

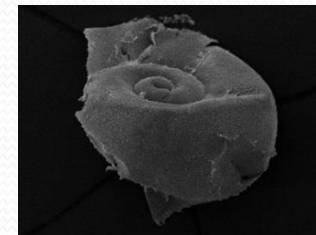
# International Law and Marine Biodiversity Conservation: Tangled Currents, Foggy Future

**Professor David L. VanderZwaag**  
**Canada Research Chair in Ocean Law and Governance**  
**Marine & Environmental Law Institute**  
**Dalhousie University**

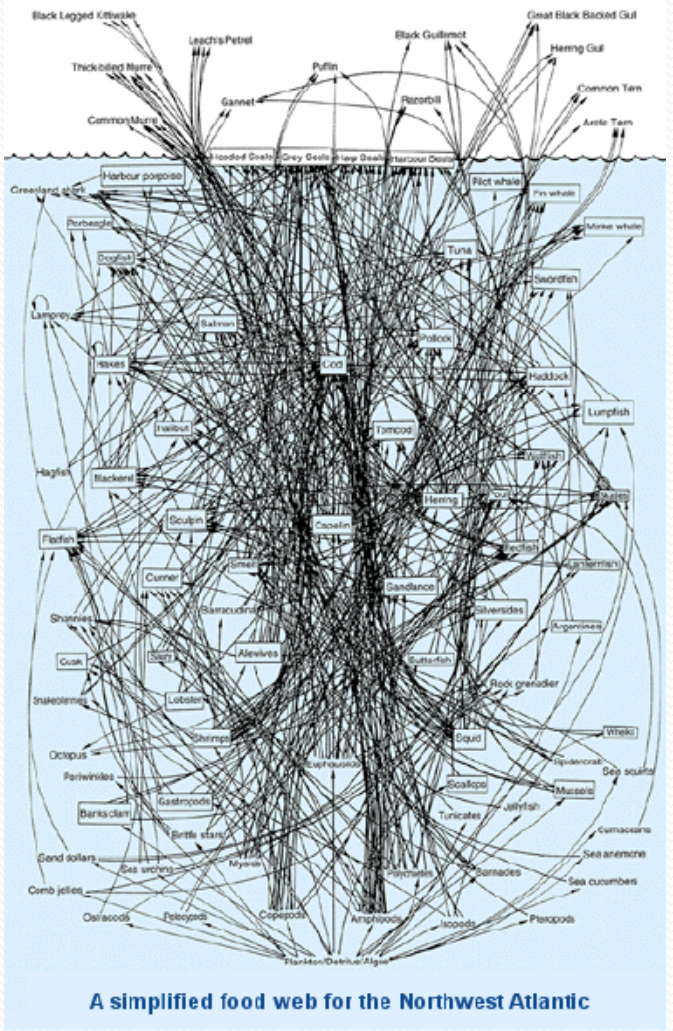
**China-ASEAN Academy on Ocean Law and Governance**  
**National Institute for South China Sea Studies**  
**Haikou, Hainan, China**  
**November 10, 2016**

## Introduction

- Human stresses on marine species and ecosystems are unprecedented
- + The present era has even been labelled the Anthropocene – a time when humans are dominating and impacting nature as never before
- + Over 90% of the large predators, including tuna, swordfish and marlins, have disappeared in parts of the ocean with direct links to overfishing
- + Keeping assessed fish stocks within biologically sustainable levels continues to be problematic (FAO 2016)
  - In 2013, 31.4% of fish stocks estimated to be overfished
  - 58.1% considered fully utilized
  - Just 10.5% categorized as underfished
- + Some 28% of assessed and non-data deficient shark species are considered globally at risk of extinction
- + The northern cod stock off Newfoundland, once thought to be inexhaustible, is now listed as endangered by the Committee on the Status of Endangered Wildlife in Canada
- + The rate of extinction of species is estimated to be 100 to 1,000 times more than what is considered natural
- + Climate change and ocean acidification are threatening the survival of coral reefs



- Scientific uncertainties continue to abound in the understanding of marine ecosystems and their threats
- + While about 250,000 marine species have been formally described in the scientific literature, at least another 750,000 species likely remain to be discovered
- + The effects of multiple ocean stressors – climate change, over exploitation, pollution and habitat losses – are difficult to unravel



- Two nautical images help capture the complex array of international agreements and arrangements that have emerged to try to protect and conserve marine biodiversity

## **I. Tangled Currents**

Multiple law and policy frameworks and initiatives have been generated by the international community to address marine biodiversity with five main “current systems” standing out

### **1. Law of the Sea “Gyres”**

- UN Convention on the Law of the Sea (1982)
- UN Fish Stocks Agreement (1995)

### **2. Biodiversity Specific “Upwellings”**

- Convention on Biological Diversity (1992)
- Biosafety Protocol (2000)
- Nagoya Protocol on Access and Benefit Sharing (2010)



### 3. Species Oriented “Side Currents”

- Convention on International Trade in Endangered Species (1973)
- Bonn Convention on the Conservation of Migratory Species of Wild Animals (1979)
- International Whaling Convention (1946)

### 4. Habitat Focused “Eddies”

- Convention on Wetlands of International Importance Especially as Waterfowl Habitat (1971)
- Convention on the Protection of World Cultural and Natural Heritage (1972)



### 5. Soft “Undercurrents”

- The FAO Code of Conduct for Responsible Fisheries and associated guidelines and plans of action
- UN General Assembly resolutions
- Earth Summit documents

## II. Foggy Future (a Second Image)

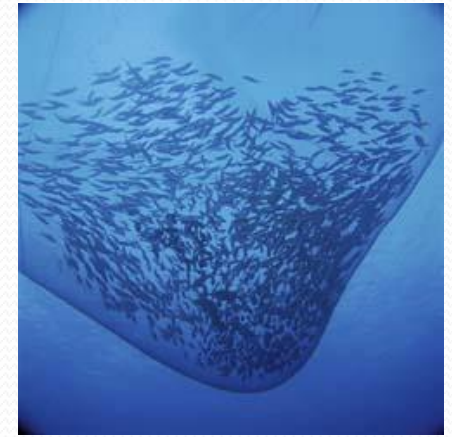
Debates have raged within the United Nations for almost a decade over whether a new global agreement on the conservation of marine biodiversity beyond national jurisdiction is needed and, if so, its contents

- + Still uncertain what the future holds for governance of the high seas beyond 200 nm EEZs
  - Covering about 40% of the planet's surface
  - Making up about 64% of the surface of the oceans



- A two-part speed cruise follows





# I. Tangled Currents

## 1. Law of the Sea “Gyres”

- UN Convention on the Law of the Sea (LOSC)
- + The main focus of LOSC is on sustaining commercial fisheries with general management responsibilities imposed, e.g.,
  - Coastal States required to determine total allowable catch (TAC) for fish stocks in their EEZs based on best scientific evidence (Art. 61(1)(2))
  - Management measures shall ensure living resources are not endangered by over-exploitation (Art. 61(2))
  - Management measures should maintain or restore fish stocks at a maximum sustainable yield (MSY) level as qualified by relevant environmental and economic factors (Art. 61(3))
  - General duty to give other States access to the surplus of the allowable catch (Art. 62)



- + LOSC does include various “tangential” biodiversity Articles
  - Art. 192

States have the obligation to protect and preserve the marine environment
  - Art. 206

States are to require EIAs for proposed activities that may cause substantial pollution or significant harm to the marine environment
  - Art. 61(4)

Coastal States in managing EEZ fisheries are to consider harvesting effects on dependent/associated species and to maintain such species at levels not seriously threatening their reproduction
  - Art. 119(1)(b) provides same obligation for high seas fisheries

States are to consider harvesting effects on dependent/associated species and to maintain/  
restore populations of those species above levels at which reproduction may be seriously threatened



- Art. 194(5) LOSC

The measures taken in accordance with this part shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life.



