13.11 SWO-AT-Atlantic swordfish (Xiphias gladius)

Introduction

The status of the North and South Atlantic swordfish stocks was assessed in 2022, by means of applying statistical modelling to the available data up to 2020. Complete information on the data availability and assessment can be found in the Report of the 2022 ICCAT Atlantic Swordfish Data Preparatory Session (Anon., 2022d) and Report of the 2022 ICCAT Atlantic Swordfish Stock Assessment Meeting (Anon., 2022e). A summary of both stock status is provided below (**Tables 1a and 1b**). **Table 2** provides estimated catches and discards by gear, for the period 2000-2024. The Kobe Phase Plots and uncertainty of current status estimates are summarized in **Figure 1**. **Table 3** provides estimated probabilities (%) that both the fishing mortality will be below F_{MSY} and spawning stock biomass will be above SSB_{MSY} in future years under different constant catch scenarios.

Table 1a. North Atlantic swordfish summary table.

Indicator		***Stock Status***
Maximum Sustainable Yield (MSY)	12,819 t (10,864 t - 15,289 t)[1]	2020
TAC (2024)	13,200 t	
Current (2024) Yield	11,001 t[2]	
Relative Biomass (B_{2020}/B_{MSY})	1.08 (0.71-1.33)[3]	
Relative Fishing Mortality (F_{2020}/F_{MSY})	0.80 (0.64-1.24)[3]	
Stock Status	Overfished: NO (37.1% probability of being overfished)[4] Overfishing: NO (14.7% probability of overfishing)[4]	
Management measure in effect	Rec. 24-10 TAC (2025): 14,769 t	
Managed according to a Management Procedure: Recommended TAC for the period 2025-2027 of 14,769 t		

[1] Median from base case JABBA and Stock Synthesis models; range corresponding to the lowest and highest 95% CIs from the two models.
[2] Provisional as of 27 September 2025 and subject to revision.
[3] Median and 95% quantiles from base case Stock Synthesis and JABBA models.
[4] As estimated from the Kobe plot probability in each quadrant.

Table 1b. South Atlantic swordfish summary table.

Indicator		***Stock Status***
Maximum Sustainable Yield (MSY)	11,481 t (9,793 t-13,265 t)[1]	2020
TAC (2024)	10,000 t	
Current (2024) Yield	9,264 t[2]	
Relative Biomass (B_{2020}/B_{MSY})	0.77 (0.53-1.11)[3]	
Relative Fishing Mortality (F_{2020}/F_{MSY})	1.03 (0.67-1.51)	
Stock Status	Overfished: YES (91.5% probability of being overfished)[4] Overfishing: YES (55.6% probability of overfishing)[4]	
Management measures in effect	Country-specific TACs, Rec. 22-04	

[1] Median and 95% CIs from base case JABBA model.
[2] Provisional as of 27 September 2025 and subject to revision.
[3] Median and 95% quantiles from base case JABBA model.
[4] As estimated from the Kobe plot probability in each quadrant.

Table 2. Estimated catches and discards of Atlantic swordfish by stock, gear and country, for the period 2000-2024.

