Oceano

Recursos Naturais: Água

UC Sustentabilidade

Ciências ULisboa

MARE

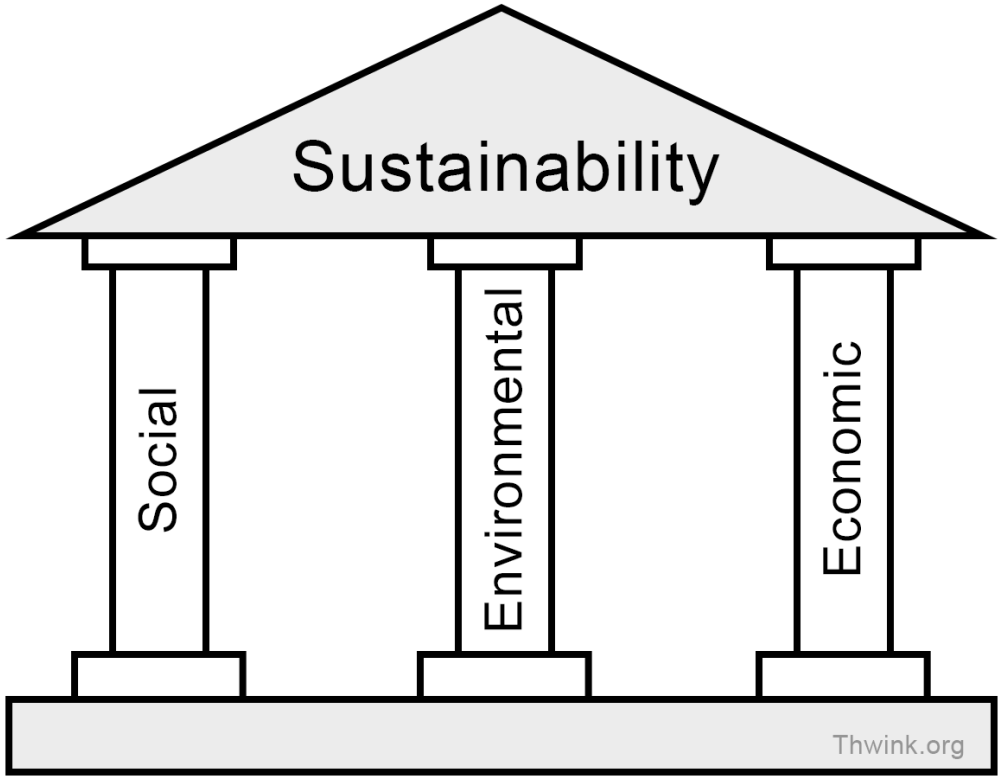
10 MARÇO 2023

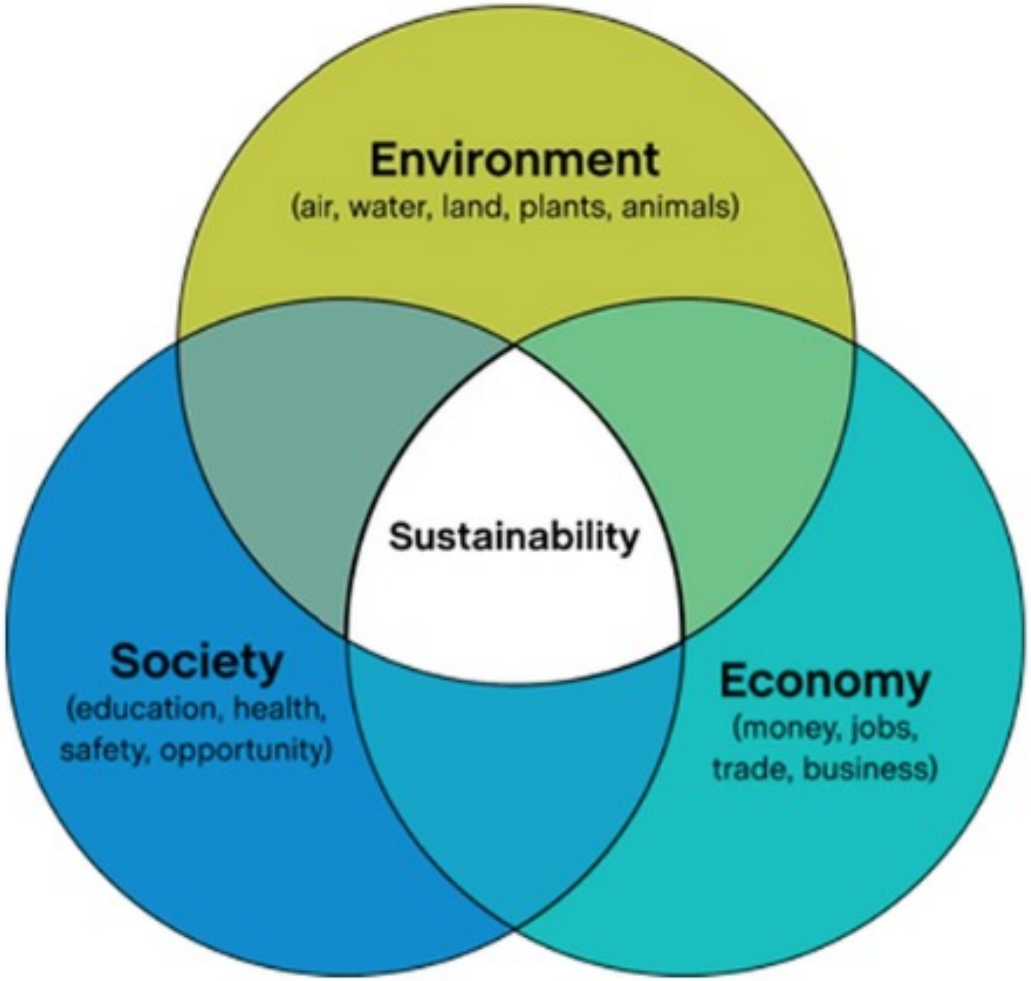
?

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Brundtland Report, 1987

environmentalillnessnetwork.tumblr.com





Dimensões da sustentabilidade

THE THREE SPHERES OF SUSTAINABILITY

Dimensões múltiplas

Ocean Sustainability

Década do Oceano lança nova Chamada para Década de Ações

© **Unsplash/Alec Douglas** | Viti Levu, em Fiji.

Nações Unidas

2021 2030 United Nations Decade of Ocean Science for Sustainable Development

A DÉCADA DOS OCEANOS

Década do Oceano lança nova Chamada para Década de Ações

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2021 2030 United Nations Decade of Ocean Science for Sustainable Development

A DÉCADA DOS OCEANOS

14 PROTEGER A VIDA MARINHA

OBJETIVOS DE DESENVOLVIMENTO SUSTENTÁVEL

Década do Oceano lança nova Chamada para Década de Ações

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14 PROTEGER A VIDA MARINHA

npj | ocean sustainability

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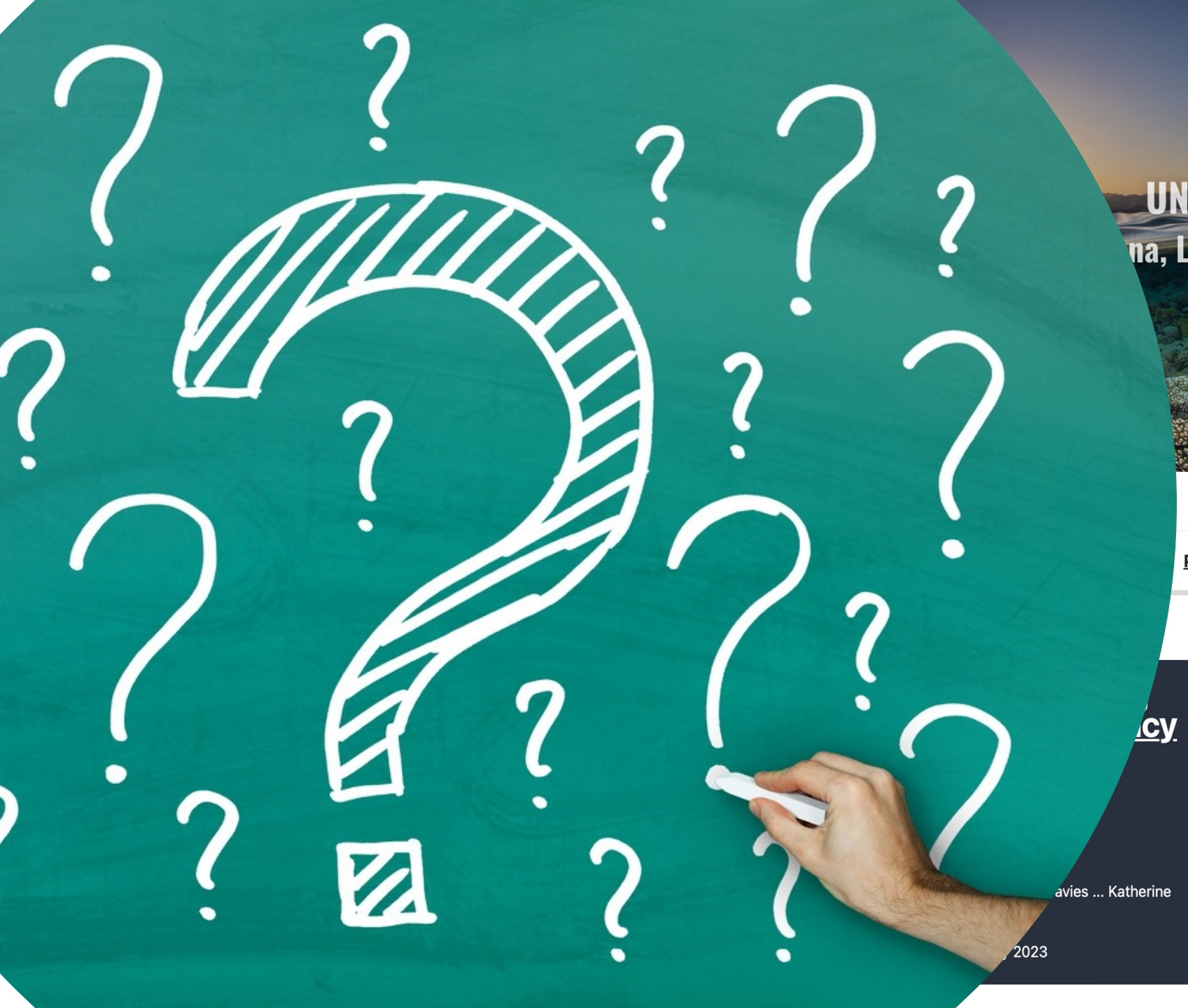
Deep seabed mining lacks social legitimacy

