

ICES advice for selected skates and rays for 2023

Joint NWWAC/NSAC Focus Group Skates & Rays
October 18, 2024

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Image Dirk Vonten, Fotolia

Introduction

- Includes advice released autumn 2024

Non-fisheries conservation considerations



- Based on feedback from stakeholders ‘conservation status advice’ changed to ‘non-fisheries conservation considerations’
 - “ICES has not identified any conservation aspects other than those related to the commercial fisheries”
 - If something is identified I refer to it in this presentation

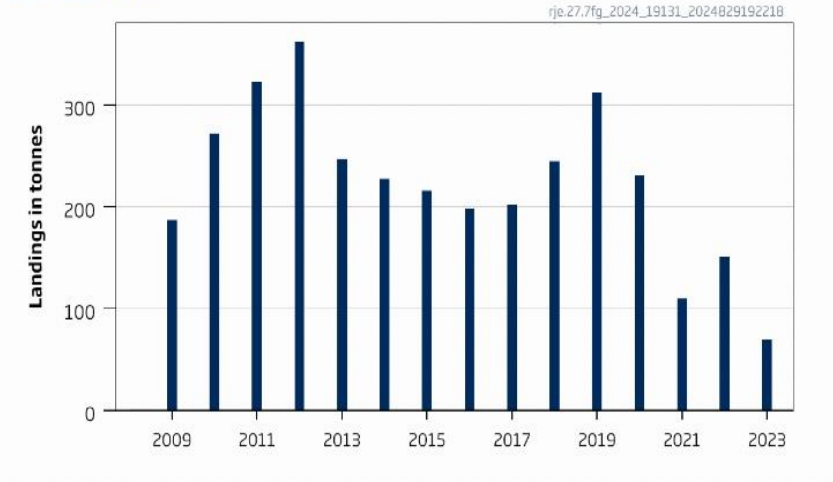
Advice delayed

- Issues detected during ADG
- Experts currently working on problem
- Decided to delay advice to give them time to explore the issue rather than rush things
- Advice release expected Monday, October 21

Small-eyed ray Bristol Channel, Celtic Sea North (7fg)

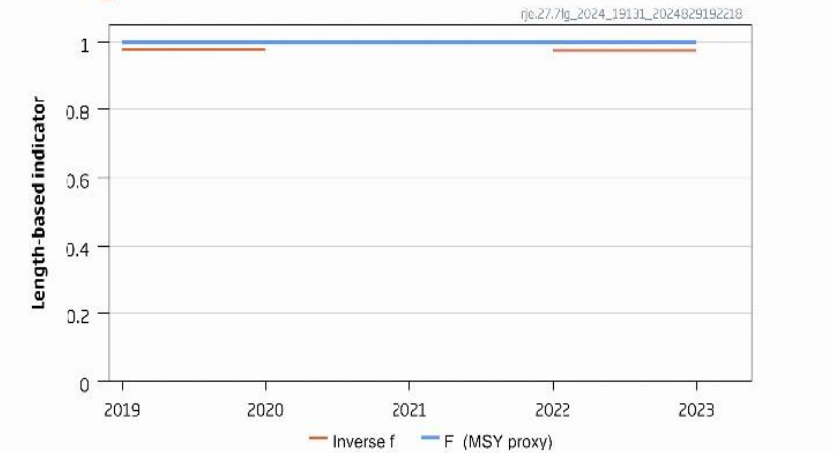
Advice for 2025 and 2026, MSY: 103 t +20%

Landings

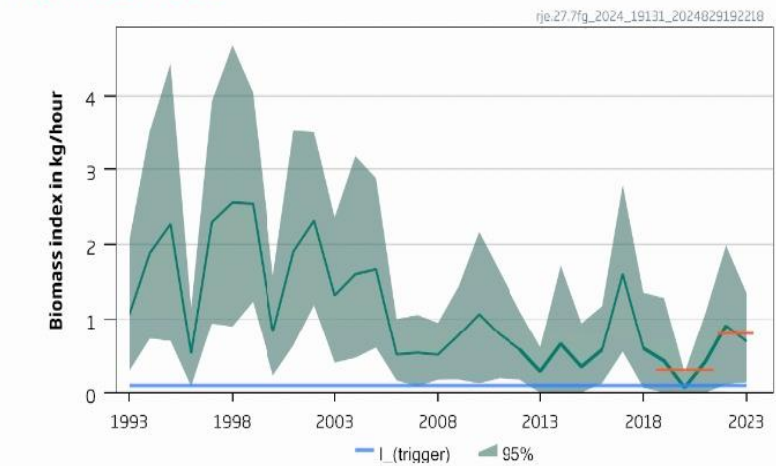


- F below F_{msy} , stock size above trigger
- Landings from 7a and of 'sandy ray' allocated to this stock

Fishing Pressure indicator



Biomass Index



Small-eyed ray Bristol Channel, Celtic Sea North (7fg)

Catch (2023) : 69 t (discards unquantified but known to take place)



Previous landings advice A_y (2023–2024 issued in 2022)	86 tonnes	
Stock biomass trend		
Index A (2022, 2023)	0.80 kg.h ⁻¹	
Index B (2019, 2020, 2021)	0.30 kg.h ⁻¹	
r: stock biomass trend (index ratio A/B)	2.6	
Fishing pressure proxy		
Mean catch length ($L_{\text{mean}} = L_{2022-2023}$)	73.18 cm	
Maximum sustainable yield (MSY) proxy length ($L_{F=M}$)	71.42 cm	
Fishing pressure proxy ($L_{F=M} / L_{\text{mean}}$)	0.98	
f: multiplier for relative mean length in catches ($L_{\text{mean}} / L_{F=M}$)	1.02	
Biomass safeguard		
Last index value (I_{2023})	0.69 kg.h ⁻¹	
Index trigger value ($I_{\text{trigger}} = I_{\text{loss}} \times 1.4$)	0.095 kg.h ⁻¹	
b: index relative to trigger value, $\min\{I_{2023}/I_{\text{trigger}}, 1\}$	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 **	220	
Stability clause (+20%/-30% compared to A_y , only applied if $b \geq 1$)	Applied	1.2
Discard rate	Unquantified	
Landings advice for 2025/26	103 tonnes	
% advice change***	+20%	

Category 3 – rfb rule

Stability cap applied

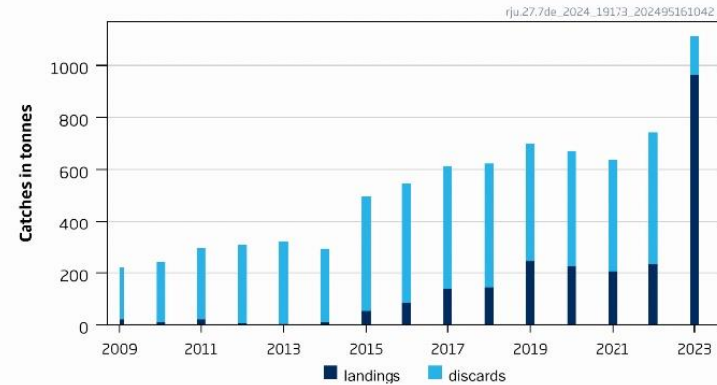
RFB calculation:

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

Undulate ray English Channel (7de)

