

## EU standing request on catch scenarios for zero-TAC stocks: cod (*Gadus morhua*) in Subdivision 21 (Kattegat). Replacing technical service provided in November 2023

### Service summary

**Please note: the present technical service replaces the one released in November 2023.**

There is no targeted cod fishery in the Kattegat at present. Cod is mainly taken as bycatch in the Norway lobster fishery, hence the fishing mortality on the cod stock is closely linked to effort directed to Norway lobster. It is not possible to forecast short-term stock development. Catches and SSB have declined in recent years, with a slight increase in catches in 2022, while mortality has increased.

Since cod are taken as bycatch in mixed fisheries, it is likely that a specific monitoring TAC would not be required for this stock.

### Request

EU DGMARE has asked ICES to evaluate the following:

*For by-catch and for target stocks (except data-limited deep sea stocks) where ICES is advising zero catch but the stock is caught in mixed fisheries with other species where non-zero catches are advised, and where sufficient data and understanding of processes exist, ICES will provide estimates of the likely catches of stocks for which there is zero catch advice, under the assumption that TACs for the target stocks are set in line with ICES advice, respectively in line with FMSY point and with FMSY lower, where available. In doing so, for the stocks for which there is zero catch advice, ICES will for the likely catches quantify corresponding changes in biomass and the probability of the biomass being above Blim at the end of the projection year.*

*For stocks where ICES is advising zero catches, ICES will identify stocks for which a sentinel fishery is required to monitor stock development. For such stocks, where possible, ICES will provide the minimum level of catches needed to provide sufficient data for ICES to continue providing scientific advice on the state of the stock. In doing so, ICES should in particular consider the following stocks for which there was advice for zero catches in 2022 and for which a sentinel fishery was conducted in 2023 or was being considered for 2023.*

### Basis of the advice

This technical service has been produced based on ICES data sources. The main information used is the category 3 assessment (ICES, 2023) and data on the catch composition by métier. Because cod in this area does not have a full analytical assessment, it is not possible to provide an accurate forecast on short-term stock development.

### Results

#### Cod in Subdivision 21

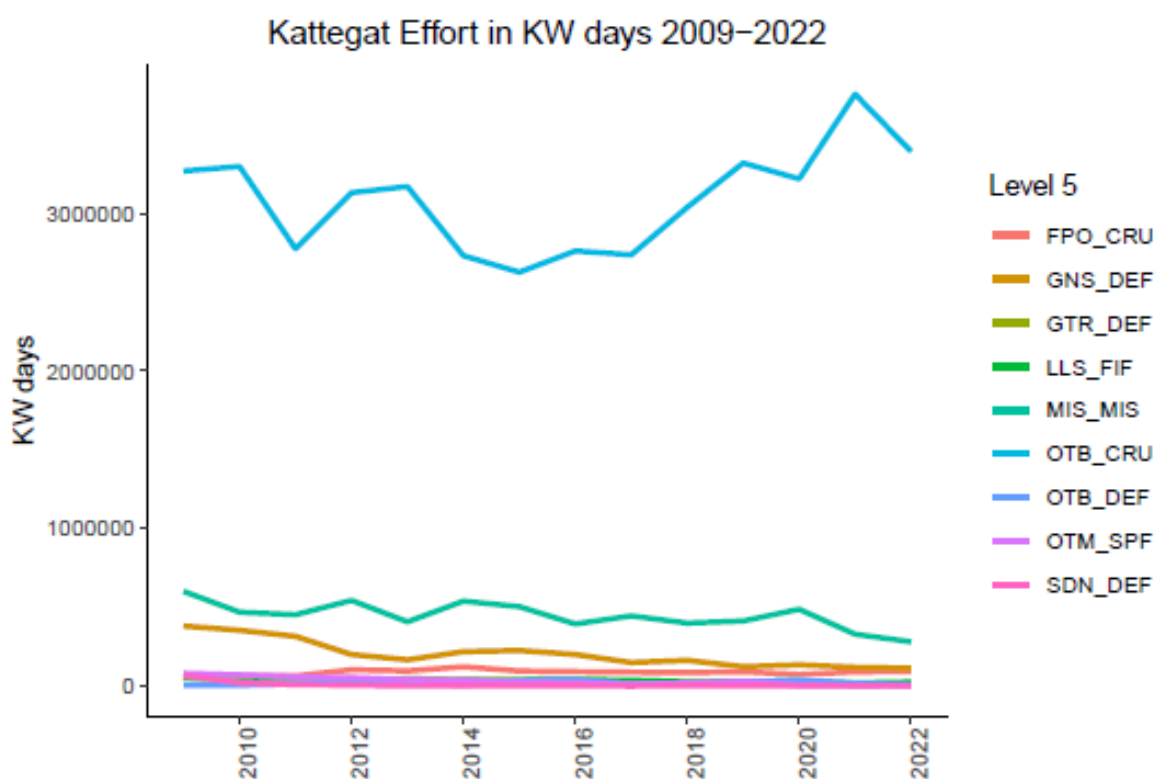
Cod is mainly caught in three métiers (EU Data Collection Framework [DCF] level 5) operating in the Kattegat (Table 1). Over the 14-year period 2009–2022, the majority of cod catches (~92%) were taken by bottom trawls targeting crustaceans (OTB\_CRU). There were also some catches of cod (~5%) in gillnets targeting demersal fish (GNS\_DEF). Minor catches of cod (1%) were taken by trawlers targeting demersal fish (OTB\_DEF). The percentage of cod in the total catches of all species for any given métier is generally low ( $\leq 7\%$ ; Table 1), indicating there is no targeted cod fishery in the Kattegat at present. Since most cod is taken as bycatch in the Norway lobster fishery, the fishing mortality of the cod stock is closely linked to effort in this fishery. The removal of the effort system in 2016, together with the loss of fishing opportunities for cod in the Baltic Sea, has increased the effort in the Norway lobster fishery over the last few years (Figure 1).