Aline Jaeckel, Harriet Harden-Davies ... Katherine Seto

Comment | 09 February 2023



Publish with us

nature

cy

avies ... Katherine

2023

71% For Scuba Divers

29% For Everyone Else

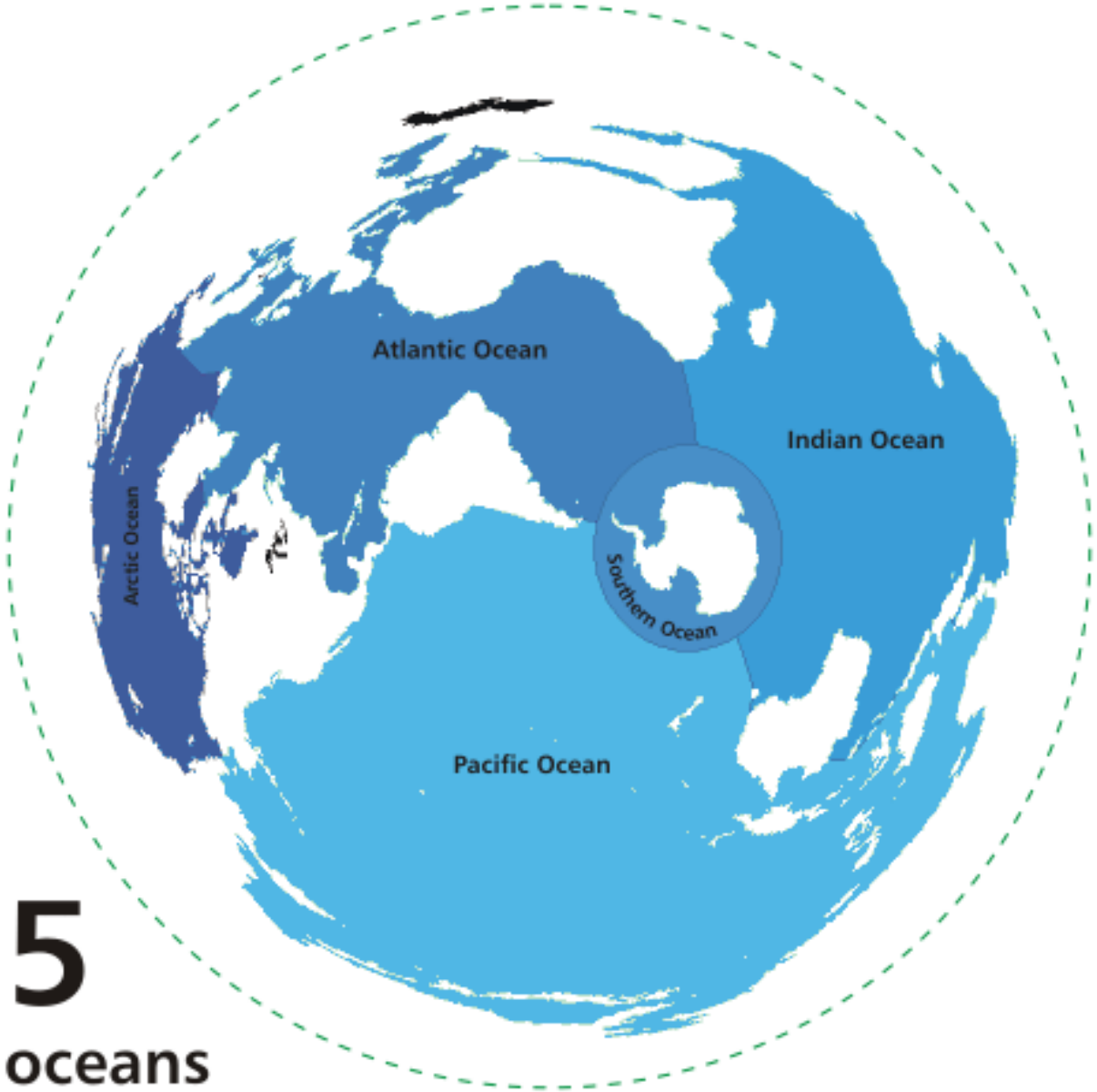
PADI

Planeta Oceano

Regulação do clima e atmosfera

maior ecossistema do mundo

1 milhão espécies


Atlantic Ocean
Indian Ocean
Arctic Ocean
Southern Ocean
Pacific Ocean

5
oceans

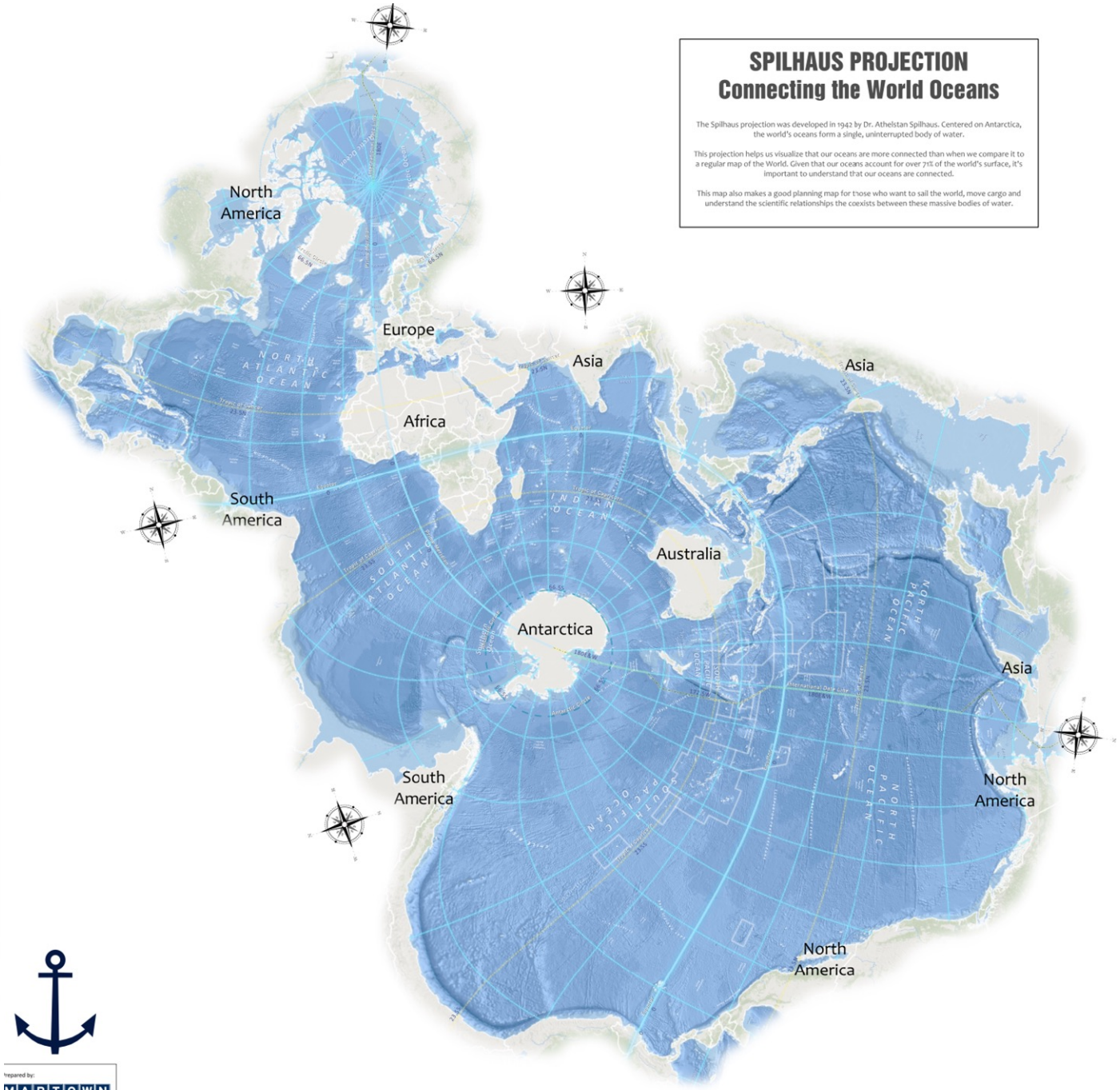
Ciências ULisboa

SPILHAUS PROJECTION
Connecting the World Oceans

The Spilhaus projection was developed in 1942 by Dr. Athelstan Spilhaus. Centered on Antarctica, the world's oceans form a single, uninterrupted body of water.

This projection helps us visualize that our oceans are more connected than when we compare it to a regular map of the World. Given that our oceans account for over 71% of the world's surface, it's important to understand that our oceans are connected.

This map also makes a good planning map for those who want to sail the world, move cargo and understand the scientific relationships the coexists between these massive bodies of water.

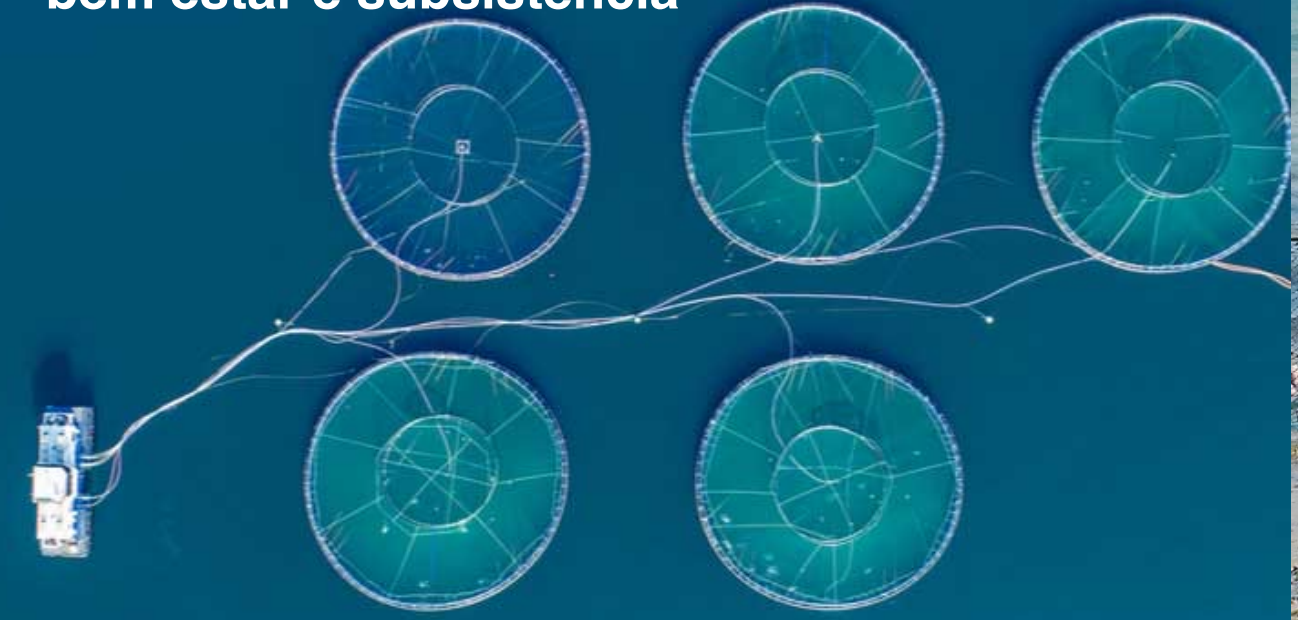


5
oceans

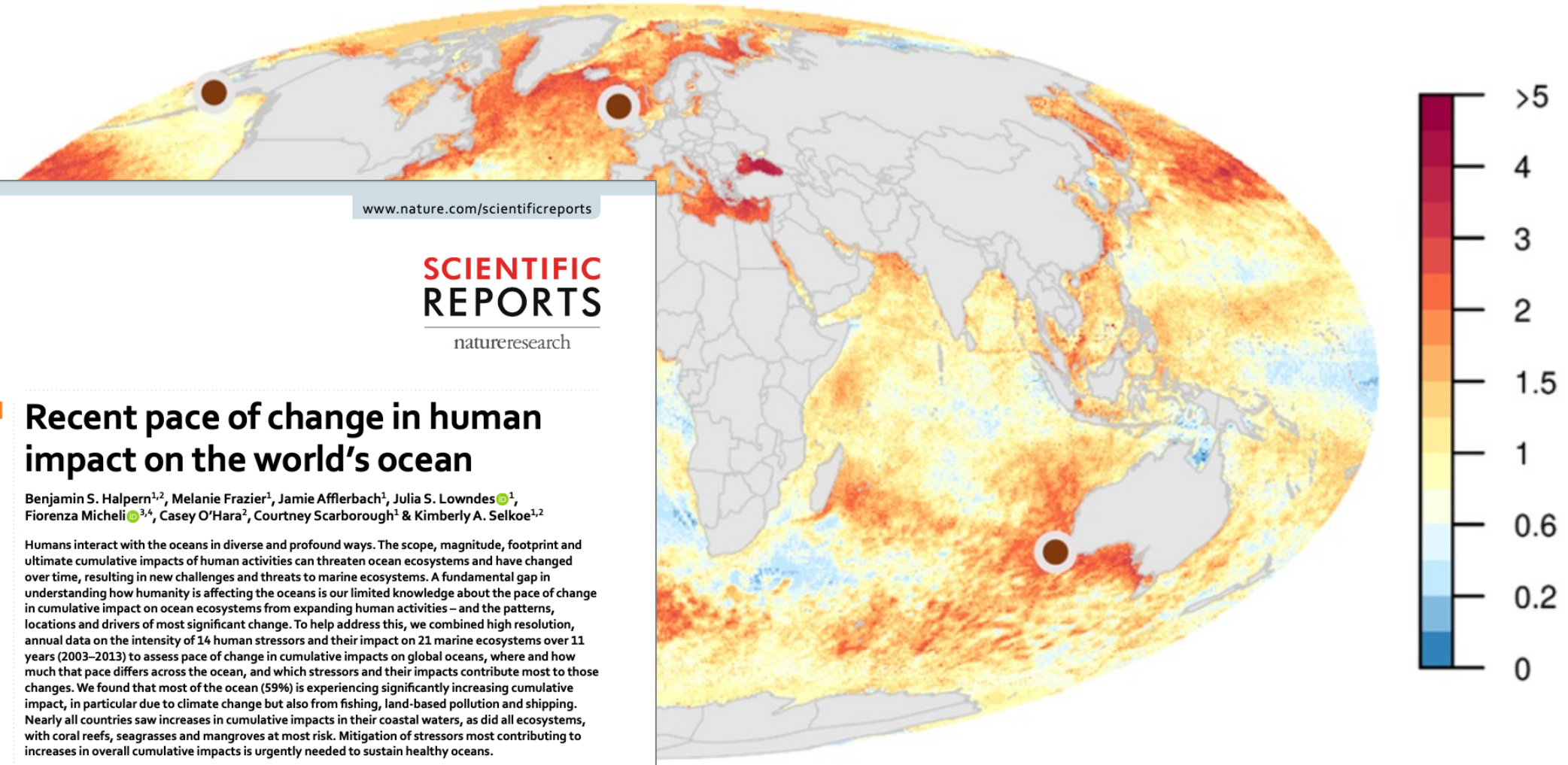
Prepared by:
MAPTOWN

3 mil milhões

pessoas dependem do oceano para bem estar e subsistência



Global cumulative human impact



www.nature.com/scientificreports

SCIENTIFIC REPORTS
nature research

OPEN

Recent pace of change in human impact on the world's ocean

Benjamin S. Halpern[1,2], Melanie Frazier[1], Jamie Afflerbach[1], Julia S. Lowndes[1], Fiorenza Micheli[3,4], Casey O'Hara[2], Courtney Scarborough[1] & Kimberly A. Selkoe[1,2]

