NWWRAC
Focus Group on
Mixed Fisheries Management Plan for the Irish Sea (VIIa)

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The current interest in multiple-fleet and -fishery based approaches has its origins around 2000, when the conflicting states of the various demersal stocks in the Irish Sea made the limitations of the traditional single-species approach to advice particularly apparent.

Sustainable management of multiple-fisheries systems exploiting multiple-stocks with specific ecological traits imply major challenges due to potentially conflicting conservation needs and fisheries strategies.

Mixed fisheries are common in demersal regimes and may become very complex as the number of fisheries strategies (métiers) increases with the increasing number of exploited stocks.

As a first step, any mixed fisheries system needs to be delimited in terms of number of stocks exploited and number of fisheries involved in this joint and simultaneous exploitation.

In this context, the outcomes from ICES Working Groups meetings assume relevant importance.

At the last WGCSE meeting that has been held in Copenhagen (08-17 May 2013), the advice for 6 species (7 stocks) from the Irish Sea has been presented:

- Cod
- Haddock
- Whiting
- Plaice
- Sole
- *Nephrops* (FU15, Western Irish Sea)
- *Nephrops* (FU14, Eastern Irish Sea).

Irish Sea Sole:

SSB has continuously declined since 2001 and is below B_{lim} since 2006. In 2012 SSB reached the lowest level. The fishing mortality shows a declining trend since the mid 1980s to a stable level in recent years, well above F_{MSY}. Recent recruitment levels have been lower than earlier in the time-series, with the 2011 recruitment being the lowest in the time series.

ICES advises on the basis of the MSY approach that there should be no directed fisheries and that bycatch and discards should be minimised.

Irish Sea Plaice:

The SSB in the last two years (2011–2012) is about 1.4% higher than the average of the three previous years (2008–2010). The surveys and SSB trends show an increase in stock size since the mid-1990s to a stable level.

Based on the ICES approach to data limited stocks, ICES advises that catches should be no more than 1802 t in 2014. If discard rates do not change from the average of the last 3 years, this implies landings of no more than 497 t.

***Nephrops* FU15, Western Irish Sea:**

The stock abundance is stable and above MSY $B_{trigger}$. Recent harvest rates have fluctuated around F_{MSY}. This stock has sustained landings at around 9000 t for many years.

ICES advises on the basis of the MSY approach that landings in 2014 should be no more than 9300 t.

***Nephrops* FU14, Eastern Irish Sea:**

There is not a long enough time-series to determine a candidate for MSY $B_{trigger}$. Current harvest rate is below the F_{MSY} proxy.

ICES advises on the basis of the MSY approach that landings in 2014 should be no more than 1300 t.

The outcomes of the recent WGCSE 2013 confirm that despite a range of management measures (adopted mainly in the framework of the Cod Recovery Plan, Reg. EC 1342/2008) whitefish stocks in the Irish Sea remain a concern.

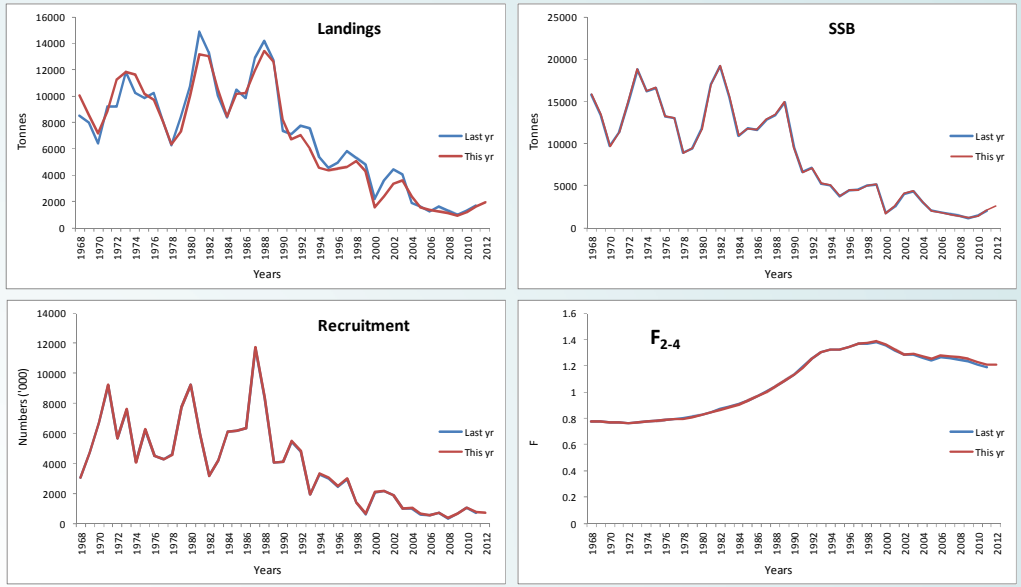
While the stock of haddock seem to be stable in terms SSB in the last years, for whiting ICES WG showed that >1000 t of whiting are discarded annually with ~50 t of landings (95% discard rate). The majority of discards were below minimum landing size.

Survey data are consistent with a high total mortality and low stock size.

- ICES Advice for Haddock: catches no more than 1000 t (landings 570 t)
- ICES Advice for Whiting: on the basis of precautionary considerations, catches should be reduced to the lowest possible levels and that effective technical measures should be implemented to reduce discards.

For cod, on the basis of the MSY approach, there should be no directed fisheries, and bycatch and discards should be minimized.