- Art. 196(1) LOSC

States shall take all measures necessary to prevent, reduce and control...the intentional or accidental introduction of species, alien or new, to a particular part of the marine environment, which may cause significant and harmful changes thereto.

- UN Fish Stocks Agreement (UNFSA)
- + Requires coastal States and States fishing on the high seas for straddling or highly migratory fish stocks to protect marine biodiversity (Art. 5(g))
- + Mandates a precautionary approach not only to managing targeted fish stocks but also to associated/dependent species and their environment (Art. 6)
  - Research programs must be developed to assess the impact of fishing on non-target species and their environment
  - Management plans must be adopted to ensure the conservation of such species and to protect habitats of special concern
- + Key implementation weaknesses
  - Limited scientific data to establish precautionary reference points even for targeted fish stocks
  - Common overriding of precautionary scientific advice within RFMOs
  - Continued priority to setting TACs just for commercially important fish stocks
  - Limited designation of “no take” and bottom trawling restricted areas



## 2. Biodiversity Specific “Upwellings”

- Key obligations for Contracting Parties to the CBD
- + Establish a system of protected areas (which should include marine areas) (Art. 8(a))
- + Establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity (Art. 8(g))
- + Develop or strengthen legislation/regulations for the protection of threatened species (Art. 8(k))
- + Preserve practices of indigenous and local communities embodying traditional lifestyles (Art. 8(j))
- + Require national EIA processes to consider impacts of proposed projects on biological diversity (Art. 14(1)(a))
- + Introduce strategic environment assessment (SEA) arrangements so proposed programs and policies are assessed for their potential to significantly impact biological diversity (Art. 14(1)(b))



- Numerous guidelines and decisions have been issued pursuant to the CBD to further promote conservation and sustainable use of marine biological diversity
- + Examples of Guidelines
  - Guidelines on Implementing the Ecosystem Approach (2004) through Decision VII/11
  - Revised Voluntary Guidelines for the Consideration of Biodiversity in Environmental Impact Assessments and Strategic Environmental Assessments in Marine and Coastal Areas (UNEP/CBD/COP/11/23) (2012)
- + Examples of Decisions
  - Strategic Plan for Biodiversity 2011-2020 adopted through Decision X/2 in 2010
    - \* Sets out 20 biodiversity targets for 2015 or 2020 (Aichi Biodiversity Targets)



\* Four especially relevant to marine biodiversity

> Target 6

By 2020, all fish and invertebrates are managed and harvested sustainably, legally and applying ecosystem-based approaches so that

- † Overfishing is avoided
- † Recovery plans and measures are in place for all depleted species
- † Fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems
- † Impacts of fisheries in species and ecosystems are within safe ecological limits

> Target 7

By 2020, areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity



> Target 10

By 2015, the multiple anthropogenic pressures on coral reefs and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning



> Target 11

By 2020, 17 per cent of terrestrial and inland water and 10 per cent of coastal and marine areas are conserved through well connected systems of protected areas and other effective area-based conservation measures

- Decision X/33 on Biodiversity and Climate Change (2010) calls for a precautionary approach to ocean fertilization and other geo-engineering schemes
  - \* Urges a precautionary prohibition on climate-related geo-engineering activities until there is an adequate scientific basis for justification and appropriate consideration of the economic, social and cultural impacts
  - \* Provides limited exception for small scale scientific research studies conducted in a controlled setting and subject to a thorough environmental impact assessment

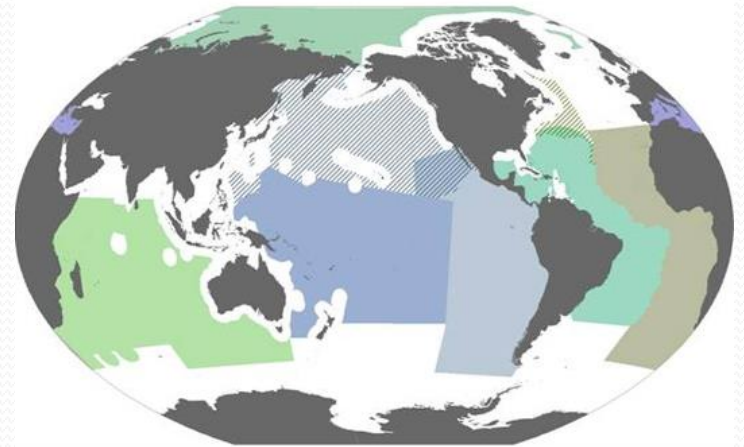




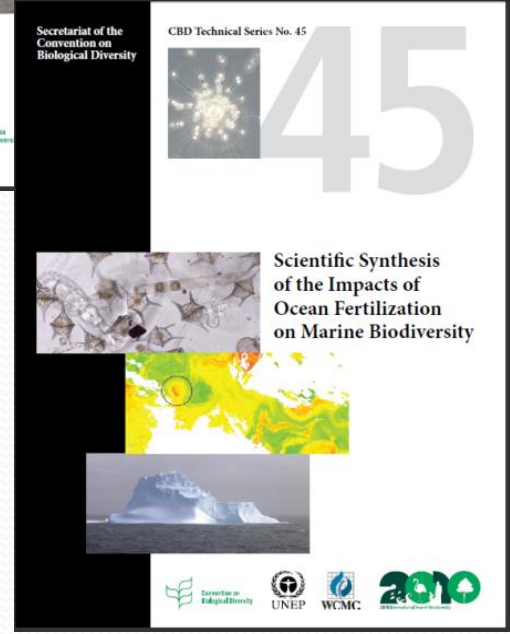
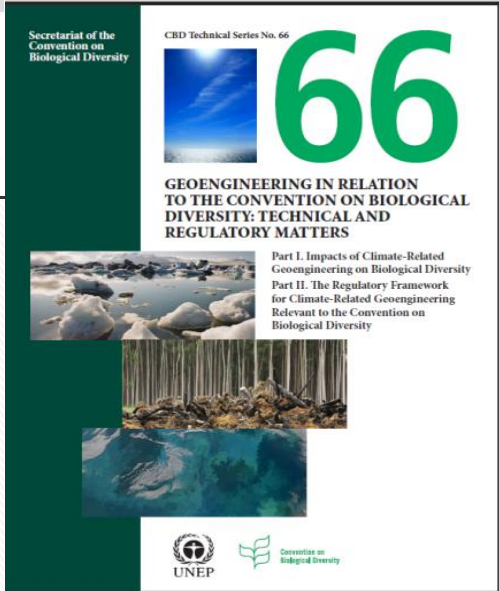
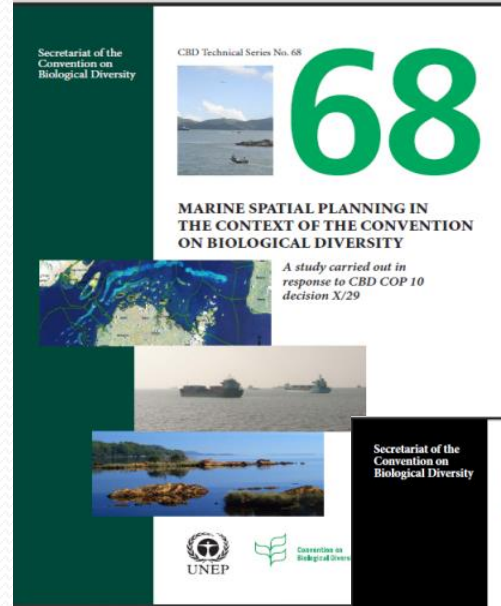
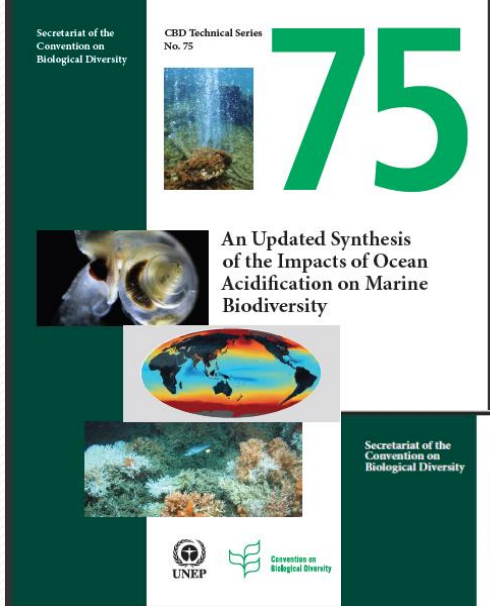
- CBD decisions have also promoted the identification of ecologically or biologically significant marine areas (EBSAs) for potential protection
  - \* Through Decision IX/20(2008) the Conference of the Parties adopted scientific criteria for identifying EBSAs with seven parameters agreed to:
    - > Uniqueness or rarity
    - > Special importance for life history stages of species
    - > Importance for threatened, endangered or declining species and/or habitats
    - > Vulnerability, fragility, sensitivity and slow recovery
    - > Biological productivity
    - > Biological diversity
    - > Naturalness



