User Rights in International Fisheries: From UNCLOS to the High Seas Treaty

Conference on Advantages and Disadvantages of Strong User Rights in Fisheries

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Introduction

- Internationally shared ocean fishery resources, said the FAO some 20 years ago, account for 1/3 of marine capture fishery harvests, and further that their effective management stands as one of the great challenges towards achieving sustainable fisheries.
  - I would assert that this remains true today
- The “users” in these fisheries are, in the first instance, states, coastal states and DWFSs (distant water fishing states), in particular. The “rights” of these users, DWFSs especially, are a matter of great controversy at the present time.
- How to strengthen these “rights”? Straightforward – achieving stable cooperation among users.
  - which means for economists that, in the study of these “rights”, the application of theory of strategic interaction – game theory - is mandatory.

Introduction cont.

- This Conference is concerned primarily with user rights at the level of individual fishermen.
- What link is there, if any, between “users” rights in international fisheries, as we have defined them, and the user rights of individual fishermen?
- The link is straightforward. Weak state user rights in international shared fisheries can easily lead to the undermining, some times to the point of destruction, of the relevant fishery resources. This, in turn, leads to the undermining of the value of any rights possessed by individual fishermen exploiting these fisheries.
- Strong “user” rights among states exploiting shared international fishery resources are the foundation of strong individual fishermen user rights
  - the case of the South Tasman Rise orange roughy fishery

A Bit of History- Need to be Remined of How We Got Where We Are Today

- Pre end of World War II
  - Coastal state Territorial Sea (3 nautical miles), the High Seas, and Freedom of the (high) seas
    - Coastal state ownership control over fishery resources in Territorial Sea absolute. In High Seas, fishery resources, due to Freedom of the Sea doctrine, *res communis,* open to all- true common pool - justification High Sea fishery resources **inexhaustible** for economic reasons, thanks to the state of fishing technology.
- End of WW II to the late 1950s
  - Exhaustibility of High Seas fishery resources- advance of fishing technology and resultant fall in harvesting costs - meant that by the'30s exhaustibility of these resources recognized by all. Clear evidence of overexploitation
  - End of WW II, attempt to address problem through international High Seas cooperative arrangements, e.g. NEAFC, ICNAF (mitigation of Freedom of the high seas)- completely inadequate
  - Inexorable move on part of coastal states to extend their control over ocean resources beyond the Territorial Sea.

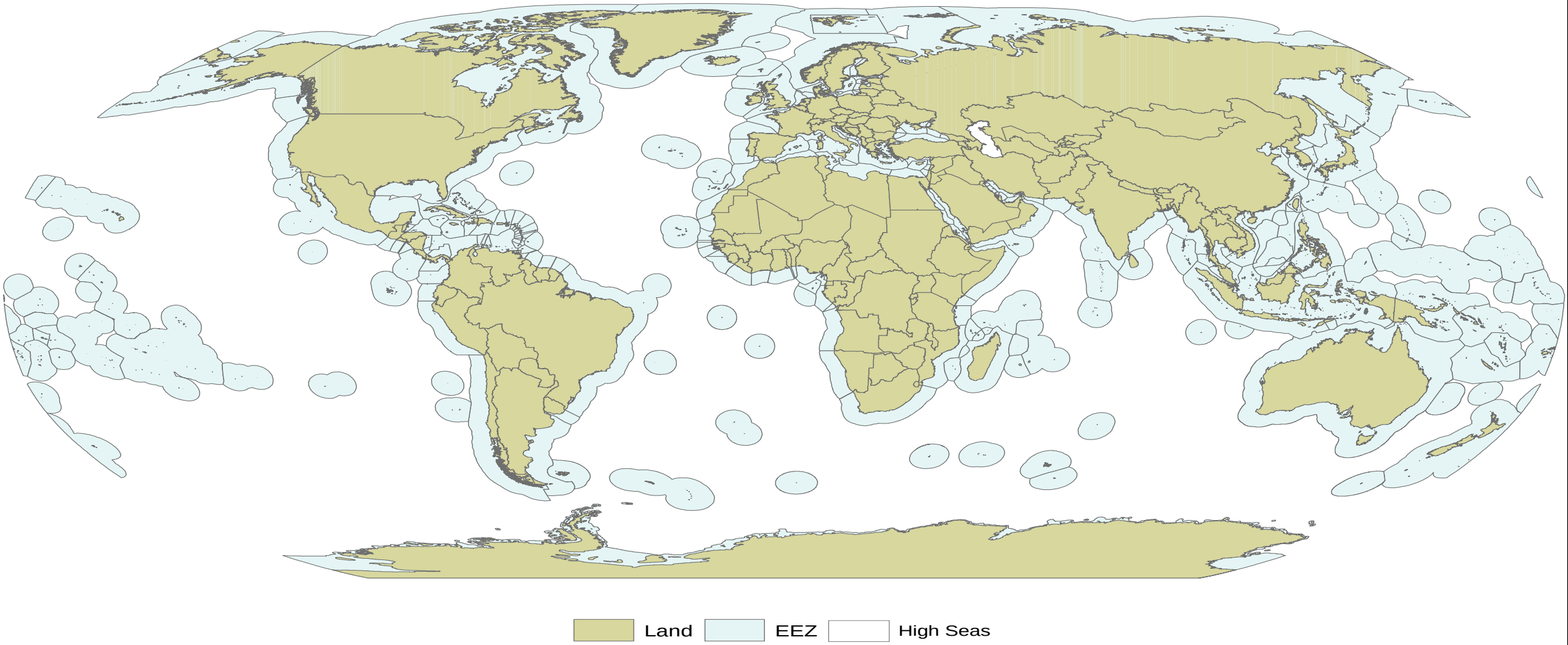
History cont., The UN Law of the Sea Conferences

- Inexorable move by coastal states to extend marine jurisdiction led to UN convening series of Law of the Sea conferences, 1958, 1960 and 1973-1982.
- From a fisheries perspective, first two conferences of little importance; the third of crucial importance.
- Third UN Conference on the Law of the Sea:
  - at beginning of Conference, uncertainty over extension of coastal state jurisdiction over fishery resources beyond 3 nautical miles – proposals ranged from extending Territorial Sea out to 200 nautical miles to granting coastal states preferential, but not ownership, rights.
  - distant water fishing states/entities (DWFSs) did, of course, push to keep coastal state extension of jurisdiction to an absolute minimum
  - Fisheries issues settled by 1975, the **Great Compromise**, which was codified as Parts V and VII of the 1982 UN Convention on the Law of the Sea (UNCLOS).

