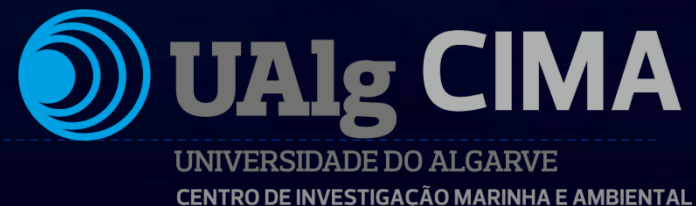


A GLOBAL ASSESSMENT TO STRENGTHEN THE SUSTAINABLE USE OF THE OCEAN

Maria João Bebianno

mbebian@ualg.pt





SUSTAINABLE DEVELOPMENT GOALS



2030 Agenda For the Sustainable Development



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

14.1 *Prevent and significantly reduce marine pollution from all kinds, in particular from land-based sources, including marine debris and nutrient pollution.*

14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including strengthening their resilience and take action for their restoration in order to achieve healthy and productive oceans.

14.3 Minimize and address the impacts of ocean acidification through the enhanced scientific cooperation at all levels.

14.5 By 2020, conserve at least 10% of coastal and marine areas, consistent with international law and based on the best available scientific information.



SUSTAINABLE DEVELOPMENT GOALS



SDGs that contribute to achieve SDG14



SDGs that will benefit from SDG 14



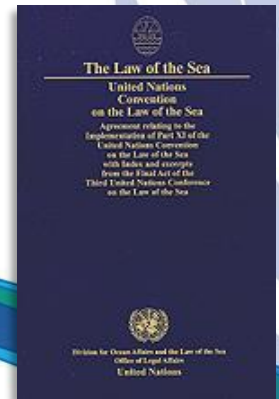
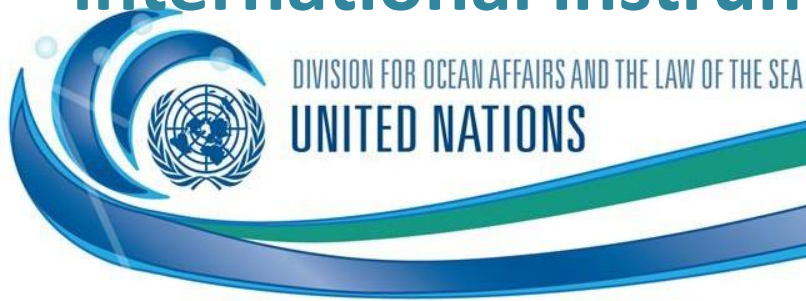
UAlg CIMA

UNIVERSITY OF ALGARVE
MARINE AND ENVIRONMENTAL RESEARCH CENTER

First World Ocean Assessment

The Regular Process to review the environment, economic and social aspects of the World Ocean was approved by the United Nations in 2004

The Regular Process is guided by international law including the United Nations Convention on the Law of the Sea and other applicable international instruments



General Concerns

- State of the world's ocean and seas is deteriorating
- No system of assessments existed at that time that gives a global picture of the state of the marine environment with socio-economic aspects



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Science-Policy interface

- Approach to understand the oceans needs to be integrated and not only sectoral
- Oceans issues are interlinked including with social and economic development on land
- Need for a more effective interface between scientific knowledge and decision-making



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Science-Policy interface

- A scientific understanding of the ocean is fundamental to carry out an effective management of the human activities that affect the marine environment and the biota that it contains



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Institutional Arrangements

General Assembly

**Ad Hoc Working Group
of the Whole**

Bureau

Group of Experts

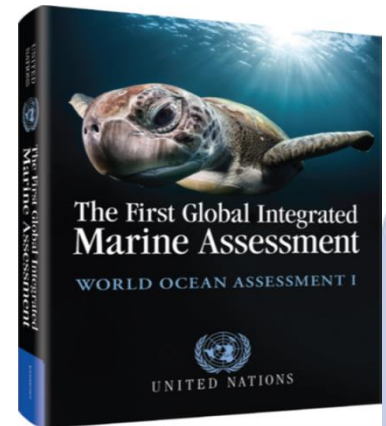
National
Focal
Points

Secretariat

Pool of Experts

First World Ocean Assessment (WOAI)

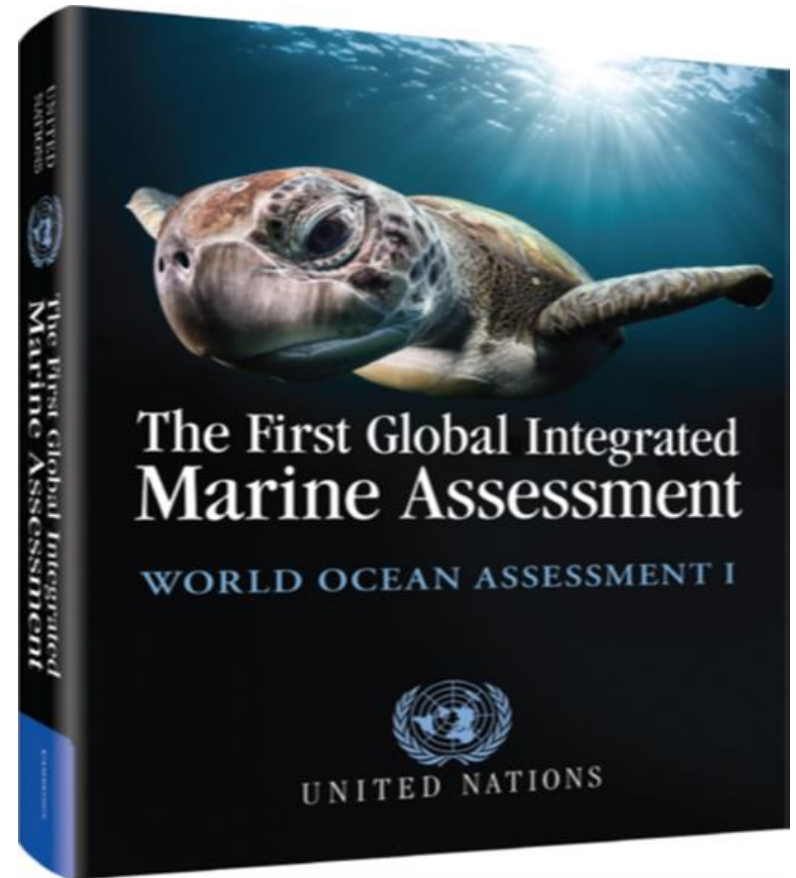
**The Regular Process
for Global Reporting and
Assessment of the State of the Marine
Environment, including Socioeconomic
Aspects produced the first integrated
assessment of the marine environment in
December 2016**





First Global Integrated Marine Assessment (WOAI)

- *“The ocean carrying capacity is near or at its limit. Urgent action on a global scale is needed to protect the world’s oceans”* (Ban Kin-moon)
- Prioritize areas for action and input to **Sustainable Development Goals**



55 Chapters , 973 pages, 645 Experts contributed

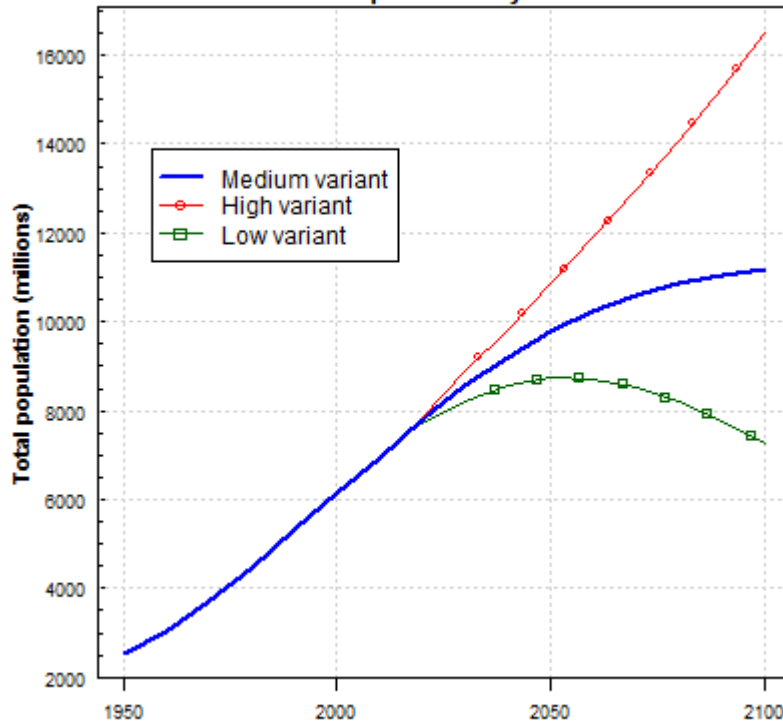
The ten themes addressed in the World Ocean Assessment

| | |
|---------|--|
| Theme A | Impacts of climate change and related changes in the atmosphere |
| Theme B | Higher mortality and less successful reproduction of marine biotas |
| Theme C | Food security and food safety |
| Theme D | Patterns of biodiversity |
| Theme E | Increased use of ocean space |
| Theme F | Increasing inputs of harmful material |
| Theme G | Cumulative impacts of human activities on marine biodiversity |
| Theme H | Distribution of ocean benefits and disbenefits |
| Theme I | Integrated management of human activities affecting the ocean |
| Theme J | Urgency of addressing threats to the ocean |

Is the Ocean capable of increasing food production ?

