

Some thoughts on future area-based conservation measures and the post 2020 global biodiversity framework: what we can learn from the past 10 years?

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When we talk about area-based conservation measures, we need to clearly address four questions: *why/what* they are for; *where* they should be; *how much*; and *how* they should be managed to be effective.

"why/what are they for needed for?"



Human
Health
Response

Emergency Room



Rehabilitation



Preventative Health



“By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.”



Biodiversity Conservation Response

**Prevent species
extinction and prevent
ecosystem collapse**



**Reverse species and
ecosystem decline**



**Retain ecological
integrity to ensure
processes enable
ecosystem services**



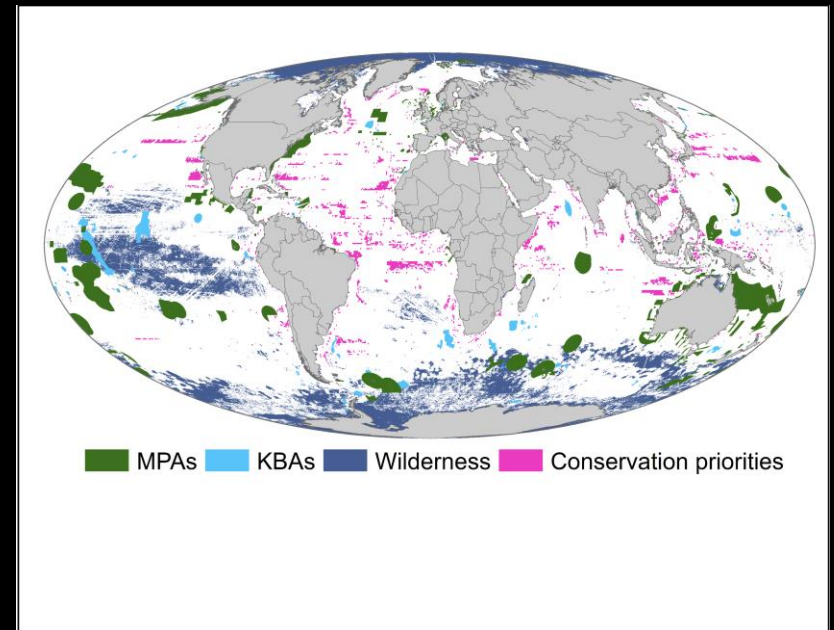
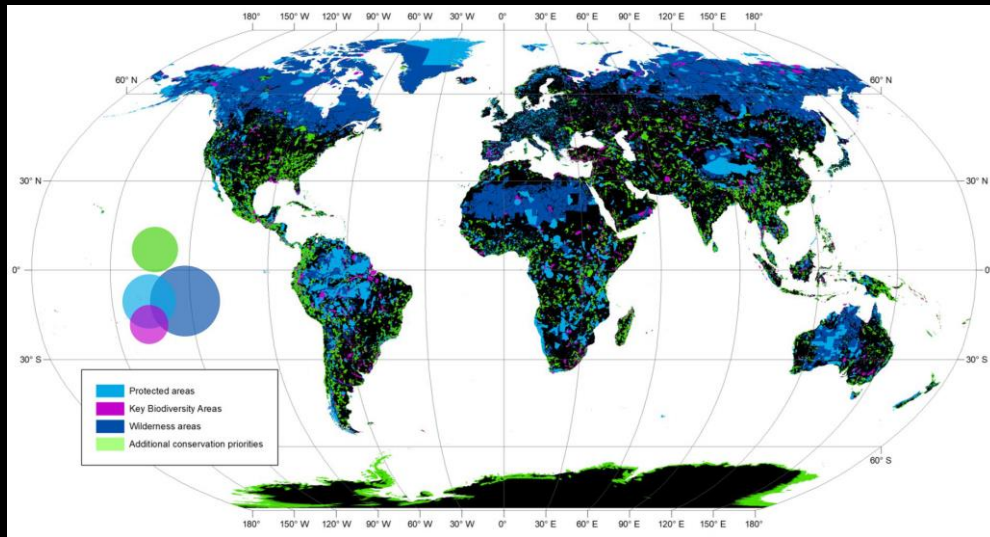
From a biodiversity perspective we can increasingly map many of these objectives.....huge advances in last ten years



- **Prevent extinction and ecosystem:** e.g. Identify and secure Key Biodiversity Area sites
- **Stop species and ecological decline and retain/restore functional assemblages:** e.g. identify and secure all intact ecosystems and those sites that stabilise declining species populations

When we talk about area based conservation measures, we need to clearly address four questions: *why/what* they are for; *where* they should be; *how much*; and *how* they should be managed to be effective.

Where? (which helps answer how much)

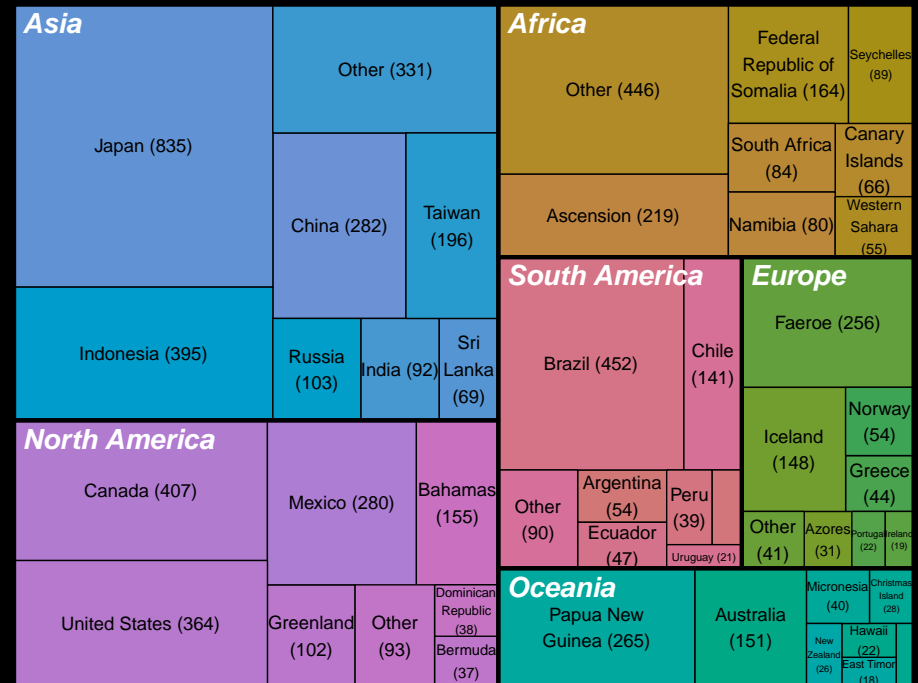
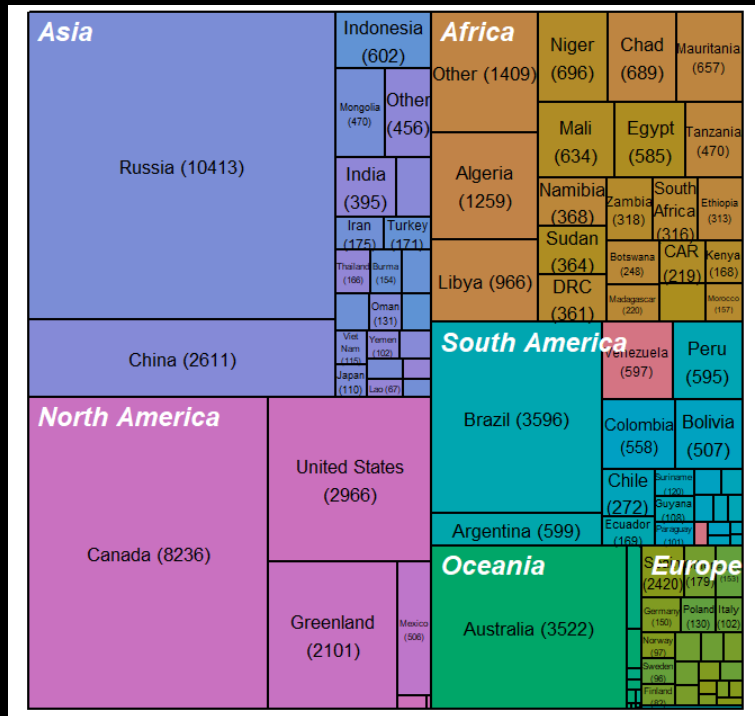
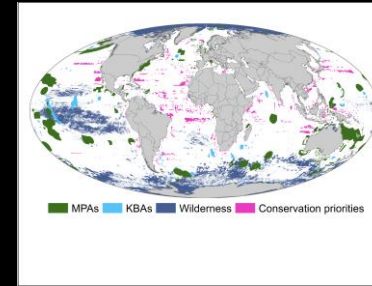
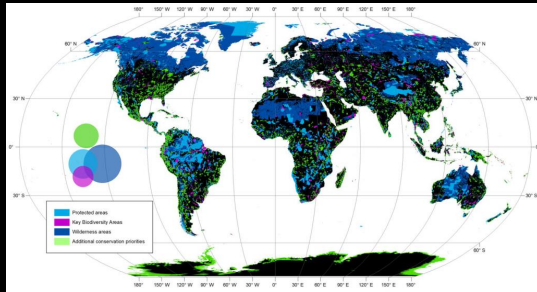


