

EU request to assess the effects of lifting the “sprat box”

Advice summary

ICES advises that the proportion of herring caught by weight in an experimental fishery for sprat was higher outside than inside the sprat box, but there was no difference when measured by number. On this basis, fishing inside the sprat box would be expected to reduce unwanted catches of herring (by weight) compared to fishing outside; ICES advises that it is unlikely there would be any effect on herring or sprat stocks if the sprat box was lifted. ICES considers that there is no further need to review the sprat box as other management measures are sufficient to control herring bycatch.

Request

ICES is requested to give advice on whether the proportion of herring catches when fishing for sprat is higher outside or inside the sprat box and determine whether allowing targeted fishing for sprat inside the sprat box would reduce unwanted catches. In light of the possible development of the stocks of sprat and herring in the North Sea, ICES is also requested to advise on an interval after which the measure should be reviewed, i.e. after how much time can the situation have changed sufficiently again that a re-establishment of the sprat box could reduce unwanted catches?

Elaboration on the advice

The proportion of herring catches when fishing for sprat outside and inside the sprat box

Results from an experimental fishery in 2014 and 2015 showed that the number of herring per kg of sprat did not differ significantly between samples taken inside and outside the sprat box, but the weight of herring per kg sprat did differ significantly, with a higher percentage of herring by weight taken outside the box.

Would fishing for sprat inside the sprat box reduce unwanted catches?

ICES understands the phrase “unwanted catches” as referring to herring catches (by weight). Based on the information available to ICES, a lower proportion of herring (by weight) would be expected to be caught inside compared with outside the box, but if measured by number no difference in catch would be expected whether taken inside or outside of the box. Fishing inside the sprat box relative to fishing outside the box would thus have no impact on the development of the herring stock. This is based on two years of catch information. Though there was considerable variation in the amounts caught, the catch information is supported by survey information from the International Bottom Trawl Survey (IBTS).

Review of advice and management*

ICES notes that the results of the experimental fishery are similar to earlier results evaluated by STECF (2007). In spite of changes in both sprat and herring biomass in the North Sea and a change in the relative composition of herring stock components of the North Sea herring, there is no indication of major changes in the relative distribution of herring and sprat in the period since the STECF evaluation. ICES furthermore notes that the need for the sprat box as a measure to control the bycatch of herring in the sprat fishery depends on other measures regulating the bycatch being in place. The EU catches of herring taken as bycatch in fisheries using nets with mesh sizes smaller than 32 mm are currently regulated by TACs (EU, 2017). This small meshed fishery includes the sprat fishery and ICES considers that if the TAC is set in accordance with scientific advice, is fully enforced and is complied with, then this measure is sufficient to control the bycatch of herring in the sprat fishery. ICES therefore advises that there is no further need to review the sprat box as long as the bycatch TAC is implemented in accordance with scientific advice and is complied with.

* Version 2: Paragraph revised for clarity

Basis of the advice

Background

The Scheveningen Group has submitted a joint recommendation to the European Commission (Scheveningen Group, 2014), asking to lift the ban on the use of certain gears in the “sprat box” area referred to in Article 21(1)(c) of Regulation (EC) 850/98 (EU, 1998). The Scheveningen Group suggests that lifting the sprat box would reduce unwanted catches, which is a legal prerequisite to lifting the sprat box by means of a Delegated Regulation. Section 8 of the 2016 ICES HAWG Report (ICES, 2016a[†]) also indicates that allowing targeted fishing for sprat inside the sprat box would reduce unwanted catches.

STECF evaluated the effectiveness of the sprat box in 2007 and concluded that the position of the sprat box may be sub-optimal in relation to the distribution of herring and sprat. However, this conclusion was based on the assumption that the distribution pattern shown in International Bottom Trawl Surveys (IBTS Q3) provided an unbiased estimate of the distribution of sprat and herring and the species composition in commercial trawl hauls.

In order to estimate whether the distribution of sprat and herring in surveys is mirrored in their distribution in commercial catches and whether there is a significant difference in bycatch of herring inside and outside the box, an experimental fishery was conducted during 2014–2015 and the results compared with the distribution of catches in IBTS Q3 as recommended by STECF.

The experimental fishery forming the basis for this advice was conducted in the months of July, August, September, and October in 2014 and 2015. These months cover the main season of the commercial fishery for sprat. Fourteen vessels participated in the experimental fishery, mainly pair trawling. Comparable temporal coverage was achieved inside and outside the box.

Results and conclusions

The experimental fishery was analysed using multivariate analyses (Anova and mixed models). The analyses showed no significant difference in the relative amount (in numbers) of herring vs. sprat in catches inside and outside the box (Table 1), but that the relative catch (in weight) of herring (Table 2) is significantly lower inside the box than outside. The catch weight is used in the bycatch regulations of herring in sprat catches.

In two different analyses the amount (by weight) of herring per kg sprat differed significantly between catches from the box and those from the adjacent area. When fishing within the box, one method estimated 31% lower catch weight of herring per catch weight of sprat, while another method estimated 32% lower catch weight.

Table 1 Average numbers of herring per kg sprat in experimental catches (from ICES, 2016a,b[†]).

	2014		2015	
	Inside sprat box	Outside sprat box	Inside sprat box	Outside sprat box
July	355	44	0.733	2.6
August	16.7	16.2	0.097	1.76
September	7.4	14.8	0.59	3.8
October	8.79	6.9	1.78	1.4

Table 2 Average percentage of herring by weight in experimental catches (ICES, 2016b[†]).

	2014		2015	
	Inside sprat box	Outside sprat box	Inside sprat box	Outside sprat box
July	15.3%	26.5%	1.1%	1.8%
August	10.9%	11.7%	0.7%	1.2%
September	11.6%	14.9%	1.5%	2.4%
October	8.2%	7.2%	2.9%	3.0%

[†] Version 2: Reference updated

Sources and references

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[‡] Version 2: Reference updated