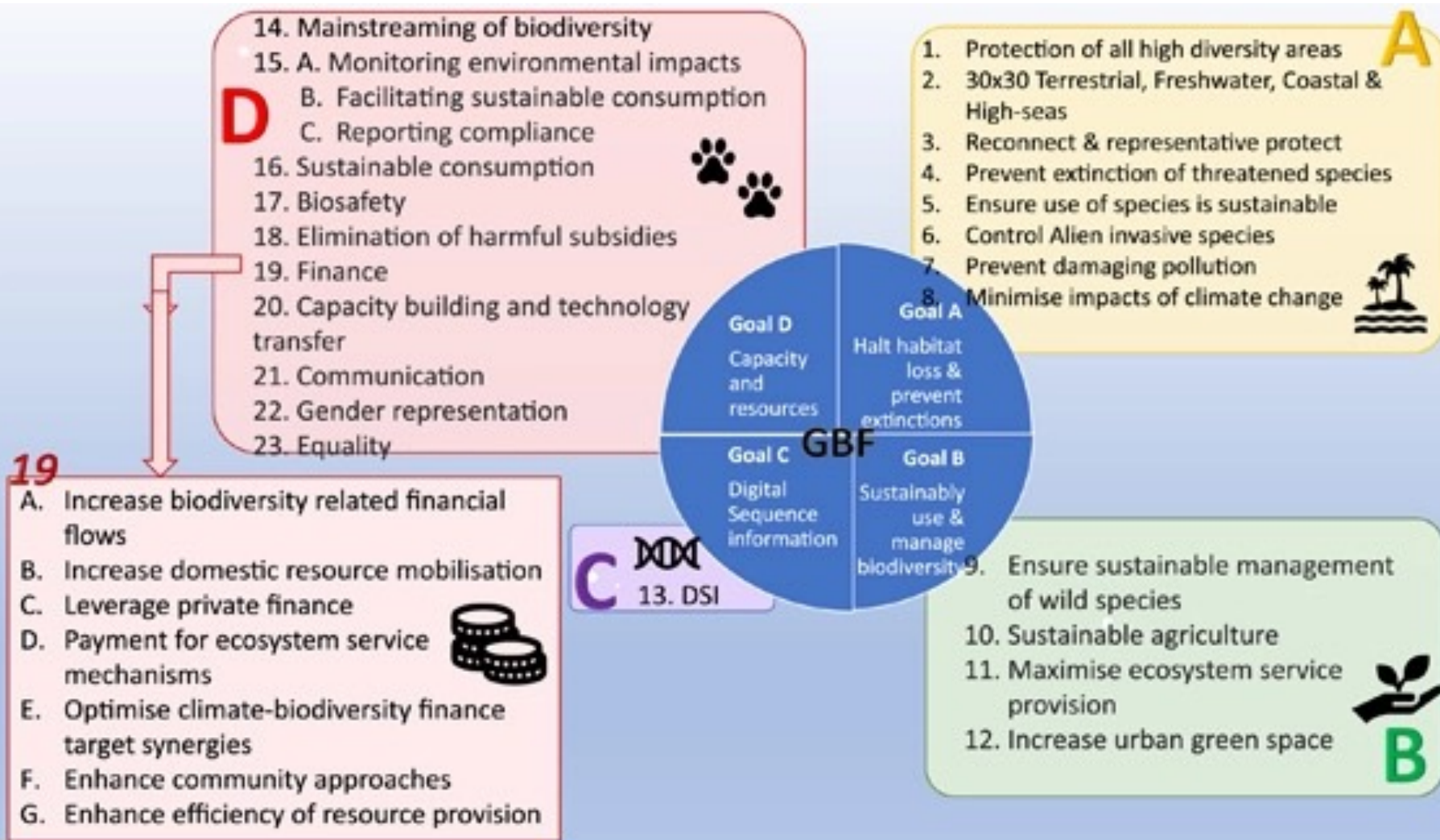
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COP 15 / CP-MOP 10 / NP-MOP 4

Ecological Civilization-Building a Shared Future for All Life on Earth

KUNMING – MONTREAL

What's in the GBF?