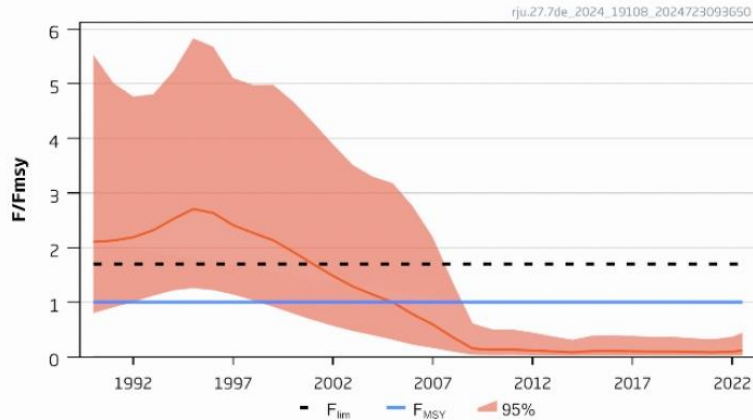
Advice for 2025 and 2026, MSY: 4821 t and 4637 t +3% (2025)

Catches

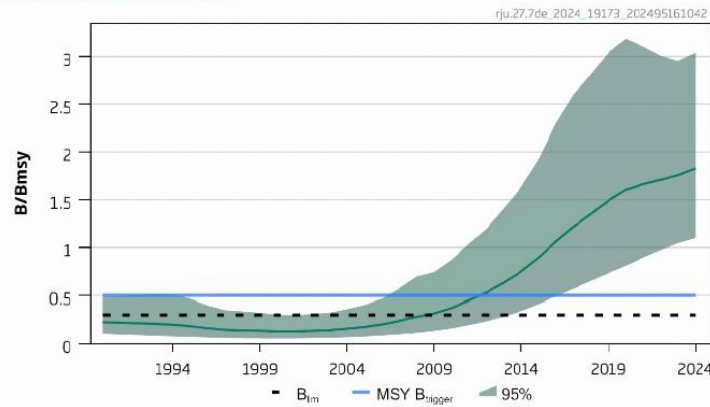


- F below F_{msy} , Biomass above $MSYB_{trigger}$
- Implied landings of 3784 and 3639 t based on 2023 discard data

Relative fishing pressure



Relative Biomass



Undulate ray English Channel (7de)

Catch (2023) : 1814 t (12% discards)

F(2024) = 0.145 * Fmsy (=F2023);

Biomass (2025)= 1.85 * BMSY



SPiCT assessment

Advice based on a proportion of FMSY (15th percentile)
Has become 'standard' for elasmobranchs using SPiCT

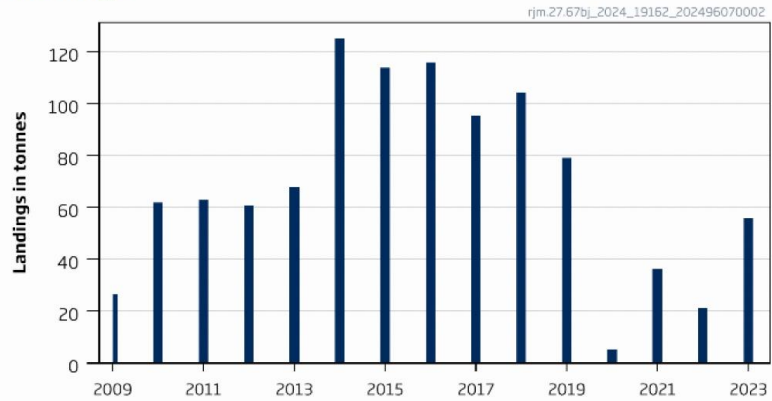
Basis	Total catch (2025)	Fishing mortality F ₂₀₂₅ /F _{MSY}	Stock size B ₂₀₂₆ /B _{MSY}	% B change*	% advice change**	Corresponding landings***
ICES advice basis						
Maximum sustainable yield (MSY) approach (15th percentile of predicted catch distribution under F = F _{MSY})	4 821	0.59	1.77	-4.2	3.1	3 784
Other scenarios						
F = F _{MSY}	8 029	1	1.69	-8.5	72	6 301
F = F ₂₀₂₄	1 218	0.145	1.86	0.69	-74	956
F = 0	0	0	1.89	2.3	-100	0
Catch = 10th percentile of predicted catch distribution under F = F _{MSY}	4 279	0.52	1.78	-3.4	-8.5	3 358
Catch = 20th percentile of predicted catch distribution under F = F _{MSY}	5 301	0.65	1.76	-4.8	13.4	4 160
Catch = 35th percentile of predicted catch distribution under F = F _{MSY}	6 633	0.82	1.72	-6.6	42	5 206

Basis	Total catch (2026)	Fishing mortality F ₂₀₂₆ /F _{MSY}	Stock size B ₂₀₂₇ /B _{MSY}	% B change*	% advice change**	Corresponding landings***
ICES advice basis						
Maximum sustainable yield (MSY) approach (15th percentile of predicted catch distribution under F = F _{MSY})	4 637	0.59	1.71	-3.4	-3.8	3 639
Other scenarios						
F = F _{MSY}	7 402	1	1.57	-11.3	54	5 809
F = F ₂₀₂₄	1 225	0.145	1.87	5.7	-75	961
F = 0	0	0	1.92	8.8	-100	0
Catch = 10th percentile of predicted catch distribution under F = F _{MSY}	4 145	0.52	1.73	-2.1	-14.0	3 253
Catch = 20th percentile of predicted catch distribution under F = F _{MSY}	5 068	0.65	1.69	-4.6	5.1	3 977
Catch = 35th percentile of predicted catch distribution under F = F _{MSY}	6 230	0.82	1.63	-7.9	29	4 889

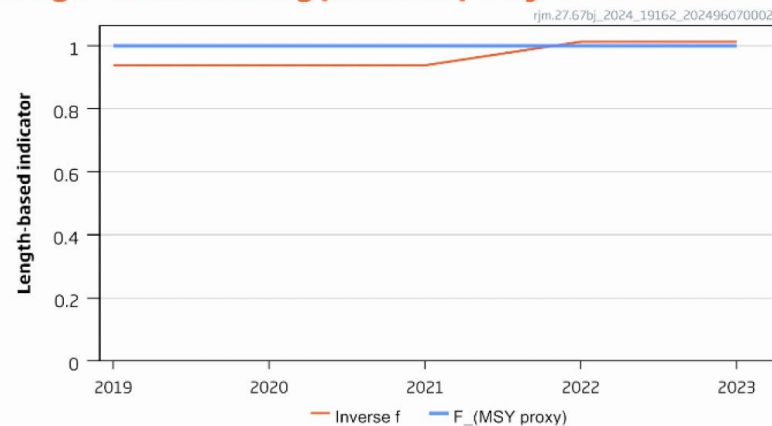
Spotted ray West of Scotland, west & southwest of Ireland (7bj)

Advice for 2025 and 2026, MSY: 32 t each year -11% landings

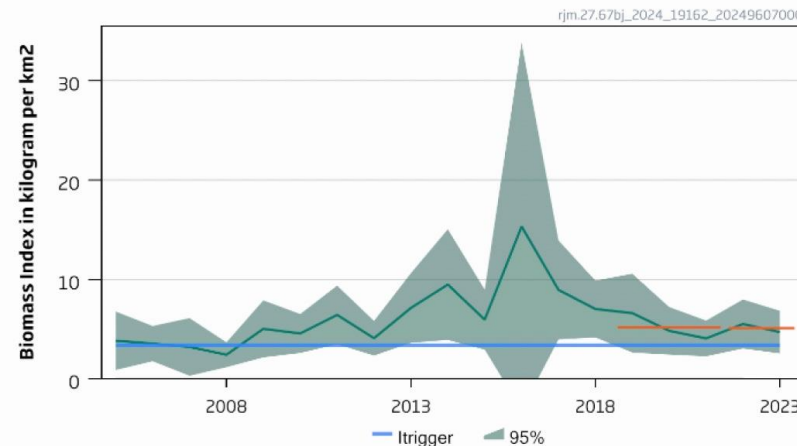
Landings



Length-based fishing pressure proxy



Biomass index



- F at Fmsy, stock size above trigger
- Skates and rays managed under single TAC - prevents effective control of single-stock exploitation rates and could lead to overexploitation of some species.