There are many examples of great mapping efforts...all still incomplete

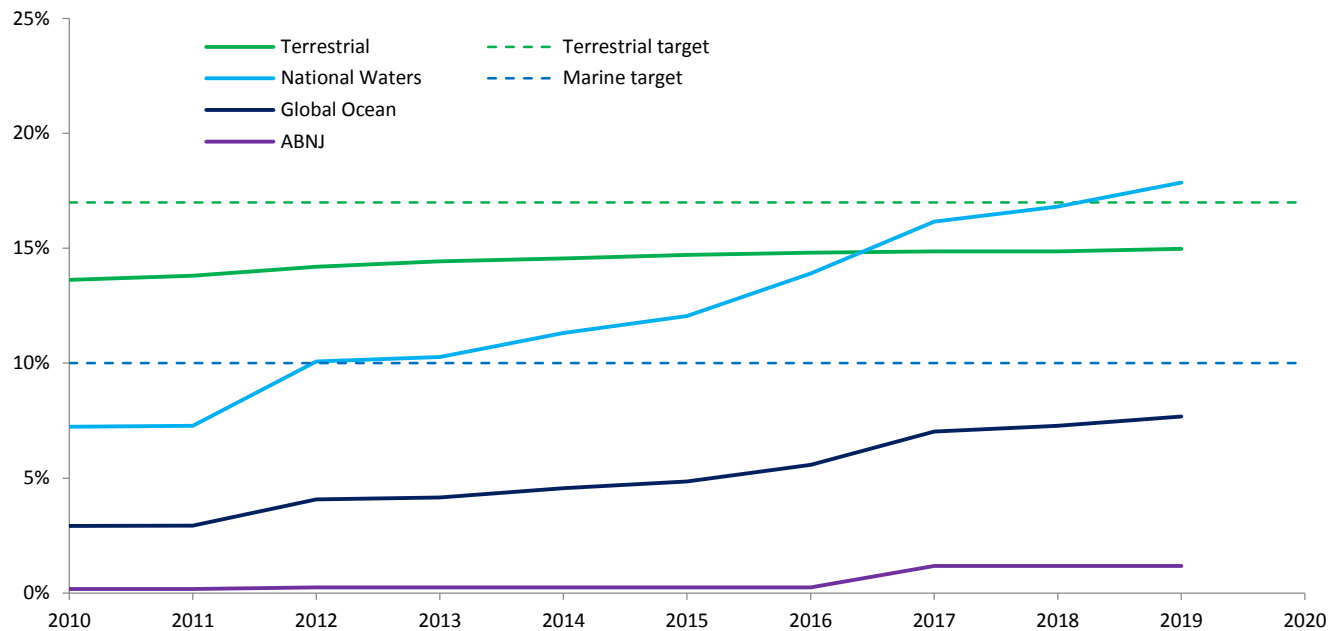
- Incomplete biodiversity spatial data
- Many more KBAs will be designated
- Most analyses are completely blind to climate change

BUT OVER THE LAST TEN YEARS WE HAVE BEEN INCREASINGLY ABLE TO PROVIDE THE EVIDENCE -BASED FOR WHAT IS NEEDED AND WHERE

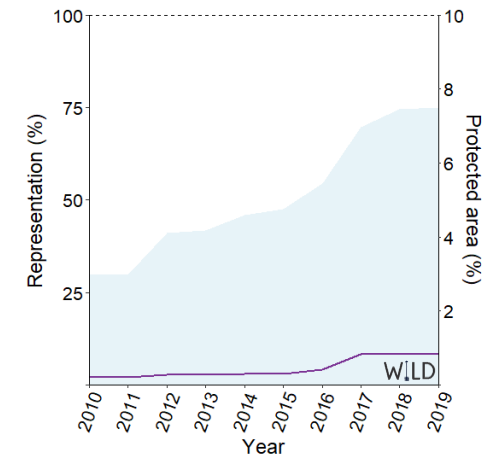
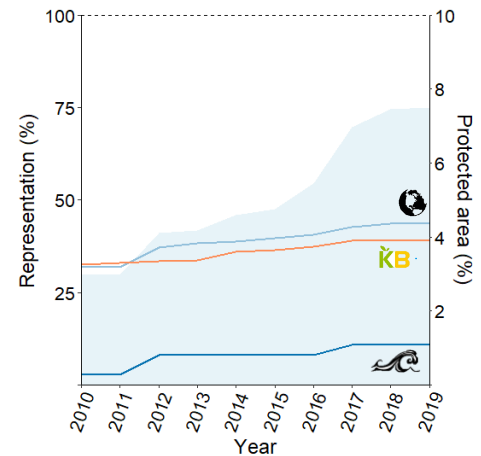
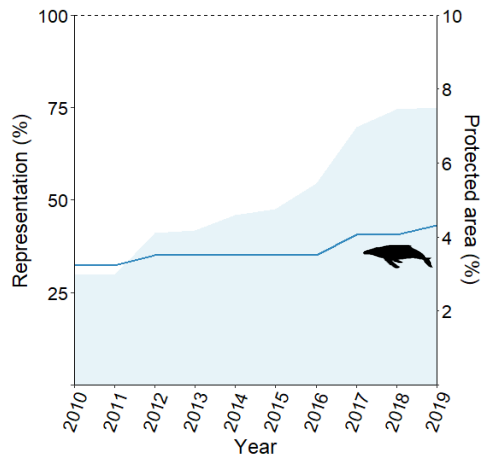
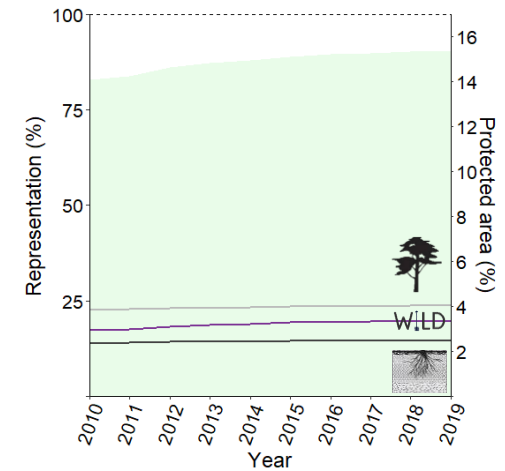
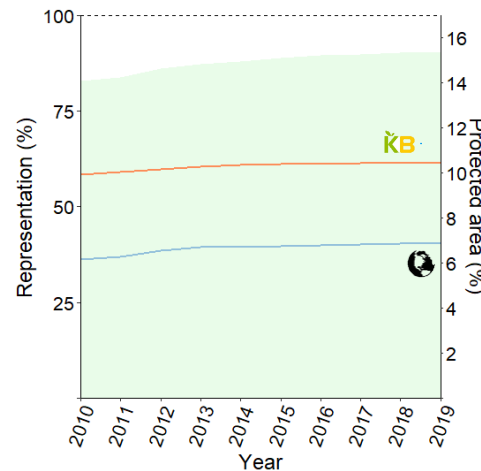
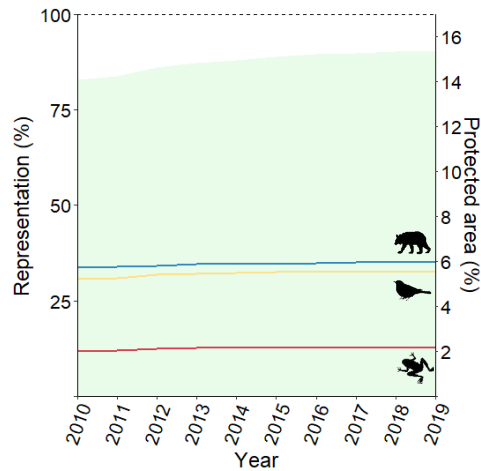
Big differences between countries