Received: 18 February 2019
Accepted: 11 July 2019
Published online: 12 August 2019

Humans interact with the oceans in diverse and profound ways. The scope, magnitude, footprint and ultimate cumulative impacts of human activities can threaten ocean ecosystems and have changed over time, resulting in new challenges and threats to marine ecosystems. A fundamental gap in understanding how humanity is affecting the oceans is our limited knowledge about the pace of change in cumulative impact on ocean ecosystems from expanding human activities – and the patterns, locations and drivers of most significant change. To help address this, we combined high resolution, annual data on the intensity of 14 human stressors and their impact on 21 marine ecosystems over 11 years (2003–2013) to assess pace of change in cumulative impacts on global oceans, where and how much that pace differs across the ocean, and which stressors and their impacts contribute most to those changes. We found that most of the ocean (59%) is experiencing significantly increasing cumulative impact, in particular due to climate change but also from fishing, land-based pollution and shipping. Nearly all countries saw increases in cumulative impacts in their coastal waters, as did all ecosystems, with coral reefs, seagrasses and mangroves at most risk. Mitigation of stressors most contributing to increases in overall cumulative impacts is urgently needed to sustain healthy oceans.

Impacts of human activities on the ocean have been shown to be substantial, ubiquitous[1] and changing[2]. The resulting cumulative impact of these activities often leads to ecosystem degradation or even collapse[3–7], and studies of individual marine ecosystems (e.g., coral reefs, kelp forests, seagrasses) have shown declines in condition globally due to increasing anthropogenic stressors[8–13]. Ongoing and emerging policy around managing for cumulative impacts to the oceans creates a pressing need to understand how, and how fast, cumulative impacts are changing. Expansion of existing uses of the ocean and emerging new ones – including offshore energy, ocean farming, and ocean mining – requires an understanding of what else is impacting those locations, how those new uses will add to existing impacts, and critically whether the cumulative impact of these ocean uses is changing,


poluição

PLASTIC DOES NOT GO AWAY

BOOMERANG ALLIANCE

THIS YEAR OVER

9 MILLION TONNES

OF PLASTIC[1]

WILL ENTER THE WORLD'S OCEANS

9 MILLION TONNES

x2

18 MILLION TONNES

BY 2026 ??

THE RATE WE ARE POLLUTING THE OUR OCEAN DOUBLES EVERY 11 YEARS[2]

AUSTRALIANS CONSUME

2.93 MILLION TONNES

of plastic each year of which

<9% is recycled

"Plastic is so permanent and so indestructible that when you've tossed it, in the ocean or even into a dustbin... it does not go away"

Sir David Attenborough

192 BILLION PIECES OF PLASTIC

in Australia's marine environment[2] including (every year):

180 MILLION PLASTIC BAGS

420 MILLION PLASTIC BOTTLES

200 MILLION OTHER PIECES OF PLASTIC PACKAGING

TRILLIONS OF MICROPLASTIC BEADS & FIBRES

PLASTIC DOESN'T DECOMPOSE

IT JUST GETS SMALLER

Over time a single plastic bottle can break up into over **10,000 PIECES**

52% of all **SEA TURTLES**[4]

96% OF ALL BIODIVERSITY

90% of all **SEA BIRDS**[7]

WE MUST ACT NOW

4

THE FIRST 4 STEPS WILL ELIMINATE OVER

70%

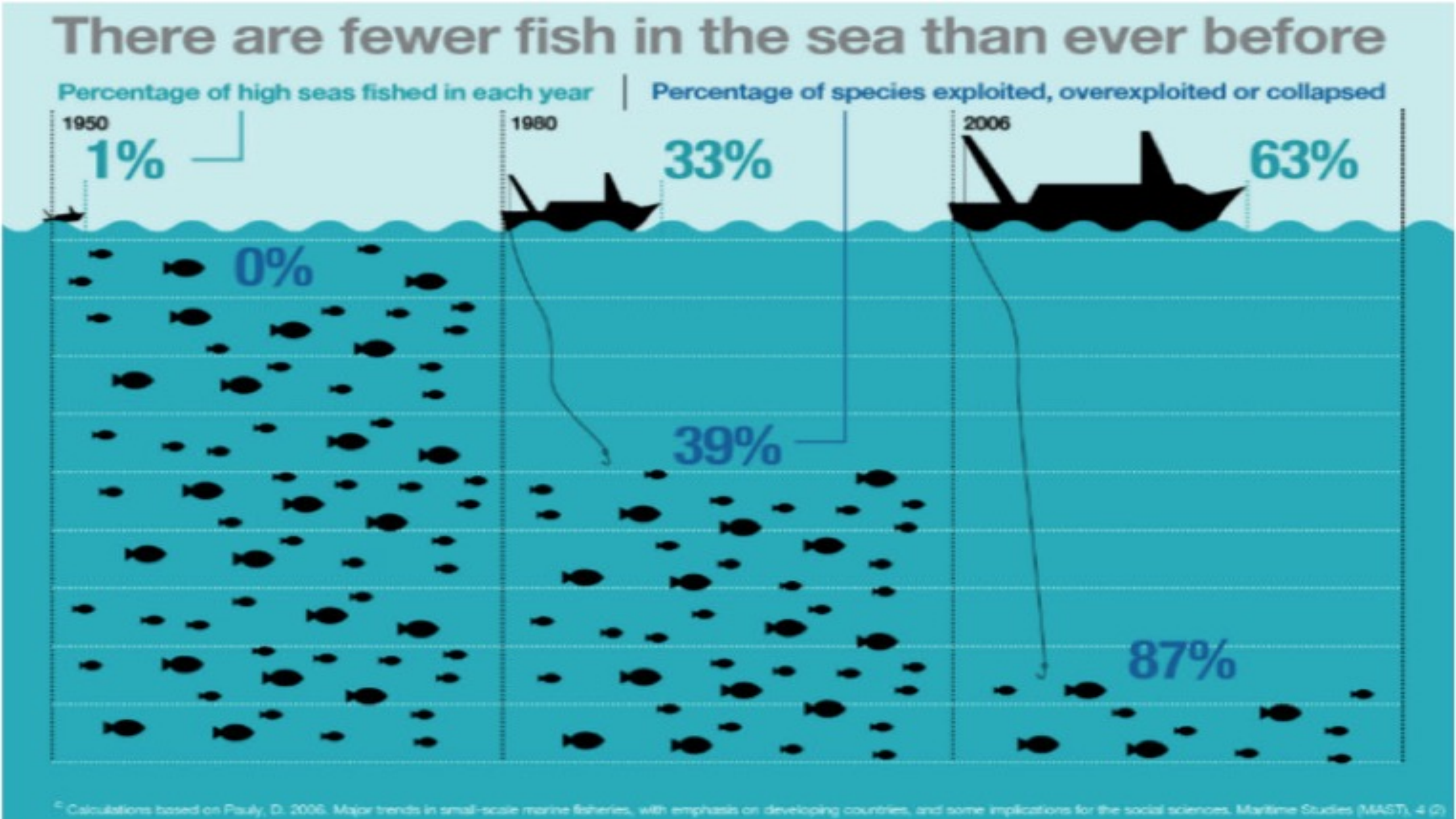
of marine plastic pollution **BEFORE** it enters our oceans:

1. Introduce a container deposit system to eliminate beverage rubbish
2. Ban all single-use plastic bags
3. Remove microbeads from personal care & laundry products
4. Ensure plastic producers & recyclers capture microplastics on their premises

INFORMATION SOURCES


sobrepesca

There are fewer fish in the sea than ever before



[c] Calculations based on Pauly, D. 2006. Major trends in small-scale marine fisheries, with emphasis on developing countries, and some implications for the social sciences. Maritime Studies (MAST). 4 (2)


perda de habitat

perda de habitat

Alterações climáticas

#TimeForAction

Ciências ULisboa

30th Anniversary ipcc
INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE
1988 – 2018
WMO UNEP

