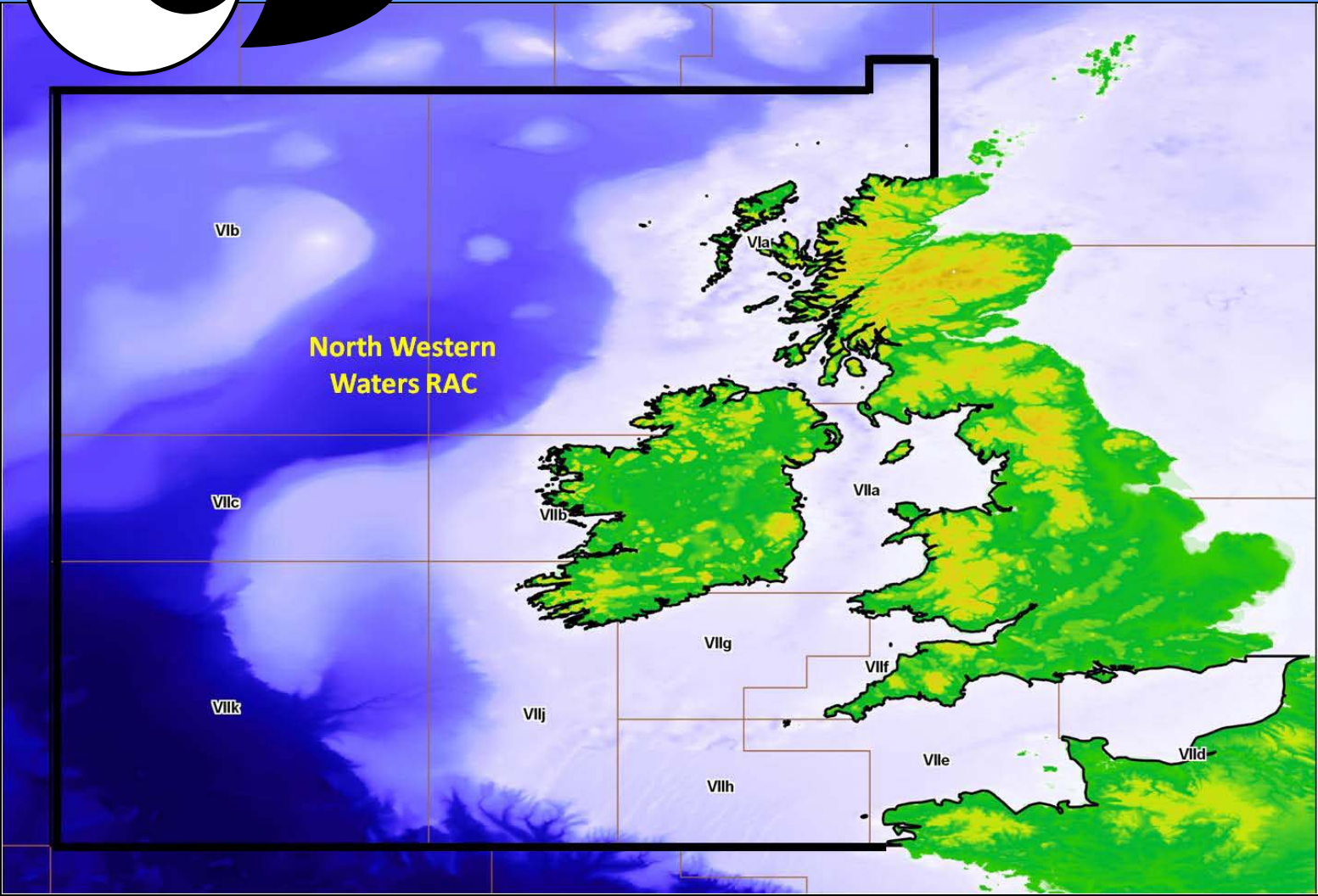
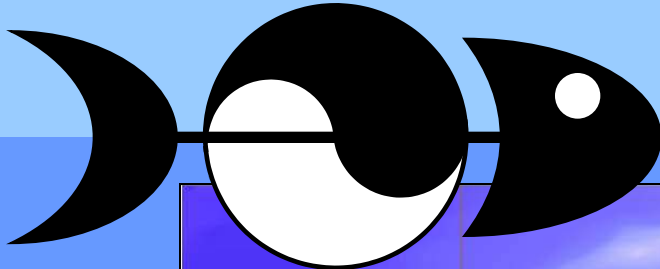


