

# ICES advice for North Western Waters

NWWAC meeting, July 2024

ENGLISH CHANNEL

Joanne Morgan

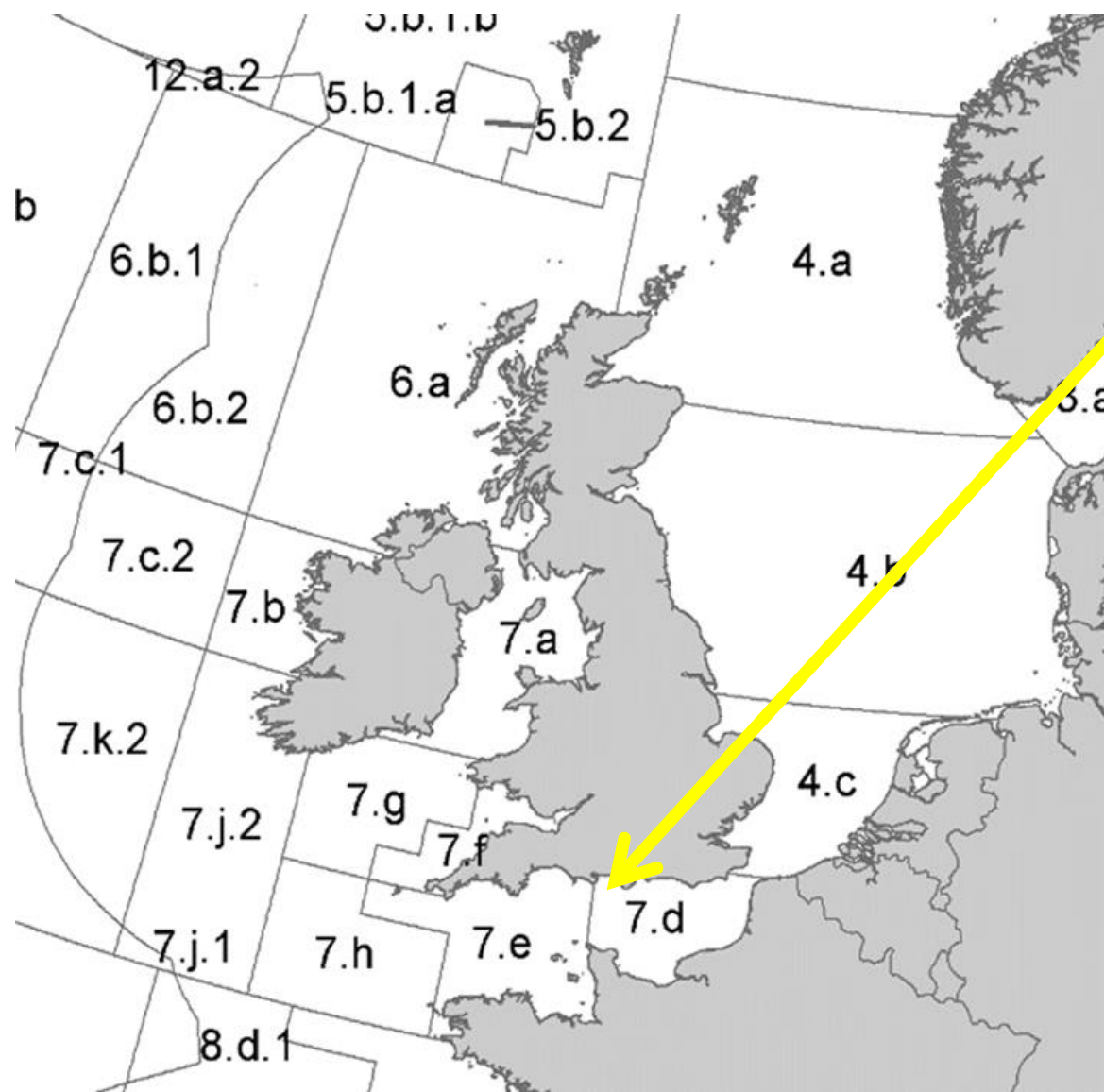
ICES ACOM vice-chair



Science for sustainable seas

Image Dirk Vonten, Fotolia

## English Channel (Divisions 7.d and e)

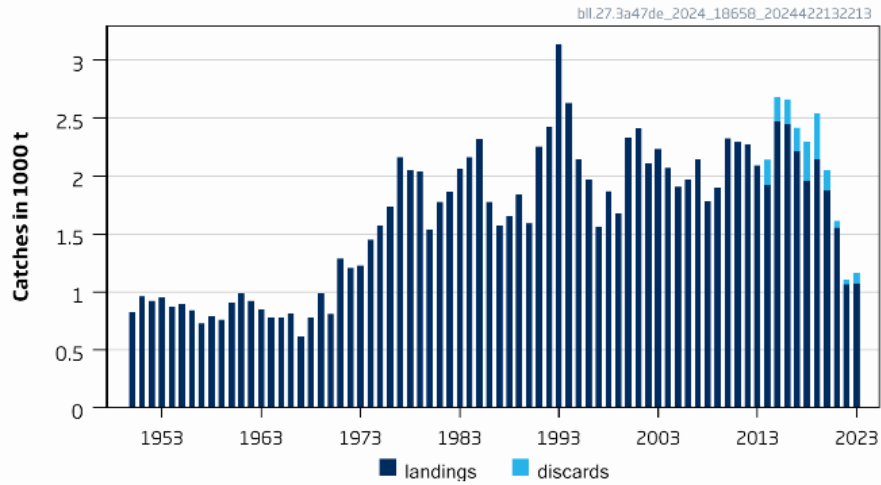


- Brill (3a, 4, 7d)
- Lemon sole (3a,4,7d)
- Plaice (7.d)
- Plaice (7.e)
- Sea bass ( 4.bc, 7.a,d-h)
- Sole (7.d)
- Sole (7.e)
- Sprat (7.de)
- Striped red mullet (4,7.d,3.a)
- Whiting (4,7.d)
- Cod (4, 6a,7.d, 20)
- Autumn
  - Rays and skates

# Brill in the North Sea, Skagerrak and Kattegat, English Channel (4, 3.a, 7.de)

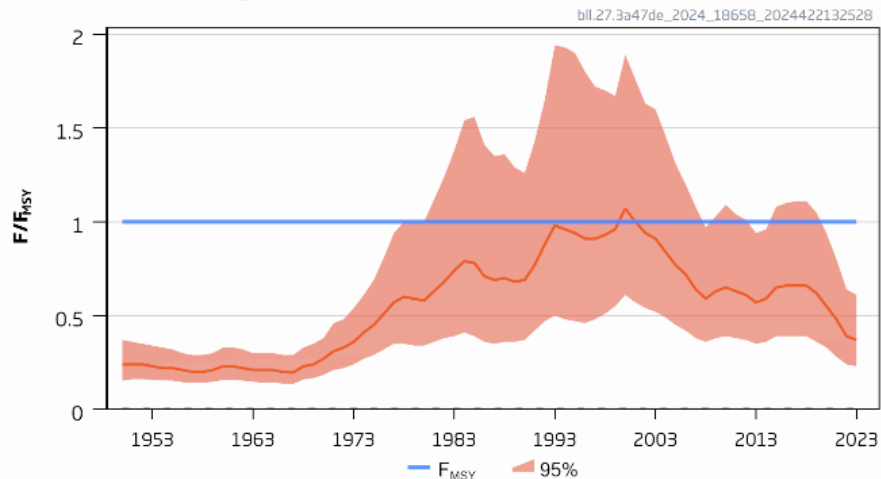
**Advice for 2025, MSY:** Catch  $\leq 2970$  t advice +21%

## Catches

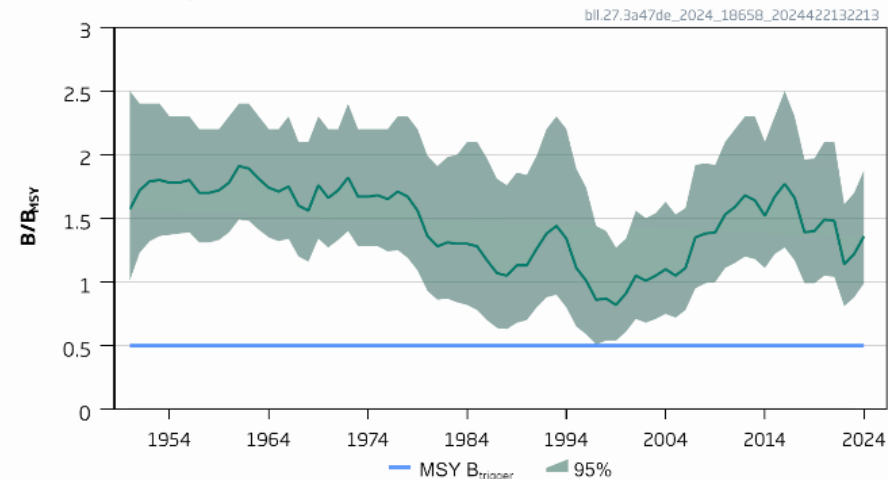


- F also declining, below  $F_{MSY}$
- Stock size above MSY Btrigger
- Increase in SSB but also upward revision and downward revision F (retrospective)

## Relative fishing pressure



## Relative exploitable biomass



# Brill in the North Sea, Skagerrak and Kattegat, English Channel (4, 3.a, 7.de)

Catch 2023: 1160 t (8% discards) 497 t in 7de

**Table 2** Brill in Subarea 4 and divisions 3.a and 7.d–e. Annual catch scenarios. All weights are in tonnes.

Basis	Total catch (2025)*	Projected landings (2025)	Projected discards (2025)**	Fishing mortality $F_{2025}/F_{MSY}$	Stock size $B_{2026}/B_{MSY}$	% $B/B_{MSY}$ change***	% TAC change^	% advice change^^
ICES advice basis								
MSY approach (35th percentile of predicted catch distribution under $F = F_{MSY}$ )	2 970	2 823	148	0.92	1.32	-11.6	21	21
Other scenarios								
$F_{MSY}$	3 197	3 038	159	1.00	1.29	-14.3	30	30
$F = F_{2024}$	1 304	1 240	65	0.37	1.55	4.5	-47	-47
$F = 0$	0	0	0	0	1.71	13.9	-100	-100

