Challenges and opportunities in managing Atlantic salmon - the international aspects

Peter Hutchinson, Secretary of NASCO

- The Convention
- Scientific advice
- Salmon fisheries
- Research on salmon at sea
- Implications for future management
- Future research priorities

The Convention

Entered into force on 1 October 1983 and commits Parties *inter alia* to:

- conserve, restore, and rationally manage salmon
- acquire, analyse and disseminate scientific information
- consult non-NASCO Parties where actions adversely affect salmon

Prohibits fishing for salmon beyond 12 nautical miles except at West Greenland (up to 40nm) and around the Faroe Islands (up to 200nm) thereby creating an enormous protected zone free of directed salmon fisheries

Allows for the establishment of regulatory measures where one Party harvests salmon originating in the rivers of another Party

Photo courtesy of Gilbert van Ryckevorsel

Scientific advice

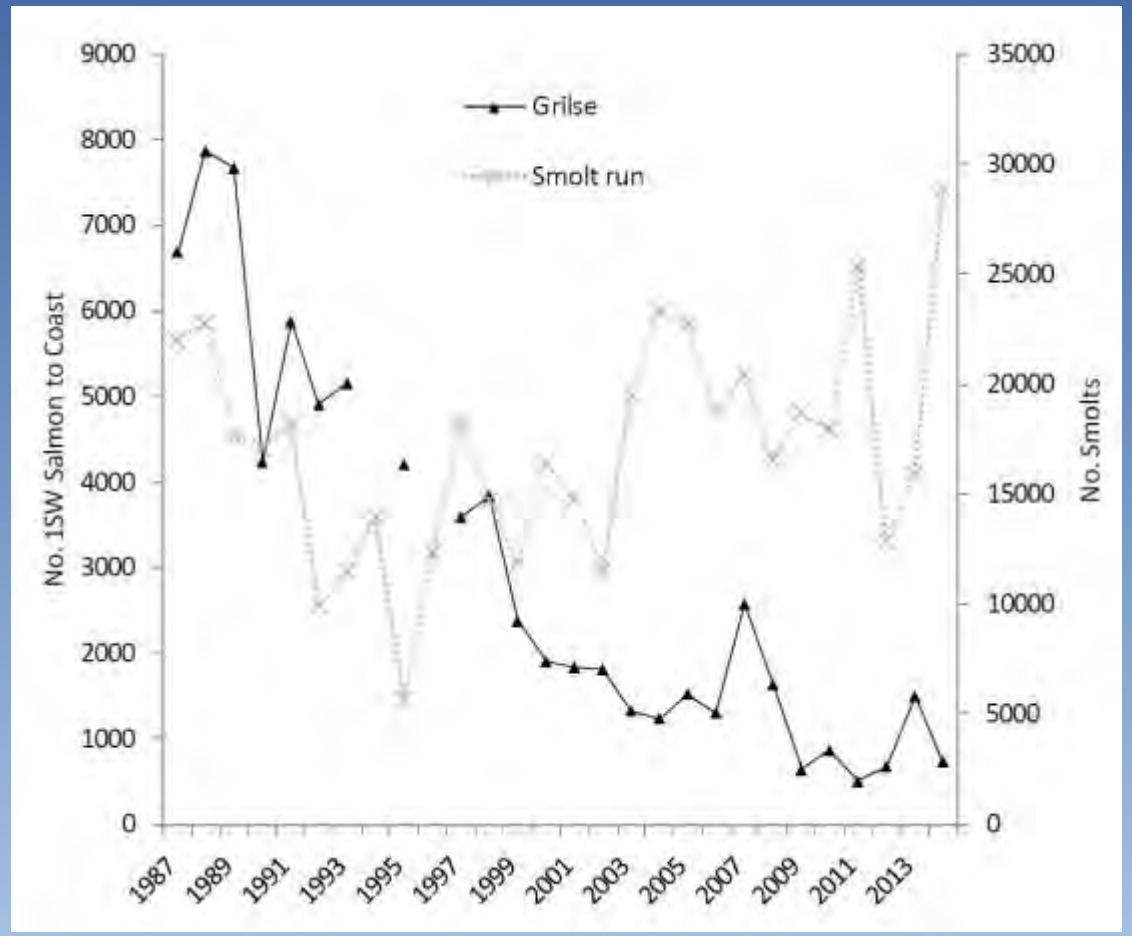
Factors taken into account in establishing regulatory measures include:

- the best scientific advice, including advice from ICES
- conservation measures taken by States of Origin
- the interests of dependent communities

ICES advises that marine survival indices although variable remain low and the declining trend has persisted. The continued low abundance of many salmon stocks, despite significant fishery reductions, indicates that factors acting on survival in the first and second years at sea are constraining the abundance of Atlantic salmon