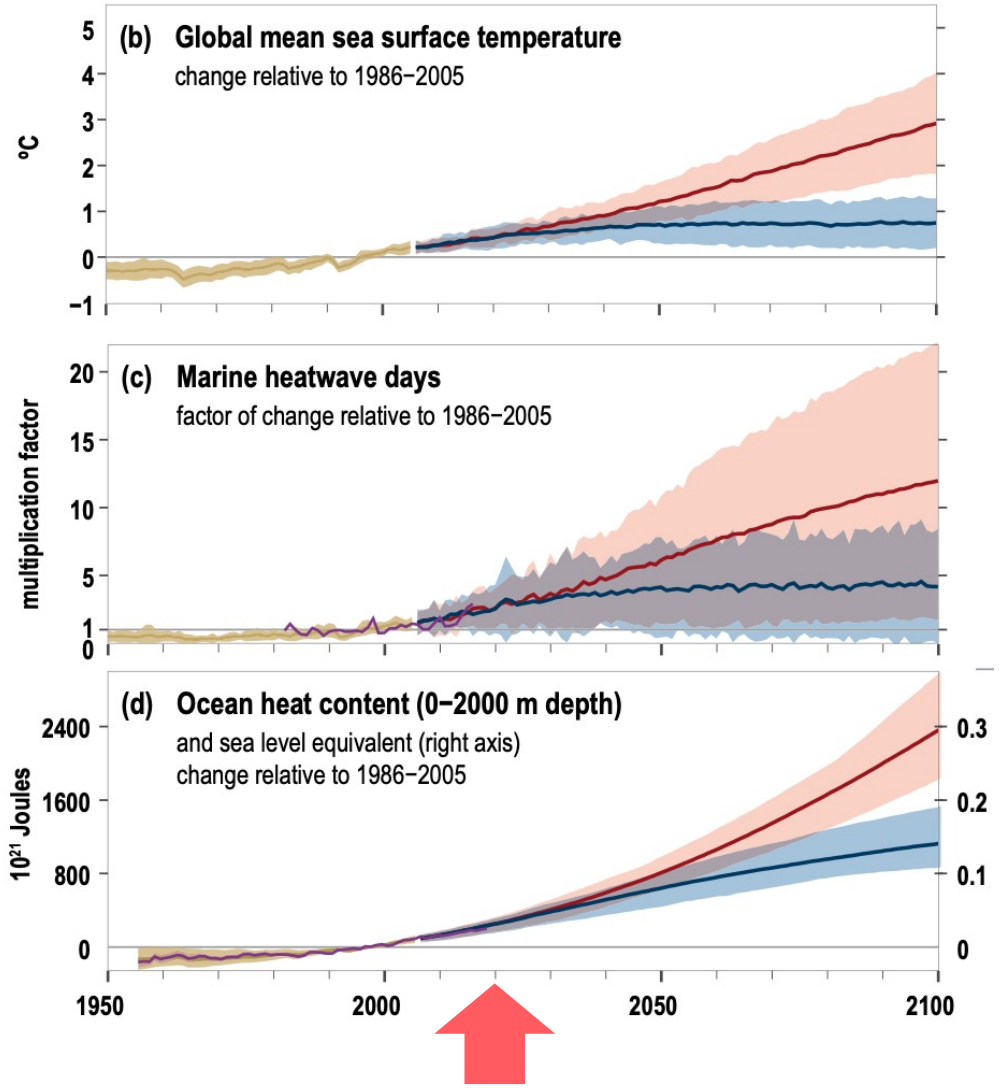
UNITED NATIONS PARIS CLIMATE AGREEMENT

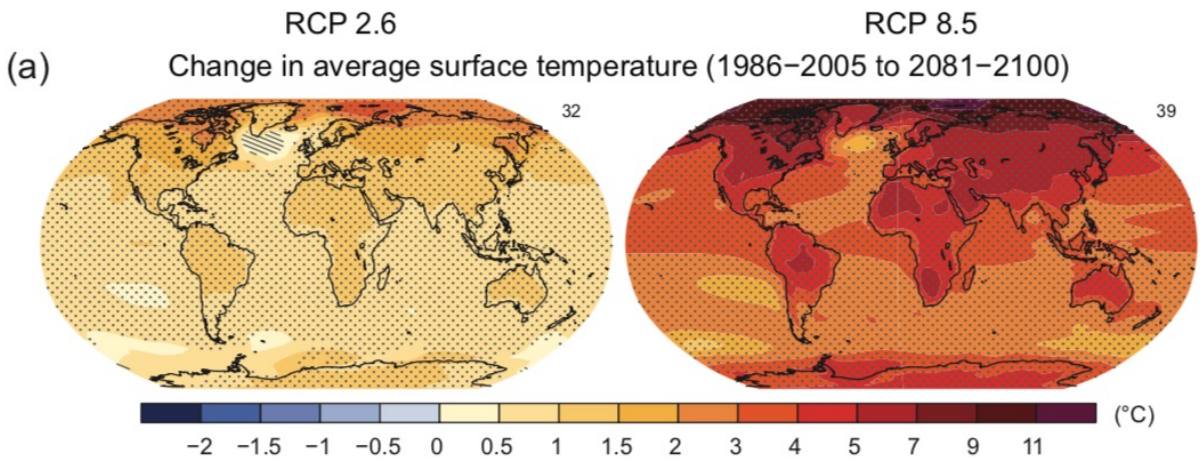
SS4C School Strike 4 Climate

TIME FOR ACTION
COP25
CHILE
MADRID 2019
UN CLIMATE CHANGE CONFERENCE

#

Transformative adaptation and mitigation

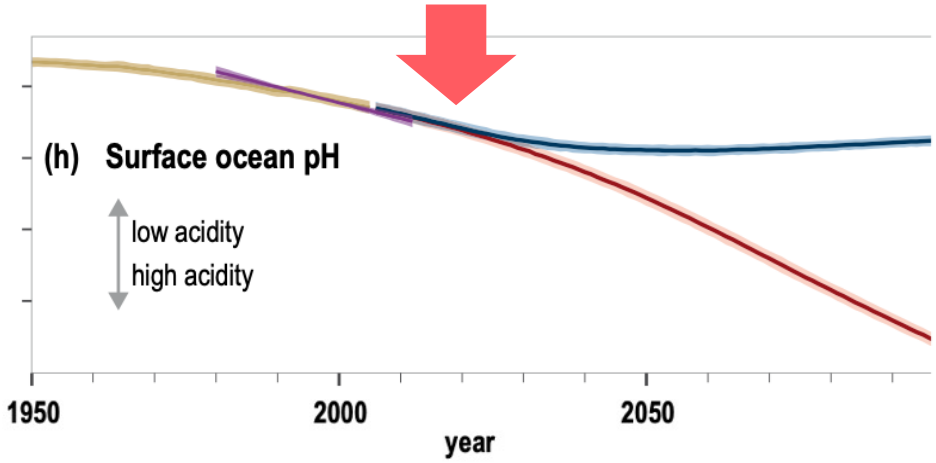


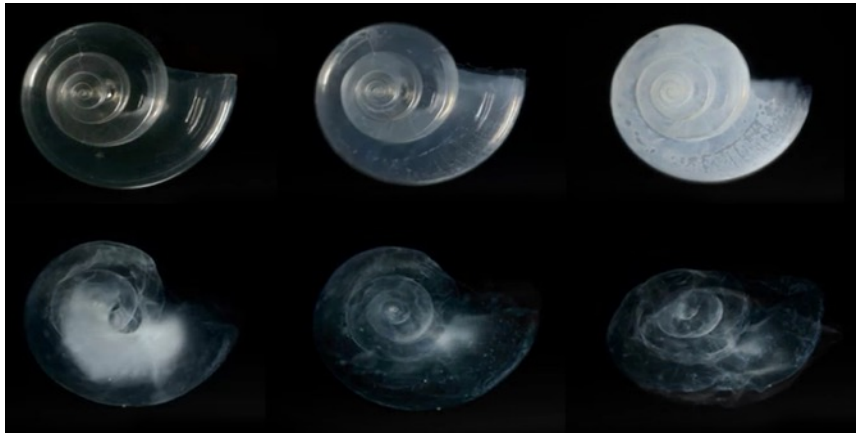


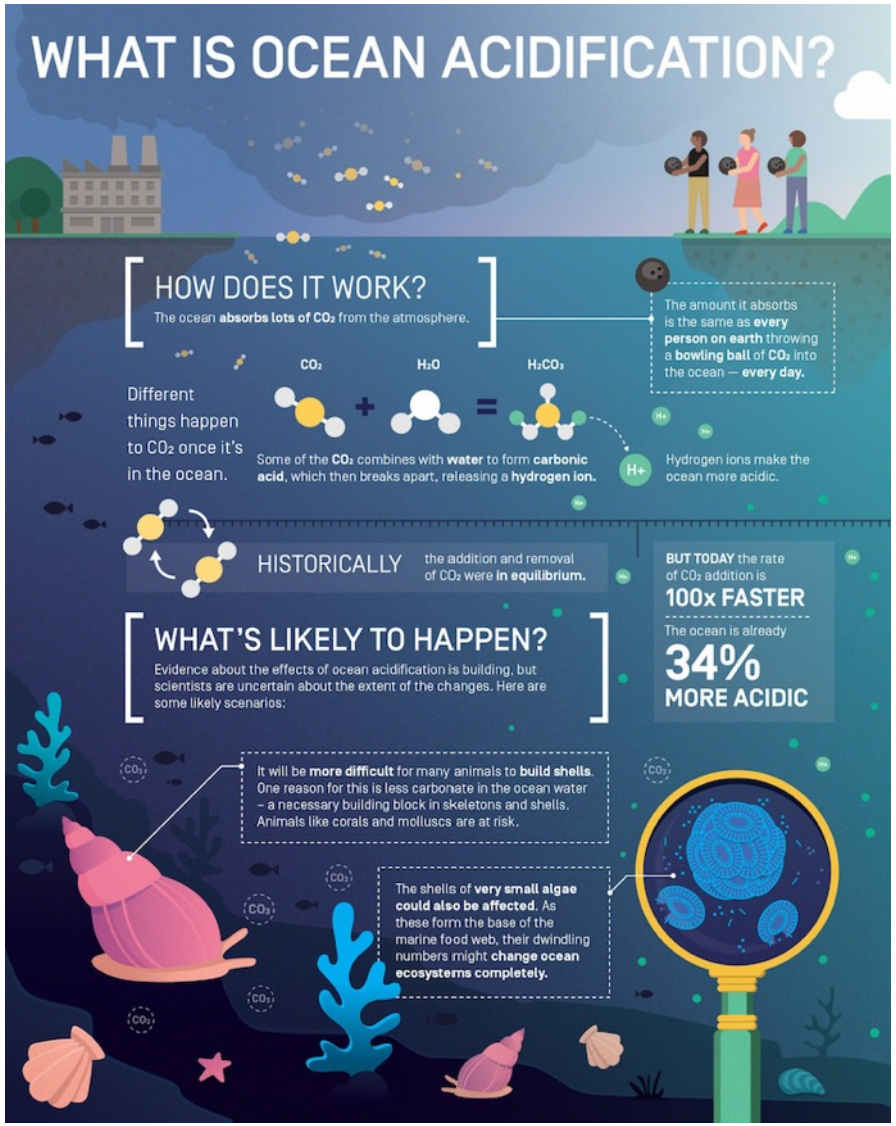
Aquecimento do Oceano

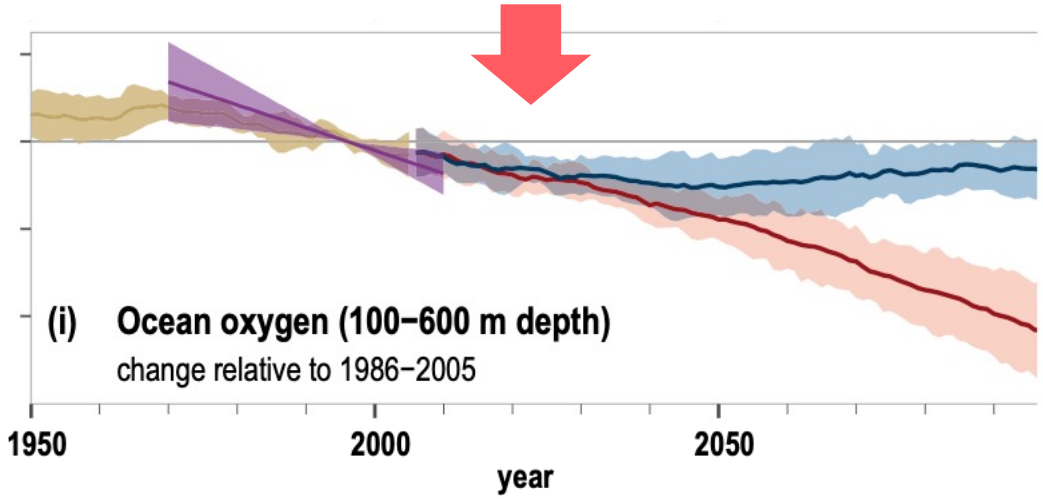
IPCC (2019)