- \* Through Decision X/29 on Marine and Coastal Biodiversity (2010), Parties
  - > Emphasized the selection of management measures is a matter of States and competent intergovernmental organizations
  - > Requested the Executive Secretary to organize a series of regional workshops to facilitate the description of EBSAs
- \* Regional workshops have subsequently been held in the
  - > Arctic
  - > Eastern Tropical & Temperate Pacific
  - > Mediterranean
  - > North-East Indian Ocean
  - > North Pacific
  - > North-West Atlantic
  - > North-West Indian Ocean
  - > Seas of East Asia
  - > South-Eastern Atlantic
  - > Southern Indian Ocean
  - > Western South Pacific
  - > Wider Caribbean & Western Mid-Atlantic
- \* A special website has been created to provide access to EBSA reports and implementation efforts (<http://www.cbd.int/ebsa/>)



- Various CBD technical reports have also been issued of special relevance to marine biodiversity



- Biosafety Protocol (2000)

- + Not a comprehensive approach to controlling the introduction of genetically modified marine organisms, such as “super salmon”
  - Only covers the transboundary movements of living modified organisms (Art. 4)
  - Establishes an advance informed agreement (AIA) procedure for LMOs intended for introduction into the environment of an importing Party (Art. 7)
- \* Party of export must notify or require the exporter to notify in writing the competent national authority of the import Party prior to transboundary movement (Art. 8)
- \* Party of import must acknowledge receipt of the notification in writing within 90 days of its receipt (Art. 9)
- \* Party of import has 270 days from date of notification receipt to communicate to the notifier and the biosafety clearing-house its decision (Art. 10)
  - > Approval with or without conditions
  - > Prohibition
  - > Request for more information
  - > Extension of time for review



- \* Decisions by importing Parties must be based on scientific risk assessment (Art. 10(1))
  - > Risk assessments must follow the checklist set out in Annex III (Art. 15(1))
  - > Party of import may require the exporter to carry out the risk assessment (Art. 15(2))
  - > Party of import may require the notifier to cover the cost of risk assessment (Art. 15(3))
  
- \* Protocol allows Party of import to take a precautionary approach in reaching decisions

Lack of scientific certainty due to insufficient relevant scientific information and knowledge regarding the extent of the potential adverse effects of a living modified organism on the conservation and sustainable use of biological diversity in the Party of import, also taking into account risks to human health, shall not prevent that Party from taking a decision ... (Art. 10(6))



- Protocol exempts “contained uses” of LMOs (Art. 6(2))
  - Protocol does not cover trade in products, such as frozen fillets of genetically modified fish, where there is no potential for further genetic replication in the environment (Art. 3(h))
- + Example of limited coverage demonstrated by Canada’s recent approval of the first genetically modified fish organism (a super salmon)
- AquaBounty is proposing to propagate eggs in Canada and send them to Panama for grow out in a land-based facility
  - Biosafety Protocol does not cover the proposed activities
  - No global regulatory system has been forged

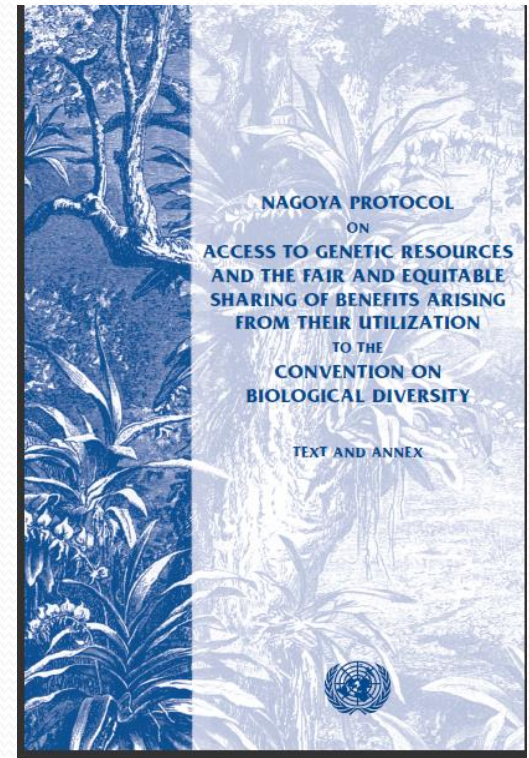


- Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization (2010)
- + Fleshes out the international legal framework for addressing an ongoing reality
  - Taking of genetic resources (bioprospecting) by researchers in one country from the land or sea in another country, especially developing countries
  - Subsequent commercializing a product or process derived from the genetic resource
    - \* Sponges are particularly a rich source of new products, including anticancer and anti-viral agents



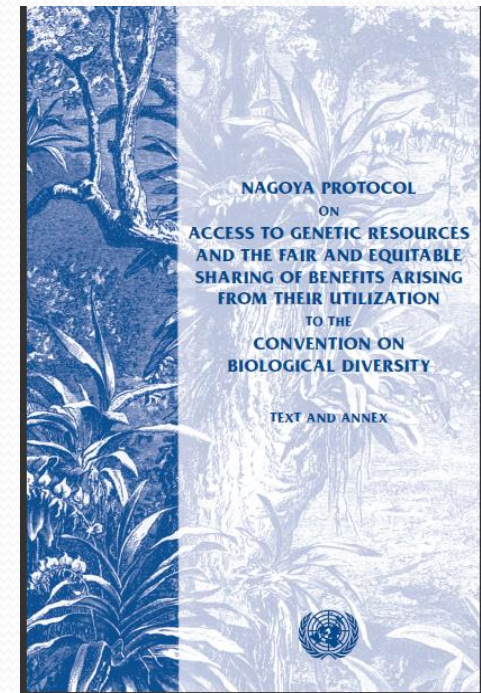
- \* Over 1000 new compounds estimated to be isolated from marine organisms on an annual basis (Mehbub et al. 2014)

- + Protocol sets the legal parameters for accessing genetic resources (Art. 6)
  - Makes access subject to the prior informed consent (PIC) of the Party providing the genetic resources (unless the Party determines otherwise)
  - Provides a checklist of legislative and administrative measures that should be implemented by Parties requiring PIC, e.g.,
    - \* Fair and non-arbitrary rules and procedures on accessing genetic resources
    - \* Information on how to apply for PIC
    - \* Provision for a written decision in a cost-effective manner and in a reasonable period of time
    - \* Provision for issuance of an access permit or its equivalent
    - \* Where applicable and subject to domestic legislation, the establishment of criteria and/or processes for obtaining the PIC and involvement of indigenous and local communities for access to genetic resources
    - \* Establishment of clear rules and procedures for working out mutually agreed terms, such as benefit sharing





