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# Governing New and Exploratory Fisheries in Environments of Uncertainty and Change: Comparing Global and Regional Approaches

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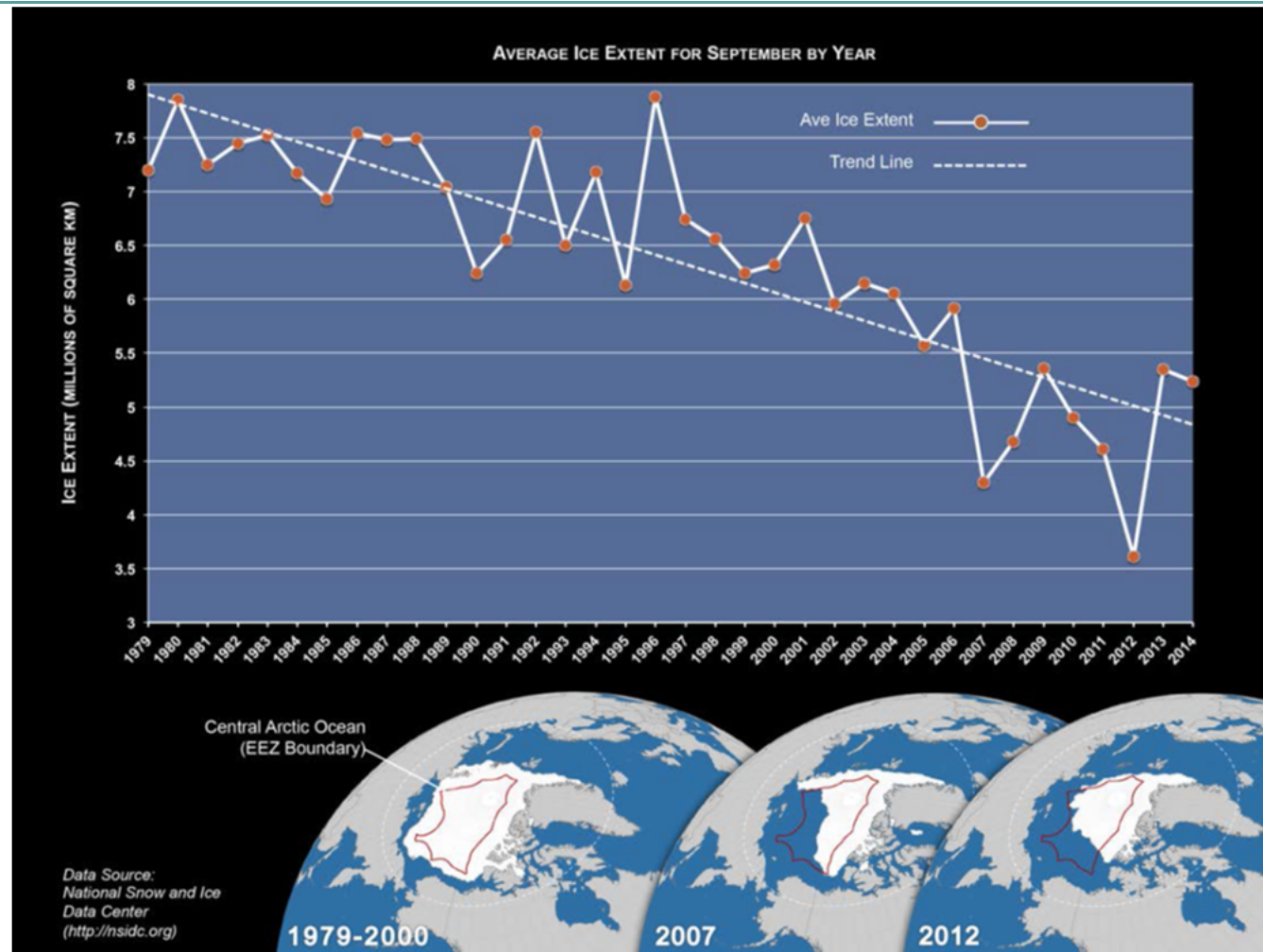
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# Introduction