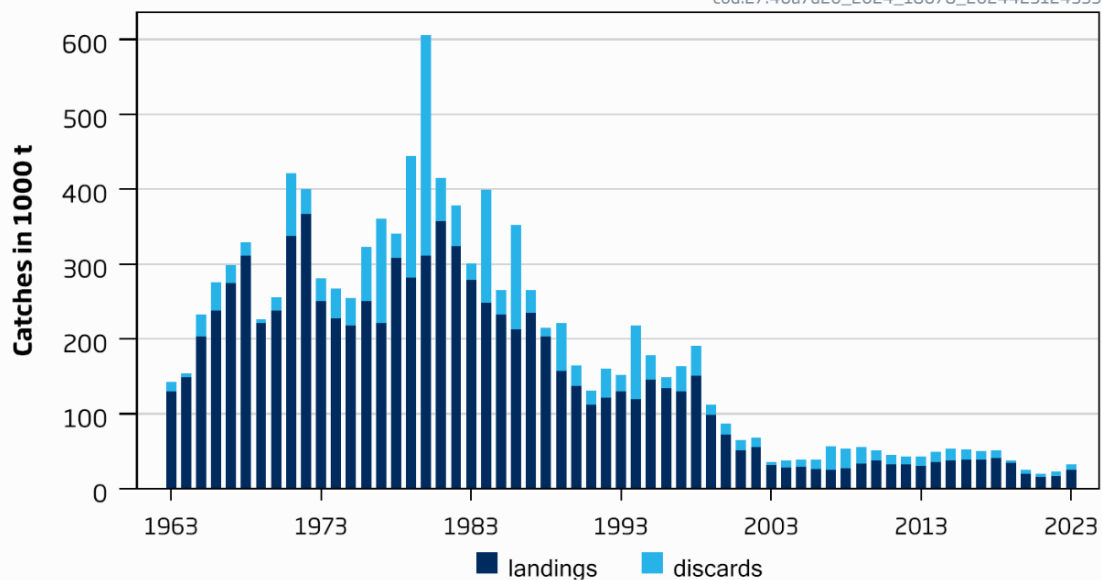
SPiCT

# Cod North Sea W Scotland E Channel (4, 6a, 7d, 20)

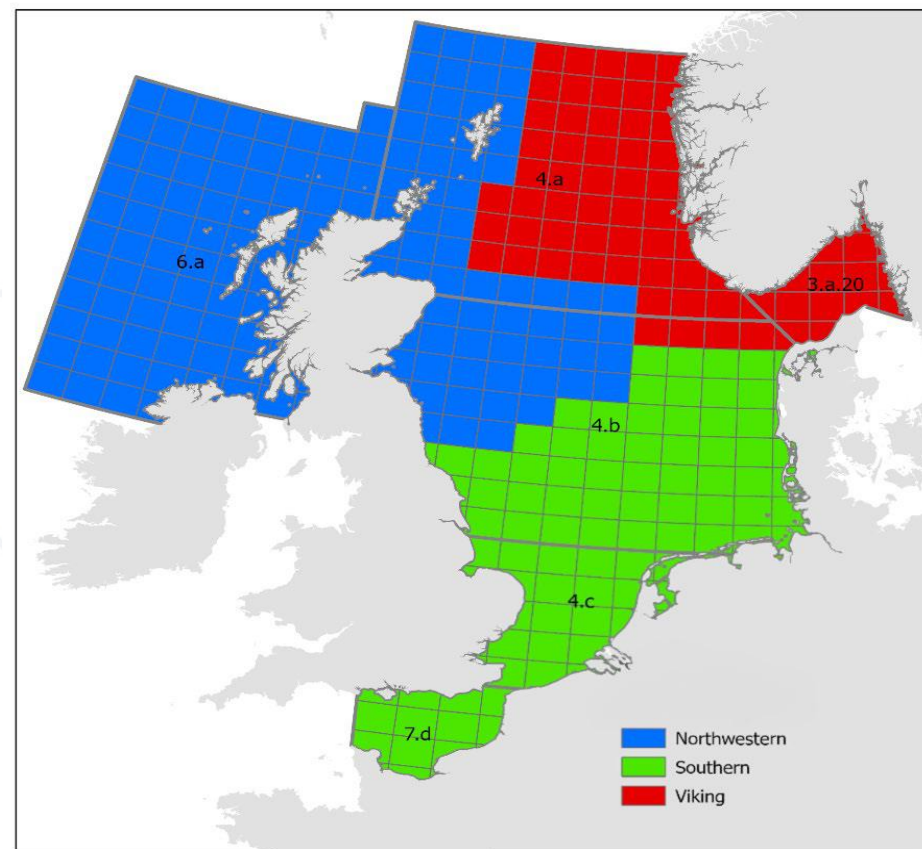
**Advice for 2025 MSY:** Catch  $\leq$  19 321 t

## All substock combined catches

cod.27.46a7d20\_2024\_18678\_2024423124355



- Benchmark 2023
- Multi stock SAM

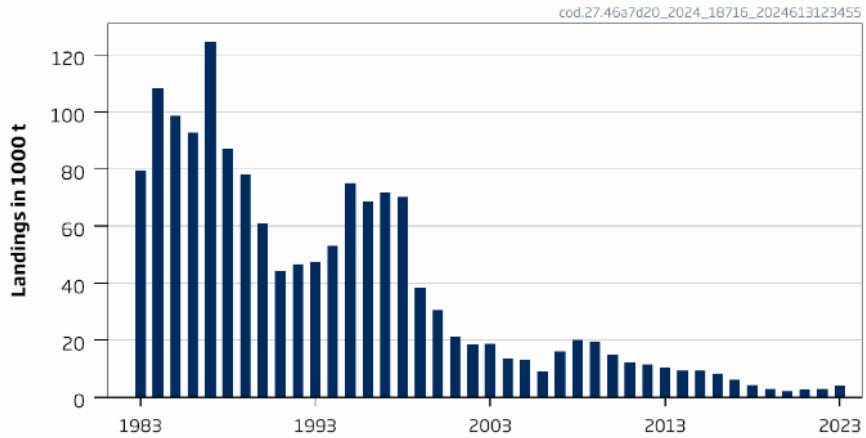


# Cod North Sea W Scotland E Channel (4, 6a, 7d, 20) southern

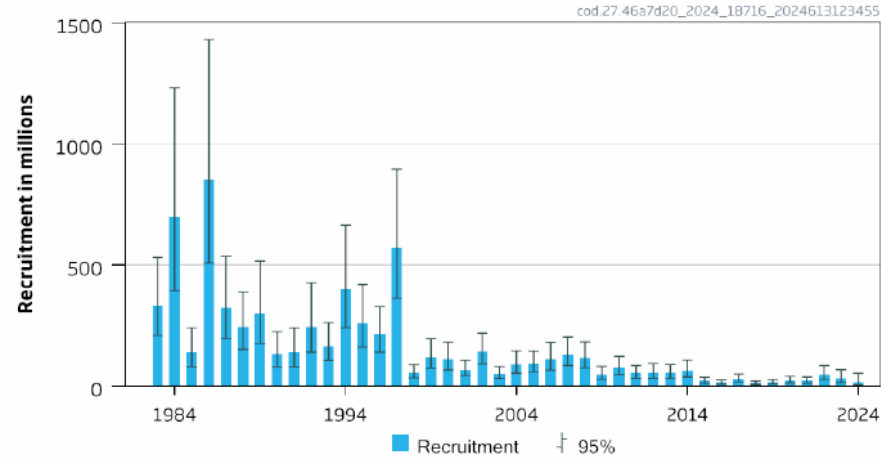
**Advice for 2025 MSY:** Catch  $\leq 3\,074\text{t}$  -22%

- Benchmark 2023
- Multi stock SAM
- Below Btrigger
- F above FMSY
- SSB retro

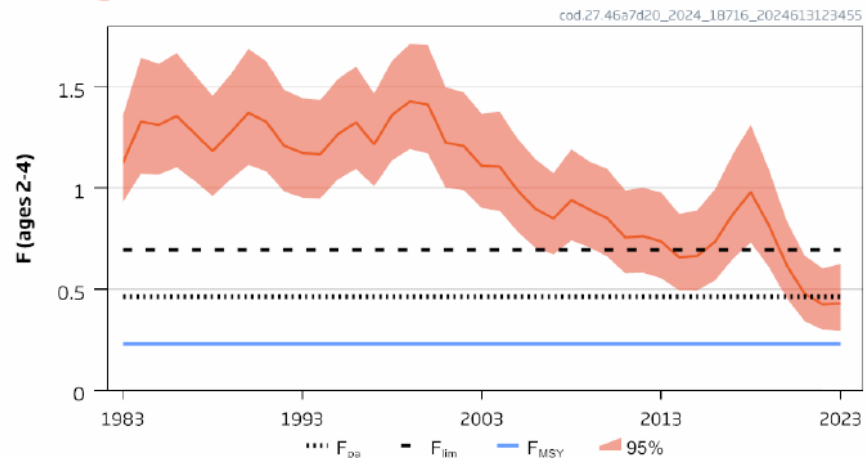
### Model estimated catches



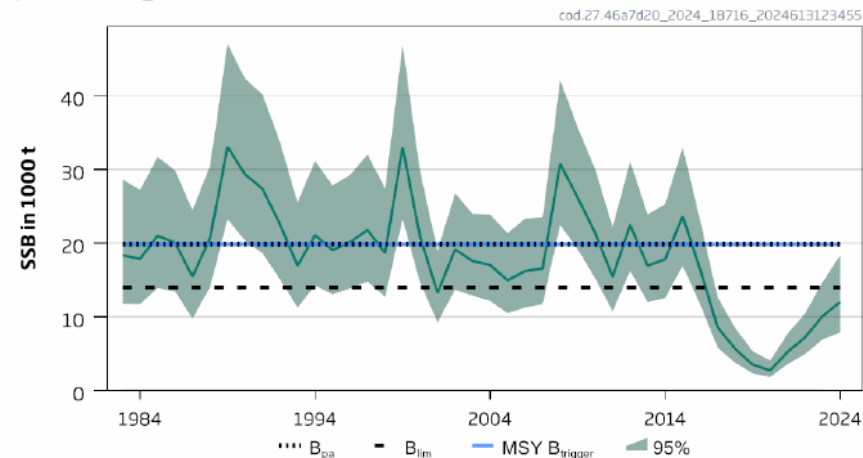
### Recruitment (age 1)



### Fishing Pressure



### Spawning Stock Biomass



# Cod North Sea W Scotland E Channel (4, 6a, 7d, 20) southern

**Catch (2023) : 32 561t (23% discards) values for total area**

**F(2024) = 0.43 (Fsq =2023);**

**SSB (2025)= 14 330 < MSY<sub>Btrigger</sub> (19 851t) F<sub>MSY</sub>= 0.231**



**Table 2a** Cod in Subarea 4, divisions 6.a and 7.d, and Subdivision 20. Annual catch scenarios for the Southern substock. All weights are in tonnes.

Basis	Total catch 2025	F <sub>total (ages 2-4)</sub> 2025	SSB 2026	% SSB change*	% advice change**
ICES advice basis					
MSY approach: F <sub>MSY</sub> × SSB (2025)/MSY B <sub>trigger</sub>	3074	0.167 <sup>^</sup>	21693	51	-22
Other scenarios					
F <sub>MSY lower</sub> × SSB (2025)/MSY B <sub>trigger</sub>	1984	0.104 <sup>^</sup>	23222	62	-49
F <sub>MSY</sub>	4111	0.231 <sup>^</sup>	20303	42	4.8
F <sub>MSY lower</sub>	2689	0.144 <sup>^</sup>	22183	55	-31
F = 0	0	0	26143	82	-100
F <sub>pa</sub>	7372	0.464 <sup>^</sup>	15971	11.5	88
SSB (2026) = B <sub>lim</sub>	8823	0.58	14126 <sup>^</sup>	-1.42	125
SSB (2026) = MSY B <sub>trigger</sub> = B <sub>pa</sub>	4278	0.24	19590 <sup>^</sup>	37	9.1
F = F <sub>2024</sub>	6813	0.43 <sup>^</sup>	16746	16.9	74
SSB(2026) = SSB(2025)	8554	0.55	14455 <sup>^</sup>	0.87	118

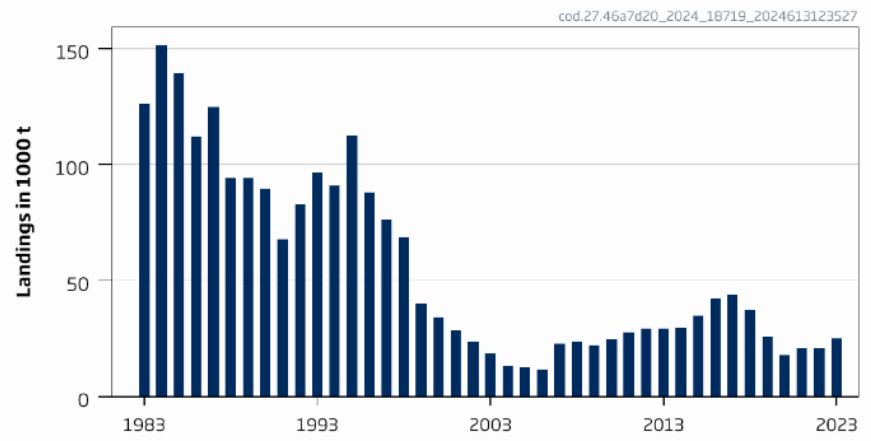
\* SSB 2026 relative to SSB 2025 (14 330 t)

Multi stock  
SAM

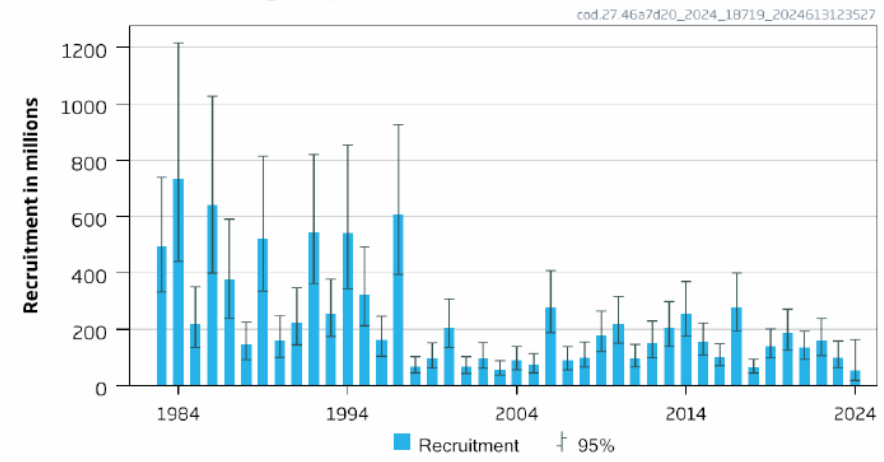
# Cod North Sea W Scotland E Channel (4, 6a, 7d, 20) north western