The Great Compromise

- Under Part V of UNCLOS- coastal state 200 nautical mile Exclusive Economic Zones - coastal states granted what amount to property rights to fishery resources contained therein – Freedom of the high seas severely restricted
  - far more than preferential rights for coastal states, but not the powers of the Territorial Sea
- Under Part VII – the High Seas- DWFSs granted the right to fish in the remaining high seas, **BUT** subject to the qualification that they must cooperate with coastal states and each other in the cooperative management of the relevant fishery resources.

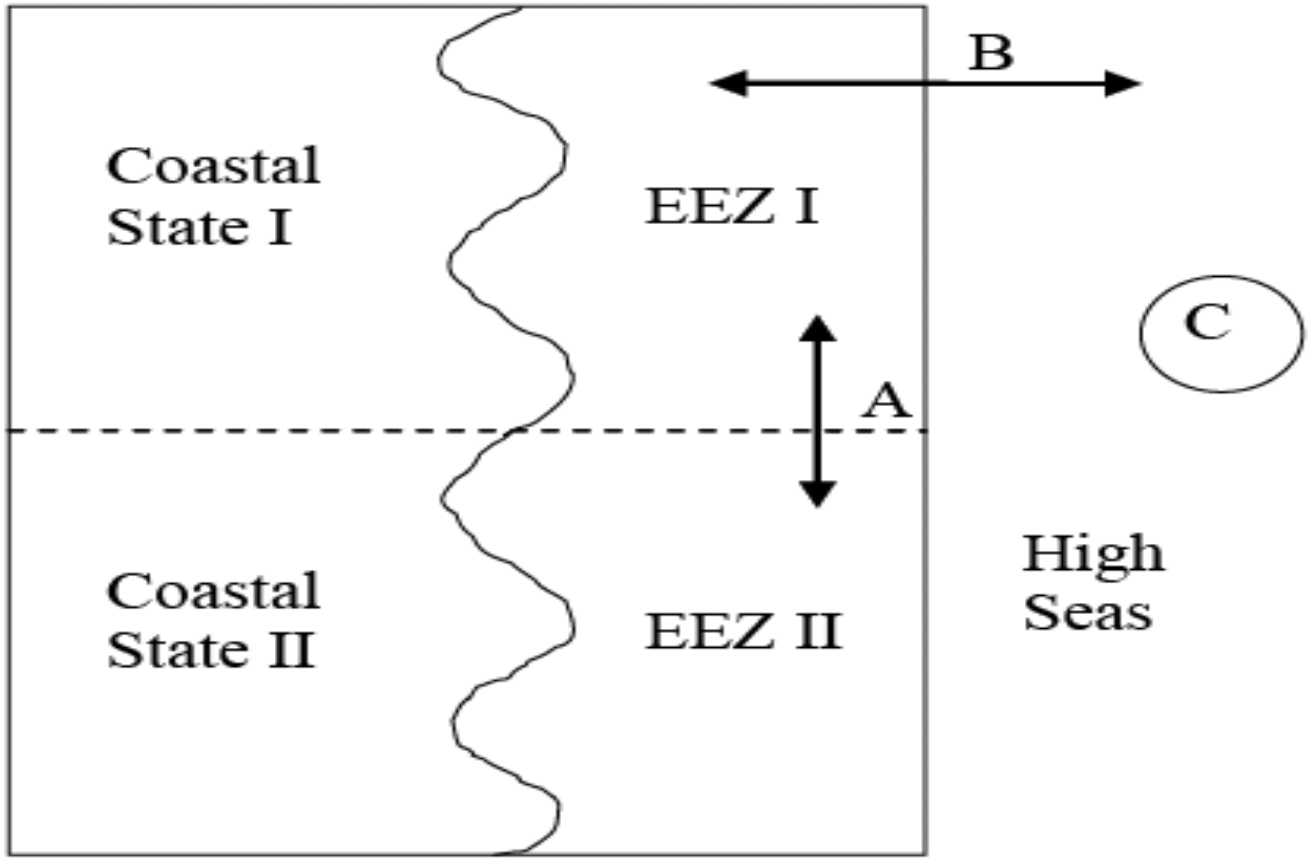
World Exclusive Economic Zones



Shared Stocks

- The EEZs world wide were estimated to encompass 90% of the commercially exploitable marine capture fishery stocks. The mobility of most of them meant that stocks would inevitably cross the EEZ boundary into neighbouring EEZs and/or the adjacent high seas, giving rise to four major categories (FAO)of shared stocks: (i) transboundary (EEZ-EEZ); EEZ – adjacent high seas:(ii) highly migratory, (iii) straddling; and (iv) discrete high seas
  - we will combine (ii) and (iii) into straddling stocks broadly defined (reasons for), so we have: (A) transboundary; (B) straddling br. def.; (C) discrete high seas