The uptake of the TAC for Norway lobster was 72% in 2022, allowing for a further increase in the effort of the trawl fishery targeting it. Selective gears have been in place for fisheries targeting Norway lobster, such as the Swedish sorting grid, which has a bycatch of less than 1.5% cod by weight. This sorting grid was formerly used extensively by Swedish fishers; however, following the introduction of the landing obligation (and the removal of effort limits in the cod long-term

management plan), there are no incentives to continue using the grid, and the uptake of the gear has decreased since 2016.

**Table 1** Summary of species mixing with cod in the catches in Kattegat from 2009 to 2022, covering ICES Subdivision 21.

Métier (level 5)	Cod catches (tonnes)	Percentage of total cod catches (%)	Total catches (tonnes)	Cod percentage of total catches of all species (%)
OTB_DEF	46	1.05	675	6.8
GTR_DEF	31	0.71	653	4.6
GNS_DEF	220	5.1	5365	4.1
OTB_CRU	3979	92	112679	3.5
SDN_DEF	23	0.52	603	3.8
LLS_FIF	12	0.27	4389	2.7
FPO_CRU	0.11	0.0024	457	0.023
MIS_MIS	37	0.86	150655	0.025
OTM_SPF	0.20	0.0045	21617	0.00091



**Figure 1** Total effort (kW days) over the complete time-series (2009–2022) for level 5 métiers operating in Kattegat.

ICES advice for the majority of the species caught within the OTB\_CRU métier allows for an increase in fishing mortality (Table 2). The advised increase in the Norway lobster harvest rate and catches could result in an increase in effort in the OTB\_CRU métier, with an associated increase in fishing mortality on cod.

**Table 2** TAC area, stock codes, fishing mortality (F) for 2023 and advised F for 2024, and % change in ICES catch advice for 2024.

Species	Corresponding EC TAC area	ICES stock code	F (2023)	Advised F (2024)	% advice change*
Cod ( <i>Gadus morhua</i> )	Subdivision 21	cod.27.21	n/a	0	0
Norway lobster ( <i>Nephrops norvegicus</i> )	Division 3.a	nep.fu.3–4	4.7%**	7.9%***	–1.69
Sole ( <i>Solea solea</i> )	Subdivisions 20–24	sol.27.20–24	0.178	0.164–0.225	–14, –13
Whiting ( <i>Merlangius merlangius</i> )	Division 3.a	whg.27.3a	n/a	n/a	–27^
Plaice ( <i>Pleuronectes platessa</i> )	Subdivisions 21–23	ple.27.21–23	0.149	0.31	45
Haddock ( <i>Melanogrammus aeglefinus</i> )	Subarea 4, Division 6.a, Subdivision 20	had.27.46a20	0.111	0.24	17.8

\* Advice value 2024 relative to the advice value 2023.

\*\* Harvest rate 2022.

\*\*\* Harvest rate 2024.

^ Advice value for 2023 and 2024 relative to the advice value for 2021 and 2022.

## Sources and references

ICES. 2023. Cod (*Gadus morhua*) in Subdivision 21 (Kattegat). In Report of the ICES Advisory Committee, 2023. ICES Advice 2023, cod.27.21. <https://doi.org/10.17895/ices.advice.21820488>

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