The fishing mortality in recent years is slightly declining, but total mortality remains very high. The SSB has declined ten-fold since the late 1980s; the SSB increased from 2010 but remains well below B_{lim} (6000 t). Recruitment has been low for the last ten years.



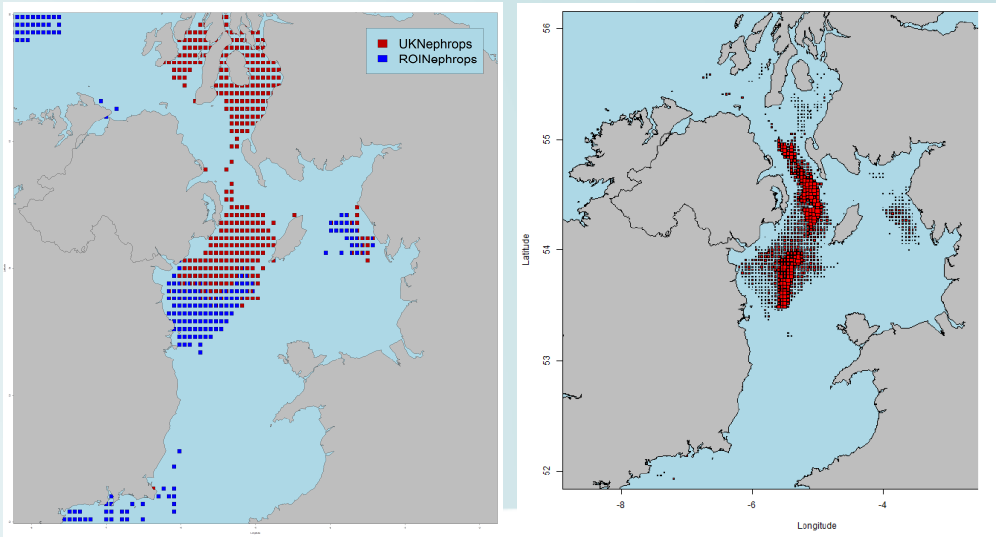
Cod in ICES Division VIIa: Comparison between the results of the assessment carried out at WGCSE 2012 and that performed at WGCSE 2013.

Regarding the mixed fisheries issues, in the view of the available knowledge, it is inevitable that cod would be driving the management direction in the Irish Sea.

Cod would lead all species to be fished at or below F_{MSY} (cod continues to be the most limiting, or 'choke', species in terms of effort required to catch available quota).

Therefore, the main focus still remains how to avoid cod in the fisheries – most of the cod are taken within a fairly clear time window/area/fishery and if we want to seriously minimise F on cod then we should focus on that period and implement measures that are effective in limiting cod catches during that key period (e.g. use of grids, etc.).

Nephrops fishery effort distribution from VMS data (yr 2012) (left panel); Distribution of cod catches in quarter 3 (2005-2011 data combined) (right panel).



Nephrops fishery in the Irish Sea

Since the Cod Recovery Plan (Reg. EC 1342/2008) has been introduced in 2009, annual effort baselines in *Nephrops* trawl fisheries (Effort group TR2 OTB 70–99 mm) in Division VIIa have been reduced by 25% annually.

The use of species selective gears to mitigate effort restrictions to avoid effort limits has increased steadily since 2009.

- A conditional national licence has been introduced by Ireland since March 2012, making the use of grids or separator panels mandatory for all TR2 boats fishing in the Irish Sea. Around 55% of the Irish vessels use separator trawls and while 45% have opted to use Swedish grids to reduce bycatch.

- Since October 2012, all TR2 vessels in the UK(Northern Ireland) fleet are required to use a highly selective fishing gear (Seltra 300mm box trawl, 270 mm diamond mesh panel, Seltra box trawl, and 300mm square mesh panel). All these gears are being developed with the aim of achieving exemption from the cod recovery plan under Article 11 (less than 1.5% cod catch).

Nephrops fishery in the Irish Sea

Provisional data suggests a ~30% increase in *Nephrops* catch rates and a reduction in fish bycatch of ~30% due to the lower headline height.

Despite this, the *Nephrops* trawl fishery still takes bycatch of several species (plaice, whiting, cod, etc.); the selectivity of this fishery needs to be further improved to reduce bycatch of cod and juvenile whiting, in particular.

Data deficiencies

The quality of the commercial landings and catch-at-age data (especially for cod, but also for haddock) deteriorated in the 1990s following reductions in the TACs. ICES Working Groups have, since the 1990s, attempted to overcome this problem by incorporating sample-based estimates of landings from three major ports in the WG landings figures.

The unaccounted removals figures given by models could potentially include components due to increased natural mortality and discarding as well as misreported landings or catches from the stock taken outside VIIa.

Data deficiencies

Discarding is prominent in all the fisheries, and although data on discards are available from observer programs, these data only cover the most recent period and the number of observed trips is generally very low. For several stocks, there are also clear indications of underreporting or misreporting of landings in some periods, often triggered by the introduction of regulations aimed at reducing fishing pressure.

Apart from the seal predation affecting cod in ICES Division VIa, West of Scotland, environmental influence on the stocks was not considered in depth.
Hence, issues such as the contribution of environmental factors to the life cycle of several stocks still remain unanswered.

Data deficiencies

However, the data quality is expected to deteriorate further:

- Reduction of TACs
- Increase in gear selectivity
- Discard ban

Possible solutions:
- Improvement of both scientific and FSP (Fisheries Science Partnership) surveys;
- Further investigation dealing with unaccounted mortality issues;
- Maximize the collaboration between research, fishery industry, stakeholders, etc.