- + Protocol also gives directions on the fair and equitable sharing of benefits from genetic resource utilizations
  - Sharing of benefits between the providing Party and using Party is to be upon mutually agreed terms
  - Where rights of indigenous and local communities are held over genetic resources, benefit sharing based on mutually agreed terms is also to be ensured
  - Benefit sharing may include monetary and non-monetary approaches with an Annex to the Protocol setting out examples, such as
    - \* Monetary
      - > Access fees
      - > Royalty payments
      - > Financial contributions to support biodiversity conservation
      - > Research funding
      - > Joint ownership of intellectual property rights
    - \* Non-monetary
      - > Sharing of research results
      - > Collaboration in education and training
      - > Institutional capacity-building



## + Key challenges in putting the Protocol into practice

### – Getting full ratification

- \* Just 78 Parties as of 28 October 2016
- \* Only entered into force on 12 October 2014

### – Ensuring both providing and utilizing Parties

- \* Adopt effective national laws and policies to implement the PIC and benefit sharing obligations
- \* Commit resources to compliance and enforcement

### – Following through with the capacity-building, scientific cooperation and technology transfer commitments in the Protocol (Articles 22 and 23)



### 3. Species Oriented “Side Currents”

- CITES

- + Uses the international "trade lever" to protect endangered/threatened species

- Appendix I listed endangered species

- \* No trade allowed for primarily commercial purposes
- \* Only limited trade, e.g. scientific exchanges, zoos/exhibitions
- \* Trade subject to export and import permit requirements

- > Export permit (State of export scientific authority must advise export will not be detrimental to survival of the species. State of export management authority must be satisfied the specimen was not taken in contravention of national laws, shipment will be "safe", and an import permit has been granted)



> Import permit (State of import scientific authority must advise that the import will not be detrimental to the species' survival and that suitable living quarters will be provided by recipient. State of import management authority must be satisfied the specimen will not be used primarily for commercial purposes.

– Appendix II listed “threatened species”

- \* Strictly regulated trade
- \* Trade requires an export permit

> Scientific authority of State of export must advise export will not be detrimental to species' survival

> Management authority of State of export must be satisfied the specimen was not taken in contravention of State's laws and that shipment will be “safe”



- Appendix III listed species (a Party wishes to control trade and therefore requests listing)
  - \* Export permit required
    - > Management authority of State of export must be satisfied taking was in accord with State's laws and that shipment will be “safe”



+ Has been considerable controversy over the appropriateness of listing commercially exploited aquatic species under CITES with some States arguing that FAO and RFMOs are the appropriate fora for addressing conservation concerns



- Very “rough waters” faced at 15<sup>th</sup> CoP of CITES in March 2010
  - \* CoP rejected proposed listing of several shark species, oceanic white tip shark (Appendix II), porbeagle (Appendix II) and spiny dogfish (Appendix I)
  - \* CoP rejected listing Atlantic bluefin tuna (Appendix I)
  
- “Breakthroughs” occurred
  - \* At the 16<sup>th</sup> CITES CoP in March 2013 with oceanic whitetip sharks, three hammerhead sharks, the porbeagle shark and manta rays added to Appendix II
  - \* At the CoP17 in 2016 where the silky shark, three thresher sharks and nine species of mobula rays were added to Appendix II



- Various other marine species have also been listed, e.g.,
  - \* Appendix I
    - > All beaked whales
    - > Almost all great whales (species subject to management by the International Whaling Commission)
    - > All marine turtles
    - > Coelacanths
    - > Dugongs
    - > Irrawaddy River Dolphin
    - > Shortnose sturgeon
    - > All sawfish species



- \* Appendix II, e.g.,
  - > All antipatharian (black coral) species
  - > All dolphins not listed in Appendix I
  - > All giant clam species
  - > All stony coral species
  - > Basking shark
  - > European eel
  - > Great white shark
  - > Humphead wrasse
  - > Most sturgeon species
  - > Queen conch
  - > Seahorses
  - > West Greenland stock of minke whales
  - > Whale shark



- \* Appendix III, e.g.,
  - > Sea cucumber species (*Isostichopus fuscus*) listed on Appendix III by Ecuador
  - > Walrus (by Canada)



- + Have been substantial tensions between allowing sustainable harvesting and protecting species vulnerable to trade, e.g.,
  - Polar bear listing
    - \* At 15<sup>th</sup> CoP in 2010 USA proposed transferring the polar bear from Appendix II to Appendix I (Arguments for a precautionary approach to ensure commercial trade does not compound the threats to polar bears)
    - \* Canada countered that
      - > Species does not meet the biological criteria for listing on Appendix I
      - > Trade does not have a detrimental impact on the species
    - \* The uplisting proposal was rejected
- + CITES' major limitations in species protection
  - Only covers trade in listed species
  - Does not cover takings/tradings restricted to within countries
  - Creates a very complex listing of species that is difficult to enforce
    - \* Approximately 5,600 fauna species
    - \* About 30,000 flora species
  - Allows reservations



- Bonn Convention
- + For Appendix I listed endangered migratory species, Range States urged to
  - Conserve and restore habitats
  - Prevent or compensate for/minimize adverse effects of activities seriously impeding migration of species
  - Strictly control introduction of exotic species
  - Prohibit taking except for limited purposes, e.g., scientific, traditional subsistence user needs



+ For Appendix II listed migratory species (having an unfavourable conservation status or having a conservation status which would significantly benefit from international cooperation)

- Range States encouraged to conclude further conservation agreements
- Guidelines set out as to what such agreements should contain, e.g.,

- \* Designation of national authority by each Party
- \* Commitment for a network of protected habitats
- \* Coordinated management plans
- \* Cooperative research and exchange of scientific information
- \* Monitoring and reporting requirements
- \* Settlement of disputes
- \* Public education and awareness

