

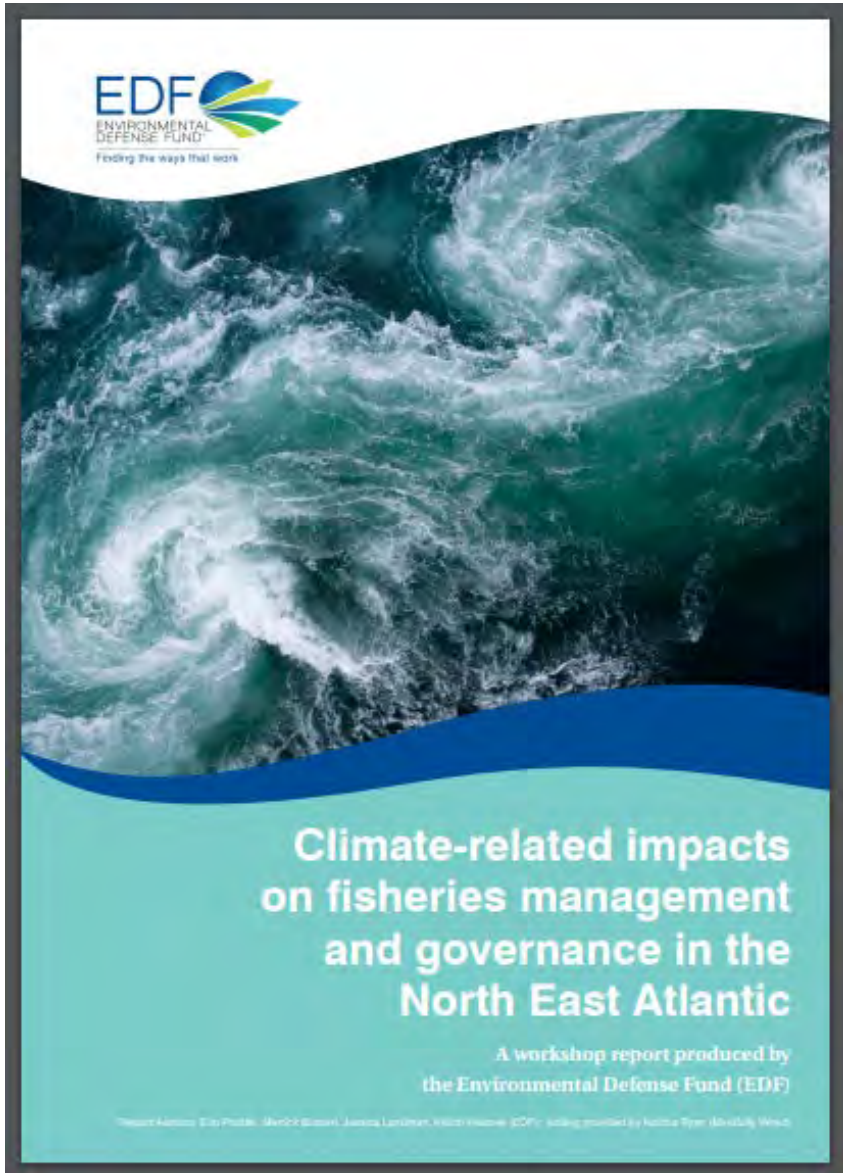
Climate-related impacts on fisheries management and governance in the Northeast Atlantic

Merrick Burden

Director of Opportunities and
Outcomes
Oceans

Erin Priddle

Northeast Atlantic Programme Manager
Oceans



In 2017 we hosted a meeting at the ICES headquarters and brought together fisheries science and policy expertise

We sought to identify climate risks to NE Atlantic fisheries and what might be done about it

Topics covered:

- Climate-related effects to fish stocks of the NE Atlantic
- Fishery management challenges created by these effects
- How institutions in Northern Europe could be modified to better handle these effects

What we know...