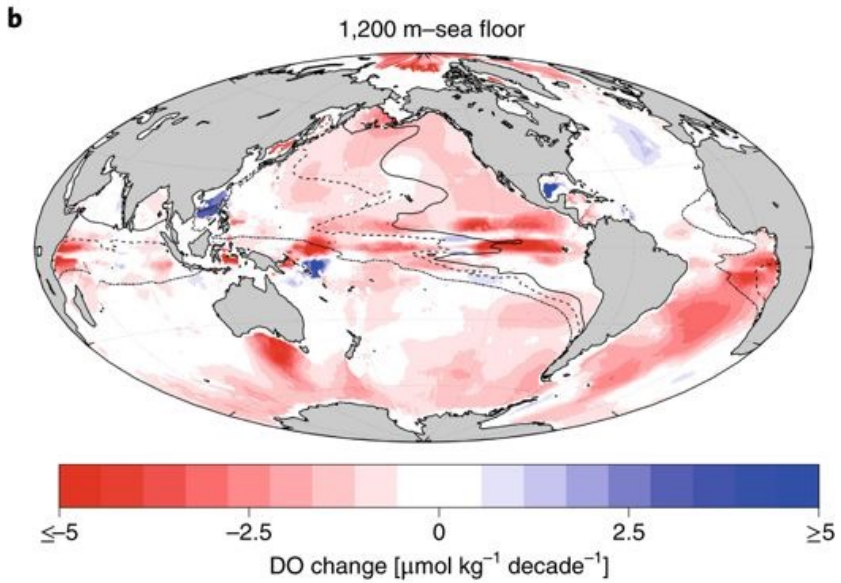
Acidificação

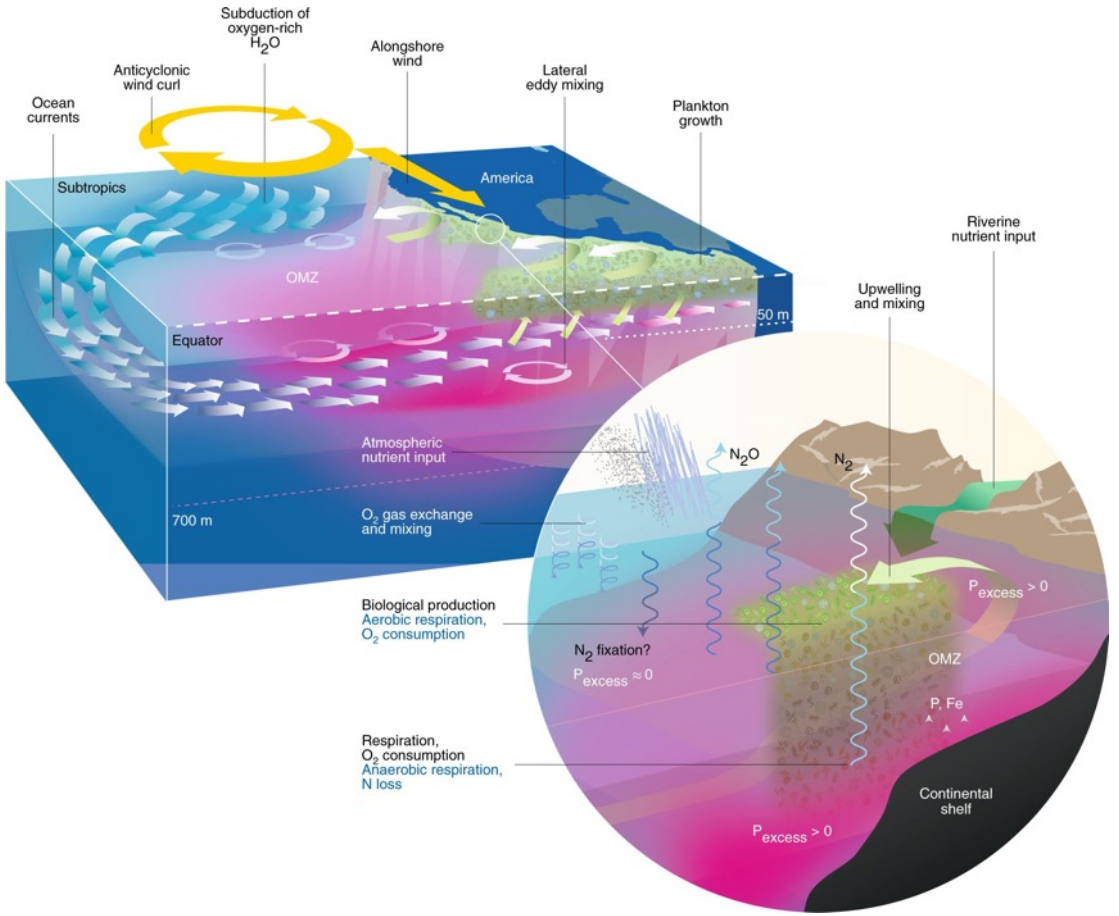










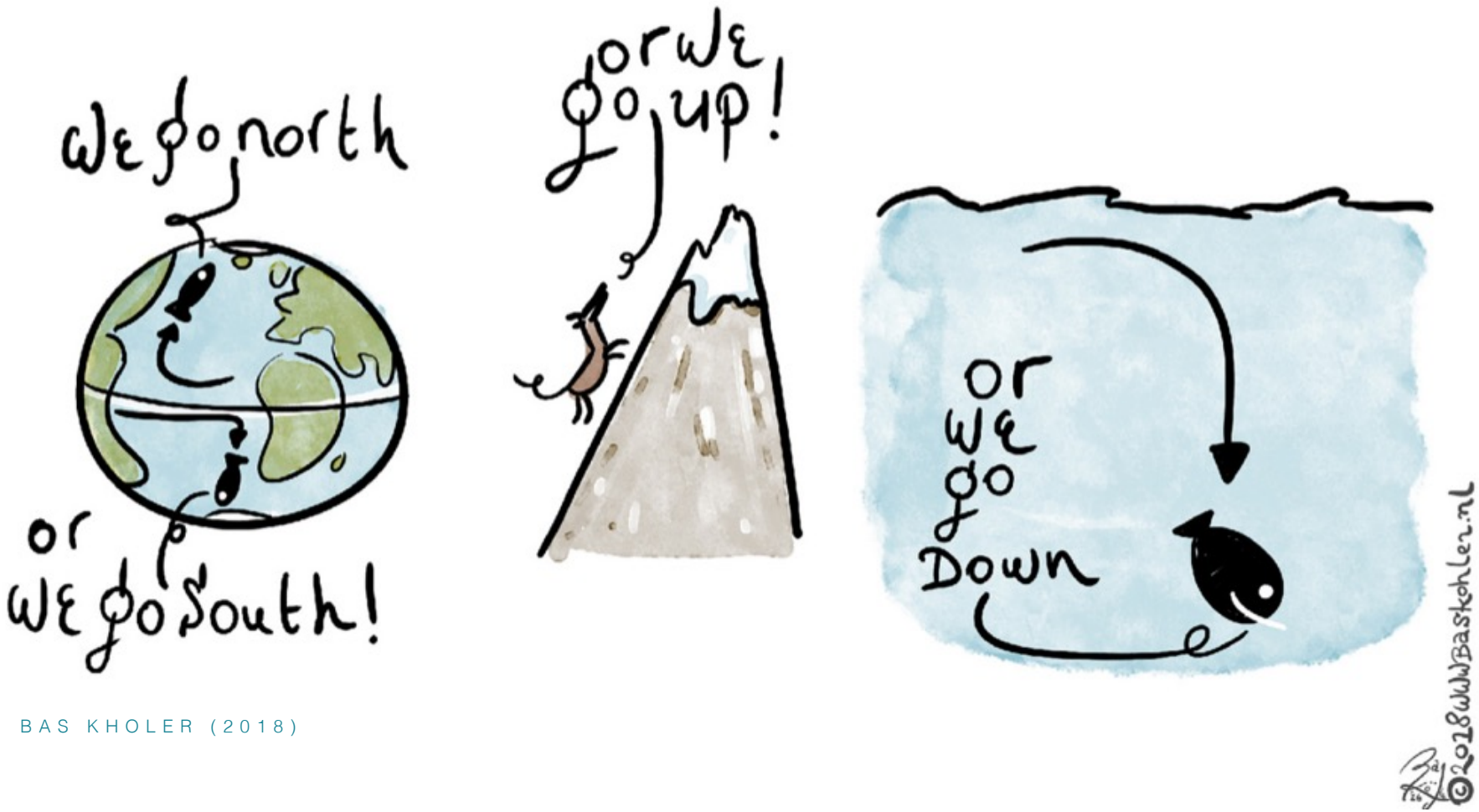


Deoxigenação

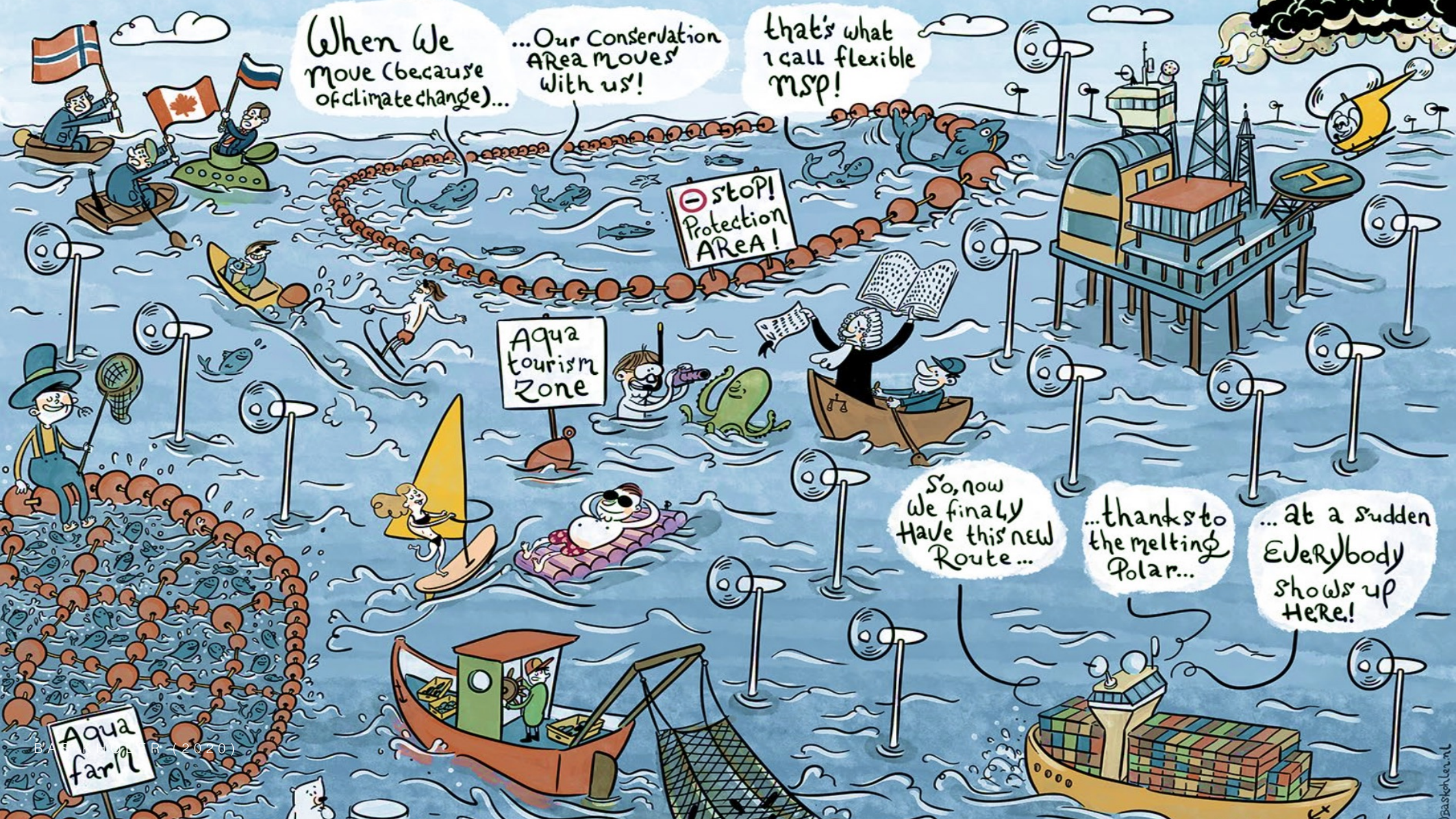
OSCHLIES ET AL. (2018)
NATURE GEOSCIENCE

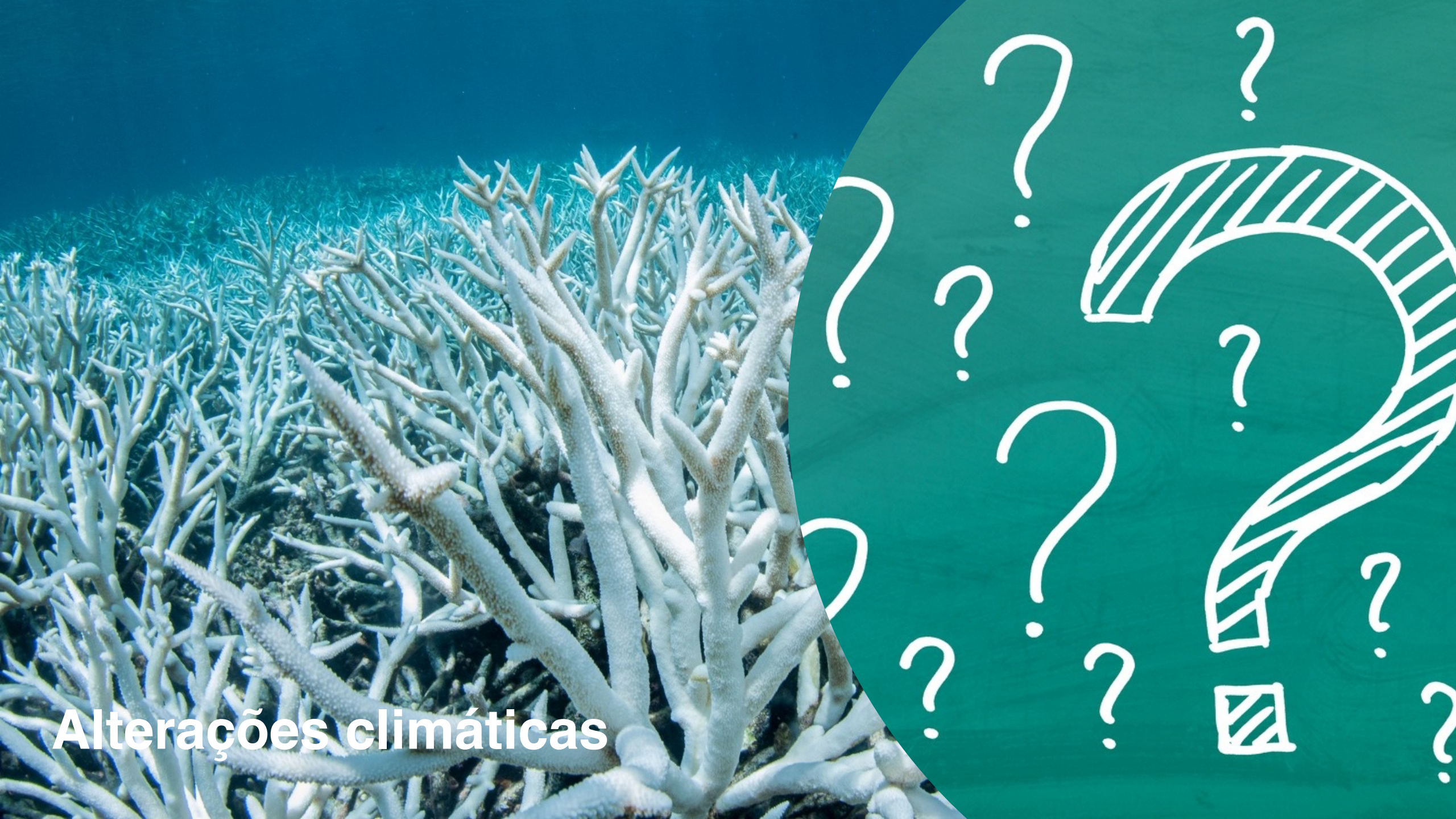
MARINE ECOSYSTEMS
STRUCTURE AND FUNCTIONING