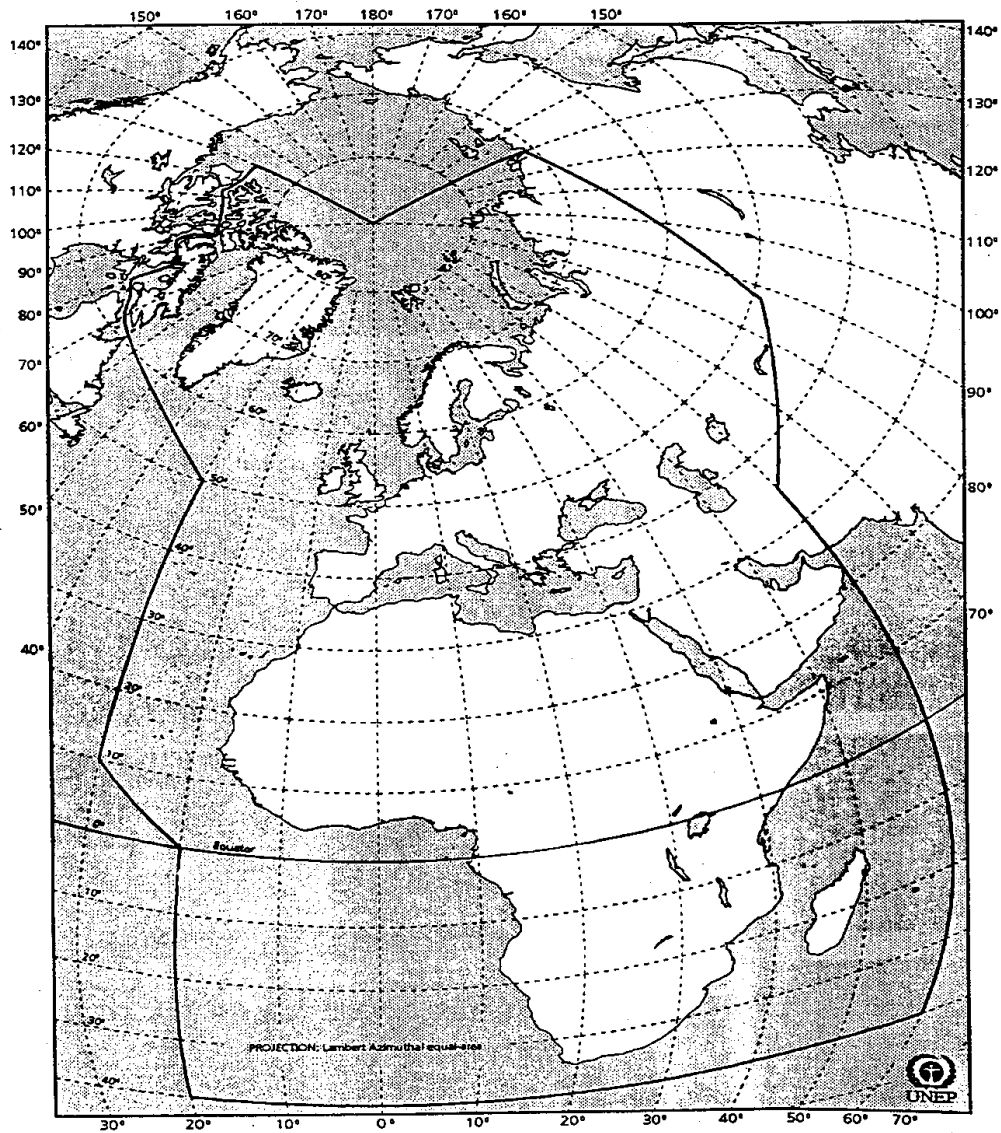


+ Species may be listed under one or both Appendices

- + Seven agreements concluded to date
  - Cetaceans of the Mediterranean Sea, Black Sea and Contiguous Atlantic Area
  - Small Cetaceans of the Baltic, North-East Atlantic, Irish and North Seas
  - Seals in the Wadden Sea
  - African-Eurasian Migratory Waterbirds
  - Albatrosses and Petrels
  - European Bats
  - Gorillas and Their Habitats
  
- + Various MOUs also, e.g.,
  - Marine Turtles of the Atlantic Coast of Africa
  - Marine Turtles of the Indian Ocean and South-East Asia
  - Cetaceans and their Habitats in the Pacific Islands Region
  - Migratory Sharks
  - Mediterranean Monk Seal
  - West African Aquatic Mammals

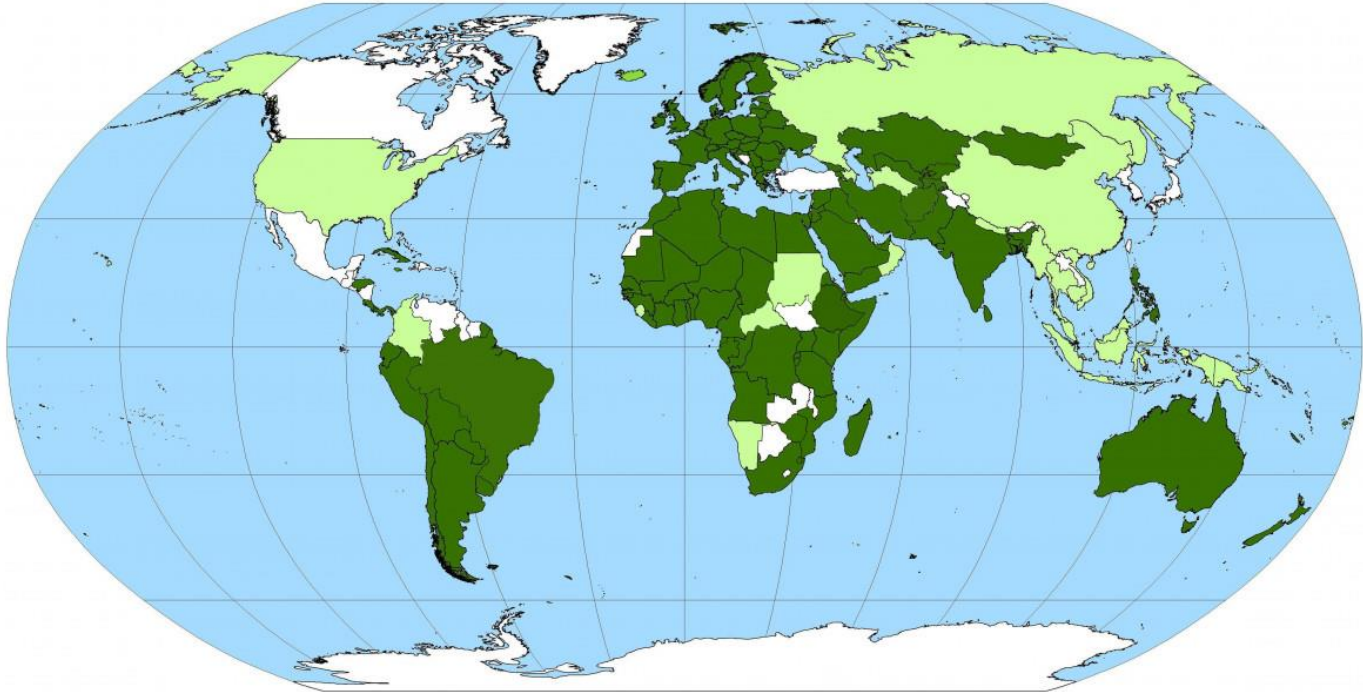


Annex 1a: Map of the Agreement Area



- + Key limitations
  - Limited acceptance of the Convention

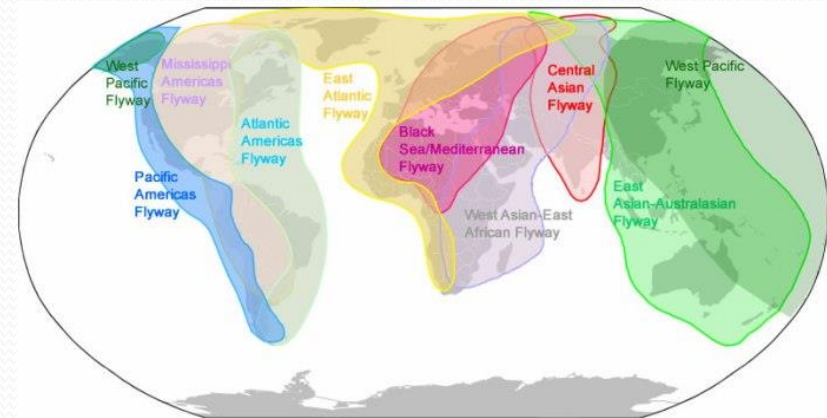
**Convention on the Conservation of Migratory Species of Wild Animals**  
**Map of 124 Parties (as of 1 August 2016)**



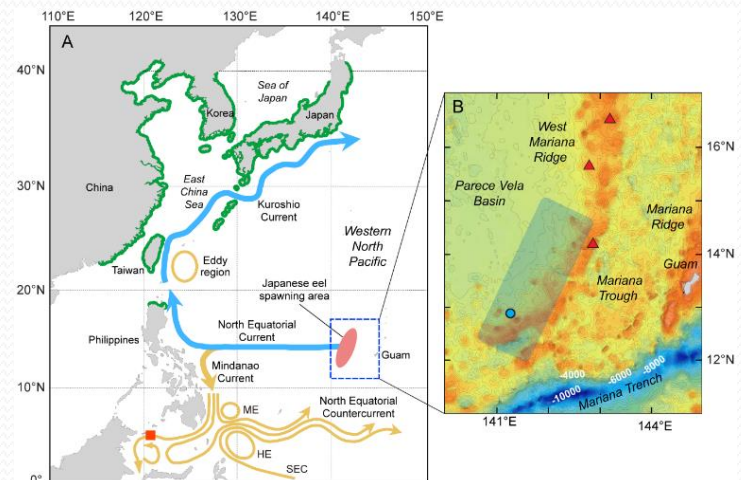
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.  
The final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined.