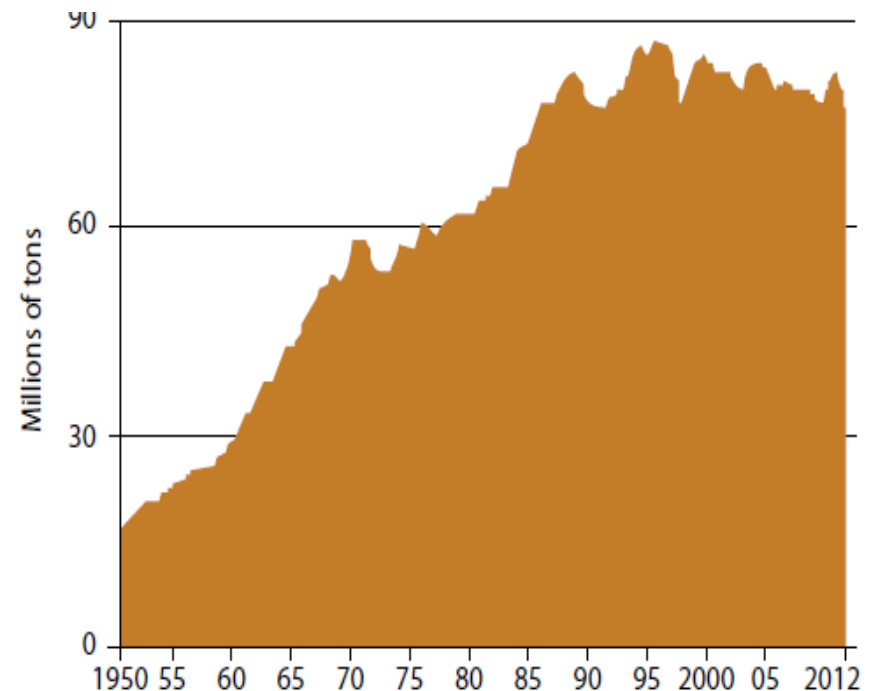
World Population Prospects 2017

Total Population by variant



- 9.8 billion in 2050,
- 11.2 billion in 2100

Global commercial catches reported by the Food and Agriculture Organization of the United Nations, 1950-2012



Source: Food and Agriculture Organization of the United Nations, *The State of World Fisheries and Aquaculture 2014* (Rome, 2014).

Global trends in the state of world marine fish stocks, 1974–2011

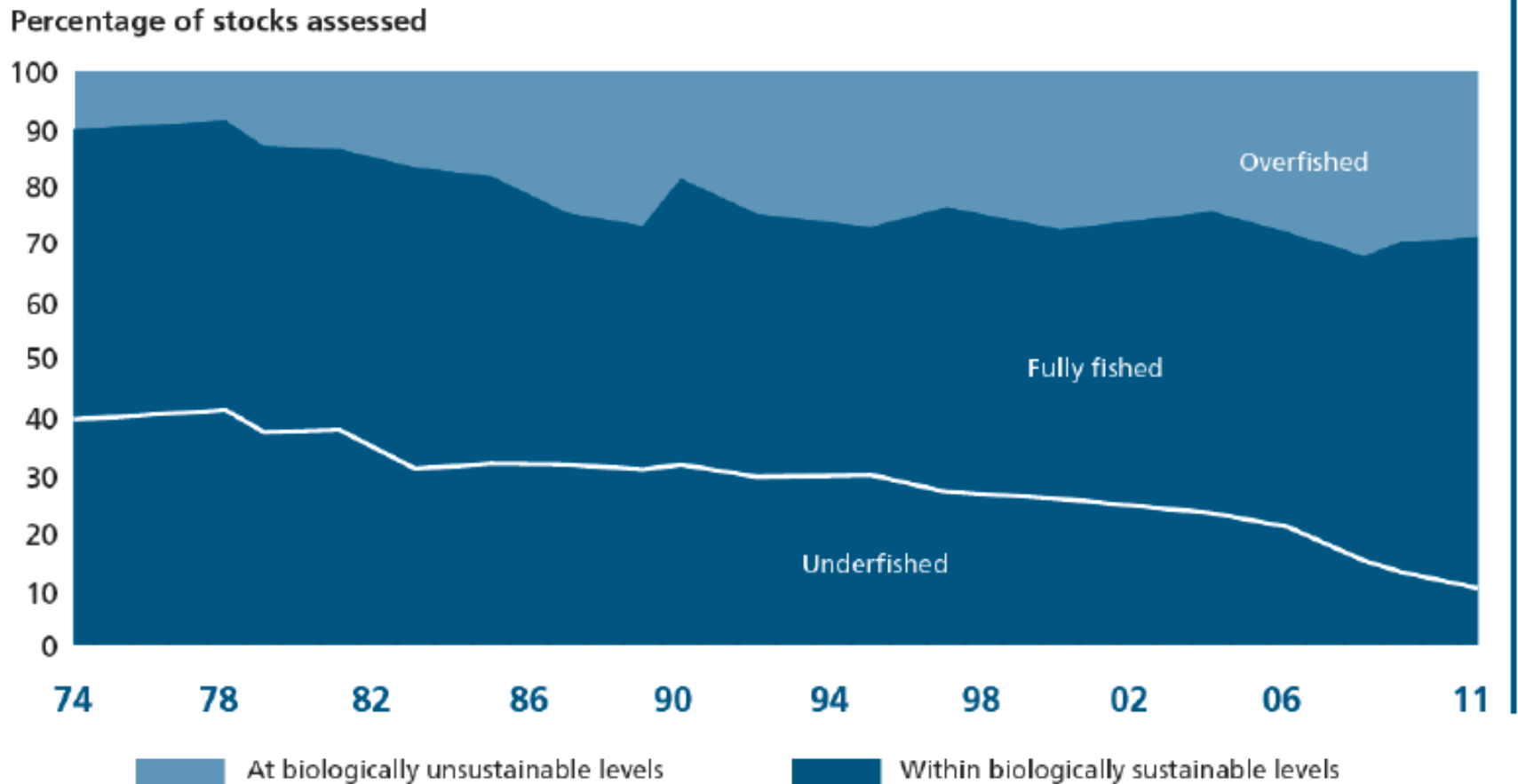
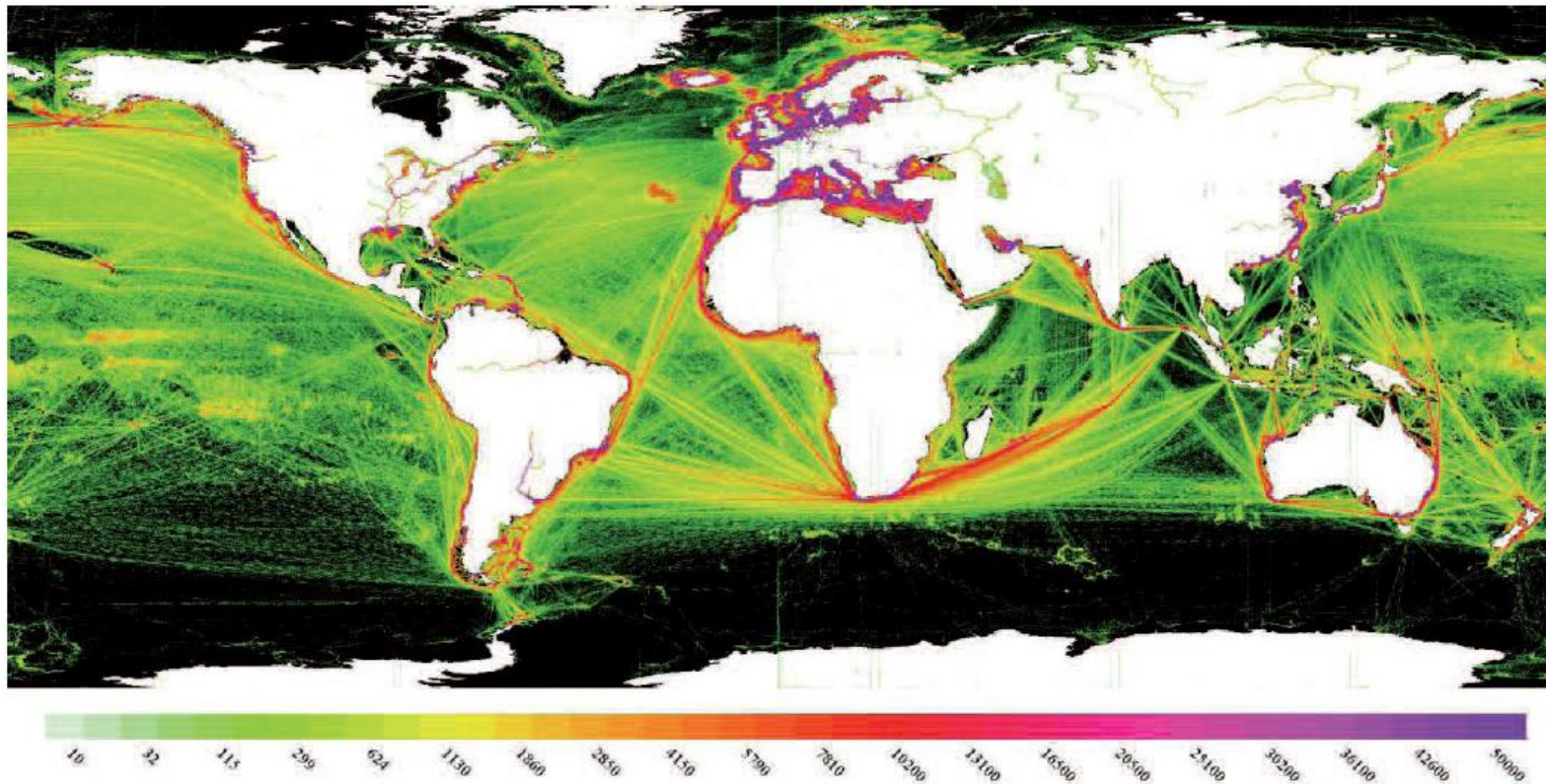


