

Correction of maturity stages in the Faroese spring groundfish survey

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When correcting data from the Faroese spring groundfish survey, it was necessary to correct maturities for 1994-1997. The problem was that a substantial number of fish were incorrectly classified as “maturing”. Since cod, haddock and saithe spawn during the spring, these “maturing” fish had to be reclassified as “immature” or “spent”.

Maturity stages for the period 1999-2002 was studied in order to characterise immature and spent fish. Table 1 shows the differences between immature and spent fish. In those cases when a fish could be both immature or spent according to the main criteria in Table 1, additional criteria were used. The fish was classified as immature if it was younger than a specified value or smaller than a specified length.

When the model was applied to the same data that were used to derive the model, the goodness of fit was 95% for cod, 99% for haddock and 80% for saithe. An attempt was made to improve the goodness of fit for saithe by considering position of capture, interaction between length, age and maturity, but I did not get any better fit.

The model was also applied to fish correctly classified as immature or spent in the period in question (1994-1997). The fit was 95% for cod, 98% for haddock and 80% for saithe. This was taken as a validation of the model. The model was thereafter run for all fish that were originally classified as maturing.

The model was nearly as good when only length and position of capture was taken into account. This opens up for the opportunity to classify all fish caught on the survey, since only a minor adjustment of the model is necessary. By considering length distribution (scaled to the total catch per station), every fish in the station can be classified as immature or mature. The length distributions of immature fish can then be summed up for all stations (as well as for mature fish) and split into age groups by an age-length-key. **This is not done for the moment, due to short time.**

Table 1. Criteria for classifying cod, haddock and saithe as “immature” or “spent”. Fish were first classified according to the main criteria and, if they still could be immature or spent, the additional criteria were applied. In those cases the fish was classified as immature if the age was less or equal to a specified value. Length was used in those cases when age was not available.

“Goodness of fit”		Main criteria				Additional criteria
95%	Cod	Immature		Spent		Else immature if:
		Min	Max	Min	Max	
	Depth (m)	60	376	60	320	
	Length (cm)	4	80	50	130	(Length <= 71)
	Age	1	7	3	25	Age <= 5
99%	Haddock					
	Depth (m)	60	500	100	200	
	Length (cm)	10	57	44	100	(Length <= 52)
	Age	1	7	3	20	Age <= 5
80%	Saithe					
	Depth (m)	60	500	100	500	
	Length (cm)	20	80	48	130	Length <= 64.5
	Age	1	9	3	25	