				2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
TOTAL				27181	25139	23758	24078	25153	25544	25724	27935	23472	24814	24267	23914	24576	21282	20678	21103	21116	20837	19414	20339	19389	19287	19034	20581	20266
	ATN			11453	10011	9654	11444	12071	12378	11528	12306	11102	12146	11672	12709	13890	12078	10708	10758	10505	10300	9026	10248	10450	9787	10275	12215	11001
	ATS			15728	15128	14104	12634	13082	13165	14196	15629	12370	12668	12596	11205	10686	9204	9970	10345	10611	10537	10388	10091	8939	9500	8759	8366	9264
Landings	ATN		Longline	10520	8678	8799	10334	11410	11529	10896	11479	10394	11504	11077	11796	12976	11366	10090	10200	9917	9466	8403	9343	9747	9169	9745	11603	10291
			Other surf.	393	432	240	486	341	516	409	546	465	485	441	511	512	513	463	391	483	684	470	600	590	517	459	537	620
	ATS		Longline	15448	14302	13576	11714	12558	12917	13984	15318	11980	12301	12087	10854	10255	8958	9736	10047	10461	10281	10323	9975	8814	9323	8622	8213	9101
			Other surf.	278	826	527	920	523	248	212	221	384	368	361	277	291	246	189	254	148	145	36	65	66	47	52	43	105
Discards	ATN		Longline	539	896	607	618	313	323	215	273	235	151	148	392	391	199	156	167	105	149	152	304	113	99	68	74	70
			Other surf.	1	6	8	5	7	10	8	8	9	7	5	9	10	0	0	0	0	0.4	0.5	1	0.2	2	3	1	20
	ATS		Longline	1	0.1	0.3	0.4	1	0	0	91	6	0	147	74	140	0	46	43	2	111	26	50	57	128	85	110	58
			Other surf.	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	0	0	
Landings	ATN	CP	Barbados	13	19	10	21	25	44	39	27	39	20	13	23	21	16	21	29	20	21	18	10	12	13	8	9	8
			Belize	0	0	0	0	0	0	0	9	1	112	106	184	141	142	76	1	3	59	145	117	111	121	70	77	68
			Brazil	117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80
			Cabo Verde	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	**0**
			Canada	968	1079	959	1285	1203	1558	1404	1348	1334	1300	1346	1551	1489	1505	1604	1579	1548	1188	782	995	1334	1377	1342	1923	1673
			China PR	22	102	90	316	56	106	72	85	92	92	73	75	59	96	60	141	135	81	87	92	96	44	38	105	103
			Costa Rica	1	0.3	0	1	4	3	2	4	11	6	11	23	21	22	30	34	26	44	43	23	19	51	26	27	39
			Cuba	0	0	10	3	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Curaçao	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	**0**
			Côte d'Ivoire	0	0	0	0	0	0	0	0	0	25	30	0	0	0	0	0	0	0	0	0	26	8	17	0	2
			EU-España	4595	3968	3957	4586	5376	5521	5448	5564	4366	4949	4147	4889	5622	4084	3750	4013	3916	3586	3186	3112	3587	3235	3717	4957	4593
			EU-France	122	0	74	169	102	178	92	46	14	15	35	16	94	44	28	68	90	79	80	82	90	103	120	163	265
			EU-Germany	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	**0**
			EU-Ireland	35	17	5	12	1	1	3	2	2	1	2	2	5	2	3	15	15	10	13	3	24	9	22	31	61
			EU-Netherlands	0	0	0	0	0	0	0	0	0.1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**0**
			EU-Portugal	732	735	766	1032	1320	900	949	778	747	898	1054	1203	882	1438	1241	1420	1460	1871	1691	2392	2070	2165	1750	1967	1429
			El Salvador	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	**0**
			FR-St Pierre et Miquelon	0	0	10	3	36	48	0	82	48	17	90	1	0	18	3	0	0	0	0	0	0	0	78	0	**0**
			Great Britain	1	0	0.1	0	0	0	49	0.2	0	2	0.3	0	0.2	0.0	0	0.2	0	0.2	0	0.1	0.0	0.2	0	0	**0**
			Grenada	84	0	54	88	73	56	30	26	43	0	0	0	0	0	0	39	29	36	36	22	15	4	7	16	7
			Guatemala	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