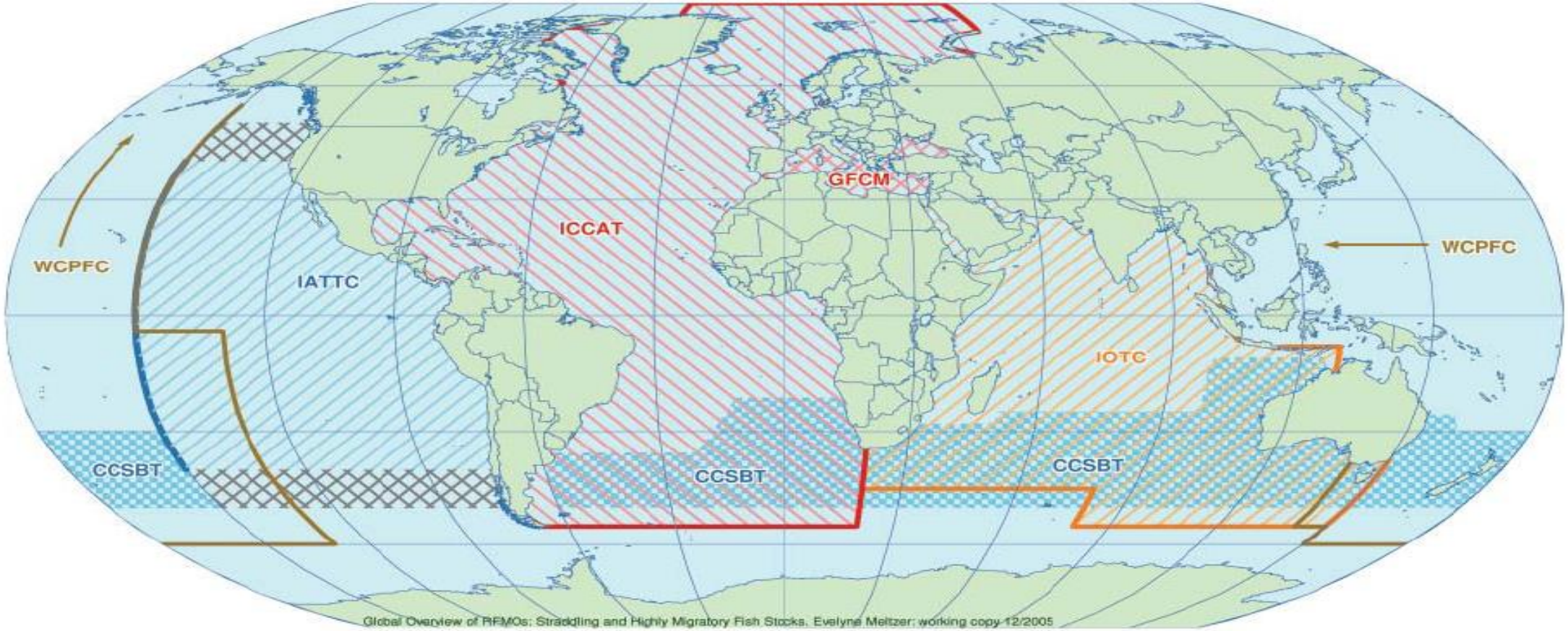
Shared Stocks



A. Transboundary fish stocks
B. Straddling fish stocks (broadly defined)
C. Discrete High Seas fish stocks

The EZZ – Adjacent High Seas Stocks

- Part VII of UNCLOS proved wholly inadequate for the management of of the high seas portions of straddling stocks broadly defined- one resource disaster after another.
- UN forced to convene a second conference, 1993-1995, to resolve the inadequacies.
- Result was the buttressing of UNCLOS through the 1995 UN Fish Stocks Agreement (UNFSA), leading to the RFMO(Regional Fisheries Management Organization) regime.
  - UN kept the distinction between highly migratory and straddling (narrowly defined) stocks