Making the European Fisheries Ecosystem Plan Operational



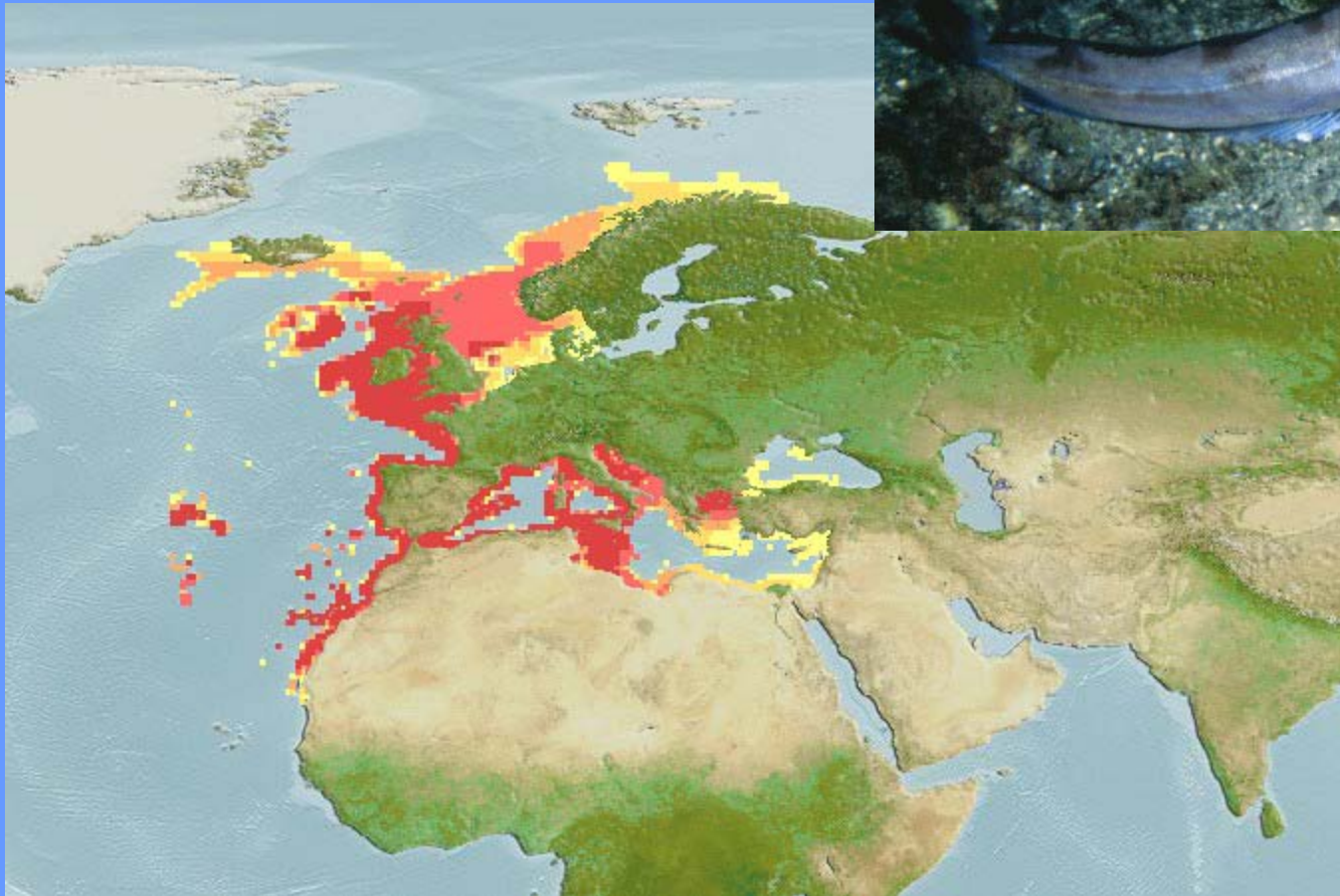
North Western Waters

Case Studies



Cormac Nolan

1) Northern Hake (*Merluccius meluccius*)



Images:

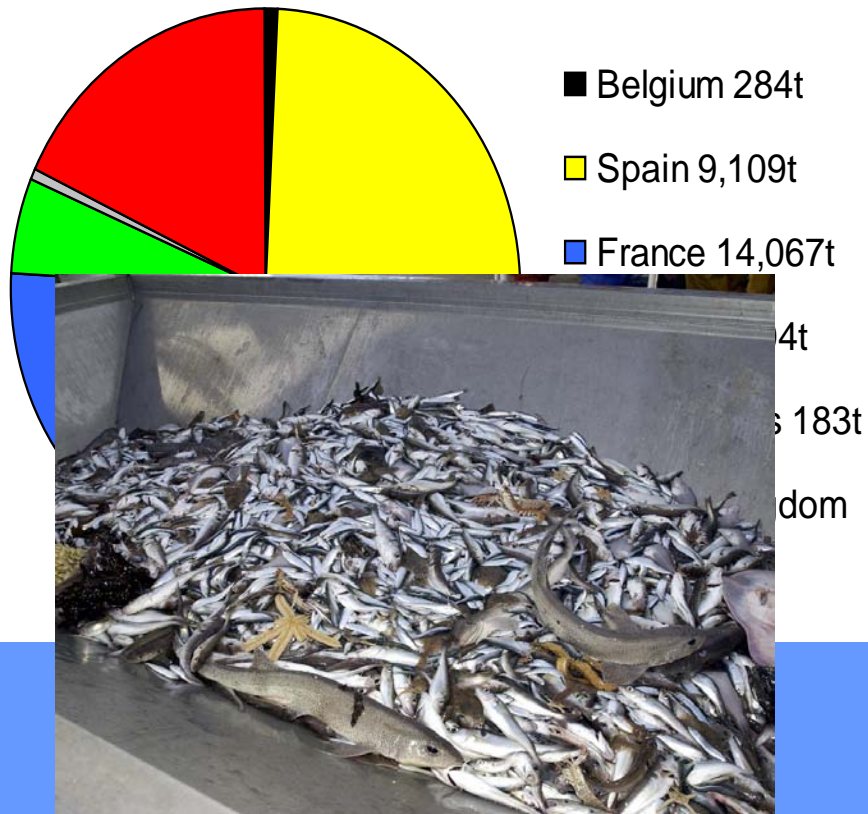
www.aquamaps.org

www.fishbase.org

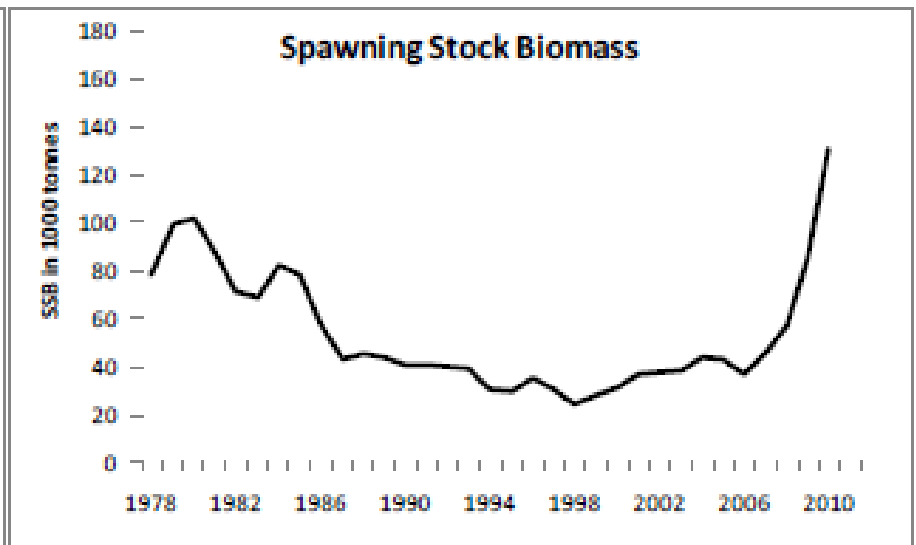
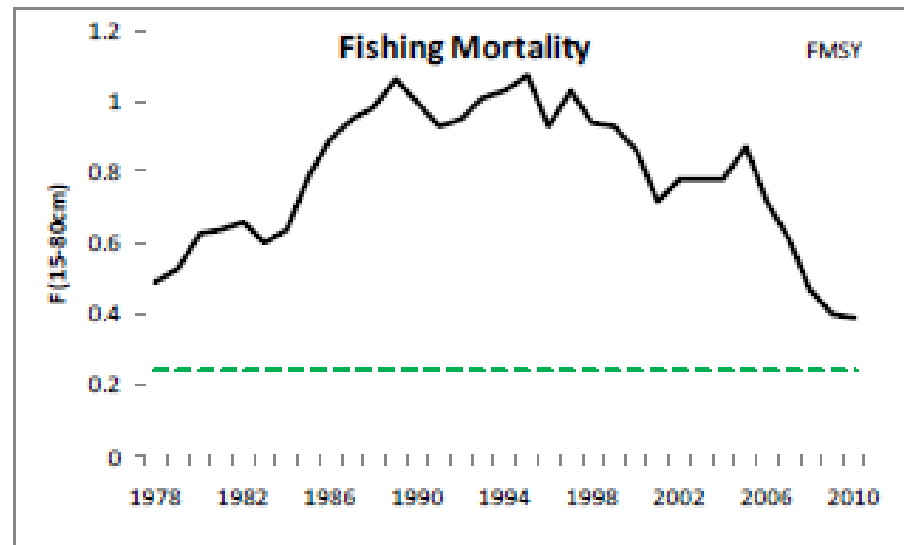
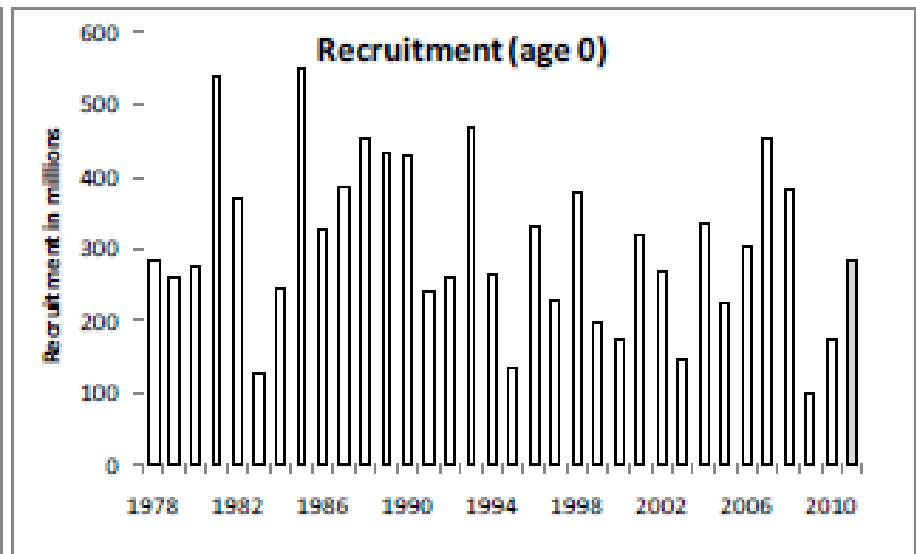
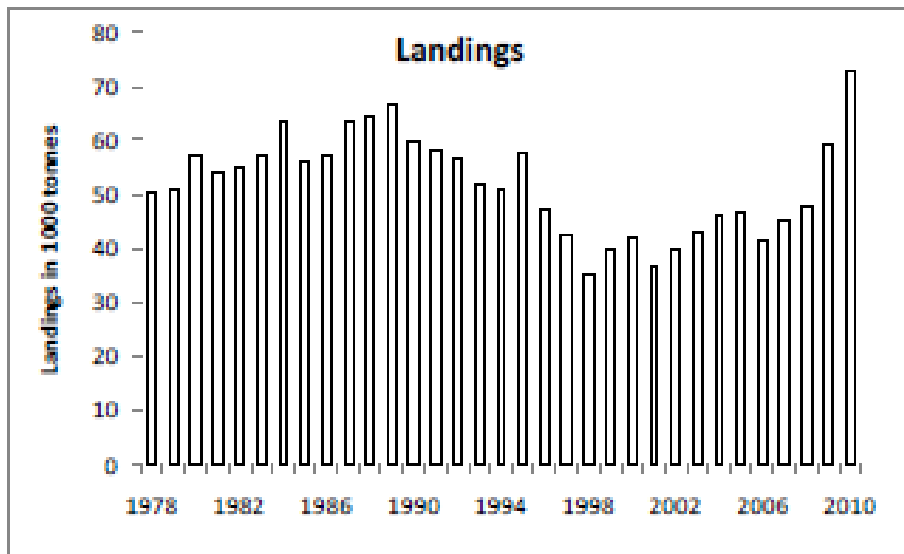
The NWW Hake Fishery