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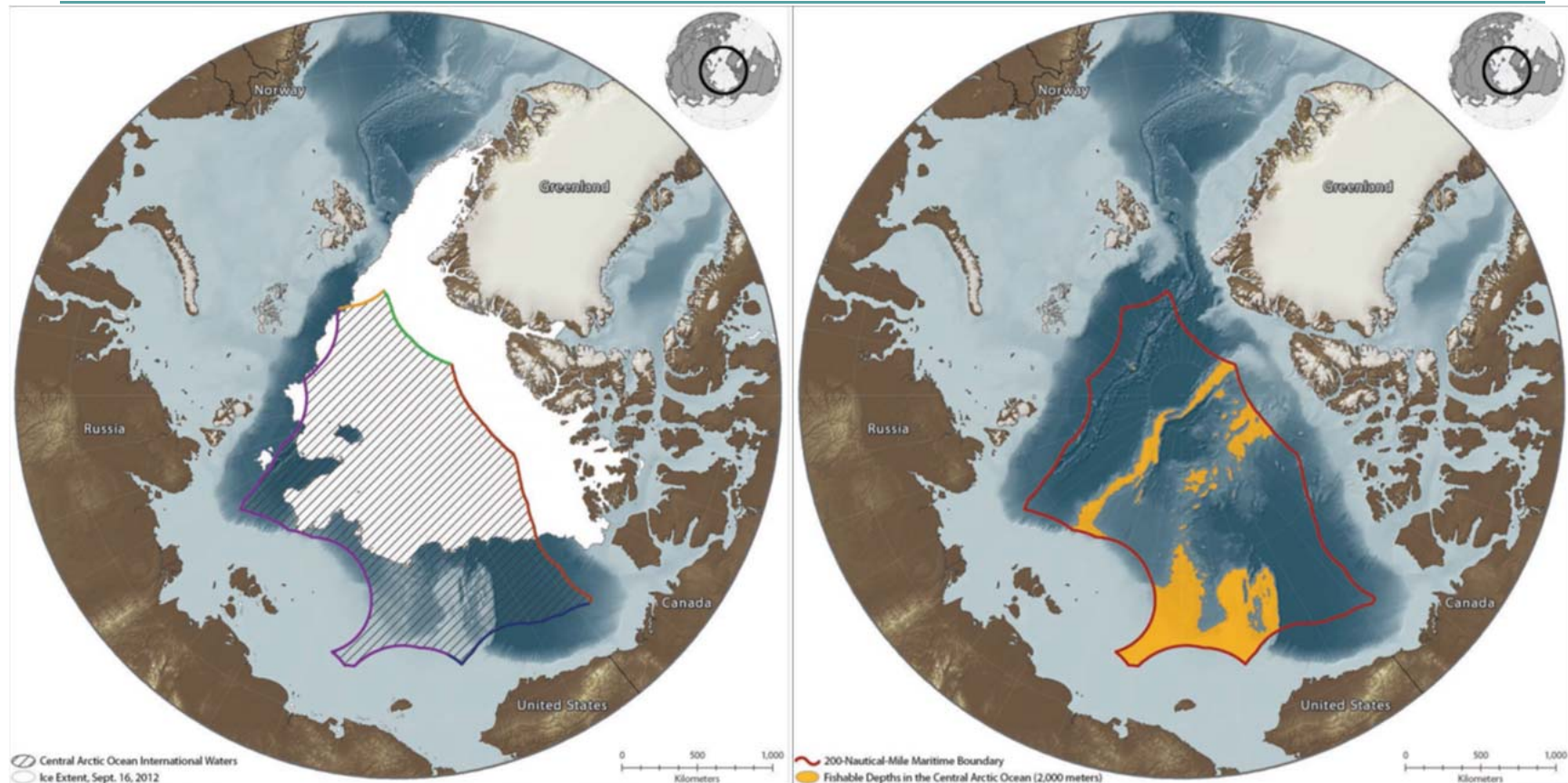
- Uncertainty and Change in Arctic Ocean Fisheries
- International Law and Policy on New and Exploratory Fisheries
  - Governing New and Exploratory Fisheries at the Global Level
  - Governing New and Exploratory Fisheries at the Regional Level
    - CCAMLR
    - NEAFC
- Comparing Global and Regional Approaches