	<b>CMS Party</b>
	<b>Non-Party participating in Agreement or MOU</b>
	<b>No CMS Family involvement</b>

- Limited number of agreements and arrangements forged to date, e.g.,
  - \* Only one migratory birds agreement with many other flyways not formally addressed under the CMS
  - \* No CMS agreements/arrangements to address migratory eels that are facing major decreases in Europe, North America and Asia



> Japanese eel



(Watanabe et al. 2014)

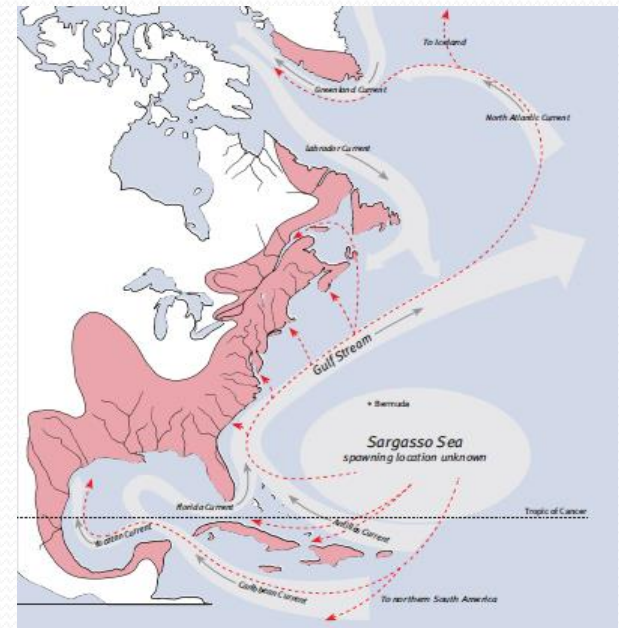
> American eel

- † One “big happy family” ranging from Greenland to the northeast coast of South America



[http://www.dfo-mpo.gc.ca/science/publications/article/img/american\\_eel.jpg](http://www.dfo-mpo.gc.ca/science/publications/article/img/american_eel.jpg)

- † For a catadromous species like the American eel, LOSC requires the coastal State in whose waters the species spends the greater part of its life cycle to enter an agreement for rational management with a State through whose EEZ the fish migrates (either as juvenile or mature)
- † No bilateral or regional agreements have been forged for the American eel



Source: Gulf of Maine Council on the Marine Environment. 2007. *American Eels: Restoring a Vanishing Resource in the Gulf of Maine*, at 2.



- International Whaling Convention
- + Established the International Whaling Commission (IWC)
- + IWC has imposed moratorium on commercial whaling since 1986
- + IWC has declared whaling sanctuaries
  - Southern Ocean
  - Indian Ocean

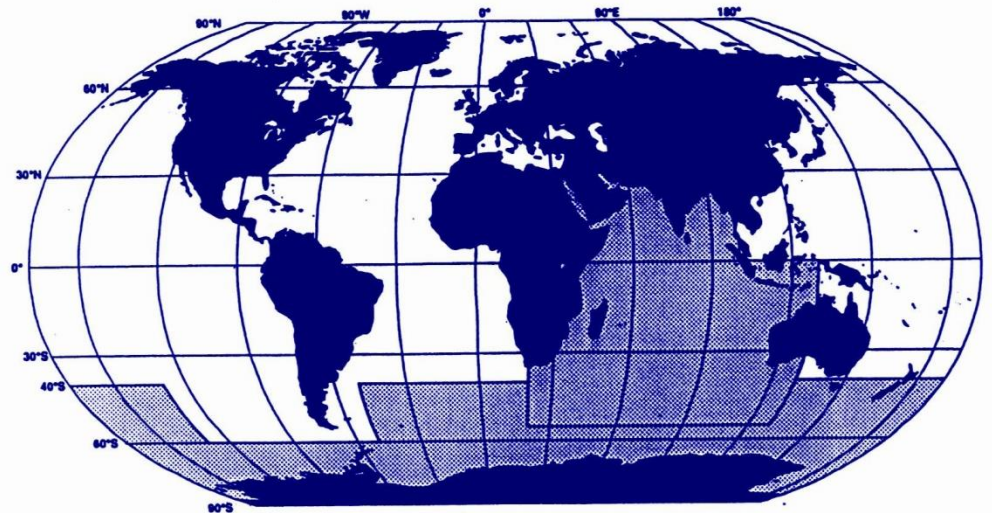


Figure. Boundaries of the Southern Ocean and Indian Ocean Sanctuaries.

## + International Whaling Convention frailties

- Opt out of management measures provision
- Scientific whaling “loophole”



- \* Japanese whaling vessels have taken over 15,000 whales under special permits issued since the moratorium including over 10,000 in what is now the Southern Ocean Sanctuary
- \* IWC has adopted over 20 resolutions calling on Japan to halt or restrict its lethal scientific whaling
- \* Australia was successful in a case before the ICJ which ruled in 2014 that Japan's programme of whaling in the Antarctic was not reasonable and not in accord with Article VIII of the International Whaling Convention



- \* Japan at first accepted the ICJ judgement and conducted only non-lethal whale research in Antarctica in the 2014/15 season but in October 2015 withdrew its recognition of the ICJ's compulsory jurisdiction over living marine resource disputes
- \* In December 2015 Japan issued a special permit allowing the take of 333 minke whales in the Southern Ocean in the 2015/16 season under a new research program



- \* In a January 2016 letter published in *Nature*, 31 members of the IWC Scientific Committee concluded that the science underlying Japan's research plan did not pass peer review and the need for lethal sampling was not established
- \* At the IUCN World Conservation Congress in Honolulu, Hawaii in September 2016, a Resolution on Concerns about Whaling under Special Permits called on Japan to remove lethal sampling from its whale research programs



- \* At the IWC's 66<sup>th</sup> meeting in October 2016, resolutions were passed
  - > To establish a new Working Group to review scientific permit proposals and programs
  - > To undertake an independent performance review of the IWC



- Questionable jurisdiction over small cetaceans
- Unresolved ethical debates
- Lack of amendment procedure
- No binding dispute resolution



## 4. Habitat Focused “Eddies”

- Convention on Wetlands of International Importance Especially as Waterfowl Habitat
  - + Parties urged to designate wetlands on “the List” of wetlands of international importance (Art. 2.1)
  - + Parties required to include wetland conservation and “wise use” considerations in planning (Art. 3.1)
  - + Parties required to inform the Secretariat of any ecological changes to listed wetlands e.g., development activities, pollution interferences (Art. 3.2)
  - + Parties urged to establish nature reserves in wetlands, whether listed or not (Art. 4.1)





## + Wetlands broadly defined

- [A]reas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres (Art. 1)
- Boundaries of listed wetlands may incorporate adjacent riparian and coastal zones, islands or bodies of marine water deeper than six metres lying within the wetlands (Art. 2.1)