- Important resource for demersal fisheries
- Targeted and incidental bycatch in trawls, nets and other gear
- Discarded in some areas
- Emerged as a commercial fishery in 2004 ->

Northern Hake 2011 Quota. TAC 30,900.



State of the Stock (ICES 2011)

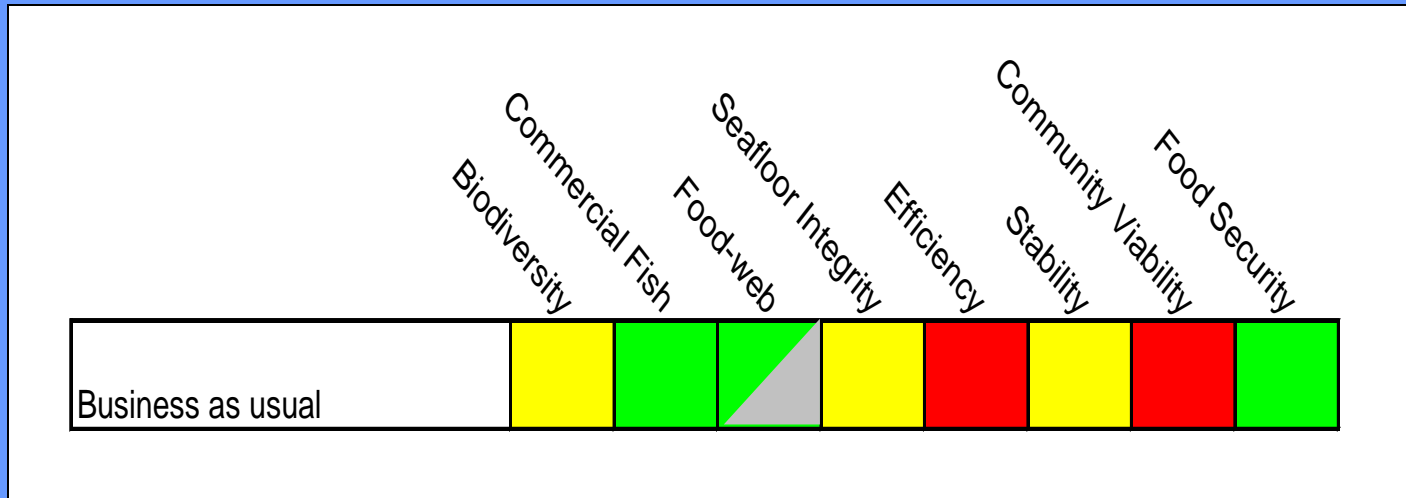


Business as Usual (BAU)

Tools currently employed in NWW:

- Total allowable catch
- Minimum landing size
- Gear specifications (mesh size restriction and square mesh panel)
- Effort restriction (in biologically sensitive area)

