Seas the Day: A New Narrative for the Ocean

Jane Lubchenco
UC Berkeley

Hitchcock Lecture #2

March 13, 2025

Image: Bob Berwyn

Oregon State University

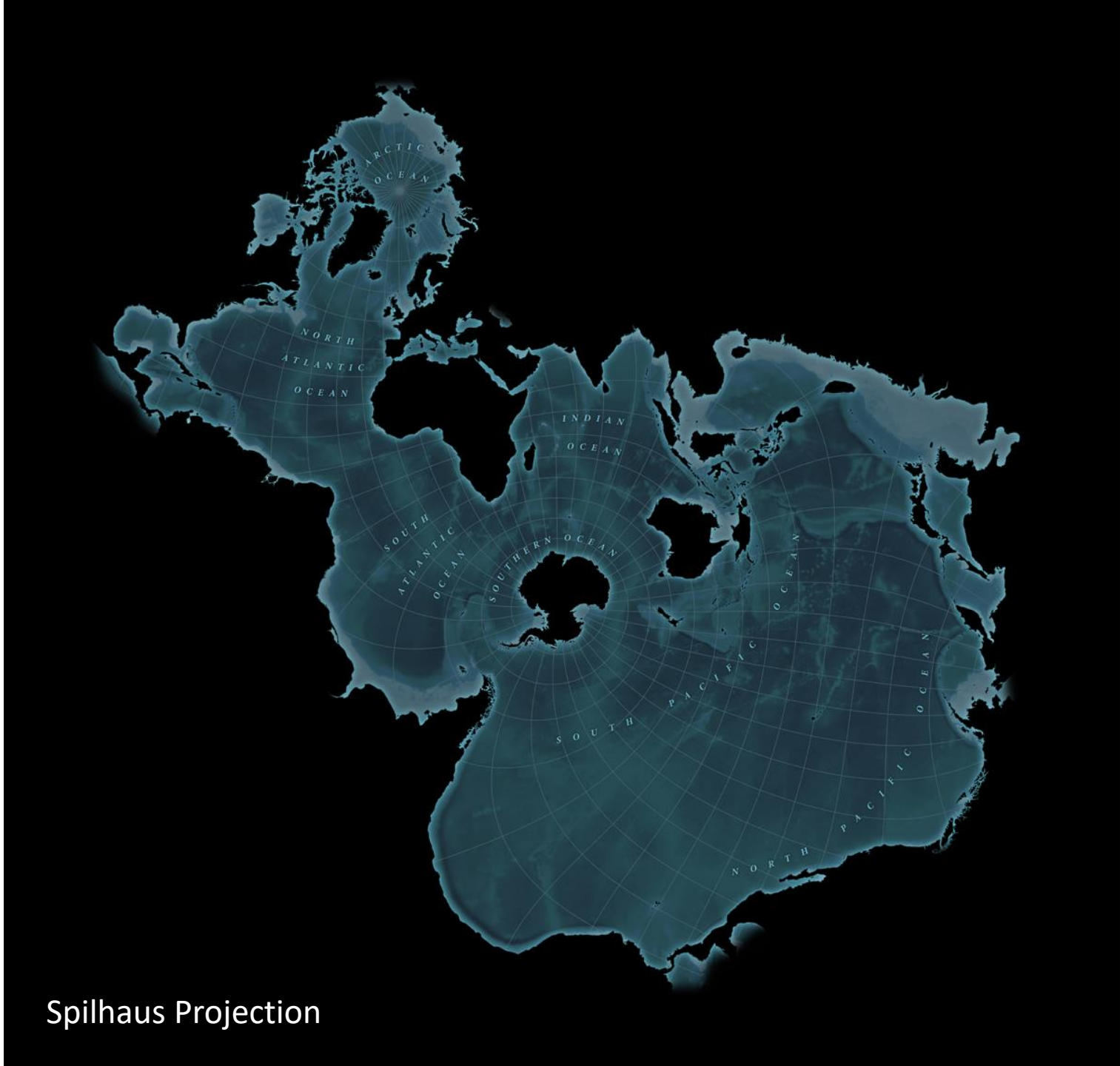
Maps and **Narratives** are Powerful Tools

- They help us ‘see’ our world & our place in it.
- They frame our thinking & guide our actions.
- They can constrain or inspire us.

What do maps tell us about the ocean?

It’s all one ocean. It’s all connected.

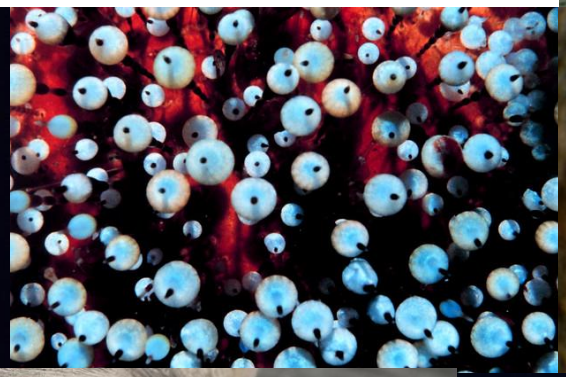
The Ocean.

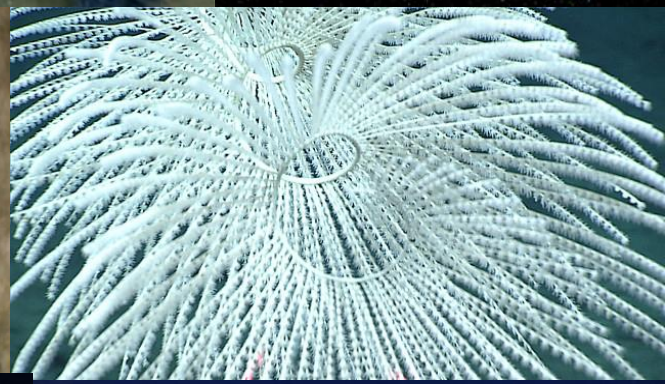
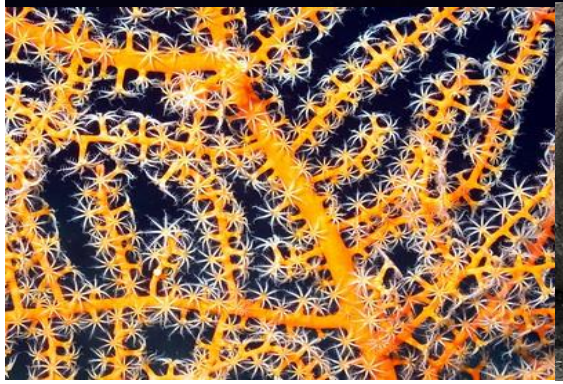


Spilhaus Projection

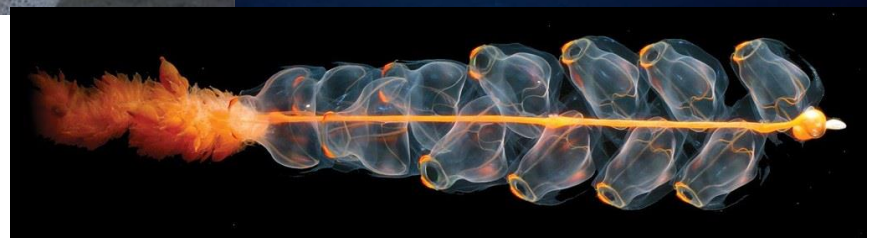
What are our images of the ‘ocean’?