- + Listing requirements not particularly onerous (Only one criterion of nine needs to be met for listing wetlands of international importance), e.g.,
  - Wetland supports vulnerable, endangered, or critically endangered species or threatened ecological communities (Criterion 2)
  - Wetland regularly supports 20,000 or more waterbirds (Criterion 5)
  - Wetland regularly supports 1% of the individuals in a population of one species or subspecies of waterbird (Criterion 6)
  - Wetland supports significant proportion of indigenous fish species, life-history stages... thereby contributing to global biological diversity (Criterion 7)
  - Wetland important source of food for fishes, spawning ground, nursery and/or migration path for fish stocks (Criterion 8)



- + Parties commit to require EIAs before transformation of wetlands allowed (Resolution 5.1 of 1993)
- + Parties agree to make national wetland inventories identifying major sites for wetland biodiversity (Resolution 5.1 of 1993)
- + As of 28 October 2016, there were 169 Contracting Parties, 2,243 listed Wetlands of International Importance, covering 216,320,717 hectares



## + Wetlands Convention “frailties”

- Parties only required to designate one wetland on the List of Wetlands of International Importance (Art. 2(4))
- Wetlands do not have to be protected before designation
- Parties urged to promote establishment of nature reserves on wetlands whether listed or not (Art. 4(1))
- The Convention provides for a list (the Montreux Record) where priority conservation attention and support is needed because adverse changes in ecological character to a Ramsar site have occurred, are occurring or are likely to occur
  - \* A Contracting Party may request inclusion
  - \* Others, such as NGOs, can suggest inclusion
  - \* No listing on the Record may occur, however, without the approval of the Contracting Party concerned



- World Cultural and Natural Heritage Convention

- + Convention urges Parties to protect/rehabilitate “world class” sites of cultural or natural heritage
- + World Heritage Committee established to approve properties for “World Heritage List”

- Listing increases tourism value
- Listing/proposed listing may help lever financial assistance from the “World Heritage Fund”





- + World Heritage listing criteria
  - Natural properties (Art. 2 of Convention)
    - \* Natural features...of outstanding universal value from the aesthetic or scientific point of view
    - \* Habitats of threatened species of animal and plant of outstanding universal value from the point of view of science or conservation
    - \* Natural sites... of outstanding universal value from the point of view of science, conservation or natural beauty
  - Cultural properties (Art. 1 of Convention)
    - \* Monuments...of outstanding universal value from the point of view of history, art or science
    - \* Groups of buildings...of outstanding universal value from the point of view of history, art or science
    - \* Sites... of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view

+ As of October 2016, (Convention website), 1052 properties were on the World Heritage List (814 cultural, 203 natural, 35 mixed) in 165 State Parties

– Examples of sites

- \* Galapagos Islands
- \* Shark Bay, Western Australia
- \* The Great Barrier Reef
- \* The Great Wall of China
- \* Lunenburg, Nova Scotia (Old Town)
- \* Phoenix Islands Protected Area (Kiribati)
- \* Ha Long Bay (Viet Nam)





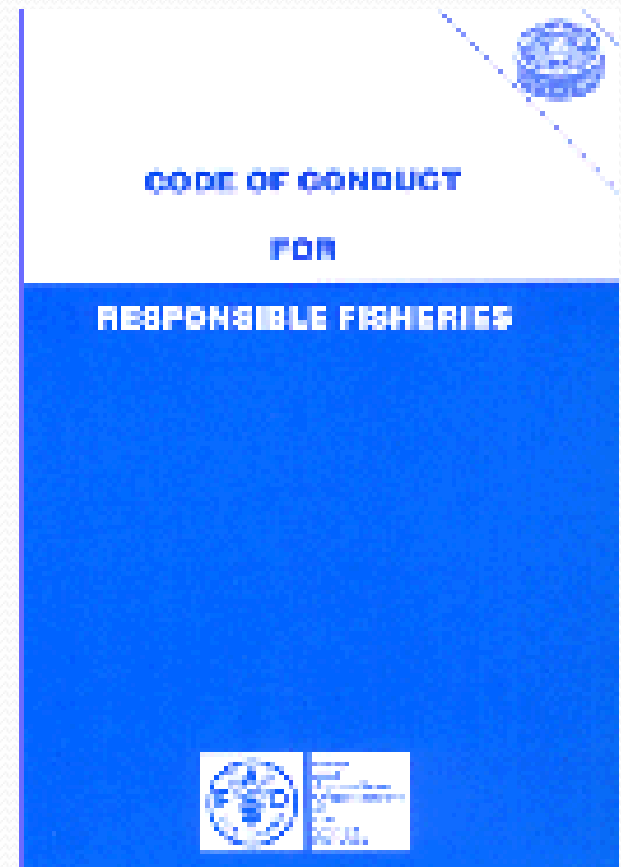
## + World Heritage Convention limitations

- Requires national inventories of “world class” cultural and natural sites but no actual requirement to list
- Leaves level of protection largely to Contracting Parties
  - \* Controlling tourism may in fact become the biggest challenge
  - \* Various “pressures” do exist to ensure adequate legal, administrative and management arrangements, e.g.,
    - > Requirement to document legislative and management arrangements as part of the listing process
    - > Obligation to provide national implementation reports every six years



## 5. Soft “Undercurrents”

- No time for details!
  - Three main “soft law” current systems to keep an eye on
- + FAO documents aimed at sustaining fisheries and reducing fishing impacts on marine ecosystems, e.g.,
- FAO Code of Conduct for Responsible Fisheries
  - FAO Guidelines
    - \* Precautionary Approach to Fisheries (1996)
    - \* Ecosystem Approach to Fisheries (2003)



- FAO International Plans of Action (IPOAs) with two particularly relevant to marine biodiversity conservation
  - \* IPOA for the Conservation and Management of Sharks (1999)
    - > Urges States to adopt national plans of action for the conservation/management of sharks (by the FAO Committee on Fisheries (COFI) session in 2001)
    - > Calls upon States to regularly assess the status of shark stocks
    - > Urges States to review shark-plan implementation at least every four years with a view to increasing effectiveness
    - > Urges States to cooperate through regional and subregional fisheries organizations/arrangements to conserve shark stocks including through the development of regional or subregional shark plans



- \* IPOA for Reducing Incidental Catch of Seabirds in Long-line Fisheries (1999)

- > Calls upon States with longline fisheries to conduct assessments of incidental catches of seabirds to determine if a problem exists



- > Urges States to adopt national plans of action for reducing incidental catches of seabirds in longline fisheries if a problem exists (no later than COFI session in 2001)
- > Prods States to cooperate through regional and subregional fisheries organizations/arrangements to reduce incidental catches

> Sets out list of possible mitigation measures for consideration to reduce incidental catch of seabirds including:

- † Weighting the longline gear (increasing the sinking speed of baited hooks will reduce exposure time to seabirds)
- † Thawing bait (overcomes buoyancy problem)
- † Setting the line under water
- † Bird-scaring line positioned over area where baited hooks enter the water





- † Acoustic deterrent
- † Setting baited hooks at night
- † Reducing attractiveness of vessels to seabirds (e.g., avoiding fish discards and garbage disposals)
- † Imposing area and seasonal closures when concentration of breeding or foraging seabirds are high
- † Requiring release of live birds

## + UN General Assembly Resolutions

- Annual Oceans and Law of the Sea resolutions
- Annual Sustainable Fisheries resolutions