			Iceland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	**0**
			Japan	759	0	0	0	575	705	656	889	935	778	1062	523	639	300	545	430	379	456	325	355	406	311	431	448	548
			Korea Rep	0	0	0	0	0	51	65	175	157	3	0	0	0.0	64	35	0	9	19	9	9	14	13	17	20	18
			Liberia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	95	3	7	7	8	0.5	1	3
			Maroc	114	523	223	329	335	339	341	237	430	724	968	782	770	1062	1062	850	900	900	950	950	936	955	1085	1145	887
			Mexico	37	27	34	32	44	41	31	35	34	32	35	38	40	33	32	31	36	64	44	30	21	25	22	26	20
			Norway	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	**0**
			Philippines	0	1	4	44	5	0	8	0	22	28	0	17	37	9	14	0	0	0	0	0	0	0	0	0	**0**
			Russian Federation	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
			Senegal	0	0	0	0	0	0	0	38	41	87	113	148	44	43	49	78	146	112	89	121	33	6	0	54	17
			Sierra Leone	2	2	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	
			St Vincent and Grenadines	0.1	22	22	7	7	7	7	51	7	34	13	11	8	4	40	102	33	46	26	12	7	0	2	0	**0**
			Trinidad and Tobago	41	75	92	78	83	91	19	29	48	30	21	16	14	16	26	17	13	36	3	6	8	6	6	1	4
			UK-Bermuda	3	2	0.4	0.5	0.5	0.5	0.5	3	4	3	3	3	1	1	1	1	2	1	2	2	6	5	3	4	4
			UK-British Virgin Islands	0	0	0	0	4	4	7	0	3	0	0	4	0	0	0.4	0.3	0	0	0	0	0	0.4	0	0	
			UK-Turks and Caicos	0	0	0	0	0	0	0	0.2	0	0	0	0	0	13	17	0	0	0	0	0	0	0	0	0	**0**
			USA	2863	2217	2384	2513	2380	2160	1873	2463	2387	2730	2274	2551	3393	2824	1809	1581	1408	1294	1135	1449	1351	1142	1281	954	846
			Venezuela	44	21	34	45	53	55	22	30	11	13	24	18	25	24	25	40	60	62	38	37	17	15	19	32	39
		NCC	Chinese Taipei	347	299	310	257	30	140	172	103	82	89	88	192	166	115	78	115	148	78	162	115	144	66	145	170	198
			Guyana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	6	10	5	2	5	3	0	0	
		NCO	Dominica	0	1	0	0	0.1	0.2	0.4	0.3	0.3	1	0	0.0	0	0	0.4	0.0	0.1	1	0	0.4	0.1	0	0	0	
			Faroe Islands	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Saint Kitts and Nevis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.3	2	0	1	0	0	0	
			Seychelles	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Sta Lucia	0	0	0	0.2	2	3	0.1	0.4	2	0.3	0.0	0.4	0	0.2	0.1	0.1	0.1	1	0	0	0	0	0.0	0	
			Vanuatu	0	0	0	0	35	29	14	0	0	0	10	23	15	2	4	7	0	0	0	0	0	0	0	0	
	ATS	CP	Angola	0	0	0	0	0	3	0	0	0	0	0	0	0	0	18	0	0	13	0	0	0	45	135	22	32
			Belize	8	0	0	0	0	0	0	120	32	111	121	207	197	136	45	111	176	166	115	55	2	2	2	0	19
			Brazil	4579	4082	2910	2920	2998	3785	4430	4153	3407	3386	2926	3033	2833	2384	2892	2599	2938	2410	2798	2863	2110	2823	2197	1984	2298
			China PR	344	200	423	353	278	93	300	473	470	291	296	248	316	196	206	328	222	302	355	211	89	37	188	109	128
			Curaçao	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	**0**
			Côte d'Ivoire	20	19	19	43	29	31	39	17	24	145	156	58	89	133	68	48	58	41	57	123	19	14	24	4	65
			EU-España	6388	5789	5741	4527	5483	5402	5300	5284	4073	5183	5801	4700	4852	4184	4113	5059	4992	4656	4404	4224	4442	4470	3592	4092	4661
			EU-France	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	4	0	0.2	0	0	0.2	**0**
			EU-Portugal	392	393	380	354	345	493	440	428	271	367	232	263	184	125	252	236	250	466	369	323	335	224	210	360	293
			El Salvador	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	**0**
			Gabon	0	0	0	9	2	1	0	0	0	2	0.2	0	0	0	0.1	0	0	0	0	0	0	0	0	0	
			Ghana	117	531	372	734	343	55	32	65	177	132	116	60	54	37	26	56	36	55	6	32	31	19	16	21	12