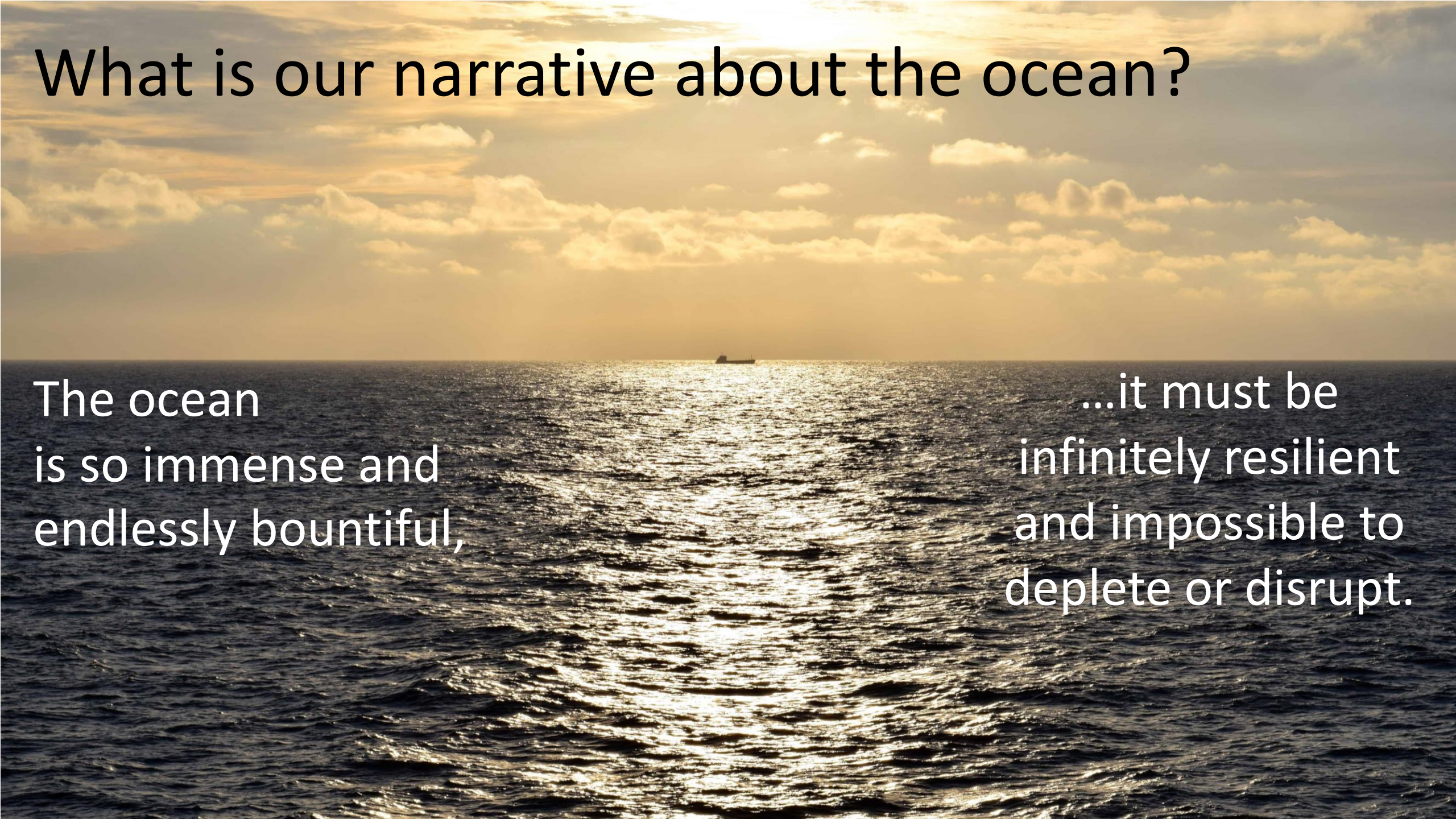







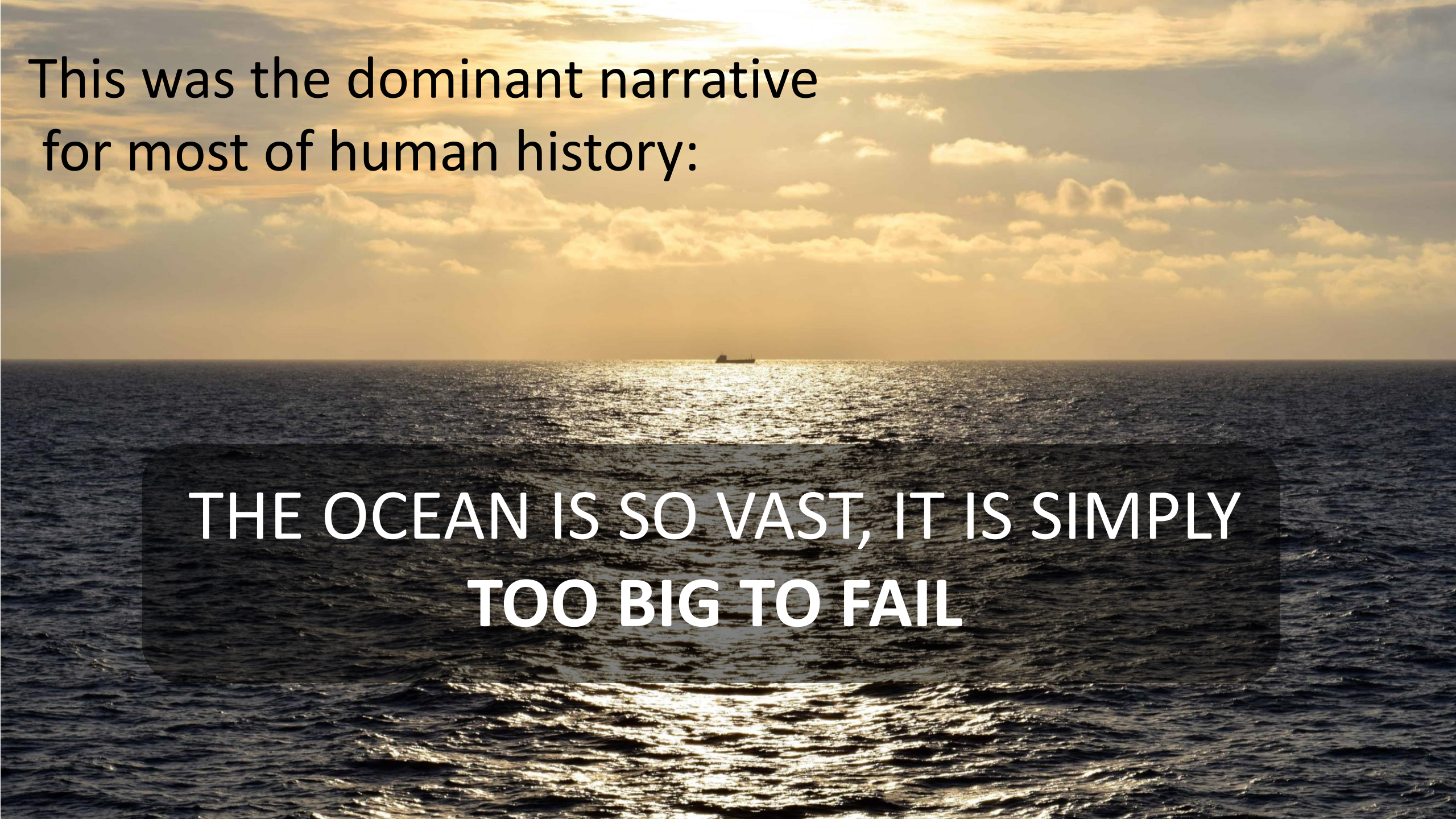
…mysterious, exotic, bizarre, unknown…

What is our narrative about the ocean?



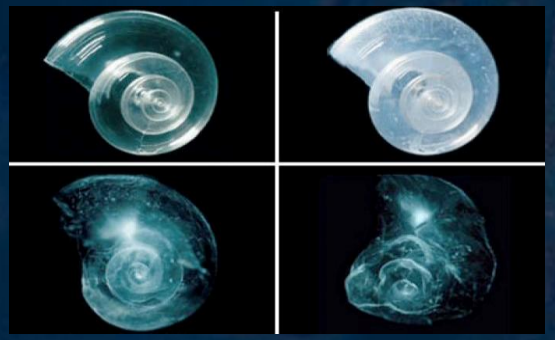
The ocean
is so immense and
endlessly bountiful,

…it must be
infinitely resilient
and impossible to
deplete or disrupt.


This was the dominant narrative
for most of human history:
THE OCEAN IS SO VAST, IT IS SIMPLY
TOO BIG TO FAIL

The result?

1. Overfishing & use of destructive fishing gear
2. Illegal, unregulated, unreported fishing
3. Climate change
4. Ocean acidification
5. Habitat destruction
6. Nutrient, plastic, & toxic pollution



Yesterday's ocean was clean & full of life

Photo: Enric Sala/Pristine Seas/National Geographic Society

…especially **big fish**

Photo: Enric Sala/Pristine Seas/National Geographic Society

…and top predators

Photo: Enric Sala/Pristine Seas/National Geographic Society

Today's ocean is:

- depleted – especially of big fish & top predators
- polluted
- disrupted
- warmed
- deoxygenated
- acidified
- less resilient & less predictable

The folly of the ‘too big to fail’ narrative is glaringly obvious.

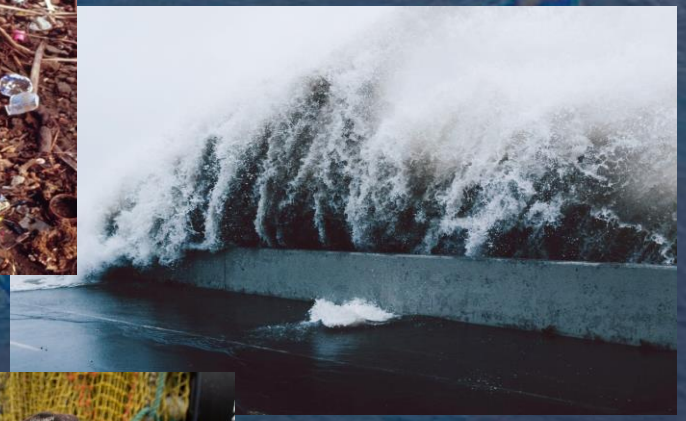
Nonetheless, that mindset persists today, → even more intense, unsustainable uses of the ocean

Why?

1. Ignorance
2. The allure of new economic opportunities
3. Perverse incentives; lack of accountability, transparency
4. A desperate need for food, resources, & development.

The depletion & disruption threaten:

1. the most vulnerable people
2. the safety, security, culture, economic prosperity, quality of life & opportunities for everyone
3. the well-being of the ocean's amazing life forms.



To make matters worse, demands on the ocean are escalating.

Marine Transport & Manufacturing

Brand South Africa

Thomas Peschak

Tourism & Recreation

Healthy Seafood & Food Security

Oil, Gas & Mining for Minerals

And so a second narrative has come to dominate:

THE OCEAN IS MASSSIVELY & FATALLY DEPLETED & DISRUPTED.

THE OCEAN IS SIMPLY TOO BIG TO FIX.

Doom & gloom
Lack of engagement
Lack of motivation

However…

However, despite the undeniable challenges, a third ocean narrative is emerging…

…informed by

science & Indigenous Knowledge,
pioneering fishing people & communities,
governments & industry leaders, youth

Photo: Enric Sala/Pristine Seas/National Geographic Society

The reality is that many powerful solutions already exist & could be scaled up.

Opportunities abound to develop new solutions that are based on
efficiency, incentives, technology, biotechnology, & regenerative & holistic approaches.

With the message that the ocean may not be too big to fix.

Photo: Enric Sala/Pristine Seas/National Geographic Society

Examples of 5 existing solutions that could be scaled:

1. Reform fisheries management to ‘fish smarter not harder’:

- Policy reforms
- Rights-based fisheries

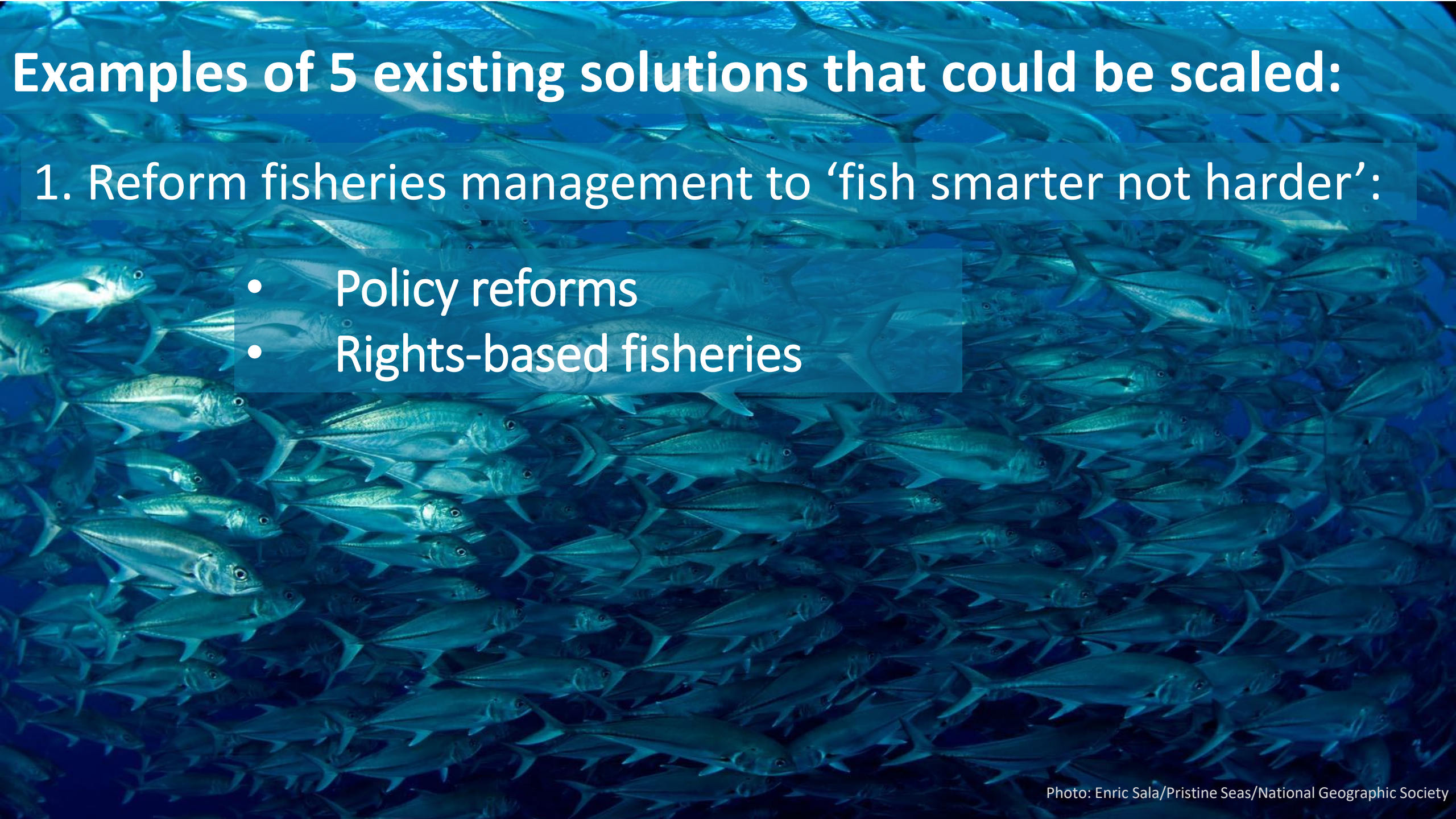


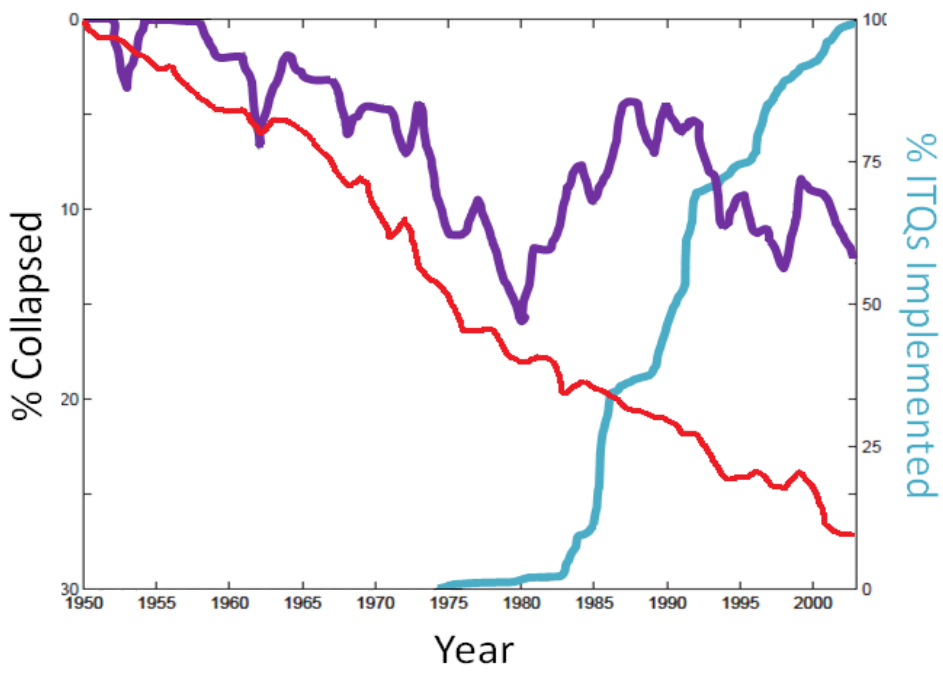
Photo: Enric Sala/Pristine Seas/National Geographic Society

Fisheries: The enabling conditions for successful fisheries are becoming clear.

Align the long-term interests of sustainable fisheries with the short-term needs of fishers.

Rights-based fisheries are less likely to collapse

Costello, Gaines, & Lynham 2008, *Science*



% ITQs Implemented

% of Fisheries Collapsed without ITQ Management

% of Fisheries Collapsed with ITQ Management

1. U.S. Pacific Groundfish

Economic and ecological collapse lead to fishery being declared a federal disaster in 2000

Catch-share management began in 2011 & has yielded:

- A reduction in accidental catch of most vulnerable species by **2/3**
- **13** species of groundfish now certified by the MSC
- **40** species of groundfish are “best choice” or “good alternative” from Seafood Watch

2. Belize Shallow-Water Reef Fisheries

Threatened by serial overfishing and illegal fishing in no-take areas, became increasingly hard to make a living

By 2011, local fishing communities partnered with government & NGOs to implements pilot TURF (territorial user-rights for fishing) system

- Illegal fishing decreased by **60%**
- **90%** reporting rate for catches
- *Success of pilots has lead to scaling up:*
  - Nation-wide system by **end of 2015**
- Empowering fishermen
  - From *recipients* of policy to *agents* of policy

Examples of 5 existing solutions that could be scaled:

1. Reform fisheries management to ‘fish smarter not harder’;
2. Combine remote sensing, AI/ML, transparency, & new policies to minimize illegal fishing;

Photo: Enric Sala/Pristine Seas/National Geographic Society

INTERPOL

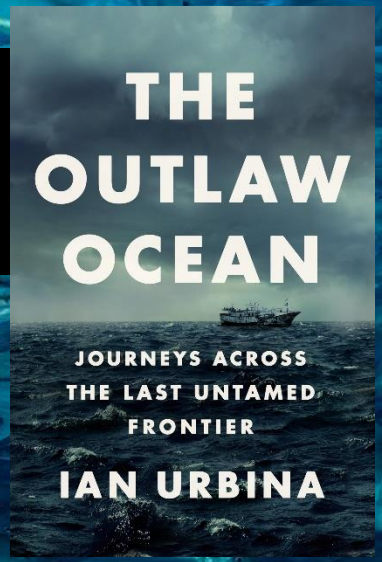
Food and Agriculture Organization of the United Nations

Port State Measures Agreement

Sec John Kerry

EU Fisheries Commissioner Maria Damanaki

Spec Adv to Pres John Podesta



HIGH LEVEL PANEL for A SUSTAINABLE OCEAN ECONOMY

Global Fishing Watch

globalfishingwatch.org

Global

Shows fishing activity and marine traffic of ~70,000 publicly trackable commercial fishing vessels

Photo: Enric Sala/Pristine Seas/National Geographic Society

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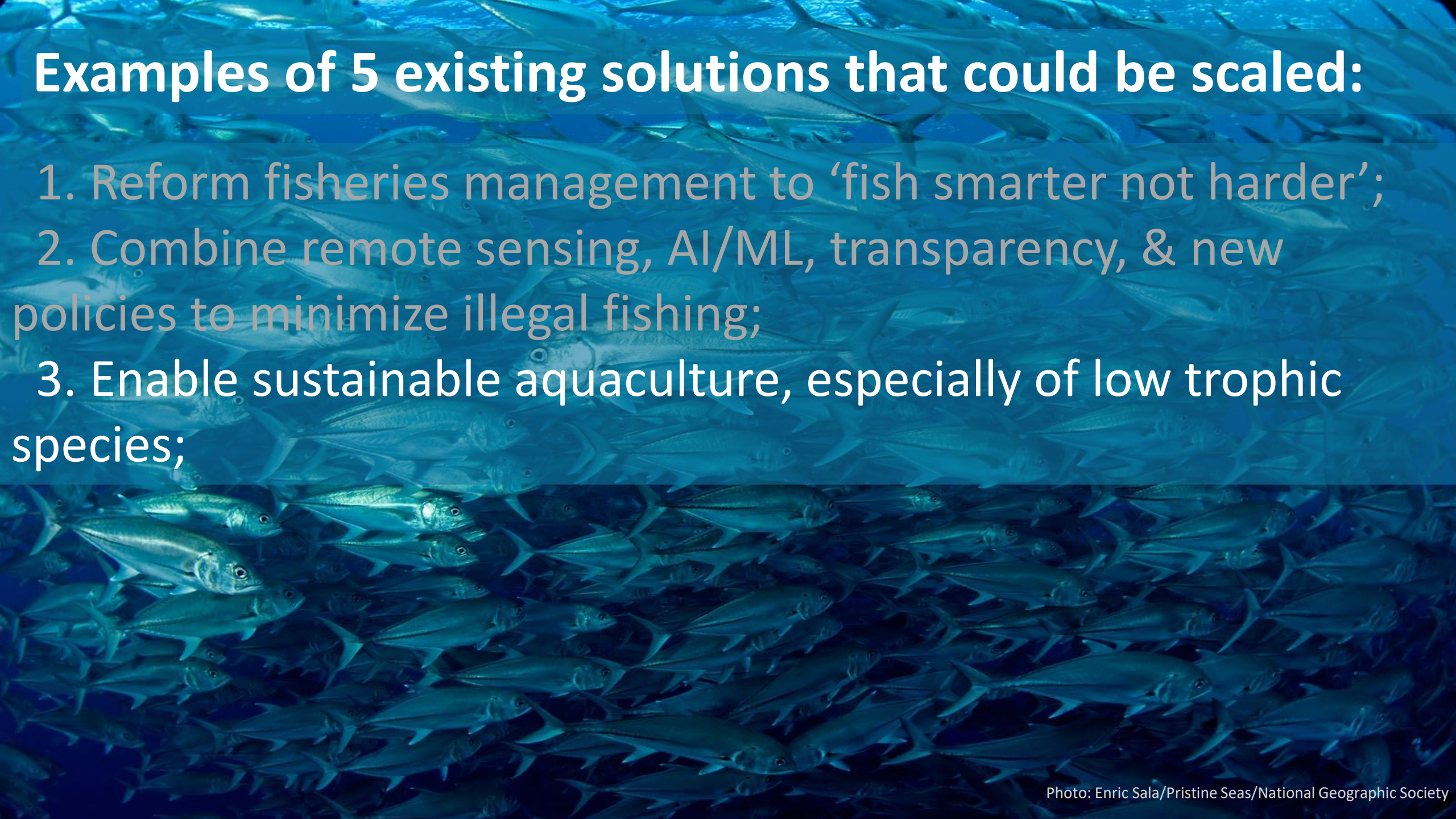

