

ECOREGION **North Sea**
SUBJECT **Joint EU-Norway request on the management of whiting in Subarea IV**
(North Sea) and Division VIIId (Eastern Channel)

Request

ICES is requested to:

- 1) *Describe the uncertainties in the data used to assess the status whiting stock, highlighting data deficiencies, by region and contributing fishery that should be addressed to improve the quality of the management advice provided. This should include consideration of stock structure and identity (for example, is there one stock with local concentrations or multiple stocks).*
- 2) *Taking into account the data uncertainties indentified above, provide advice on options for a future management plan for whiting, in particular:*
 - a) *the appropriate geographical scope of such a plan and any regional variation that might be necessary;*
 - b) *possible management objectives (F and/or biomass targets), and*
 - c) *associated management measures (for example effort limitations, discard limits, closed areas, increased selectivity).*

ICES Advice

The uncertainty in the North Sea and Eastern Channel whiting stock status derives from a mismatch between stock trends based on available catch and stock trends based on survey data during the period 1980 to 1995 (Figure 6.3.3.3.1). In the period 1985–1995 the catch-based SSB estimates are relatively stable until 1990 and sharply declined afterwards, while the combined survey-based SSB estimates increased from 1985 to 1990 and are relatively stable until 1995. After 1995 the trends in the catch and survey are similar. The reason for the historic mismatch in the time series is under investigation but has yet to be determined, it has caused uncertainty in the determination of the stock's status relative to historic levels, but not the recent trends used to provide advice on current management.

The majority of the landings data is considered to be adequately sampled and uncertainties introduced into the assessment and management process from this component of the catch are not considered to be significant.

Discard monitoring has indicated increased rates of discarding in the northern areas, but monitoring coverage is low for some fleets. Detailed seasonal and spatial analysis would be required to reduce the uncertainty in the discard estimates. Discard data are not available for recent years from France, which fishes in one of the main fishing areas (the southern North Sea and the Eastern Channel), where 80mm meshes are primarily used. ICES is aware that discard studies have been conducted in this region in recent years, but the results have not been made available to ICES for analysis.

Sampling of the catches of the industrial fleet should be reviewed and, if necessary, increased to provide better information on these catches. Catches from industrial by-catch fisheries have declined in recent years and consequently the number of samples reduced, resulting in poor quality estimates of the age composition.

Survey data for the North Sea are generally considered of good quality, tracking year classes consistently from year to year. Data for the Eastern Channel are noisy and do not track year classes well. This would cause difficulties in conducting a regional assessment, but not for the whiting assessment as a whole. However, surveys have recently been underestimating year class strength. Alternative sources of information on recruitment strength should thus be sought, along with an investigation into the survey indices of recent cohorts, possibly looking at alternative raising procedures. Current estimates of recent biomass and recruitment are highly uncertain, and SSB-based targets are therefore not considered to be robust.

There is increased evidence for sub-stock structure in whiting, indicating at least two sub-stocks in the North Sea, likely located in the northern and southern North Sea respectively, and separated in the region of the Dogger Bank (Figure 6.3.3.3.2). This spatial structuring can be addressed by attempting separate stock assessments, or by applying regional management measures to ensure appropriate local exploitation rates.

With respect to possible management objectives, maintaining fishing mortality at its current level of $F=0.3$ would be consistent with long term stability if recruitment is not poor. This F target is also consistent with that established for North Sea haddock. A full quantitative evaluation of biological reference points should be undertaken. Because whiting are caught in a mixed demersal fishery with cod and haddock, management strategies for whiting should be compatible with those for cod and haddock.

With respect to management measures, several measures could prove useful. Seasonal and spatial effort limitations and control of gear type within areas to increase control of catch and discard rates. Rather than developing a fine scale management plan for each sub-area restrictions on the amount of effort permitted within juvenile concentrations by gears that have high discard rates may be more practical. Regional TAC or regional quota allocation could be implemented to increase control of landings. Real time closures, similar to those for cod, could be implemented to divert effort away from concentrations of juvenile whiting. This could be followed by the introduction of gear types / escape panels that permit escapement of juvenile whiting. In areas where large meshes, grids or escape panels are used and it can be established that there is improved selection, fewer discards of immature whiting and improved age structure, then higher regional rates of exploitation rates (effort allocations) could be permitted. Similarly, in fisheries that target other species using small meshes resulting in significant whiting discards or by-catch, resulting in selection patterns dominated by juveniles, there would need to be reduced effort, increased gear regulations and or seasonal and real time closures. Applying similar restrictions to all areas would provide equanimity.