			Great Britain	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
			Guatemala	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	**0**
			Guinea Ecuatorial	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	
			Japan	790	685	833	924	686	480	1090	2155	1600	1340	1314	1233	1162	684	976	659	637	915	640	647	552	478	622	422	558
			Korea Rep	10	0.1	2	24	70	36	94	176	223	10	0	0	42	47	53	5	19	11	18	9	15	6	6	5	10
			Namibia	469	751	504	191	549	832	1118	1038	518	25	417	414	85	129	395	225	466	600	881	811	789	623	1100	665	402
			Panama	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
			Philippines	0	6	1	8	1	1	4	58	41	49	14	35	15	35	58	0	0	0	0	0	0	0	0	0	**0**
			S Tomé e Príncipe	120	120	120	120	126	147	138	138	183	188	193	60	84	60	94	145	77	65	10	12	4	14	11	11	9
			Senegal	0	0	0	0	0	0	0	77	97	137	78	117	162	178	143	97	90	112	65	116	38	0	0	0	**0**
			South Africa	328	547	649	293	295	199	186	207	142	170	145	97	50	171	152	218	164	189	189	251	149	179	161	291	291
			St Vincent and Grenadines	0	0	0	0	0	0	0	10	7	16	4	3	2	2	19	0.3	5	9	4	15	9	32	76	0	**0**
			UK-Sta Helena	0	20	4	2	2	0.5	0	0.2	0.1	0	0	0	0	5	6	2	0	0	0	0	0	0	0	0	**0**
			USA	142	43	200	21	15	0	0	0	0	0	0.2	0	0	0.1	0	0	0	0	0	0	0.0	0	0	0	**0**
			Uruguay	713	789	768	850	1105	843	620	464	370	501	222	179	40	103	0	0	0	0	0	0	0	0	0	0	**0**
		NCC	Chinese Taipei	1303	1149	1164	1254	745	744	377	671	727	612	410	424	379	582	406	511	478	416	446	346	296	406	335	269	428
		NCO	Argentina	0.1	5	10	8	0.1	0	0	0	0	0	1	0.5	0	0	0	0	0	0	0	0	0	0	0	0	
			Mixed flags (FR+ES)	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Seychelles	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Togo	0	0	0	0	9	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Vanuatu	0	0	0	0	0	11	26	6	3	0	3	1	3	0.2	1	1	0	0	0	0	0	0	0	0	
Discards	ATN	CP	Canada	50	26	33	79	45	106	38	61	39	9	15	8	111	59	12	8	11	21	5	2	2	3	2	3	15
			EU-España	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1	0.2	0.3	0	0	4
			EU-France	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0.2	0.4	0.2
			EU-Portugal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	1	22
			Japan	0	567	319	263	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	5	4	2	3	4
			Korea Rep	0	0	0	0	0	0	0	0	0	0	0	170	46	19	0.1	2	0	0	0	0	0	0	0	0	**0**
			Mexico	0	0	0	0	0	0	0.1	0.1	0.1	0.0	0.2	1	0.1	0.1	0.0	0	0.1	0.0	0.1	0.1	0.2	0.1	0.0	0.1	0.1
			UK-Bermuda	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0.1	0.1	0.3	0.1	0.0	0.0
			USA	490	308	263	282	275	227	185	220	205	148	138	223	217	120	137	137	90	111	140	287	91	90	59	55	44
		NCC	Chinese Taipei	0	0	0	0	0	0	0	0	0	0	0	0.4	27	0	7	18	4	18	7	7	14	2	5	13	1
	ATS	CP	Brazil	0	0	0	0	0	0	0	91	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
			EU-España	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	27
			EU-France	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**0**
			Japan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.2	2	0.1	0.4	0.2
			Korea Rep	0	0	0	0	0	0	0	0	0	0	147	70	23	0	0.2	0	0	0	0	0	0	0	0	0	**0**
			South Africa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0	**0**
			USA	1	0.3	0.3	0.4	1	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
		NCC	Chinese Taipei	0	0	0	0	0	0	0	0	0	0	0	4	117	0	45	43	2	111	26	49	57	126	85	110	31