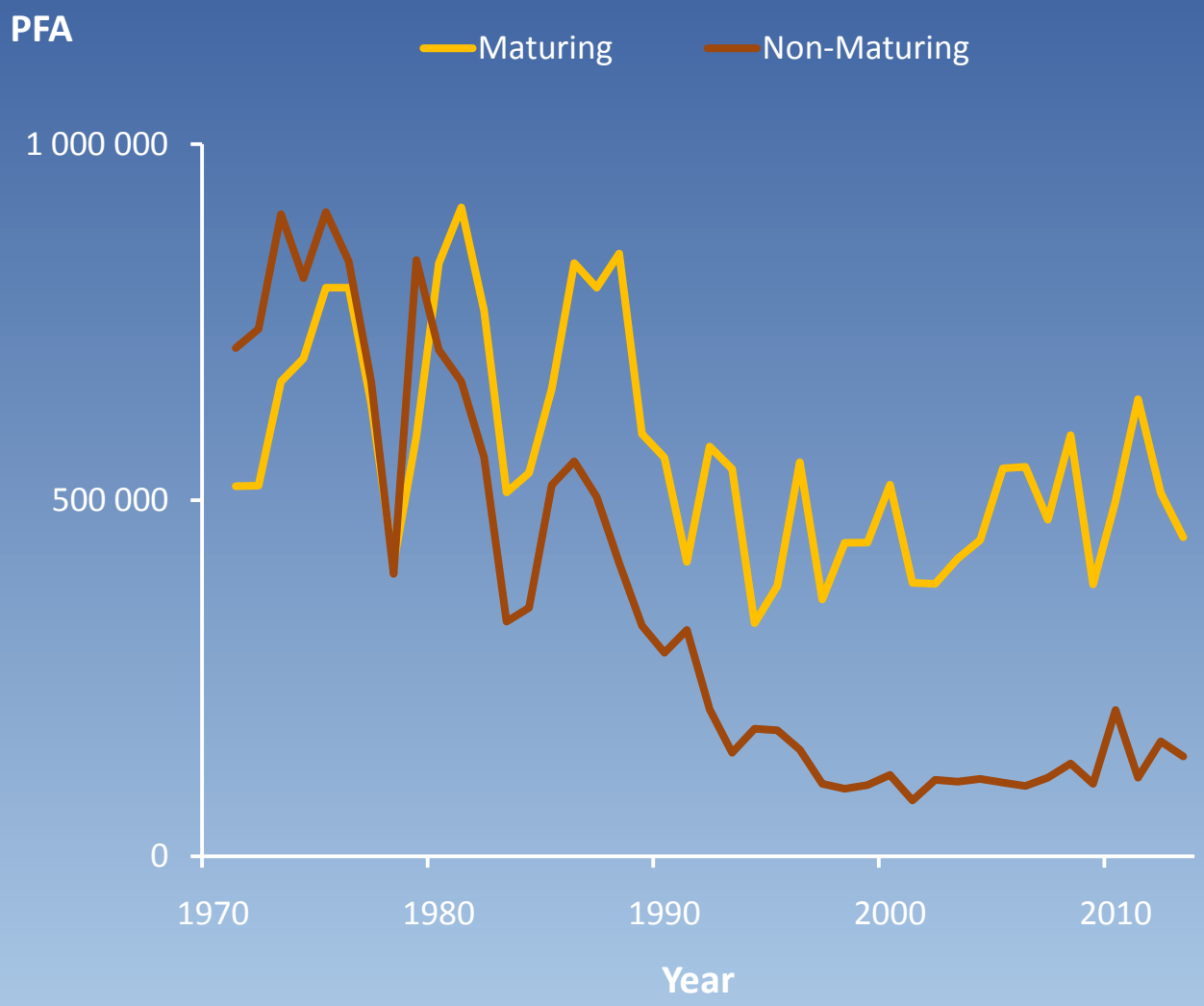
Photo courtesy of Gilbert van Ryckevorsel

Marine survival indices
River Bush, Northern Ireland



Source: Richard Kennedy

Estimates of Pre-fishery Abundance



Source: ICES

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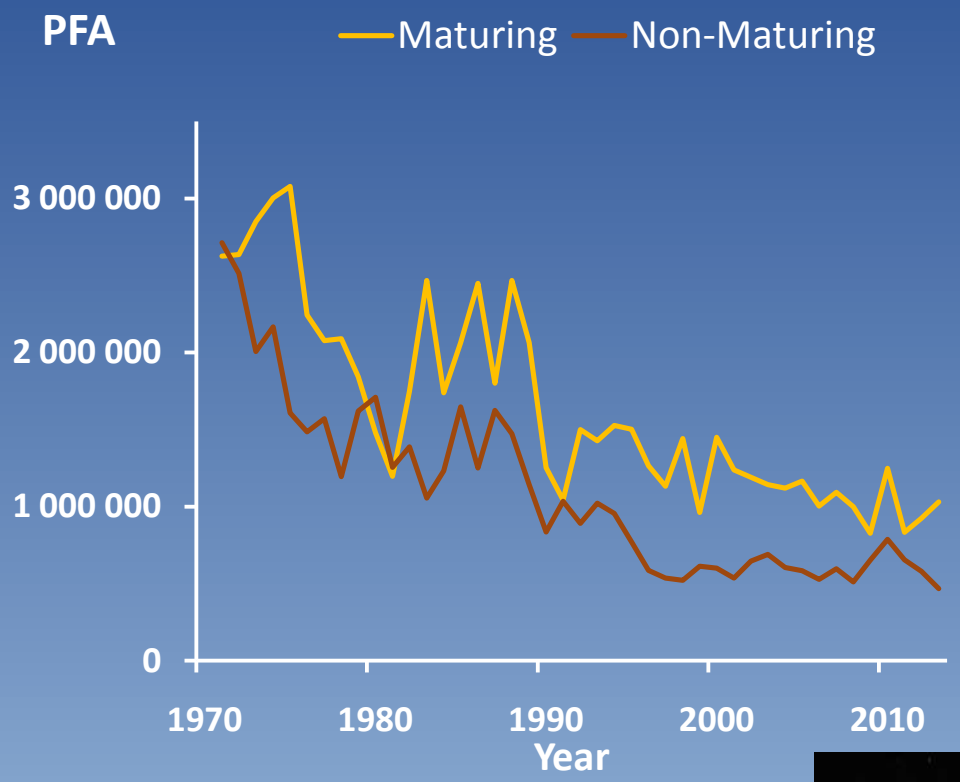
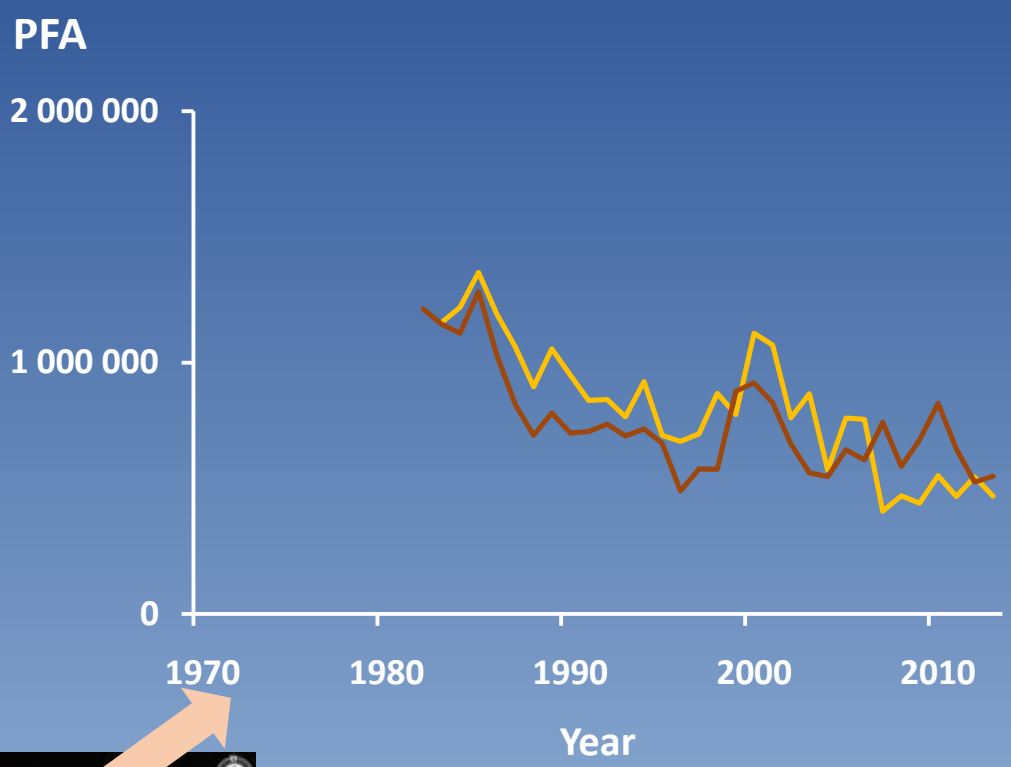