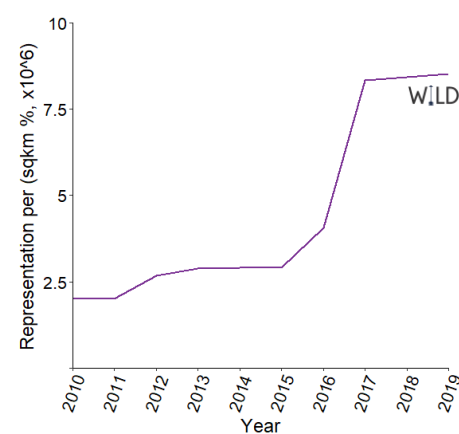
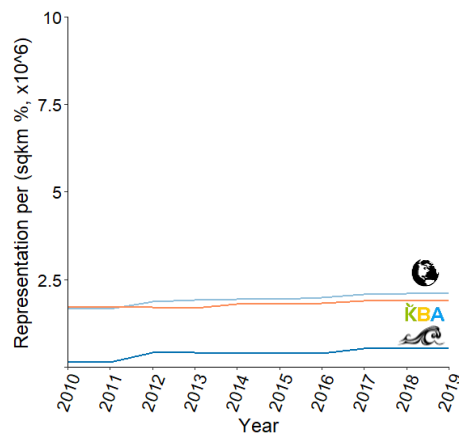
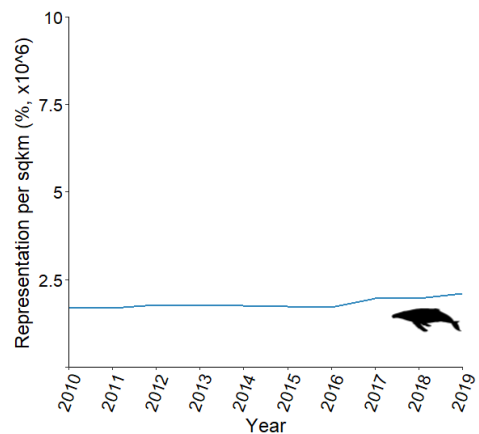
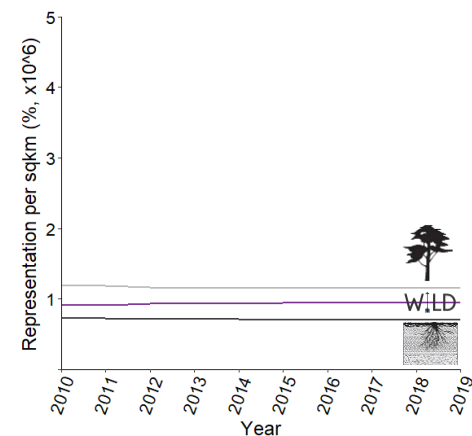
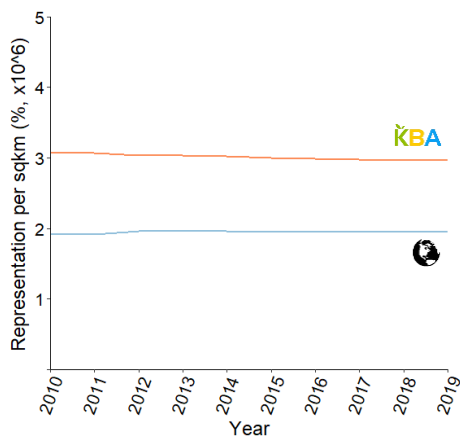
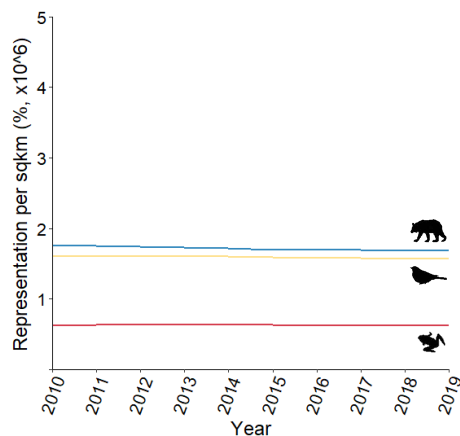
Growth of protected area estate shows nations are reacting to targets



Area of protection against some elements of biodiversity



Relative proportion of 'important biodiversity' coverage



Interpretation needs some nuance

Lots of area (ie quantity) and massive growth in some countries over past ten years

- This is likely due to a % target driving expansion

Little evidence that areal increases are hitting the 'quality' (ie important biodiversity areas and species) BUT

- OECMs not measured in these, just protected areas
- Many of these things we assess have never been a formal target for PAs or wider area-based conservation measures (ie KBAs)
- Many species don't need PAs to manage their security (few analyses to date done to look at threats that PAs/OECMs abate)

why/what they are for ?

We need to be far more clear about the role different area based conservation measures deal with threats to biodiversity...

Area-based conservation measures must deal with the threat (not add to it)

nature International weekly journal of science

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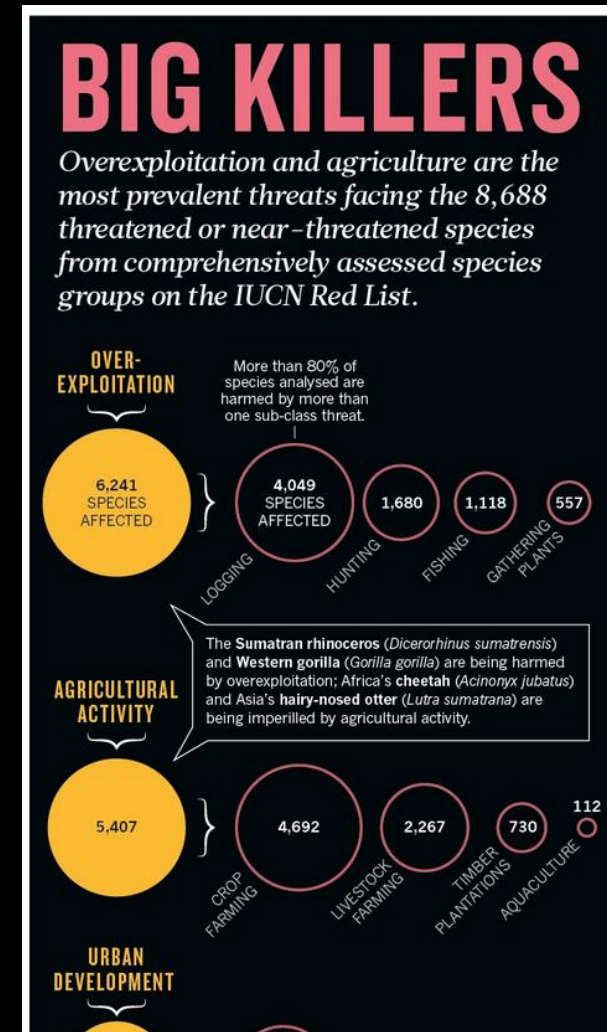
NATURE | COMMENT