Spotted ray West of Scotland, west & southwest of Ireland (7bj)

Catch (2023) : 56 t (discards unquantified but known to take place)



10

Previous landings advice A_y (2023–2024 issued in 2022)	36 tonnes	
Stock biomass trend		
Index A (2022–2023)	5.09 kg km ⁻²	
Index B (2019, 2020, 2021)	5.15 kg km ⁻²	
r: stock biomass trend (index ratio A/B)	0.99	
Fishing pressure proxy		
Mean survey length ($L_{\text{mean}} = L_{2023}$)	53.26 cm	
Maximum sustainable yield (MSY) proxy length ($L_{F=M}$)	53.35 cm	
Fishing pressure proxy ($L_{F=M} / L_{\text{mean}}$)	1.00	
f: multiplier for relative mean length in catches ($L_{\text{mean}} / L_{F=M}$)	1.00	
Biomass safeguard		
Last index value (I_{2023})	4.68 kg km ⁻²	
Index trigger value ($I_{\text{trigger}} = I_{\text{loss}} \times 1.4$)	3.38 kg km ⁻²	
b: index relative to trigger value, $\min\{I_{2023} / I_{\text{trigger}}, 1\}$	1	
Precautionary multiplier to maintain biomass above B_{lim} with 95% probability		
m: multiplier (generic multiplier based on life history)	0.90	
RFB calculation	32 tonnes	
Stability clause (+20%/–30% compared to A_y , only applied if $b \geq 1$)	Not Applied	
Discard rate	Unquantified	
Landings advice for 2025–2026**	32 tonnes	
% advice change***	–11 %	

Category 3 – rfb rule

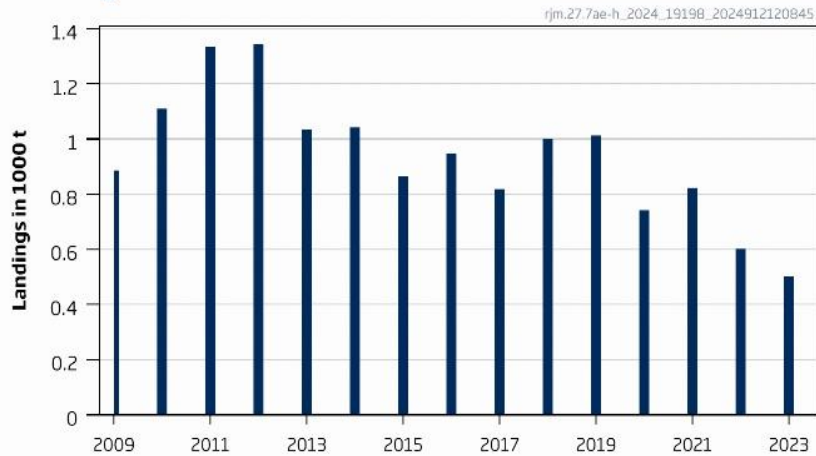
rfb calculation:

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

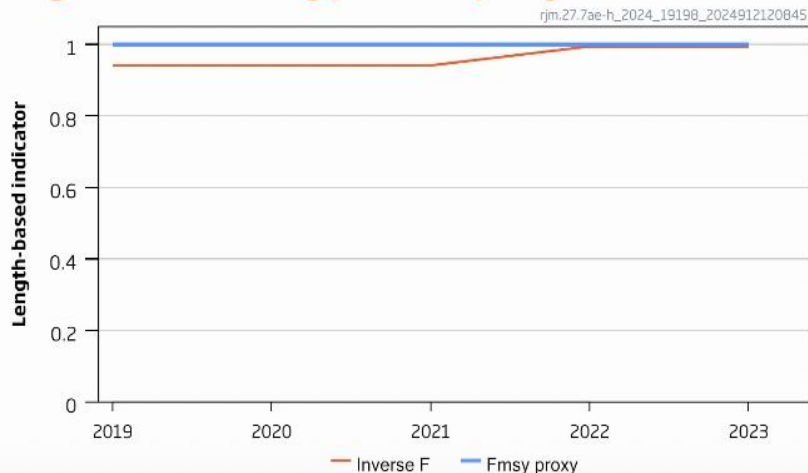
Spotted ray southern Celtic Seas and western English Channel (7a,e-h)

Advice for 2025 and 2026, MSY: 757 t each year -7% landings

Landings



Length-based fishing pressure proxy



Biomass Index



- F at Fmsy, stock size above trigger
- Skates and rays managed under single TAC - prevents effective control of single-stock exploitation rates and could lead to overexploitation of some species.

Spotted ray southern Celtic Seas and western English Channel (7a,e-h)

Catch (2023) : 502 t (discards unquantified but known to take place)



Table 1 Spotted ray in divisions 7.a and 7.e–h. The basis for the catch scenarios. Landings are in tonnes. *

Previous landings advice A_y (2023–2024 issued in 2022)	814 tonnes	
Stock biomass trend		
Index A (2022,2023)	0.52 kg h ⁻¹	
Index B (2019, 2021)**	0.51 kg h ⁻¹	
r: stock biomass trend (index ratio A/B)	1.03	
Fishing pressure proxy		
Mean catch length ($L_{mean} = L_{2022-2023}$)	49.11 cm	
Maximum sustainable yield (MSY) proxy length ($L_{F=M}$)	48.85 cm	
Fishing pressure proxy ($L_{F=M} / L_{mean}$)	0.99	
f: multiplier for relative mean length in catches ($L_{mean} / L_{F=M}$)	1.01	
Biomass safeguard		
Last index value (I_{2023})	0.43 kg h ⁻¹	
Index trigger value ($I_{trigger} = I_{loss} \times 1.4$)	0.20 kg h ⁻¹	
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)	0.90	
RFB calculation***	757 tonnes	
Stability clause (+20%/-30% compared to A_y , only applied if $b \geq 1$)	Not applied	
Discard rate	Unquantified	
Landings advice for 2025–2026	757 tonnes	
% advice change^	-7%	

Category 3 – rfb rule

rfb calculation:

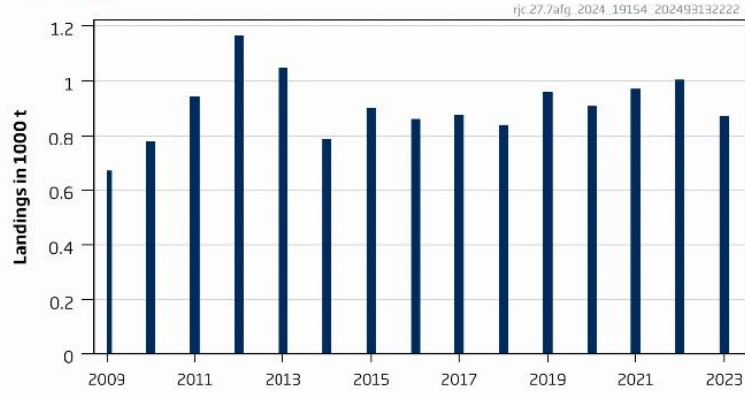
$$A_{y+1} = A_y \times r \times f \times b \times m$$

Thornback ray southern Irish Sea, Bristol Channel, Celtic Seas North(7a,fg)