# Uncertainty and Change in Arctic Ocean Fisheries





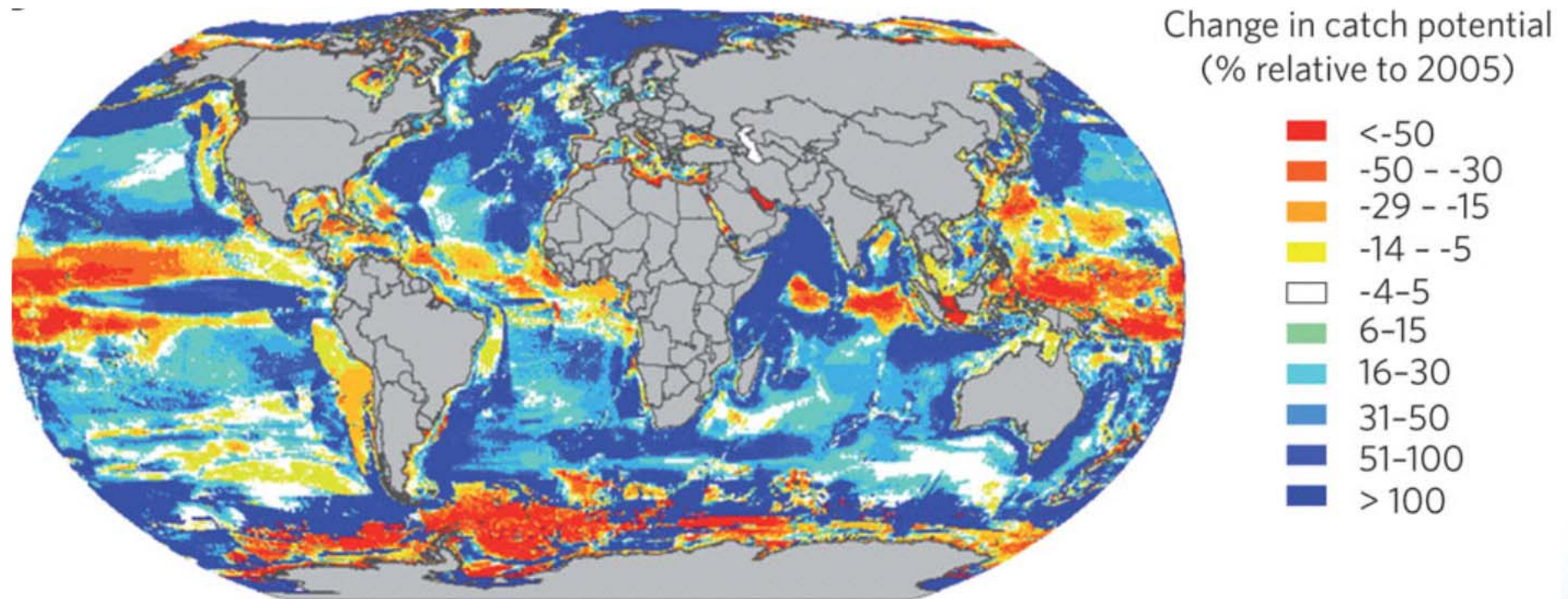
# Uncertainty and Change in Arctic Ocean Fisheries



Source: PEW Trusts (<http://www.pewtrusts.org/>)

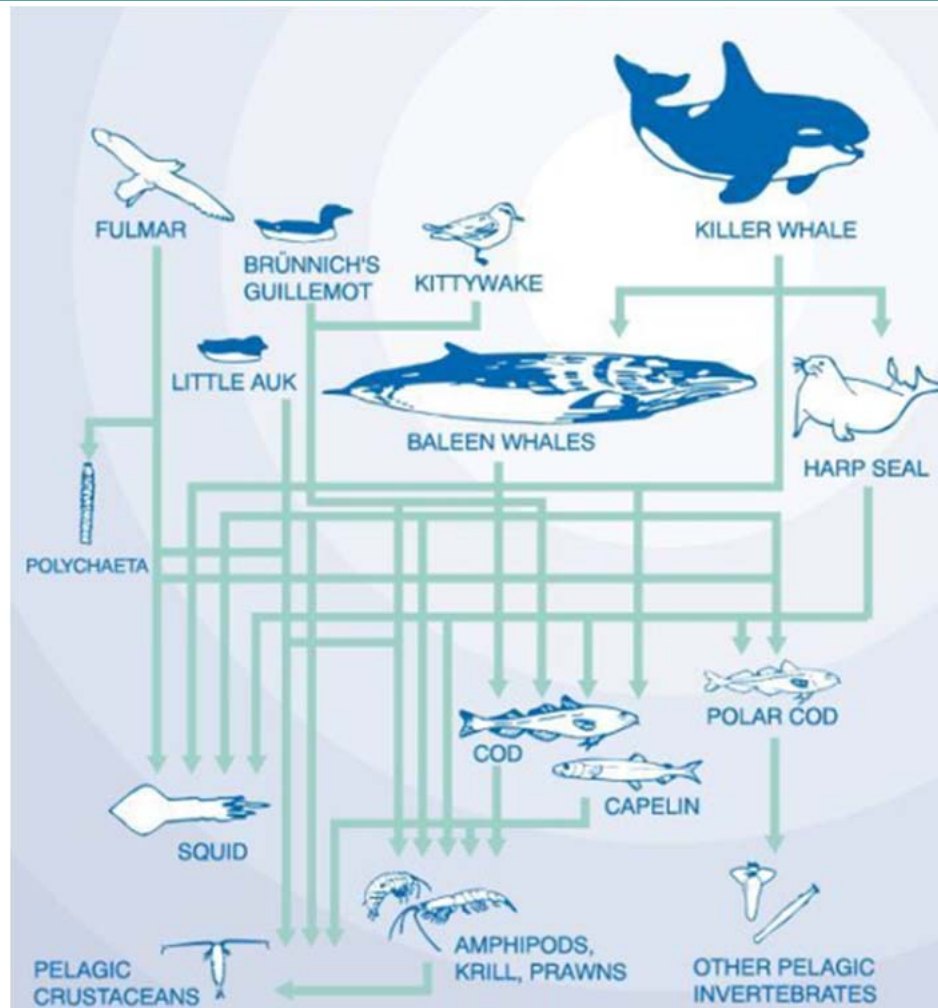
# Uncertainty and Change in Arctic Ocean Fisheries