\* One of the most famous was Resolution 61/105 in December 2006

> Called upon Regional Fisheries

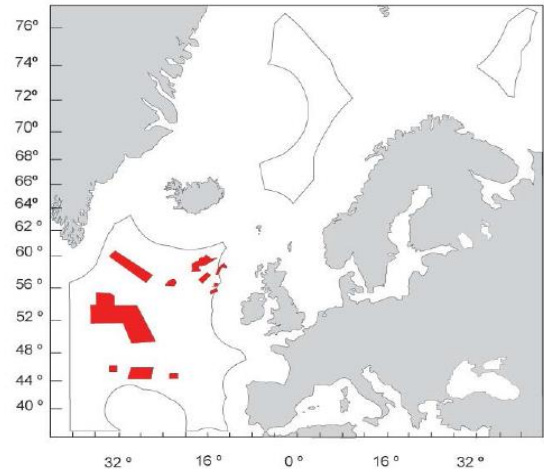
Management Organizations or Arrangements (RFMO/As)

- † To close vulnerable marine ecosystems (VMEs), including seamounts, hydrothermal vents and cold water corals, to bottom fisheries
- † To ensure bottom fishing activities do not proceed unless conservation and management measures have been established to prevent significant adverse impact on VMEs



- \* Has resulted in various VME closures, such as in the North East Atlantic

- Resolution 70/1 (September 2015) adopting 17 Sustainable Development Goals including Goal 14 “Conserve and sustainably use the oceans, seas and marine resources for sustainable development”



- + Earth Summit documents

- 1992 UN Conference on Environment and Development (UNCED)
  - \* Rio Declaration on Environment and Development
  - \* Agenda 21, Chapter 17 on Oceans
- 2002 World Summit on Sustainable Development (WSSD)
  - \* Johannesburg Declaration on Sustainable Development
  - \* Johannesburg Plan of Implementation
- 2012 Rio+20
  - \* The Future We Want

### III. Foggy Future (a Second Nautical Image)

- Debates over future directions for governance of marine biodiversity in areas beyond national jurisdiction occurred in two main UN fora before June 2015

+ UN Open-ended Informal Consultative Process on Oceans and Law of the Sea (ICP), e.g.,

- Fifth ICP meeting in 2004 addressed management of biological diversity of the seabed beyond national jurisdiction as a central topic
- Eighth ICP meeting in 2007 focused discussions on marine genetic resources including bioprospecting in areas beyond national jurisdiction

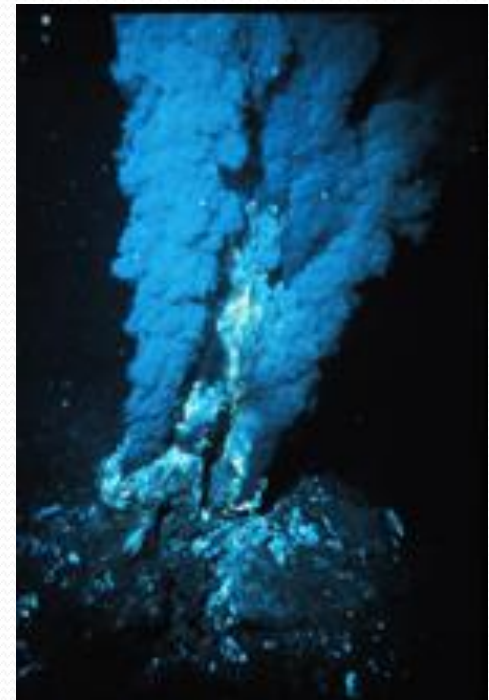




- + Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction (ABNJ WG)
  - First meeting 13-17 February 2006
  - Second meeting 28 April-2 May 2008
  - Third meeting 1-5 February 2010
  - Fourth meeting 31 May-3 June 2011
  - Fifth meeting 7-11 May 2012
  - Sixth meeting 19-23 August 2013
  - Seventh meeting 1-4 April 2014
  - Eighth meeting 16-19 June 2014
  - Ninth meeting 20-23 January 2015



- Heated debates over two main issues
- + Whether there is a governance gap in relation to marine genetic resources?
  - One view is that marine genetic resources beyond areas of national jurisdiction are covered by the high seas regime of LOSC and customary international law:
    - \* A high seas freedom
    - \* Subject to marine environmental protection and assessment responsibilities
    - \* An elaborated regulatory regime might impede scientific research and innovation



– Another view is that marine genetic resources beyond national jurisdiction should be considered part of the common heritage of mankind:

- \* Requiring fair and equitable sharing of benefits
- \* Supporting the need for new regulatory and practical measures



+ A second central contention point – Whether there should be a new Implementation Agreement on Marine Biodiversity Beyond National Jurisdiction?

- Idea pushed particularly by the EU and various NGOs
- Such an agreement might address various issues such as

- \* Establishment of MPAs on high seas
- \* Enhancement of EIA provisions
- \* Clarification of governance principles



- Still a foggy future
- + At the Rio + 20 Conference in June 2012, governmental representatives pledged to take a decision on the development of an international instrument under LOSC before the end of the 69<sup>th</sup> Session of the General Assembly (2015)



**RIO+20**  
United Nations Conference  
on Sustainable Development

- + In Resolution 69/292 (June 2015), the General Assembly decided to establish a preparatory committee process to develop a draft text on an international legally binding instrument under LOSC on the Conservation and Sustainable Use of BBNJ

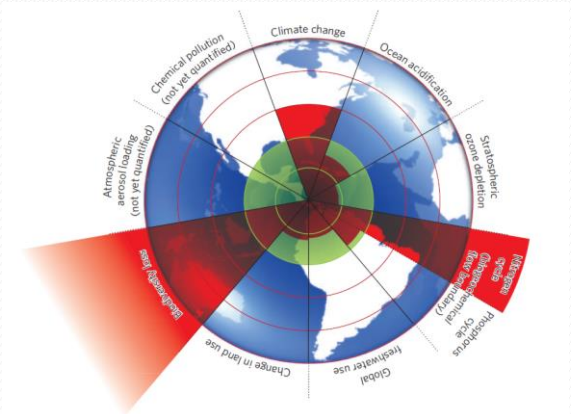
- + PrepCom to meet no less than two sessions in each of 2016 and 2017
- + A package of 4 issue areas to be addressed
  - Marine genetic resources including the sharing of benefits
  - Measures such as marine protected uses and other area-based management tools
  - Environmental impact assessments
  - Capacity-building and transfer of marine technology
- + General Assembly, based on the report of the PrepCom, will decide before the end of its 72<sup>nd</sup> session (2018) on the convening of an intergovernmental conference to elaborate the text of an international legally binding instrument under LOSC

- + PrepCom held two meetings in 2016
  - 28 March - 8 April
  - 26 August - 9 September
  - Still lots of unresolved issues
  - In all 4 areas
  - Relationship of a new agreement with existing organizations and arrangements having responsibilities relating to BBNJ, such as
    - \* Regional fisheries arrangement organizations/arrangements
    - \* The International Seabed Authority



## Conclusion

- Conserving marine biodiversity remains one of the world's largest challenges
- + Groundswells of international agreements and documents have emerged to try and curb the unprecedented losses of marine biodiversity
- + Putting words on paper into actual practice continues to be a critical shortcoming
  
- Ultimately, much more will be needed than the tangle of marine conservation agreements and commitments that continue to evolve
- + Biodiversity loss is just one of the planetary boundaries!
- + To reach to goal of healthy coastal communities and sustainable seas more than a fixation on nature conservation is needed



**Figure 1 | Beyond the boundary.** The inner green shading represents the proposed safe operating space for nine planetary systems. The red wedges represent an estimate of the current position for each variable. The boundaries in three systems (rate of biodiversity loss, climate change and human interference with the nitrogen cycle), have already been exceeded.

Planetary boundaries (Rockstrom et al. 'A safe operating space for humanity' *Nature* 46, 24 September 2009, 472)



- To cover the other 8 planetary boundaries would take at least another 8 hours of lecture
- + But our time is up!
- + The speed cruise must end

**Merci pour votre attention!**



*<http://www.mnr.gov.on.ca>*