BAU Evaluation



Legend:

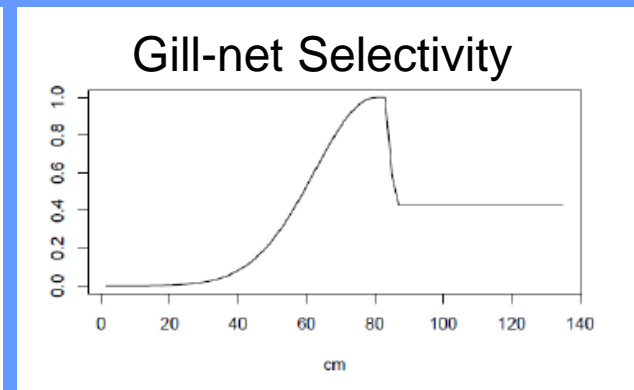
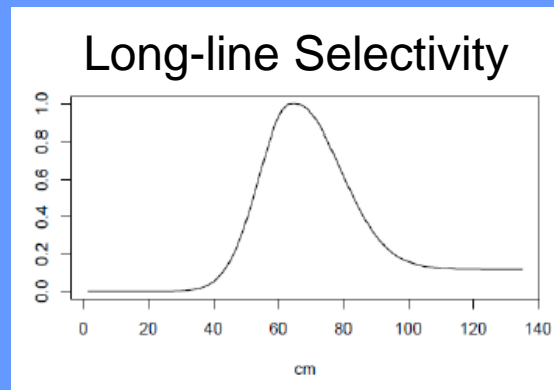
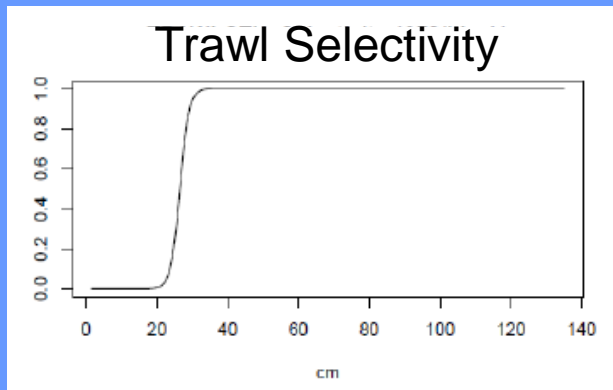
- Green: Expected improvement in the status of the descriptor
- Yellow: Stable (i.e. no change in the status of the descriptor)
- Red: Expected deterioration in the status of the descriptor
- Grey: Outcome unknown

- SSB increasing
- Trawls pressuring seafloor + small hake
- TAC constraining catch?

Strategy A: Redistribute Quotas

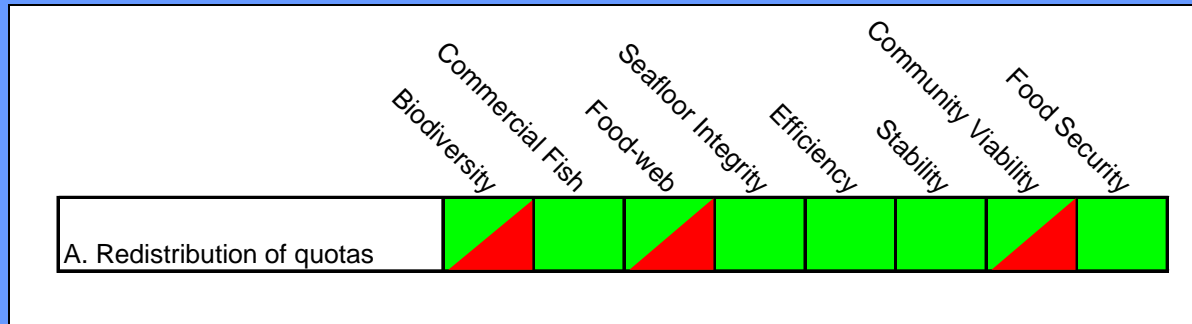
“Discards of juvenile hake can be substantial in some areas and fleets. The spawning biomass and the long-term yield can be substantially improved by reducing mortality of small fish. This could be achieved by measures that reduce unwanted bycatch through shifting the selection pattern towards larger fish.”

ICES advice 2011



Redistribute quotas from trawls to long-lines and gillnets

Redistributing Quotas: Evaluation



“...a redistribution of quotas from trawls to the rest of the fleet generates a higher F_{MSY} , more stable biomass and higher catch compared to fishing with the actual selection patterns.”