**Advice for 2025 precautionary:** Catch  $\leq$  12 158t -10.1%

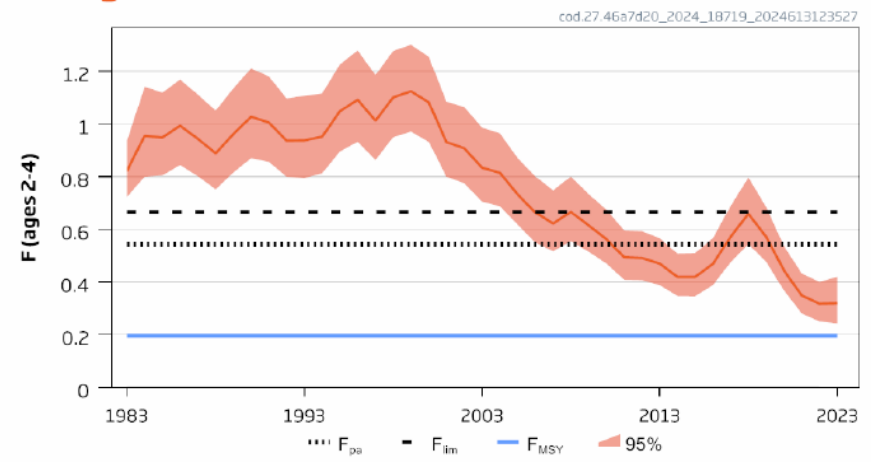
## Model estimated catches



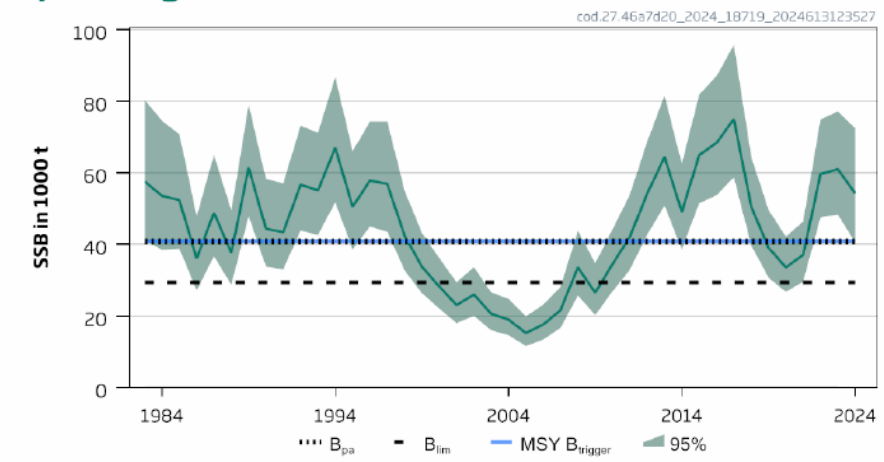
## Recruitment (age 1)



## Fishing Pressure



## Spawning Stock Biomass



- Benchmark 2023
- Multi stock SAM
- F above FMSY
- SSB above trigger
- Decrease in stock size, lower recruitment, lower F (adjusted to due to status of southern)



# Cod North Sea W Scotland E Channel (4, 6a, 7d, 20) north western

**Catch (2023) : 32 561t (23% discards) values for total area**

**F(2024) = 0.32 (Fsq =2023);**

**SSB (2025)= 65 657 > MSY<sub>Btrigger</sub> (40 823t) F<sub>MSY</sub>= 0.231**



**Table 2a** Cod in Subarea 4, divisions 6.a and 7.d, and Subdivision 20. Annual catch scenarios for the Southern substock. All weights are in tonnes.

Basis	Total catch 2025	F <sub>total (ages 2-4)</sub> 2025	SSB 2026	% SSB change*	% advice change**
ICES advice basis					
MSY approach: F <sub>MSY</sub> × SSB (2025)/MSY B <sub>trigger</sub>	3074	0.167 <sup>^</sup>	21693	51	-22
Other scenarios					
F <sub>MSY lower</sub> × SSB (2025)/MSY B <sub>trigger</sub>	1984	0.104 <sup>^</sup>	23222	62	-49
F <sub>MSY</sub>	4111	0.231 <sup>^</sup>	20303	42	4.8
F <sub>MSY lower</sub>	2689	0.144 <sup>^</sup>	22183	55	-31
F = 0	0	0	26143	82	-100
F <sub>pa</sub>	7372	0.464 <sup>^</sup>	15971	11.5	88
SSB (2026) = B <sub>lim</sub>	8823	0.58	14126 <sup>^</sup>	-1.42	125
SSB (2026) = MSY B <sub>trigger</sub> = B <sub>pa</sub>	4278	0.24	19590 <sup>^</sup>	37	9.1
F = F <sub>2024</sub>	6813	0.43 <sup>^</sup>	16746	16.9	74
SSB(2026) = SSB(2025)	8554	0.55	14455 <sup>^</sup>	0.87	118

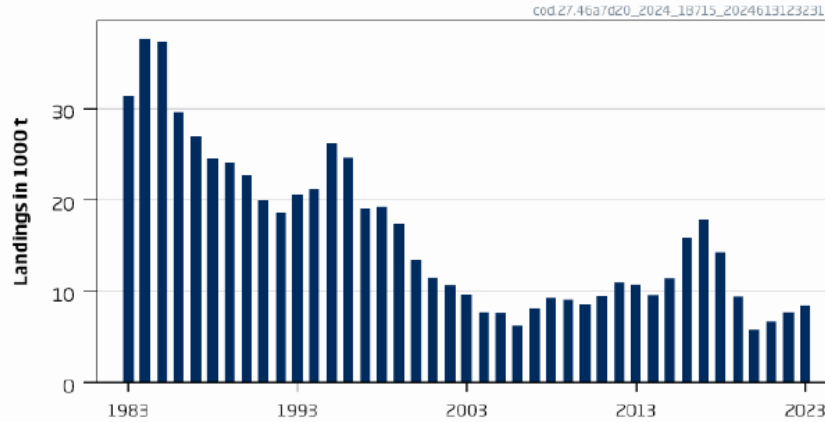
\* SSB 2026 relative to SSB 2025 (14 220 t)

Multi stock  
SAM

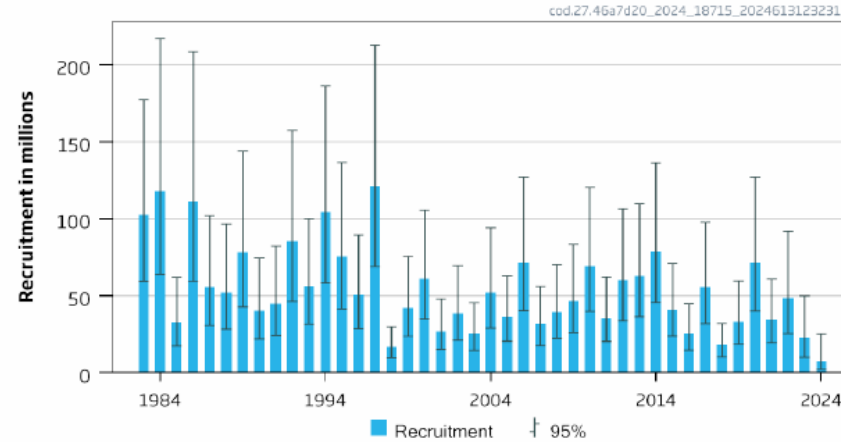
# Cod North Sea W Scotland E Channel (4, 6a, 7d, 20) Viking

**Advice for 2025 precautionary:** Catch  $\leq$  4 089t -22%

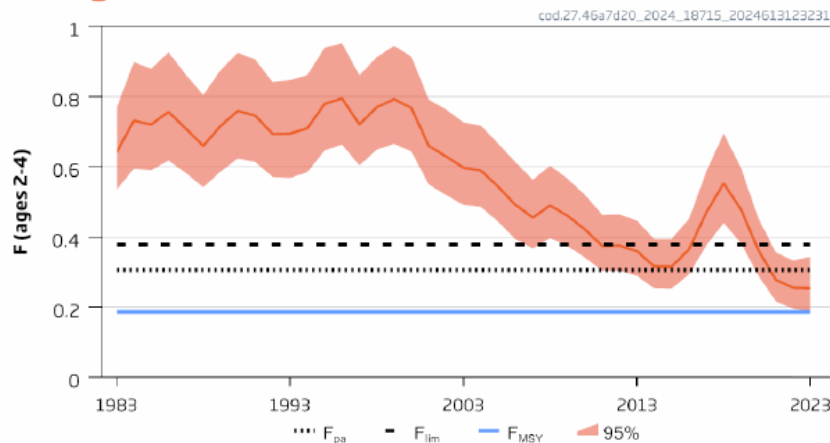
**Model estimated catches**



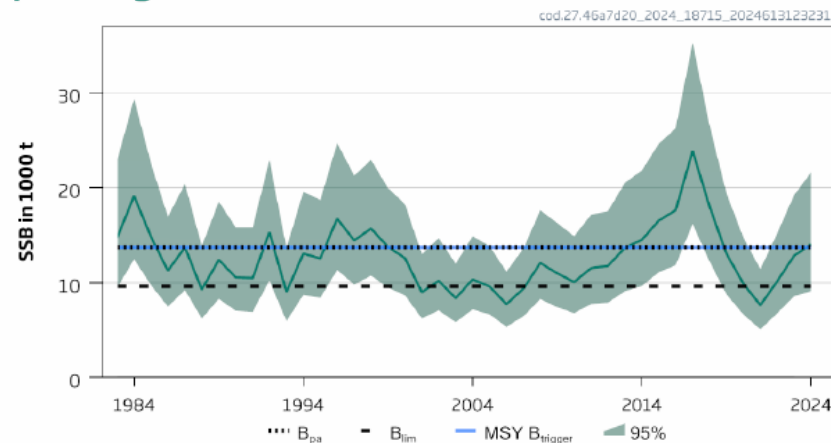
**Recruitment (age 1)**



**Fishing Pressure**



**Spawning Stock Biomass**



- Benchmark 2023
- Multi stock SAM
- F above FMSY
- SSB above trigger
- Retro in stock size, lower recruitment, lower F (adjusted to due to status of southern)

# Cod North Sea W Scotland E Channel (4, 6a, 7d, 20) Viking



**Catch (2023) : 32 561t (23% discards) values for total area**

**F(2024) = 0.25 (Fsq =2023);**

**SSB (2025)= 17 617 > MSY<sub>Btrigger</sub> (13 732t) F<sub>MSY</sub>= 0.187**

**Table 2c** Cod in Subarea 4, divisions 6.a and 7.d, and Subdivision 20. Annual catch scenarios for the Viking substock. All weights are in tonnes.