16 of 21 key commercial species in the region displaying significant changes in distribution



These shifts are accelerating and are occurring across management zones (EEZs)



We also know that productivities of fish stocks are changing

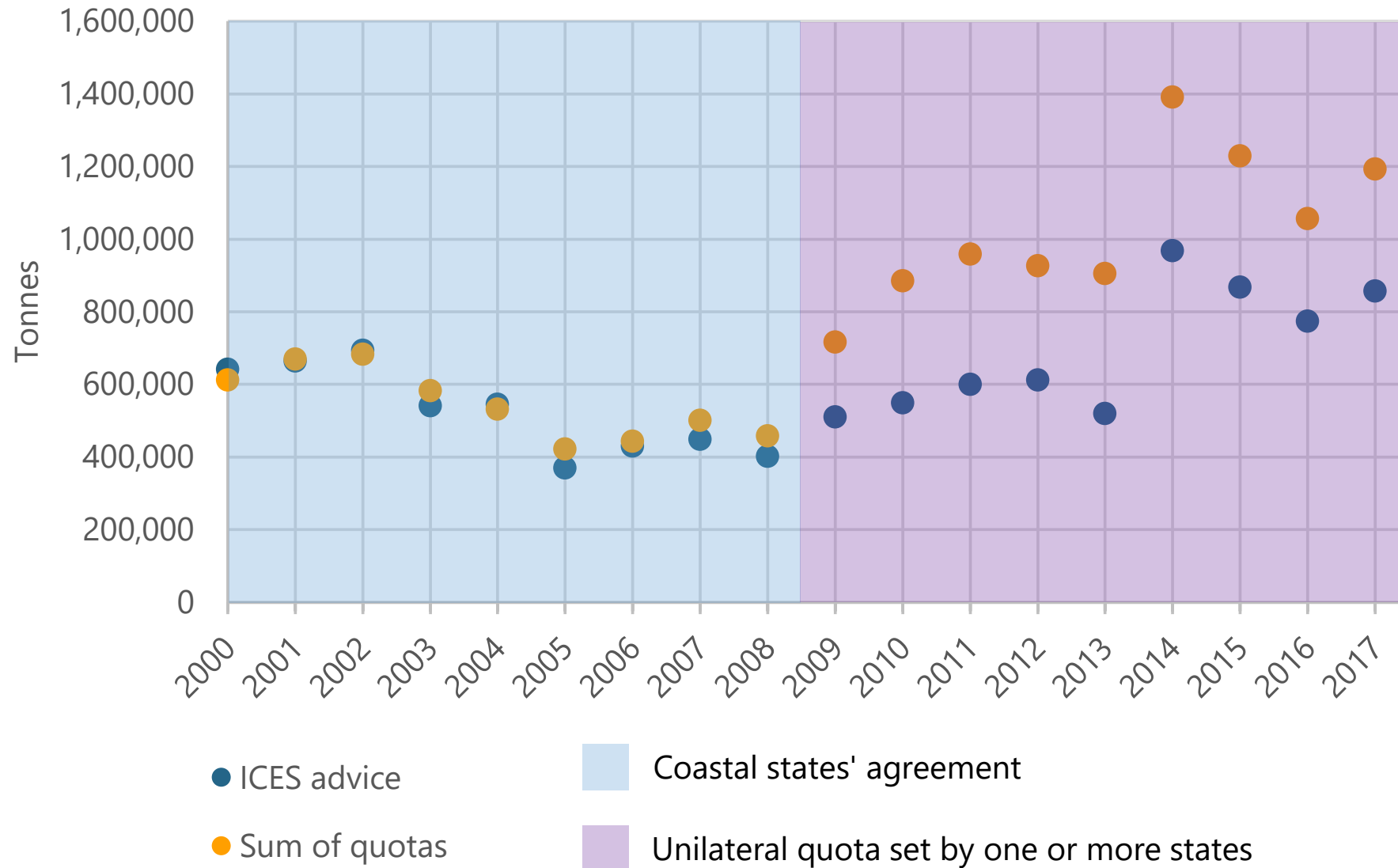
Current framework for managing fisheries is not equipped to cope with this change