Figure 2. State of world marine fish stocks (from SOFIA, FAO 2014)

WOA, 2016

Ship Movements



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Figure 2. Global Network of Ship Movements (data 2012). Data derived from daily Automatic Identification System (AIS) messages recorded for each $0.2^{\circ} \times 0.2^{\circ}$ grid square. The coloured scale shows the number of messages recorded over the year for the grid squares. Source: IMO, 2014o.

Transport of Goods

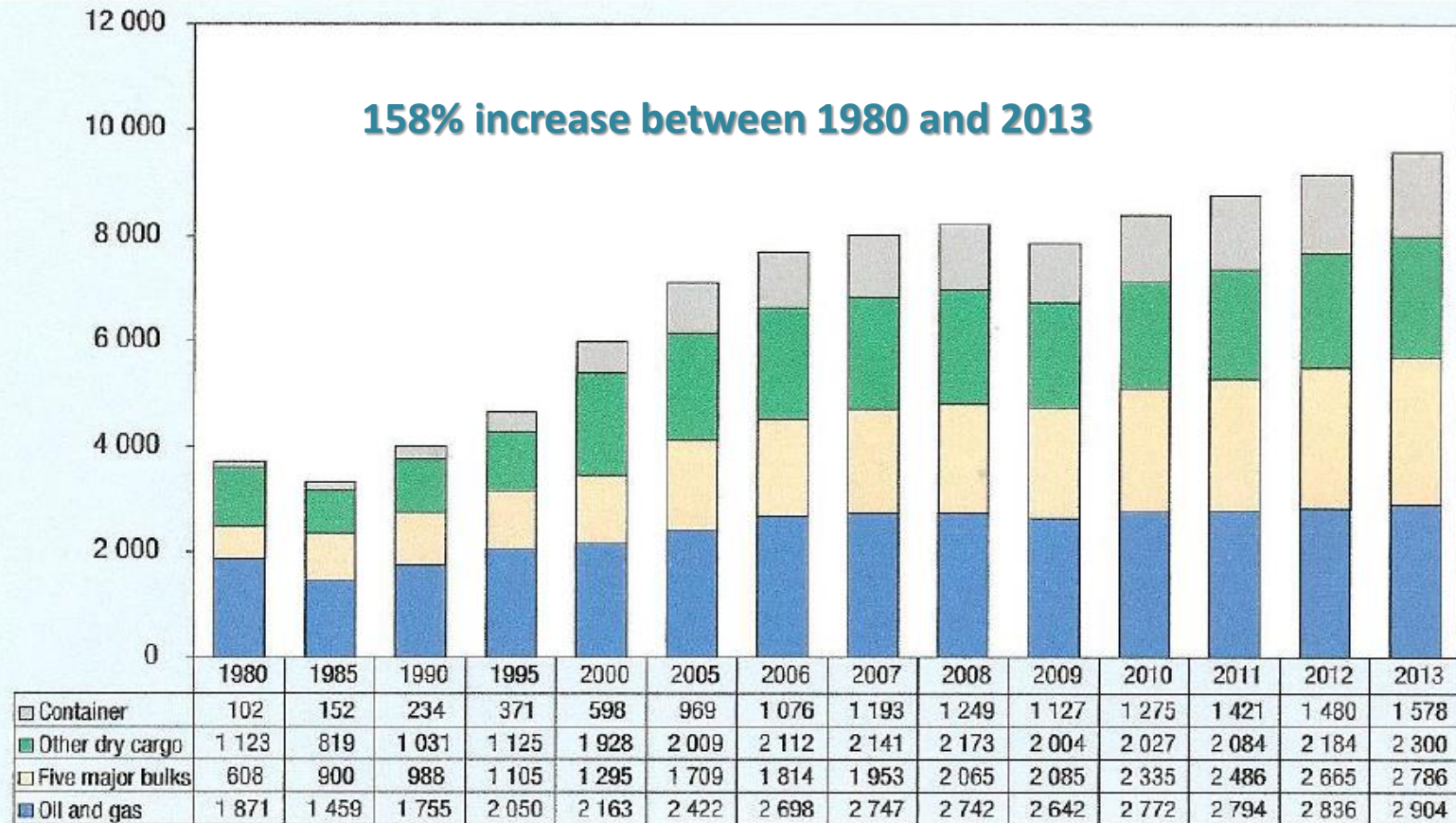


Figure 1. International Seaborne Trade: selected years 1980 – 2013. *Millions of tons loaded*. The “Five Major Bulks” are iron ore, grain, coal, bauxite/alumina and phosphate rock. “Other Dry Cargo” includes agricultural produce, metals, and forest products). Source: UNCTAD, 2013.

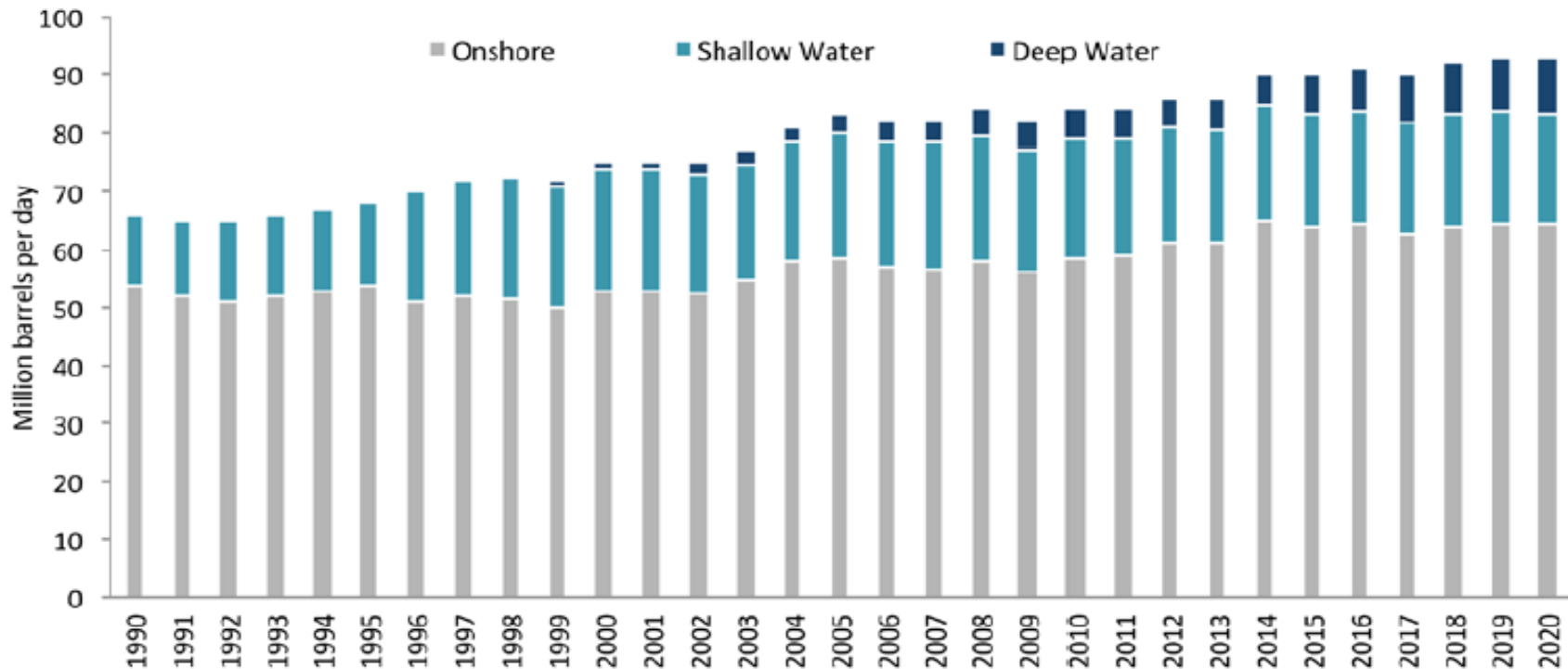
Origin of Tourists



Figure 1. Origins of tourists by WTO region. Source: WTO, 2014.