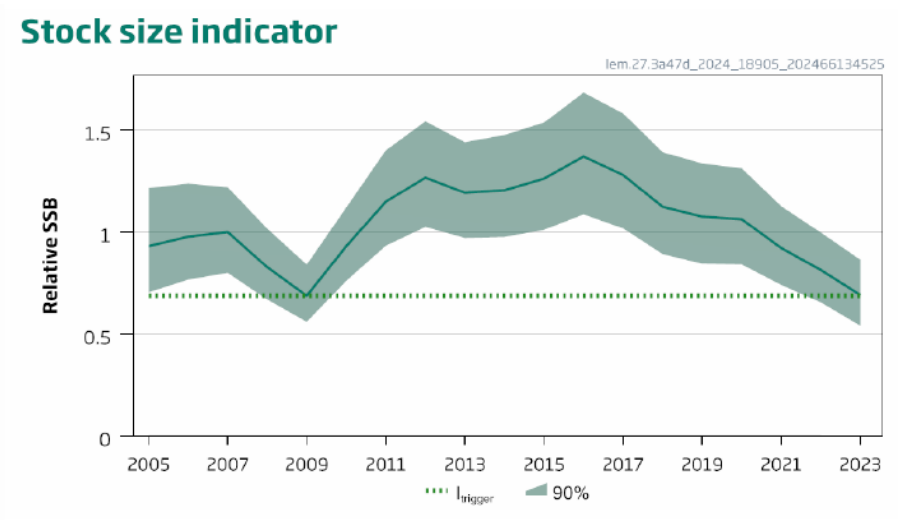
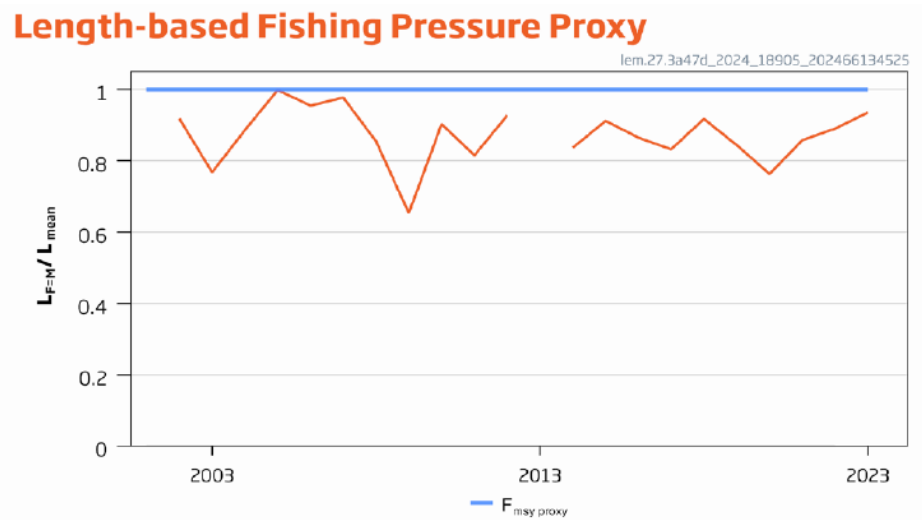
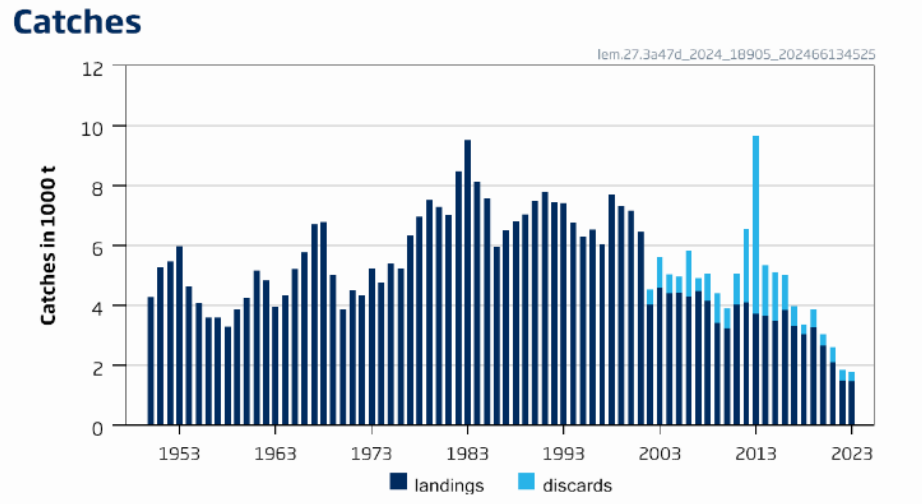
Multi stock  
SAM

Basis	Total catch (2025)	F <sub>total (ages 2-4)</sub> (2025)	SSB (2026)	% SSB change**	% advice change***
ICES advice basis					
Precautionary considerations: F <sub>(2024,Viking)</sub> × 0.39*	4089	0.099	22034	25	-22
Other scenarios					
F <sub>MSY</sub>	7310	0.186^	18841	6.9	40
F <sub>MSY lower</sub>	4293	0.102^	21850	24	-18.1
F <sub>MSY upper</sub>	10573	0.296^	15571	-11.6	102
F = 0	0	0	26234	49	-100
F <sub>pa</sub>	10823	0.306^	15289	-13.2	107
SSB (2026) = B <sub>lim</sub>	16828	0.59	9682^	-45	220
SSB (2026) = MSY B <sub>trigger</sub> = B <sub>pa</sub>	12414	0.36	13787^	-22	137
F = F <sub>2024</sub>	9182	0.26^	16856	-4.3	75
SSB(2026) = SSB(2025)	8434	0.21	17594^	-0.131	61

# Lemon sole in the North Sea, Skagerrak and Kattegat, E-English Channel (4, 3.a, 7.d)

**Advice for 2025, MSY:** Catch  $\leq$  1450 t advice -30%

- DLS method – chr –stability clause (-30%) applied
- F below FMSY proxy
- Stock size indicator declining but above Itrigger



# Lemon sole in the North Sea, Skagerrak and Kattegat, E-English Channel (4, 3.a, 7.d)

Catch (2023) = 1771 t (17% discards); landings of 43 t in 7.d



Match exactly when calculated using the rounded figures in the table.

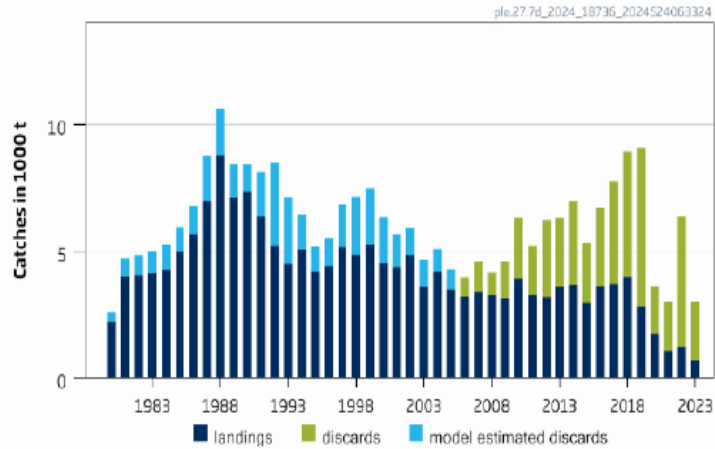
Previous catch advice $A_y$	2 072 tonnes	
Biomass index		
I: most recent biomass index ( $I_{2023}$ )	0.692	
MSY proxy harvest rate		
$HR_{MSY\ proxy}$ : MSY proxy harvest rate (average of the ratio of catch to biomass index for the years for which $f > 1$ , where $f = L_{mean}/L_{F=M}$ )	4 066	
Biomass safeguard		
Index trigger value ( $I_{trigger}$ )	0.688	
b: index relative to trigger value, $\min\{I_{2023}/I_{trigger}, 1\}$	1	
Precautionary multiplier to maintain biomass above $B_{lim}$ with 95% probability		
m: multiplier (generic multiplier based on life history)	0.5	
chr calculation: $I \times HR_{MSY\ proxy} \times b \times m$	1 407 tonnes	
Stability clause (+20%/-30% compared to $A_y$ , only considered if $b = 1$ )	Applied	-30%
Catch advice $A_{y+1}$ for 2025*	1 450 tonnes	
% TAC change**	-30%	
% Advice change^	-30%	

Formula:  $A_{y+1} = I \times HR_{MSY\ proxy} \times b \times m$ , stability clause applied

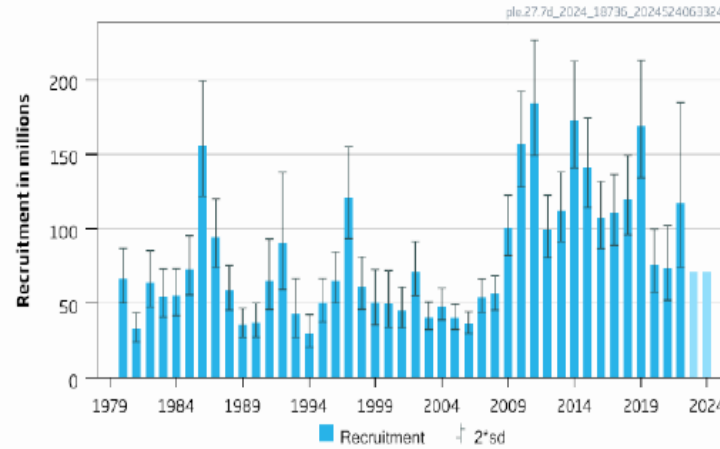
# Plaice in the eastern English Channel (7.d)

**Advice for 2025, MSY:** Catch  $\leq 2600t$  advice +9.8%

Catches

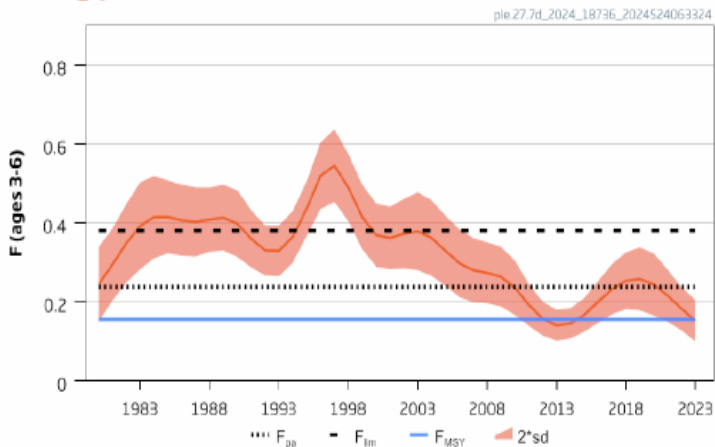


Recruitment (age 1)

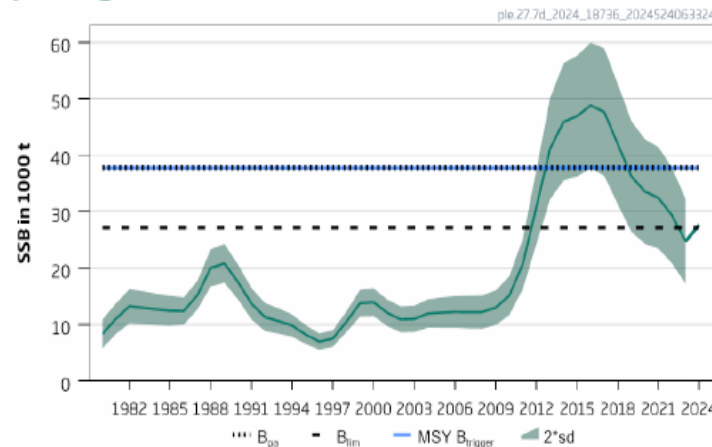


- Part of the catches in 7d are from the Western Channel and North Sea: advice is **3113 t** when taking other stocks caught in 7.d into account
- F below  $F_{msy}$
- SSB below MSY  $B_{trigger}$
- Increased selection on age 1 and 2 – more exploitable biomass

Fishing pressure



Spawning Stock Biomass



# Plaice in the eastern English Channel (7.d)

**Catch (2023) : 3015 t for the plaice 7d stock (77 % discards); 3812t in 7d area**  
**F(2024) = 0.152 (Average exploitation pattern 2021-2023, scaled to 2023);**  
**SSB (2025)= 28064 t < MSY<sub>Btrigger</sub> (37761t) F<sub>MSY</sub>= 0.156 AAP assessment**