D
14. Mainstreaming of biodiversity
15. A. Monitoring environmental impacts
    B. Facilitating sustainable consumption
    C. Reporting compliance
16. Sustainable consumption
17. Biosafety
18. Elimination of harmful subsidies
19. Finance
20. Capacity building and technology transfer
21. Communication
22. Gender representation
23. Equality

19
A. Increase biodiversity related financial flows
B. Increase domestic resource mobilisation
C. Leverage private finance
D. Payment for ecosystem service mechanisms
E. Optimise climate-biodiversity finance target synergies
F. Enhance community approaches
G. Enhance efficiency of resource provision

A
1. Protection of all high diversity areas
2. 30x30 Terrestrial, Freshwater, Coastal & High-seas
3. Reconnect & representative protect
4. Prevent extinction of threatened species
5. Ensure use of species is sustainable
6. Control Alien invasive species
7. Prevent damaging pollution
8. Minimise impacts of climate change

C
13. DSI

Goal D Capacity and resources
Goal A Halt habitat loss & prevent extinctions
Goal C Digital Sequence information
Goal B Sustainably use & manage biodiversity

GBF

B
9. Ensure sustainable management of wild species
10. Sustainable agriculture
11. Maximise ecosystem service provision
12. Increase urban green space

What is missing in the GBF

- Many targets are vague
- Fails to recognise continued problems with over-utilisation of systems
- Some are non-functional; how can ocean resilience to acidification be increased without geoengineering?
- Many targets require identification of key areas-but how are these recognised when many areas lack data?
- Precaution and horizon scanning removed

Monitoring framework

- The monitoring framework aims to help implementation of the GBF through providing the metrics to chart progress

- This includes various types of indicators, including headline indicators, complementary and constituent indicators, as well as a set of binary indicators

- These indicators are also likely to be key to success of the GBF

- -range of widely accepted datasets and methodologies including the redlist of species, the redlist of ecosystems, and quantifiable targets around protection and population-size

Using the framework-SMART?

A. Draft Goal/Target[1]	Proposed headline indicators[2]
A	A.1 Red List of Ecosystems
	A.2 Extent of natural ecosystems
	A.3 Red List Index
	A.5 The proportion of populations within species with an effective population size > 500
B[b]	B.1 Services provided by ecosystems*

|	
1[b]	A.1 Red List of Ecosystems
	A.2 Extent of natural ecosystems
	1.1 Percent of land and seas covered by biodiversity-inclusive spatial plans*
2	2.2 Area under restoration*
3	3.1 Coverage of protected areas and OECMs
4	A.3 Red list Index
	A.5 The proportion of populations within species with an effective population size > 500
5	5.1 Proportion of fish stocks within biologically sustainable levels
6[b]	6.1 Rate of invasive alien species establishment
7	7.1 Index of coastal eutrophication potential
	7.2 Pesticide environment concentration*
8[b]	-
9[b]	9.1 Benefits from the sustainable use of wild species*
	9.2 Percentage of the population in traditional occupations*
10	10.1 Proportion of agricultural area under productive and sustainable agriculture
	10.2 Progress towards sustainable forest management
11	B.1 Services provided by ecosystems*
12[b]	12.1 Average share of the built-up area of cities that is green/blue space for public use for all

- Specific
- Measurable
- Achievable
- Relevant
- Timebound?

Not biodiversity indicators

Ensure that the management and use of wild species are sustainable, thereby providing social, economic and environmental benefits for people