Source: ICES

Attainment of Conservation Limits

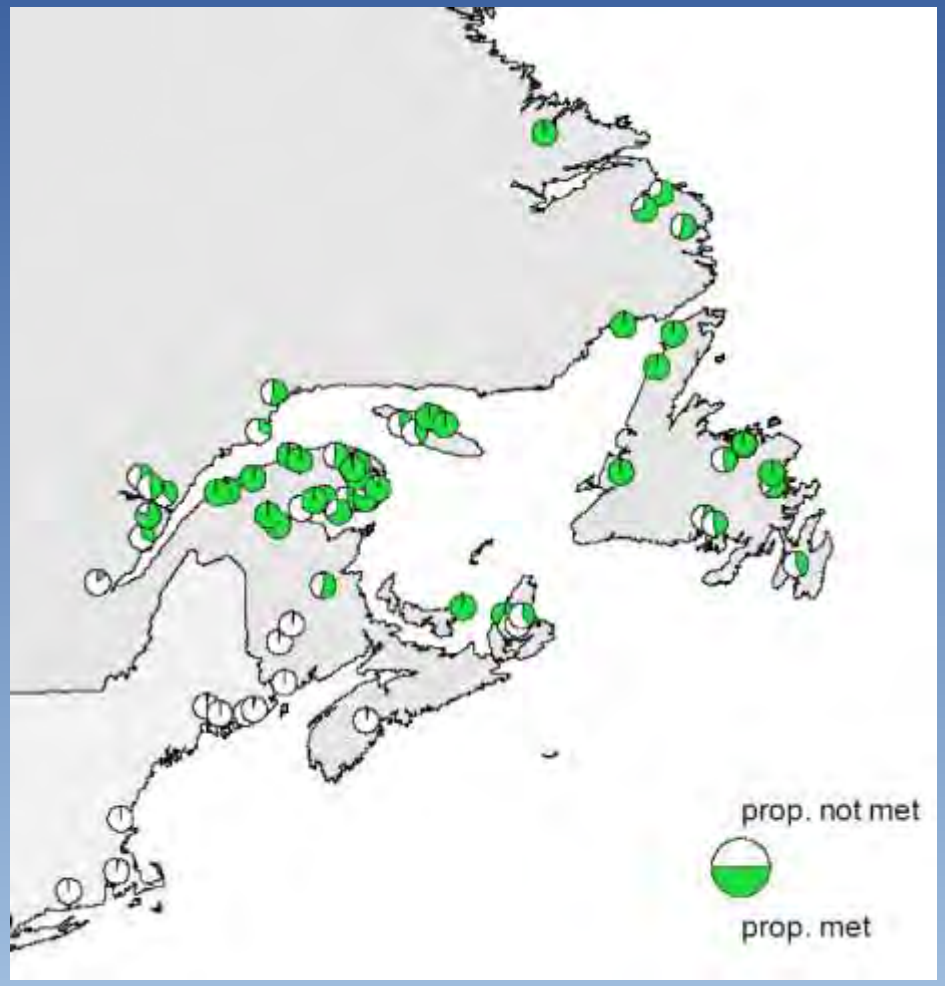
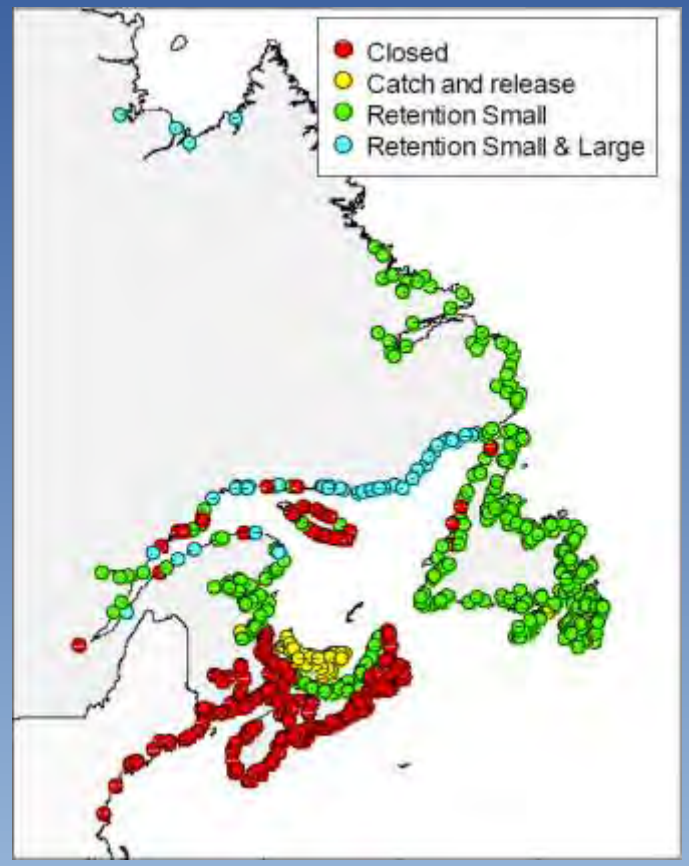


