

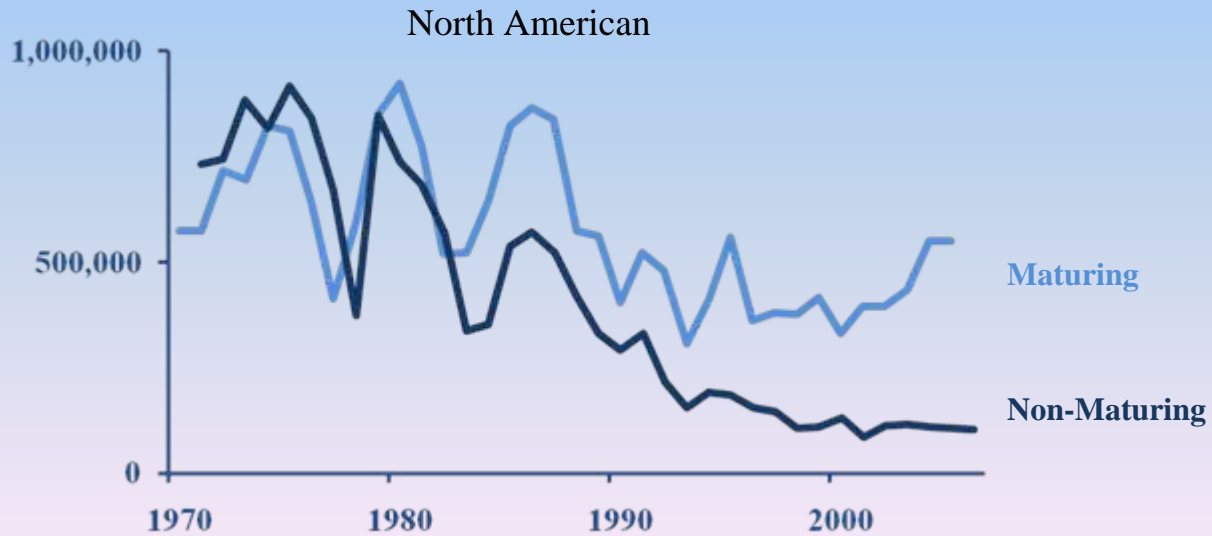
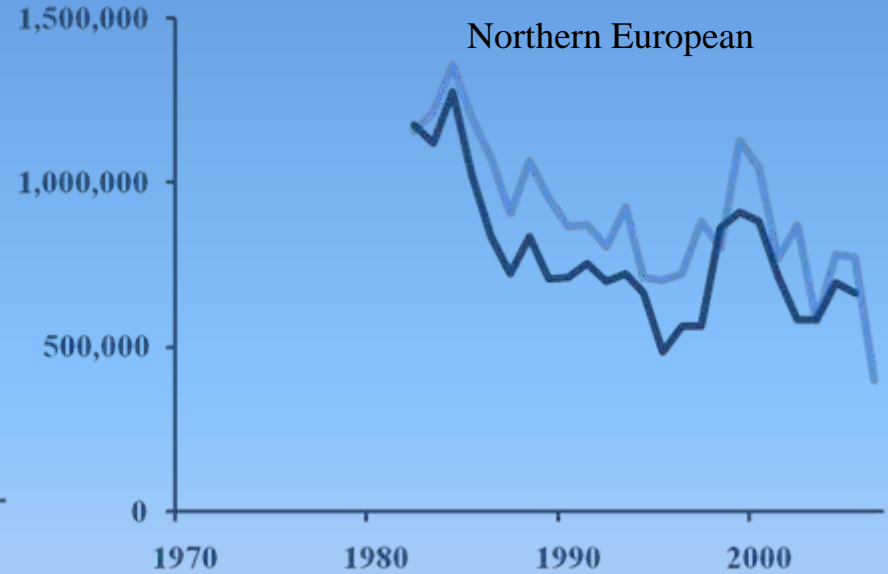
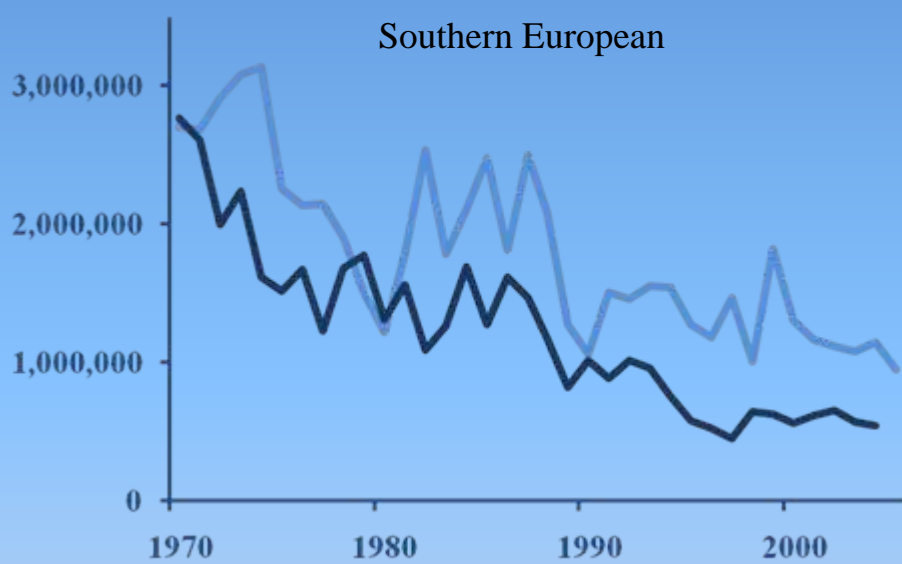
The SALSEA Programme