Number of passages increased over the years

Oil Production



Sources: Infield Systems, BP Statistical Review 2014

Figure 3. Global crude oil production, comparing onshore, shallow offshore (<100 m water depth) and offshore deep (>100 m water depth) production (from Infield, 2014).

Oil Trade and Spills

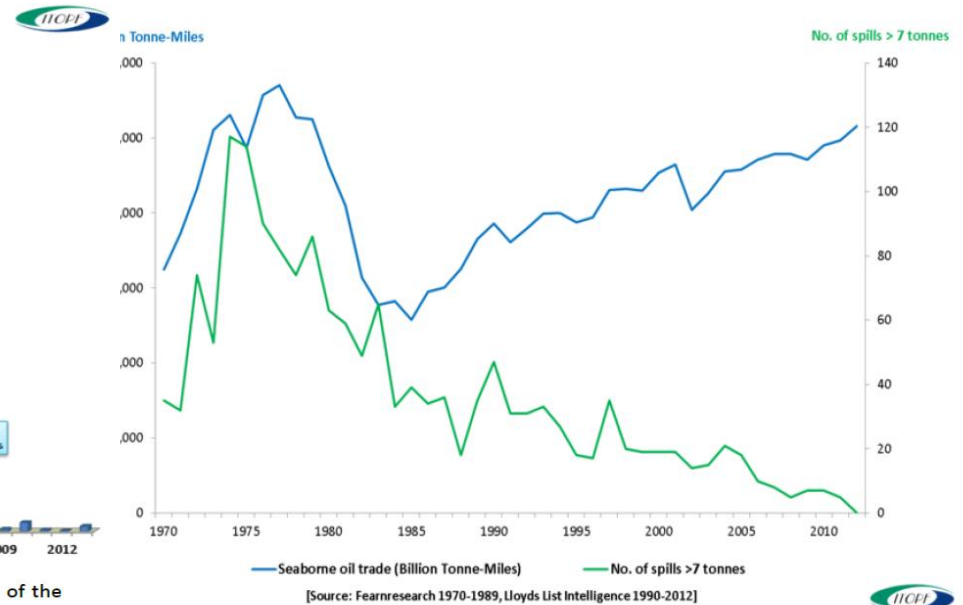
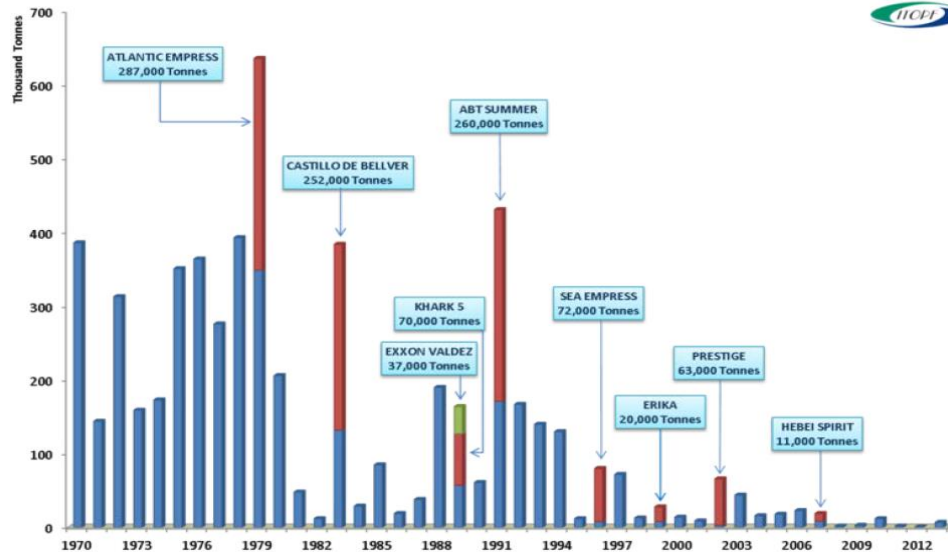
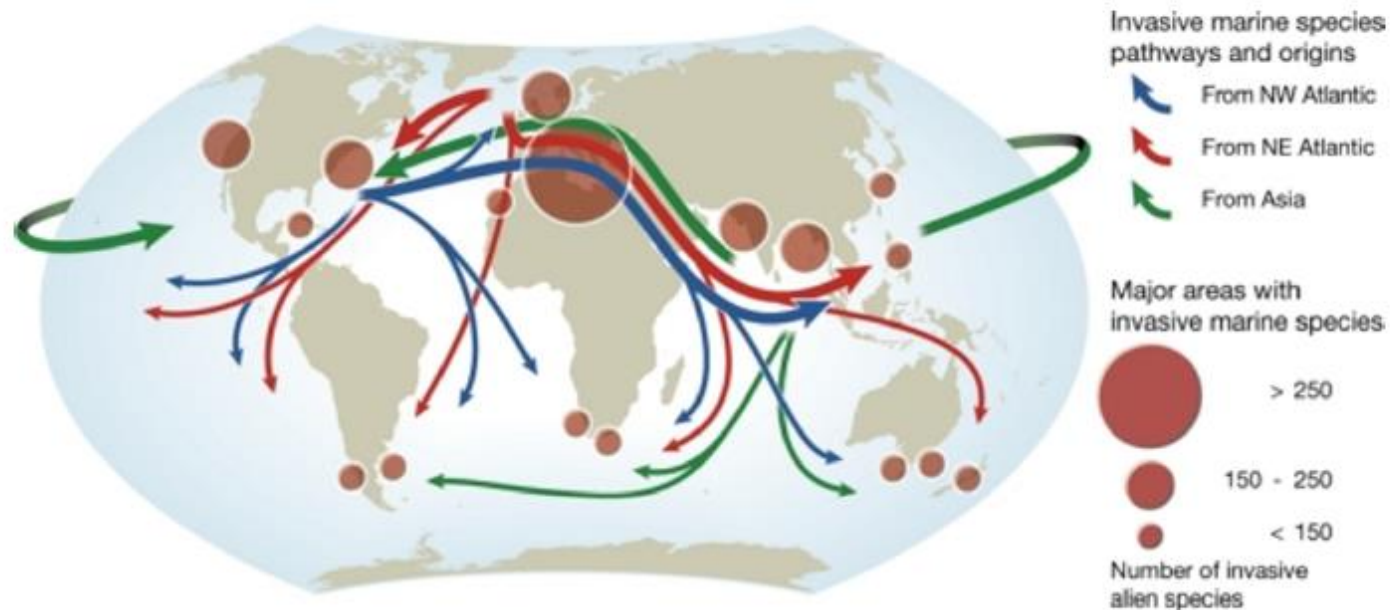


Figure 11. Quantities of oil in spills of more than 7 tons in the years 1970 – 2013. (with notes of the major recent oil spills and their sizes). Source: ITOPF, 2014b.

Figure 10. Seaborne oil trade and number of tanker spills of more than 7 tons 1970 - 2012. Source: ITOPF, 2014b.

