

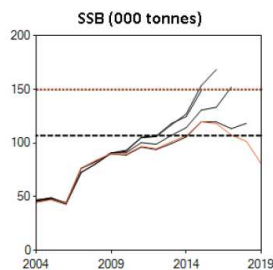
9. marts 2021

Kære Fiskeriminister.

Kopi MOF

Fra 2017 og derefter forsvandt 50-100.000 tons torsk fra Nordsøen af uafklarede årsager. Det er op mod halvdelen af den samlede biomasse. Det har medført, at de anbefalede TAC'er fra ICES er faldet fra godt 47.000 tons i 2017 til godt 14.000 tons i 2021.

ICES er gået "stille med dørene", men jeg har talt med Henrik Sparholt, Københavns Universitet og tidligere rådgivningsansvarlig i ICES, om situationen i forbindelse med hans deltagelse i ICES's torskearbejdsgruppe i denne måned. Han har udarbejdet bilagte notat om sagen. ICES siger selv, at årsagen til ændringen i bestandssituationen ikke er fuldt forstået, og at den kan inkludere mulige økologiske og menneskelige påvirkninger. (*"The reason for this discrepancy is not fully understood and might include a number of possible ecological and anthropogenic drivers"*). Kurverne nedenfor illustrerer udviklingen i den beregnede biomasse, hvor den øverste kurve angiver 2016 situationen, og den nederste kurve situationen i 2019 beregnet på samme modelgrundlag.



Bortset fra spørgsmålet om hvor torsken er blevet af, giver problemstillingen anledning til en række overvejelser. Her i kort form, men jeg uddyber gerne.

1. Der er af flere grunde behov for at forbedre den fiskeribiologiske rådgivning, bl.a. anvender rådgivningen ikke realtids data, og de anvendte modeller tager ikke tilstrækkeligt hensyn til dynamiske faktorer (fx ændrede vandringmønstre og klima). Jeg henviser også til Miljø- og Fødevarerudvalget 2020-21, [MOF Alm.del - Bilag 242](#) vedrørende Brexit: *"7. Det eksisterende ressourcegrundlag kan udnyttes bedre: Den biologiske rådgivning er for ofte ude af trit med de faktiske forekomster. Den bør moderniseres og baseres på realtids-data."*

Jeg foreslår, at du nedsætter en teknisk arbejdsgruppe med deltagelse af biologer fra DTU Aqua og erhvervet og med ekspertise indenfor forvaltning og fiskeripolitik.

Arbejdsgruppen skal diskutere og fremsætte forslag til et forbedret rådgivningssystem baseret på 1) fremskaffelse og anvendelse af bedre data, herunder realtids-data direkte fra fiskeriet, 2) AI (artificial intelligence) modellering og 3) andre forvaltningsprincipper, herunder [balanced harvest](#) og [økosystem baseret FMSY](#), som en række internationale biologer foreslår som økosystembaseret tilgang i stedet for den nuværende enkelt-arts tilgang.

Internationale biologer skal inddrages med deres viden. Gruppen rapporterer til ministeren, der vurderer anbefalingerne og mulighederne for at Danmark kan formå EU og ICES til at igangsætte en modernisering af rådgivningssystemet. EU er ICES største "kunde" og Danmark er selvstændigt medlem af ICES, og har i øvrigt værtskabet for organisationen.

2. Det er muligt, at de "forsvundne" torsk er vandret ud af Nordsøen, måske midlertidigt, måske permanent. Regeringen bør gøre sig nogle overvejelser om de fordelingspolitiske konsekvenser af klimabetingede fiskevandring. DTU Aqua har i en årrække arbejdet med den biologiske side og besidder ekspertise på området. Jeg foreslår at DTU Aqua og Institut for Ressourceøkonomi udarbejder nogle scenarier, der kan belyse udviklingen i det danske kvotegrundlag og de økonomiske konsekvenser heraf under hensyn til EU's kvotefordelingspolitik og ændringer i fiskebestandenes udbredelsesmønstre.
3. Det er muligt, at en del af de forsvundne torsk er fanget ulovligt eller udsmidt. Det giver anledning til at genoverveje implementering af fiskerireformens princip om fuld fangstafregning. Fx jf. [EUV 2020-21 Alm.del - Bilag 144](#)

Ovenstående er kun et enkelt af de mange strategiske problemstillinger Dansk Fiskeri står overfor. Mine forslag bør ses i sammenhæng med ministeriets øvrige fiskeripolitiske udfordringer. Det var måske en idé, at få målsat og prioriteret arbejdet.