Improving understanding of the migration and distribution of salmon in the North Atlantic

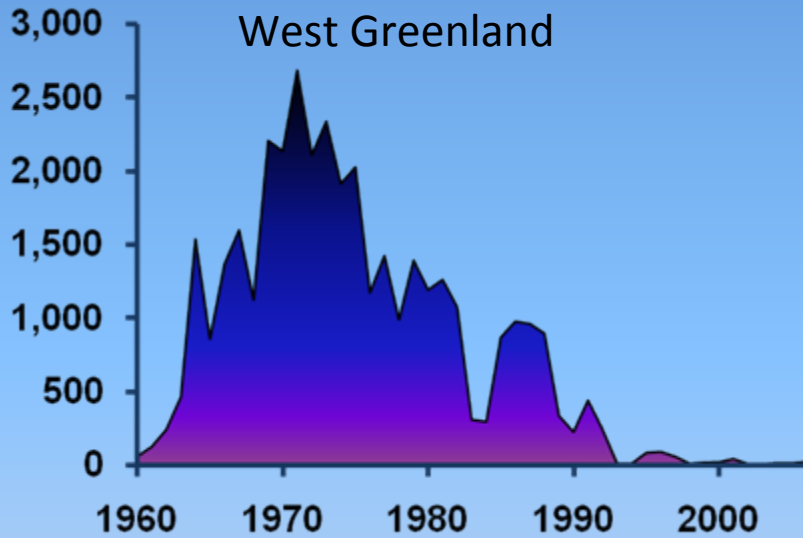


Photograph courtesy of Gilbert van Ryckevorsel

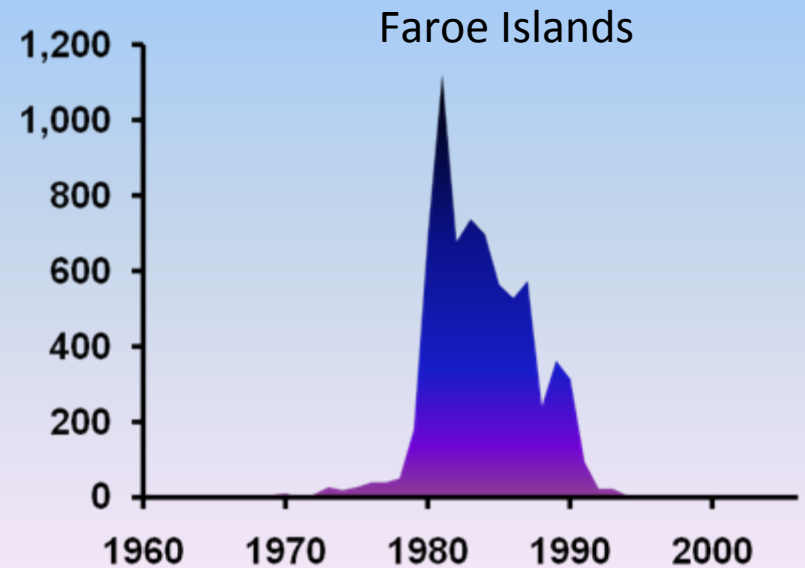
Stock Complex PFA Estimates



Management response



Source: ICES



Photographs Mark Ives, Ian McLaren, FRS, Faroese Tourist Board

Management response

- closure of Irish drift net fishery; exploit stocks $>$ CL
- closure of all commercial fisheries in Canada (2002 -)
- phasing-out MSFs in England/Wales & N. Ireland
- ~ 90% reductions in netting effort in Scotland and Norway
- increasing use of catch and release and river closures in recreational fisheries