Biodiversity: The ravages of guns, nets and bulldozers

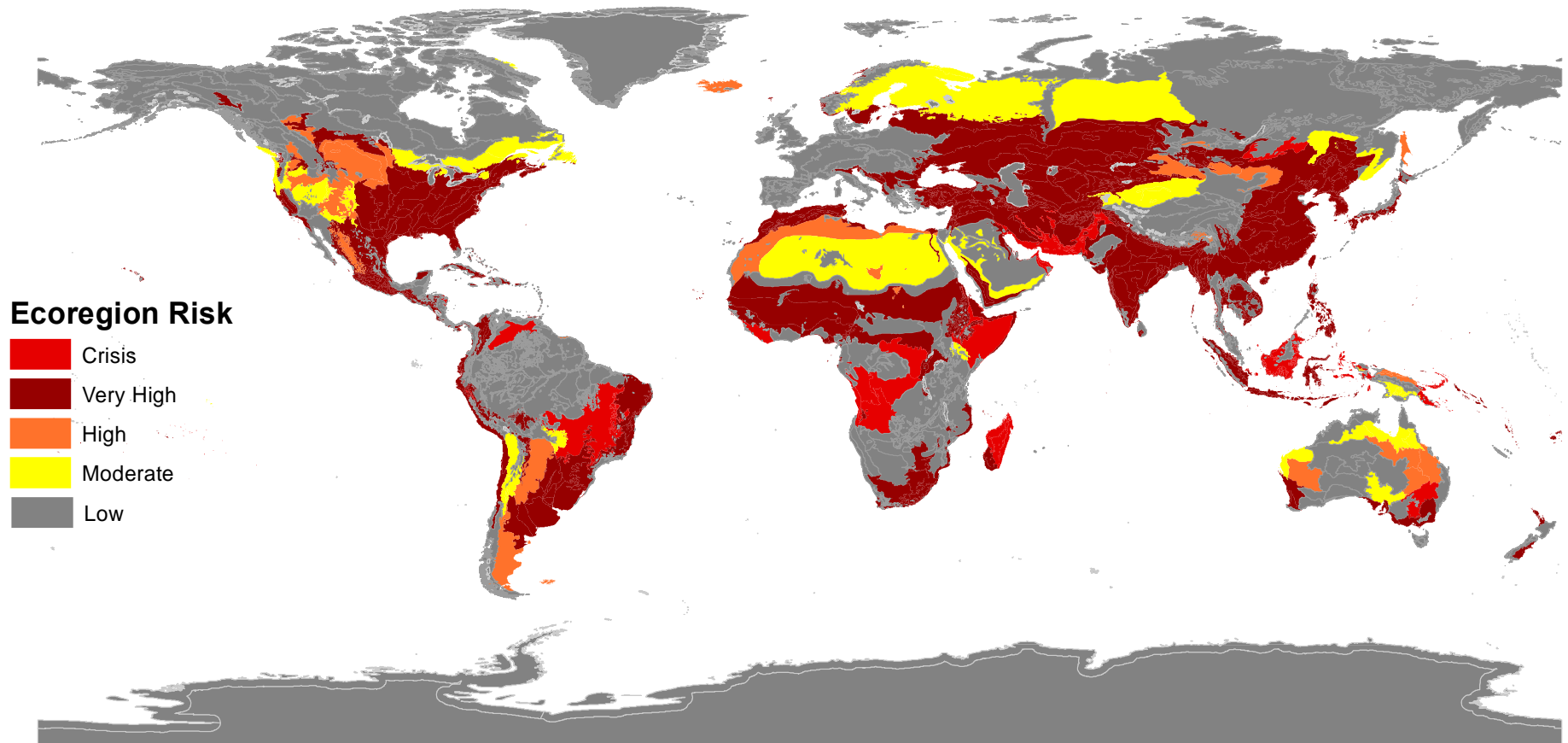
Sean L. Maxwell, Richard A. Fuller, Thomas M. Brooks & James E. M. Watson

10 August 2016

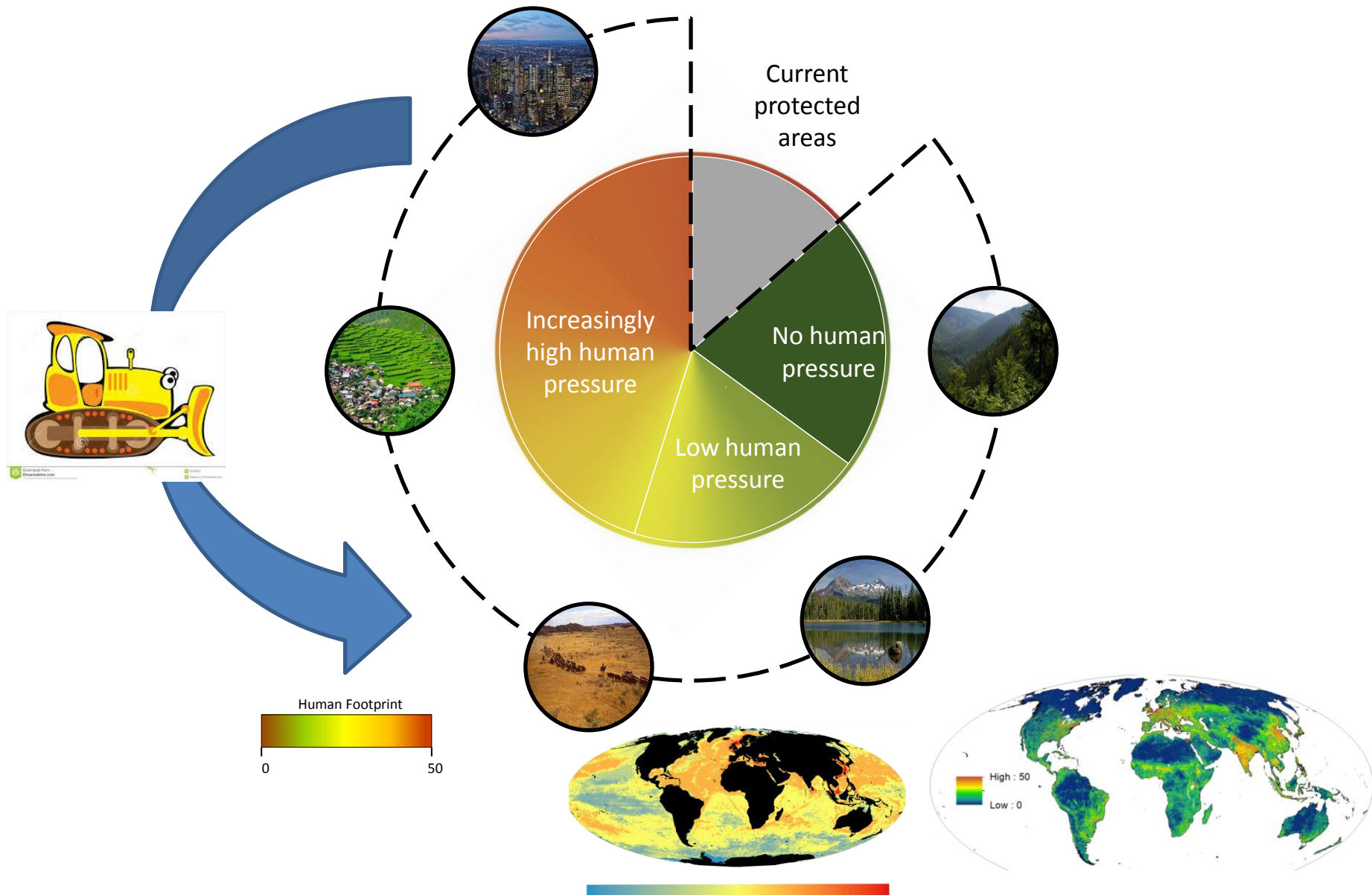
The threats of old are still the dominant drivers of current species loss, indicates an analysis of IUCN Red List data by Sean Maxwell and colleagues.



Relationship between protected areas and areas with sustained/increasing habitat loss