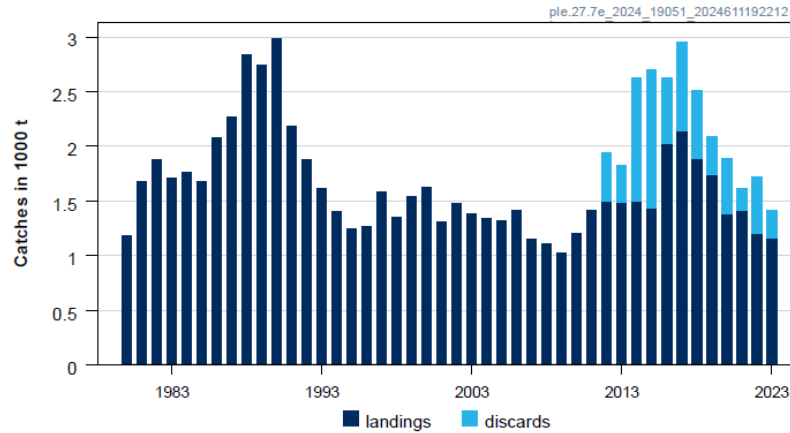
Basis	Division 7.d plaice stock									All plaice in Division 7.d <sup>#</sup>					
	Total catch (2025) <sup>^</sup>	Projected landings (2025)	Projected discards* (2025)	F <sub>total</sub> (ages 3–6) (2025)	F <sub>projected</sub> landings (ages 3–6) (2025)	F <sub>projected</sub> discards (ages 3–6) (2025)	SSB (2026)	% SSB change **	% advice change <sup>§</sup>	Total catch (2025)	Projected landings (2025)	Projected discards* (2025)	% change in projected catches <sup>^^</sup>	% advice change <sup>##</sup>	% TAC change <sup>###</sup>
ICES advice basis															
MSY approach: F <sub>MSY</sub> × SSB (2025) /MSY B <sub>trigger</sub>	2600	945	1654	0.116	0.025	0.091	27861	-0.72	9.8	3113	1132	1981	-13.8	10.2	10.2
Other scenarios															
F = F <sub>MSY lower</sub> × SSB (2025)/ MSY B <sub>trigger</sub>	1908	694	1214	0.084	0.0181	0.066	28704	2.3	-19.4	2285	831	1454	-37	-19.1	-19.1
F <sub>MSY lower</sub>	2537	923	1614	0.113	0.024	0.089	27938	-0.45	7.2	3038	1105	1933	-15.9	7.5	7.5
F <sub>MSY</sub>	3441	1251	2190	0.156	0.034	0.122	26841	-4.4	45	4121	1498	2623	14.1	46	46
F = 0	0	0	0	0	0	0	31047	10.6	-100	0	0	0	-100	-100	-100
F <sub>pa</sub>	5079	1845	3234	0.238	0.051	0.187	24870	-11.4	115	6082	2209	3873	68	115	115
F <sub>lim</sub>	7683	2786	4897	0.381	0.082	0.30	21783	-22	225	9201	3337	5864	155	226	226
SSB (2026) = B <sub>lim</sub>	3188	1159	2029	0.144	0.031	0.113	27147	-3.3	35	3818	1388	2430	5.7	35	35
SSB (2026) = B <sub>pa</sub> = MSY B <sub>trigger</sub> <sup>^^^</sup>															
F = F <sub>2024</sub>	3359	1221	2138	0.152	0.033	0.119	26941	-4.0	42	4022	1462	2560	11.4	42	42

**Advice for plaice in Division 7.d is for the stock, it takes into account catches of 7.e and North Sea stocks in 7.d**

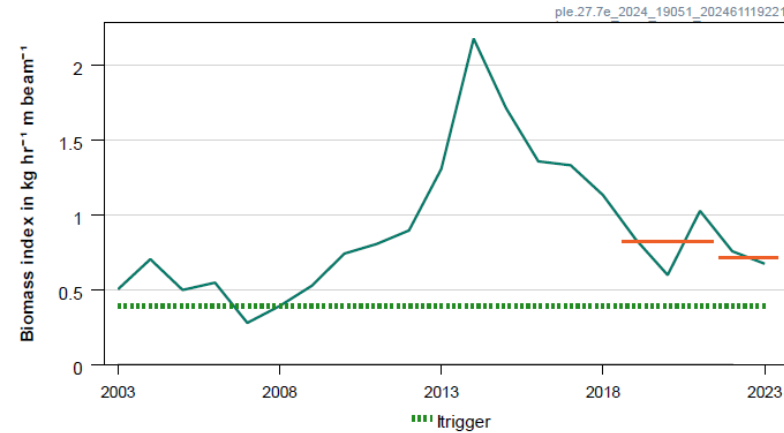
# Plaice in the western English Channel (7.e)

**Advice for 2025 and 2026, MSY: Catch  $\leq$  927t advice -24%**

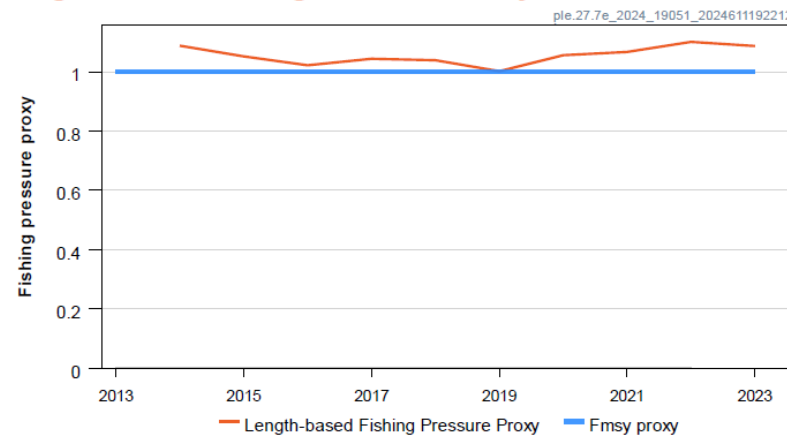
Catches



Biomass index



Length-based Fishing Pressure Proxy



F above FMSY proxy  
Stock size above  
Itrigger  
But has declined and  
results in lower  
advice



# Plaice in the western English Channel (7.e)

## Catch (2023) : 1233 t (10% discards)

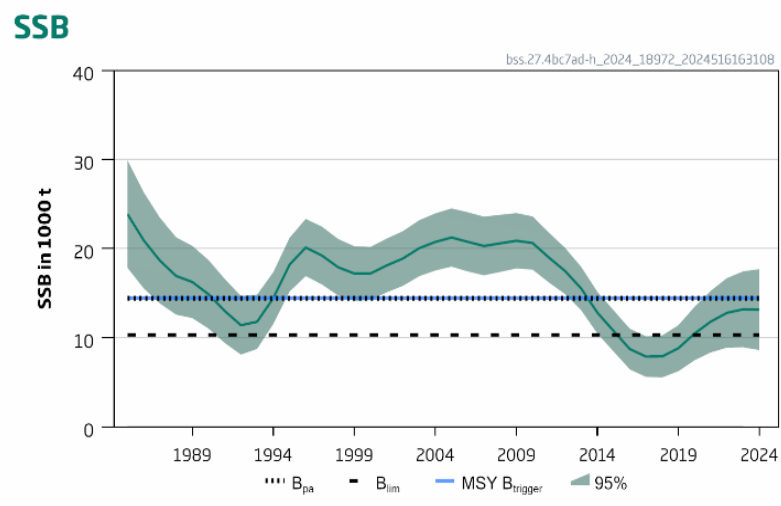
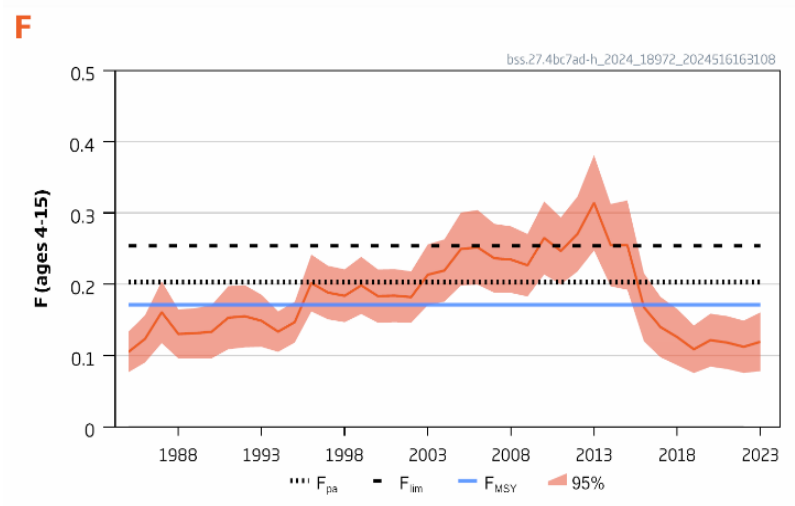
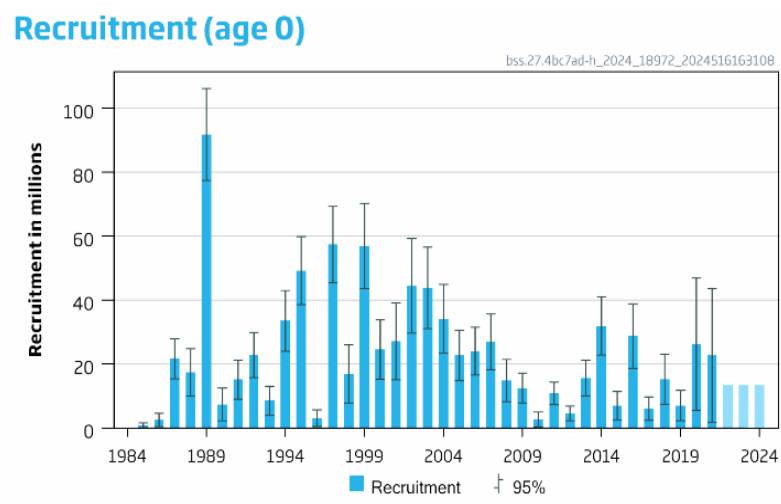
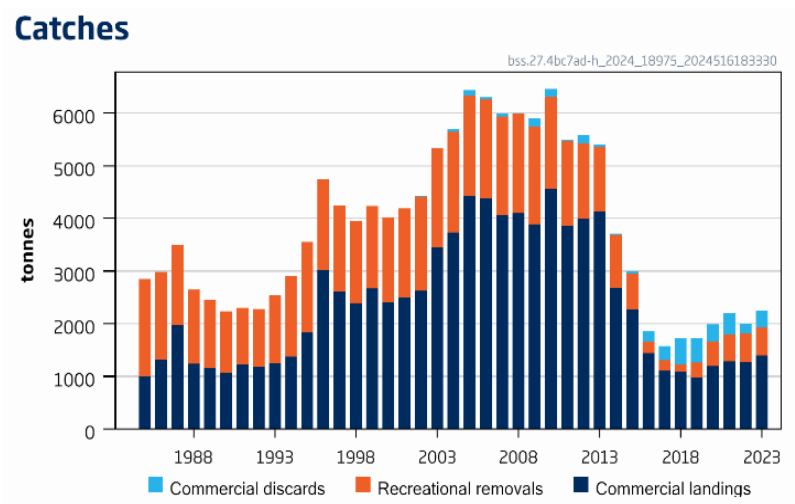
Division 7.e plaice stock	
Previous catch advice $A_y$ (advised catch for 2024)	1219 tonnes
Stock biomass trend	
Index A (2022, 2023)	0.72 kg hr <sup>-1</sup> m beam <sup>-1</sup>
Index B (2019, 2020, 2021)	0.82 kg hr <sup>-1</sup> m beam <sup>-1</sup>
r: multiplier for stock biomass trend (index ratio A/B)	0.87
Fishing pressure	
Mean catch length ( $L_{mean} = L_{2023}$ )	31.7 cm
MSY proxy length ( $L_{F=M}$ )	34.4 cm
Fishing pressure proxy ( $L_{F=M}/L_{2023}$ )	1.09
f: multiplier for relative mean length in catches ( $L_{2023}/L_{F=M}$ )	0.92
Biomass safeguard	
Last index value ( $I_{2023}$ )	0.68 kg hr <sup>-1</sup> m beam <sup>-1</sup>
Index trigger value ( $I_{trigger} = I_{loss} \times 1.4$ )	0.39 kg hr <sup>-1</sup> m beam <sup>-1</sup>
b: multiplier for index relative to trigger, $\min\{I_{2023}/I_{trigger}, 1\}$	1.00
Precautionary multiplier to maintain biomass above $B_{lim}$ with 95% probability	
m: multiplier (generic multiplier based on life history)	0.95
RFB calculation**	927 tonnes
Stability clause (+20%/-30% compared to $A_y$ , only applied if b = 1)	Not applied
Discard rate	26%
Catch advice for 2025 and 2026 ( $A_y \times r \times f \times b \times m$ )	927 tonnes
Projected landings corresponding to advice***	682 tonnes
% advice change^	-24%
Plaice in Division 7.e	
Catches of Division 7.e stock caught in Division 7.d	119 tonnes
Area based discard rate	23%
Catch of plaice in Division 7.e corresponding to the advice for the stock	809 tonnes
Projected landings of plaice in Division 7.e corresponding to the advice for the stock***	621 tonnes

### rfb rule

$$A_{y+1} = A_y \times r \times f \times b \times m$$

Since 2024, the TAC includes considerations of how much can be fished in each of the divisions 7.e and 7.d

**Advice for 2025, MSY: Catch ≤ 2 776 t: advice +14.1%**



- SSB below MSYBtrigger
- F below F<sub>MSY</sub>
- Higher recruitment – SSB now closer to trigger so adjustment to F is less