Target	Target Aim	Indicators	Indicators available	S	M	A	R	T	Taxonomically representative	Spatially representative	Needs definitions	mismatch	Other issues	Goal	Score
1	Inclusive spatial planning	3	2	yes	semi	yes	semi	no	no	no	yes	partial		A-B	5/45
2	30% of areas under effective restoration	1	0	no	semi	yes	yes	yes	not specified	semi	yes	no		A-B	8/60
3	30% areas protected	1	1	yes	yes	yes	no	yes	not specified	semi	yes	no		A-B	8/65
4	Halt human induced extinction	2	2	semi	no	yes	no	no	no	semi	no	high		A-B	2/21
5	Sustainable wildlife trade	1	1	no	no	no	no	no	no	no	yes	very high		A-B	1/10
6	Invasive alien species	1	1	no	no	yes	no	no	no	semi	yes	no		A-B	4/35
7	Pollution risks	2	1	no	no	yes	no	no	NA	semi	yes	yes	No precautionary element	A-B	3/25
8	climate change	0	0	no	no	yes	no	no	NA	no	yes	no indicator		A-B	3/20
9	Sustainable wildlife trade	2	0	no	no	no	no	no	no	no	yes	very high		A-B	1/10
10	Sustainable agriculture and aquaculture	2	2	semi	semi	semi	no	no	NA	not factored in	yes	yes		A-B	4/25
11	Ecosystem services	1	0	no	no	yes	no	no	no	possible	yes	high	scope needs defining	A-B	3/21
12	connectivity	1	1	semi	no	yes	no	no	NA	no		high		A-B	2/16
13	DSI	2	0	semi	no	semi	semi	no	NA	yes		high		C-D	4/26
14	Biodiversity mainstreaming	0	0	no	no	yes	no	no	NA	semi		no indicator	the use of biodiversity in poverty alleviation strategies is linked to spillover, safeguards are needed. Standards are needed to avoid loopholes	C-D	2/15
15	Business and biodiversity	1	0	yes	semi	yes	semi	no	NA	semi		high	*15 has three subtargets so indicators do not cover them. Standards are needed	C-D	5/36
16	Sustainable consumption	0	0	yes	no	yes	no	no	NA	yes		no indicator	limited to food, should consider inventory and other elements of consumption	C-D	4/30
17	Biosafety	0	0	no	no	yes	no	no	no	no		no indicator	refers to older CBD articles which may need revisiting	C-D	1/10
18	Perverse incentives	2	2	no	semi	yes	no	semi	NA	no		minor	No precautionary element	C-D	4/28
19	Finance	3	2	yes	yes	no	semi	yes	NA	possible		*seven sub-targets, most lack indicators	Annual funding deficit is more than double that of the target	C-D	7/44
20	Capacity	0	0	no	no	no	semi	no	NA	no		no indicator	lacks aim on what	C-D	1/5
21	Accessible data	1	1	no	no	no	semi	no	no	no		high	definition and framework needed	C-D	1/6
22	Representative inclusion	0	0	yes	no	semi	no	no	NA	yes		no indicator		C-D	4/25
23	Gender equality	0	0	yes	no	semi	no	no	NA	yes		no indicator		C-D	4/25

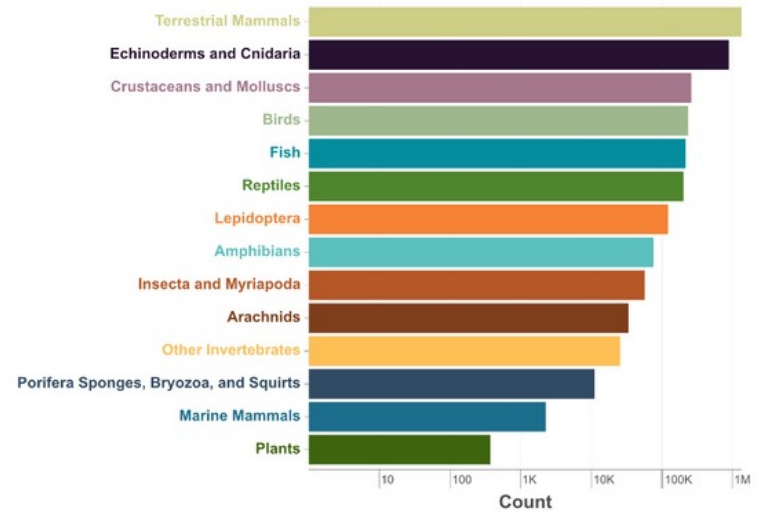# So…If indicators are mismatched, what do we have, what do we need?

- Many targets rely on temporal data for monitoring-which we lack

- Others need to target 30x30 to cover key areas-but how are these areas identified?

- Indicators may be too simple, many useful indicators are missing-i.e. BERI, STAR; solid data will be needed to make the framework actionable

- No agreed on glossary means many targets may be misinterpreted or misused

- Mismatches (or lack of) indicators for certain targets

- So what is the issue with certain key data?