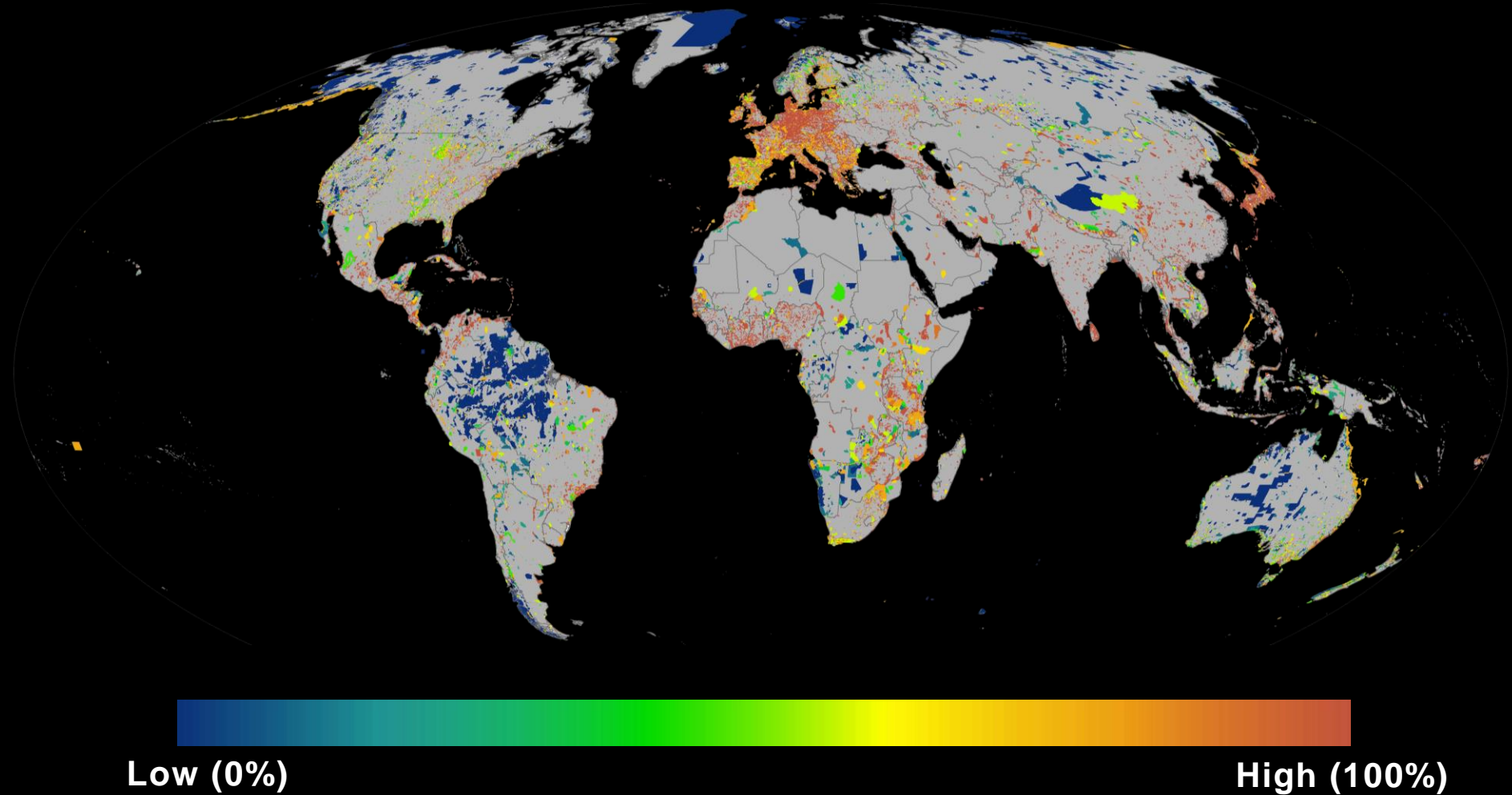


The great acceleration is on and our choices for ABCM are like a chess game



When we talk about area based conservation measures, we need to clearly address four questions: *why/what* they are for; *where* they should be; *how much*; and *how* they should be managed to be effective.

Last ten years have shown protected area under intense human pressure. And thousands of PADDD events.

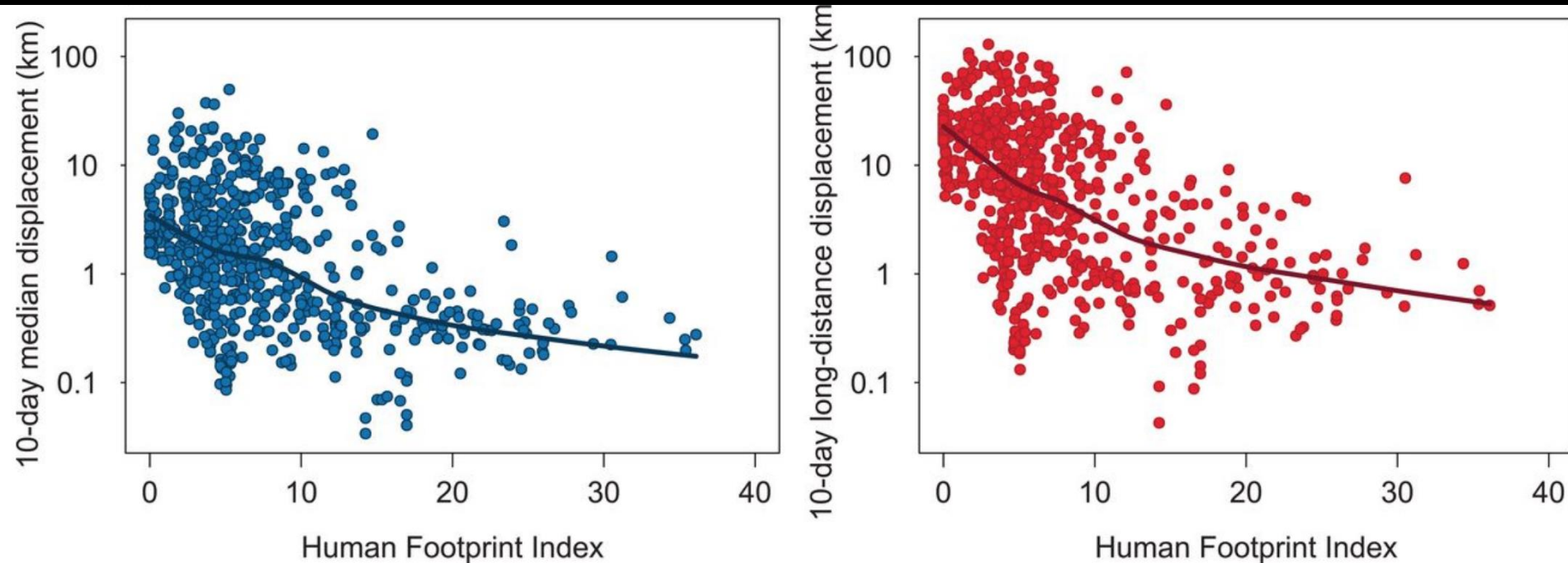


Jones et al 2018 *Science*

Threats are widespread



Significant human activity within PAs will reduce their conservation benefit



Tucker et al. 2018 Science

**WE MUST WORK OUT WHAT COUNTS AS AN ABCM SO AS
THEN MEASURE EFFECTIVENESS**

**EFFECTIVENESS NEEDS TO BE FOCUSED ON THE
OUTCOMES**



Biodiversity Conservation Response

**Prevent species
extinction and prevent
ecosystem collapse**



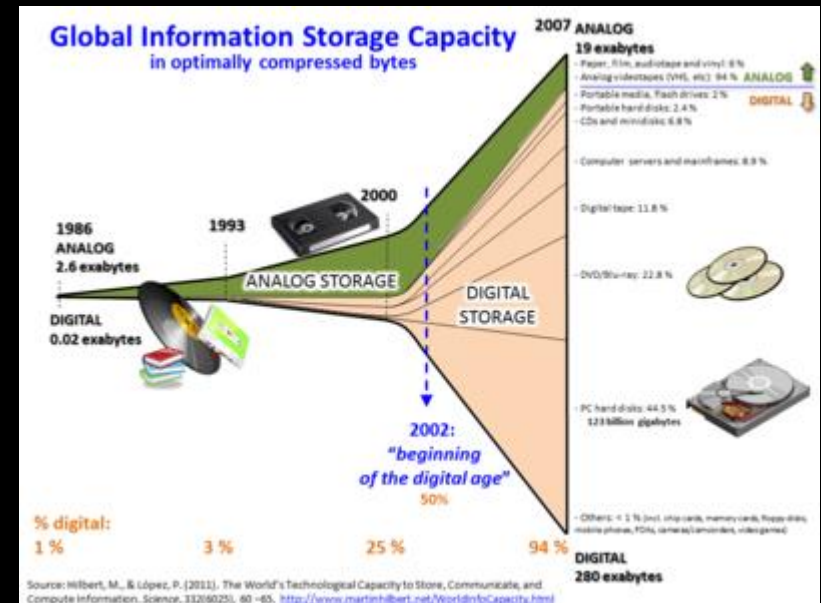
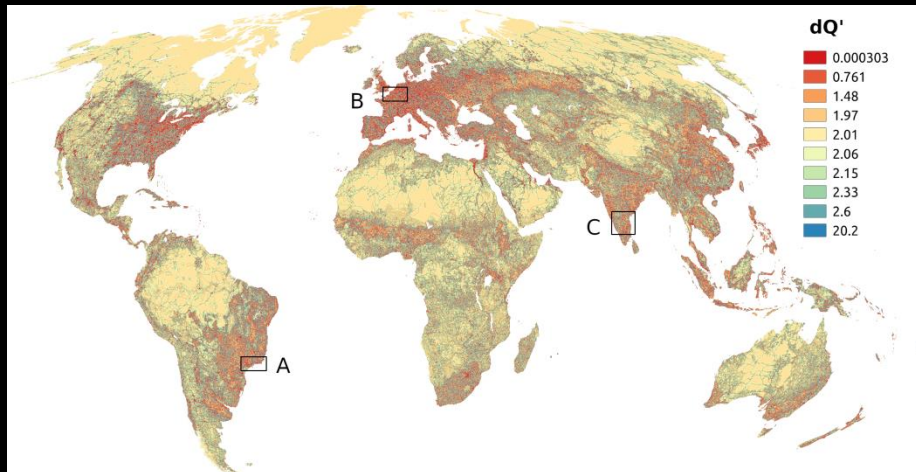
**Reverse species and
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**Retain ecological
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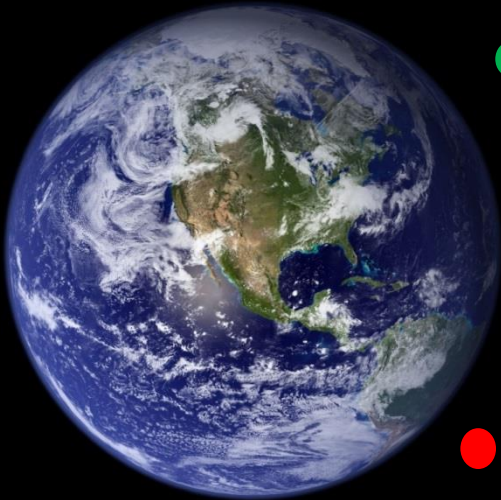
When we think about effectiveness indicators, remember the BIG DATA revolution!