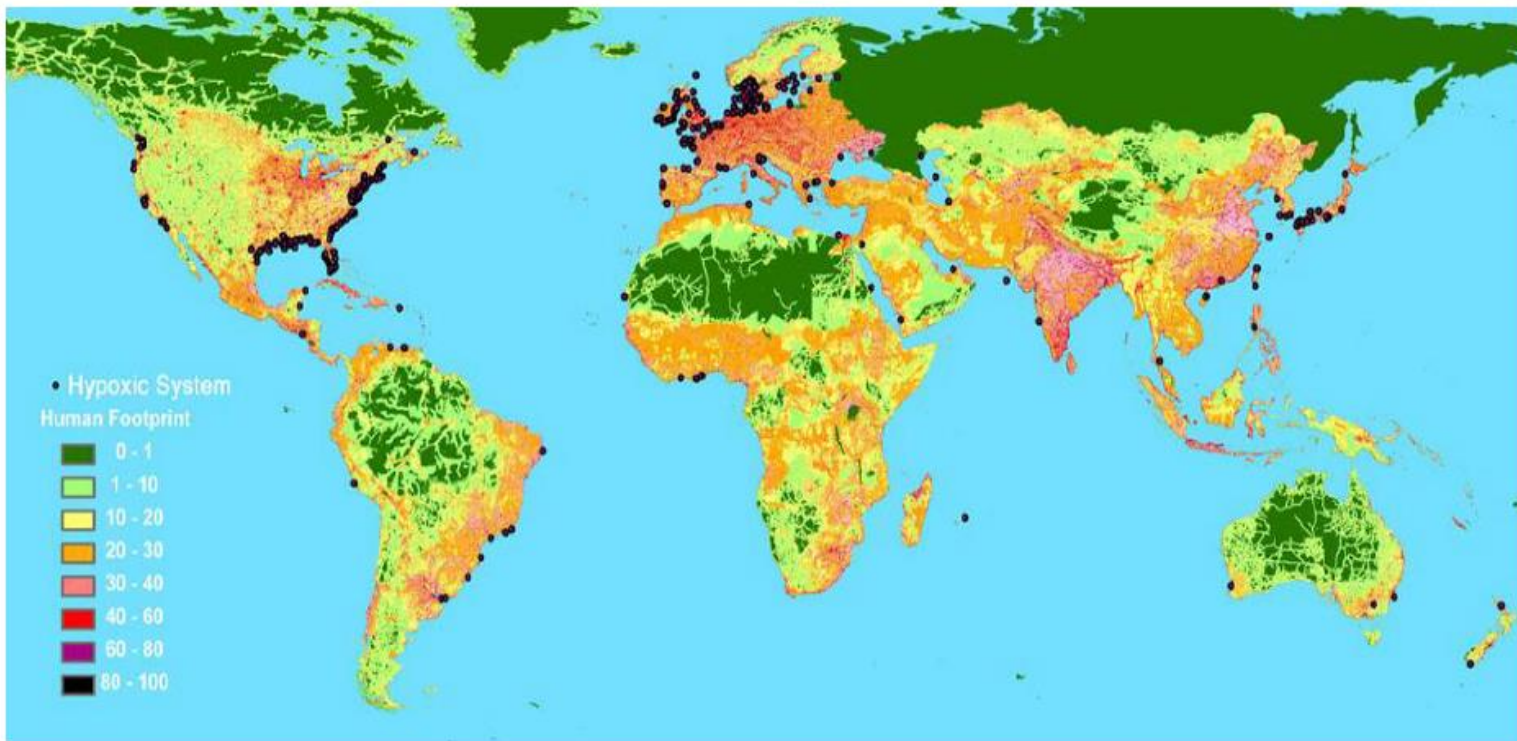
Origin of Invasive Species



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Figure 13. Major pathways and origins of invasive species infestations in the marine environment.

Dead and Hypoxic Zones



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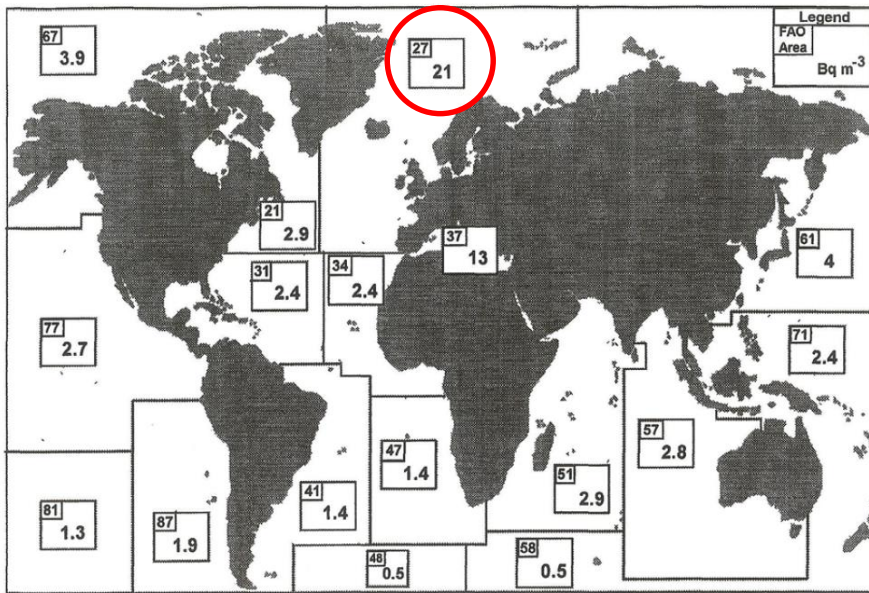
Figure 8. Global Map of Dead and Hypoxic Zones. Source:

http://www.scientificamerican.com/media/inline/2008-08-15_bigMap.jpg.

WOA, 2016

Radioactive contamination

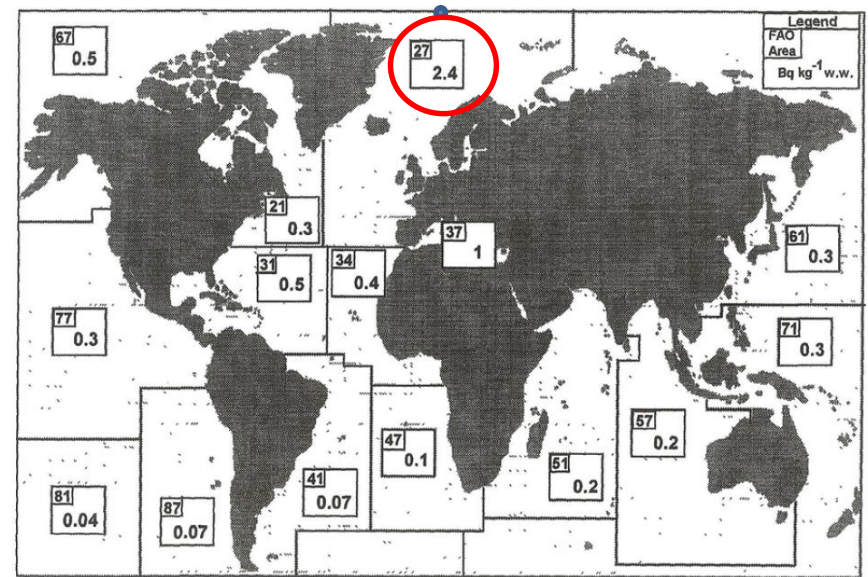
Seawater



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Figure 11. Concentrations of ¹³⁷Cs in seawater for FAO major fishing areas. Source: MARDOS, 1995.