A Whole individuals
Total: 2,847,052,429
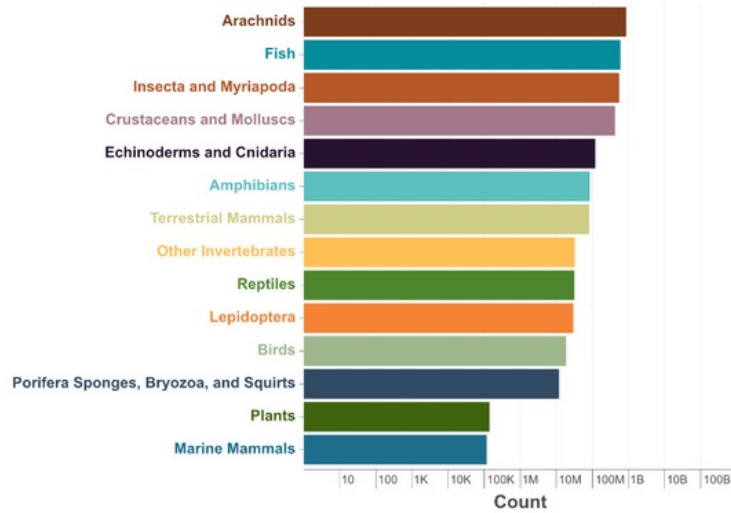
Counts of whole individuals including specimens (live and dead), eggs, entire skins, and trophies comprising the entire animal.
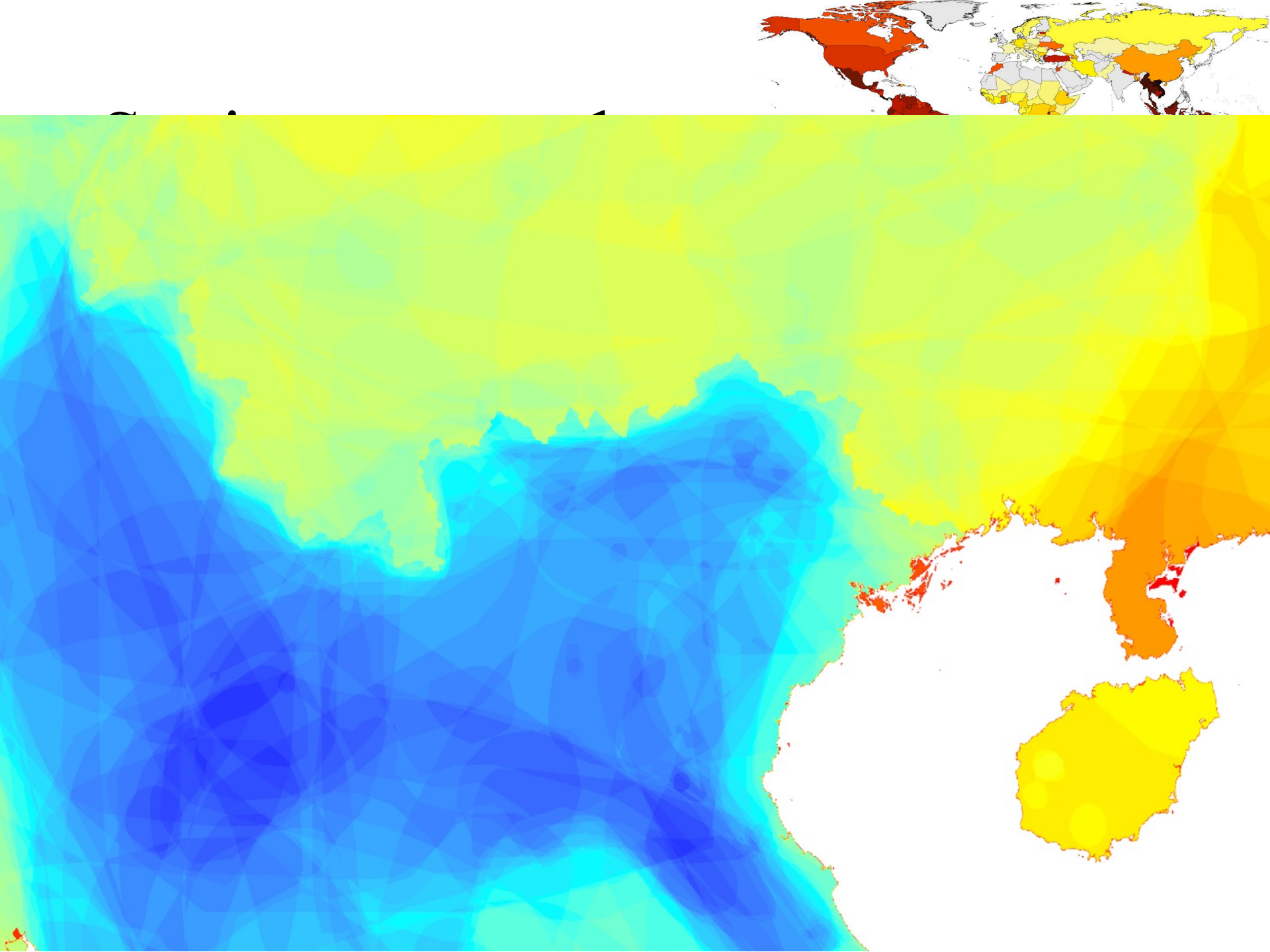
B Entries
Total: 3,479,466

Counts of data entries into the LEMIS dataset.