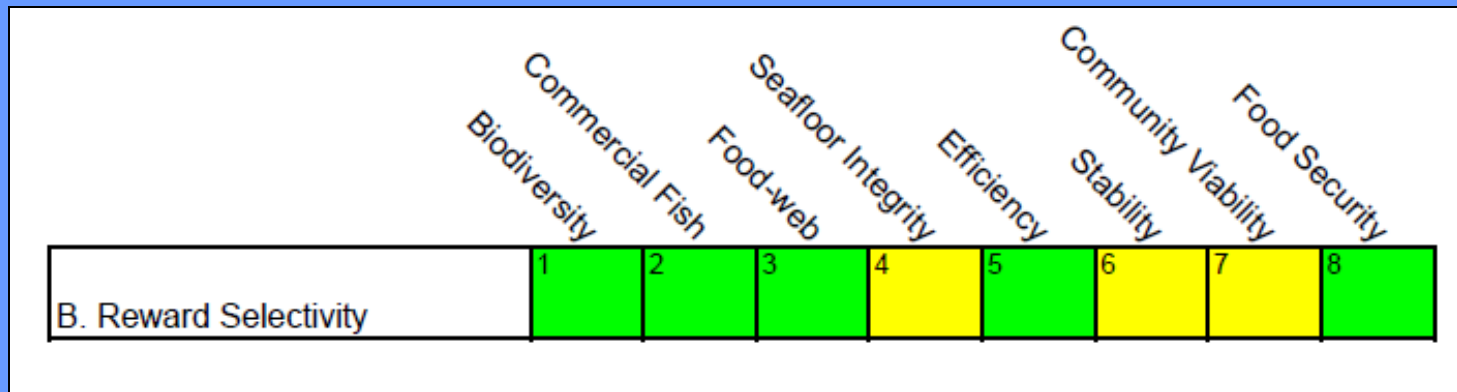
“Increasing the quotas of more selective gears raises the number of spawners and the average weight of the individual fish in the landings increases. In the long run, higher SSB and Yield are compatible with the present levels of fishing effort.”

STECF 2008

Strategy B: Reward Selectivity

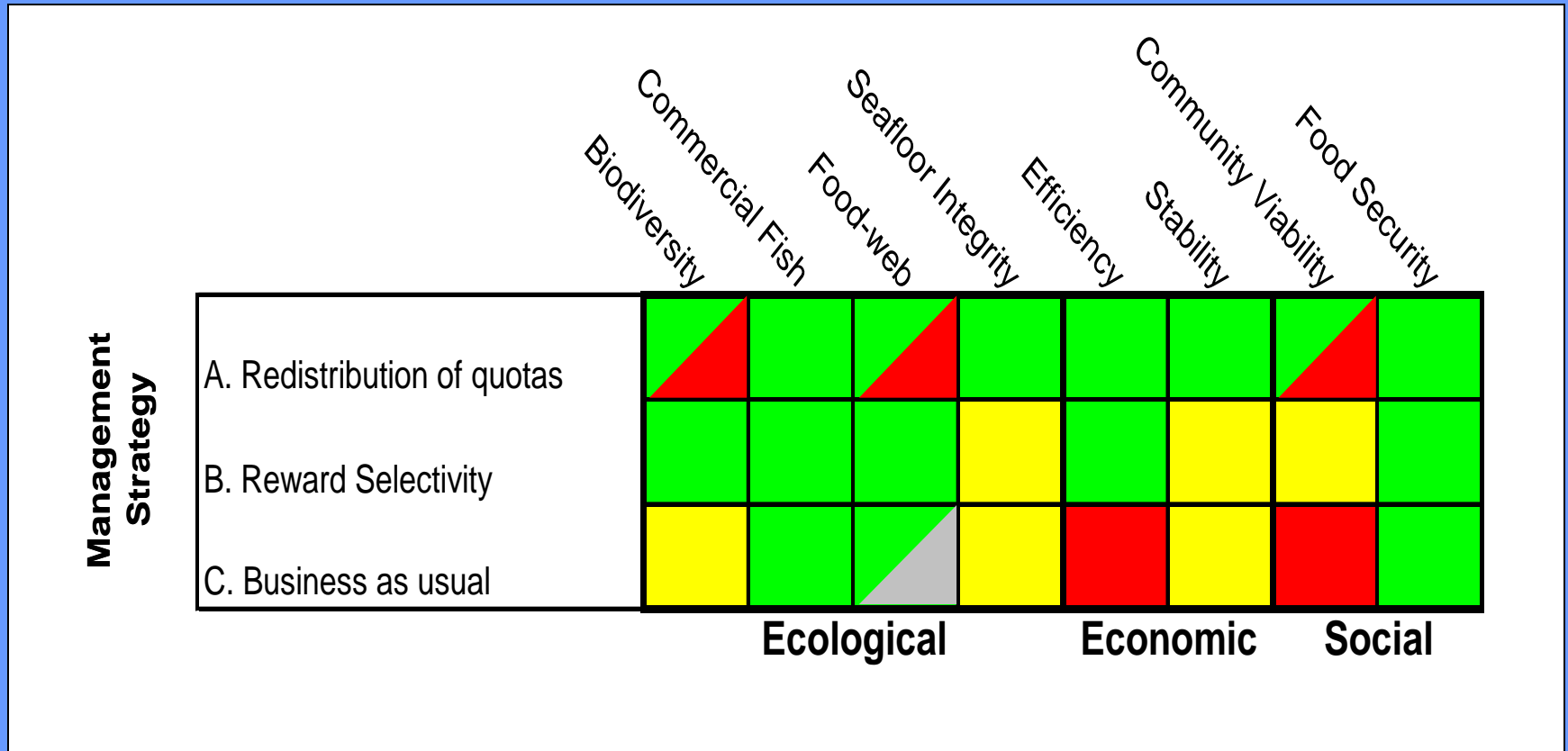
- Identical reasoning to the previous strategy: there is a problem with the exploitation pattern associated with trawling
- Quota preference within trawl group for more selectivity
- Could utilise square-meshed panels, separator panels or sorting grids for example but onus on industry to demonstrate improvements