**EU MAP : Catch: 2330 – 2776t (F<sub>MSY</sub>: 2776t)**

# Sea bass in divisions 4.b–c, 7.a, and 7.d–h

**Catch 2023: 2251 t (1397 t commercial, 316 t discards and 538 t recreational)**

**F (2024)= 0.117 (F<sub>sq</sub> for commercial fishery and full compliance in recreational)**

**SSB(2025) = 113 358t > B<sub>lim</sub> 10 313 t but < MSY B<sub>trigger</sub> = 14 439 t F<sub>MSY</sub> = 0.1713**



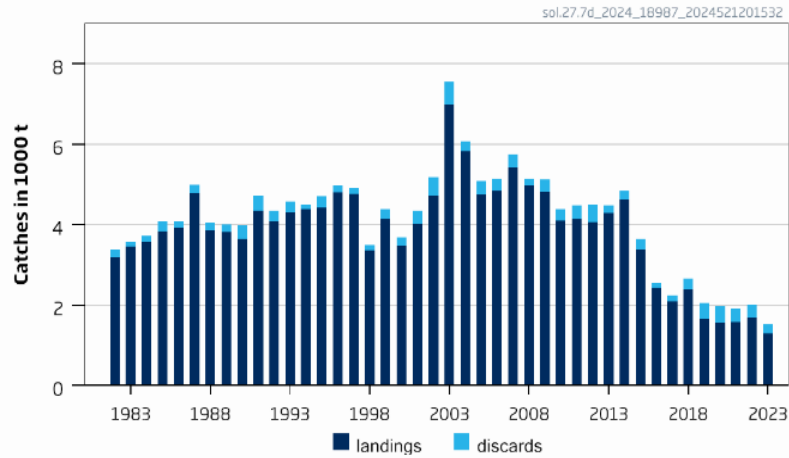
Basis	Total removals* (2025)	F <sub>total</sub> (2025)	SSB (2026)	% SSB change**	% advice change***
ICES advice basis					
MSY approach: F = F <sub>MSY</sub> × SSB <sub>2025</sub> /MSY B <sub>trigger</sub>	2776	0.159	13477	0.89	14.1
Other scenarios					
EU MAP <sup>^</sup> : F <sub>MSY</sub> × SSB <sub>2025</sub> /MSY B <sub>trigger</sub>	2776	0.159	13477	0.89	14.1
EU MAP <sup>^</sup> : F <sub>MSY lower</sub> × SSB <sub>2025</sub> /MSY B <sub>trigger</sub>	2330	0.131	13827	3.5	-4.2
EU MAP <sup>^</sup> : F <sub>MSY upper</sub> × SSB <sub>2025</sub> /MSY B <sub>trigger</sub>	2776	0.159	13477	0.89	14.1
F = F <sub>MSY lower</sub>	2506	0.142	13689	2.5	3.0
F = F <sub>MSY</sub>	2984	0.1713	13315	-0.32	23
F = F <sub>MSY upper</sub>	2984	0.1713	13315	-0.32	23
F = 0	0	0	15672	17.3	-100
F <sub>pa</sub>	3486	0.203	12923	-3.3	43
F <sub>lim</sub>	4265	0.254	12319	-7.8	75
SSB <sub>2026</sub> = B <sub>lim</sub>	6893	0.45	10313	-23	183
SSB <sub>2026</sub> = B <sub>pa</sub>	1553	0.086	14439	8.1	-36
SSB <sub>2026</sub> = MSY B <sub>trigger</sub>	1553	0.086	14439	8.1	-36
F = F <sub>2024</sub>	2082	0.117	14022	5.0	-14.4
SSB <sub>2026</sub> = SSB <sub>2025</sub>	2928	0.168	13358	0	20

SS3

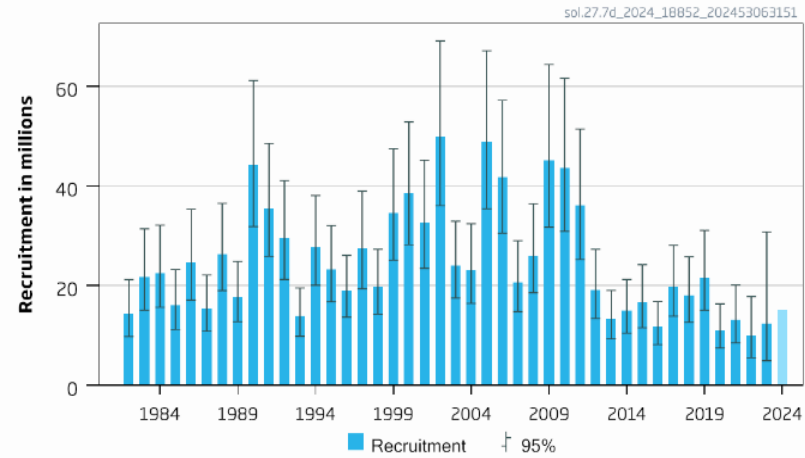
# Sole in the eastern English Channel (7.d)

**Advice for 2025, MSY : Catch  $\leq$  1 209 t -19.6%**

Catches



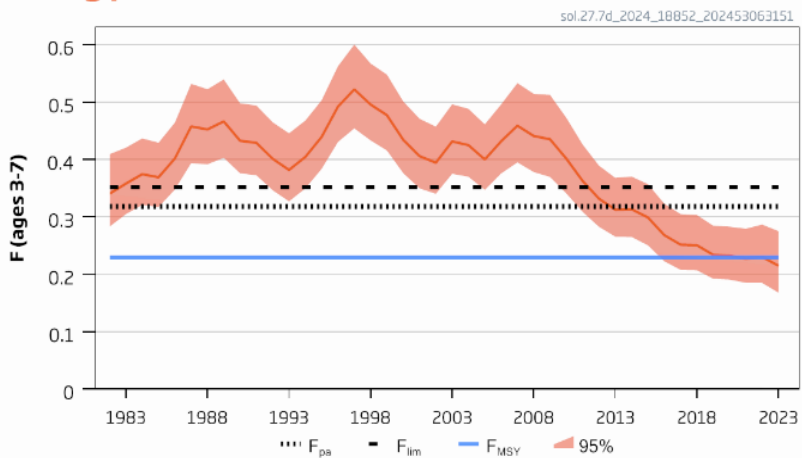
Recruitment (age 1)



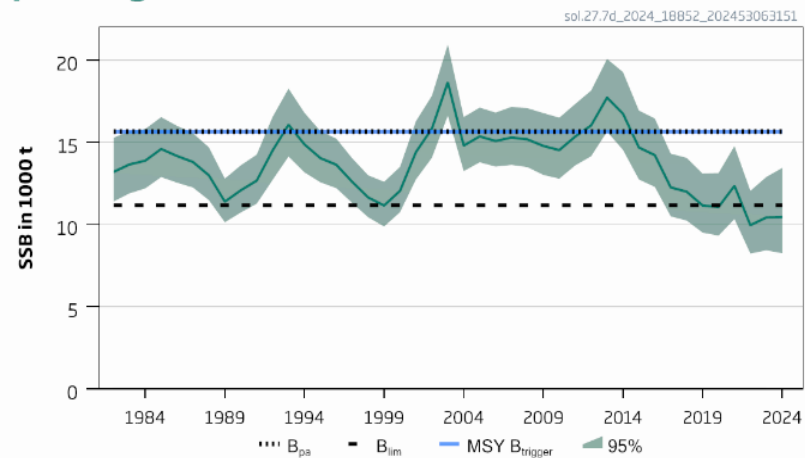
F below  $F_{MSY}$   
 SSB below MSY  $B_{trigger}$   
 Recruitment lower since 2011

Lower stock size – farther below  $B_{trigger}$  – lower target F

Fishing pressure



Spawning Stock Biomass



# Sole in the eastern English Channel (7.d)

**Catch (2023) : 1517 t (15% discards)**

**F(2024) = 0.21 (catch constraint for 2024)**

**SSB (2025)= 10 804 > B<sub>lim</sub> 11 181 t but < MSY B<sub>trigger</sub> = 15 654t F<sub>MSY</sub> = 0.23**

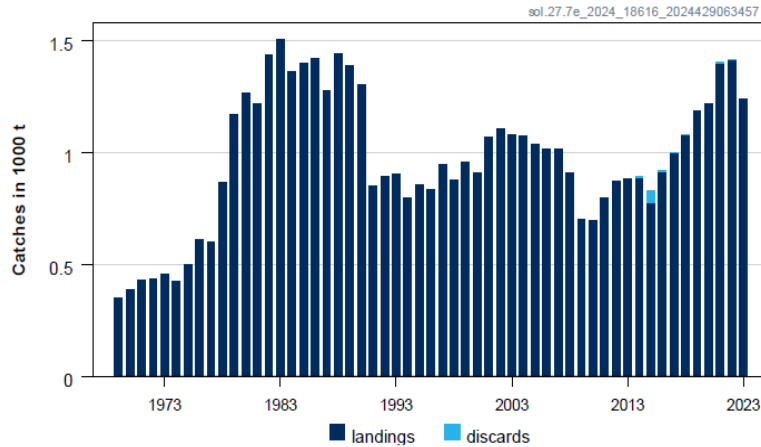
Basis	Total catch (2025)	Projected landings (2025)	Projected discards <sup>^</sup> (2025)	F <sub>total</sub> (ages 3–7) (2025)	F <sub>projected landings</sub> (ages 3–7) (2025)	F <sub>projected discards</sub> (ages 3–7) (2025)	SSB (2026)	% SSB change*	% TAC change**	% advice change**	Probability of SSB (2026) < B <sub>lim</sub> (%)
ICES advice basis											
MSY approach: F <sub>MSY</sub> × SSB (2025)/MSY B <sub>trigger</sub>	1209	990	220	0.159	0.124	0.035	11630	7.6	-19.6	-19.6	40
Other scenarios											
F <sub>MSY lower</sub> × SSB (2025)/ MSY B <sub>trigger</sub>	841	690	154	0.108	0.085	0.023	12052	11.6	-44	-44	30
F = 0	0	0	0	0	0	0	13018	20	-100	-100	14.7
F <sub>pa</sub>	2264	1850	410	0.318	0.25	0.068	10418	-3.6	51	51	66
F <sub>lim</sub>	2466	2000	450	0.352	0.28	0.076	10183	-5.7	64	64	71
SSB (2026) = B <sub>lim</sub>	1581	1290	290	0.21	0.167	0.045	11181	3.5	5.1	5.1	50
SSB (2026) = B <sub>pa</sub> = MSY B <sub>trigger</sub> <sup>#</sup>											
F = F <sub>2024</sub>	1599	1310	290	0.21	0.169	0.046	11161	3.3	6.3	6.3	50
F <sub>MSY lower</sub>	1192	980	220	0.156	0.123	0.033	11649	7.8	-21	-21	40
F <sub>MSY</sub>	1697	1390	310	0.230	0.180	0.050	11051	2.3	12.8	12.8	52

SAM assessment

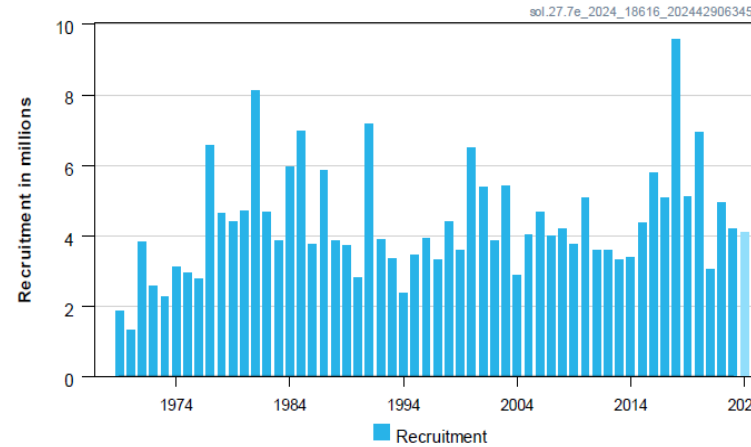
# Sole in the western English Channel (7.e)