Climate driven species redistribution



BAS KHOLER (2018)


When We move (because of climate change)...
...Our Conservation AREa moves with us!
that's what I call flexible MSP!
STOP! Protection AREA!
Aqua tourism Zone
Aqua farm
So, now We finaly Have this new Route...
...thanks to the melting Polar...
... at a sudden EVERYbody shows up HERE!



Alterações climáticas

14 LIFE BELOW WATER

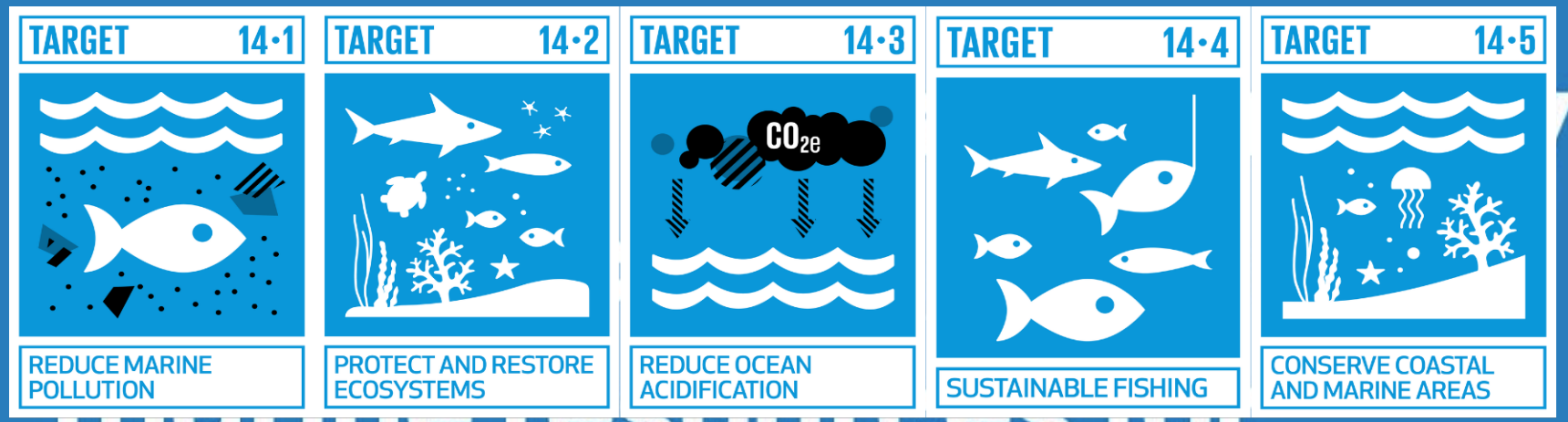
Conserve and sustainably use the oceans, seas and marine resources for sustainable development

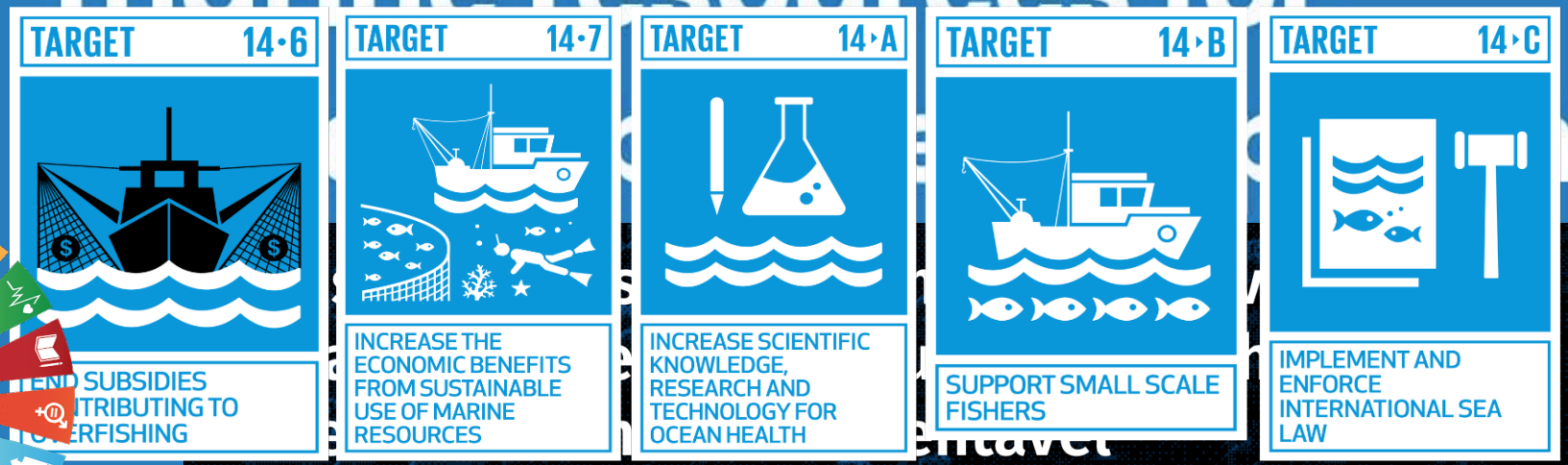
OBJETIVOS DE DESENVOLVIMENTO SUSTENTÁVEL

Conservar e usar de forma sustentável os oceanos, mares e os recursos marinhos para o desenvolvimento sustentável

Metas


14
LIFE
BELOW WATER


TARGET 14·1
REDUCE MARINE POLLUTION
TARGET 14·2
PROTECT AND RESTORE ECOSYSTEMS
TARGET 14·3
CO_{2e}
REDUCE OCEAN ACIDIFICATION
TARGET 14·4
SUSTAINABLE FISHING
TARGET 14·5
CONSERVE COASTAL AND MARINE AREAS


TARGET 14·6
$
$
TARGET 14·7
INCREASE THE ECONOMIC BENEFITS FROM SUSTAINABLE USE OF MARINE RESOURCES
TARGET 14·A
INCREASE SCIENTIFIC KNOWLEDGE, RESEARCH AND TECHNOLOGY FOR OCEAN HEALTH
TARGET 14·B
SUPPORT SMALL SCALE FISHERS
TARGET 14·C
IMPLEMENT AND ENFORCE INTERNATIONAL SEA LAW

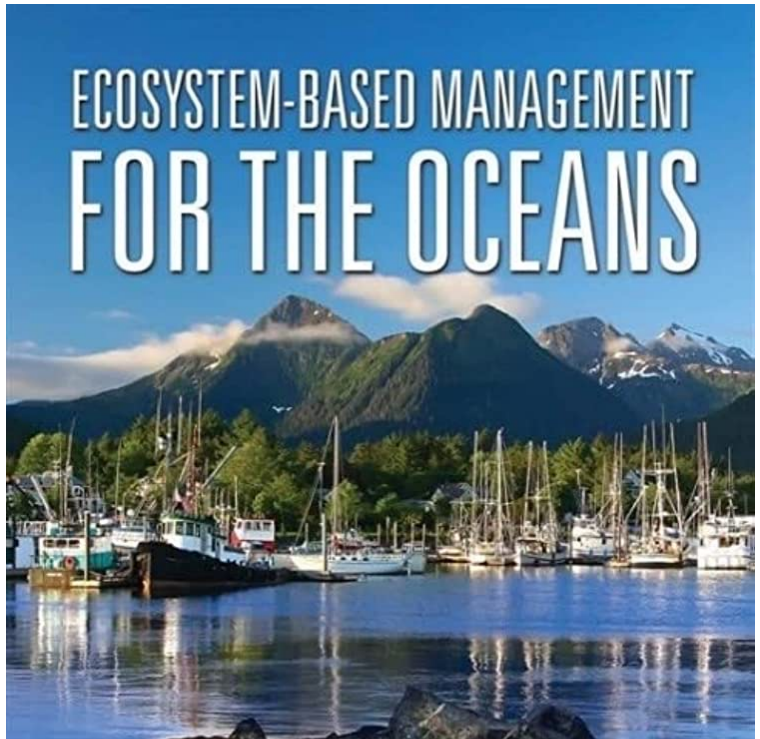

OBJETIVOS
DE DESENVOLVIMENTO
SUSTENTÁVEL

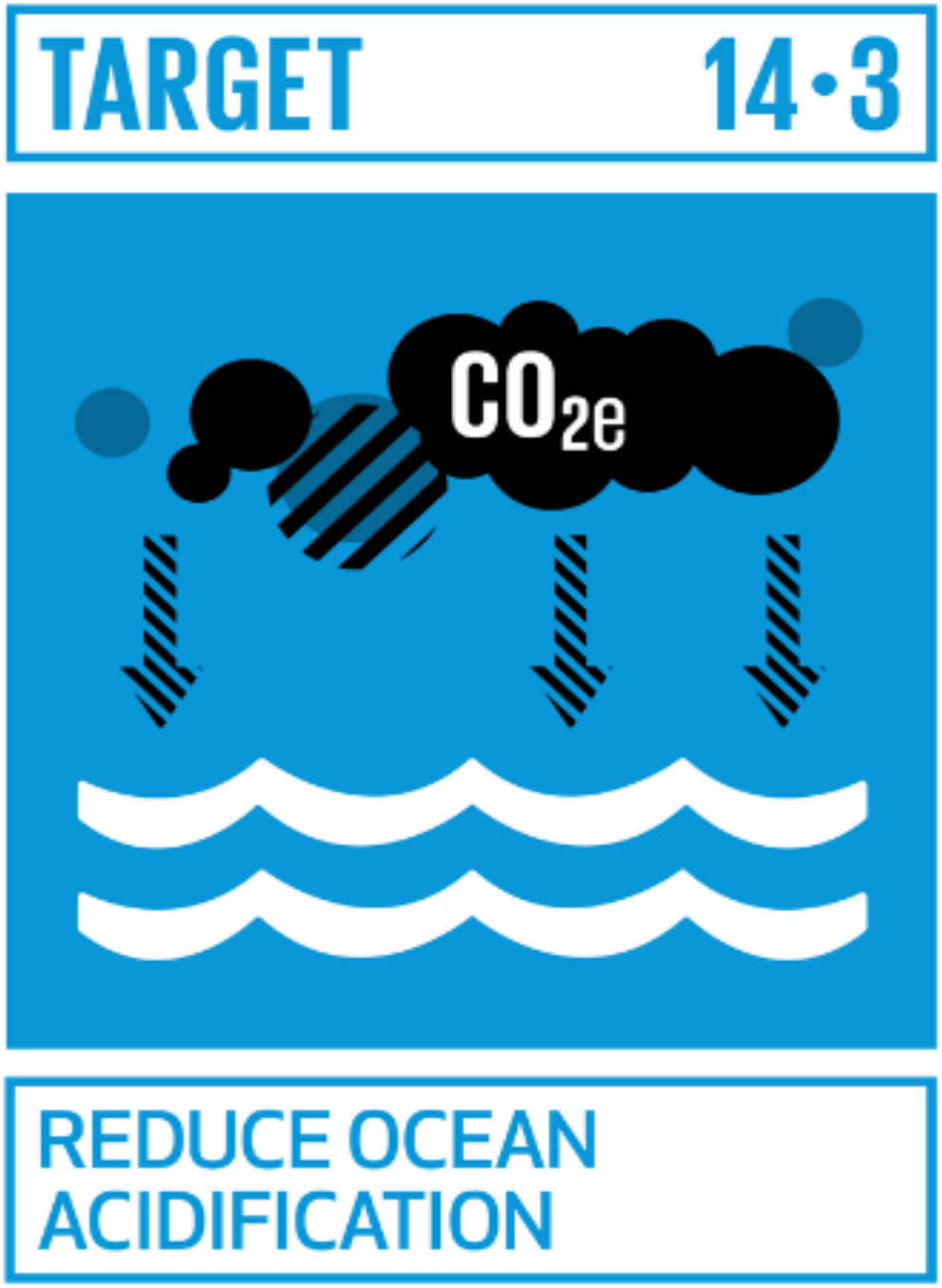
Até 2025

prevenir e reduzir significativamente a poluição marítima de todos os tipos, especialmente a que advém de atividades terrestres, incluindo detritos marinhos e a poluição por nutrientes