C Approximate number of traded species

1404 Echnioderms and Cnidaria

1903 Crustaceans and Molluscs

4985 Birds

1815 Terrestrial Mammals

3048 Reptiles

751 Arachnids

2773 Fish

1395 Amphibians

1255 Insecta and Myriapoda

1091 Lepidoptera

165 Other Invertebrates

112 Marine Mammals

120 Porifera Sponges, Bryozoa, and Squirts

280 Plants
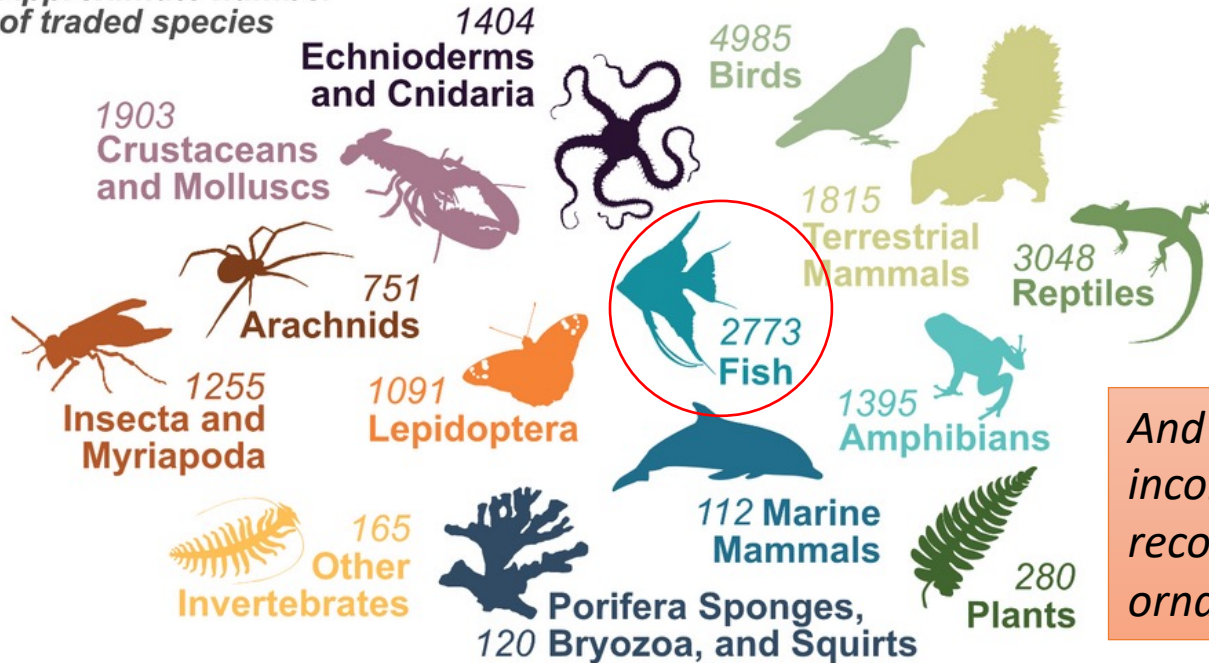
And the indicator is inconsistently recorded & misses ornamental fish

Red List as a species indicator?

- The Red List and the Population 500 indicators are the only species level indicators

- But, whilst Population 500 is rigorous- it will take time to collate data across Taxa

- The Red List however does not allow monitoring over time, and the quality of assessments is hugely variable, with smaller taxa having fewer and more generic data sources

- This means that for most species we have no data, or data points within the timeline of the GBF

