

# **Transboundary and Adaptive Ecosystem Management: Obligations and Challenges**

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**Transboundary Fisheries Management in an Era of  
Shifting Ecosystems: An Integrative Opportunity for OceanCanada?  
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# Outline

- I. Managing Fisheries in a Changing Ocean: Ecosystem Approach to Fisheries Management**
- II. Transboundary Fisheries: States' Obligations in Implementing EAFM**
- III. Challenges for Ecosystem and Adaptive Management of Transboundary Fisheries**

**Distribution/migration of stocks**  
**Stocks' productivity, Production variability**  
**Community and foodweb structure**  
**Habitat alteration**  
**Disease impact**  
**Fishing/community infrastructure/gear**  
**Access to fishing grounds/Risk at sea**



# **Marine Ecosystems**

**Ocean warming**  
**Sea Level rise**  
**Frequency and intensity of extreme events**  
**Changes in ocean salinity, density and stratification (precipitation, evaporation, river run-off, ice melt)**  
**Changed circulation patterns**  
**Hypoxia**  
**Ocean Acidification**

# Legal and Policy Framework for EAFM

**UNCLOS**

**UNFSA**

**CBD**

**RFMOs  
Agreements**

**FAO Code of  
Conduct**

**2001 Declaration on  
Responsible Fisheries**

**UNGA Resolutions**

**UNFSA Review  
Process**

**FAO Technical  
Guidelines**

**FAO EAFM Toolbox**

**Rio Declaration, Agenda  
21**

**Johannesburg PoI**

**Sustainable  
Development Goals**

**CBD CoP Decisions**

**Jakarta Mandate**

**Aichi Biodiversity  
Targets**

**Sectoral, single-species management**

**Holistic (system) management**



**Few specific goals**

**Comprehensive goal, multiple objectives**

**Man not part of nature**

**Man is part of the ecosystem (social-ecological system)**

**Management within defined (ecological) boundaries**

**Short-term focus**

**Long-term focus**

**Uses top-down approaches**

**Relies on collaborative decision-making**

**Decentralized**

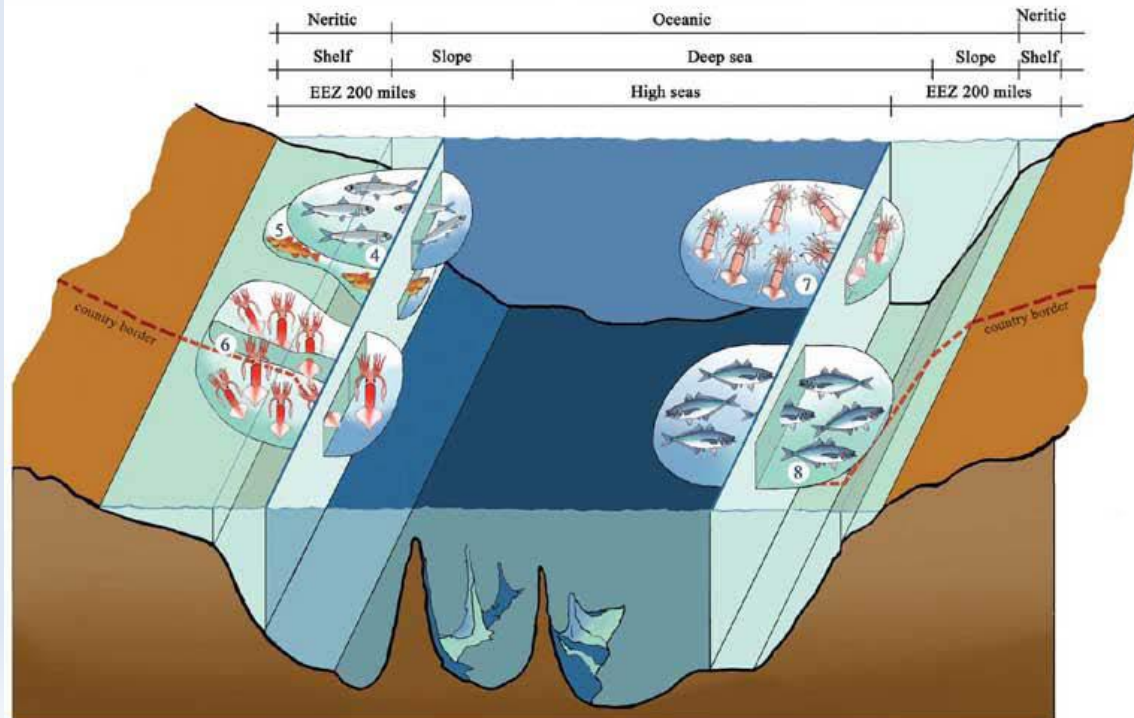
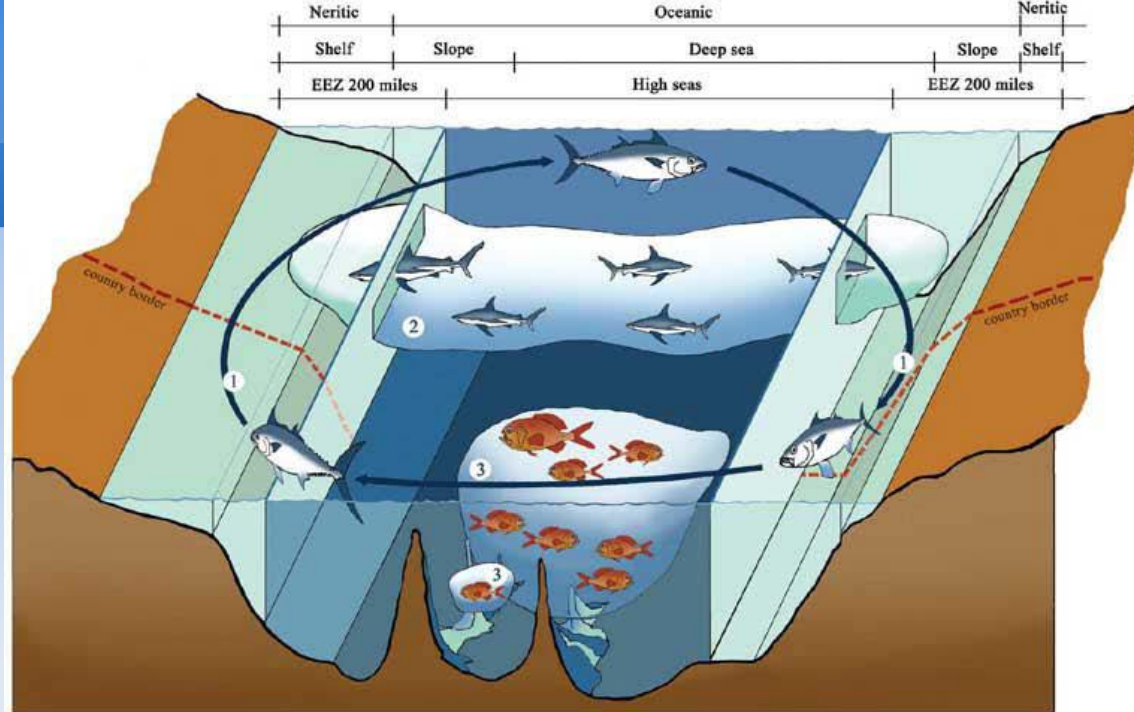
**Knowledge-based; multidisciplinary/ traditional and local knowledge**

**Predictive management**

**Precautionary approach**

**Adaptive management**

# II. Transboundary Fisheries and EAFM

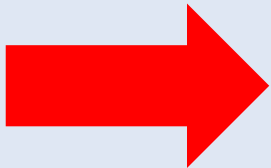


**Source:** Maguire et al.,  
*The state of world highly migratory, straddling and other high seas fishery resources and associated species, 2006*