Photograph courtesy of Panu Orell

IASRB

- established in 2002 to promote cooperation on research into the causes of marine mortality of salmon and the opportunities to counteract it
- developed an inventory of ongoing research relevant to mortality of salmon at sea
- essential tool in identifying research gaps, priorities and in coordinating existing research
- important in support of fund-raising
- 56 on-going projects mainly government funded
- annual expenditure ~ £5m



Topic areas



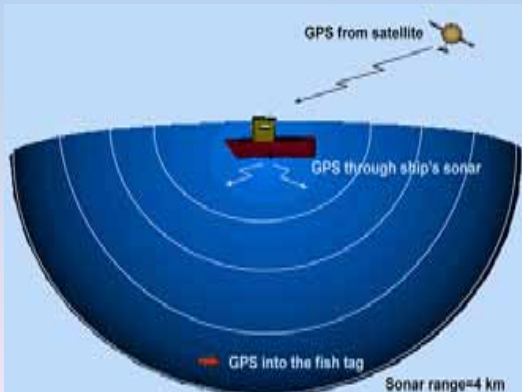
Long-term monitoring



Life history / biological processes



Distribution/migration at sea



Development of methods



Natural/anthropogenic factors

Structure of the SALSEA Programme

WP1 - Supporting Technology

Genetic stock identification
Sampling equipment evolution
Signals from scales

WP2 - Early Migration

Biological characteristics of smolts
Physical factors in fresh water
Preparing to migrate
Key predators
Impacts of aquaculture

WP3 – Oceanic Distribution

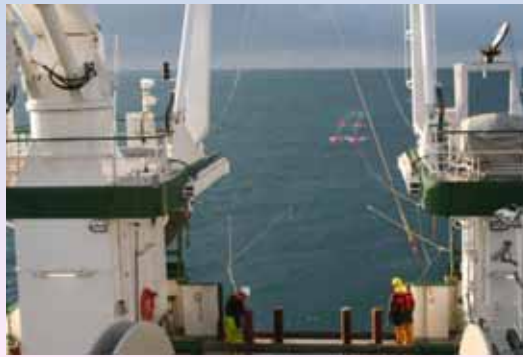
Plan marine survey
Conduct survey
Collate and analyse data

WP4 – Communications

Promoting SALSEA
IASRB/NPAFC symposium
SALSEA report

Supporting technology

- genetic baseline sampling programmes initiated in Canada, Iceland, Ireland, Norway, Russia and UK
- pelagic trawl gear developed by IMR Bergen trialled off the west coasts of Scotland (FRS in 2005) and Ireland (Marine Institute in 2007) in conjunction with Atlantic Salmon Trust
- genetics, scale reading and cruise planning workshops held in 2008
- IASRB part-funded workshops to analyse historical tag recovery information



The SALSEA Marine Programme

- SALSEA Merge
 - Seagoing sampling and analysis of data acquired
 - Genetic assignment of geographic origin
 - Merging of results and large historic data set, into an analysis of stock specific migrations and relations with oceanographic and ecologic features
- SALSEA North America
- SALSEA West Greenland