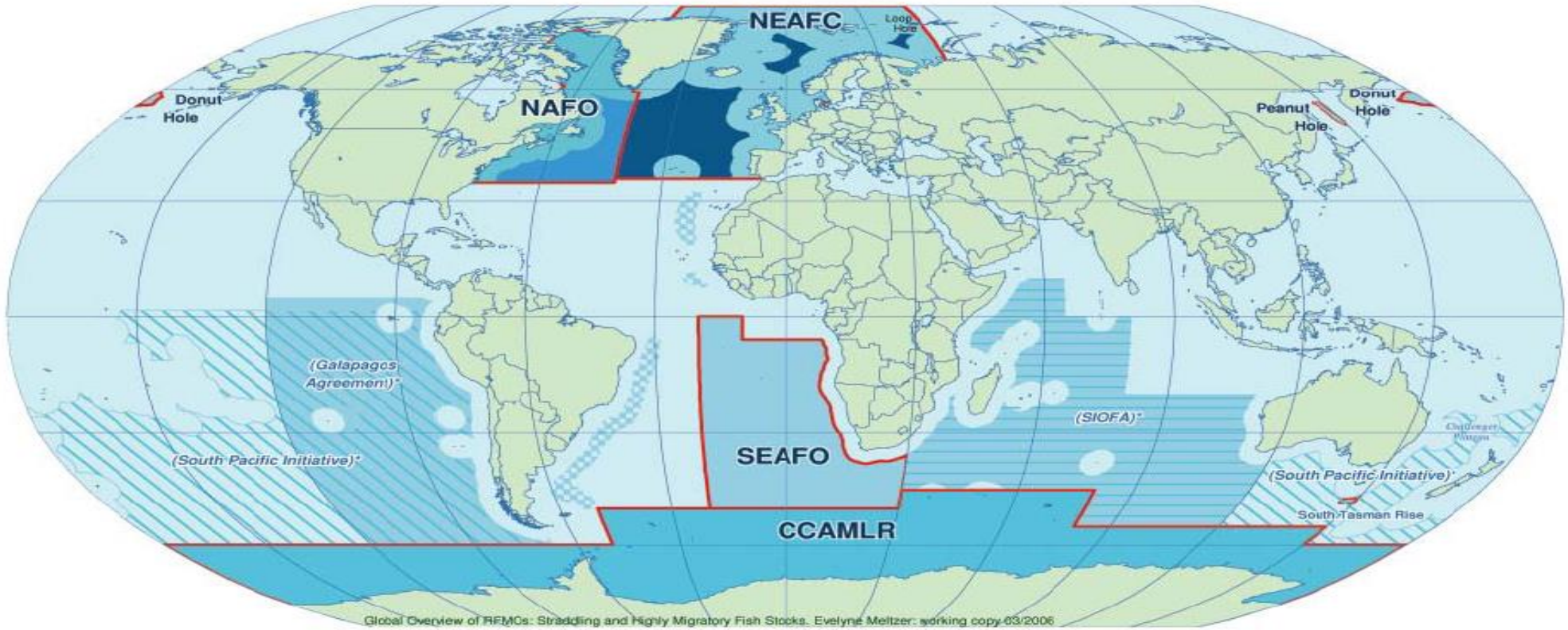


Global Overview of RFMOs:

Highly Migratory Fish Stocks (Tuna and Tuna-Like)

- IATTC
- Antigua Convention (not yet in force)
- GFCM
- CCSBT
- ICCAT
- IOTC
- WCPFC

WCPFC Note : Northern boundary and most of Western boundary for RFMO are not defined, and Area is not intended to include waters in South-East Asia which are not part of the Pacific Ocean; nor is it intended to include waters of the South China Sea.



Global Overview of RFMOs:
Straddling Fish Stocks

RFMO Boundary

( )* RFMO area under negotiation, not yet adopted or not yet in force.

- SEAFO
- CCAMLR
- NEAFC Convention Area
- NEAFC Regulatory Area
- NAFO Convention Area
- NAFO Regulatory Area
- Donut Hole Arrangement
- *(SIOFA)* (Not yet adopted)*
- *(Galapagos Agreement)* (Not yet in force)*
- *(South Pacific Initiative)* (Under negotiation - preliminary boundary)*
- Other Unregulated High Seas Areas where Straddling Fish Stocks occur

Balton's Law

- Ambassador David Balton is Deputy Assistant Secretary for Oceans and Fisheries, US Department of State. In a 1996 article, Balton maintains that UNCLOS is: **"**the *fundamental document*, a bible susceptible to subsequent interpretation and elaboration, **but not to contradiction"**
  - as evidence of this, he cites Article 4 of the UNFSA – to wit: "nothing in this Agreement shall prejudice the rights, jurisdiction and duties of States under the Convention. This Agreement shall be interpreted and applied in the context of and in a manner consistent with the Convention"
- The test of what I am calling Balton's Law is the recently released UN agreement on the high seas, with an impossibly long title, but popularly referred to as the High Seas Treaty (4/03/2023).

Balton's Law and the High Seas Treaty

- What we find in the High Seas Treaty is language that duplicates and elaborates upon Article 4 of the UNFSA. The Convention is not to be contradicted.
- What I conclude from all of this is that Balton's Law is indeed valid and that the EEZ regime and the RFMO regime, which have come under intense criticism over the past decade and half – particularly the latter, are here to stay, **whether we like it or not.**
  - the RFMO regime, to be reminded, is not separate from the Convention, but arose from an interpretation and elaboration of the Convention.

- It is our task as economists, in cooperation with our learned colleagues in the law, to carry out research that will lead towards the improvement of the regimes.
  - some recent developments are actually encouraging.

Management of Transboundary Stocks

- In turning to the management of shared fish stocks, let us start off with the relatively easy case first, transboundary stocks – EEZ to EEZ stocks

- We said at the outset that, unless there is no strategic interaction between/among the states (entities) sharing the resource, game theory is essential [*inescapable*] in the analysis of the optimal economic management of the resources.
- Cooperation or non-cooperation? With respect to the latter, theory of non-cooperative games predicts a Prisoner's Dilemma outcome. Predictive power of the theory, with respect to all categories of shared fish stocks very high.
  - recognized by academics 45 years ago, by policy makers roughly 25 years ago.
  - co-operation does matter – no argument. Non-cooperation seriously weakens the rights of both coastal states and DWFSs as "users".