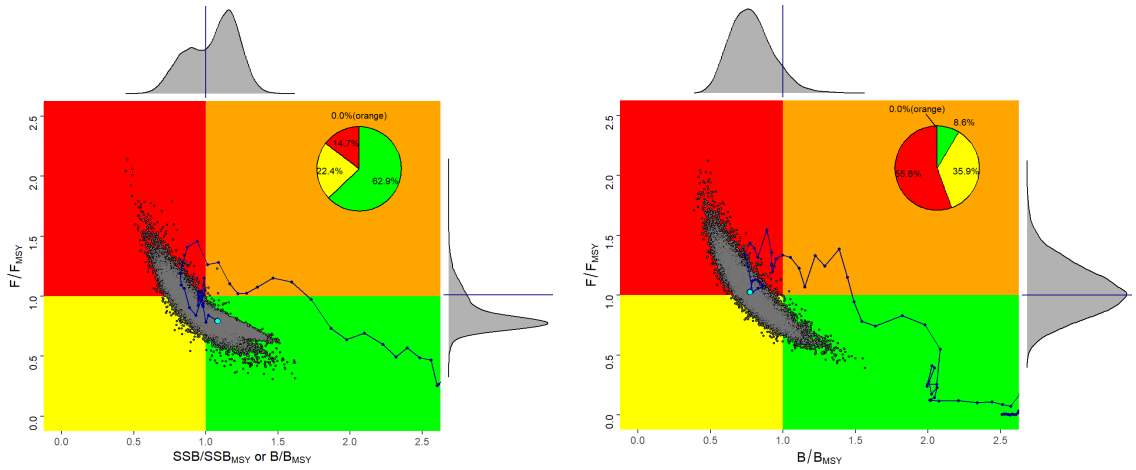

Figure 1. Kobe plots for the North (left) and South (right) Atlantic swordfish stock status in 2020, estimated during the 2022 stock assessment. The inserted pie charts indicate the probability of the stock being within each Kobe colour quadrant. The probability distributions shown in each axis represent uncertainty around current B/B_{MSY} and F/F_{MSY}. The black line indicates the stock status trajectory starting in 1950.

Outlook

North Atlantic

The stock is managed using a management procedure tested under MSE. Based on the MSE analysis, the adopted MP is expected to maintain the stock in the green quadrant of the Kobe matrix with 60% probability over the next 30 years.

Since its use in the 2022 stock assessment model, the Combined Index values for recent years have increased. This coincides with many consecutive years of catches below the TAC.

South Atlantic

The 2022 assessment stock status results were similar to the 2017 assessment, but updated information used in the 2022 assessment resulted in estimates of a less productive stock (MSY_{2020} = 11,481 t; MSY_{2015} = 14,570 t).

Results of projections from the 2017 assessment indicated that if catches remained below 11,000 t, there was a 60% chance of the stock falling within the green quadrant by 2020. The average catch for the period 2016-2020 was 10,125 t, yet the 2022 assessment indicated a 56% probability that the stock was within the red quadrant in 2020 (**Figure 1**). The Committee noted that this apparent inconsistency can be explained by the lower productivity (see above) of the stock determined in the 2022 assessment.

Projections were conducted for the base case JABBA model under constant TAC scenarios of 6 to 15 thousand tons, as well as a zero-catch scenario. Projections were implemented in 2023 and catches for 2021 and 2022 were assumed to remain constant (9,826 t) at the average from the previous three years. Under 2021-2022 catch levels (9,826 t), the South Atlantic swordfish stock had a 55% probability of being in the green quadrant of the Kobe plot by 2033 (**Table 3**).