Photo: Enric Sala/Pristine Seas/National Geographic Society

Commissioned by

HIGH LEVEL PANEL for A SUSTAINABLE OCEAN ECONOMY

BLUE PAPER

The Future of Food from the Sea

LEAD AUTHORS

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oceanpanel.org

Nature 2020

https://www.nature.com/articles/s41586-020-2616-y

University of Florida

Rutgers University

NZGeo

Photo: Enric Sala/Pristine Seas/National Geographic Society

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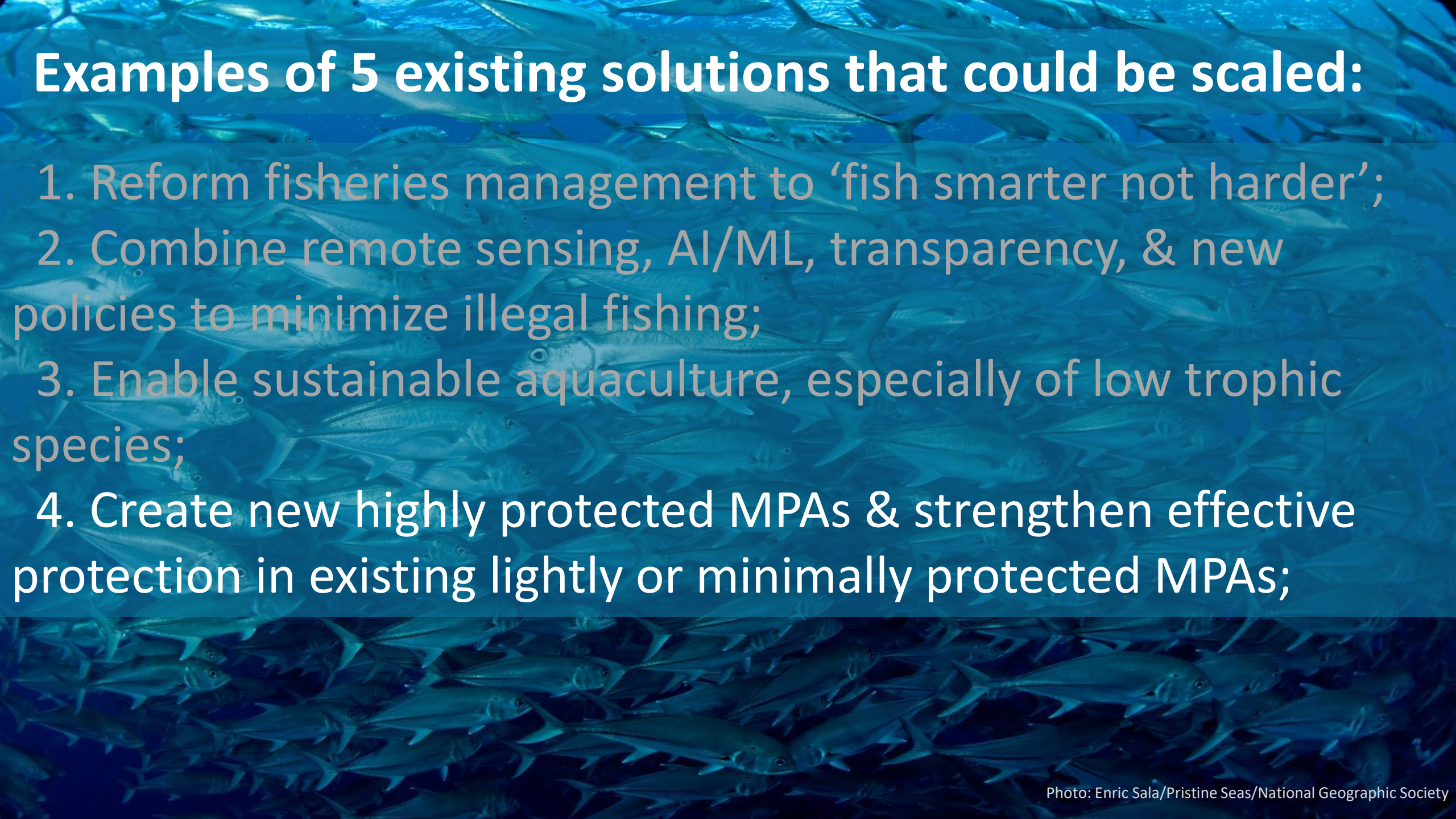
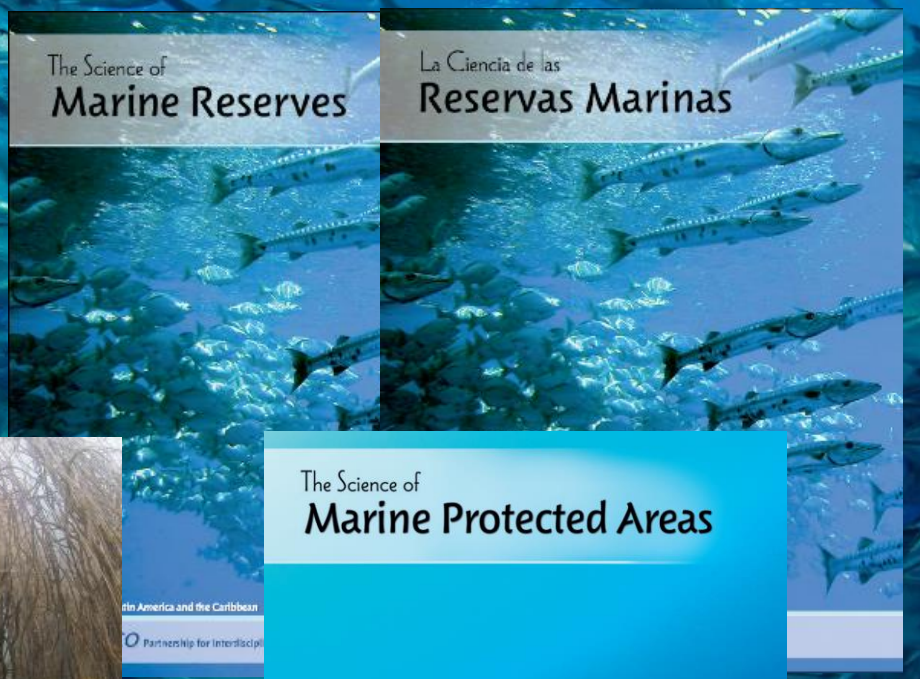
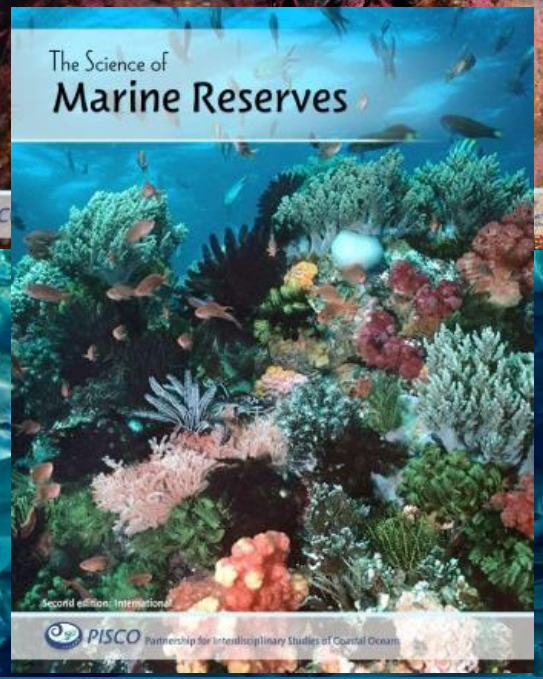


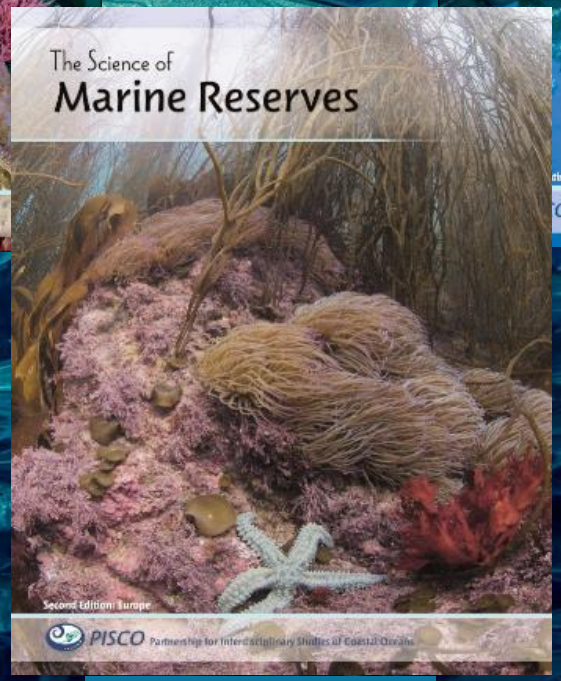
Photo: Enric Sala/Pristine Seas/National Geographic Society

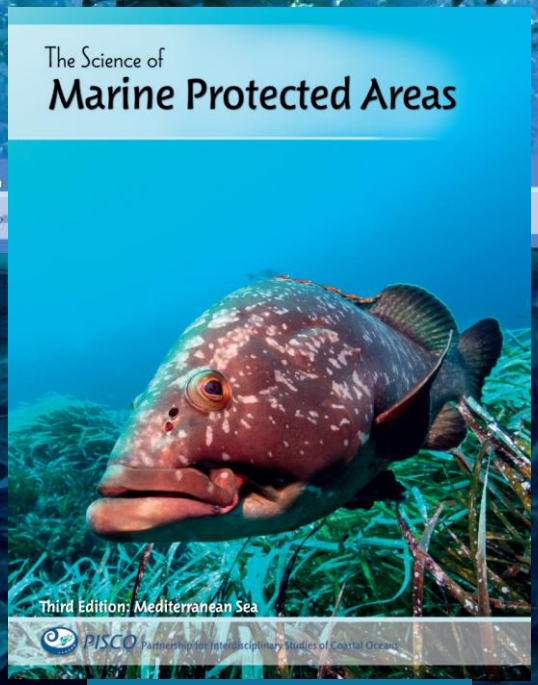
United States

Latin America & Caribbean









International

Europe

Mediterranean

Photo: Enric Sala/Pristine Seas/National Geographic Society

Marine Protected Areas that are Fully or Highly Protected

- Protect biodiversity and habitats
- Provide spill over
- Protect big individuals
- Export larvae
- Restore ecological balance
- Buffer against mistakes & uncertainty

Photos: Enric Sala, NGS Pristine Seas

- Provide reference areas
- Protect culturally important species & activities
- Enhance resistance and resilience in the face of climate change
- Protect carbon stores