Photo courtesy of Jamie Snook



Source: ICES

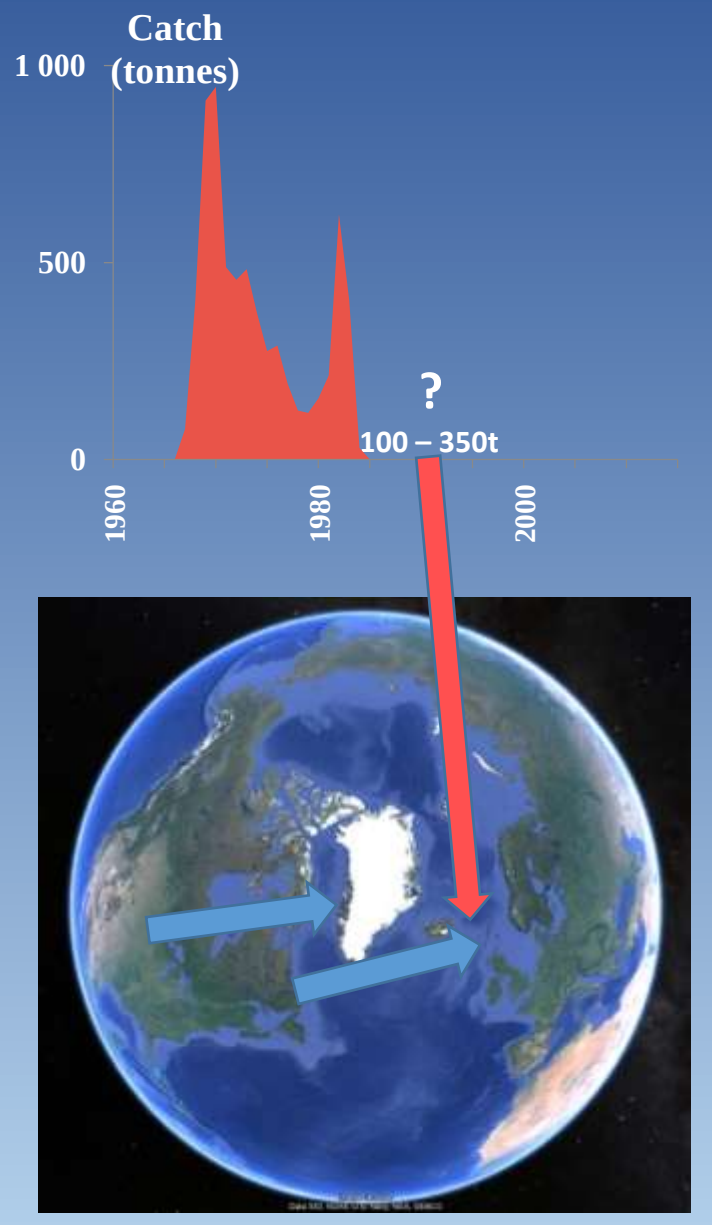
Distant-water salmon fisheries

The Northern Norwegian Sea fishery ended in 1984 when the Convention entered into force

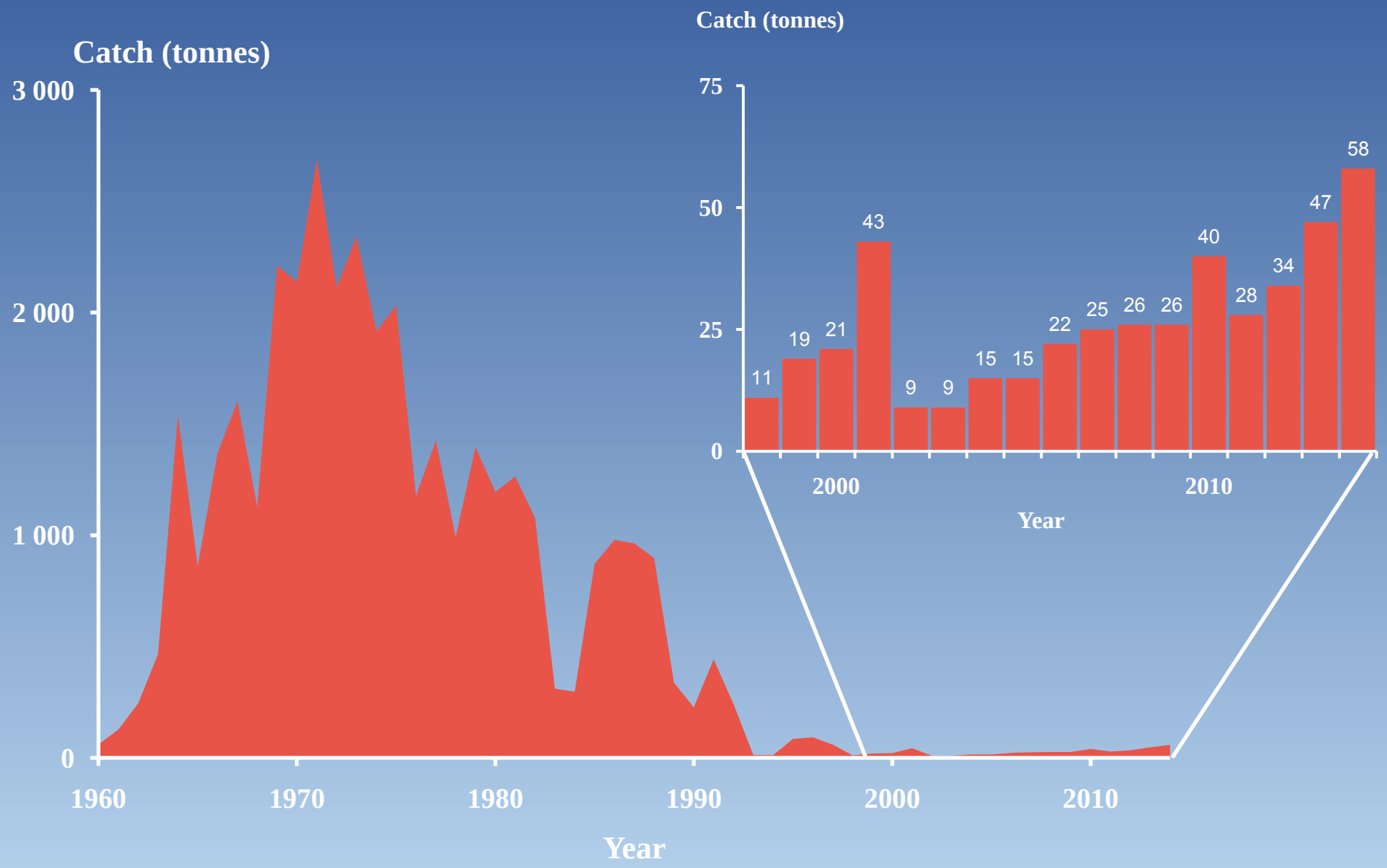
Fishing by non-NASCO vessels ended through diplomatic actions; surveillance improved and new information sought (NEAFC, NAFO, ICCAT). No sightings since 1993