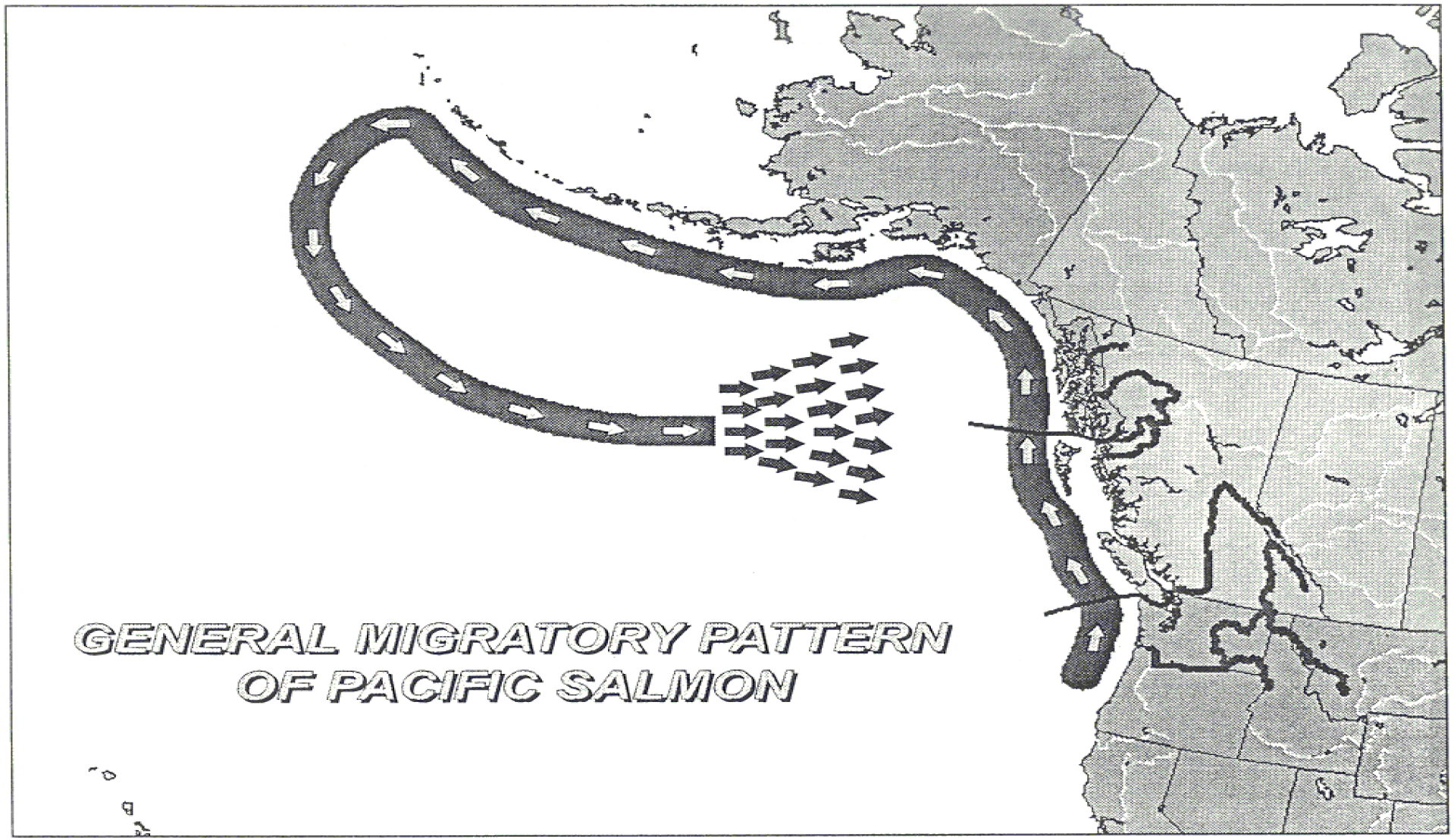
Cooperative Management of Transboundary Stocks

- Experience has taught us that we have to recognize that there are two levels of cooperation: *primary* – cooperation at the scientific level; *secondary* – cooperation at the management level – optimal stock and harvest policies through time, and all that.

- Theory of cooperative games. To review, for the solution to a cooperative fishery game to be stable, it must throughout time meet the conditions of: (i) individual rationality; (ii) collective rationality.
  - there have in fact several examples of very successful cooperative management of transboundary fish stocks, e.g. Pacific halibut, North Sea herring, Barents Sea fisheries.

Cooperative Management of Transboundary Stocks cont.

- There is a third condition to be met for cooperative fishery management regimes to be stable and that is a truly dynamic condition – ***resilience*** – the ability to withstand unpredictable shocks. This has become increasingly important due to global warming, leading to unpredictable changes migratory patterns of the fishery resources.
  - a recent study estimates that by the end of the century **45%** of the world's transboundary fishery resources will have experienced shifts due to global warming,
- While this issue has been made prominent by global warming, the problem was, in fact, first highlighted almost 20 years ago, by a case in my part of the world, Pacific salmon, a resource which Canada shares with the United States, both to the south and north.
- At the time, the fishery, if not the most important, was a highly prominent fishery in British Columbia, Washington/Oregon and Alaska


GENERAL MIGRATORY PATTERN
OF PACIFIC SALMON

Pacific Salmon

- Under UNCLOS, the Pacific salmon resource was not be exploited on the high seas, which made it a true transboundary resource.
- In 1985, Canada and the US signed a formal treaty to manage the resource cooperatively from northern California to the Gulf of Alaska. Complication- Canada could be deemed a single player, but the US was a a sub-coalition of players, with the most important players being Washington/Oregon and Alaska.
- All went well until the early 1990s. Unbeknownst to the negotiators, a climate regime shift (nothing to do with global warming) had been underway, which was very positive to the salmon stocks in the north, and very detrimental to those in the south. Consequence, the treaty froze up in 1993 and was not patched up until 1999.
    - for Alaska, in 1993 the individual rationality was not satisfied.
    - from 1993 to 1999 – return of the PD – destructive fish wars

Pacific Salmon and Uncertainty

- The cooperative game that was the Pacific salmon treaty lacked **resilience**. The players were caught by surprise and could adjust to the shock, only after a very long lag.
- We have seen this replicated in many, many other cases, some close to this conference – Atlanto- Scandian herring, Northeast Atlantic mackerel
  - of partial comfort in the Scandinavian cases, is that when cooperation breaks down it does not do so fully. Cooperation at the secondary level goes, but cooperation at the primary level remains.
  - also of great interest in these cases is the emergence of a cyclical pattern; when the stocks are robust, cooperation weak; when the stocks not robust, cooperation strong. More research on this important topic is to be strongly encouraged
- There is a call for managers of shared fishery resources to include anticipation of shocks in their plans – the earthquake preparedness model
- The fact remains that our fisheries game theory models are currently inadequate. We require robust dynamic models incorporating **uncertainty**. A few exist, but as Grønbæk et al. (2020) maintain, the models are wholly inadequate in helping us deal with the threat that lies before us, thanks to global warming .