Jeg rejser problemstillingen ud fra en almen interesse for værdiskabningen i den danske fiskerisektor. Brug ikke din tid på et substanssvar til mig, men tag mine forslag til overvejelse.

Venlig hilsen



Mogens Schou

Missing 50,000 – 100,000 t of North Sea cod.

Based on the IBTS (International Bottom Trawl Survey) in the 1st quarter and the 3rd quarter of the year the indications are that 50,000 – 100,000 t of cod, more than the reported catch, disappeared from the North Sea between 1st February 2017 and 1st September 2017.

The IBTS 3q index falls suddenly from 2016 to 2017 which means the cod disappeared between 3q 2016 and 3q 2017. See annexed curves. The IBTS 1q index falls suddenly from 2017 to 2018, which means that the cod disappeared between 1q 2017 and 1q 2018 → thus the fall was between 1q 2017 and 3q 2017.

Not just uncertainties in the IBTS indices, because:

- 1) The changes are larger than the likely uncertainties.
- 2) They are consistent in both the 1q and the 3 q IBTS surveys in timing.
- 3) The years before was quite stable and after as well.
- 4) The fact that the two IBTS indices follow each other well over time indicate that they are quite precise.
- 5) The drop is not mainly due to drop in recruitment but as shown below, to increases in total mortality (Z) and thus in disappearance of older cod.

This has given ICES large problems in the annual assessment, as there is a disturbingly large “retrospective pattern” – see below - and the ICES Advice text in 2019 states: “The reason for this discrepancy is not fully understood and might include a number of possible ecological and anthropogenic drivers”. “Anthropogenic drivers” is a diplomatic way of saying that it might be misreporting.

The ICES WGNSSK 2020 hinted at it in a rather cryptical way at p.86: “a substantial increase in the negative gradient for ages 2–4 following the 2015 year-class in the IBTS-Q1 (age 2 in 2017) and the strong 2013 year-class in the IBTS-Q3 (bottom right).”

Possible reasons for the disappearance:

1. Misreporting.
2. Migration of cod out of the North Sea.
3. Extra predation by seals or maybe whales visiting the North Sea in the first half of 2017.
4. Diseases.
5. Unknown unknowns.

There are weak indications that some cod migrated to division VIa, but it can only be a small fraction of the missing cod because they are not seen in the catches, in the survey in VIa and neither in the assessment of this small VIa cod stock.

The amount missing is so large that it should be possible to find the reason. ICES or others should look into this.

It should be noted that also some migration out of the North Sea are indicated in the IBTS data for 2018, judged from the mortality value Z based on the IBTS data.