Initially the burning issue was the fisheries at West Greenland and around the Faroe Islands; major reductions in harvests through NASCO measures

Regulatory measures can be, and have been, agreed for other fisheries e.g. Newfoundland

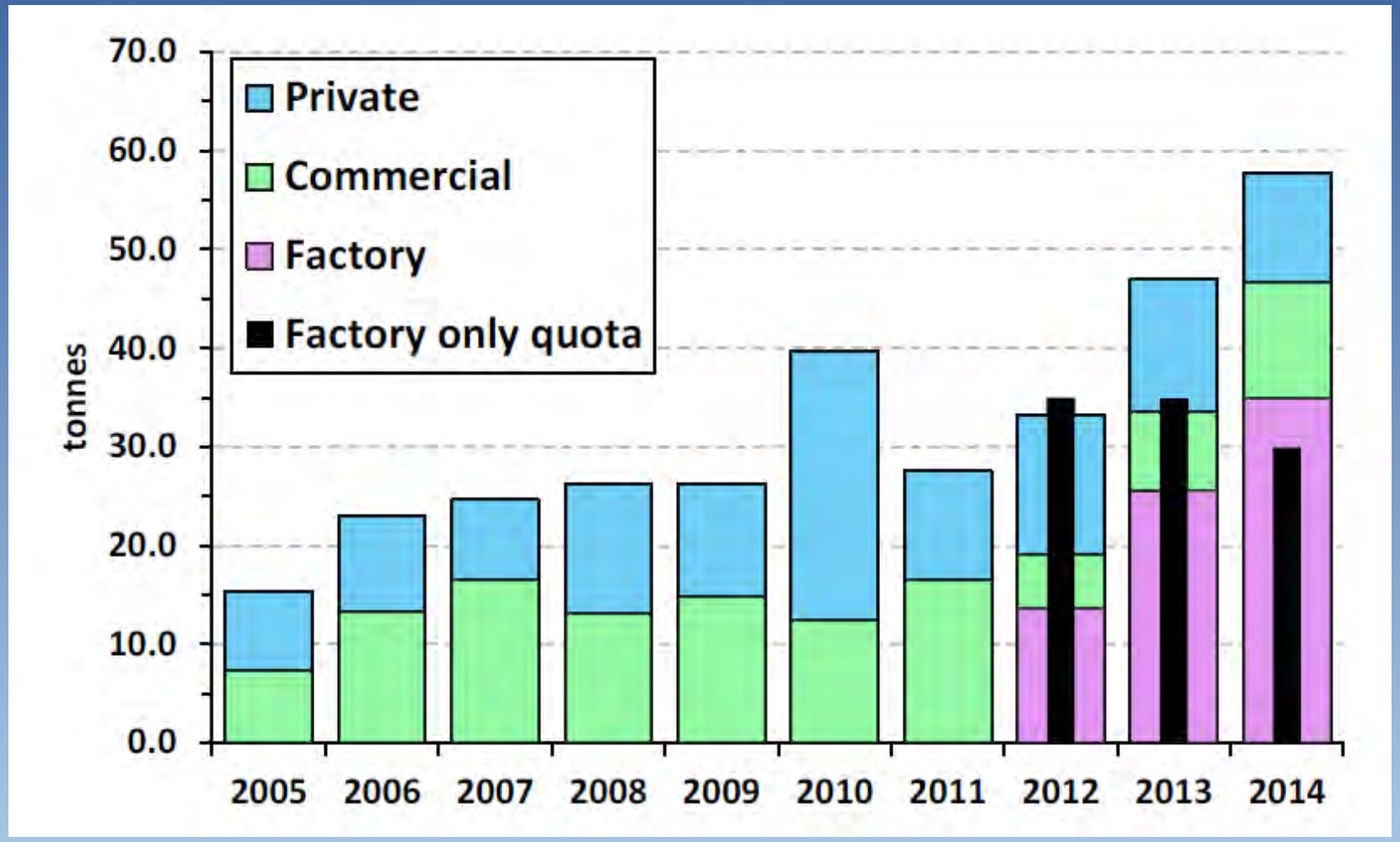


West Greenland salmon fishery



Photos courtesy of Kai Benson

West Greenland salmon fishery

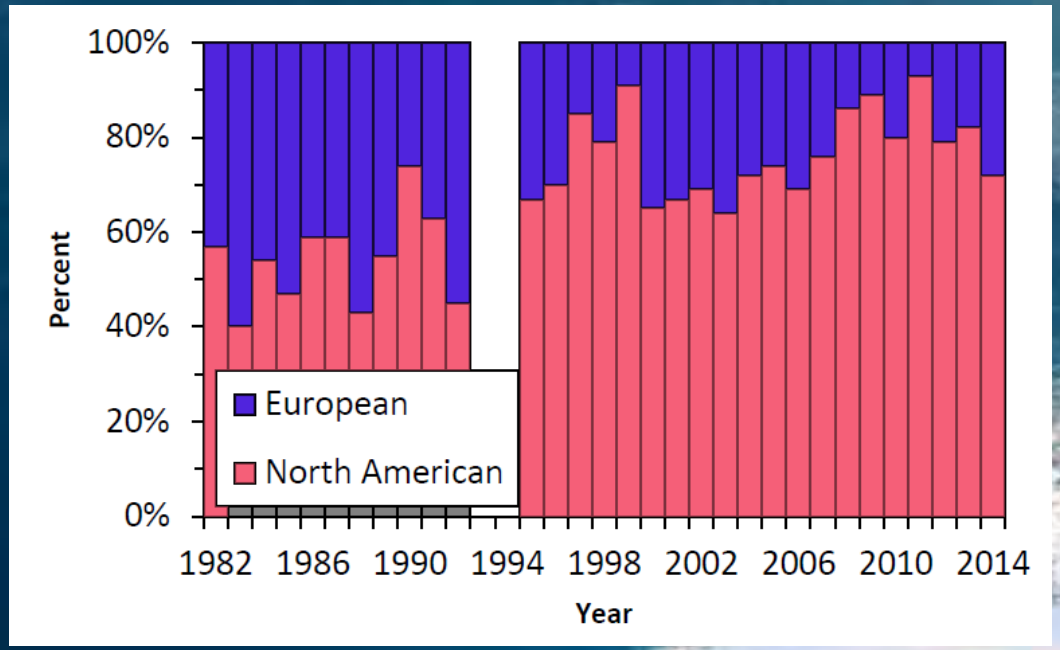


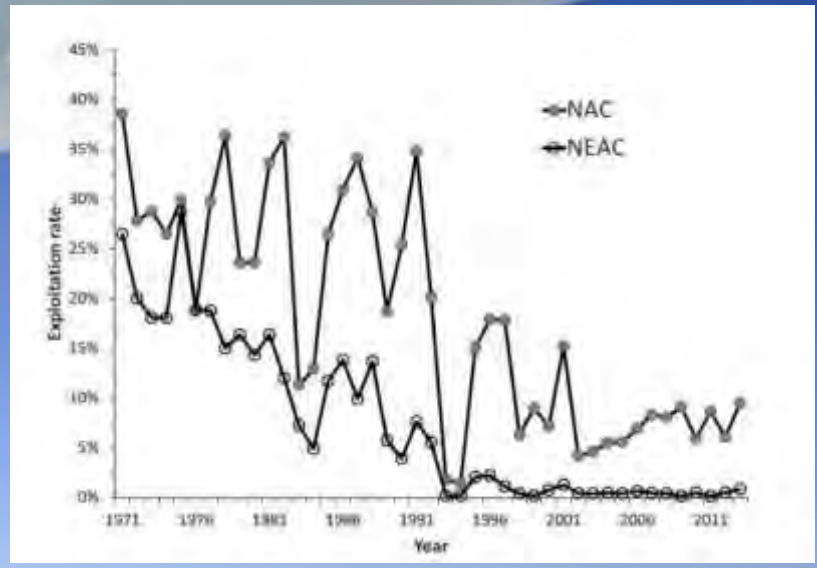
Source: ICES

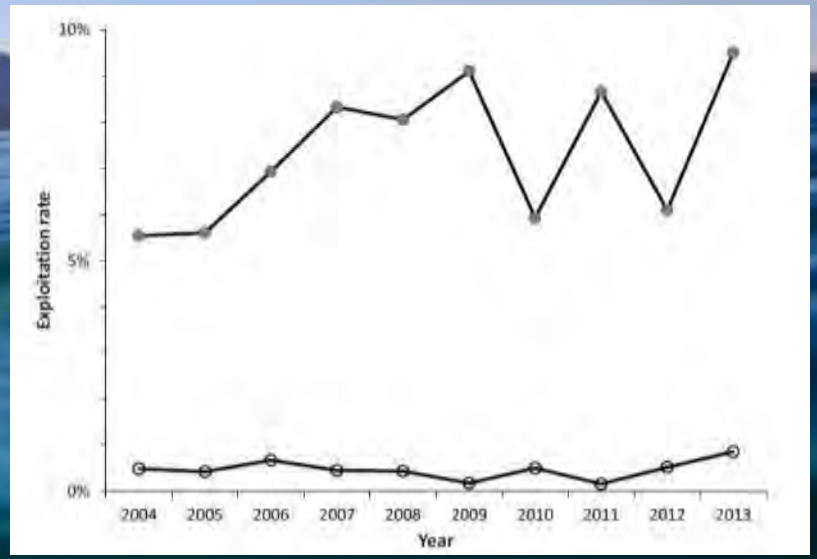
Photos courtesy of Kai Benson

West Greenland salmon fishery

Continent of origin & exploitation rate





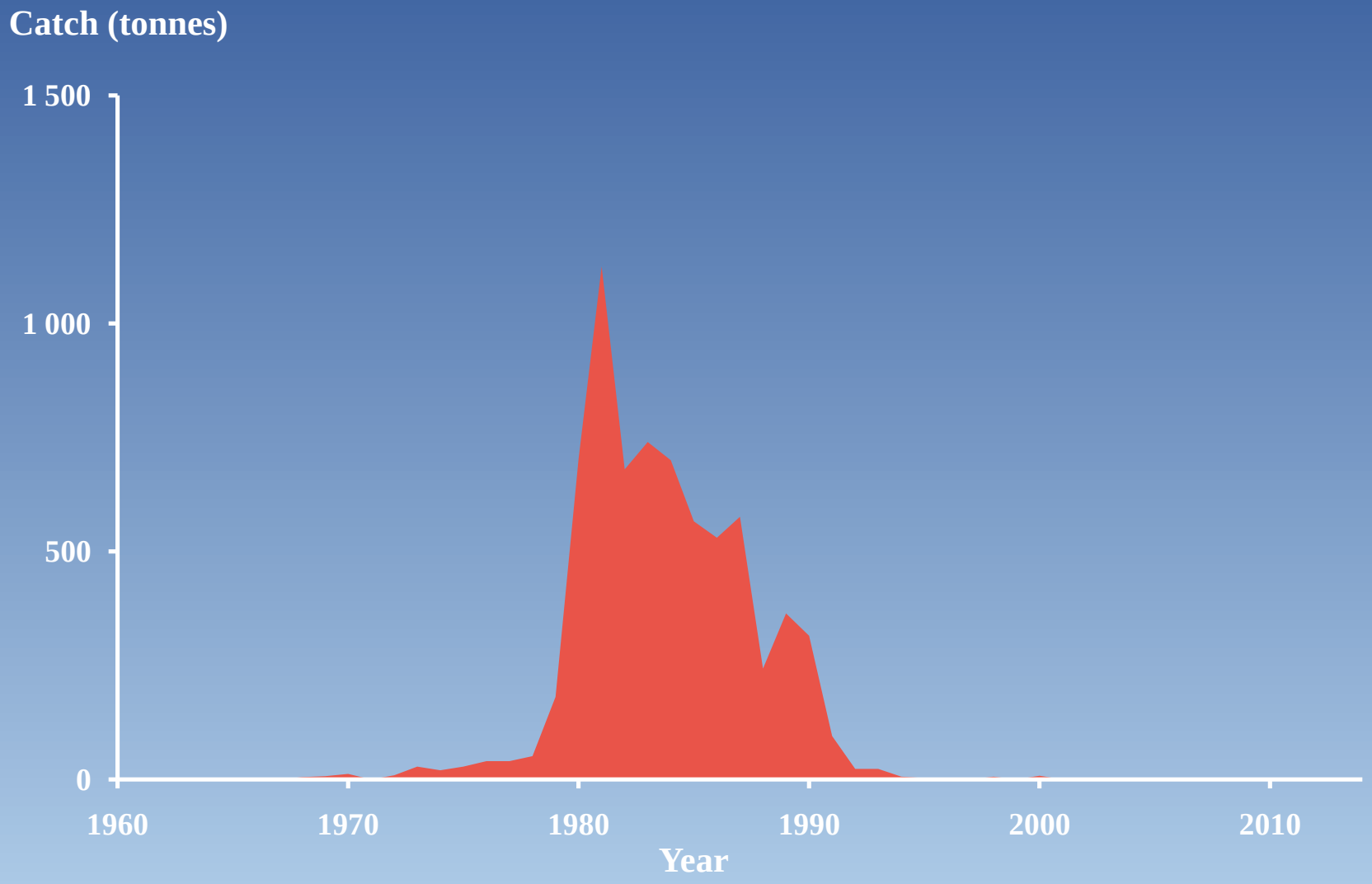


2008-2012 avg: NAC 7.6% ; NEAC 0.4%
2013 NAC 9.5% NEAC 0.9%

Photo courtesy of Kai Benson

Source: ICES – www.ices.dk

Faroese salmon fishery



Bycatch of salmon in pelagic fisheries

The concern

- post-smolt and adult salmon known to occur in catches of pelagic species e.g. mackerel
- very large discrepancy in the initial estimates of post-smolts taken as bycatch from 60 to over 1 million post-smolts (research or commercial catches)
- more knowledge gained about salmon distribution and migration (SALSEA Programme)