The Strategic Plan for Biodiversity's vision

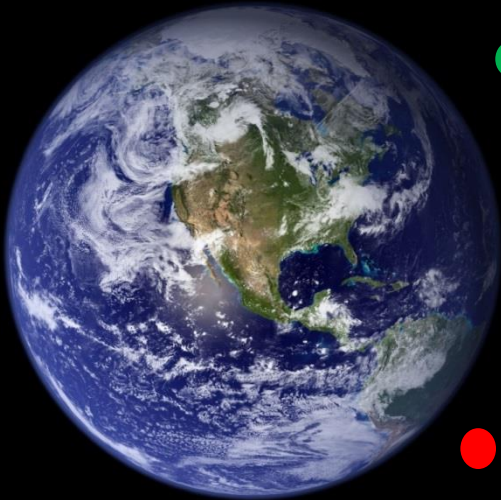
"By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people."

Three broad goals for area based conservation measures (THE 'why/what')



- — Prevent species extinction and ecosystem collapse
- — Stop species and ecological decline so as to retain/restore functional species assemblages and ecosystem integrity
- — sustain essential ecosystem services

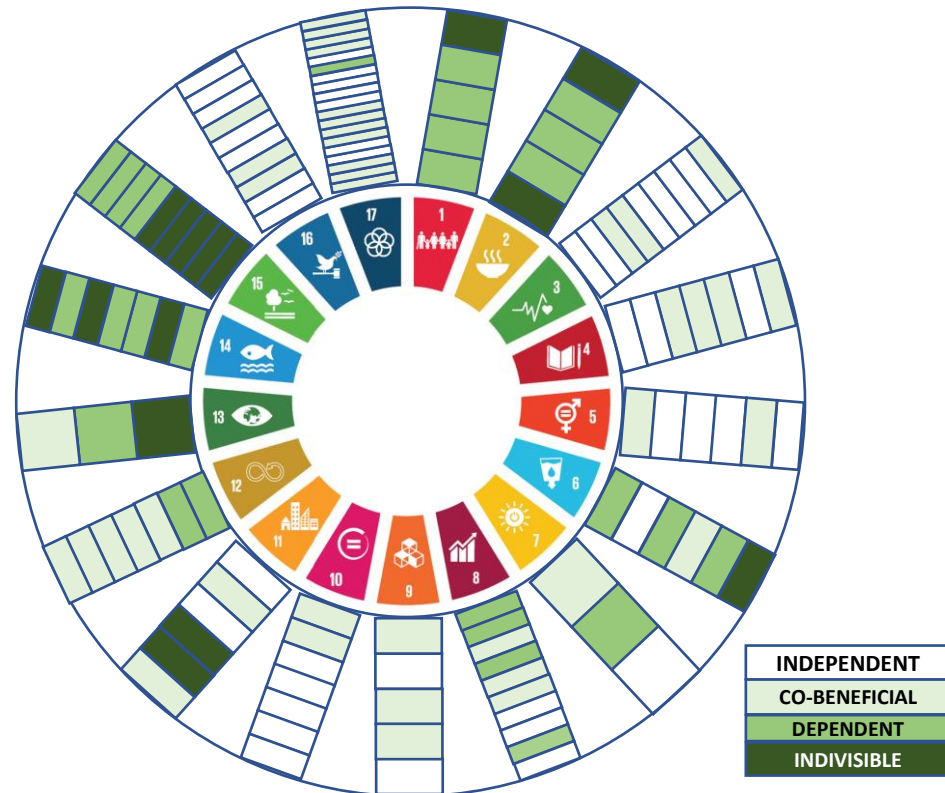
This is the scientific community's great challenge and I think the greatest challenge when we think about area based conservation measures



- Prevent species extinction and ecosystem collapse
- Stop species and ecological decline so as to retain/restore functional species assemblages and ecosystem integrity
- sustain essential ecosystem services

NATURE UNDERPINS HALF OF SDG TARGETS

- Poverty alleviation
- Food security
- Water security
- Livelihoods and jobs
- Health and wellbeing
- Peace
- Security from disasters
- Renewable energy
- Carbon sequestration
- Sustainable production



UNDP, 2018.

Not all ecosystems services are compatible with biodiversity outcomes

SUPPORTING SERVICES:

(Ecosystem functions)

nutrient cycling, evolution, soil formation, spatial structure, primary production

PROVISIONING SERVICES:

food, fresh water, fuel, wood, fiber, biochemicals, genetic resources

REGULATING SERVICES:

climate, flood, disease & water regulation, water purification, pollination

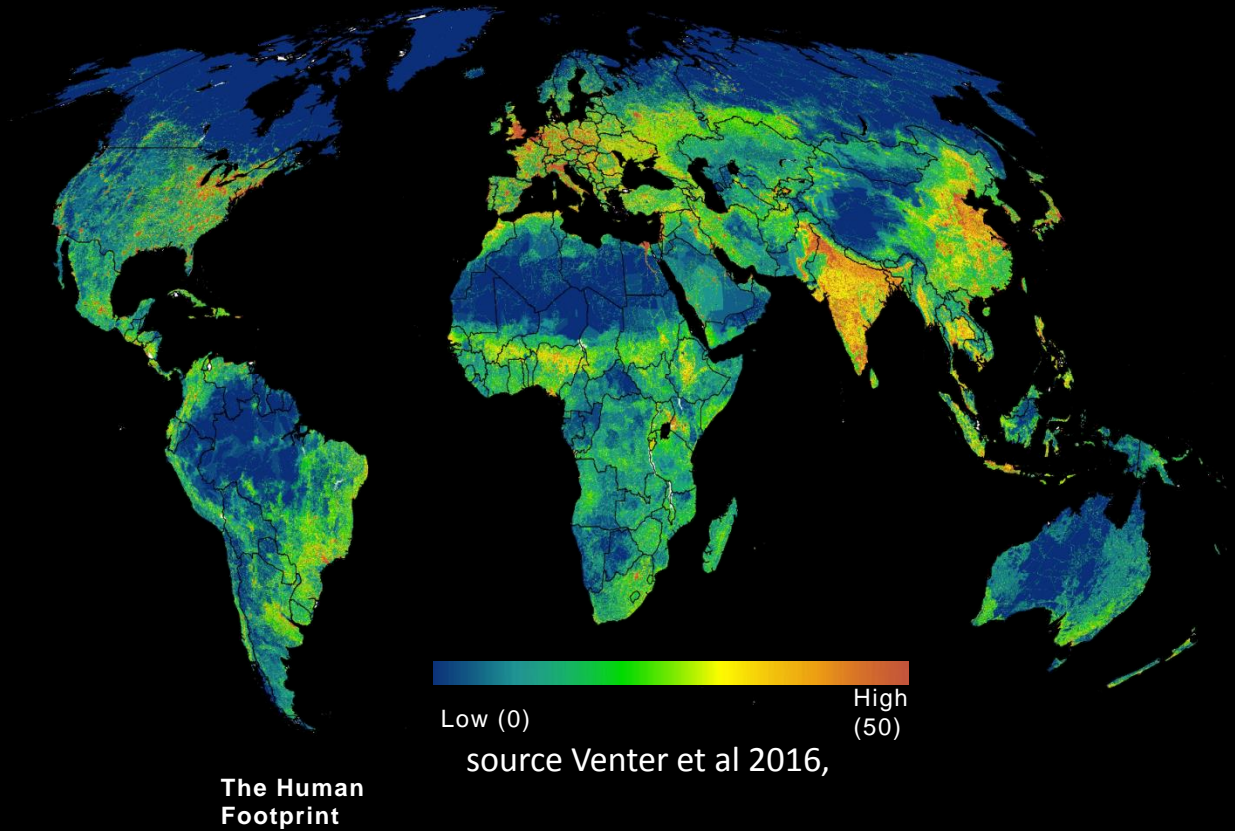
CULTURAL SERVICES:

spiritual, religious, recreation, ecotourism, aesthetic, inspirational, educational, sense of place, cultural heritage