Setting targets-do we have the data?
Target 21 looks at data mobilisation
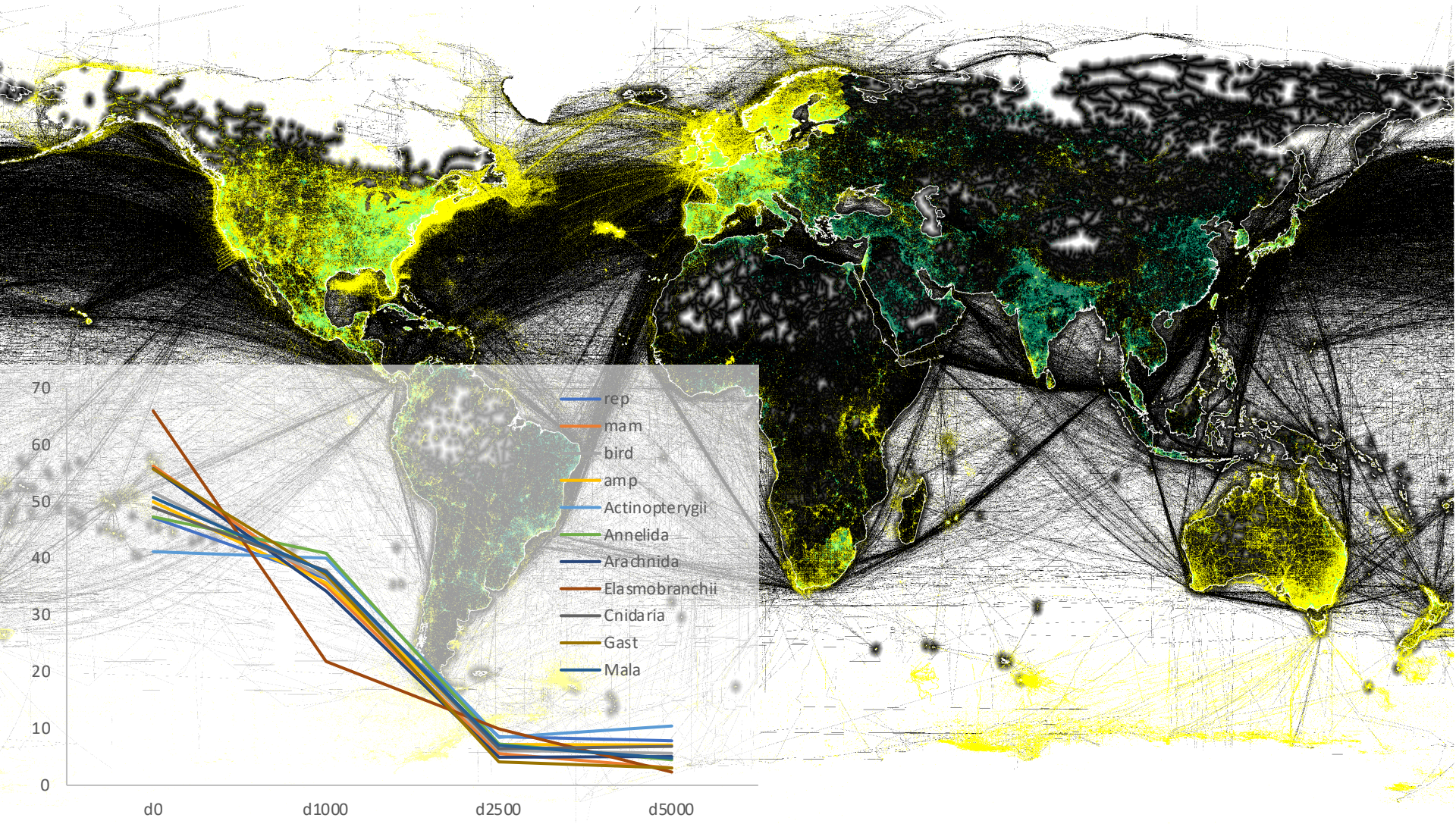
Baselines

- Understanding the data

- Does the data allow us to develop p:

*No, data is full of gaps, especially in .
does exist it's biased to afew taxa and to developed areas*

- Is there an alternative source of reliable data?

*Not really, range maps are not always representative, miss
around 50% of recorded locations, and have demonstrable
biases*
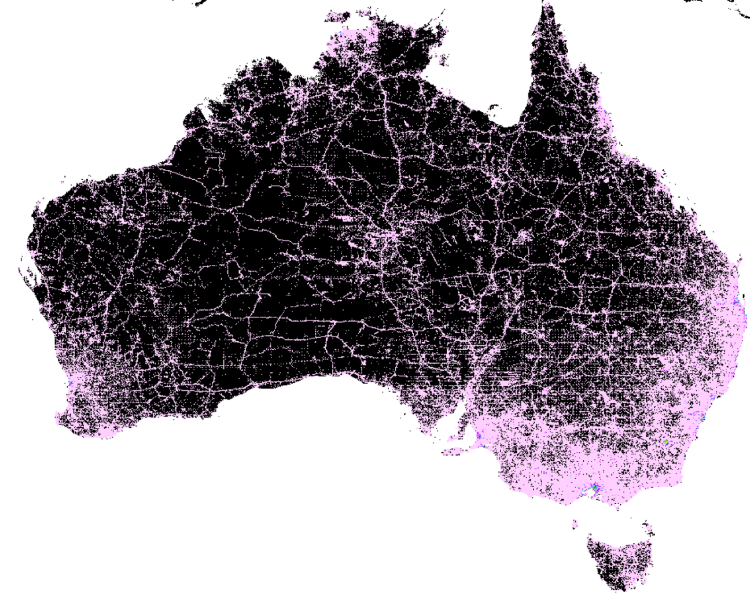
Group	dd	inredlist	%dd	described	estimate	% described species	%estimated species
Fungi	22	285	7.72	120000	12000000	0.22	0.0022
Plantae	2774	40468	6.85	390900	7000000	9.64	0.5385
Arthropoda	3735	13170	28.36	1000000	7000000	0.94	0.1348