Management of Straddling Stocks (broadly defined): the RFMO Regime

- In the management of straddling stocks (broadly defined), we have all of the problems associated with transboundary stocks, PLUS two additional problems:
  I. the problem of free riding (IUU fishing)
  II. the problem of “new members”
  - while the problem of “new members” is important, I am, because of time constraints, going to put it to one side and focus on the much more important problem of free riding.
- Before examining the problems of the management of such stocks, we must first digress and deal with a legal question: treaty law and customary international law. This we shall do, as best we can, mere economists though we may be.

The Legal Question

- A fundamental rule of international treaty law is that a treaty binds only those parties, which have ratified the treaty – *pacta tertiis*
- Customary international law binds all, except those parties which publicly state that they will not be bound by the law.
- What is a bit confusing to non-legal experts is that treaty law, to which *pacta tertiis* originally applies, can become a part of customary international law, if the provisions of the treaty gain wide acceptance.
  - Parts V and VII of UNCLOS, for example, are deemed to be a part of customary international law
- Has UNFSA achieved customary international law status? – not certain, but many parties to UNFSA are acting as if it has.

The Free Rider Problem

- I would maintain that the most difficult problem facing RFMOs is that of free riding. The 2007 Chatham House Independent Panel Report on RFMOs has as its core conclusion that successful RFMO management depends ultimately upon the ability to deter free riding. That conclusion remains no less valid in 2023.
  - obviously, the ability to deter will be easier, if UNFSA has achieved the status of customary international law.
- To address this issue, game theory must be brought to bear. It is my contention that the most powerful set of game theoretic tools for this purpose consists of partition function games.
  - popularly referred to as coalition games with externalities

Partition Function Games and the Free Rider Problem

- These games explicitly recognize that, when players cooperate, this will create positive externalities benefiting non-cooperating players – hence the incentive to free ride.
- This in turn leads to the concept of the ***internal stability*** of a cooperative game, which is achieved when the following equation holds true: the sum of the Grand Coalition (all players playing cooperatively) payoffs must not be less than the sum of the free rider payoffs

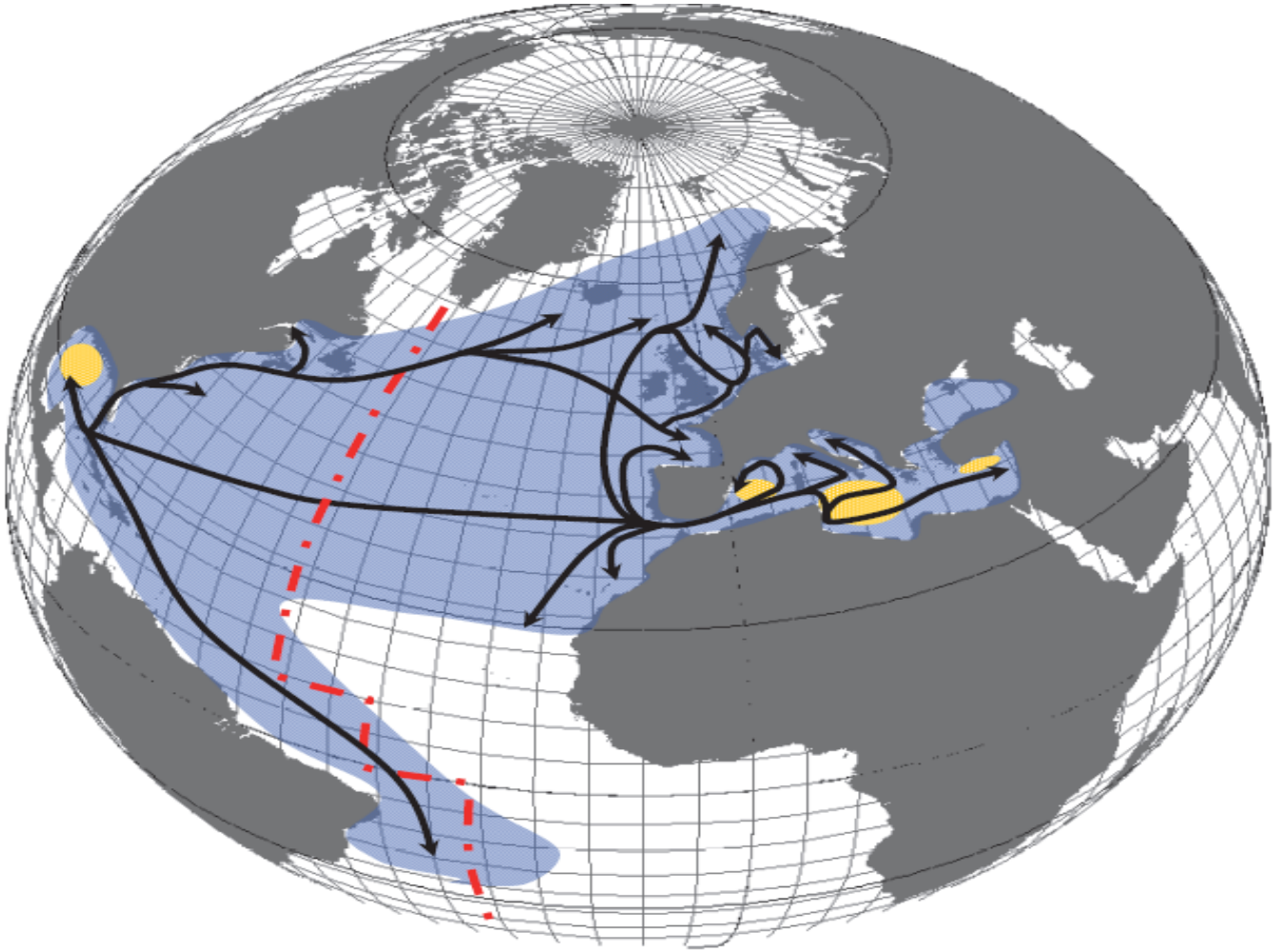
$$V_i(S) \geq V_i(S/\{i\}), \forall i \in S$$