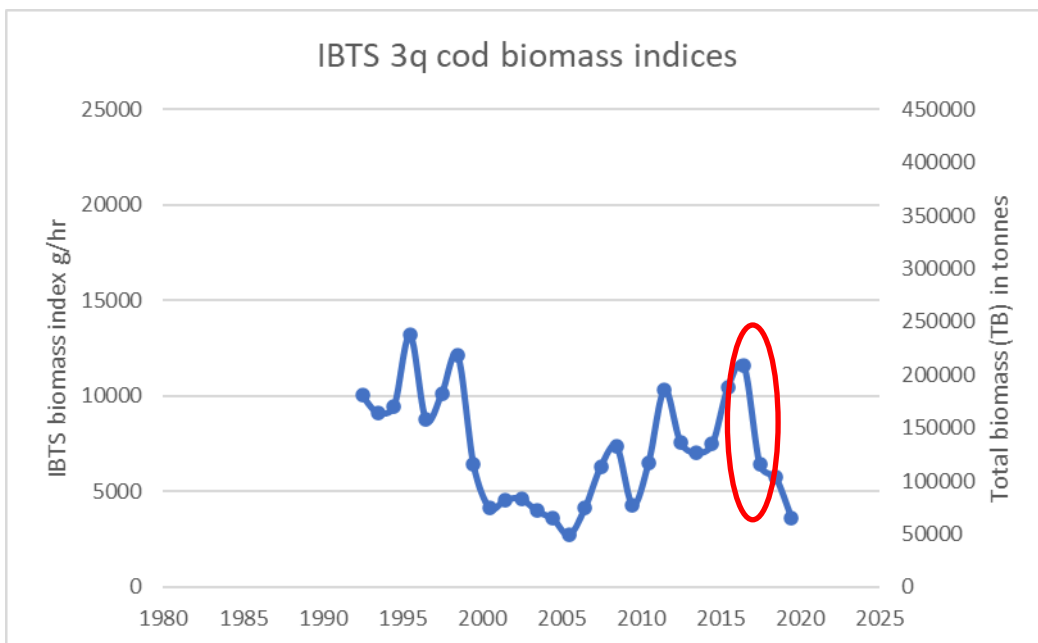
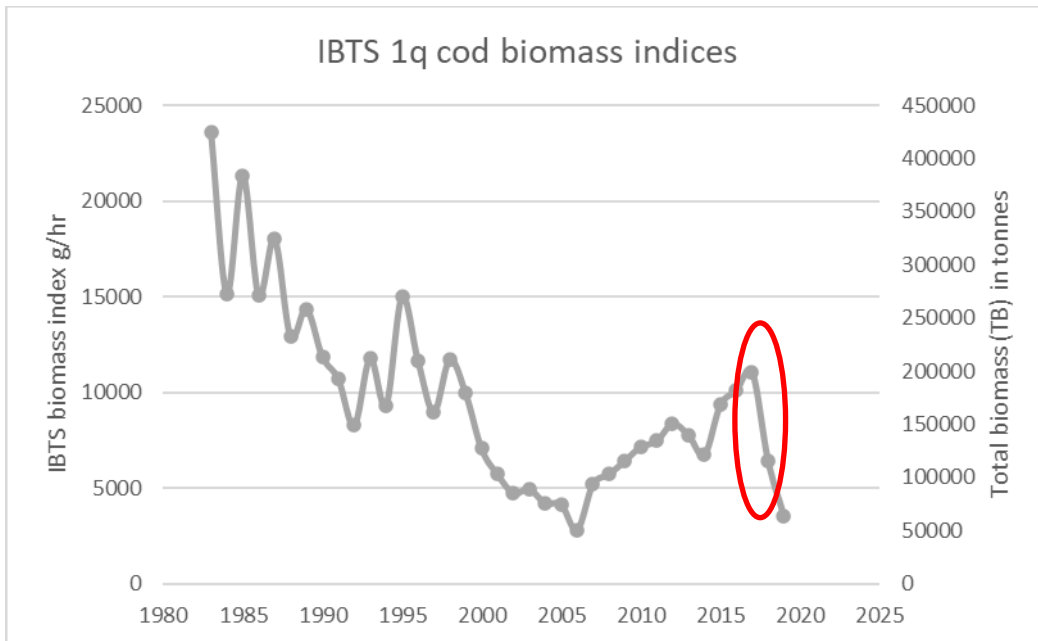
It should also be noted that the ICES assessment will smooth out the effect on the stock size estimates over several years due to the “random walk” algorithm in the model used.

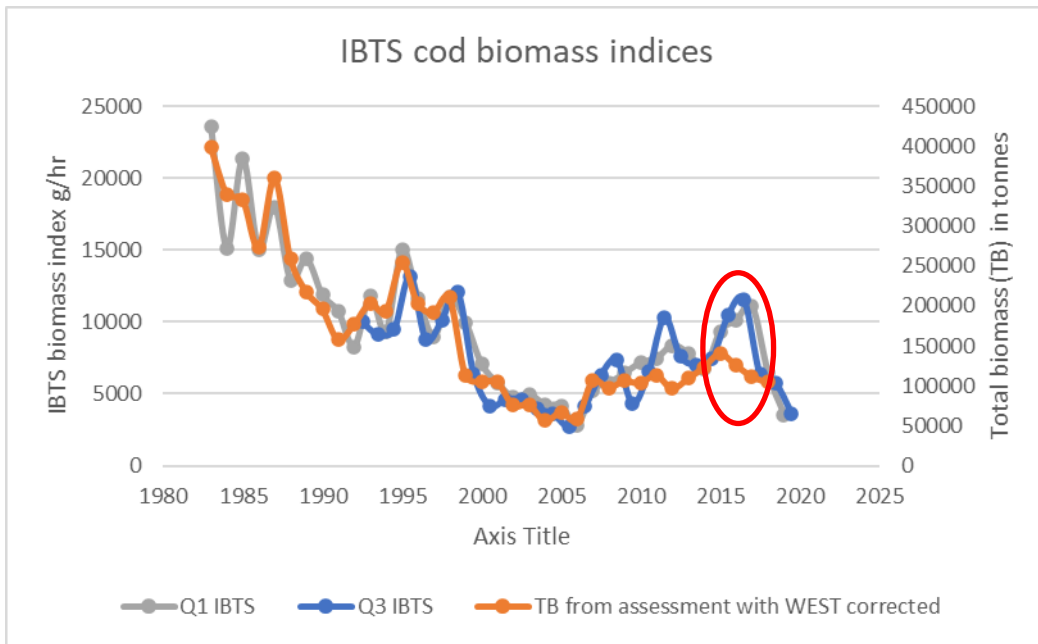
Annexes:

1. Various plots and considerations. The problematic years shown in the red ovals.
2. Extract from ICES advice 2019
3. Actual catches compared to EU allocated quotas

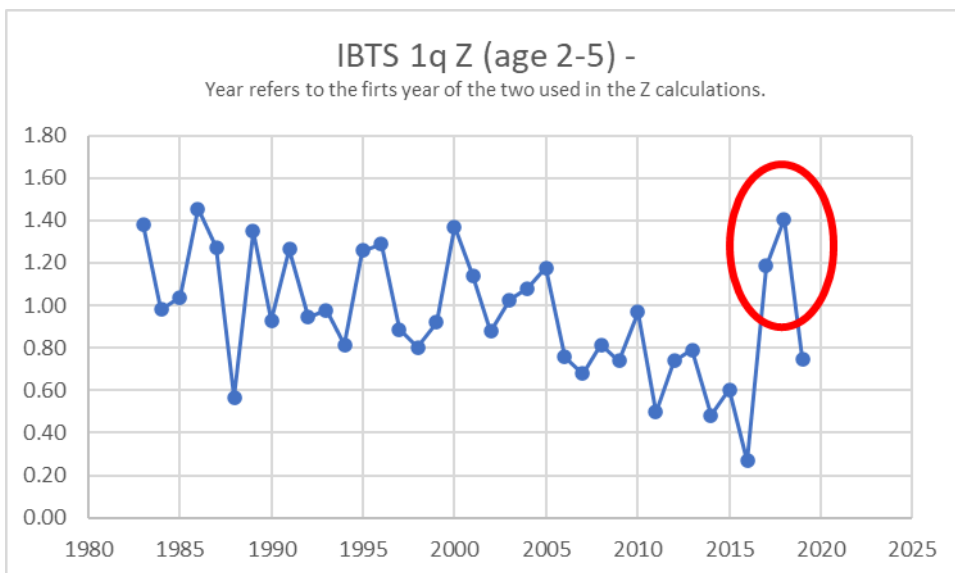
Henrik Sparholt is Post. Doc. at the University of Copenhagen and former Deputy Head of ICES advisory department

Annex 1. Various plots and considerations. The problematic years shown in the red ovals.





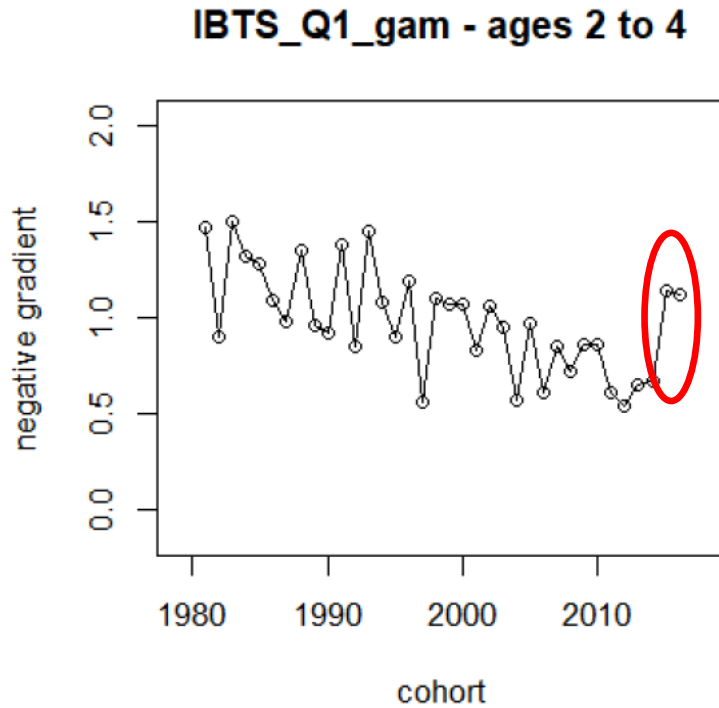
The red curve shows that the ICES assessment has difficulties following the IBTS indices in the years around 2017, while it is following well in most other years.