Definitions

| Term	Gap	Targets where an issue
Participatory integrated biodiversity inclusive spatial planning	Not practiced in many countries, lacks a standard definition	1
Restoration/rehabilitation	Definition and criteria needed	2
Sustainable management	Measure of impact needed	3, 4,
Sustainable	Needs baseline, monitoring and offtake measures in any system	3, 4, 5, 9, 10, 12, 15, 16, 18, 20
The ecosystem approach	This is meaningless without a definition, likely should be ecosystem-based solutions, but this also requires a definition	5
Sustainable wildlife trade	Needs baseline, monitoring and offtake measures in any system	5, 9
Harmful	needs measures to define	7, 18
Nature-based solutions	needs standards explicitly referred to, to avoid greenwash	8, 11
Forest	Forest targets require a definition of forest, target 10 in particular uses a "Forestry" definition of forest, the use of both within one framework will undermine effectiveness	10
Agroecology	needs a definition to avoid greenwash	10
Sustainable intensification	needs standards	10
Ecosystem-based solutions	needs standards	(5) 11
Ecosystem services	What services, how they are defined and measured needs standards and criteria	11
Sustainable urbanisation	needs standards	12

Binary indic

- Some targets hav
  indicators- which
  being used by dif
- Binary indicators
  the degree of qua
  change what they

Goal/target	Questions
B	Does your country have a national constitution or legislation recognizing, implementing and monitoring a right to a healthy environment?
1	Does your country use terrestrial and marine spatial planning to identify areas of high biodiversity importance in national development planning?
6	Has your country adopted relevant national legislation adequately resourcing the prevention or control of invasive alien species?
8	Do the nationally determined contributions, long-term strategies, national adaptation plans and adaptation communications of your country reflect biodiversity?
9	Does your country have legal instruments to regulate the use of and trade in specimens of wild species that respect customary sustainable use by indigenous peoples and local communities?
12	Does your country have urban sustainability plans referring to green or blue spatial management?
13 / C	Does your country have operational legislative, administrative or policy frameworks that relate to Target 13?
14	Does your country have national targets or a policy related to integrating biodiversity values into policies, regulations, planning, development processes, poverty reduction strategies and accounts at all levels, ensuring that biodiversity values are mainstreamed across all sectors and integrated into assessments of environmental impacts?
15	Has your country put in place legal, administrative or policy measures to ensure the achievement of Target 15?
16	Number of countries developing, adopting or implementing policy instruments aimed at supporting the shift to sustainable consumption and production[a]
17	Does your country have capacity and measures in place relating to Target 17?
22	Does your country have legislation recognizing the legal rights of indigenous peoples and local communities, environmental human rights defenders, women, young people and persons with disabilities with respect to their traditional territories, cultures and practices?
23	Does the legal framework, including customary law, of your country guarantee women's equal rights to land ownership and control?