- new insights through screening of catches and landings, primarily by Iceland, and from the recent International Ecosystem Summer Survey of the Nordic Seas (IESSNS)

Photo courtesy of Jens Christian Holst

Bycatch of salmon in pelagic fisheries
ICES Conclusions

- estimates remain highly uncertain, informative to increase efforts to obtain reliable estimates
- ICES concludes that are relatively low impacts of salmon bycatches in pelagic fisheries (0.01 – 0.03 % and <2% of NEAC PFA)
- carry out comprehensive catch screening on commercial vessels fishing in areas with known high densities of salmon – significant resources, coordination and funding and need NASCO Parties agreement
- integrate information and assess consequences for salmon productivity
- seeking cooperation from NEAFC, NAFO and ICCAT

Fairness and Balance

- Greenland and Faroes seek ‘fairness and balance’ – they now harvest a greatly reduced share of the total catch
- internationally agreed guidelines and agreements on management of salmon fisheries, habitat protection and restoration and aquaculture and related impacts
- Implementation Plans - international scrutiny of measures through critical evaluation by a Review Group comprising representatives of the Parties a

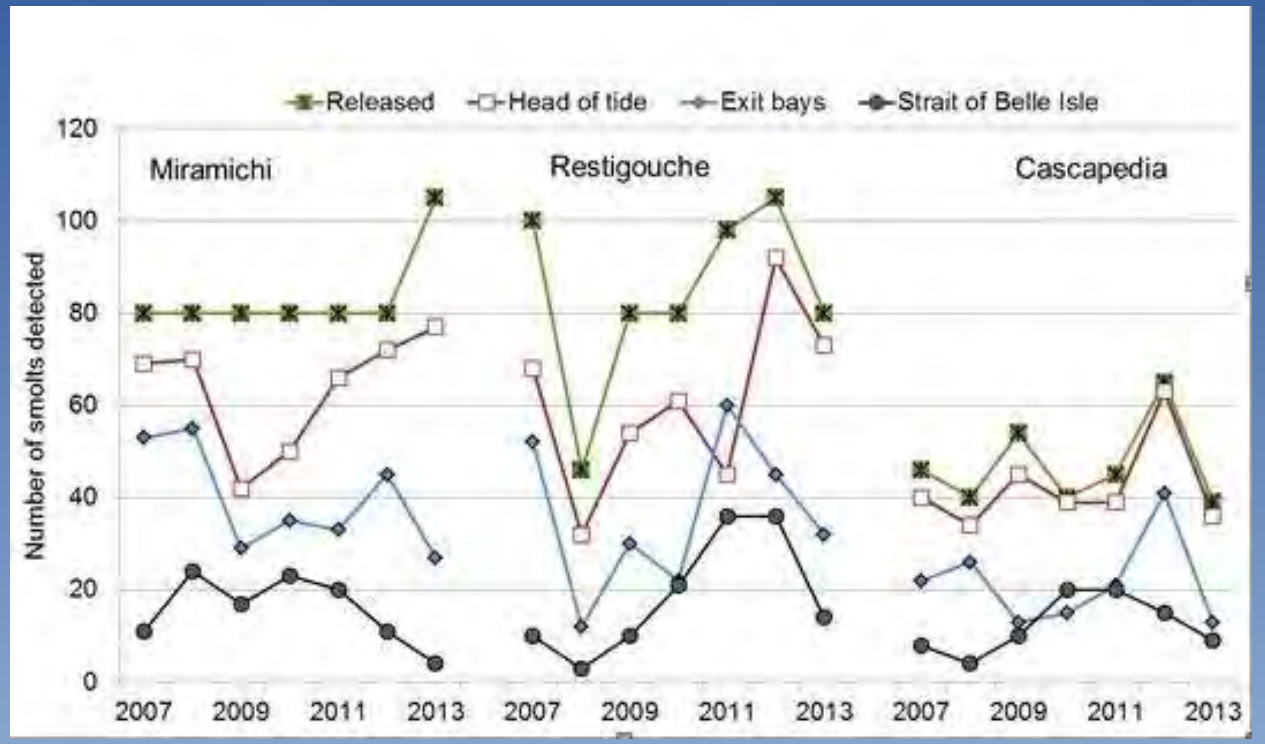
SALSEA Programme

- little was known about where salmon were dying at sea or the factors responsible and this lack of understanding was an obstacle to rational management
- IASRB established to promote collaboration and cooperation on research into the causes of marine mortality of salmon and the opportunities to counteract it
- major, innovative programme of research, the *SALSEA* Programme, developed and supported through public/private partnerships
- fresh, estuarine and offshore components but major marine surveys in Northwest and North-East Atlantic and enhanced sampling at West Greenland

Photos courtesy of Niall Ó Maoiléidigh, Jens Christian Holst and Fred Whoriskey

IASRB Current priorities

- IASRB encourages studies to partition marine mortality of migrating Atlantic salmon – SALSEA Track
- NASCO Parties to continue the development of local collaborative telemetry projects
- development of large international collaborative telemetry projects that together build upon and expand local efforts