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Source: Sumalia et al., 2011

# Uncertainty and Change in Arctic Ocean Fisheries





# Uncertainty and Change in Arctic Ocean Fisheries

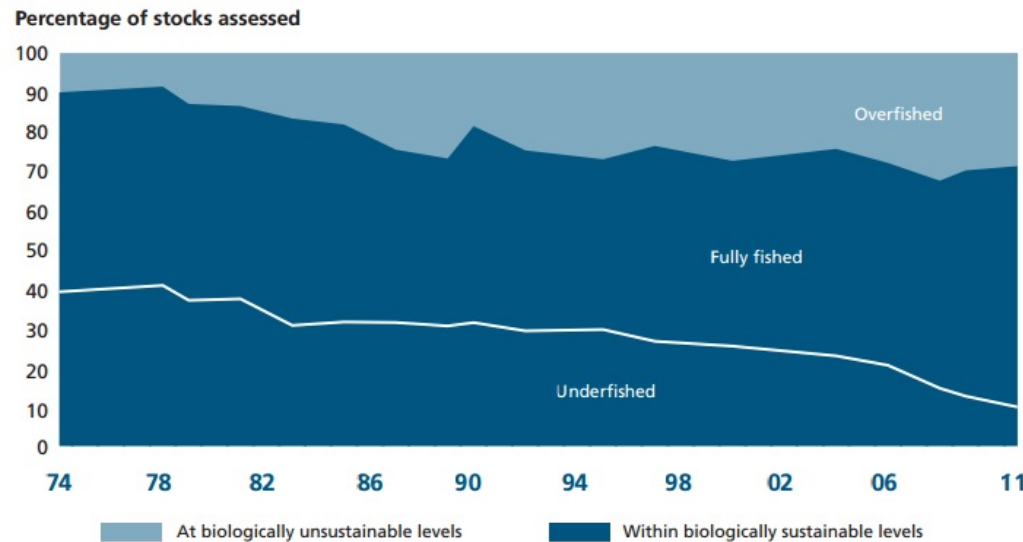
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- Changing abundance & distribution of fish stocks
  - Poleward shifts in fish stocks
  - Atlantic-Pacific fish interchange
- Highly dynamic & vulnerable marine ecosystems subject to rapid ecological changes
- High degree of scientific uncertainty & limited knowledge/data
  - Poor understanding of impacts on target species, non-target species, or broader marine environment
- Amplifying effects of climate change on all above features/characteristics
  - Arctic warming at twice average global rate
  - Receding sea ice, reduced salinity, ocean acidification
  - Changes adding to unpredictability of highly dynamic and variable Arctic Ocean ecosystems
- **Potential for new / exploratory fisheries?**

# Uncertainty and Change in Arctic Ocean Fisheries

## The Bigger Picture:

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



Notes: Dark shading = within biologically sustainable levels; light shading = at biologically unsustainable levels. The light line divides the stocks within biologically sustainable levels into two subcategories: fully fished (above the line) and underfished (below the line).

Source: FAO, 2014

(<http://www.fao.org/3/a-i3720e.pdf>)

For stock groups monitored by FAO:

- 28.8% overexploited;
- 61.3% fully exploited; and
- Only 9.9% under exploited
- **90.1% of world's monitored fish stocks cannot support additional fishing effort**

Socio-economic factors exerting severe pressure on global fisheries:

- rising demand for fish products worldwide;
- growth in fishing (by developing states);
- declining catches in existing marine capture fisheries;
- advances in technology for catching and processing fish (= world-wide excess fishing capacity).