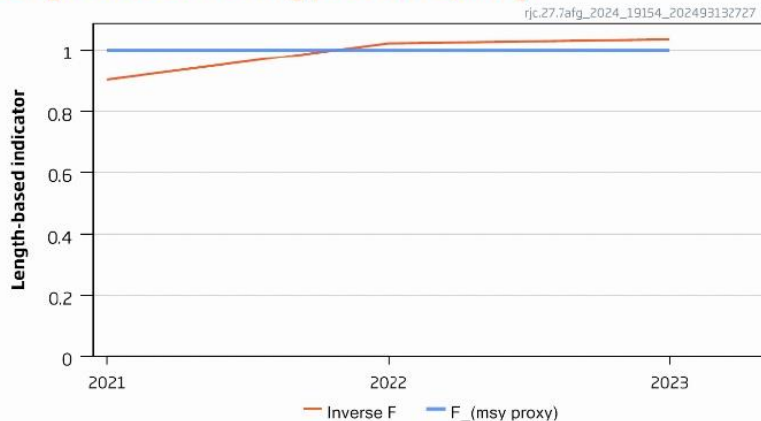
Advice for 2025 and 2026, MSY: 1699 t each year -7.3% landings



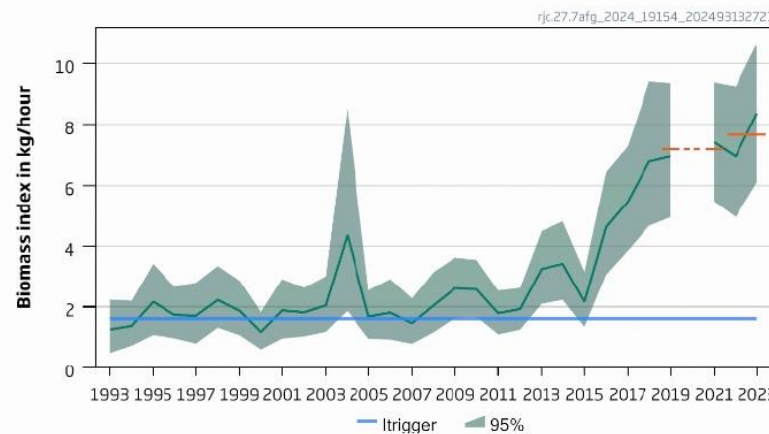
Landings



Length-based fishing pressure proxy



Biomass index



- F above F_{msy} , stock size above trigger
- Skates and rays managed under single TAC - prevents effective control of single-stock exploitation rates and could lead to overexploitation of some species.

Thornback ray southern Irish Sea, Bristol Channel, Celtic Seas North(7a,fg)

Catch (2023) : 872 t (discards unquantified but known to take place)



Table 1 Thornback ray in divisions 7.a and 7.f–g. The basis for the catch scenarios*.

Previous landings advice A_y (2023-2024 issued in 2022)	1833 tonnes	
Stock biomass trend		
Index A (2022, 2023)	7.67 kg hr ⁻¹	
Index B (2019, 2021)	7.19 kg hr ⁻¹	
r: stock biomass trend (index ratio A/B)	1.07	
Fishing pressure proxy		
Mean catch length ($L_{mean} = L_{2023}$)	52.38 cm	
MSY proxy length ($L_{F=M}$)	54.25 cm	
Fishing pressure proxy ($L_{F=M} / L_{mean}$)	1.04	
f: multiplier for relative mean length in catches ($L_{mean} / L_{F=M}$)	0.97	
Biomass safeguard		
Last index value (I_{2023})	8.37 kg hr ⁻¹	
Index trigger value ($I_{trigger} = I_{loss} \times 1.4$)	1.63 kg hr ⁻¹	
b: index relative to trigger value, $\min\{I_{2023}/I_{trigger}, 1\}$	1.00	
Precautionary multiplier to maintain biomass above B_{lim} with 95% probability		
m: multiplier (generic multiplier based on life history)	0.90	
RFB calculations**	1699 tonnes	
Stability clause (+20%/-30% compared to A_y , only applied if $b \geq 1$)	Not applied	-
Discard rate	Unquantified	
Landings advice for 2025–2026	1699	
% advice change***	-7.3%	

Category 3 – rfb rule

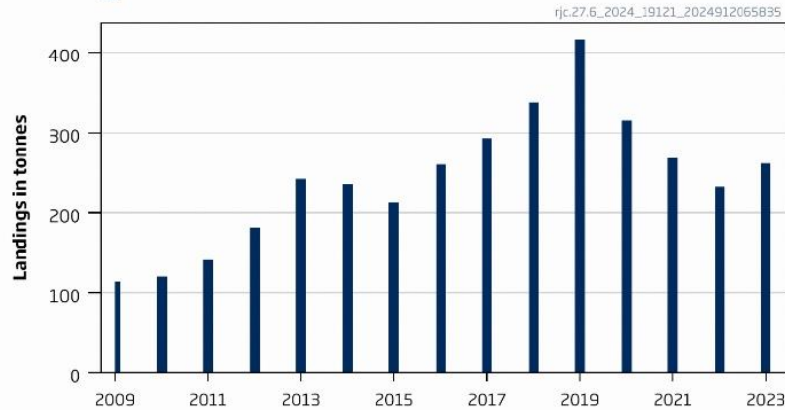
rfb calculation:

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

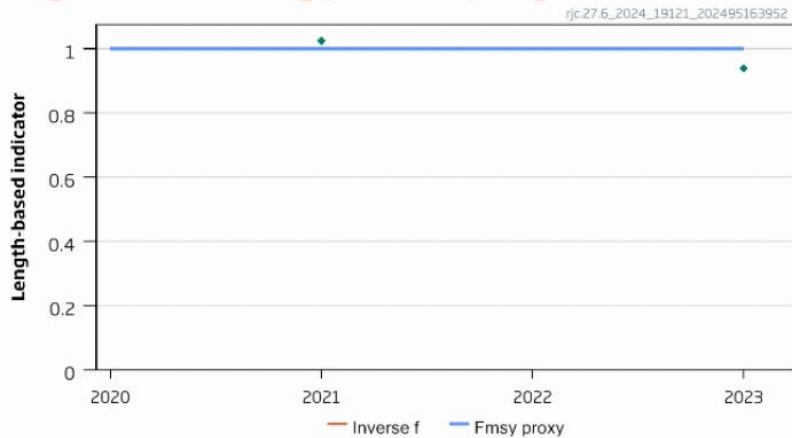
Thornback ray West of Scotland (6)

Advice for 2025 and 2026, MSY: 67 t each year -30% landings

Landings



Length-based fishing pressure proxy



Biomass Index



- F below Fmsy, stock size above trigger
- Skates and rays managed under single TAC - could lead to overexploitation of some species
- Index decreased by 60% so 30% stability clause applied

Thornback ray West of Scotland (6)

Catch (2023) : 261 t (discards unquantified but known to take place)

Table 1 Thornback ray in Subarea 6. The basis for the catch scenarios. Landings are in tonnes. *