Até 2020

gerir de forma sustentável e proteger
os ecossistemas marinhos e costeiros
para evitar impactos adversos
significativos



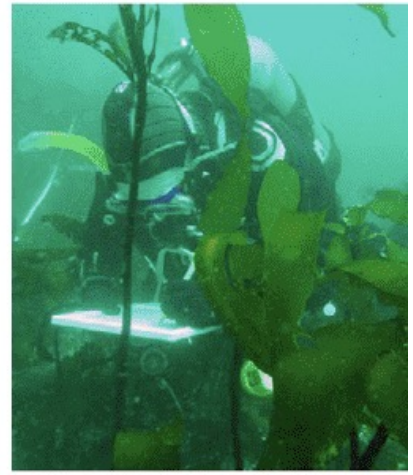


Minimizar e enfrentar os impactos da acidificação dos oceanos, inclusive através do reforço da cooperação científica em todos os níveis



OCEAN OF SOLUTIONS

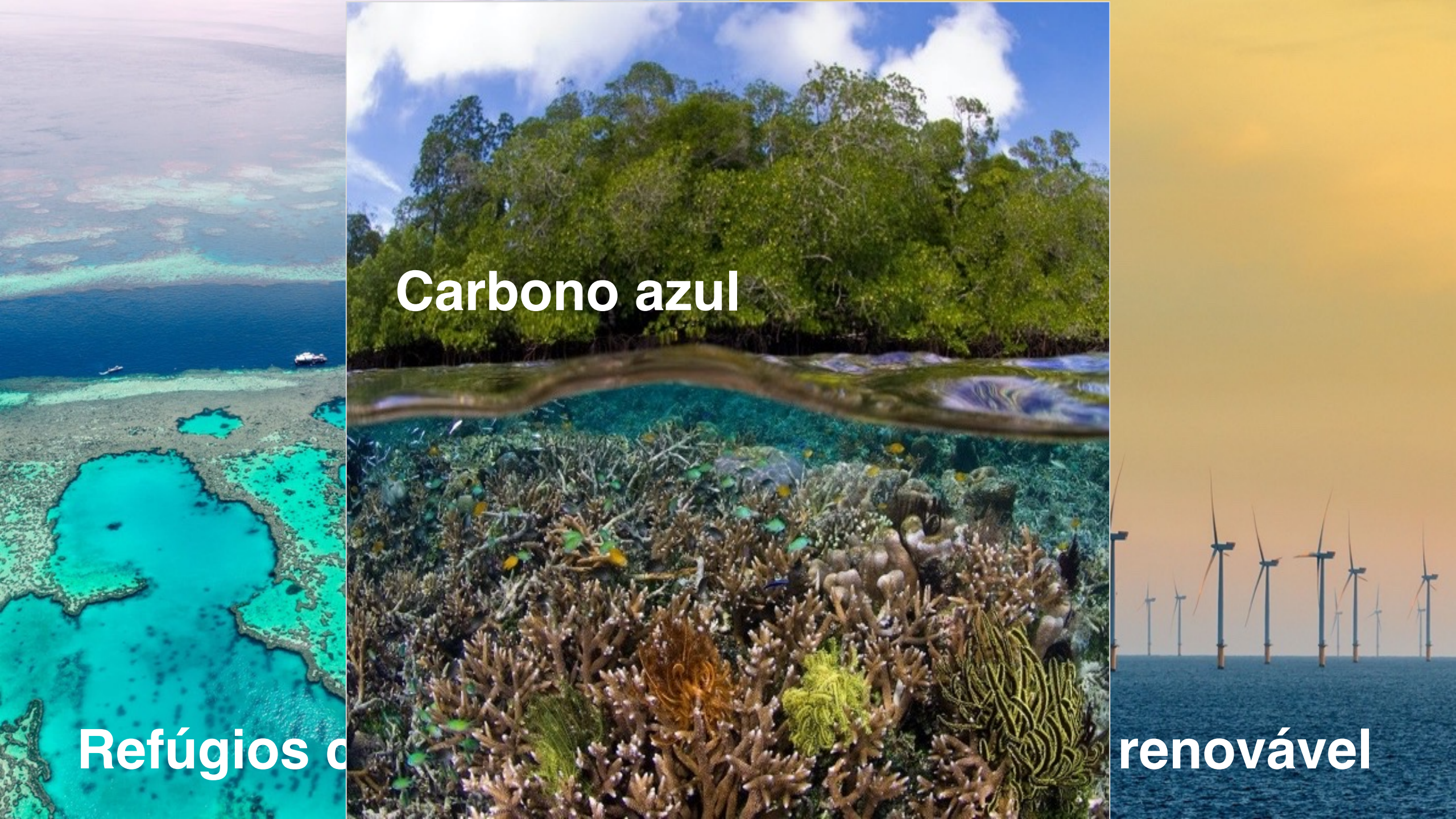
to tackle climate change and biodiversity loss

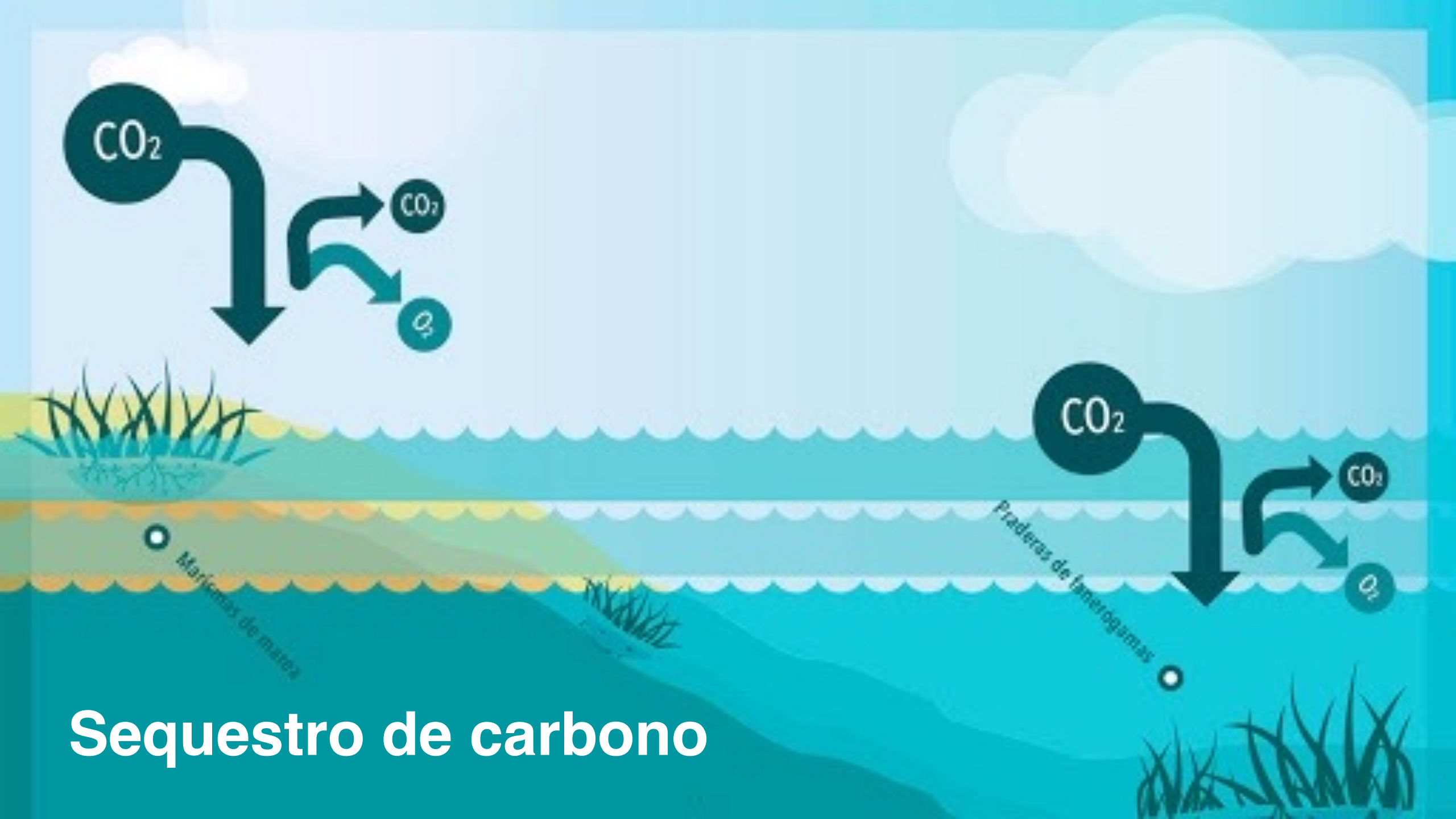





Refúgios climáticos


Energia renovável


Carbono azul
Refúgios d
renovável



Sequestro de carbono

Quem sequestra mais CO_2

Pradaria de ervas marinhas

?

Floresta tropical


35 x superior
cobrem apenas 0.2% do espaço marinho mas absorvem 10% do carbono do oceano por ano

Até 2020

Regular, efetivamente, a extração de recursos, **acabar com a sobrepesca e a pesca ilegal**, não reportada e não regulamentada e as práticas de pesca destrutivas

Até 2020

conservar pelo menos 10% das zonas costeiras e marinhas, de acordo com a legislação nacional e internacional, e com base na melhor informação científica disponível

Features of Marine Protected Areas Worldwide

No-Use Zone

No activities permitted.

No-Take Zone

Measures are taken to protect species whose populations may be affected in other zones/areas. Examples include spawning and nursery grounds.

Non-extractive activities are permitted, such as diving and mooring.

Buffer Zone

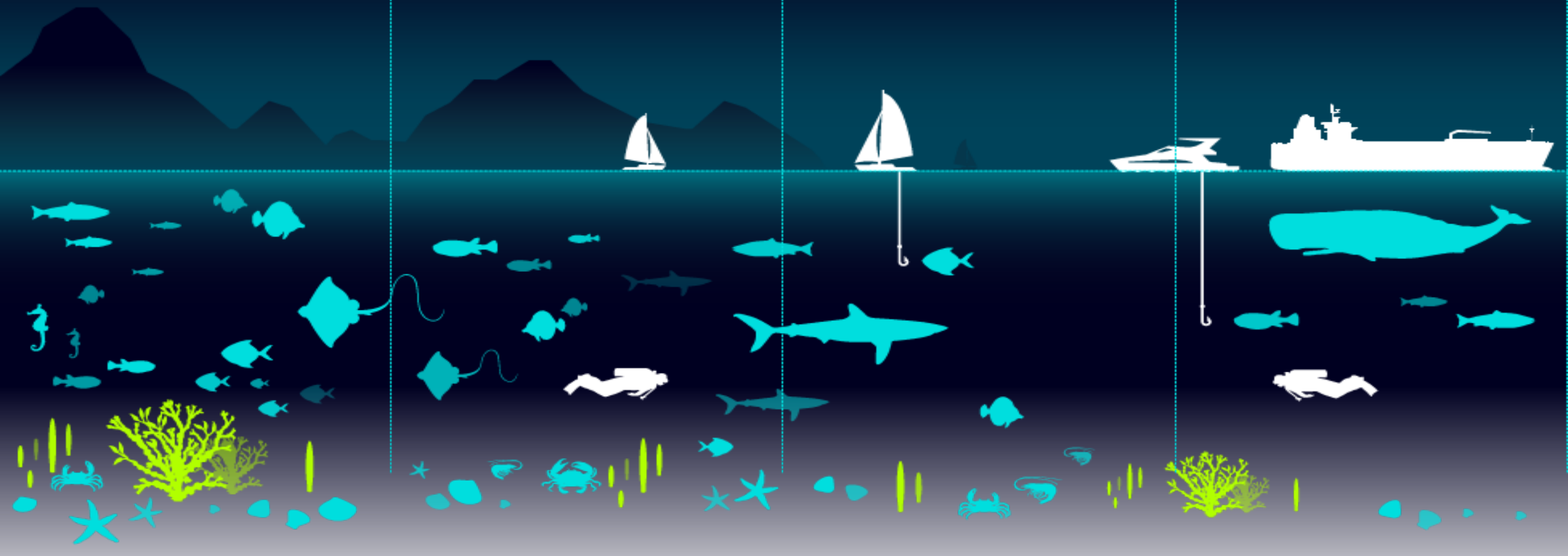
Transitional zones from no-take zones to multiple-use zones.