# Uncertainty and Change in Arctic Ocean Fisheries

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## MEETING ON ARCTIC FISHERIES

Nuuk, Greenland, 24-26 February 2014

### CHAIRMAN'S STATEMENT

**“The meeting agreed on the desirability of developing appropriate interim measures to deter unregulated fishing in the future in the high seas area of the Central Arctic Ocean... the necessary measures will ... [c]ommit States participating in the interim measures to ... authorize their vessels to conduct commercial fishing in this high seas area only pursuant to one or more regional or subregional fisheries management organizations or arrangements that are or may be established to manage such fishing in accordance with modern international standards.”**

# International Law and Policy on New and Exploratory Fisheries

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- “New” and “exploratory” fisheries emerge in a variety of scenarios, influenced greatly by changes in distribution and abundance of fish stocks (ie. as a result of climate change):
  - Fishing in new geographic areas;
  - Targeting new fish stocks / species;
  - Utilizing new fishing techniques / technology;
  - Any combination of the above
- Concept / terminology influenced by parallel developments, but can be attributed to CCAMLR
- “New” vs. “Exploratory”: usually depends on the level of information / data available
- Cf. “existing”, “established”, or “traditional” fisheries
  - history of utilization
  - (hopefully) some form of management plan

# International Law and Policy on New and Exploratory Fisheries

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- Relevant concerns:
  - Boom-and-bust fishing
  - Harmful impacts:
    - target species;
    - non-target species;
    - broader marine environment.
  - competition with existing fisheries, including subsistence & cultural fisheries
  - Lack of data
  - Lack of dedicated / tailor-made conservation & management measures
- Common element among concerns = **uncertainty**
- Uncertainty amplified by **change**
- In light of these concerns, how should new and exploratory fisheries be governed?

# International Law and Policy on New and Exploratory Fisheries

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- International fisheries law:
  - Sets out limits of permissible action by states in managing new and exploratory fisheries,
  - Outlines norms and principles by which management ought to take place
  - Starting point is UN Convention on the Law of the Sea (UNCLOS)
    - Establishes basic framework for regulation of fisheries
  - Also relevant:
    - FAO High Seas Fishing Vessel Compliance Agreement
    - UN Fish Stocks Agreement (UNFSA)
    - FAO Code of Conduct for Responsible Fisheries
    - FAO International Plans of Action
    - FAO International Deep-sea Fisheries Guidelines
    - Certain UN General Assembly resolutions
    - General principles of international environmental / fisheries law
  - Together, these instruments govern new and exploratory fisheries at the global level



# Governing New and Exploratory Fisheries at the Global Level (Hard Law)

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## UNCLOS:

- Establishes basic jurisdictional framework for fisheries, entitlements, conservation / management obligations
- Key provisions:
  - **Art 61:** Conservation of the living resources (in EEZ)
    - Coastal state duty to prevent over-exploitation through conservation/management measures (MSY)
    - Coastal state duty to consider effects on associated/dependent species
    - Duty to contribute and exchange data relevant to the conservation of stocks
  - **Art 62:** Utilization of the living resources (in EEZ)
    - Optimum utilization
    - Duty to establish / comply with conservation and management laws and regulation
  - **Art 87:** Freedom of the high seas
    - Freedom of fishing, exercised with due regard
- No recognition of new and exploratory fisheries or related concepts
- Limited substantive fisheries standards

# Governing New and Exploratory Fisheries at the Global Level (Hard Law)

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## UN Fish Stocks Agreement:

- First formal recognition of new and exploratory fisheries at global level, but no definition
- Found in Art 6 – application of the precautionary approach
- **Art 6(6) Fish Stocks Agreement:**

**“For new or exploratory fisheries, States shall adopt as soon as possible cautious conservation and management measures, including, *inter alia*, catch limits and effort limits. Such measures shall remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks, whereupon conservation and management measures based on that assessment shall be implemented. The latter measures shall, if appropriate, allow for the gradual development of the fisheries.”**

# Governing New and Exploratory Fisheries at the Global Level (Soft Law)

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## UN General Assembly Resolution 61/105:

- Called upon States to take immediate action, individually and through RFMO/As, to sustainably manage fish stocks and protect VMEs from destructive fishing practices
- Paragraph 83:

***“Calls upon regional fisheries management organizations or arrangements to... in accordance with the precautionary approach, ecosystem approaches and international law...***

**...**

**(b) to identify vulnerable marine ecosystems and determine whether bottom fishing activities would cause significant adverse impacts to such ecosystems and the long-term sustainability of deep sea fish stocks, inter alia, by improving scientific research and data collection and sharing, and through new and exploratory fisheries;“**

# Governing New and Exploratory Fisheries at the Global Level (Soft Law)

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## FAO International Guidelines on Deep-sea Fisheries on the High Seas:

- To assist States and RFMOS sustainably manage fisheries & implement relevant provisions of UNGA RES/61/105
- **Para. 12:** Precautionary approach and EAF
- **Para. 23:** DSFs should be rigorously managed throughout all stages of development: experimental, exploratory & established. While knowledge is low, harvest rates kept low enough to minimise risk to sustainability & harvests only increase as knowledge, management capacity & MCS increase.
- **Para. 28:** Prior to establishment of new RFMO/A, States should cooperate to adopt / implement interim conservation & management measures.
- **Para 47:** assessments to establish likelihood of significant adverse impacts