Moving forward

- Other metrics: most are not representative

- For example, redlist of ecosystems, 4,000 ecosystem units have been assessed following the IUCN Red List of Ecosystems Categories and Criteria-only 509 are available- and many (like China) do not follow standards
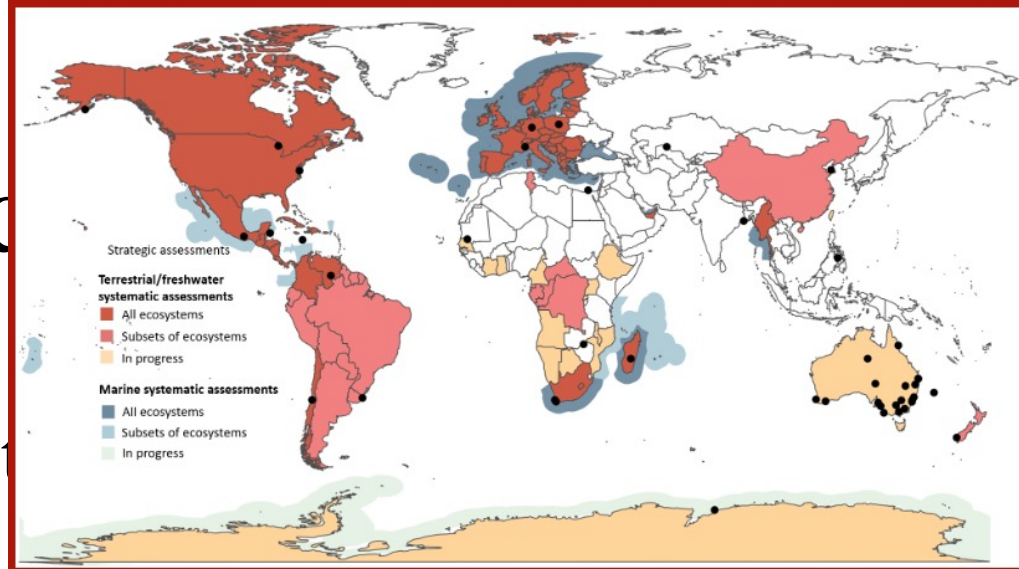
essed, meaning most
ciently for their target
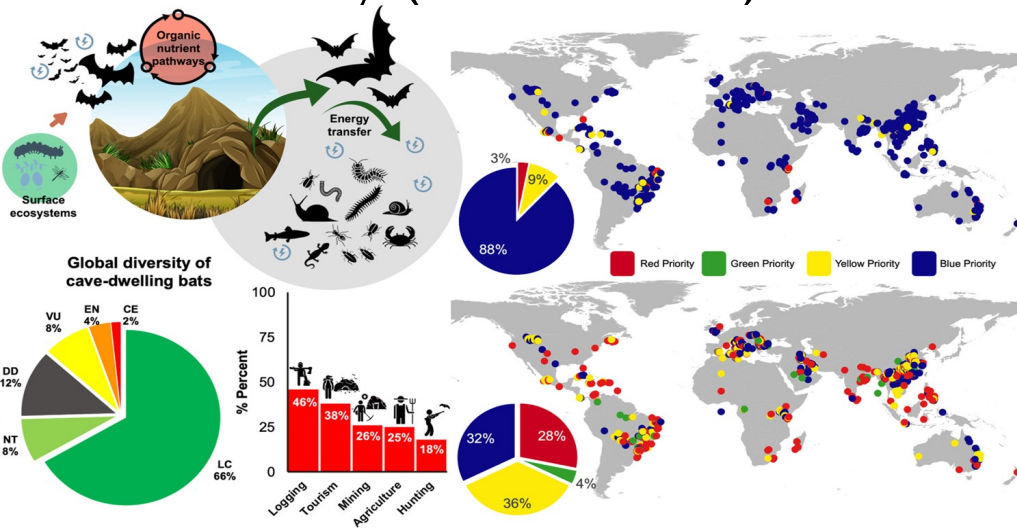
Where to from here?

- Bad analysis is too easy-but undermines our ability to maintain credibility or develop good solutions
- We need to advocate for better targets and indicators, but also better link these to other processes to ensure the collation of data for assessment and monitoring is feasible
- Task forces (like Gbike) can also focus on the details around certain indicators to ensure they can be reliably rolled out across taxa and regions
- We also need to engage better with parties to allow better indicator development and facilitate data collation

Moving forwards

- Understanding the limits of data it is possible to monitor and implement more effectively

- But we need agreed on standards, and protocols for selection and monitoring within national plans

- Better data mobilisation is also critical to provide data for tracking change, and developing effective priorities

- The AHTEG has evaluated indicators which lack a methodology, but as yet have not explored mismatches or gaps - this is urgently needed

Thank you

Challenges ahead

- BBNJ-highseas targets may be particularly challenging for all reasons-new high seas treaty may help

- "OPEC for biodiversity" may drive regressive action in tropical forest areas (Brazil, Indonesia, Congo)

- Supply-chains referenced, but mechanistic elements may not be made clearly enough

- Stronger mechanistic elements need to reflect "common but differentiated responsibilities"

- An estimated US$ 598-824 billion is needed to reverse biodiversity loss by 2030