# Obligation to Cooperate

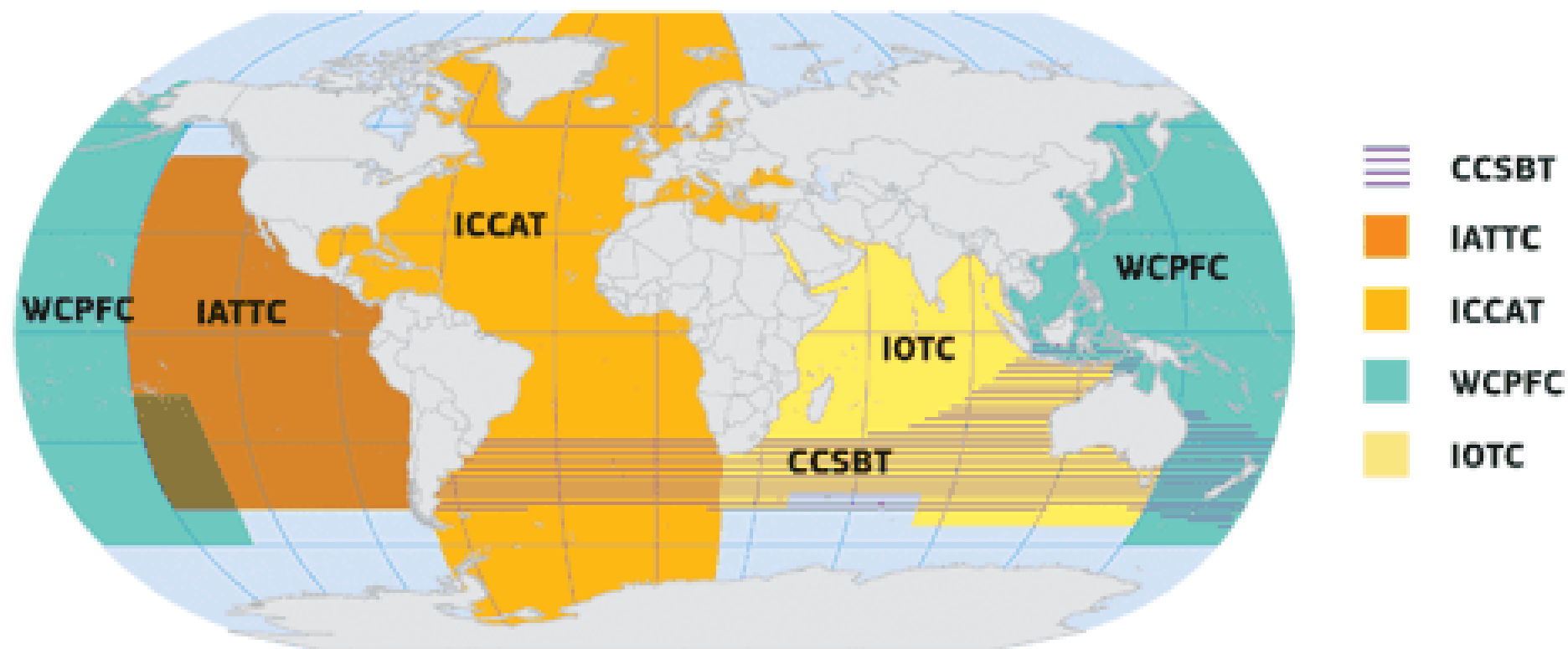
## LOSC art. 63 & 64; UNFSA arts. 5 & 7

- **“seek [...] to agree upon the measures necessary to coordinate and ensure the conservation and development of such stocks”**
- **“seek [...] to agree upon the measures necessary for the conservation of these stocks”.**
- **“cooperate [to ensure] conservation and promoting the objective of optimum utilization of such species throughout the region**