# Governing New and Exploratory Fisheries at the Global Level (Soft Law)

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- **Para 50:** appropriate mechanism for reviewing assessments / determinations / management measures, including evaluation / advice by scientific committee, other appropriate body or, as appropriate, relevant multi-lateral body
- **Para 55:** National / international cooperative observer programmes; Higher levels of coverage for experimental & exploratory stages of development, for both fisheries under as well as outside of RFMO/As. Levels of coverage should remain high until measures in place to manage fisheries & prevent significant adverse impacts evaluated & determined to be effective.
- **Para 61:** appropriate set of rules / regulations for management of existing fisheries, as well as for opening of new areas to exploratory fishing

# Governing New and Exploratory Fisheries at the Global Level (Soft Law)

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- **Para 65:** Precautionary conservation & management measures, including catch / effort controls, essential during exploratory phase; should include measures to manage the impact of the fishery on low-productivity species, non-target species & sensitive habitat features.
  - Other measures to implement precautionary approach:
    - i. precautionary effort limits, particularly where reliable assessments of sustainable exploitation rates of target & main bycatch species not available;
    - ii. precautionary measures, including precautionary spatial catch limits where appropriate, to prevent serial depletion of low-productivity stocks;
    - iii. regular review of appropriate indices of stock status & revision downwards of the limits listed above when significant declines are detected;
    - iv. measures to prevent significant adverse impacts on vulnerable marine ecosystems;
    - v. comprehensive monitoring of all fishing effort, capture of all species and interactions with VMEs.
- **Para 74:** If after assessing all available scientific & technical information, presence of VMEs or likelihood of significant adverse impacts on VMEs cannot be adequately determined, States should only authorize individual DSFs activities to proceed in accordance with:
  - i. precautionary conservation & management measures to prevent significant adverse impacts;
  - ii. protocol for encounters with VMEs; and
  - iii. measures, including ongoing scientific research, monitoring & data collection, to reduce uncertainty.

# Governing New and Exploratory Fisheries at the Global Level (General Principles / Norms)

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## **Norms/Principles:**

- Precautionary approach / principle
- Ecosystem approach to fisheries (EAF)
- Due diligence

## **Management tools:**

- Environmental impact assessment (EIA) / strategic environmental assessment (SEA)
- Science-based fisheries management
- Adaptive management

# Governing New and Exploratory Fisheries at the Global Level

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- No definition of new and exploratory fisheries or related concepts at the global level
- Limited substantive fisheries standards
- Therefore, global approach largely relies on:
  - effective implementation of general principles / norms at regional, sub-regional, bilateral and national level; or
  - development of minimum global standards at these lower levels.



# Governing New and Exploratory Fisheries at the Regional Level

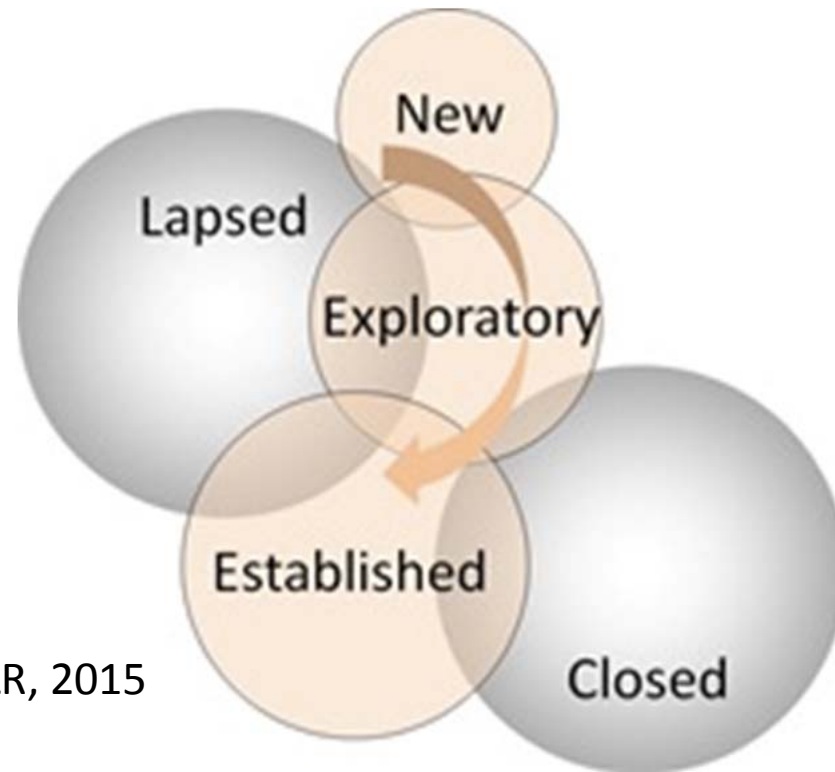
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- Consistent with global approach, strong role for RFMO/As in developing law / policy for new and exploratory fisheries
- Recognition of new and exploratory fisheries pioneered by CCAMLR
- Other developing law / policy frameworks for new and exploratory fisheries at regional level:
  - Eg. SEAFO, SPRFMO, NAFO, NEAFC
  - Central Arctic Ocean?