Blasiak et al. 2020 *Nature Sustainability* 3:588

Lubchenco, Grorud-Colvert, et al. 2016 *Science of Marine Reserves*

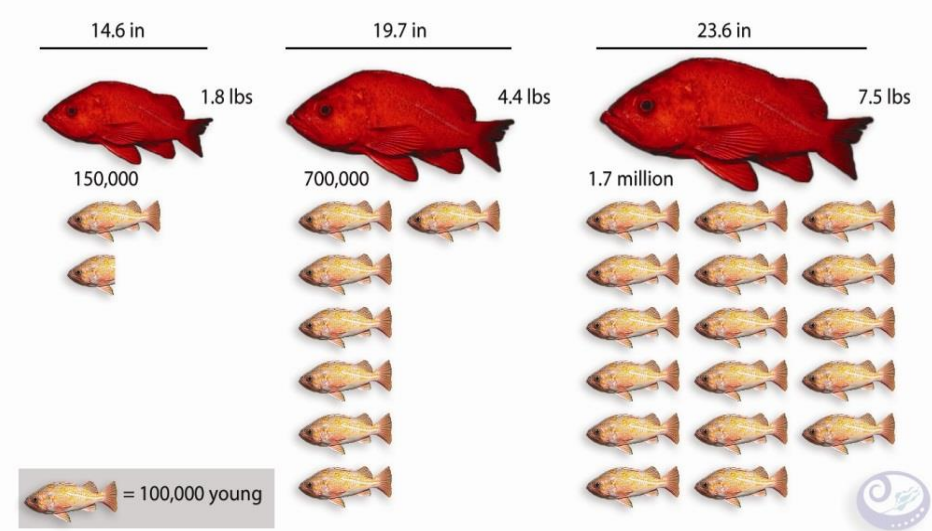
MPA Guide: https://beav.es/ouQ

Roberts et al. 2020. 2017. *PNAS*

Sala et al. 2021 *Nature*

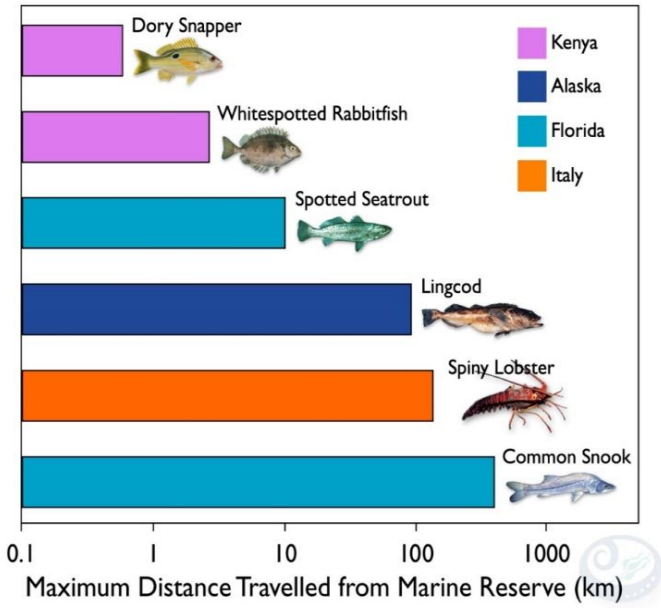
Fully Protected MPAs can help recover some depleted fisheries

Protect larger, more fecund fish



Average numbers of young produced by three different sizes of vermilion rockfish.
Data: Love et al. (1990) NOAA Technical Report

Provide spillover to adjacent areas



http://www.piscoweb.org/science-marine-reserves

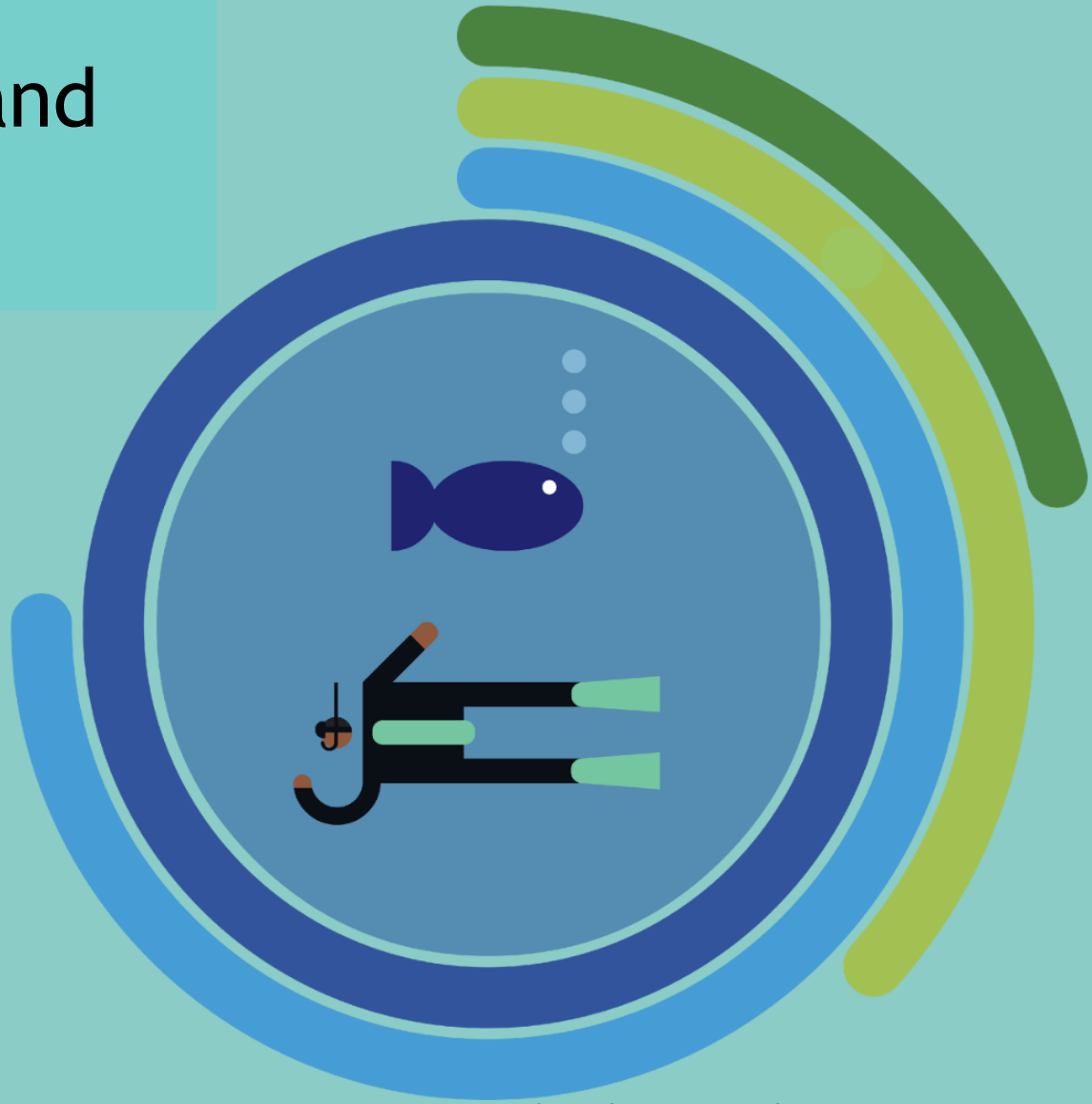
California Marine Life Protection Act

- 124 MPAs, protecting 16% of state waters along 1350 km of coastline
- Lead to increased fish biomass across the entire network

  Smith et al. *Conservation Biology* 2025

The MPA Guide: A categorization and tracking tool for MPAs

- Provides a common language to talk about elements of MPA management, governance, and regulation.
- Links types of MPAs to expected ecological and social outcomes
- Categorization provides insights into quality of protections to improve transparency around reporting