- This points to a key approach to achieving RFMO stability, namely reducing (crushing if possible) free rider payoffs.
  - if free riding is unhindered, partition function game analysis predicts that a RFMO cooperative game will likely be internally stable, only if the number of players is small, e.g. not much more than five. Typical RFMO has a large number of players

RFMO Regime Under Attack

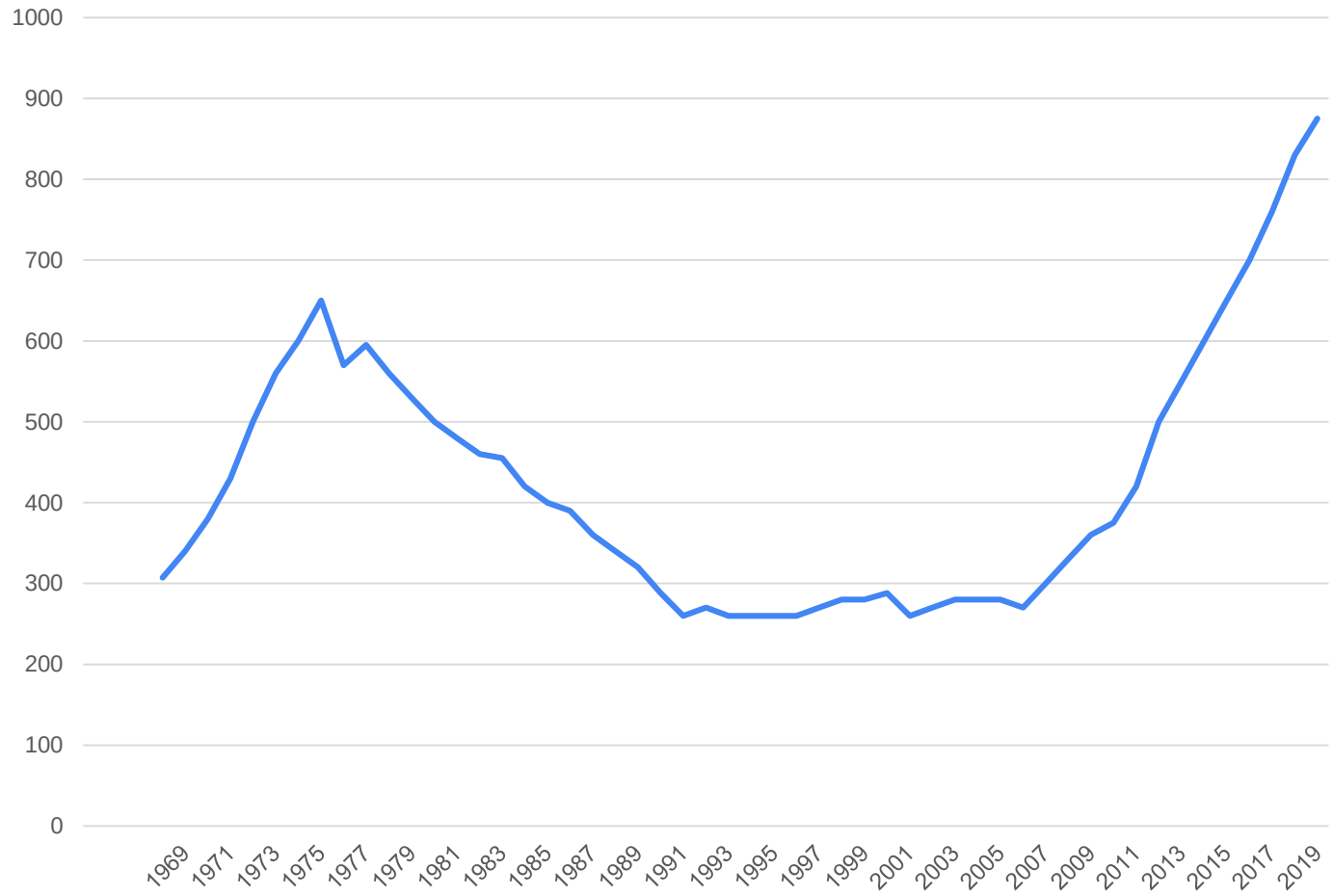
- The RFMO regime, faced with the several problems listed, has come under severe attack over the past decade and a half - “failing the high seas” is a common refrain.
- There are two responses to this that come to mind:
  - 1. there is no real alternative, we have to make the best of what we have – Balton’s Law once again
  - 2. there is a process of evolution going on, we can, and hopefully do, learn from previous mistakes and failures. Note as well, that the post-UNCLOS EEZ management regime of non-shared and transboundary stocks has hardly been disaster free – think of Northern Cod in Canada and the South Tasman Rise orange roughy stock, off Australia
- As an example of evolution, of turning failure into success, I turn to the bluefin tuna fishery of the Northeast Atlantic and Mediterranean

Atlantic Bluefin Tuna: Spatial Distribution



Bluefin Tuna – Northeast Atlantic and Mediterranean

- As the previous figure shows, Atlantic bluefin tuna extends across the ocean, but the western and eastern stocks are treated as being discrete. Our focus is on the more important of the two. Rather than use the cumbersome title, we will refer to as bluefin tuna east - BFT-E.
- So important is this case, that we will have two talks on it in the Conference. Mine is but an introduction, with the full talk to be given by my colleague, Trond Bjørndal, whose article on this very topic is forthcoming in *Marine Policy*.
- As Trond will explain, BFT-E is possibly one of the most valuable fisheries in the world. It is cooperatively managed under the RFMO, ICCAT. The number of players is very large. Up to 50 states have participated in the fishery, with the current number being close to 30. Up until, the mid-2000s, the BFT-E cooperative game was the very model of internal instability. Consider the following figure.