Previous landings advice A_y (2023- 2024 Issued in 2022)	96 tonnes	
Stock biomass trend		
Index A (2022,2023)	6.67 kg km ⁻²	
Index B (2019, 2020, 2021)	10.68 kg km ⁻²	
r: stock biomass trend (index ratio A/B)	0.62	
Fishing pressure proxy		
Mean catch length ($L_{mean} = L_{2022-2023}$)	58.74 cm	
MSY proxy length ($L_{F=M}$)	52.75 cm	
Fishing pressure proxy ($L_{F=M} / L_{mean}$)	0.90	
f: multiplier for relative mean length in catches ($L_{mean} / L_{F=M}$)	1.11	
Biomass safeguard		
Last index value (I_{2023})	6.1 kg km ⁻²	
Index trigger value ($I_{trigger} = I_{loss} \times 1.4$)	5.2 kg km ⁻²	
b: index relative to trigger value, $\min\{I_{2023}/I_{trigger}, 1\}$	1.00	
Precautionary multiplier to maintain biomass above B_{lim} with 95% probability		
m: multiplier (generic multiplier based on life history)	0.90	
RFB calculation**	58 tonnes	
Stability clause (+20%/-30% compared to A_y , only applied if $b \geq 1$)	Applied	0.7
Discard rate	Not available	
Landings advice for 2025–2026 ***	67 tonnes	
% advice change ^	-30%	

Category 3 – rfb rule

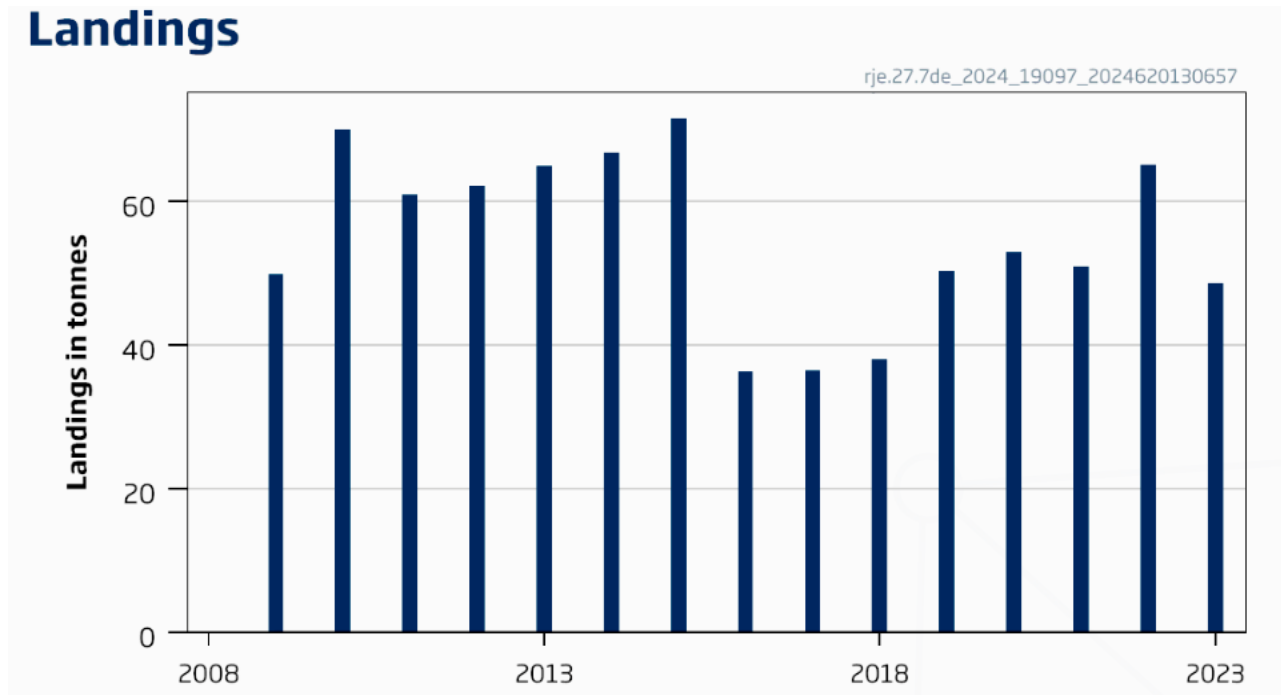
rfb calculation:

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

Stability clause applied

Advice for 2025-2028, PA: 32 t landings in each year-no change

Landings



- Category 5 – no information on abundance or exploitation
- PA buffer not applied (applied in 2022)
- Skates and rays managed under single TAC - prevents effective control of single-stock exploitation rates and could lead to overexploitation of some species.

Small-eyed ray English Channel (7de)

Landings (2023) : 49 t (discards unquantified but known to take place)

Table 1 Small-eyed ray in divisions 7.d–e. The basis for the catch scenarios.

Advised landings for 2023–2024 (issued in 2022)		32 tonnes
Discard rate		Unquantified
Precautionary buffer	Not applied	-
Landings advice *		32 tonnes
% advice change **		0%

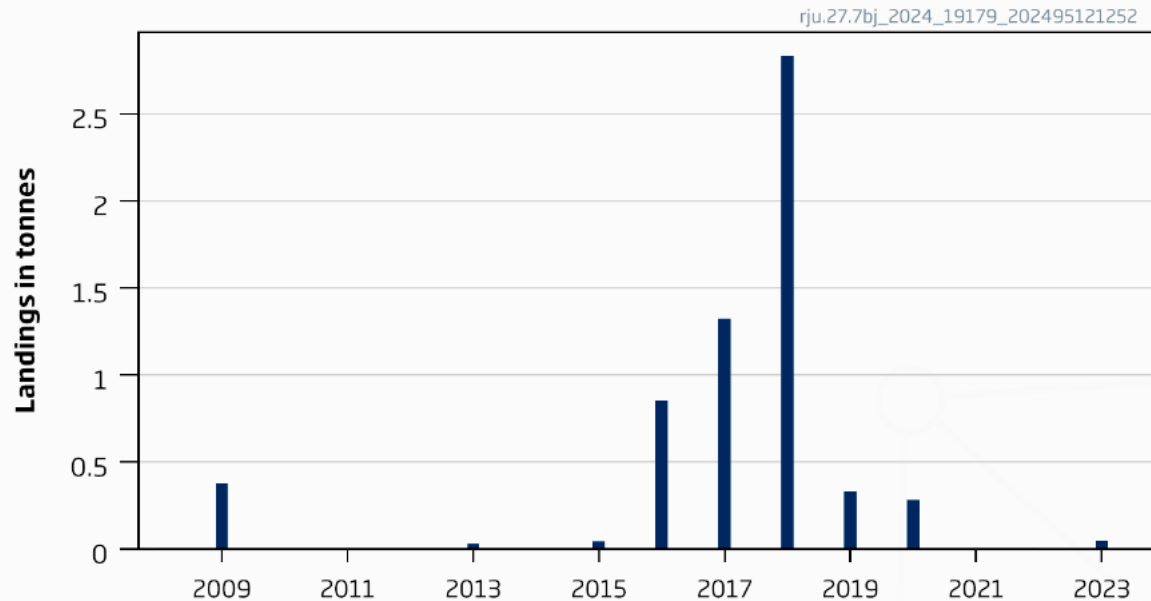
Landings from 4c and of ‘sandy ray’ have been allocated to this stock

Advice will be for 4 years until more information (catch and survey data) is available

Undulate ray west and southwest of Ireland (7bj)

Advice for 2025-2028, PA: 0 t (no change)

Landings



- Can not assess stock status
- Listed as endangered IUCN
- Found in shallow coastal areas – sensitive to habitat degradation
- Listed as species that ‘should not be retained’

Undulate ray west and southwest of Ireland (7bj)

Catch (2023) : 0.04 t (discards unquantified)

Table 1 Undulate ray in divisions 7.b and 7.j. The basis for the catch scenarios.