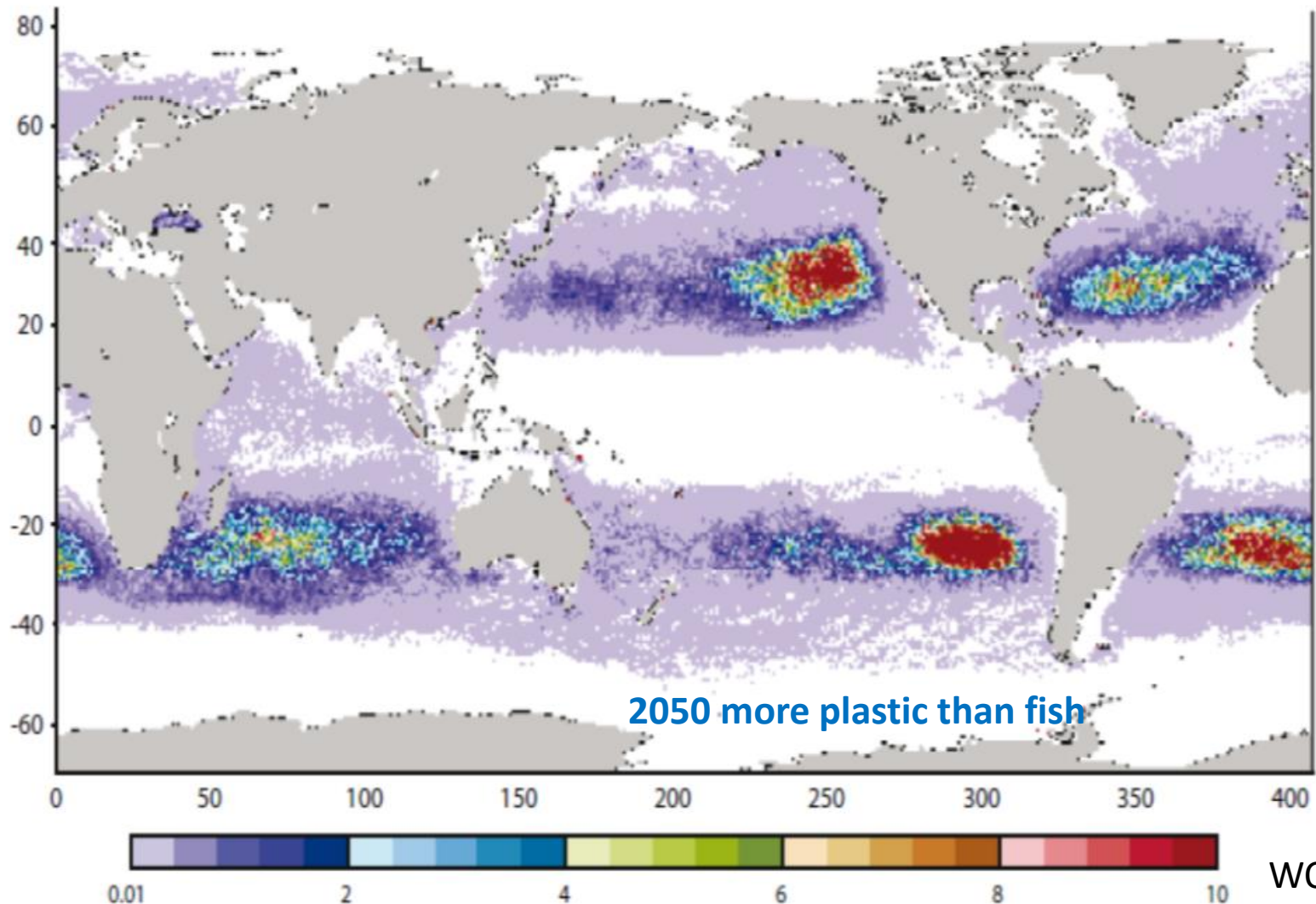
Fish



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

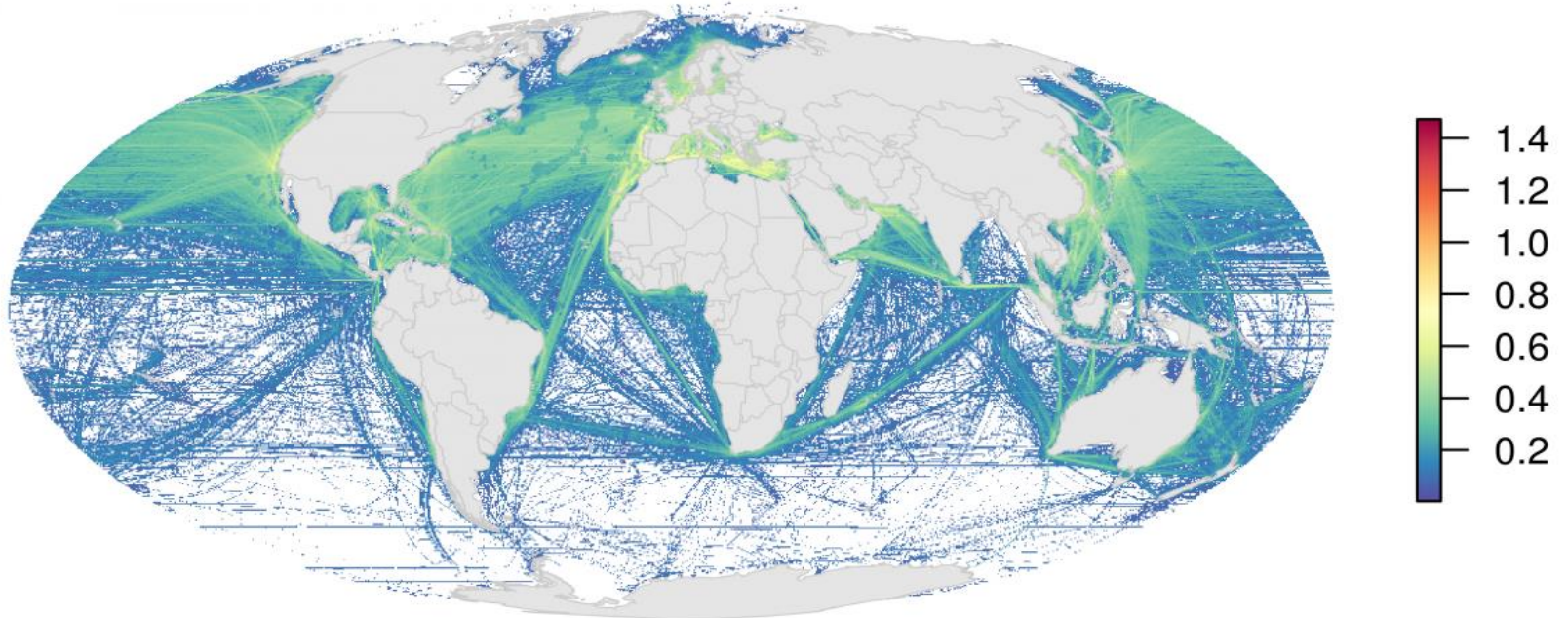
Figure 12. Concentrations of ¹³⁷Cs in fish for FAO major fishing areas. Becquerels per kilogramme of net weight. Source: MARDOS, 1995.