Moderate activities, such as hook-and-line fishing, limited aquaculture, and limited tourism are permitted.

Multi-Use Zone

All tourism, fishing and aquaculture activities permitted.

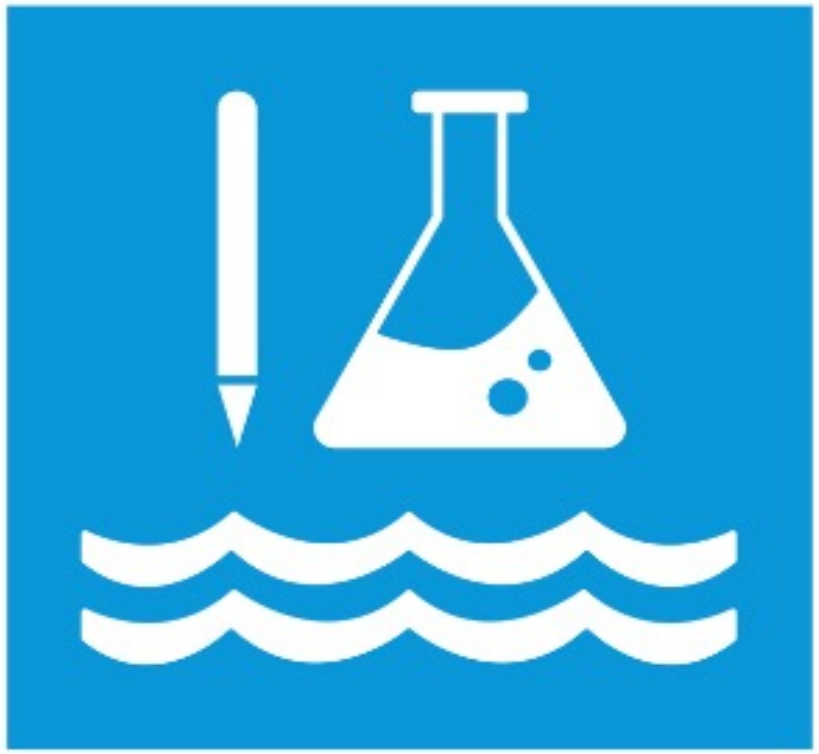
Permitted activities include diving and snorkeling, artisanal fishing, large-scale commercial fishing, and aquaculture.



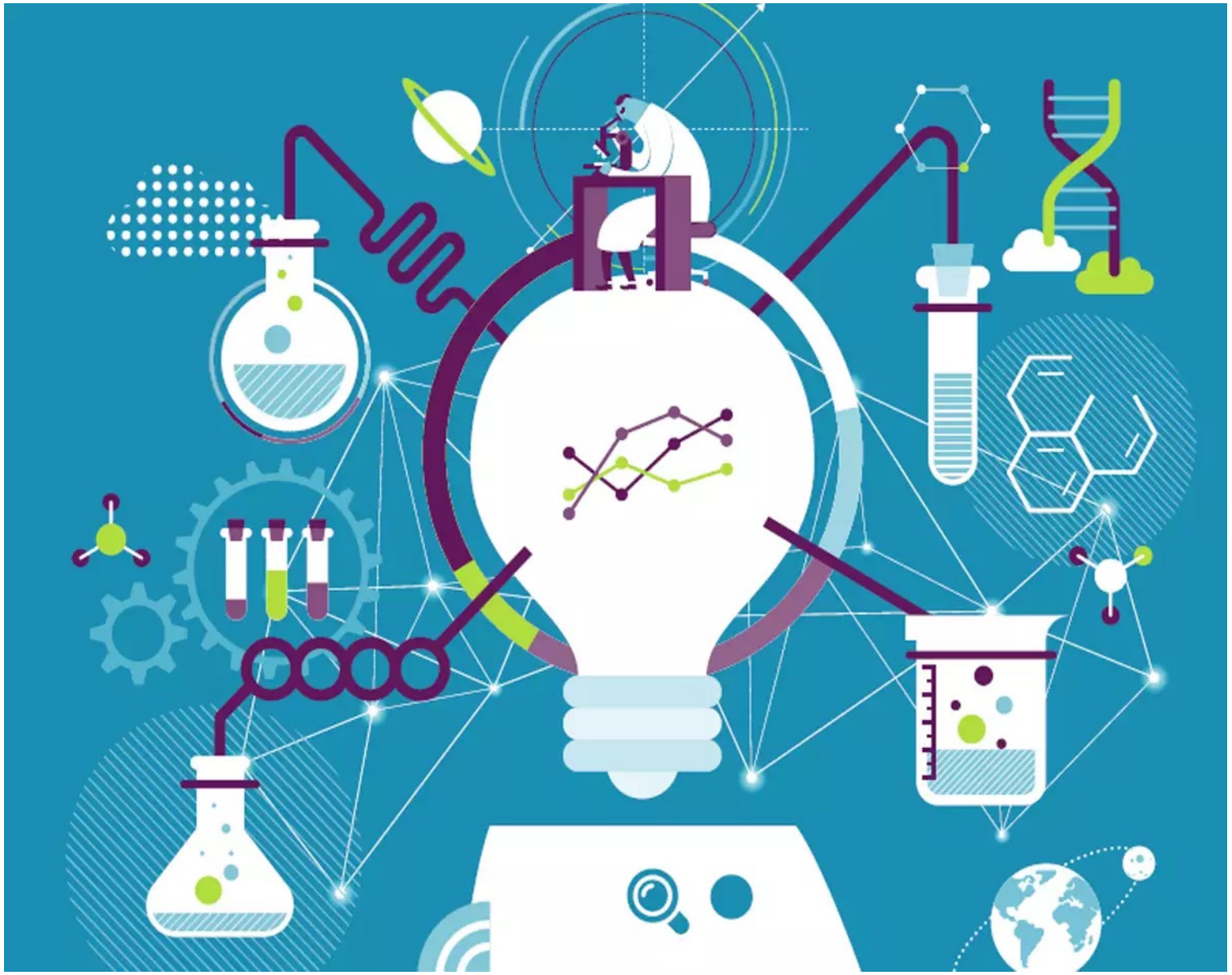
Até 2030

aumentar os benefícios económicos para os pequenos Estados insulares em desenvolvimento e os países menos desenvolvidos, a partir do **uso sustentável dos recursos marinhos**, inclusive através de uma gestão sustentável da pesca, aquicultura e turismo

TARGET 14.A



INCREASE SCIENTIFIC KNOWLEDGE, RESEARCH AND TECHNOLOGY FOR OCEAN HEALTH



Biodiversity Beyond National Jurisdiction

GLOBAL TUNA ALLIANCE

Sustainable Seafood Coalition

WWF: Landmark High Seas Treaty agreed, ushering in new rules for two-thirds of the ocean

Posted on 04 March 2023

NEW YORK CITY, United States (4 March 2023) – WWF strongly welcomes the agreement of the text for a new global legally binding High Seas Treaty reached by nations today in New York, creating a framework to conserve marine life and restrain harmful activities in two-thirds of the ocean.

Yellowfin tuna, Pacific Ocean Mexico

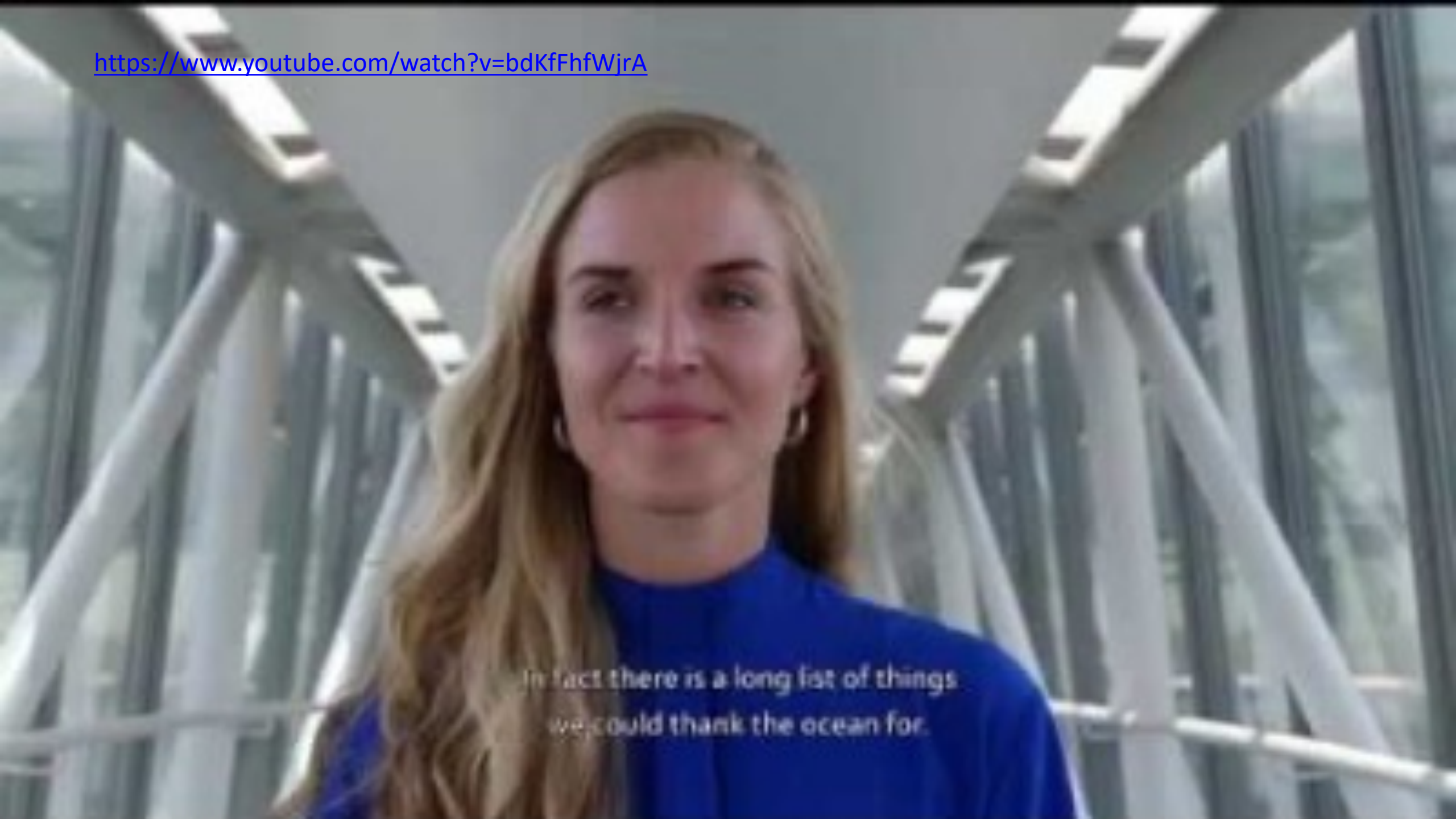
Biodiversity Beyond National Jurisdiction

GLOBAL TUNA ALLIANCE

Sustainable Seafood Coalition

Conservação *versus* Desenvolvimento

https://www.youtube.com/watch?v=bdKfFhfWjrA



THE EU BLUE ECONOMY

A NEW APPROACH FOR A

SUSTAINABLE BLUE ECONOMY IN THE EU

cfsantos@ciencias.ulisboa.pt

www.oceanplanning.lab