Rewarding Selectivity: Evaluation

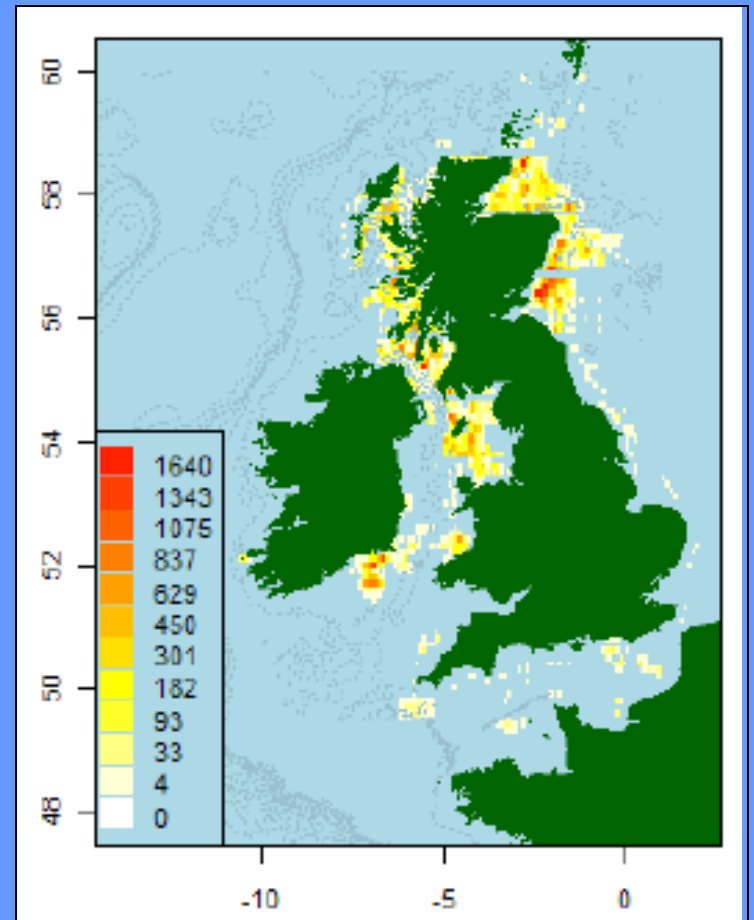
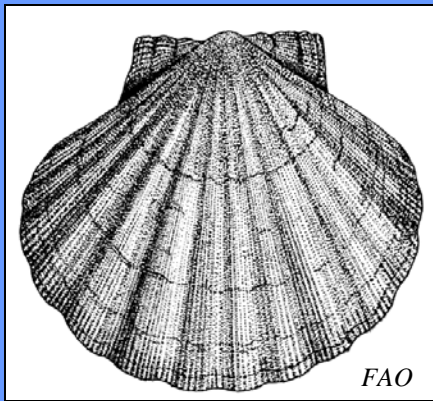


- Seafloor integrity unchanged
- Improvement in commercial species has knock-on effects

Northern Hake Strategy Matrix



2) Scallop (*Pecten maximus*)



The NWW Scallop Fishery

- Gravel, sand/shell or stony substrates (15-75 meters)
- Dredge fishery (damaging)
- Mainly inshore waters off the SE coast of Ireland, Isle of Man and western Scotland and France
- Economically important to local coastal communities
- Not under the remit of the CFP (national level)

Current Management and State of the Stocks

Raft of national level management

International management:

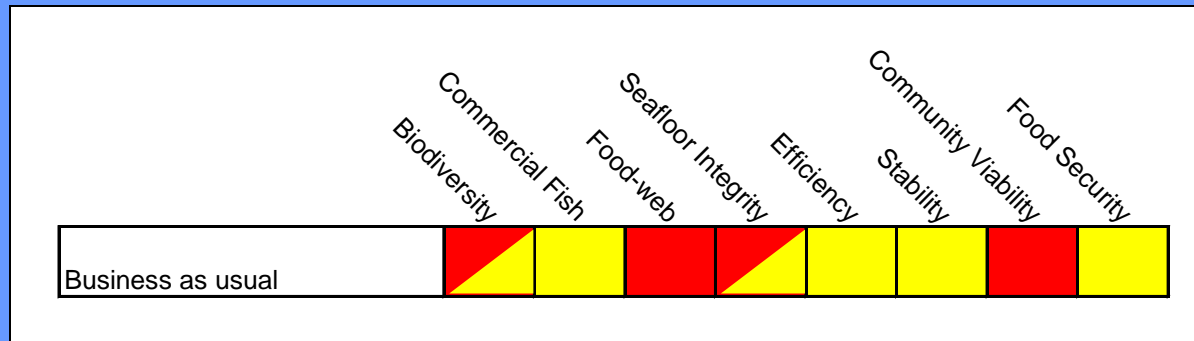
- Minimum landing size
- Effort control

Closed areas effective (Isle of Man)