A sudden increase in total mortality from 2016 to 2017 (and 2018). Only based on IBTS 1q data. The ICES assessment model has difficulties following such an abrupt change in total mortality.

From ICES WGNSK 2020 p.86.:

“a substantial increase in the negative gradient for ages 2–4 following the 2015 year-class in the IBTS-Q1 (age 2 in 2017) and the strong 2013 yearclass in the IBTS-Q3 (bottom right).”



Extract from WGNSK 2020 Figure 4.4.a. “Gradient” mean total mortality Z.

ICES hinted at it in 2019 by saying (see below): “The reason for this discrepancy is not fully understood and might include a number of possible ecological and anthropogenic drivers”. It is a diplomatic way of saying that it might be misreporting.

Annex 2. Extract from ICES advice 2019:

Quality of the assessment

In recent years (since 2017), assessments resulted in a downscaling of SSB and an upward revision of F. This is caused by lower catch rates of older fish in the IBTS surveys compared to the commercial catches. The reason for this discrepancy is not fully understood and might include a number of possible ecological and anthropogenic drivers. If the recent observed retrospective pattern continues, the current forecast may be too optimistic.

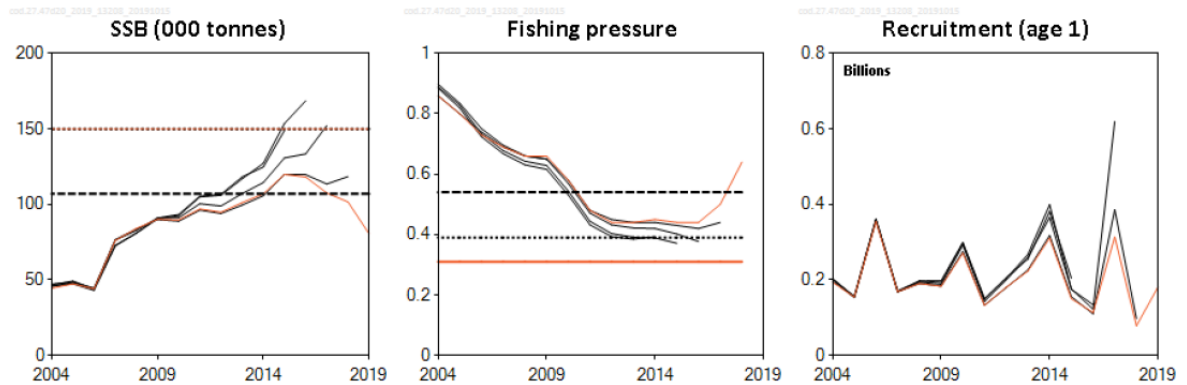


Figure 2 Cod in Subarea 4, Division 7.d, and Subdivision 20. Historical assessment results (final-year recruitment estimates included). Maturity-at-age was re-estimated in 2017, which caused the observed downward revision in SSB in the 2017 assessment.

In the 2020 assessment the retrospective pattern got even worse. From ICES advice 2020 for TAC i 2021:

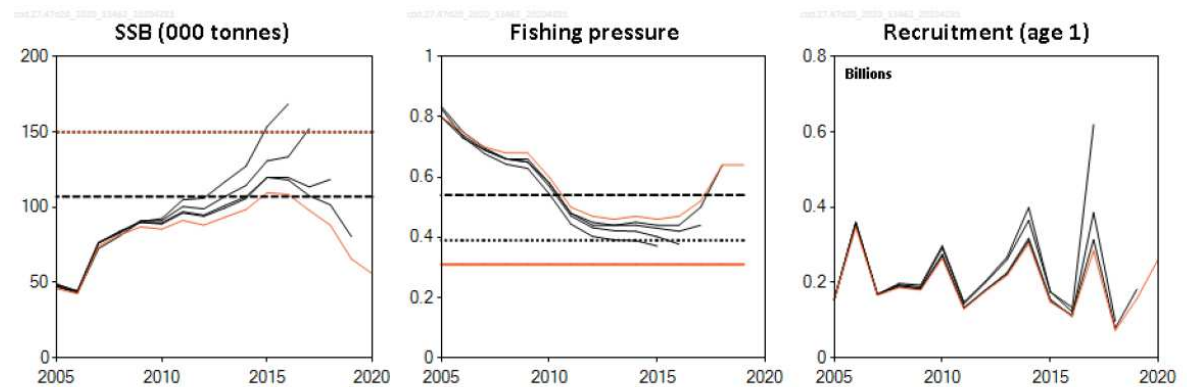


Figure 2 Cod in Subarea 4, Division 7.d, and Subdivision 20. Historical assessment results (final-year recruitment included for each line, corresponding to the forecast recruitment in the interim year). Maturity-at-age was re-estimated in 2017, resulting in the observed downward revision in SSB in the 2017 assessment.