Advised catches for 2023–2024 issued in 2022		0 tonnes
Discard rate		Unknown
Precautionary buffer	Not applied	-
Catch advice*		0 tonnes
% advice change**		0%

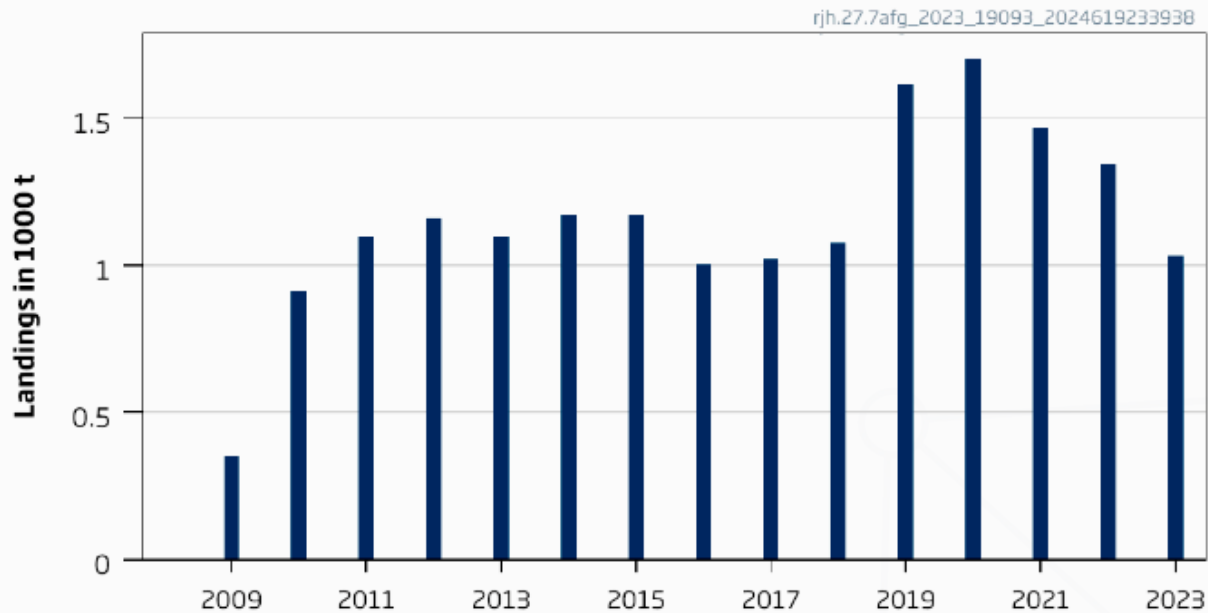
* Catch advice for 2025–2028

No assessment

Blonde ray Irish Sea, Bristol Channel, Celtic Sea North (7afg)

Advice for 2025-2028, Pa: landings 573 t in each year – no change

Landings



- Can not assess stock status
- Can not quantify catches
- Category 5 – no information on abundance or exploitation
- PA buffer not applied – applied in 2022
- Skates and rays combined TAC – could lead to over exploitation of some stocks

Blonde ray Irish Sea, Bristol Channel, Celtic Sea North (7afg)

Landings (2023) : 1034 t (discards and catch unquantified)

Table 1 Blonde ray in divisions 7.a and 7.f–g. The basis for the catch scenarios.

Advised landings for 2023–2024 (issued in 2022)		573 tonnes
Discard rate		Unknown
Precautionary buffer	Not applied	-
Landings advice*		573 tonnes
% advice change**		0%

* Advised landings for 2025–2028

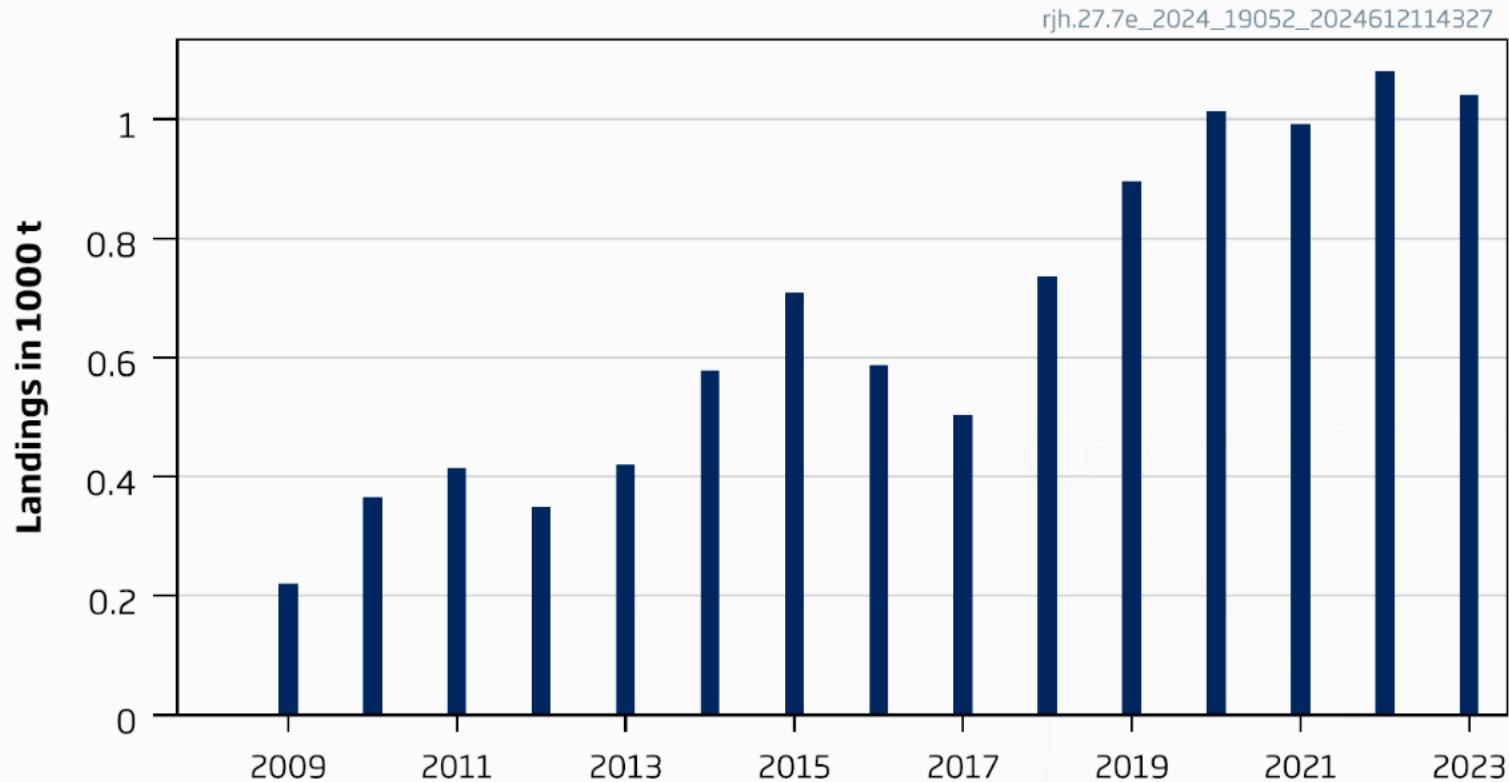
No assessment

Advice will be for 4 years until more information (catch and survey data) is available

Blonde ray Western English Channel (7e)

Advice for 2025-2028, PA: landings 213 t in each year – no change

Landings



- Can not assess stock status
- Can not quantify catches
- Category 5 – no information on abundance or exploitation
- PA buffer not applied – applied in 2022
- Skates and rays combined TAC – could lead to over exploitation of some stocks

Blonde ray Western English Channel (7e)

Landings (2023) : 1041 t (discards and catch unquantified)

Table 1 Blonde ray in Division 7.e. The basis for the catch scenarios.