**Advice for 2025, MSY :** Catch  $\leq$  1 151 t advice +8.9%

Catches

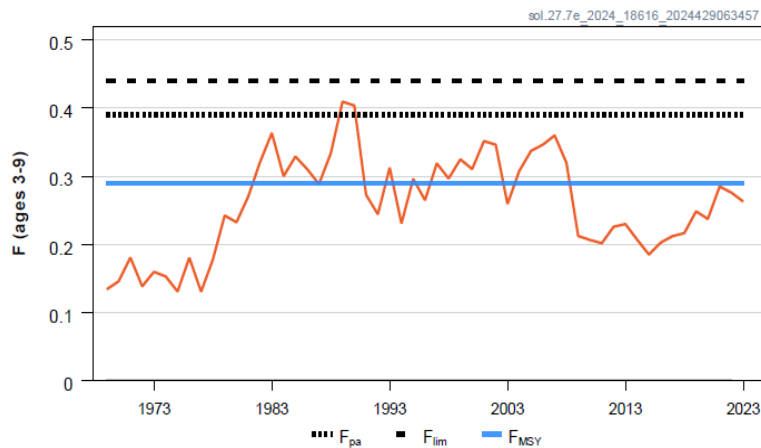


Recruitment (age 2)

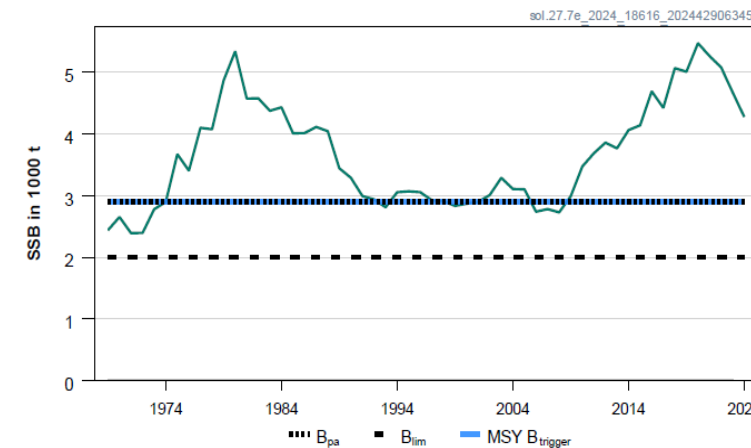


- F below  $F_{MSY}$
- SSB above MSY  $B_{trigger}$
- SSB declining but advice higher – upward revision in SSB and downward revision F (retrospective)

F



SSB



**EU MAP :** Catch: 674 – 1 319 t ( $F_{MSY}$ : 1 151t)

# Sole in the western English Channel (7.e)

**Catch (2023) : 1 241 t (negligible)**

**F(2024) = 0.27 (Based on assumed landings)**

**SSB (2025)= 3 984 t > MSY<sub>Btrigger</sub> (2 900 t) F<sub>MSY</sub>= 0.29**

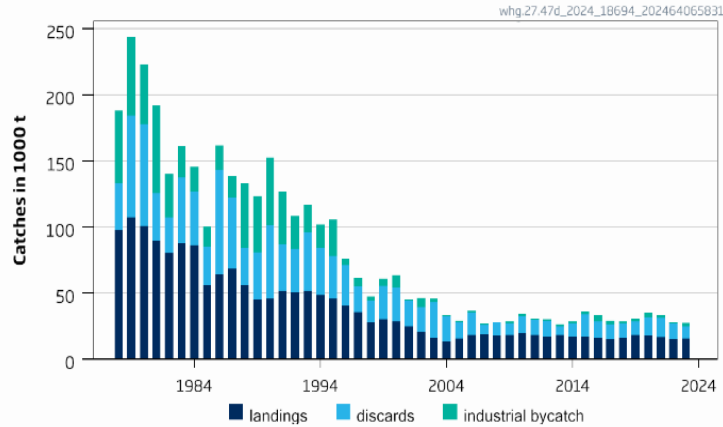
Basis	Total catch* (2025)	Projected landings (2025)	Projected discards (2025)	F <sub>projected landings</sub> (2025)	SSB (2026)	% SSB change **	% TAC change***	% advice change^
ICES advice basis								
MSY approach: F = F <sub>MSY</sub>	1151	1146	5	0.29	3706	-7.0	-2.8	8.9
Other scenarios								
EU MAP^^: F <sub>MSY</sub>	1151	1146	5	0.29	3706	-7.0	-2.8	8.9
EU MAP^^: F <sub>MSY lower</sub>	674	671	3	0.160	4166	4.6	-43	-36
EU MAP^^: F <sub>MSY upper</sub>	1319	1313	6	0.34	3544	-11.0	11.4	25
F = 0	0	0	0	0	4819	21	-100	-100
F = F <sub>pa</sub>	1479	1473	7	0.39	3390	-14.9	25	40
F = F <sub>lim</sub>	1632	1625	7	0.44	3243	-18.6	38	54
SSB <sub>2026</sub> = B <sub>lim</sub>	2946	2933	13	1.01	2000	-50	149	179
Rollover TAC	1184	1179	5	0.30	3674	-7.8	0	12.0
SSB <sub>2026</sub> = B <sub>pa</sub> = MSY B <sub>trigger</sub>	1992	1983	9	0.57	2900	-27	68	88
SSB <sub>2026</sub> = SSB <sub>2025</sub>	863	859	4	0.21	3984	0	-27	-18.4
F = F <sub>2024</sub>	1092	1087	5	0.27	3762	-5.6	-7.8	3.3

FLXSA assessment

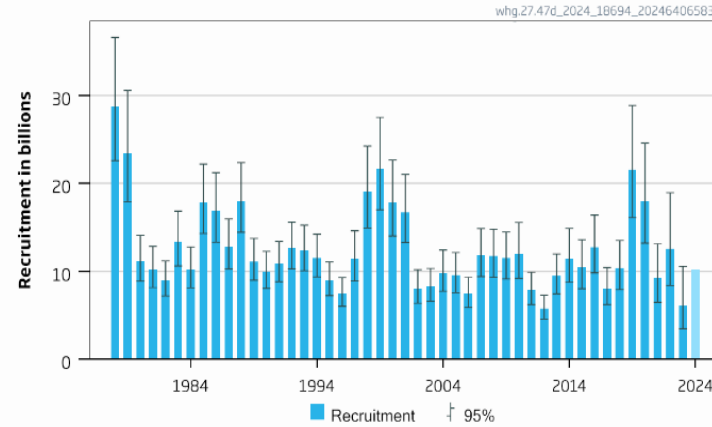
# Whiting in the North Sea and eastern English Channel (4 and 7.d)

**Advice for 2025, MSY:** Catch  $\leq$  237 008 t advice +85%

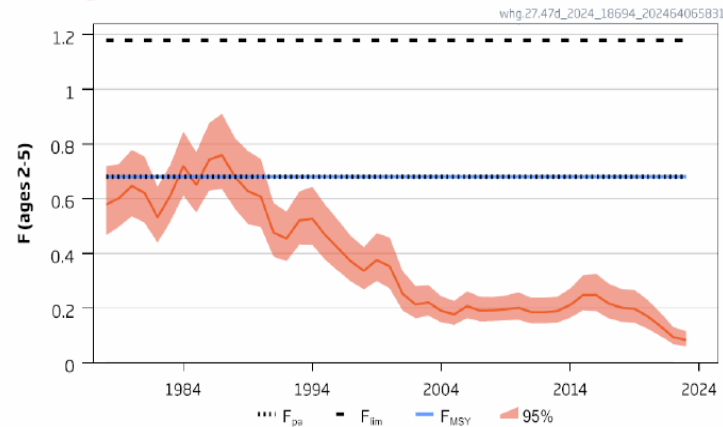
Catches



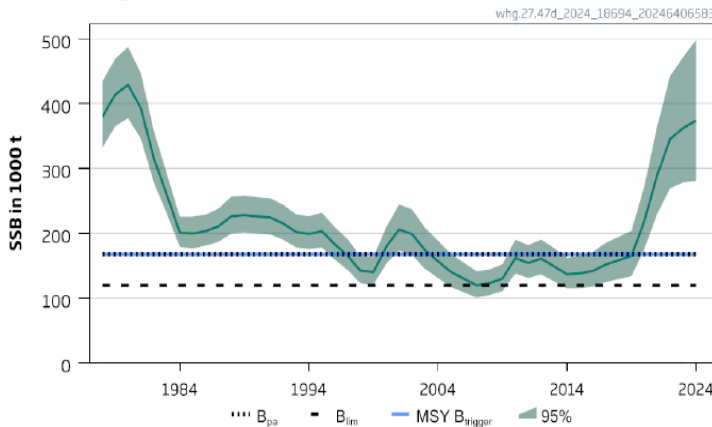
Recruitment (age 0)



Fishing pressure



Spawning Stock Biomass



- F below  $F_{MSY}$
- SSB above MSY  $B_{trigger}$ .
- About 20% of the catches are taken in the Eastern Channel area.
- Increase in advice – increase in estimate of  $F_{MSY}$  as natural mortality estimates updated



# Whiting in the North Sea and eastern English Channel (4 and 7.d)

Catch (2023): 27 601 t (43% discards) ; Catch of 2 602 t in 7.d

F (2024)=0.083 (Average exploitation pattern(2021-2023), scaled to 2023)

SSB(2025) = 363356 t > MSY<sub>Btrigger</sub> =167 419t F<sub>MSY</sub>=0.68



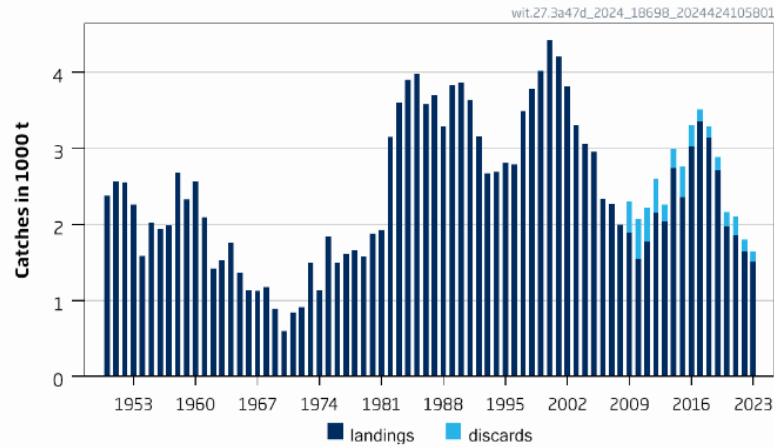
SAM

Basis	Total catch (2025)	Projected landings (2025)*	Projected discards (2025)*	Projected IBC (2025)*	Human Consumption catch (2025)	F <sub>total</sub> (ages 2–5) (2025)**	F <sub>projected</sub> landings (ages 2–5) (2025)	F <sub>projected</sub> discards (ages 2–5) (2025)	F <sub>projected</sub> IBC (ages 2–5) (2025)***	SSB (2026)	% SSB change <sup>^</sup>	% TAC change <sup>^</sup>	% advice change <sup>^^</sup>
ICES advice basis													
MSY approach: F <sub>MSY</sub>	237008	169064	66516	1428	235580	0.68	0.44	0.24	0.0059	191923	-47	148	85
Other scenarios													
F <sub>MSY upper</sub>	237008	169064	66516	1428	235580	0.68	0.44	0.24	0.0059	191923	-47	148	85
F <sub>MSY lower</sub>	160599	114063	44856	1680	158918	0.46	0.29	0.161	0.0059	251539	-31	68	25
F = 0 (industrial bycatch [IBC] only)	2202	0	0	2202	0	0.0059	0	0	0.0059	375191	3.3	-98	-98
F = F <sub>2024</sub>	29660	19810	7738	2112	27549	0.083	0.050	0.027	0.0059	353699	-2.7	-69	-77
0.75 × F <sub>2024</sub> †	22970	14994	5842	2134	20836	0.064	0.037	0.020	0.0059	358920	-1.22	-76	-82
1.25 × F <sub>2024</sub> †	36358	24631	9637	2090	34268	0.102	0.062	0.034	0.0059	348474	-4.1	-62	-72
F <sub>pa</sub>	237008	169064	66516	1428	235580	0.68	0.44	0.24	0.0059	191923	-47	148	85
F <sub>lim</sub>	410666	294067	115743	856	409810	1.18	0.76	0.42	0.0059	56432	-84	330	220
SSB (2025) = B <sub>pa</sub> = MSY B <sub>trigger</sub>	268275	191571	75379	1325	266949	0.77	0.49	0.27	0.0059	167419	-54	181	109
SSB (2025) = B <sub>lim</sub>	329547	235676	92748	1123	328424	0.95	0.61	0.33	0.0059	119585	-67	245	157