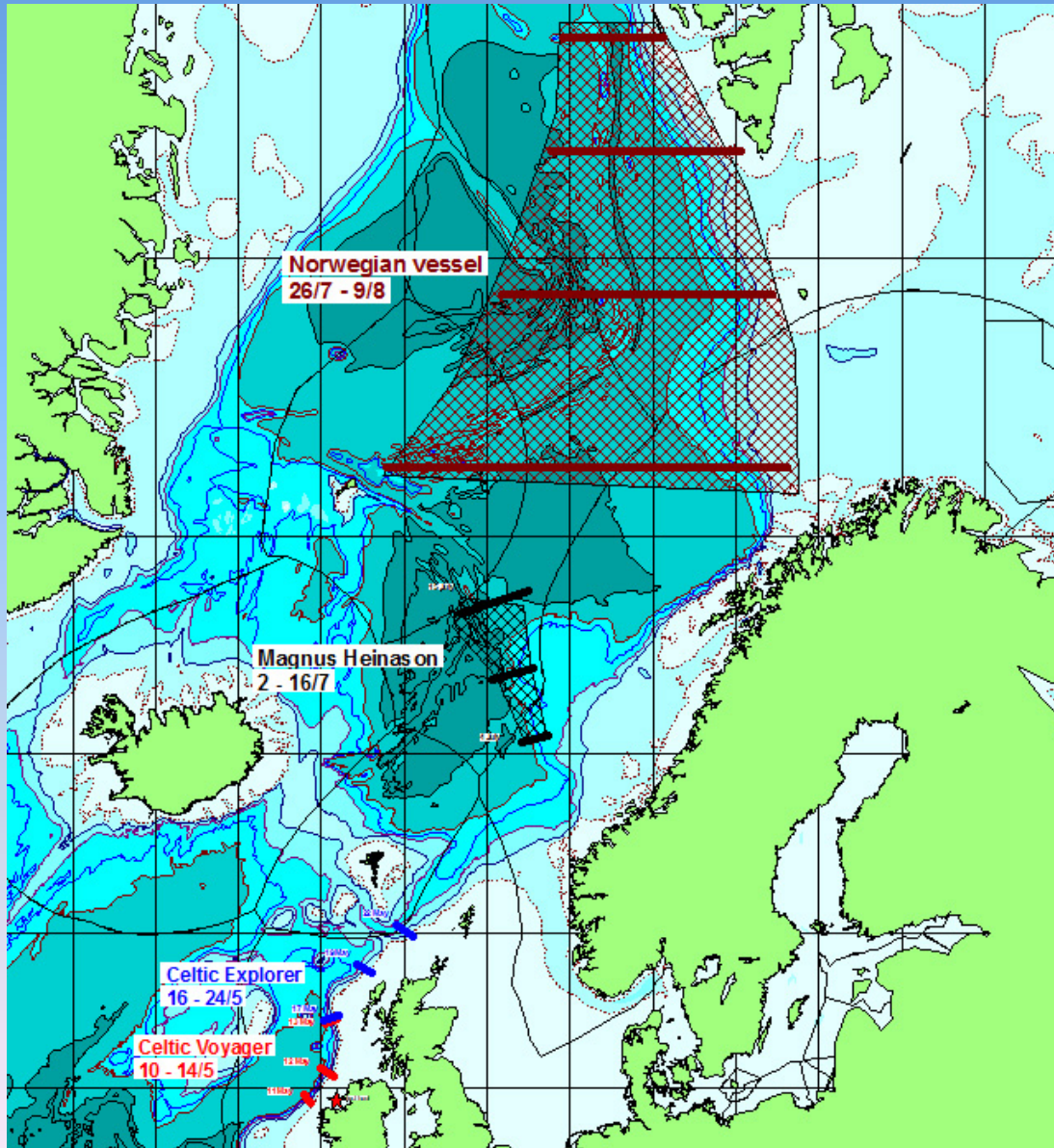
Photograph Jens Christian *Holst*

SALSEA-Merge

- launched May 2008 in Killybegs, Ireland
- public /private partnership, consortium of 20 organizations
- total funding ~ Euro5.5 over three years (to April 2011), Euro 3.5 million from EU FP7 Programme
- research cruises in 2008 and 2009 - Irish, Faroese and Norwegian vessels



SALSEA-Merge



SALSEA – North America

- sampled 46 trawl stations and 2 gillnet sets during ‘24 day cruise’
- main areas sampled were along the north-western coast and slope waters of Newfoundland, southern-mid coast to slope of Labrador; 14 of the 15 fish from Labrador area
- acoustic arrays extending further offshore allowing migration patterns and survival to be studied >1,000km from river of origin (Strait of Belle Isle)
- OTN – arrays extended to include Gulf of Maine and off Nova Scotia (2009), Cabot Strait (2009) and Greenland (2010)



SALSEA – West Greenland

- cooperative sampling over last 30 years; biological characteristics (length, weight, age), continent of origin etc
- in 2008 1,200 salmon sampled, critical input to annual ICES stock assessment activities
- extended sampling in 2009 and 2010; data from same cohorts sampled during oceanic surveys
- river/region of origin, disease and parasite status, condition gonadal development, feeding etc



Salmon Summit

- joint meeting held in 2002 on causes of marine mortality of salmon; valuable exchange
- forum for presentation of the research findings from the BASIS & SALSEA Programmes
- scheduled for Spring 2011 in Europe
- funding approved by NASCO & ICES
- prestigious, well-funded, well attended and well reported