Spawning Stock Biomass Northeast Atlantic and Mediterranean bluefin Tuna 1968-2019. '000 tonnes.

Source: Bjørndal, T. (forthcoming), The Northeast Atlantic and Mediterranean Bluefin Tuna Fishery: Back from the Brink, *Marine Policy*.

BFT-E – The Threat of Disaster

- As the figure indicates, from the mid-1970s until the mid-2000s there was a steady decline in the spawning stock biomass (SSB), with controls over fishing wholly ineffective. In the mid-200Os tuna harvested by free riders exceeded legally caught fish by a wide margin.
- In the mid-2000s the SSB was just under 300 thousand tonnes. A scientific study on the resource at that time estimated that a SSB of 100 thousand tonnes was the “drop dead” level, and that, without drastic change, the resource would within the next few years careen towards that level –resource collapse was in the offing.
  - If collapse had occurred, used rights to the resource at the national level would have become worthless.
- Impending disaster can act as great motivator. As Trond will explain, in 2006, there was a crucial ICCAT meeting at which a 15 year recovery program for BFT-E was put forward, and accepted, which, if implemented, would secure the resource and greatly improve the economics of the fishery. Wait for further details.

BFT-E – Control of Free Riding

- Crucial to the success of the recovery program was the curbing of free riding (IUU fishing).
- The FAO 2001 report, *International Plan of Action to Prevent, Deter and Eliminate IUU Fishing* , gives considerable emphasis to market measures- measures to ban the importation of IUU caught fish.
- Japan has by far the most important market for bluefin tuna. In 2006, Japan collaborated with the EU (the second most important market) to implement a market certification program. Tuna from the BFT-E fishery would be accepted into the Japanese and EU markets, if and only if, it was certified as having been caught legally. The measures were and have been rigorously enforced. The combined market power of the two make the measures highly effective.
    - the market certification policy was also adopted and implemented all other ICCAT members
- Free riding has been sharply reduced. The SSB in 2019, was estimated to be just under **900** thousand tonnes. Why? Go back to the partition function game internal stability equation for your answer.

Free Riding and Market Measures

- A key lesson to be learned from the BFT-E experience is the power of market measures in dealing with free riding.
- Of course, special conditions have to apply for these measures to be effective- market concentration ; effective cooperation between/among importing countries.
- When market measures can be effectively used, RFMO charter members can laugh in the face of *pacta tertiis*.
- This is true strengthening charter members “user” rights.

Some Conclusions

- We have been concerned with the management of international fisheries, where the “users” are coast states and DWFSs operating within the framework of the EEZ-RFMO regime. Strengthening the rights of these “users” is straightforward-achieve stable cooperation between/among the users.
- Strong user rights among states exploiting in internationally shared fishery resources, the foundation for strong user rights at the national level.
- Our first conclusion is that the EEZ-RFMO regime is here to stay, whether we like it or not – Balton’s Law. Our challenge is to find ways of improving the regime, recognizing that we are dealing with a process of evolution – learning through often painful experience.
- We focused on two threats to achieving effective cooperation, which, in turn threaten the rights of the “users”: (i) lack of resilience of the cooperative management arrangements; (ii) free riding

Some Conclusions cont.

- The resilience problem is when the cooperative management arrangement is hit by unpredictable shocks, and cannot cope. We know that this threat is going to be exacerbated by climate change.
- So far, have not done well in dealing with this problem. We know what has to be done -contingency planning. Most shocks cannot be predicted with any degree of accuracy, but many can be anticipated, e.g. stock distribution shifts due to climate change.
    - we economists can, I suggest, contribute through the further development of dynamic games, incorporating uncertainty.
- The free riding (IUU fishing) is the most serious problem confronting fisheries management under RFMOs. Here, we have some reason for hope, optimism.

Some Conclusions, Yet More

- While not mentioned earlier, free riding has been curbed to some degree by cooperation among RFMOs – marine Interpol.
- The experience of the BFT-E fishery gives us particular grounds for optimism – an “international disgrace”, a hopeless case, turned into a success. The lesson learned: the power of effective market measures in curbing free riding.
- Finally, the overall economic management of international fisheries, and the strengthening of “user rights” is a process of evolution.
- As economists, we cannot, we shall not, neglect the key role that we can and must play in ensuring that the evolution is one of progress.


Thank you for your attention

The New Member Problem

- Under Article 8 of UNFSA all states with a “real” interest in the fisheries under the governance of a RFMO have the right to become members of that RFMO. “Charter” members of the RFMO do not have the right to bar new members from applying to join.
- We next have to distinguish between coastal state new members and DWFSs. Coastal state new members have to be accommodated – UNCLOS
    - how could a coastal state be put in a new member situation?
- DWFSs as new members are a different proposition. Under Article 11 of UNSFA, charter members of the RFMO are, when considering potential new DWFS members, called upon to consider as well the state of the relevant fisheries. The charter members can state that the relevant fisheries are already fully exploited – no more room. Exactly this has happened – e.g. NAFO.
    - this is a response popularly known as “slamming the door”.

New Member Problem cont.

- Economists demonstrated a decade and a half ago that the appearance of prospective DWFSs new members could constitute implicit free riding – how so? If prospective new members have the door slammed in their faces, could turn to explicit free riding, particularly if UNFSA has not achieved customary international law status and the prospective new members have not ratified UNFSA.
- A solution put forward by economists, originally treated with scorn, but now accepted by at least some policy makers, is to make it possible for new members to buy/lease quota from charter RFMO members. This would give the charter member de facto property rights to the relevant resources, and could thus be seen as strengthening the rights of the charter member “users”.