Plastic debris in surface waters of the global ocean

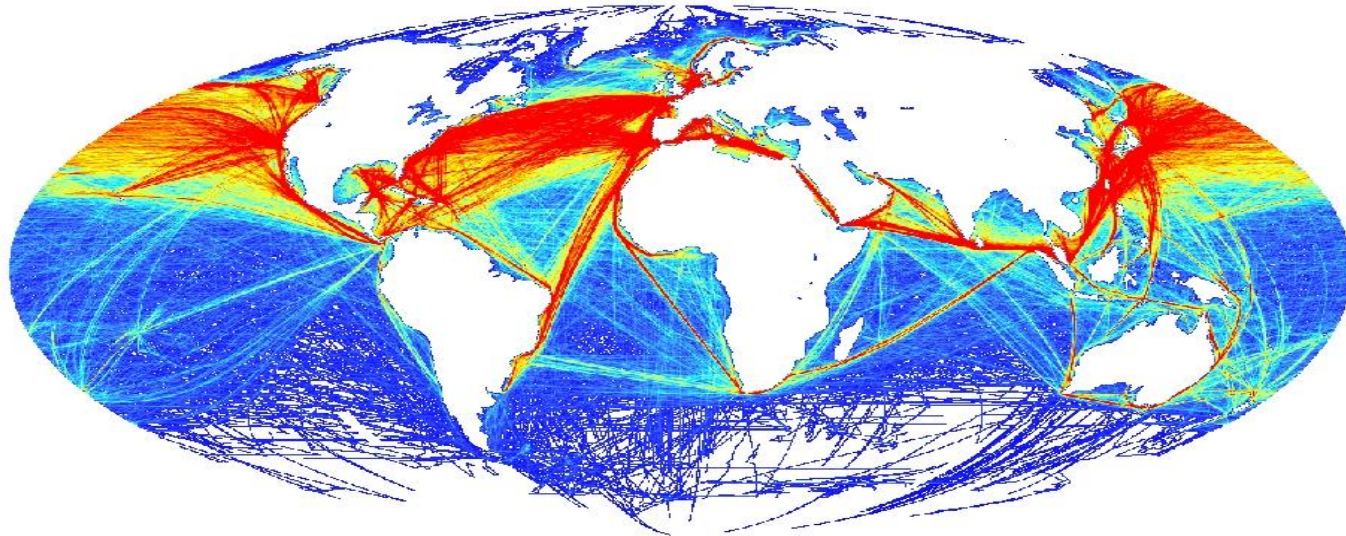


WOA, 2016

Ocean-based pollution



Global World Traffic



Acts of Piracy

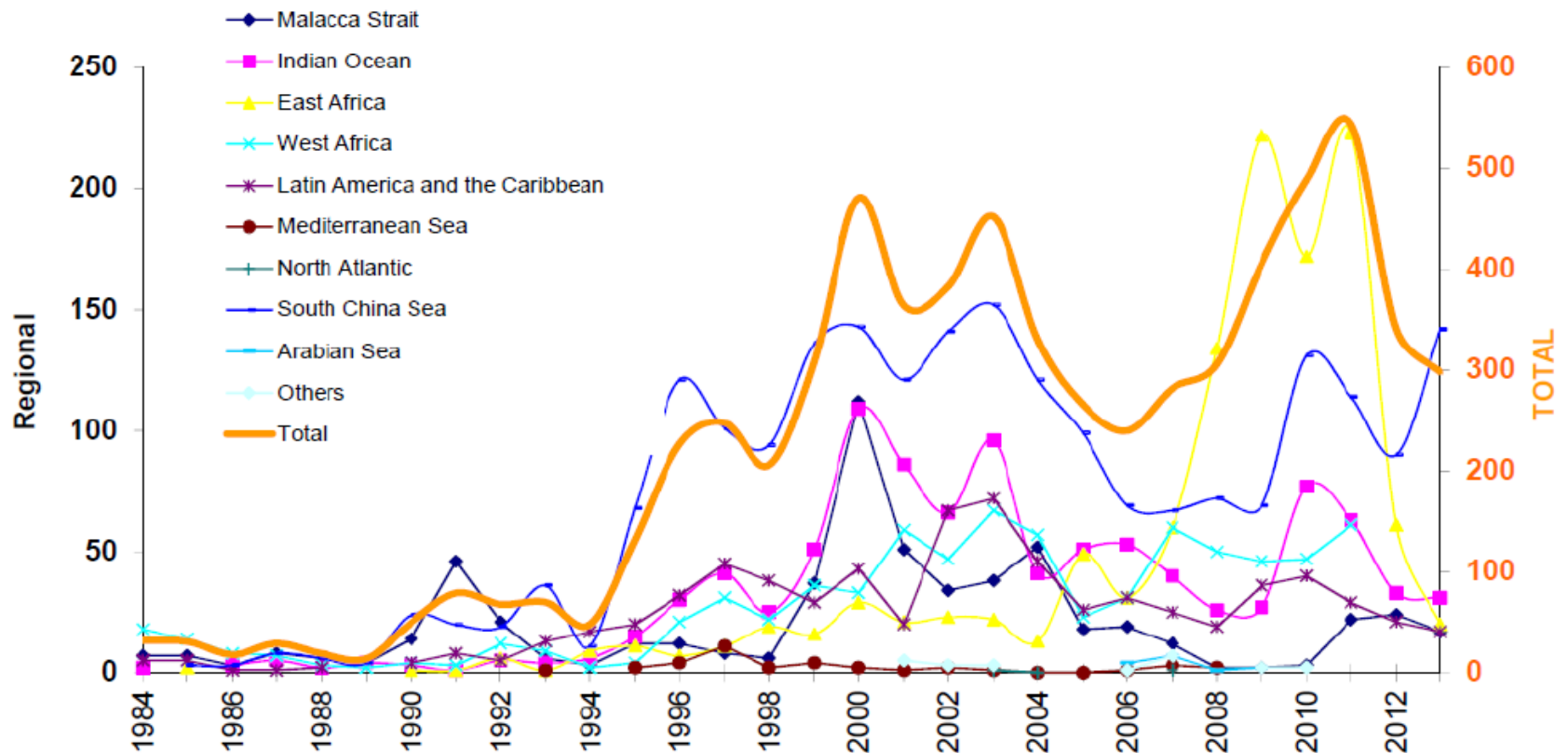


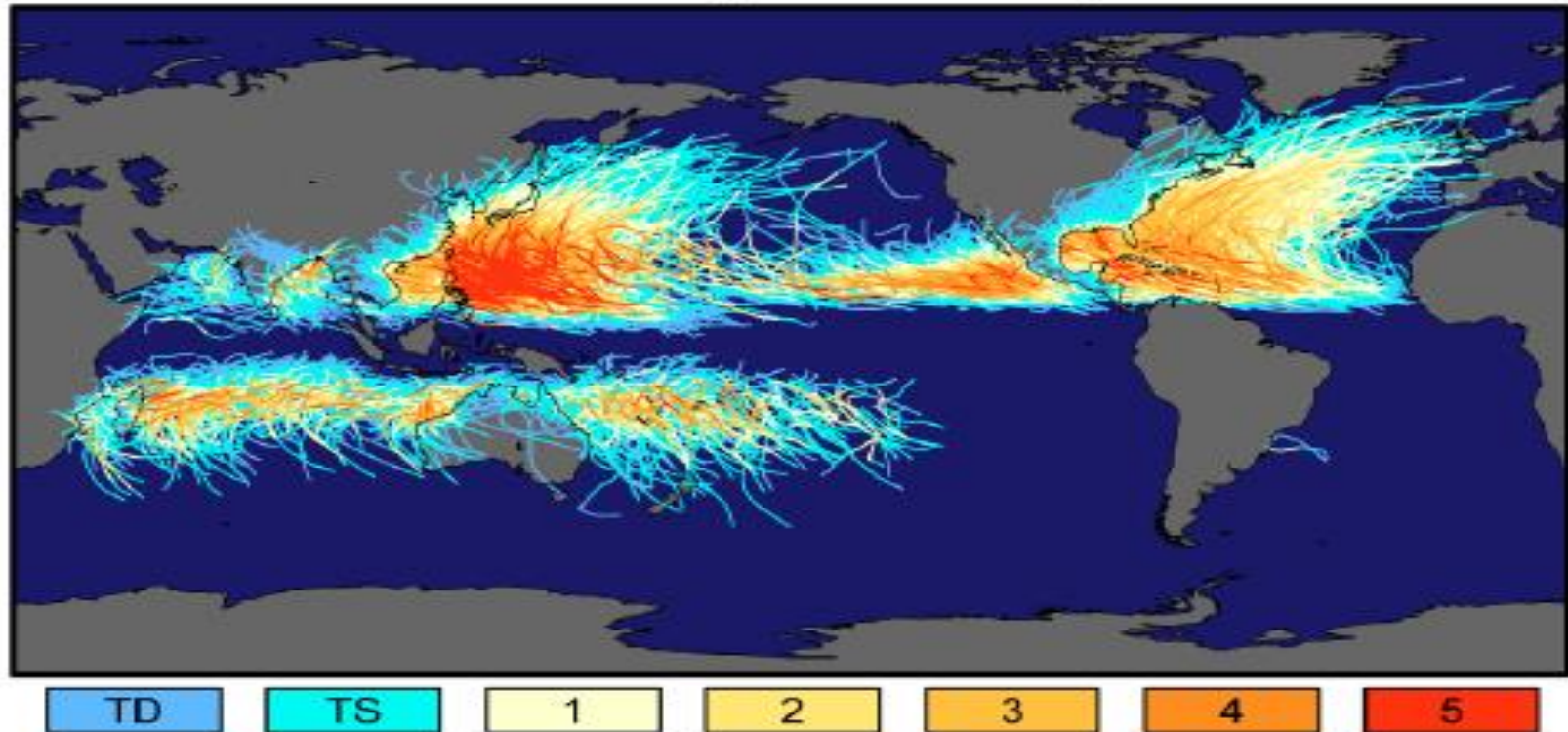
Figure 9. Reports of Alleged Acts of Piracy and Armed Robbery Committed or Attempted 1984 – 2013.
Source: IMO, 2014a.

[illegible]

Figure 1. Diagrammatic map of transatlantic submarine cables. Source: Telegeography, 2014.

WOA, 2016

Tracks and Intensity of All Tropical Storms



Saffir-Simpson Hurricane Intensity Scale

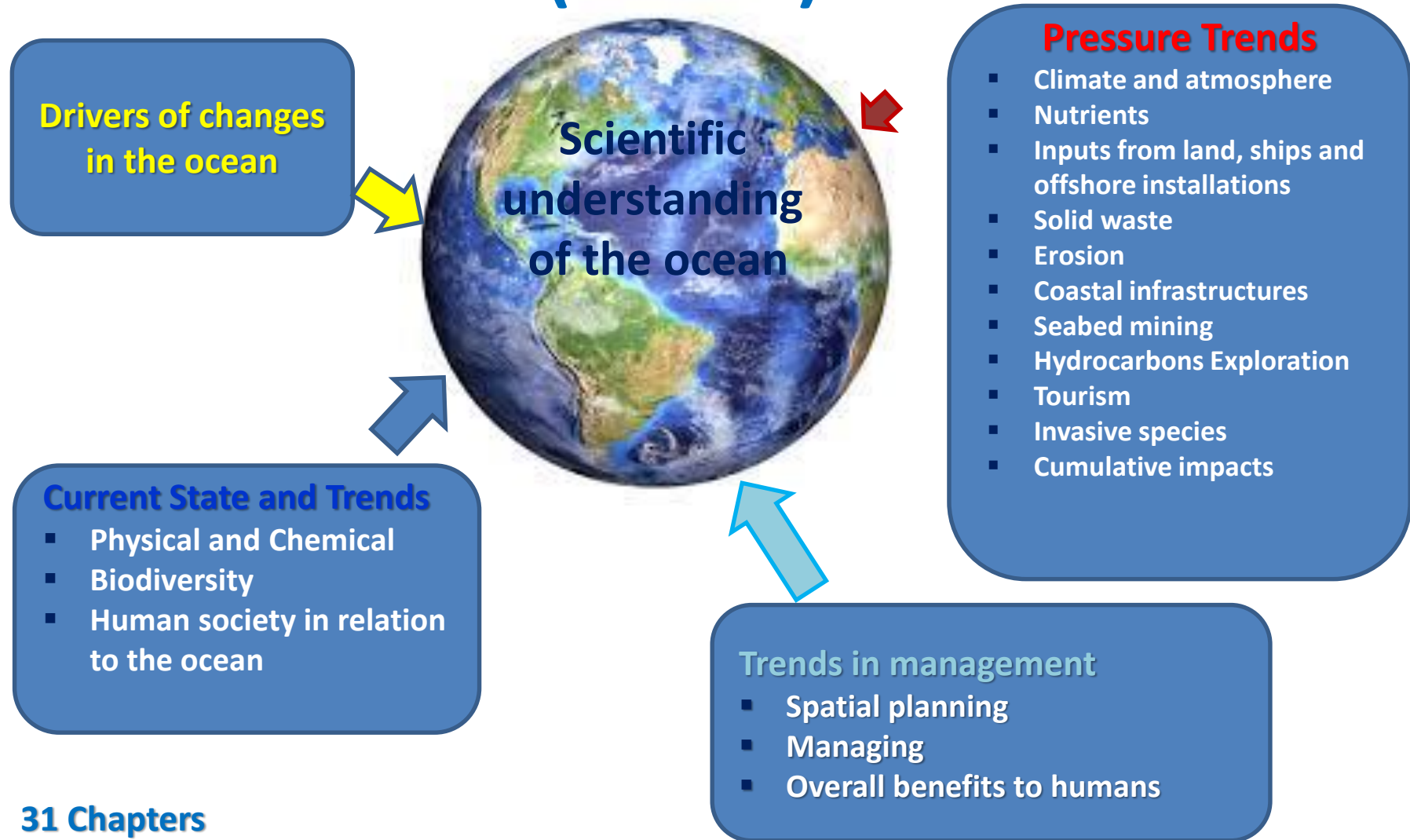
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Figure 3: These plots of tropical cyclones (and typhoons) over the past 100 years illustrate that damaging storms are rare within a band between 7° North and South of the Equator, such that a large proportion of the high biodiversity reefs in Indo-Pacific are rarely damaged by damaging storms (courtesy of NASA, USA, 2008). There are predictions that under increasing climate change, the damaging strength of cyclones will increase with more category 4 and 5 storms, but the number of storms may not change (Wilkinson and Souter, 2008).

