

9 Recommendations

9.1 NE Atlantic mackerel

IBTS survey and the derived recruit index

WGWIDE regards the addition of the first quarter survey data as an improvement over the version implemented during the 2014 WKPELA benchmark workshop (ICES CM 2014 / ACOM:43). However, the analysis suggested a possible difference in catchability between first and fourth quarter surveys, so this should be further explored before the new index is implemented in the assessment.

IESSNS survey

- Cover the NEA mackerel stock completely during the summer feeding
- Increase the survey effort in Greenlandic and international waters in the western part of the survey area.
- Develop a method that can sample the mackerel representatively in the North West European shelf Seas south of 58.5N, where mackerel tend to dive under surface trawls.

9.2 Blue whiting stock structure

The ICES Stock Identification Methods Working Group (SIMWG) reviewed this evidence in 2014 (ICES SIMWG 2014) and concluded that the perception of blue whiting in the NE Atlantic as a single-stock unit is not supported by the best available science. SIMWG further recommended that blue whiting be considered as two units. However, there is currently no information available that can be used as the basis for generating advice on the status of the individual stocks. There is therefore a need to begin to collate information on these stocks:

- Otolith-shape analysis has recently been shown to be able to reliably identify the stock-origin of sampled fish Keating et al (2014). Use of this method in conjunction with age-reading in both scientific surveys and catch sampling can therefore provide a valuable source of information about the individual stocks. WGWIDE therefore recommends that during the next “Age Reading Workshop for Blue Whiting”, otoliths from the whole area of this stock distribution should be collected to perform shape analysis, and used to both standardize the technique and plan for its roll-out.
- The spatial and temporal coverage of the International Blue-whiting spawning stock survey (IBWSS) currently does not include the southern component, which spawns in the Porcupine Seabight in February-March (Pointin and Payne 2014). WGWIDE therefore recommends expansion of this survey to cover this component. [WGIPS]
- This Mackerel Egg Survey (MEGS) survey has previously been shown to provide valuable information about the distribution of fish spawning, including blue whiting (Ibaibarriaga et al 2007). This survey covers the spatial and temporal distribution of spawning in both blue whiting stocks extremely well, and can therefore provide valuable information about their relative abundances. WGWIDE therefore recommends that WGMEGS checks the possibility of identifying and counting the blue

whiting larval per haul during the 2016 version of this survey.
[WGMEGS]

- Seek/provide statistical advice on how to bias correct log-normally distributed SSB values used to predict future catches in stochastic simulations. TO METHODS WG.