# Governing New and Exploratory Fisheries at the Regional Level (CCAMLR)

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- Regulatory framework designed to prevent fishing from expanding faster than acquisition of information necessary to ensure that each fishery meets CCAMLR's long-term management objectives
- Five types of fisheries:
  - New
  - Exploratory
  - Established
  - Lapsed
  - Closed



Source: CCAMLR, 2015  
(ccamlr.org)

# Governing New and Exploratory Fisheries at the Regional Level (CCAMLR)

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- **New Fishery (Conservation Measure 21-01):**
  - Biological data (including species distribution / abundance) and fishery data not available, or data from two most recent fishing seasons have not been submitted to CCAMLR
  - Any bottom-trawling in high seas areas of Convention Area
- Notification required at least 3 months prior to next regular meeting of Commission
- Must submit Fisheries Operation Plan to Scientific Committee and Commission
  - Must also include commitment to implement Data Collection Plan developed by Scientific Committee on basis of Fisheries Operation Plan
- No fishing pending procedures
- Limited catch or effort (or both)
- Obligatory scientific observation
- Conduct of fishery limited to member(s) who made notification
- Only open to vessels with good track record
- Becomes exploratory fishery after first year of fishing

# Governing New and Exploratory Fisheries at the Regional Level (CCAMLR)

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- **Exploratory Fisheries (Conservation Measure 21-02)**
  - Fishery previously defined as a ‘new fishery’
  - Remains exploratory fishery until sufficient information is available on appropriate catch / effort levels and potential impacts on dependent / related species
- Not allowed to expand faster than acquisition of information necessary for managing fishery within CCAMLR’s management objectives
- Notification and permission required prior to fishing
  - Similar procedural obligations as new fisheries (FOP, DCP, no fishing pending decision, etc.)
  - Decisions made by consensus
- Annual precautionary catch limits set by the Commission
- Commission annually considers adopting relevant conservation measures for each exploratory fishery
- Limitations / requirements on gear use
- Stringent data / reporting requirements



# Governing New and Exploratory Fisheries at the Regional Level (CCAMLR)

Source: Kock (ed.),  
2000  
([www.ccamlr.org/en/system/files/am-all.pdf](http://www.ccamlr.org/en/system/files/am-all.pdf))