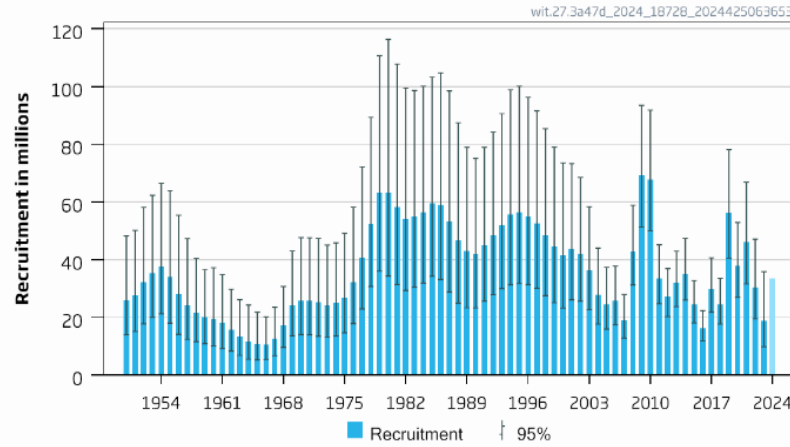
# Witch North Sea, Skagerrak and Kattegat, eastern English Channel (SA4, 3a, 7d)

**Advice for 2025, MSY:** Catch  $\leq 1\,969$  t advice +25%

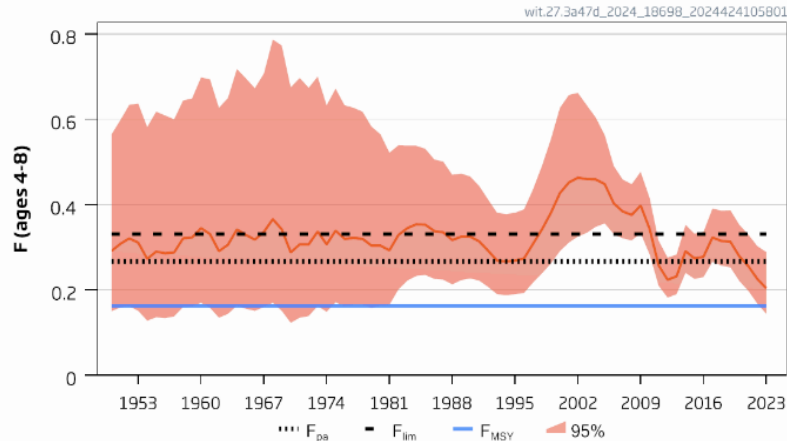
Catches



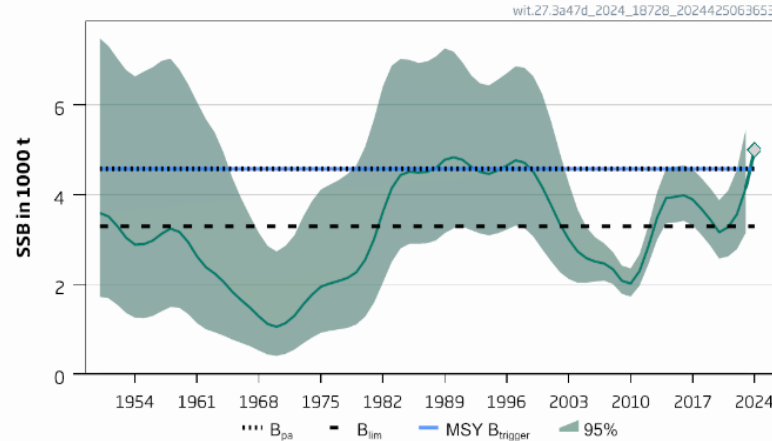
Recruitment (age 1)



Fishing pressure



Spawning Stock Biomass



- F above  $F_{MSY}$
- SSB above MSY  $B_{trigger}$ .
- Increase in advice – increase in SSB – now above  $B_{trigger}$  so target  $F_{MSY}$

# Witch North Sea, Skagerrak and Kattegat, eastern English Channel (SA4, 3a, 7d)

**Catch (2023): 1 635t (11% discards) ;**

**F (2024)=0.151 (catch constraint, exploitation pattern 2023)**

**SSB(2024, July 1) = 4998 t > MSY<sub>Btrigger</sub> F<sub>MSY</sub>=0.163**

**Table 2** Witch in Subarea 4 and divisions 3.a and 7.d. Annual catch scenarios. All weights are in tonnes.

Basis	Total catch (2025)	Projected landings (2025)	Projected discards* (2025)	F <sub>total</sub> (ages 4–8) (2025)	SSB <sup>^^</sup> (2025)	SSB <sup>^^,#</sup> (2026)	% SSB change **	% TAC change ***	% advice change ^
ICES advice basis									
MSY approach: F <sub>MSY</sub>	1969	1885	84	0.163	5528	5848	10.6	25	25
Other scenarios									
F <sub>MSY upper</sub>	2596	2484	112	0.222	5337	5328	6.8	64	64
F <sub>MSY lower</sub>	1380	1324	56	0.111	5699	6366	14	-12.6	-12.6
F = 0	0	0	0	0	6088	7656	22	-100	-100
F <sub>pa</sub>	3044	2918	126	0.267	5196	4970	4.0	93	93
F = F <sub>2024</sub>	1840	1764	76	0.151	5565	5961	11.3	16.5	16.5
SSB (2026) = B <sub>lim</sub>	5399	5148	251	0.55	4434	3293	-11.3	240	240
SSB (2026) = B <sub>pa</sub> = MSY B <sub>trigger</sub>	3558	3409	149	0.32	5041	4576	0.86	125	125
Rollover advice	1579	1515	64	0.128	5641	6230	12.9	0	0

SAM



**Thank you  
for your  
attention!**



Science for sustainable seas

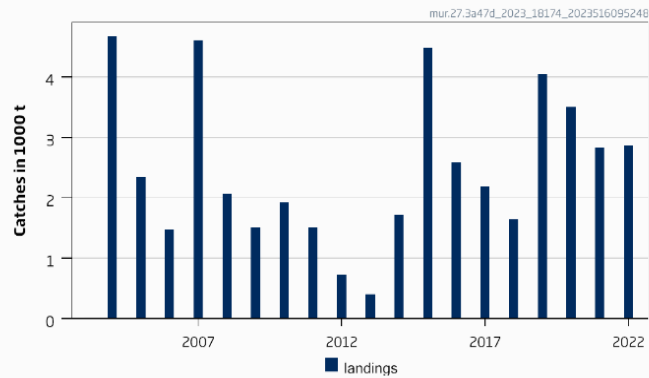
[www.ices.dk](http://www.ices.dk)

[Joanne.Morgan@ices.dk](mailto:Joanne.Morgan@ices.dk)

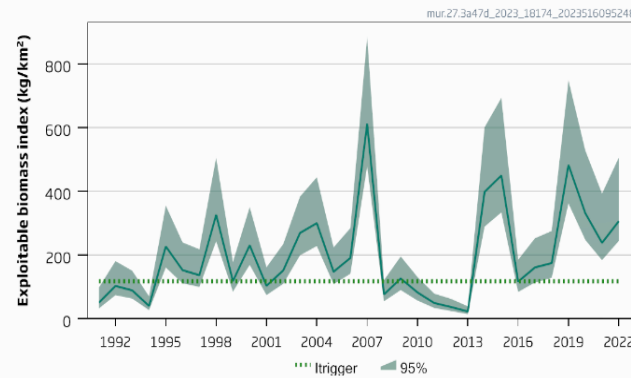


**Advice for 2024 and 2025 , MSY: Catch  $\leq$  1 985 t +2%**

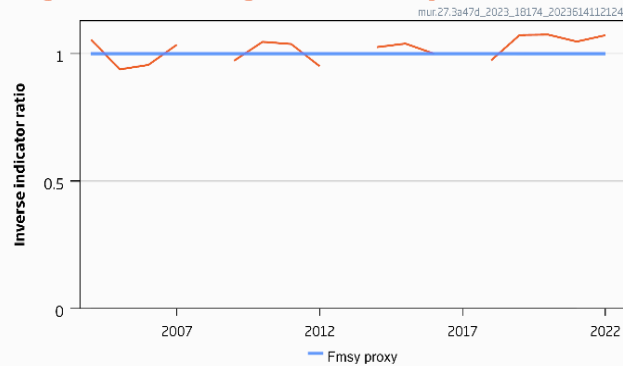
Catches



Stock size indicator



Length-based Fishing Pressure Proxy



- New DLS method - chr
- Catches remain high: F Fishing pressure proxy
- Stock size has shown some increase
- No UK-BTS in are in 2022 and 5 stations missing from FR-GFS – minimal impact

## Catch (2022) : 2 866t (negligible discards)

Previous catch advice $A_y$ (advised catch for 2022 and 2023)	1950 tonnes
Biomass index	
$I$ : most recent biomass index ( $I_{2022}$ )	306.13
MSY proxy harvest rate	
$HR_{MSY\ proxy}$ : MSY proxy harvest rate (average of the ratio of catch to biomass index for the years for which $f > 1$ , where $f = L_{mean}/L_{F=M}$ )	12.97
Biomass safeguard	
Index trigger value ( $I_{trigger}$ )	117.38
$b$ : index relative to trigger value, $\min\{I_{2022}/I_{trigger}, 1\}$	1
Precautionary multiplier to maintain biomass above $B_{lim}$ with 95% probability	
$m$ : multiplier (generic multiplier based on life history)	0.5
CHR calculation **	1985 tonnes
Stability clause (+20%/-30% compared to $A_y$ , only considered if $b=1$ )	Not applied
Discard rate	0%
Catch advice $A_{y+1}$ for 2024 and 2025**	1985 tonnes
Landings corresponding to the advice for 2024 and 2025 ***	1985 tonnes
% advice change	1.80%

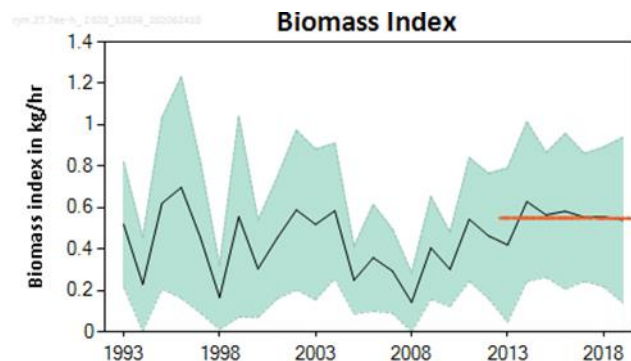
$$A_{y+1} = I \times HR_{MSY\ proxy} \times b \times m$$

# Skates and rays

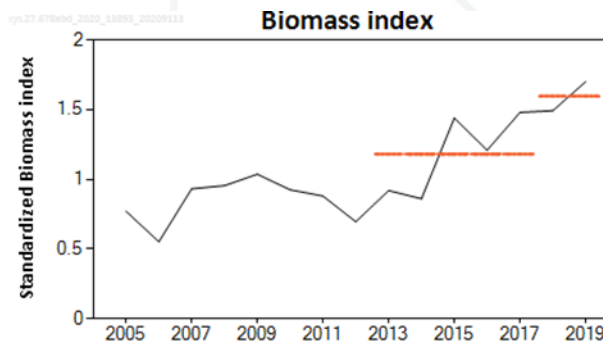
- Advice for the following stocks for 2022 to be issued in autumn
  - Thornback ray in Subarea 4 and in divisions 3.a and 7.d
  - Blonde ray in divisions 4.c and 7.d
  - Spotted ray in Subarea 4 and in divisions 3.a and 7.d
- Advice issued in 2020 for 2021/2022

Stock	Landings (2020)	Advice for 2022 Landings	Rationale
Spotted ray in 7.a and 7.e-h	741	1041	PA - based on survey index (UK(E&W)-BTS-Q3)
Cuckoo ray in 6,7, 8abd	2453	3150	PA - based on survey indices (IGFS and EVHOE)
Undulate ray in 7.de	225	183 (2552)	PA - based on survey index (CGFS)
Small-eyed ray in 7de	53	40	PA - based on historical landings
Thornback ray in 7.e	464	170	PA - based on historical landings
Blonde ray in 7e	1014	266	PA - based on historical landings

Spotted ray in 7.a , 7e-h



Cuckoo ray in 6, 7, 8 abd



Undulate ray in 7.de

