Climate Change and International Fisheries

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Never Stand Still | Faculty of Law

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Overview

- The effects of climate change on global fish stocks
- The challenge of climate change for international fisheries management
- The structural limitations of RFMOs
- RFMOs and climate change
  - Tuna RFMOs
  - Non-Tuna RFMOs
- The CCAMLR experience
- The challenges ahead

Climate Change and Fish Stocks

- Climate change related changes in water temperature, oxygenation, ocean acidity and ocean currents will amplify natural variations and fluctuations in abundance leading to changes in abundance levels and in species distribution
- Evidence already exists of species displacement towards the poles and changes in size and abundance
- Indirect effects of increasing acidification, through destruction of prey and habitat, predicted to have profoundly detrimental impacts on fisheries, broader ecosystem services and livelihoods
- IPCC warns that by 2025 global redistribution of fish yields, coupled with decreases in open ocean net primary production and fish habitat caused by ocean warming, anoxia and acidification, will have profound implication for fish stocks and global food security

Climate Change and International Fisheries Management

- The challenge = how to manage under increasing conditions of uncertainty
- Spatial or species specific management approaches do not align with current – let alone changing - ecological boundaries
- Implementing precautionary and ecosystem approaches rendered potentially ineffective due to changes in species abundance and distribution compounded by jurisdictional issues:
  - Transboundary (or shared) stocks/species
  - Straddling, highly migratory and high seas stocks/species

Structural Limitations of RFMOs

- RFMOs are generally considered deficient in the essential capacities for adaptive, integrated governance and management required to effectively support the resilience of marine ecosystems in an increasingly dynamic, climate change-challenged environment

- Structural limitations include:
  - *pacta tertiis* effect and lack of obligations on non-members and free riders to comply with data acquisition and other conservation and management measures
  - Opt-out procedures for members
  - FOCs/FONCs

RFMOs and Climate Change: Emerging Practice

- Most RFMO mandates now call for precautionary and ecosystem approaches
- However, most RFMOs treat climate change as a sub-category of general climate fluctuations – not as its own distinct environmental challenge
- References to the importance of ecosystems are not made in the context of considering climate change but rather the interactions between species
- Climate change is recognised in a general way as possibly affecting the oceans/stocks under management but very little substantive action has been taken to date to address its impacts through or in conservation and management measures

Practice in TUNA RFMOs

- IATTC: focusing on understanding the impacts of climate change and ocean acidification on the population status and dynamics of managed species.
- IOTC: monitoring ocean climate conditions to depict the inter-annual trend and to track major changes that may affect the large pelagic ecosystem.
- ICCAT: has done little by way of climate change specific research to date. Pending study on the Design of Best Practices when Including Environmental Information into ICCAT Indices of Abundance may eventually generate data sets for use in accounting for responses of tuna to environmental change in management decisions.
- CCSBT: although acknowledging need to do more re climate change, has done little to date and Scientific Committee has said factoring in climate change is a low priority because existing robustness tests broadly cover the area.

Practice in Non-Tuna RFMOs

- NAFO: Ecosystem Approach to Fisheries Management provides a mechanism through which climate impacts may be considered implicitly if not explicitly
- NEAFC: second Review Panel specifically recommended that climate effects be considered more explicitly in developing its management programme and that the scientific basis for such considerations be improved.
- SEAFO and the SPRFMO talk of precautionary and ecosystem approaches but their current conservation and management measures make no mention of climate change or other environmental change terminology. Environmental variability is mentioned only in the context of discussion of seasonal cycles (ie el niño/la niña events).

The CCAMLR Experience

- **NB: CCAMLR not a RFMO** (although it has some of the attributes of one)
- CCAMLR's Mandate – Conservation of Antarctic Marine Living Resources (not just fish) where conservation includes *rational* use
- any harvesting to be done in accordance with conservation principles requiring application of 'Ecosystem approach' = designed to take into account the delicate and complex relationships between organisms and physical processes that constitute the Antarctic marine ecosystem

- Potential implications and how CCAMLR should respond under general discussion since 2002
- 2008: Commission requests SC to add climate change to its agenda. Recognised impacts include effects on invertebrates, higher trophic levels, CCAMLR managed fisheries, and increased accessibility associated with increase in ice-free areas

CCAMLR and Climate Change

2009 Resolution 30/XXVIII on Climate Change

- Recognises climate change as one of the greatest challenges facing the Southern Ocean and urges increased consideration of climate change impacts in the Southern Ocean to better inform CCAMLR's management decisions