Grorud-Colvert et al. *Science*. 2021

See below the founding partners of *The MPA Guide*

UN environment programme WCMC

IUCN WCPA World Commission on Protected Areas

National Geographic Pristine Seas

Oregon State University

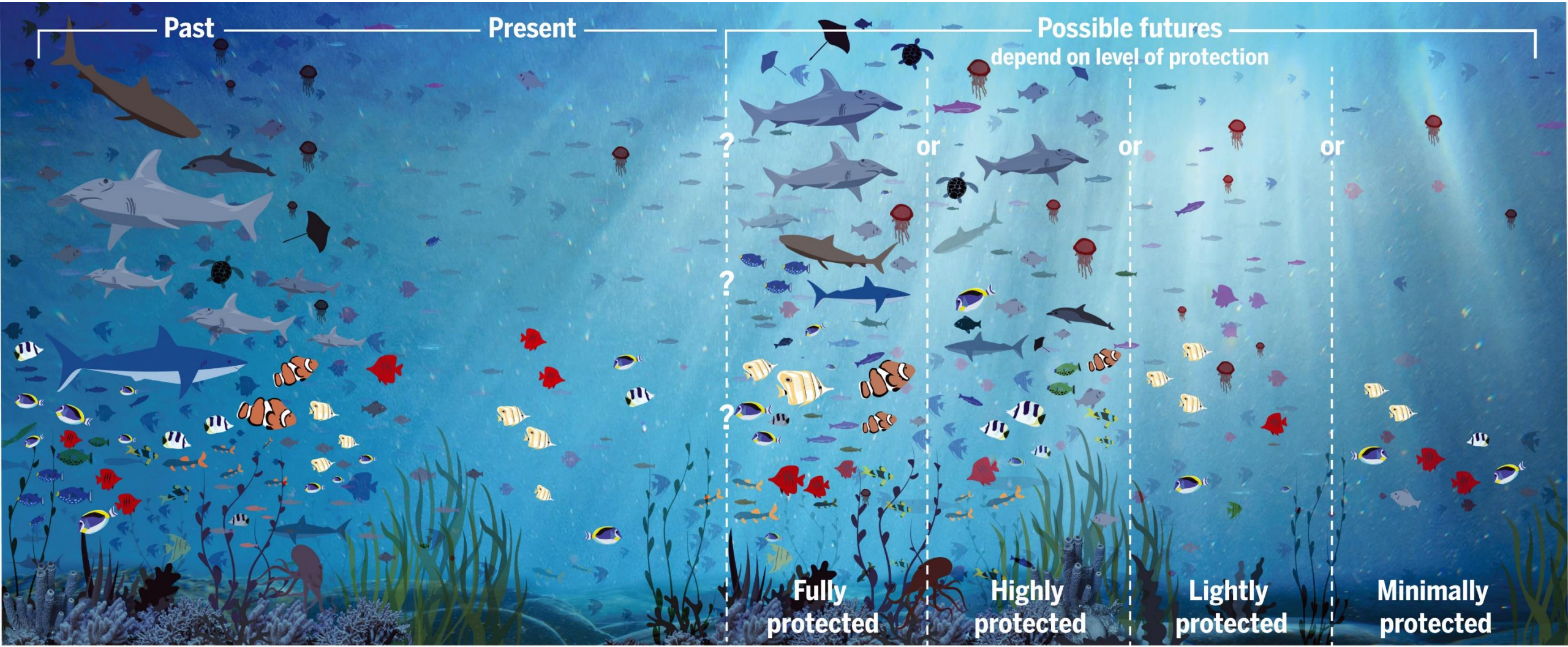
protected planet

Marine Conservation Institute | Marine Protection Atlas

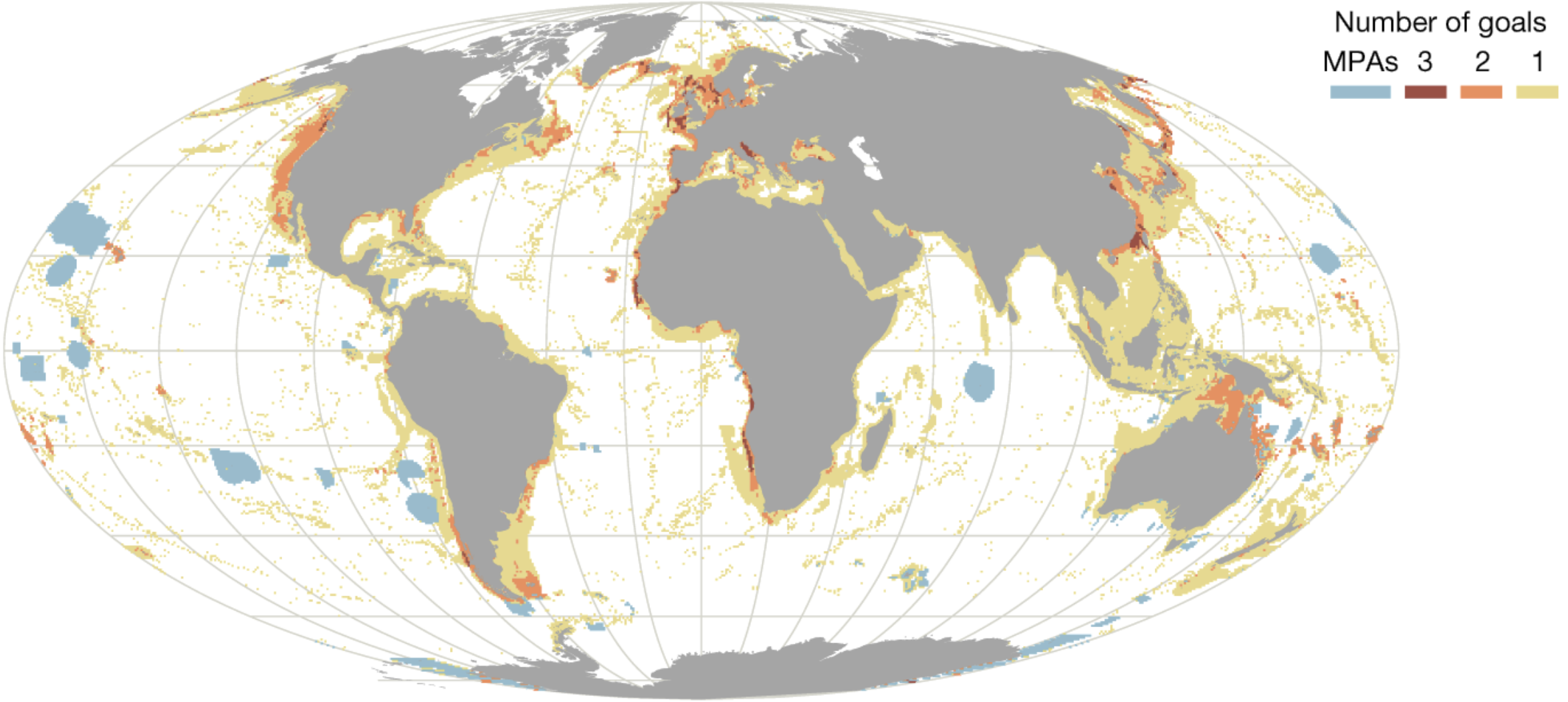
The MPA Guide: Informing choices.

Which future we have will depend in part on the level of protection from extractive activities in MPAs.

Grorud-Colvert et al. *Science*. 2021



Priority areas for MPAs to achieve multiple benefits



Protecting the global ocean for biodiversity, food, & climate -Sala et al. 2021 *Nature*

High Seas Treaty

Four main components:

- Marine genetic resources, including the fair and equitable sharing of benefits;
- Measures such as area-based management tools, including marine protected areas;
- Environmental impact assessments; and
- Capacity-building and the transfer of marine technology.

- 112 countries have signed the agreement
- 20 have ratified it

THE OCEAN CONFERENCE
UNITED NATIONS, NEW YORK, 5-9 JUNE 2017

Examples of 5 existing solutions that could be scaled:

1. Reform fisheries management to ‘fish smarter not harder’;
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5. Realize the power of the ocean to mitigate & adapt to climate change

Photo: Enric Sala/Pristine Seas/National Geographic Society

HIGH LEVEL PANEL for
A SUSTAINABLE
OCEAN ECONOMY

oceanpanel.org

The inaugural 14 sitting heads of state & government of the Ocean Panel
+ UN Sec General's Special Envoy for the Ocean, Peter Thomson

HIGH LEVEL PANEL for
A SUSTAINABLE
OCEAN ECONOMY

High Level Panel for a Sustainable Ocean Economy

As of 2025:

- 18 countries
- 20% of shipping fleet
- 42% of coastlines
- 37% of EEZs
- 18% world fishing fleet

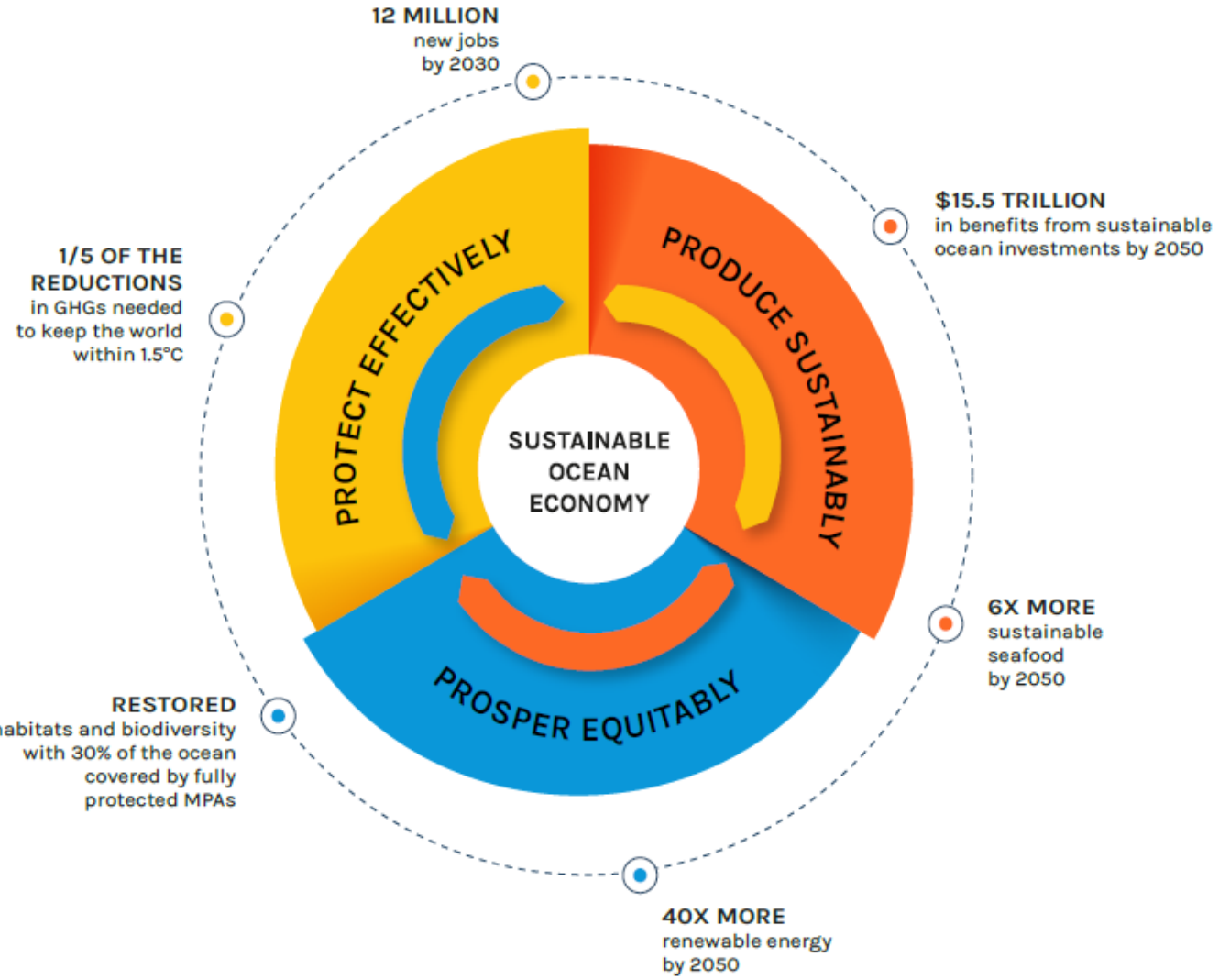
HIGH LEVEL PANEL for
A SUSTAINABLE
OCEAN ECONOMY

Transformations for a Sustainable Ocean Economy

A Vision for Protection, Production and Prosperity

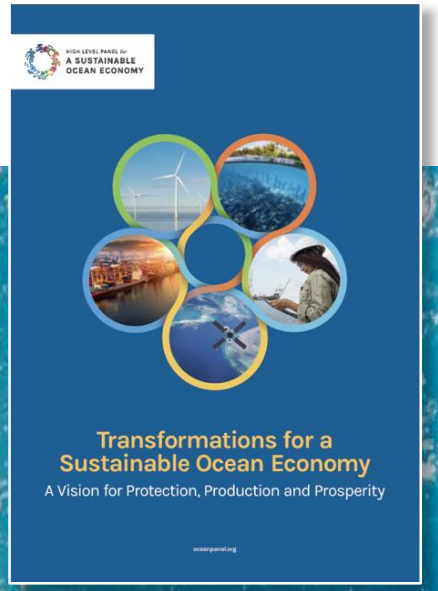
oceanpanel.org

The Ocean Panel Vision



Action Agenda: 74 Commitments by Ocean Panel

Including*:

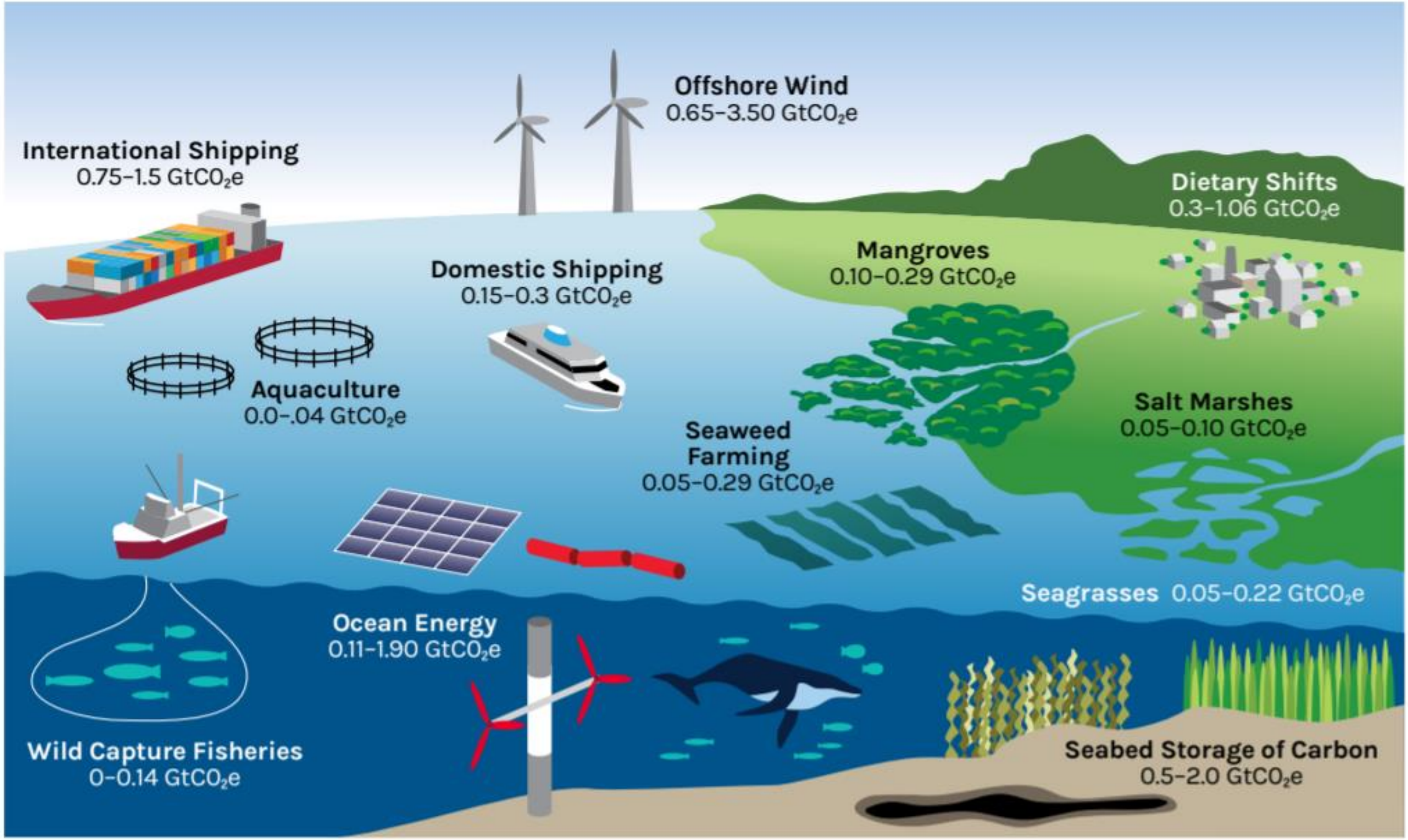


1. Invest in & promote ocean-based renewable energy
2. Incentivize transition to decarbonized shipping
3. Protect and restore blue carbon ecosystems
4. Ban use & carriage of heavy fuel oil in the Arctic through IMO
5. Support a global target to protect 30% of the ocean by 2030
6. Sustainably Manage 100% of their EEZs by 2025
7. Work collaboratively with other nations, business & industry, civil society, financial institutions, & intergovernmental bodies

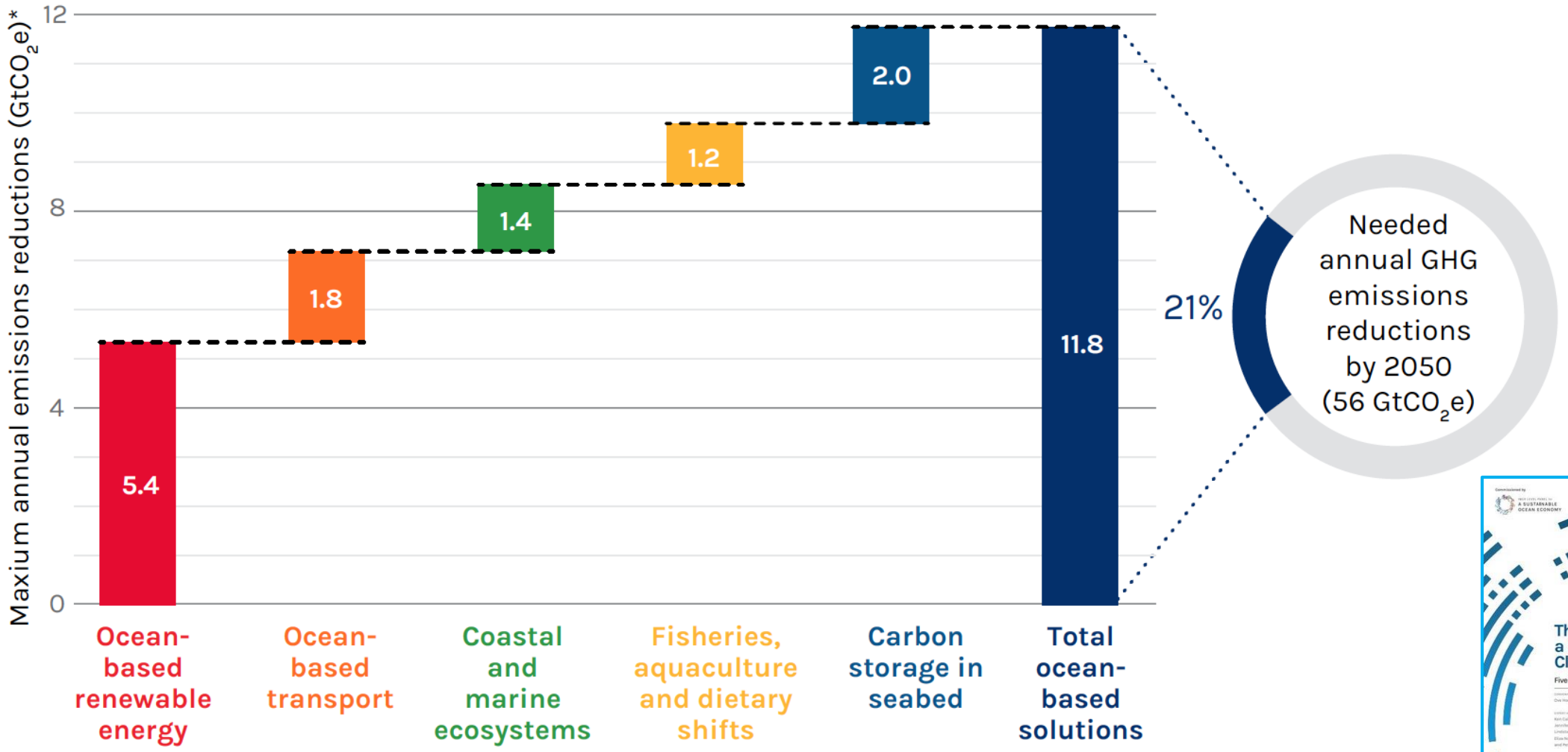
* For the actual wording of the endorsed actions, see https://oceanpanel.org

High Level Panel for a Sustainable Ocean Economy

The ocean could provide up to 21% of the greenhouse gas reductions needed to achieve the 1.5° target by 2050


Offshore Wind
0.65–3.50 GtCO₂e
International Shipping
0.75–1.5 GtCO₂e
Dietary Shifts
0.3–1.06 GtCO₂e
Mangroves
0.10–0.29 GtCO₂e
Domestic Shipping
0.15–0.3 GtCO₂e
Aquaculture
0.0–.04 GtCO₂e
Salt Marshes
0.05–0.10 GtCO₂e
Seaweed
Farming
0.05–0.29 GtCO₂e
Seagrasses 0.05–0.22 GtCO₂e
Ocean Energy
0.11–1.90 GtCO₂e
Wild Capture Fisheries
0–0.14 GtCO₂e
Seabed Storage of Carbon
0.5–2.0 GtCO₂e

The Ocean as a Solution to Climate Change: up to 21% of GHG emission reductions needed



($GtCO_2e$) *= gigatonnes of carbon dioxide equivalents*

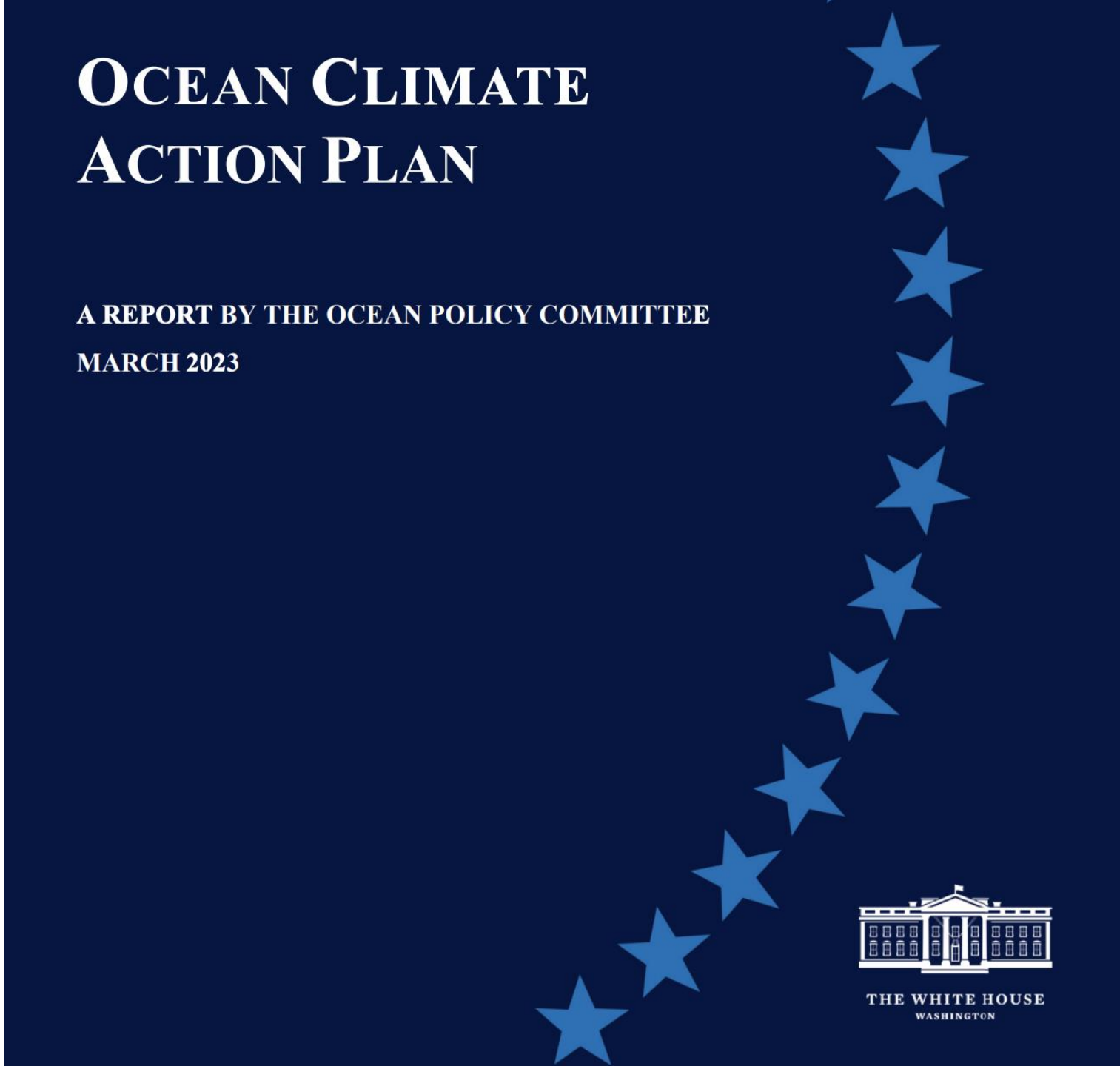
http://www.oceanpanel.org/climate

U.S. Ocean Climate Action Plan

- Renewable ocean energy
- Green shipping
- Blue carbon

+

- Inflation Reduction Act & Bipartisan Infrastructure Law: > $50 billion for resilience of coastal communities



Examples of 5 existing solutions that could be scaled

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4. Create new highly protected MPAs & strengthen effective protection in existing lightly or minimally protected MPAs; &
5. Realize the power of the ocean to mitigate & and enable people & ecosystems to adapt to climate change.