Advised landings for 2023–2024 (issued in 2022)		213 tonnes
Discard rate		Unknown
Precautionary buffer	Not applied (last applied in 2022)	-
Landings advice*		213 tonnes
% advice change**		0 %

* Advised landings for 2025–2028

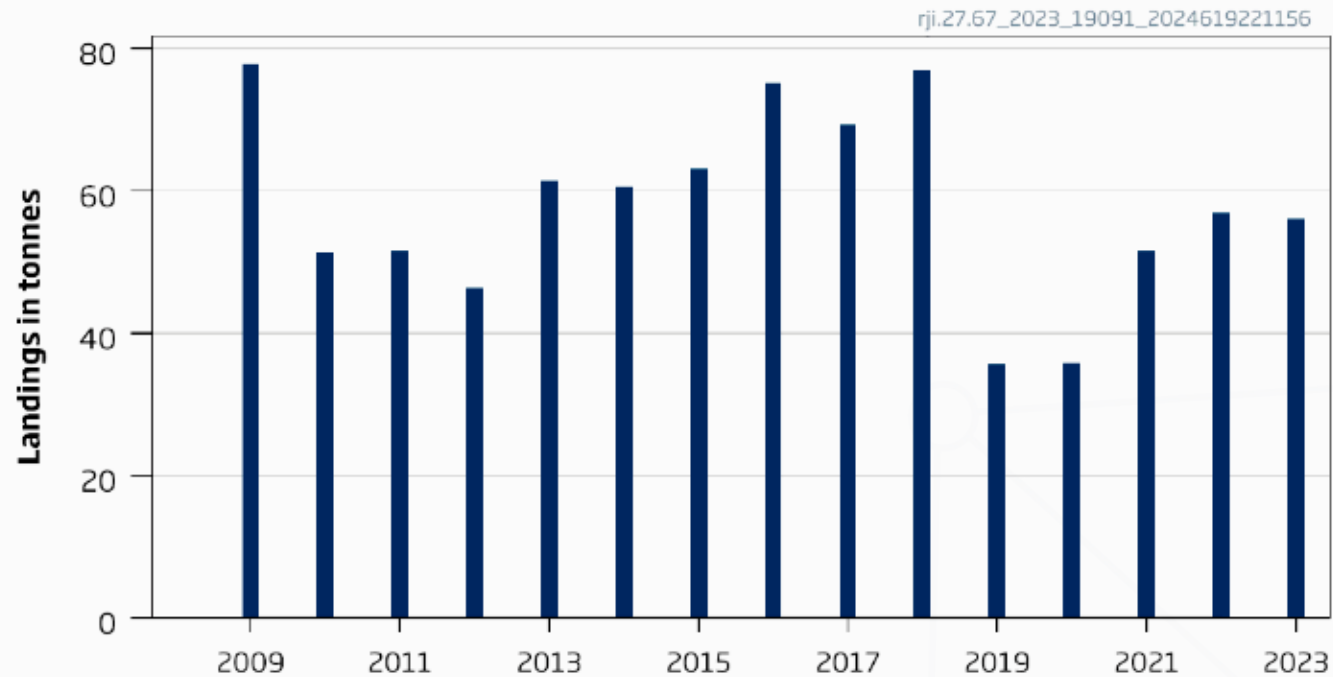
No assessment

Advice will be for 4 years until more information (catch and survey data) is available

Sandy ray West of Scotland, Celtic Seas south, English Channel (6-7)

Advice for 2025-2028, PA: landings 27 t in each year – no change

Landings



- Can not assess stock status
- Can not quantify catches
- Category 5 – no information on abundance or exploitation
- PA buffer not applied – applied in 2022
- Skates and rays combined TAC – could lead to over exploitation of some stocks

Sandy ray West of Scotland, Celtic Seas south, English Channel (6-7)

Landings (2023) : 56 t (discards and catch unquantified)

Table 1 Sandy ray in Subareas 6–7. The basis for the catch scenarios.

Advised landings for 2023–2024 issued in 2022		27 tonnes
Discard rate		Unknown
Precautionary buffer	Not applied	-
Landings advice*		27 tonnes
% advice change**		0%

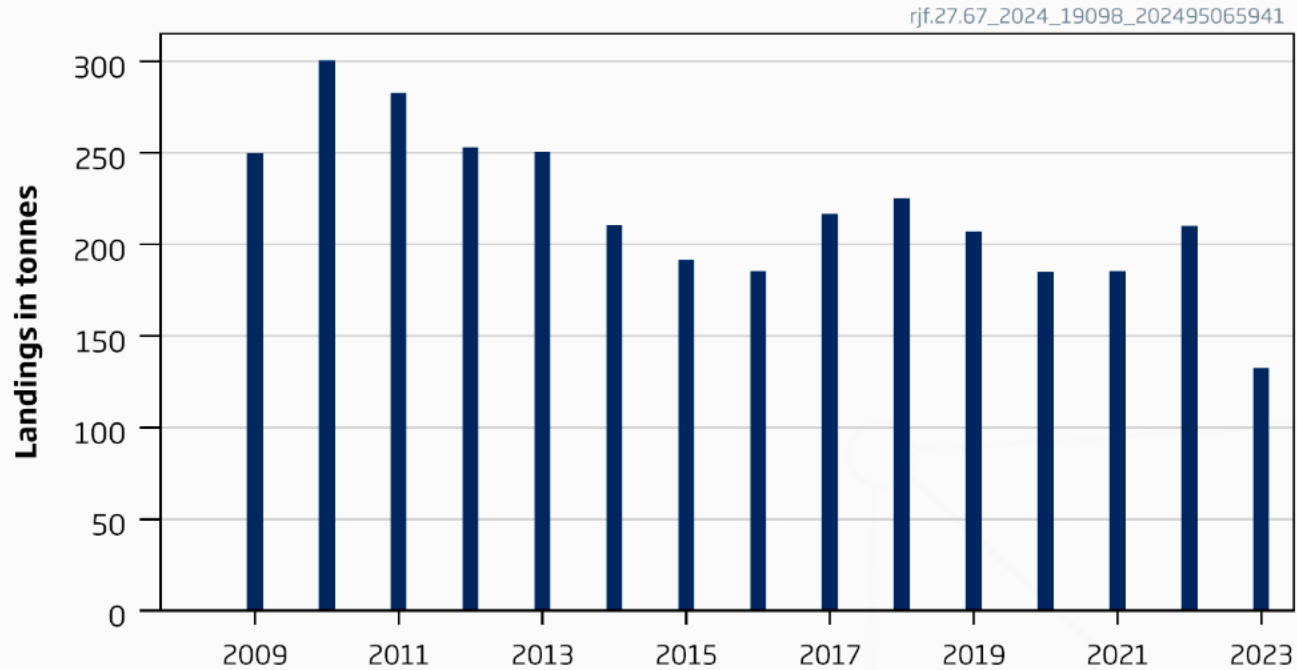
No assessment

Advice will be for 4 years until more information (catch and survey data) is available

Shagreen ray West of Scotland, Celtic Seas south, English Channel (6-7)

Advice for 2025-2028, PA: landings 134 t in each year – no change

Landings



- Can not assess stock status
- Can not quantify catches
- Category 5 – no information on abundance or exploitation
- PA buffer not applied – applied in 2022
- Skates and rays combined TAC – could lead to over exploitation of some stocks

Shagreen ray West of Scotland, Celtic Seas south, English Channel (6-7)

Landings (2023) : 133 t (discards and catch unquantified)

Table 1 Shagreen ray in subareas 6–7. The basis for the catch scenarios.

