

DTU Aqua



NOTAT

Til NaturErhvervstyrelsen

Vedr. Closed areas in Kattegat

Fra DTU Aqua

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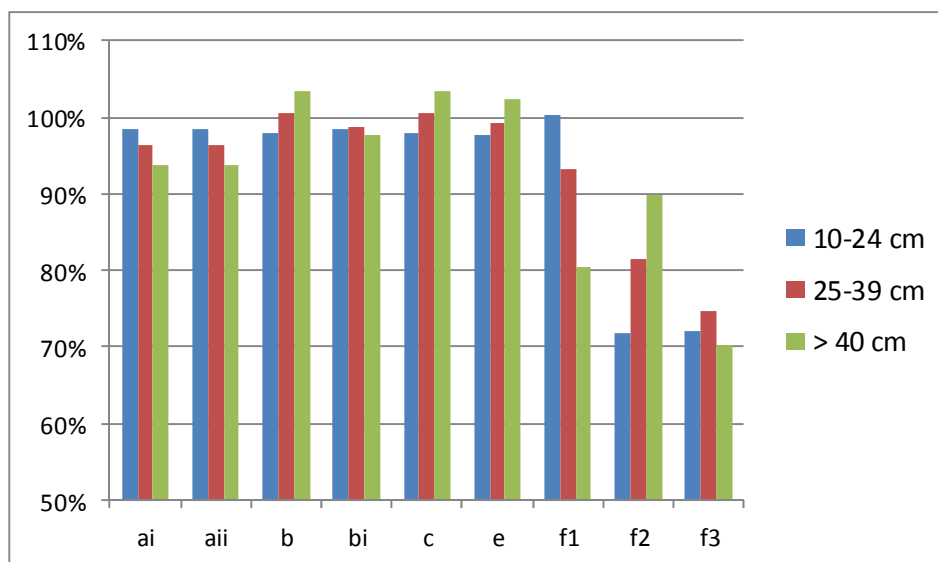
Evaluation of an additional scenario for closed areas in Kattegat.

Background

The Swedish-Danish report "Evaluation of the effect of effort redistribution and gear changes in relation to the closed areas in Kattegat" presents the results of several scenarios. In the report, scenario b) "Opening Box 3 for grid and SELTRA 1/5-31/12" shows a lower fishing impact for the 10-24 cm cod and a higher impact for cod larger than 25 cm compared to the present regulation. DTU Aqua has been requested to evaluate a scenario similar to scenario b), but where the open period for grid and SELTRA in Box 3 is reduced by two months to 1/7-31/12.

Summary of results

The results of the new scenario bi) together with the results from the existing scenarios are shown below. Comparing scenario b) and bi) shows that the extra two months of closure of Box 3 reduces the fishing impact on cod larger than 25 cm, such that scenario bi) provides fishing impact smaller than the baseline for all cod sizes.



Scenarios: Fishing impact relative to baseline (100 %) by size group of cod

ai	Opening Box 3 for grid 1/5-31/12
aii	Opening Box 3 for grid + close Box 2 in April
b	Opening Box 3 for grid and SELTRA 1/5-31/12
bi	Opening Box 3 for grid and SELTRA 1/7-31/12
c	Opening Box 3 for grid and SELTRA 1/5-31/12 + close Box 2 in April
e	Opening Box 3 for grid and SELTRA 1/5-31/12 + close Box 1,2 and 4 in April
f1	Maintain present regulation but substitute SELTRA 300 by Grid in Box 2
f2	Maintain present regulation but allow only SELTRA or Grid in open areas
f3	Closure of Box 2 and 3 in Quarter 1, Grid only in Box 1 in Q1, Grid Only in Box 2 in Q2-Q4 . Grid or SELTRA are mandatory in all other areas and time periods.

Detailed results

Scenario bi): Box 3 is reopened in the period from 1 July until 31 December for fisheries using very selective gears (SELTRA or Swedish grid).

The data, methodology and assumptions are the same as applied for the main report.

Scenario bi) is similar to scenario b), however with a reduction of the period open for grid or SELTRA to the second half year. For scenario b) the fishing impact in May and June is higher than the baseline. This is due to the assumed high density of larger cod in Box 3 in the period in combination with some retention of larger cod by the SELTRA gears. The new scenario bi) maintains the closure of Box 3 in May and June such that the catch of larger cod is avoided which maintains *status quo* (100 %) for the period (see Table 2).

Due to the very low historical Swedish effort in Box 3 the fishing impact by Sweden (Table 1) is basically the same as for scenario b). Compared to scenario b) the extension of the closure by two months gives an increase in fishing impact for 10-24 cm cod for the Danish fisheries, as the density of small cod is lower in Box 3 in May and June than outside the box. The opposite is the case for the larger cod.

Table 1. Fishing impact on cod per country, area, and size class.

Scenario relative to Baseline in %	10-24cm	25-39cm	>40cm
Total	98.5	98.7	97.6

Scenario relative to Baseline in %	10-24cm	25-39cm	>40cm
DNK	97.0	97.9	96.7
SWE	99.9	99.8	99.6

Scenario relative to Baseline in %	Box 0	Box 1	Box 2	Box 3	
10-24cm	95.8	93.7	93.0	NA	
DNK	25-39cm	93.9	93.7	91.7	NA
	>40cm	93.9	94.4	91.3	NA
10-24cm	99.8	99.8	99.8	NA	
SWE	25-39cm	99.6	99.6	99.6	NA
	>40cm	99.6	99.6	99.6	NA

Table 2. Fishing impact on cod per country, size class and month

Scenario relative to Baseline in %		Jan	Feb	Mar	April	May	Jun	July	Aug	Sep	Oct	Nov	Dec
DNK	10-24cm	100	100	100	100	100	100	90.0	95.6	90.8	95.4	96.6	96.3
	25-39cm	100	100	100	100	100	100	93.9	97.0	93.4	99.4	99.1	98.8
	>40cm	100	100	100	100	100	100	92.0	96.4	90.9	99.2	96.3	98.6
SWE	10-24cm	100	100	100	100	100	100	99.4	99.9	99.9	99.7	100	99.2
	25-39cm	100	100	100	100	100	100	99.4	99.9	99.9	99.5	100	98.7
	>40cm	100	100	100	100	100	100	99.4	99.9	99.9	99.4	100	98.3