State of the Stocks:

- Est. 59,000t landed in 2009
- Most countries report stable landings from fully or overexploited populations
- VPA in Scotland shows SSB in 2 areas at historical low

BAU Evaluation

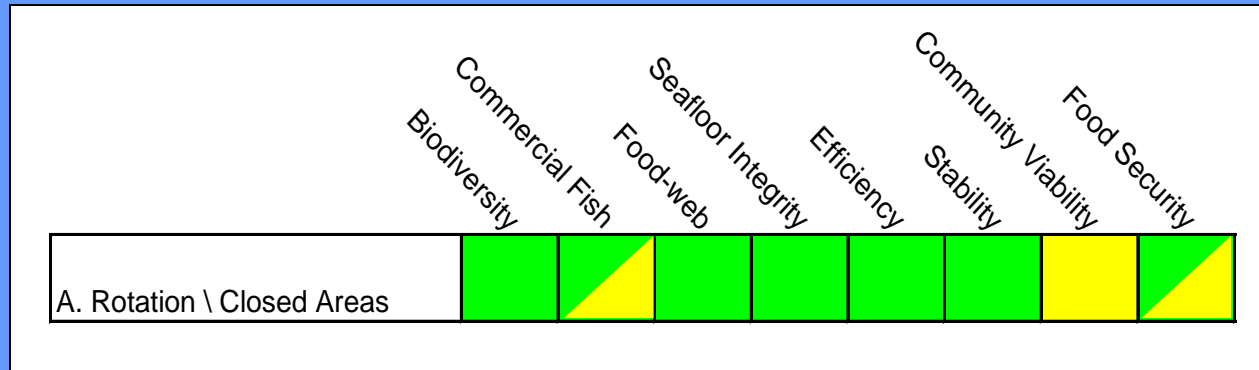


- Significant effects on target species and the wider marine environment
- Possible sequential depletion
- Market constraining effort

Strategy A: Rotation of Closed Areas

- Isle of Man closure in 1989
- Scallop density, age and size structure resulted in the exploitable biomass nearly 11 times higher in the closed area by 2003
- Issues about the placement of permanently closed areas
- A rotational harvest strategy could have substantial benefits for the management of fisheries of sessile species with high indirect fishing mortality

Rotation of Closed Areas: Evaluation

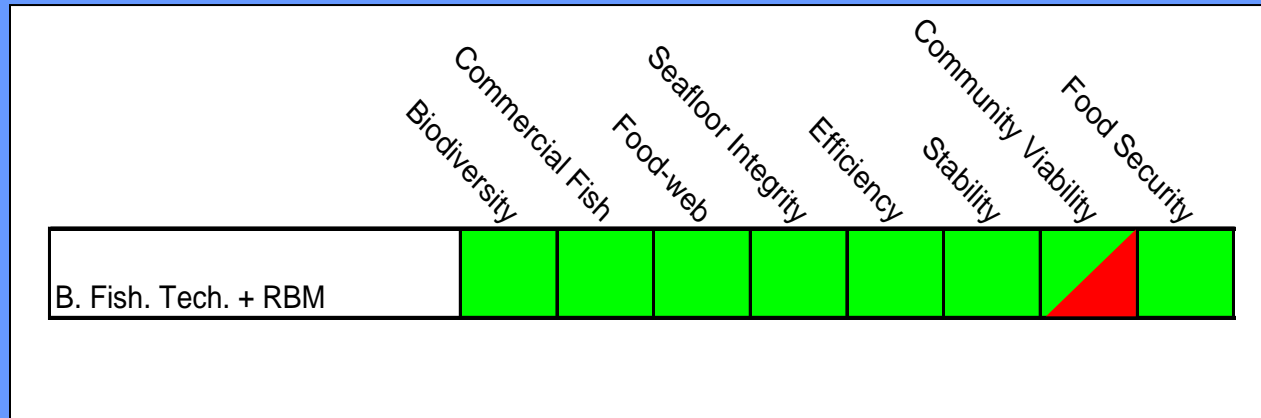


- Closed areas greatly improve benthos inside
- Increased pop. density improves fertilisation => larval export
- Model of a similar species in U.S.A. indicates that yield and spawning biomass per recruit would increase under such a management regime

Strategy B: Improve Fishing Technology and RBM

- New dredge designs reduce benthic impact
- Improving resolution of maps improves efficiency
- => need to limit mortality
- RBM moved from current systems (i.e. vessel quotas in Ireland, individual quotas and some TURFs in the UK, and limited licensing and community quotas in France) to systems ranked higher by the MRAG consortium report on RBM in European Waters

Fish. Tech. and RBM: Evaluation



- Acceptability of introduced RBM
- Fishing technology reduces ecological pressures
- RBM increases societal efficiency*

Scallop Strategy Matrix