Advised landings for 2023–2024 issued in 2022		134 tonnes
Discard rate		Unknown
Precautionary buffer	Not applied	--
Landings advice*		134 tonnes
% advice change**		0 %

* Advice for 2025–2028

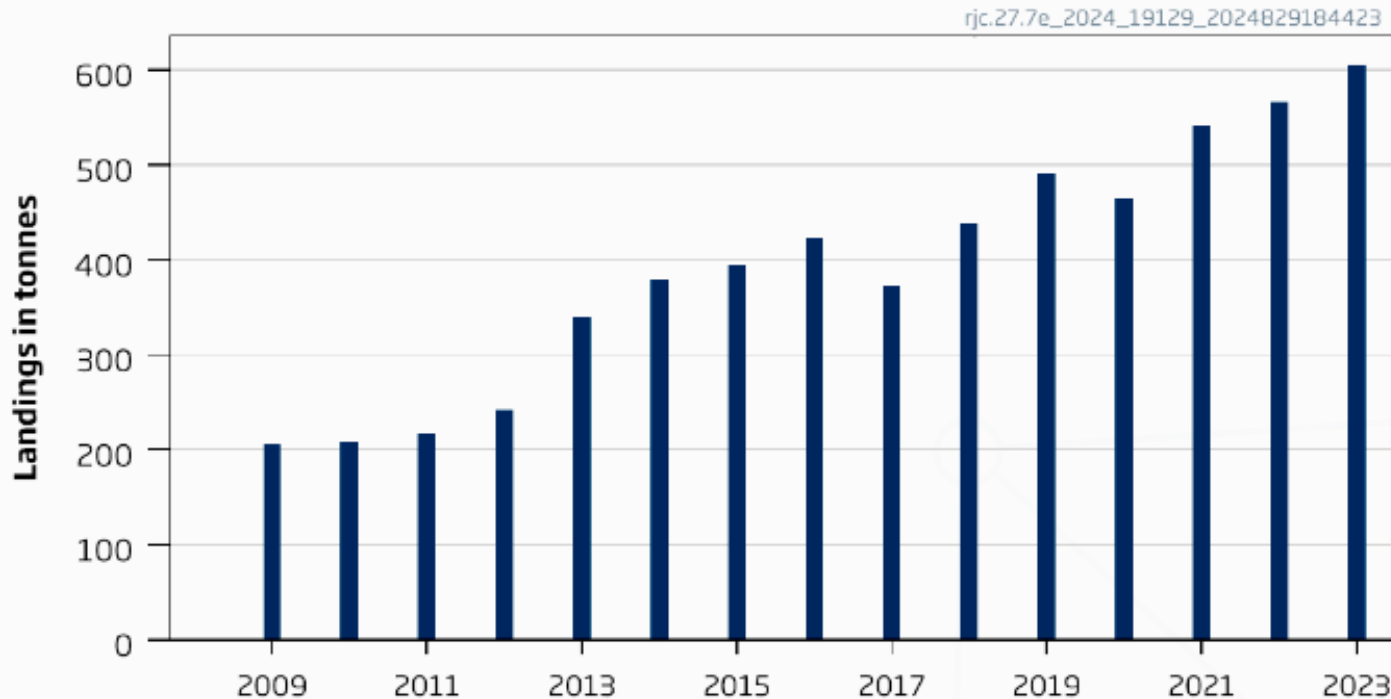
No assessment

Advice will be for 4 years until more information (catch and survey data) is available

Thornback ray western English Channel (7e)

Advice for 2025-2028, PA: landings 170 t in each year – no change

Landings



- Can not assess stock status
- Can not quantify catches
- Category 5 – no information on abundance or exploitation
- PA buffer not applied – decrease in effort but increasing catch
- Skates and rays combined TAC – could lead to over exploitation of some stocks

Thornback ray western English Channel (7e)

Landings (2023) : 605 t (unquantified but known to take place)

Table 1 Thornback ray in Division 7.e. The basis for the catch scenarios.

Advised landings for 2023–2024 issued in 2022		170 tonnes
Discard rate		Unquantified
Precautionary buffer	Not applied	-
Landings advice*		170 tonnes
% advice change**		0%

* Advised landings (2023–2024)

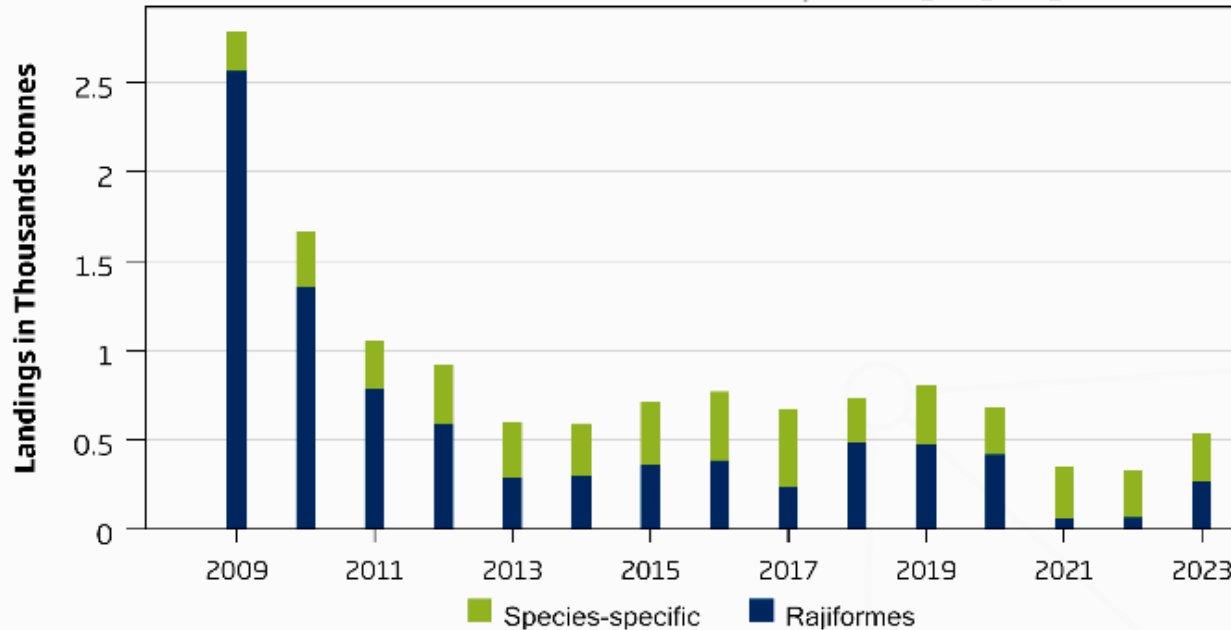
No assessment

Advice will be for 4 years until more information (catch and survey data) is available

Advice for 2025-2028, ICES can not provide advice

Landings

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- Lack of survey and catch data
- Species specific landings data should be improved
- Skates and rays combined TAC – could lead to over exploitation of some stocks
- 540 t of catch 2023

Advice for 2025-2028, PA: zero catch

- Complex is blue skate (*Dipturus batis*) and flapper skate (*Dipturus intermedius*)
- Can not assess status
- All dipturus species are large bodied - low productivity
- Depletion and range contraction known to have occurred
- Listed as critically endangered by IUCN
- 5 t of catch 2023

Where to find these:

ICES library

<https://ices-library.figshare.com/>

I find works best to search stock code

e.g. rju.27.7de

<https://ices-taf.shinyapps.io/advicexplorer/>



**Thank you
for your
attention!**



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CIEM

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Science for sustainable seas