Source: ICES

Photo courtesy of Gilbert van Ryckevorsel

Management Implications - General

- over the last forty years, increased mortality at sea, linked to a warming climate, has resulted in a dramatic decline in the abundance of Atlantic salmon
- management options in the ocean are limited so goal should be to maximise the number of healthy wild salmon that go to sea by focusing actions on impact factors in fresh, estuarine and coastal waters
- factors operating in fresh or estuarine waters may manifest themselves as increased marine mortality

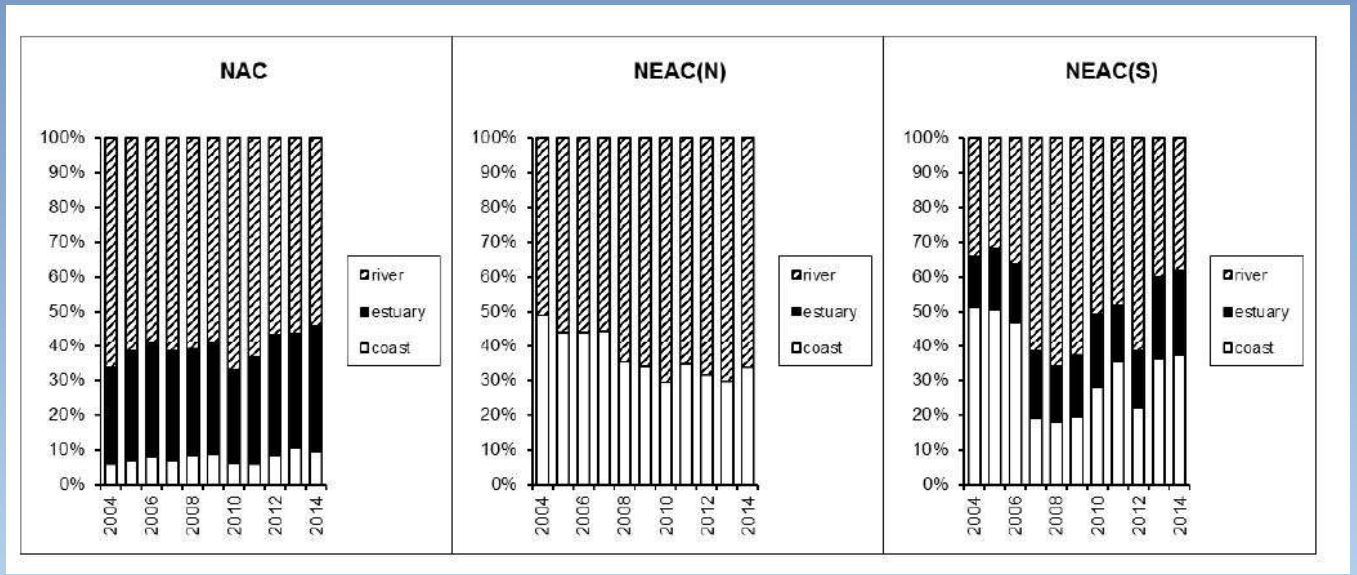
Challenges and Opportunities - Fisheries

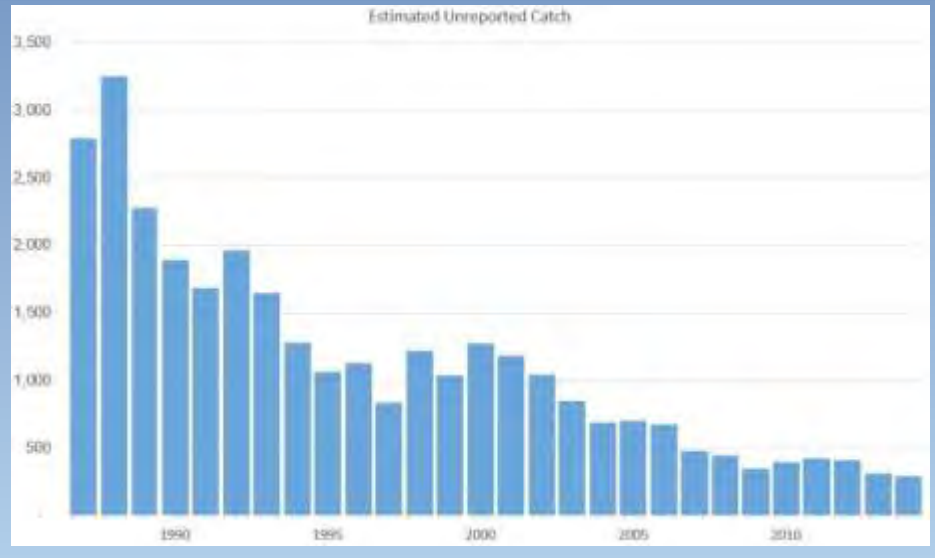
- major reductions in fishing effort in part reflecting international obligations; increasing use of catch and release >135,000 salmon in 2014
- no sightings of non-NASCO vessels, stability in distant-water fisheries
- despite sacrifices abundance remains low and managers face uncertainty due to a changing climate, particularly in the south
- fisheries should only exploit surpluses; some jurisdictions have not established CLs and others permit fishing where stocks below CLs
- reductions in condition of returning salmon and increased incidence of repeat spawners in some areas need to be considered

Photos courtesy of Sergey Prusov

Challenges and Opportunities - Fisheries

- MSFs pose particular difficulties for management; increasing proportion of catch taken in fresh water but coastal MSFs remain even though it is unclear how weakest stocks are protected
- need to continue to cooperate in assessing bycatch in pelagic fisheries
- warming in freshwater may affect the benefits of catch and release fishing and this mortality needs to be considered
- estimated unreported catch remains significant





Source: ICES

Challenges and Opportunities -– Other aspects

- maintain and improve the productive capacity of salmon habitat e.g. through coordinated catchment management planning, restoring degraded habitat, improving access
- planting of bankside vegetation to create shade and changes to land use and land drainage schemes may mitigate some of the expected effects of climate change
- increasing interest in stocking – need to consider the risks and benefits
- challenges remain to be addressed in managing impacts of salmon farming particularly concerning sea lice and escaped farmed salmon (resistance to lice treatments a concern) and introductions and transfers (*G.salaris*)


www.nasco.int
www.salmonatsea.com