Management recommendation

North Atlantic

Catch advice for 2025-2027 was generated by a management procedure (MP) adopted in 2024. The index used to inform the MP uses catch and effort data from 7 major fishing fleets. While the North Atlantic swordfish Exceptional Circumstances Protocol is still being developed the index was updated in 2025 (with data to 2023) to support the interim evaluation of exceptional circumstances (see response 19.15).

South Atlantic

The current TAC of 10,000 t (Rec. 22-04) will result in a 52% probability of being in the green quadrant in 2033 (**Table 3**). Catch levels less than 10,000 t will accelerate rebuilding. The Committee also recognized that the above advice did not fully account for removals associated with the mortality of unreported dead and post release mortality of live discards, quota carryovers (30% at the time of the assessment, reduced to 10% in Rec. 22-04) nor quota transfers across the North and South stock management boundaries. The Committee emphasized the importance of these uncertainties and recommended that the stock be closely monitored in the upcoming years to confirm rebuilding.

Table 3. Kobe II matrices for South Atlantic swordfish stock giving the probabilities that: a) $F<F_{MSY}$ (overfishing not occurring); b) $B>B_{MSY}$ (stock not overfished) and c) joint probability that $B>B_{MSY}$ and $F<F_{MSY}$ (the "green zone").

a) Probability that $F<F_{MSY}$

TAC (t)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
6000	95%	97%	98%	98%	99%	99%	99%	99%	100%	100%	100%
6500	92%	94%	96%	97%	98%	98%	99%	99%	99%	99%	99%
7000	88%	91%	93%	95%	96%	97%	97%	98%	98%	98%	98%
7500	82%	86%	89%	91%	93%	94%	95%	96%	96%	97%	97%
8000	75%	80%	83%	86%	88%	90%	91%	92%	93%	94%	95%
8500	68%	72%	76%	79%	82%	84%	85%	87%	88%	89%	90%
9000	59%	64%	68%	71%	74%	76%	78%	80%	81%	83%	84%
9500	51%	55%	59%	62%	65%	67%	69%	71%	72%	74%	75%
9826	46%	50%	53%	56%	58%	60%	62%	64%	65%	67%	68%
10000	43%	47%	49%	52%	54%	57%	59%	60%	62%	64%	65%
10500	35%	38%	40%	42%	44%	46%	48%	49%	50%	52%	53%
11000	29%	31%	32%	33%	35%	36%	37%	38%	39%	40%	40%
11500	23%	24%	25%	25%	26%	27%	27%	28%	28%	29%	29%
12000	18%	18%	19%	19%	19%	19%	19%	20%	20%	20%	20%
12500	13%	14%	14%	14%	14%	14%	14%	13%	13%	13%	13%
13000	11%	10%	10%	10%	10%	10%	9%	9%	9%	9%	9%
13500	8%	8%	7%	7%	7%	6%	6%	6%	6%	6%	5%
14000	6%	6%	5%	5%	5%	4%	4%	4%	4%	3%	3%
14500	5%	4%	4%	3%	3%	3%	3%	2%	2%	2%	2%
15000	4%	3%	3%	2%	2%	2%	2%	2%	1%	1%	1%