- Stock movement and productivity changes mean changes in availability of fish to countries and fishermen
- International fisheries agreements are breaking down, resulting in overfishing of shared stocks
- Within the EU, fixed quota allocations across member states creates a rigid system for EU fishermen
 - *Conservation concern*: incentives to illegally discard
 - *Economic concern*: premature closure of fisheries
- Brexit is adding to the uncertainty, but also creating an opportunity to do things differently

Coastal State Agreements



Breakdown in international fishery agreements led to overfishing: Norwegian Spring Spawning Herring



Problems can be addressed by refining the current system

Reinvigorated regional institutions / international fisheries agreements have important role as stocks shift

Updates to bilateral and multilateral fisheries agreements must include 'climate-proofing' mechanisms such as:

- more fluid quota transfer
- framework for making allocation decisions
- effective channels to resolve disputes

**What does a climate-ready
governance and management
structure in the NE Atlantic look
like?**

7 Recommendations for international fisheries agreements and good governance in NE Atlantic:


- Over-arching science institution
- Forward looking science
- Adequate scale
- Benefits of agreements must outweigh the benefit of withdrawing
- Fewer parties, more stocks
- Transferability and flexibility
- Dispute resolution mechanisms




The Science

- A single authoritative scientific entity (ICES) whose science management decisions must be based upon
- Science should be forward looking. It should anticipate changes in stock location and sustainable fishery yields resulting from c.c.
 - This in turn should spur forward looking management and governance and give these systems a chance to respond before issues arise
- Use of EBFM and true decision support tools to help management make better decisions

Institutional scale and durability

- International agreements should strive to cover the current and future range of managed stocks
 - These agreements must be mutually beneficial to the signing parties (carrots, not sticks)
 - Agreements with fewer parties but more factors of reciprocity (i.e. species) are more stable
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Allocations and dispute resolution

- Allocations across international boundaries must be mutually beneficial between contracting parties
 - Framework should enable adjustment of allocations as conditions change
 - The framework - and associated allocations - should be reviewed periodically
 - A mechanism for dispute resolution should exist
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Transferability and flexibility

- Allocations to coastal states should reflect, at some level, the availability of fish on the ground
- Countries and fishermen should be allowed to transfer quota in-season with one another
- Quota allocation criteria should be agreed and reviewed periodically
- Where stocks move into and out of management areas, countries 'losing out' should be offered some form of compensation

The European Union

Fixed allocations to member states, the discard ban, and Brexit are converging, creating significant challenges

- Holding on to 1970s era allocations is now creating instability
 - Re-define what it means to achieve “relative stability” in terms of opportunity rather than species caught before
 - Allocations to member states can change while continuing to provide stability to industry
- Create a framework for updating allocations
- Foster easier quota transferability across member states

Bringing it together

- Climate change is converging with the existing governance and management systems in the Northeast Atlantic to create a “perfect storm” of fishery management problems
- These problems can be overcome with existing institutions, but change will be necessary

Bringing it together (continued)

- Specific remedies include:
 - Science must incorporate ecosystem information into assessments and become forward looking
 - Governance systems should match the current and future spatial scale of fishery resources
 - Coastal state allocations must be mutually beneficial and adjustable according to an agreed-upon framework (which includes dispute resolution)
 - EU should provide framework that enables member state allocations to adjust as species move
 - All coastal states should strive for flexibility via quota transferability mechanisms
 - Brexit can be viewed as a ‘window’ for change, to do things differently and better

Parting thoughts

- Adapting fisheries to climate change will be hard, it will raise conservation challenges, it will have socioeconomic impacts
- The worst thing we can do is not try to adapt
- The measures described here would provide:
 - rigorous yet adaptive framework
 - provide economic opportunities while meeting conservation objectives
- Europe is a challenging landscape, but lessons learned here could be used to help address similar problems elsewhere



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Merrick Burden

Mburden@edf.org

Erin Priddle

epriddle@edf.org