Annex 3. Actual catches compared to EU allocated quotas

From ICES WGSSK 2020, it can be noted that catches have differed markedly from quota allocations set by EU. It cannot be concluded, that overfishing has occurred as quota swaps between Member States could not be calculated.

Registered catches of cod in the North Sea (source: ICES WGSSK 2020)

Sub-area IV	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Country										
Belgium	666	663	882	1,075	1,258	1,223	1,103	695	818	727
Denmark	5,686	4,883	4,803	4,536	5,457	6,026	6,713	6,119	5,489	4,964
Faroe Islands	32	-	-	-	-	-	-	-	-	0
France	782	619	369	287	637	517	391	401	583	450
Germany	2,844	2,211	2,385	1,921	2,257	2,133	2,083	2,300	1,506	822
Greenland	-	-	-	-	-	-	2	1	-	-
Netherlands	2,657	1,928	1,955	1,344	1,242	1,403	1,365	653	513	716
Norway	4,495	4,898	4,601	4,080	4,800	5,404	5,627	5,521	5,553	4,518
Poland	-	2	-	-	-	-	-	-	-	-
Sweden	362	316	471	332	401	415	373	387	274	344
UK (E/W/NI)	2,553	2,169	1,629	2,129	2,962	-	-	-	-	-
UK (Scotland)	11,567	10,141	10,565	10,619	10,517	-	-	-	-	-
UK (combined)	n/a	n/a	n/a	n/a	n/a	14,889	16,603	18,523	21,054	15,589
Others	-	-	-	-	-	-	-	0	-	-
Danish industrial by-catch	12	0	0	2	24	0	5	147	0	2
Norwegian indust by-catch *	201	1	-	-	-	-	-	-	-	-
Total Nominal Catch	31,667	27,799	27,640	26,324	29,355	32,011	34,265	34,746	35,789	28,130
Unallocated landings	-877	-1,124	-1,013	-1,009	-805	-787	-1,230	-1,637	-1,345	428
BMS landings	-	-	-	-	-	-	-	1	8	41

TAC quota allocation for cod in the North Sea

The tables show initial allocation, which may change over the year due to i.a. quota swaps.

COUNCIL REGULATION (EU) 2017/127

Species:	Cod <i>Gadus morhua</i>	Zone:	IV; Union waters of IIa; that part of IIIa not covered by the Skagerrak and Kattegat (COD)2A3AX4
Belgium	1 159		
Denmark	6 659		
Germany	4 222		
France	1 432		
The Netherlands	3 762		
Sweden	44		
United Kingdom	15 275		
Union	32 553		
Norway	6 667 ⁽¹⁾		
TAC	39 220		Analytical TAC Article 7(2) of this Regulation applies

⁽¹⁾ May be taken in Union waters. Catches taken within this quota are to be deducted from Norway's share of the TAC.

COUNCIL REGULATION (EU) 2018/120

Species:	Cod <i>Gadus morhua</i>	Zone:	4; Union waters of 2a; that part of 3a not covered by the Skagerrak and Kattegat (COD/2A3AX4)
Belgium	1 275		
Denmark	7 327		
Germany	4 645		
France	1 575		
The Netherlands	4 140		
Sweden	49		
United Kingdom	16 808		
Union	35 819		
Norway	7 337 ⁽¹⁾		
TAC	43 156		Analytical TAC Article 7(2) of this Regulation applies

COUNCIL REGULATION (EU) 2019/124

Species:	Cod <i>Gadus morhua</i>	Zone:	4; Union waters of 2a; that part of 3a not covered by the Skagerrak and Kattegat (COD/2A3AX4)
Belgium	828 ⁽¹⁾		
Denmark	4 758		
Germany	3 017		
France	1 023 ⁽¹⁾		
The Netherlands	2 688 ⁽¹⁾		
Sweden	32		
United Kingdom	10 914 ⁽¹⁾		
Union	23 260		
Norway	5 004 ⁽²⁾		
TAC	29 437		Analytical TAC

⁽¹⁾ Special condition: of which up to 5 % may be fished in: 7d (COD/*07D).

⁽²⁾ May be taken in Union waters. Catches taken within this quota are to be deducted from Norway's share of the TAC.