b) Probability that $B>B_{MSY}$

TAC (t)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
0	21%	48%	74%	90%	96%	99%	99%	100%	100%	100%	100%
6000	21%	33%	46%	59%	70%	77%	83%	88%	92%	94%	95%
6500	21%	32%	44%	56%	66%	74%	80%	85%	88%	91%	93%
7000	21%	31%	41%	52%	62%	70%	75%	80%	85%	88%	90%
7500	21%	30%	39%	48%	57%	65%	70%	76%	80%	83%	86%
8000	21%	29%	37%	45%	53%	60%	65%	70%	74%	78%	81%
8500	21%	28%	34%	41%	48%	54%	59%	64%	68%	72%	75%
9000	21%	27%	32%	38%	44%	49%	53%	58%	61%	65%	68%
9500	21%	26%	31%	35%	39%	44%	48%	51%	55%	58%	60%
9826	21%	25%	29%	33%	36%	40%	43%	47%	50%	52%	55%
10000	21%	25%	29%	32%	35%	39%	41%	45%	47%	49%	52%
10500	21%	24%	27%	29%	31%	34%	36%	38%	40%	41%	43%
11000	21%	23%	25%	26%	28%	29%	30%	32%	33%	34%	35%
11500	21%	22%	23%	24%	24%	25%	25%	26%	26%	27%	27%
12000	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%
12500	21%	20%	19%	19%	18%	18%	17%	17%	16%	16%	16%
13000	21%	19%	18%	17%	16%	15%	14%	13%	13%	12%	12%
13500	21%	18%	17%	15%	14%	12%	11%	10%	10%	9%	9%
14000	21%	18%	15%	13%	12%	10%	9%	8%	7%	7%	6%
14500	21%	17%	14%	12%	10%	8%	7%	6%	6%	5%	4%
15000	21%	16%	13%	10%	8%	7%	6%	5%	4%	3%	3%

c) Probability that $F<F_{MSY}$ and $B>B_{MSY}$

TAC (t)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
0	21%	48%	74%	90%	96%	99%	99%	100%	100%	100%	100%
6000	21%	33%	46%	59%	70%	77%	83%	88%	92%	94%	95%
6500	21%	32%	44%	56%	66%	74%	80%	85%	88%	91%	93%
7000	21%	31%	41%	52%	62%	70%	75%	80%	85%	88%	90%
7500	21%	30%	39%	48%	57%	65%	70%	76%	80%	83%	86%
8000	21%	29%	37%	45%	53%	60%	65%	70%	74%	78%	81%
8500	21%	28%	34%	41%	48%	54%	59%	64%	68%	72%	75%
9000	21%	27%	32%	38%	44%	49%	53%	58%	61%	65%	68%
9500	21%	26%	31%	35%	39%	44%	48%	51%	55%	58%	60%
9826	21%	25%	29%	33%	36%	40%	43%	47%	50%	52%	55%
10000	20%	25%	28%	32%	35%	39%	41%	45%	47%	49%	52%
10500	20%	23%	26%	29%	31%	33%	35%	38%	40%	41%	43%
11000	20%	22%	24%	25%	27%	28%	30%	31%	32%	33%	35%
11500	18%	19%	21%	22%	23%	23%	24%	24%	25%	26%	26%
12000	16%	16%	17%	18%	18%	18%	18%	18%	19%	19%	19%
12500	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
13000	10%	10%	10%	10%	9%	9%	9%	9%	9%	9%	8%
13500	8%	8%	7%	7%	7%	6%	6%	6%	6%	5%	5%
14000	6%	6%	5%	5%	5%	4%	4%	4%	4%	3%	3%
14500	5%	4%	4%	3%	3%	3%	3%	2%	2%	2%	2%
15000	4%	3%	3%	2%	2%	2%	2%	2%	1%	1%	1%

Additional supporting information

The Committee recognized that environmental variability and Climate Change are important factors affecting many aspects of swordfish population dynamics and the data used to assess stock status such as the indices of relative abundance. The Committee is working to address these themes through projects described in more detail in the workplan. Given the potential influence of observed environmental changes on the variability of abundance indices, the SCRS will attempt to integrate these variables into the construction of such indices.

The Committee noted the expanded use of trapline gear in the Mediterranean and Atlantic. Initial evidence suggests that catchability, selectivity, and bycatch differ for this gear, relative to typical longline gears. The Committee noted the importance of further research on this gear type and to track its use in ICCAT fisheries and encouraged CPCs to provide relevant data voluntarily in accordance with the recommendation from the Subcommittee on Statistics.