**REGIONAL FISHERIES MANAGEMENT  
ORGANIZATIONS (RFMOs) OR ARRANGEMENTS**

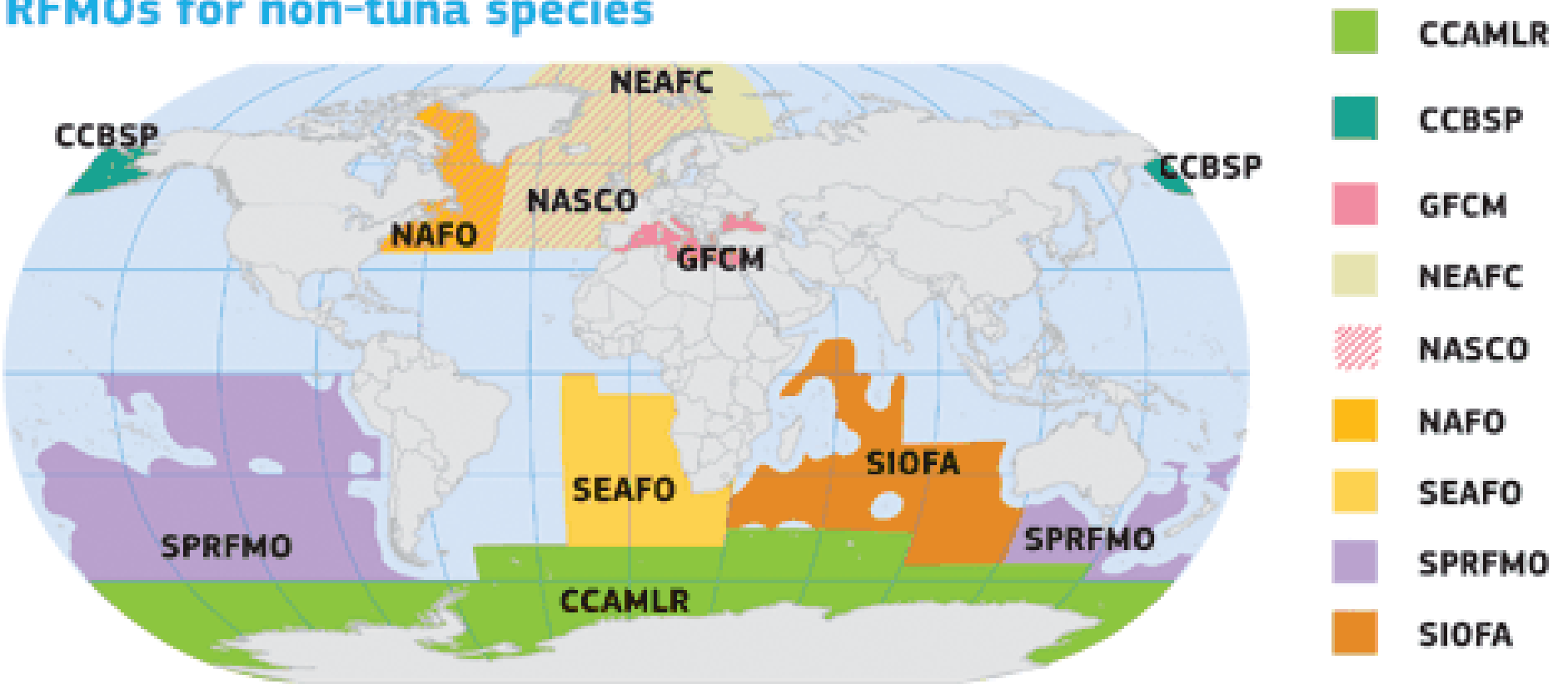
## RFMOs for highly migratory fish stocks (tuna and associated species)



Source: PESCALEX  
<https://normativapesquera.wordpress.com/lex-ue/orps/>



# RFMOs for non-tuna species



Source: PESCALEX  
<https://normativapesquera.wordpress.com/lex-ue/orps/>

# Objective of Conservation

- **Achieve MSY...**
- **... as qualified by relevant **environmental** and economic factors [...] taking into account [...] the interdependence of stocks and generally recommended international minimum standards**

# Specific Obligations

- Apply the **precautionary approach**
- Assess the **impacts of fishing, other human activities and environmental factors** on target stocks and species belonging to the same ecosystem
- Adopt management measures for **species belonging to the same ecosystem** (viability threshold)
- minimize **pollution, waste, discards**, catch by lost or abandoned gear, catch of **non-target species**, both fish and non-fish species (...) and impacts on associated or dependent species, in particular endangered species
- Protect **biodiversity** in the marine ecosystem (**CBD!**)
- Promote and conduct scientific **research** and develop appropriate technologies

# III. Challenges for Ecosystem and Adaptive Management of Transboundary Fisheries

## ■ Fragmentation

- Scope and ratification of UNFSA
- RFMOs' legal mandates
- Institutional capacity

## ■ Adapting to change

- Assessing and incorporating climate change/OA
- new areas, new players, new agreements
- distribution of “costs” of climate-induced changes to marine fisheries (allocation!)

## ■ Negotiation process for a new implementation agreement for the protection of marine biodiversity in ABNJ

# Thank you!

## Acknowledgments



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