Many provisioning services are threats to biodiversity



Area-based conservation activities should help retain ecological processes that support ecosystems that derive supporting, regulating and cultural ecosystem services



Area based conservation measures must target retaining intact ecosystems

Low integrity

High integrity

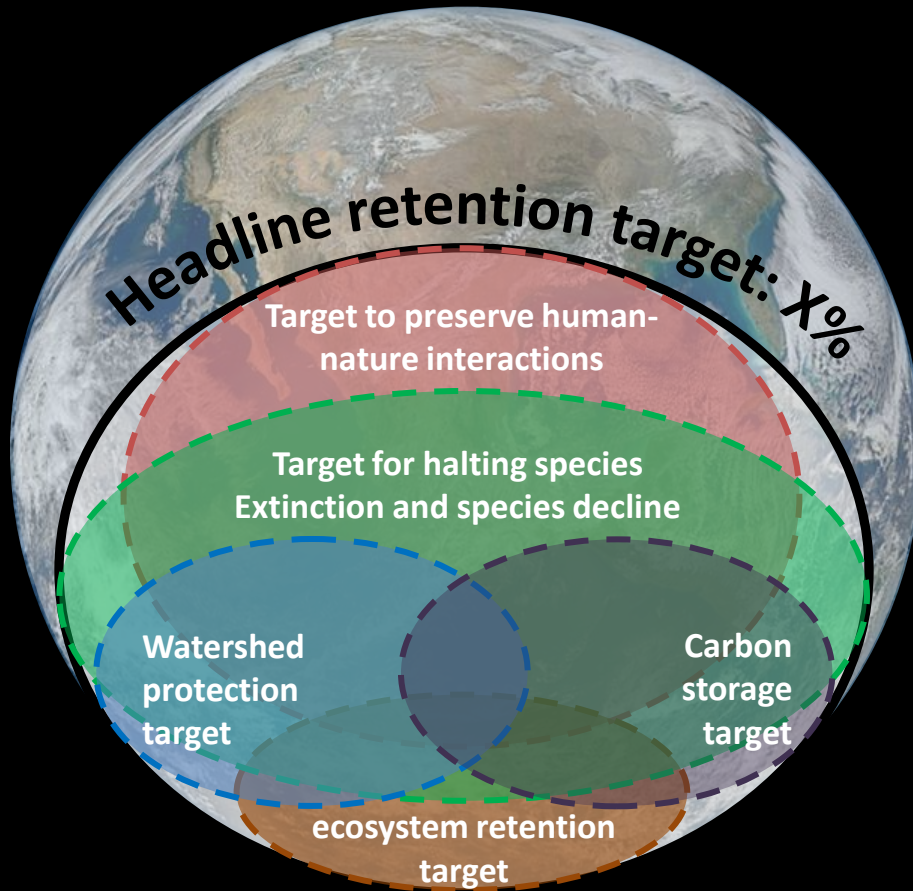
Strongholds for imperiled biodiversity and intact assemblages, critical in a time of climate change – they are connected by definition

Have extraordinary ecosystem service value

Support many of the world's most marginal communities

Betts et al., 2017; *Nature*; Martin and Watson, *Nature Climate Change*; Scheffers et al., 2016 *Science*; Houghton et al, 2016 *Nature Climate Change*; Watson et al. 2016 *Current Biology*, Griscom et al. 2018 *PNAS*

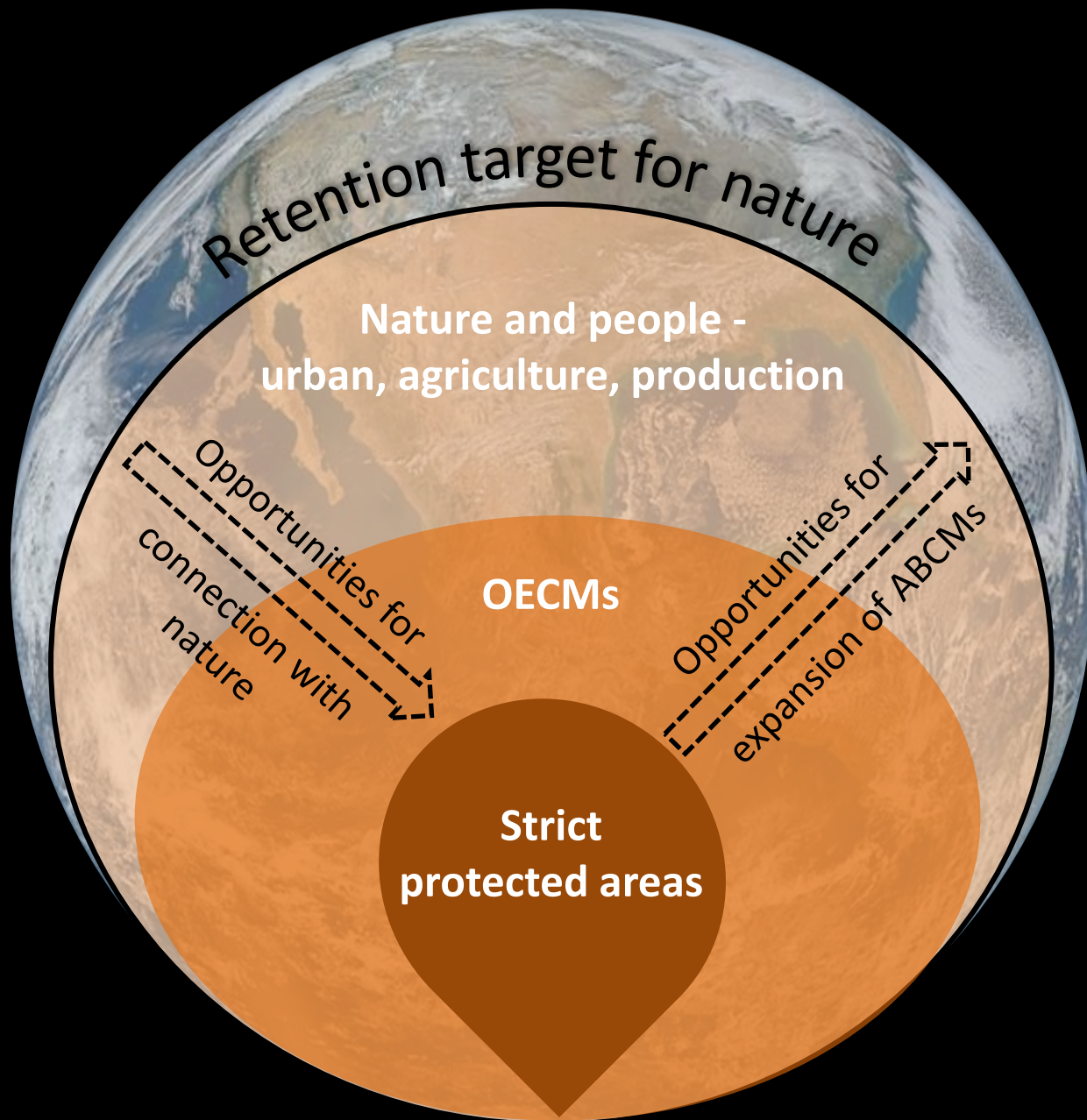
With a ecosystem service lens, area-based conservation measures are bigger than the CBD