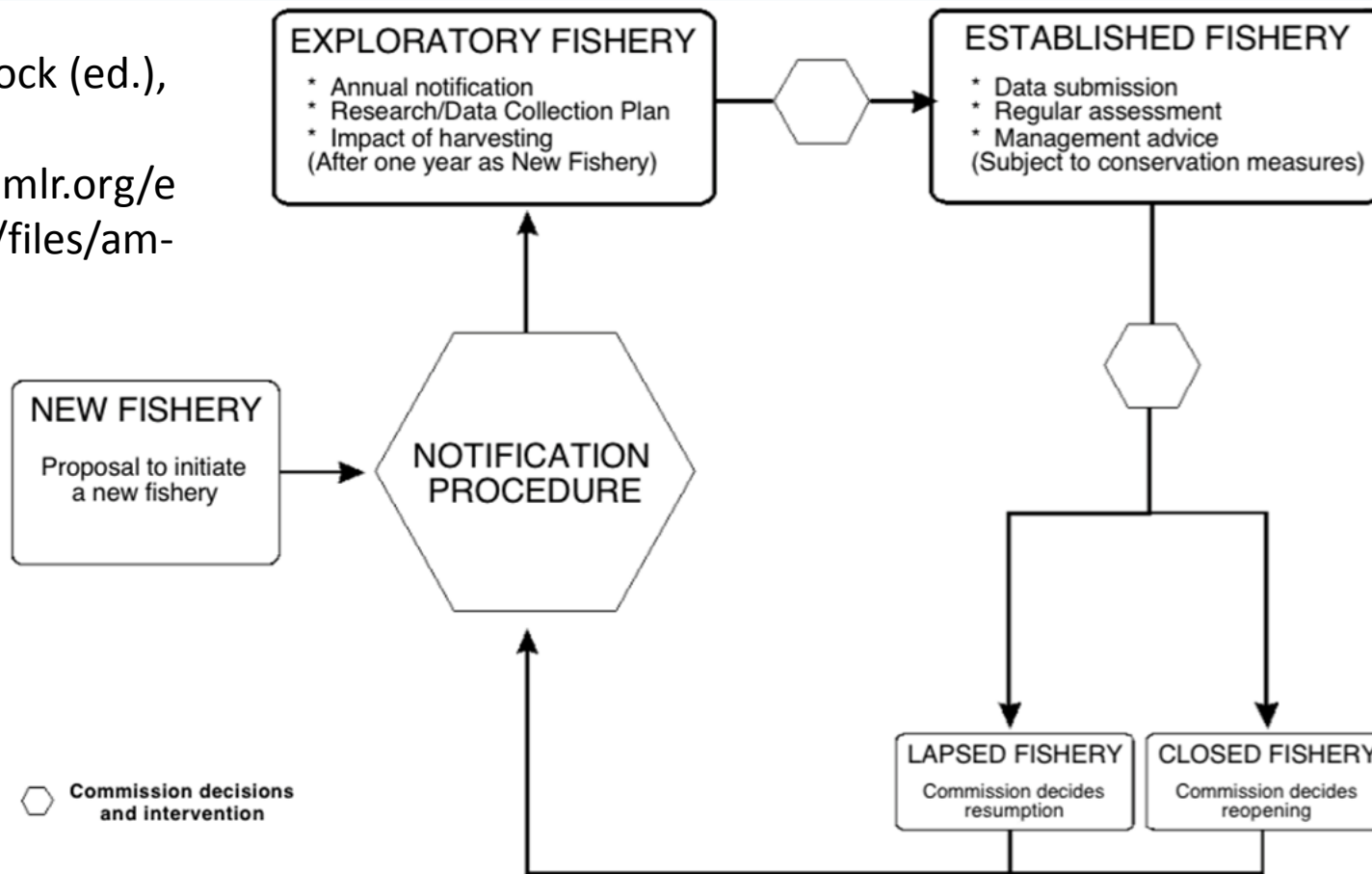


Figure 19: Stages of CCAMLR fishery development, indicating notification procedures and decision-making by the Commission.

# Governing New and Exploratory Fisheries at the Regional Level (NEAFC)

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- Exploratory fisheries addressed in context of bottom fishing and vulnerable marine ecosystems (VMEs)
- Recommendation 19:2004, Protection of VMEs in the NEAFC Regulatory Area (as amended by Recommendation 9:2015)
  - Exploratory bottom fishing: “all commercial bottom fishing activities outside area closures and existing bottom fishing areas, or if there are significant changes to the conduct and technology of bottom fishing activities within existing bottom fishing areas”
  - No definition of new bottom fishing (as of 2015)

# Governing New and Exploratory Fisheries at the Regional Level (NEAFC)

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- Articles 6 & 7:
  - Proposing Contracting Party to gather data to present to Commission; preliminary assessment of impacts
  - Notice of Intent required 6 months prior to fishing; forwarded by Secretary to parties and PECMAS for review; fishing can only commence on approval.
  - Preference given to fishing with least adverse impact possible
  - Vessels shall have observers system and report results to ICES and all parties
  - Commission may decide to authorise new bottom fishing based on results of exploratory bottom fishing conducted in previous two years; Areas where new bottom fishing authorised defined as “existing bottom fishing areas”

# Governing New and Exploratory Fisheries at the Regional Level

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- Similar practice by SPRFMO, SEAFO, NPFC, NAFO
- Strong emphasis on precautionary approach / EAF
- Other common features:
  - Preliminary assessments
  - Prior approval
  - Science-based management
  - Robust observer programs
- Varying use of terms / definitions: “new“, “exploratory“, “scientific“, “experimental“
  - Focus on bottom-fishing vs. fishing in general
  - Some concepts embedded in constitutive instruments, others found in conservation & management measures / recommendations
- Threshold between new, exploratory, and existing fisheries ambiguous

# Comparing Global and Regional Approaches

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- No universal definition of new and exploratory fisheries
  - Not necessarily problematic:
    - Leaves room to tailor concepts to particular management needs
    - Does not divert focus from underlying issues (ie. scientific uncertainty)

Some cross-cutting trends:

- Avoiding unregulated fishing
- Rejecting unilateralism
- Moving from open to restricted access
  - “Permission to fish”
  - Compatible with freedom of fishing?
- Addressing uncertainty and change
  - Operationalizing precautionary approach & EAF
  - Fostering due diligence through procedural obligations
  - Requiring adaptive, science-based management

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Questions?

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