ICES favors a management plan development process that involves an interactive dialogue among scientists, managers, and stakeholders. Such a process should identify potential management options to enable quantitative evaluation of their efficacy with regard to the future of the fishery and the stock.

Sources

Darby, C. D.; Ulrich, C. and Millar, C. P. 2010. Joint EU-Norway request to ICES on whiting (*Merlangius merlangus*) management in the North Sea (Subarea IV) and the Eastern Channel (Division VIIId). Working document to ACOM, July 2010 (<http://groupnet.ices.dk/RGNShw-ADGNSHW2010>).

ICES. 2010. Report of the ICES Working Group for the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGSSK), 5–11 May 2010, ICES CM 2010/ACOM:13.

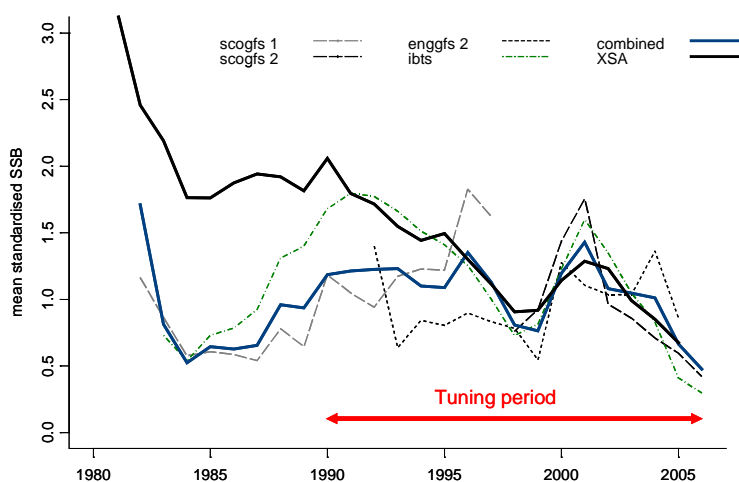


Figure 63.33.1 Catch based estimates of North Sea and Eastern Channel whiting spawning stock biomass (black line) and survey based estimates of spawning stock biomass (blue, and dashed lines), the blue line showing an estimate based on all the surveys. These are scaled so that the mean of each line over the years 1996–2006 is one. The current assessment year range is shown in red.

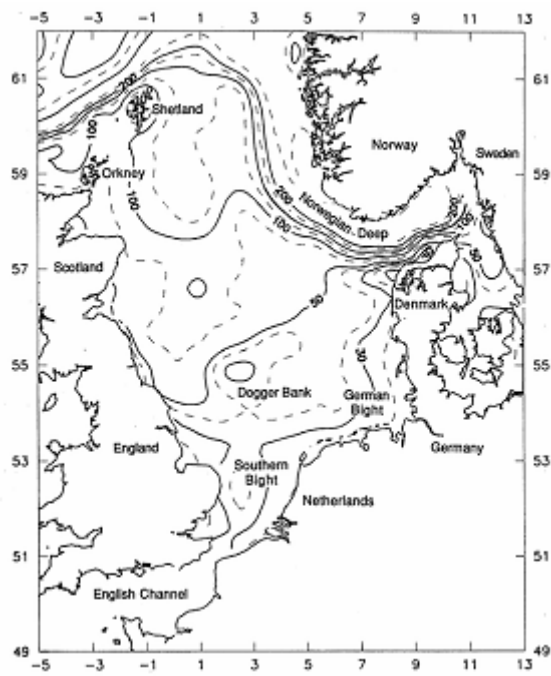


Figure 6.3.3.2 Map of the North Sea area with the region of the Dogger Bank and the 50 m contour.