

12.4.8 Reopening of the advice

Updated version available since 2021

Reopening of the advice provided in spring

ICES has a protocol for reopening fisheries advice for stocks when new information from fisheries-independent surveys becomes available after the advice has been issued. The protocol includes criteria for identifying candidate stocks for reopening the advice, based on analysis of whether the new survey information will significantly change the assessment of recruiting year classes.

Fish stocks with information from bottom trawl surveys

The protocol for reopening the advice was established following recommendations of the Ad hoc Group on Criteria for Reopening Fisheries Advice (AGCREFA; ICES, 2008). The protocol was then endorsed by the ICES Advisory Committee (ACOM) and has been used since 2008 to provide updated advice based on analysis of the information from the summer surveys.

The advice is to be reopened when reliable new information from summer surveys indicates that the size of a recruiting year class in a given year differs from the estimated or assumed value used in that year’s assessment forecasts. The method to evaluate the survey data is the RCT3 method, which applies calibrated regression analysis for summer survey recruitment indices (Shepherd, 1997).

The RCT3 analysis offers a year-class strength prediction based on the survey information, together with the standard error associated with the prediction. The difference (D) between the assumed size of the recruiting year class in spring (before information from the autumn surveys becomes available) and the RCT3 year-class strength estimates based on the summer surveys, scaled to the internal standard error calculated by RCT3, is:

$$D = \frac{R - A}{S}$$

In this equation, R is the log-weighted average prediction from RCT3, A is the assumed year-class strength used in the spring assessment report, and S is the internal standard error from RCT3.

The following specifications should be used to standardize the application of RCT3:

Specification	RCT3 value
Regression type	C
Tapered time weighting required	N
Shrink estimates toward mean	N
Exclude surveys with a standard error greater than that of the mean	N
Enter minimum log standard error for any survey	0.0
Minimum number of years for regression (3 is the default)	3
Apply prior weights to the surveys	N

A key factor is the evaluation of the probability of summer surveys providing reliable new information. In theory (assuming normal statistics and that the RCT3 provides an accurate estimate of the internal standard error), values of D can be interpreted as follows:

- 0.67 < D < 0.67 indicates a 50% probability of reliable new information being available
- 1.00 < D < 1.0 indicates a 67% probability of reliable new information being available
- 2.00 < D < 2.0 indicates a 95% probability of reliable new information being available

ICES considers that the criteria used to trigger the reopening of advice should be sufficiently demanding (in terms of evidence of reliable new information) to avoid that reopening becomes common or frequent. A more than 50:50 chance of new information being available is considered an appropriate trigger for reopening advice. However, ICES considers that the 95% confidence often used for statistical inferences is too demanding for inaccurate fisheries data. ICES recommends that the reopening of advice should be triggered by a D value less than -1.0 or greater than 1.0.

Based on the above considerations the following protocol was agreed:

1. The expert group determines whether summer survey data from the relevant year (YEAR) has been sufficiently quality assured to merit consideration as a basis for reopening advice. The EG documented the steps taken to assure quality.
2. The expert group applies RCT3 (with the specification given above) to predict the size of recruiting year classes in YEAR+1, based on data from summer surveys of YEAR.
3. The expert group calculates D (see formula above), using R and S from the RTC3 (step 2) and A from the spring assessment.
4. If D is less than -1.0 or greater than 1.0, the process for reopening advice is triggered. If not, spring advice stands.
5. If reopening advice is triggered in step 4, the expert group updates assessment forecasts using the methodology it deems most scientifically appropriate. When the reopening of advice is triggered by recruitments higher than those anticipated by the spring assessment, the trade-off between the short-term gain from increasing the catch in YEAR+1 and the potential loss of catch in the medium term should be evaluated.
6. If reopening advice is triggered in step 4, the expert group will respond to requests from the ACOM leadership for additional information.
7. If reopening advice is triggered in step 4, the ACOM leadership designs a process to decide whether the spring advice should be changed to reflect the updated results.

Steps 1–4 of the protocol should be completed as soon as possible, making sure quality assurance is not neglected. When completed, the chair of ACOM should be informed of whether or not the advice should be reopened.

Nephrops stocks assessed with UWTV survey information

The following reopening protocol was agreed for the assessment of *Nephrops* stocks using underwater TV survey information:

1. A reopening criteria analogous to the one used for bottom trawl surveys, separating signal from noise, is in place. If the point estimate of survey abundance used for the spring (June) advice differs by one standard deviation confidence interval of the mean estimate from the in-year summer/autumn survey, the reopening process is triggered. When triggered, the expert groups (EGs) calculate an update of the advice and inform the ACOM leadership.
2. All available new survey data having appropriate quality assurance should be considered (this should happen independently if the survey data indicate a higher or lower abundance).
3. Revision of the advice will only concern a change in survey abundance as input to the calculation of the catch advice. The fishing mortality rate will not be changed.

Sources

ICES. 2008. Report of the Ad hoc Group on Criteria for Reopening Fisheries Advice (AGCREFA), 20–22 August 2008, Copenhagen, Denmark. ICES CM 2008/ACOM:60. 30 pp.

Shepherd, J. G. 1997. Prediction of year-class strength by calibration regression analysis of multiple recruit index series. ICES Journal of Marine Science, 54: 741–752.