Photo: Enric Sala/Pristine Seas/National Geographic Society

PLUS: New innovative partnerships to scale up solutions, like SeaBOS.

MARUHA NICHIRO

NISSUI

Thai Union

CPF

SeaBOS: **CEOs of 8** major seafood companies Seafood Business for Ocean Stewardship

CEOs in partnership with scientists led by

Stockholm Resilience Centre

Dongwon

SKRETTING a Nutreco company

Cargill

cermaq

Hope: Recover the bounty; use it wisely

More fish in the ocean
Healthier ocean ecosystems
More seafood on plates
More profitable businesses
Healthier communities

Photo: NOAA

Reasons for hope

- New science, awareness, leadership, & thinking are resulting in innovative technologies, nontraditional partnerships, creative financing, fresh champions, and timely institutions and agreements.
- Hundreds of proven or promising solutions exist.
- That they are not yet deployed at the scale or pace needed for real transformation and healing presents a golden opportunity.

Photo: Enric Sala/Pristine Seas/National Geographic Society

What can you do?

- Identify & share successes widely.
- Replicate and scale solutions.
- Focus on incentives: economic & social
- Create new solutions.
- Team up with policy-savvy, science-respecting NGOS and businesses with complementary skills and goals

Agency. Urgency. Hope.

Photo: Enric Sala/Pristine Seas/National Geographic Society

Now is the time to replicate, accelerate, & escalate existing successes while driving innovative & transformative changes.

It is Possible to Use the Ocean Without Using it Up

Image: Bob Berwyn

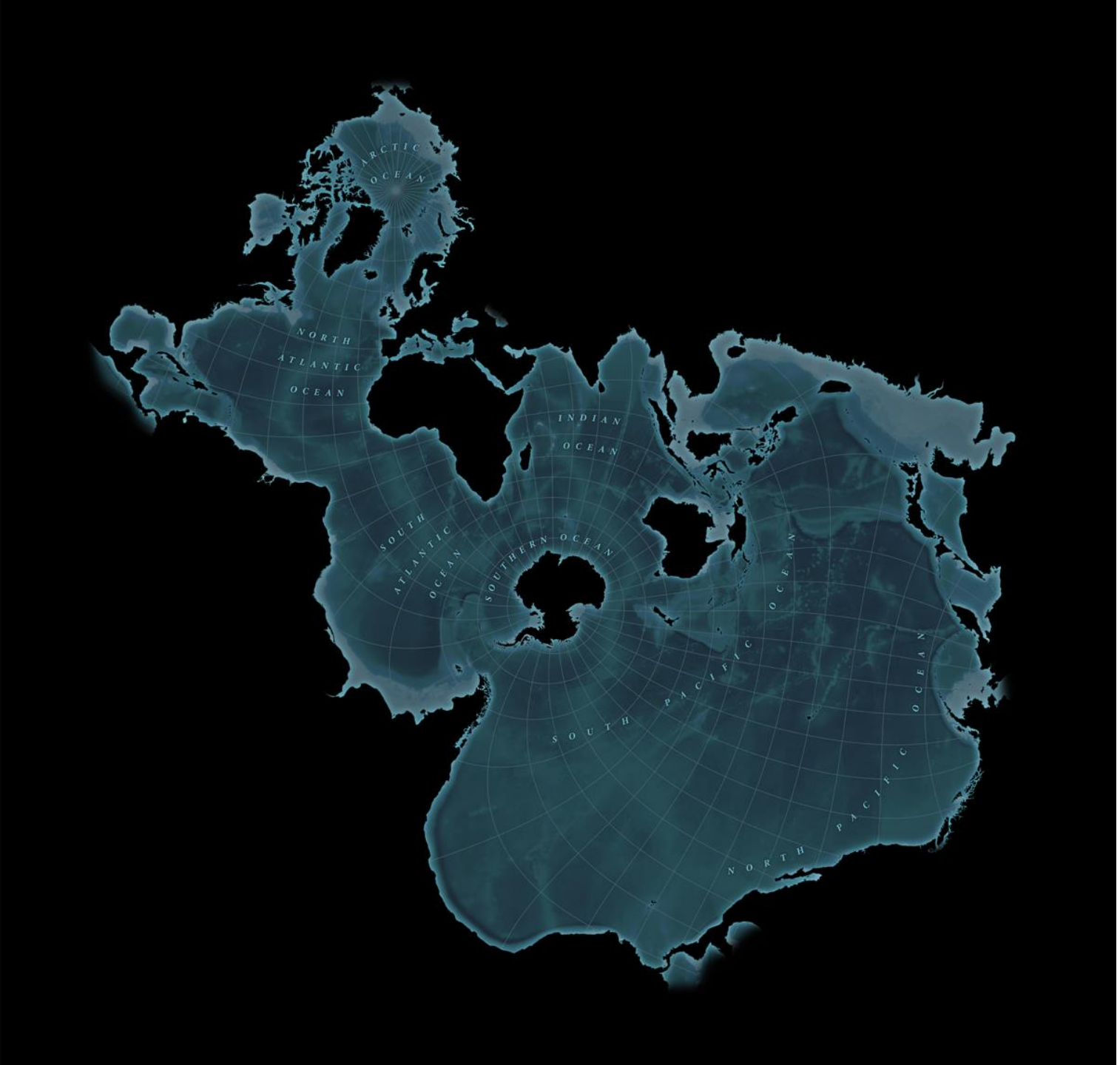
Maps and **Narratives** are Powerful Tools

- They help us ‘see’ our world & our place in it.
- They frame our thinking & guide our actions.
- They can constrain or inspire us.

These findings, actions, and results are leading to the emergence of a third narrative:

Away from

THE OCEAN IS TOO BIG TO FIX



…a new narrative where the ocean is at the center of our future


The ocean – the one ocean – sustains and feeds us.
It connects us. It is our past and our future.
It is time for a New Narrative for the Ocean
Image: Bob Berwyn

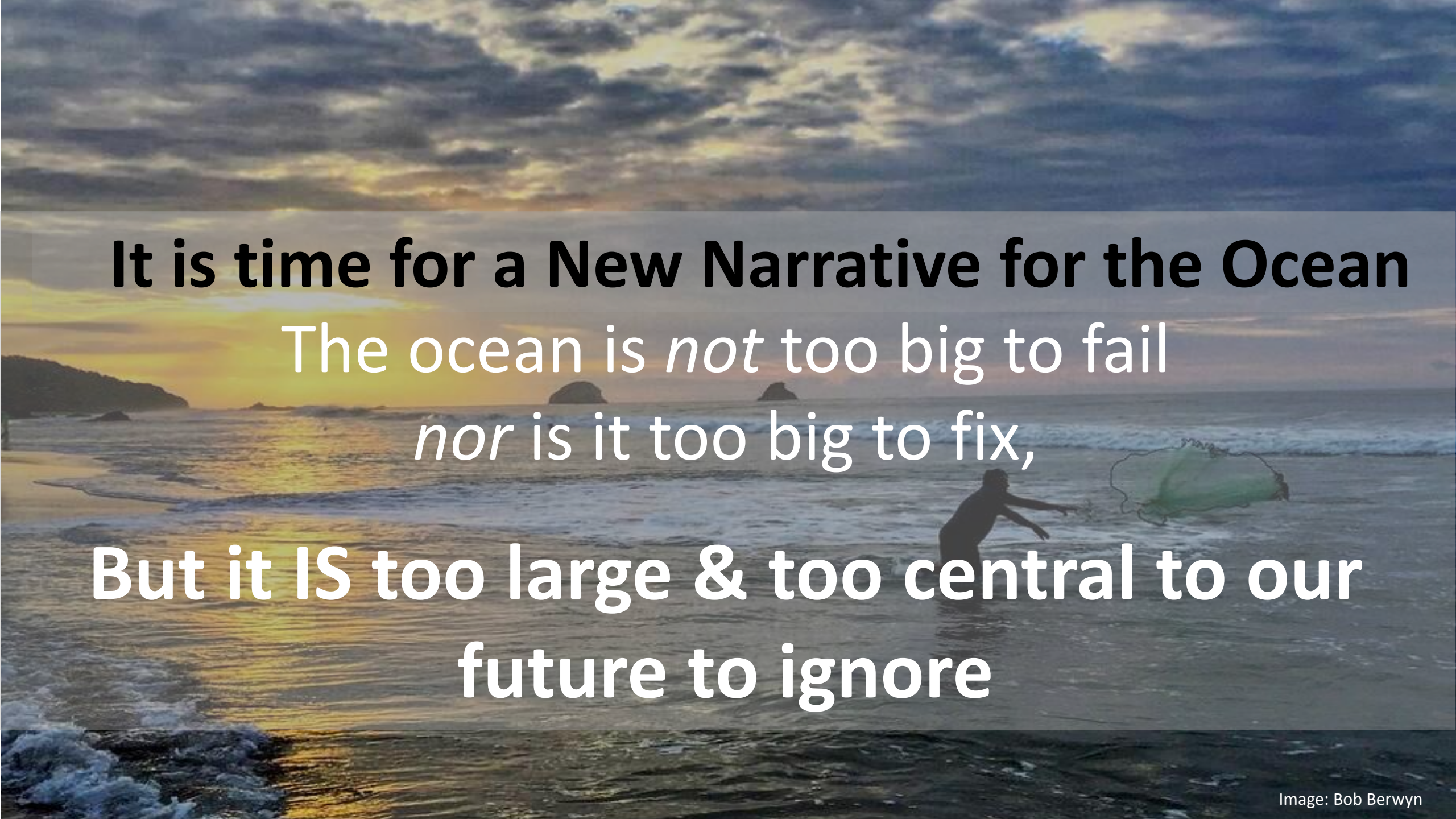


Image: Bob Berwyn