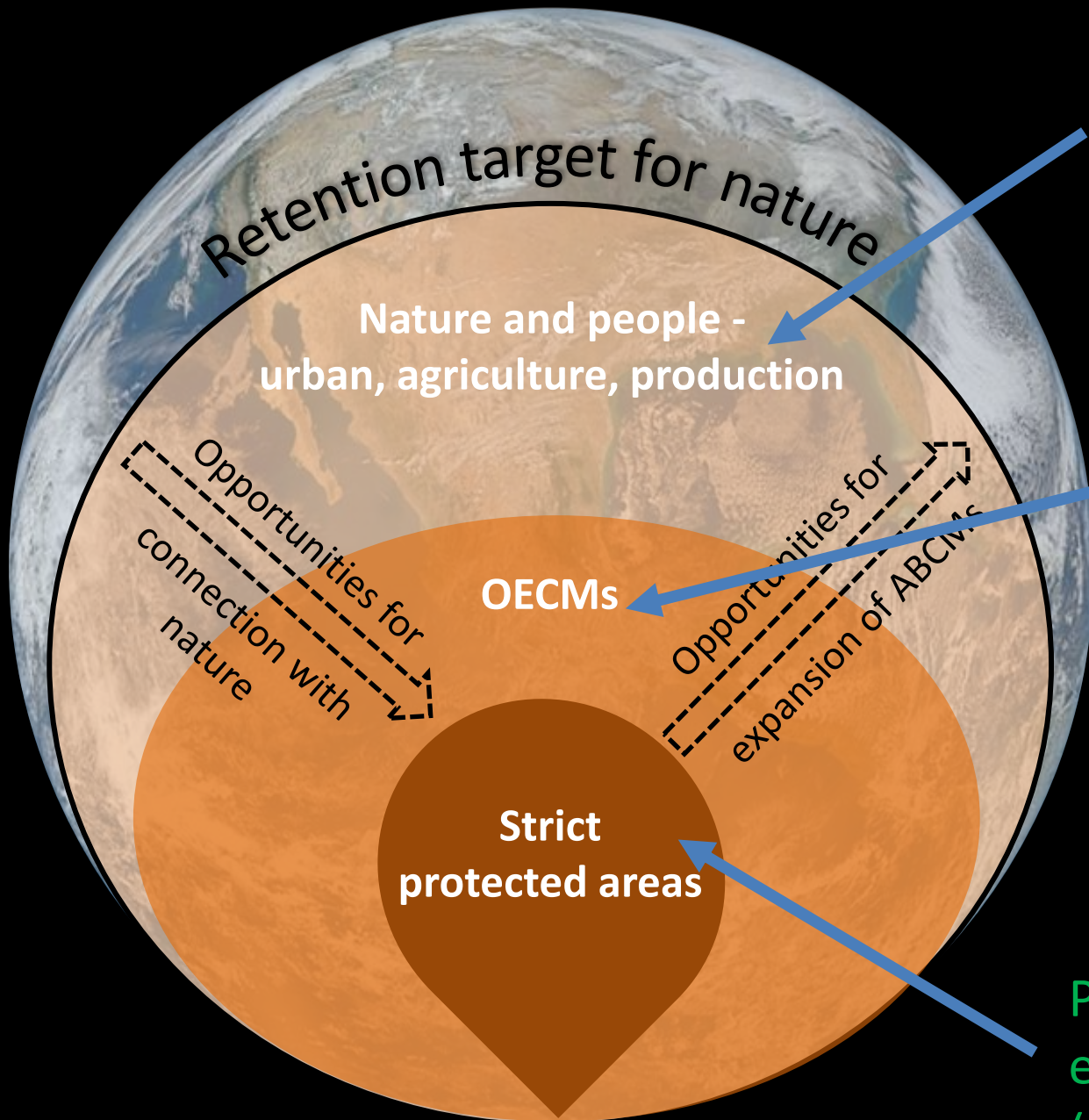
United Nations
Convention to Combat
Desertification



United Nations
Framework Convention on
Climate Change



Clearly clarifying the role of ABCMs is more essential than setting a target



Sustainably manage land to achieve provisioning ecosystem services (Targets 6, 7)

Stop decline and retain functional assemblages, areas for regulating, cultural, supporting ecosystem services (Targets 5, 10, 15)

Prevent extinction and ecosystem collapse (target 12, 13, new ecosystem target)

Clarify AECM role(s) will help focus on quality

Thank you

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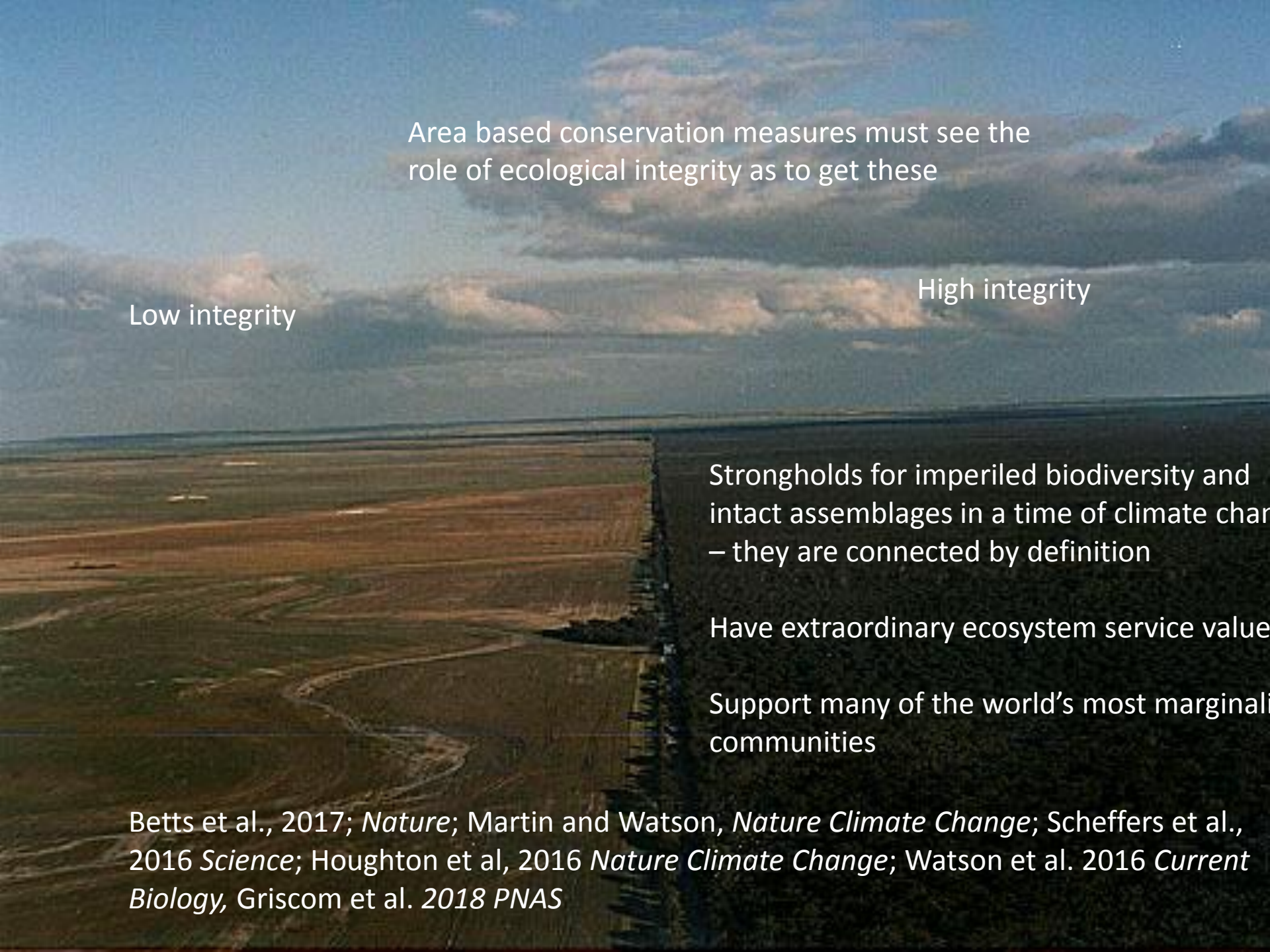


www.greenfirescience.com



Rio Declaration 1992

States shall co-operate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development



Area based conservation measures must see the
role of ecological integrity as to get these

Low integrity

High integrity

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