Outline for the World Ocean Assessment II

- The Second World Ocean Assessment - give a picture of the state of the world's marine environment, including socioeconomic aspects, based on the developments since **World Ocean Assessment I**, and using **Drivers – Pressures – State – Impacts – Response (DPSIR) model**.
- Sets out the relevant *drivers*,
- Describe the trends in the current *state* of the main components of the marine environment, resulting from the developments in the effects of the many *pressures* and their *impacts*,
- Developments in the effects of the management measures adopted in *response*.

Outline of World Ocean Assessment II (WOAII)

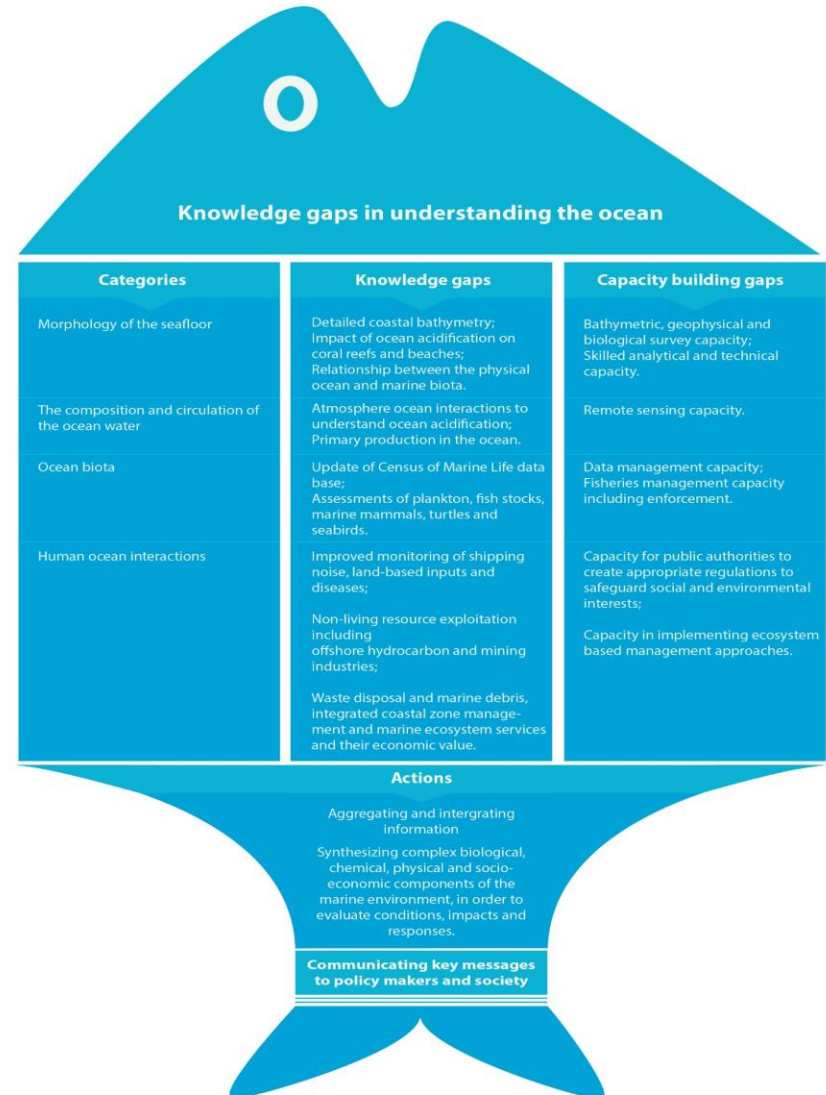


31 Chapters

1st Draft concluded in December 2019

Knowledge and capacity building gaps

- **Knowledge Gaps**
 - Physical structure of the ocean
 - Waters of the ocean
 - Biotas of the ocean
 - Ways in which humans interact with the ocean
- **Capacity building gaps**



**The Regular Process is helping to guide
planning for the activities of the
United Nations Decade of Ocean Science for
Sustainable Development providing an
opportunity to progress the development of
the science policy interface for sustainable use
of the global ocean**

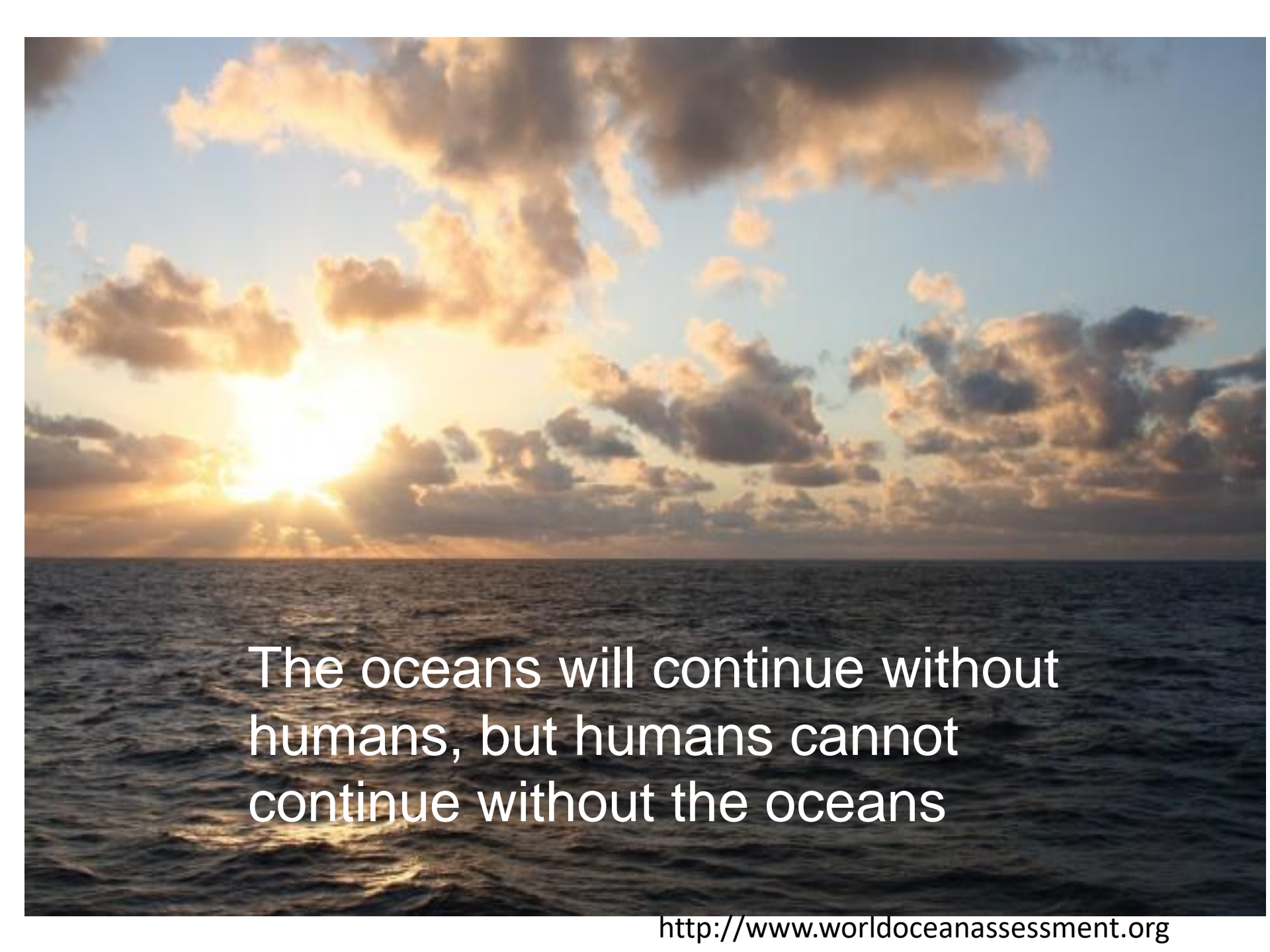


2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development



<https://en.unesco.org/ocean-decade>

Next WOA3



The oceans will continue without
humans, but humans cannot
continue without the oceans

Lisbon will host the 2nd UN Ocean Conference



2020



2 – 6 June 2020

For more information visit:

<http://www.un.org/Depts/los/rp>



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