2011 CM 91-04: General framework for the establishment of CCAMLR Marine Protected Areas

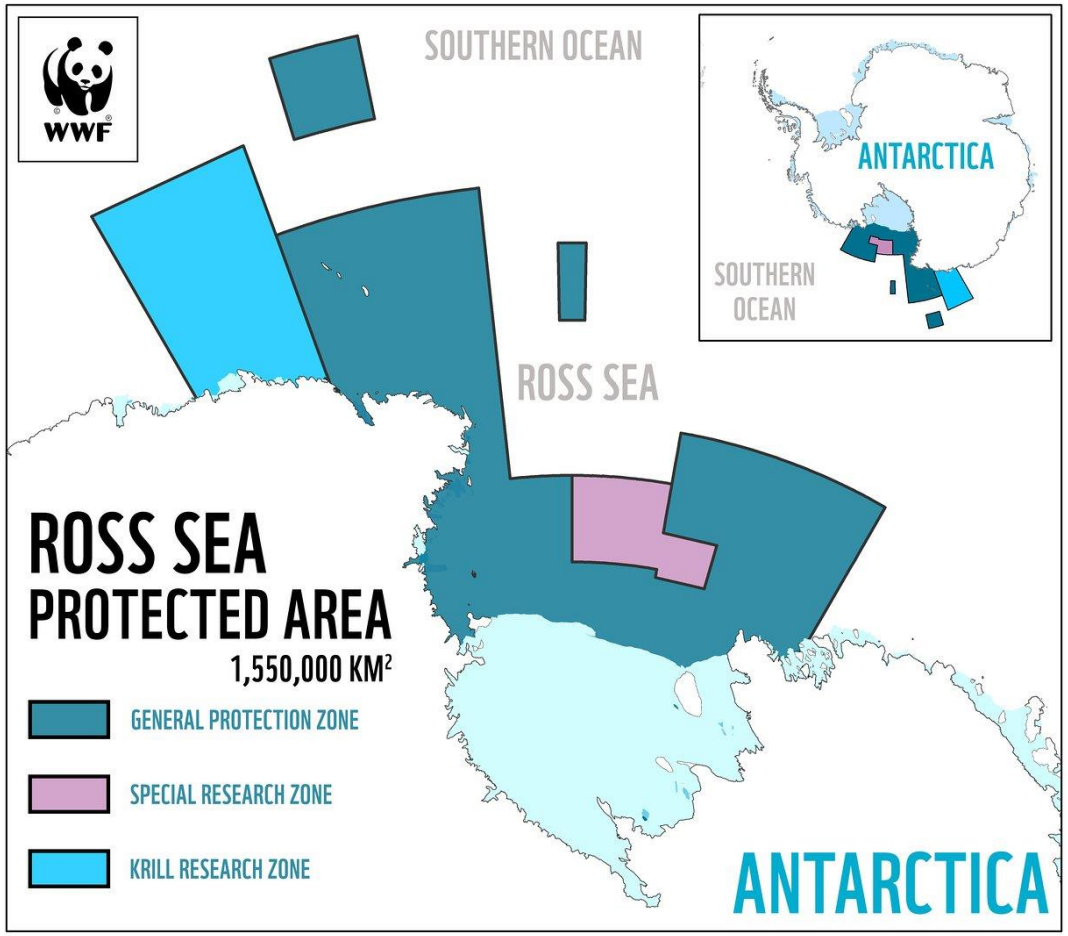
- Recognises MPAs can contribute to the achievement of Convention objective and the protection of areas to maintain resilience or the ability to adapt to the effects of climate change

(2016) CM 24-04: Establishing time-limited Special Areas for Scientific Study in newly exposed marine areas following ice-shelf retreat or collapse in Statistical Subareas 48.1, 48.5 and 88.3

- Provides for designation for up to 10 yrs to allow research to understand ecosystem processes in relation to climate change. Special conditions apply to fisheries and harvesting related research

The Ross Sea Region MPA

- 1.55 million km^2
- Into force 1 December 2017
- limits or entirely prohibits, certain activities in order to meet specific conservation, habitat protection, ecosystem monitoring and fisheries management objectives.
- 72% is 'no-take' zone, which forbids all fishing, while other sections will permit some harvesting of fish and krill for scientific research
- Displaced fishing effort moved to previously closed areas outside the MPA
- Monitoring and implementation plan under negotiation



The Challenges ahead

- If CCAMLR is having so much trouble – what hope is there for 'ordinary' RFMOs??
- RFMOs must do more than just talk about climate change and climate related impacts on the stocks they manage.
- Much remains to be done to make integration of climate change effects into management decisions a reality.
- 'climate change implications statements' in working papers and fisheries reports would at least be a first step in demonstrating their intent and their actions
- mechanisms for cooperation between existing RFMOs will need to be strengthened to ensure holistic ecosystem management of migrating or re-distributed stocks.
- new regulatory approaches/regimes may be necessary to ensure the sustainable conservation and use of fisheries resources in a climate changed ocean.

Thank you!