

13.13 SMT-Small tunas

Introduction

The species under the Small Tunas Species Group include the following tuna and tuna-like species:

- BLF Blackfin tuna (*Thunnus atlanticus*)
- BLT Bullet tuna (*Auxis rochei*)
- BON Atlantic bonito (*Sarda sarda*)
- BOP Plain bonito (*Orcynopsis unicolor*)
- BRS Serra Spanish mackerel (*Scomberomorus brasiliensis*)
- CER Cero (*Scomberomorus regalis*)
- COM Narrow-barred Spanish mackerel (*Scomberomorus commerson*)
- FRI Frigate tuna (*Auxis thazard*)
- KGM King mackerel (*Scomberomorus cavalla*)
- LTA Little tunny (*Euthynnus alletteratus*)
- MAW West African Spanish mackerel (*Scomberomorus tritor*)
- SSM Atlantic Spanish mackerel (*Scomberomorus maculatus*)
- WAH Wahoo (*Acanthocybium solandri*)

Knowledge on the biology and fishery of small tunas is very fragmented. Furthermore, the quality of the knowledge varies according to the species concerned. This is due in large part to the fact that these species are often perceived to have little economic importance compared to other tunas and tuna-like species, and owing to the difficulties in conducting sampling of the landings from artisanal fisheries, which constitute a high proportion of the fisheries exploiting small tuna resources. The large industrial fleets often discard small tuna catches at sea or sell them on local markets mixed with other bycatches, especially in Africa. The amount caught is rarely reported in logbooks; however, the observer programme for purse seine fleets has recently provided estimates of catches of small tunas.

Small tuna species can reach high levels of catch and values in some years and have a very high relevance from a social and economic point of view, because they are important for many coastal communities in all areas and a main source of food. Their social and economic value is often not evident because of the underestimation of the total landing figures, due to the difficulties in data collection mentioned above. Several statistical problems are also caused by misidentification.

Scientific collaboration between ICCAT, Regional Fisheries Organizations (RFOs) and countries in the various regions is imperative to advance understanding of the distribution, biology and fisheries of these species.

A summary of the stock information is provided below (**Table 1**). **Table 2** provides estimated catches of small tunas, for the period 2000-2024.

Table 1. Small tunas summary table.

<i>Indicator</i>	<i>Species</i>												
	BLF	BLT	BON	BOP	BRS	CER	COM	FRI	KGM	LTA	MAW	SSM	WAH
Maximum Sustainable Yield (MSY) ¹	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Current (2025) TAC	ICCAT has never set TAC nor catch limits to small tunas												
Current (2024) Yield ²	4069	4696	102489	311	933	0	0	23809	6432	30173	5422	7990	6017
Relative Biomass (SSB_{YEAR}/SSB_{MSY})	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Relative Fishing Mortality (F_{YEAR}/F_{MSY})	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Stock Status	See additional information section for the available information												
Management measures in effect	There are no ICCAT regulations in effect for small tunas. Several regional and national regulations are in place.												

¹ Not available.² As of 26 September 2025.

Table 2. Estimated catches (t) of small tuna species by area, gear and flag for the period 2000-2024.

						20	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024											
BLF	TOTAL	ATL				2483	4034	4756	1303	1926	1031	1937	1927	1669	1442	1837	2083	2849	2134	1263	1386	2017	1481	1635	1542	2712	2880	4856	7603	4069											
	Landings		All gears			2483	4034	4756	1303	1926	1031	1937	1927	1669	1442	1837	2083	2849	2134	1263	1386	2017	1481	1635	1542	2712	2880	4856	7603	4069											
	Discards					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										
	BLT	Landings	ATL	CP	Angola		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									
					Brazil		38	149	1669	1	118	91	242	233	266	10	9	46	124	110	299	325	228	192	392	410	820	1691	2273	5345	2608										
					Canada		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	0	0	0	0					
					Costa Rica		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	0	0	0	0	0				
					Curaçao		45	45	45	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	0	0				
					EU-France		1040	1040	1040	0	0	0	0	0	0	0	0	32	19	26	0	14	12	14	14	14	14	6	28	15	17	30	35	90							
					Grenada		164	223	255	335	268	306	371	291	290	291	291	291	291	291	291	291	291	291	291	0	0	0	94	73	0	36	108	43							
					Mexico		0	12	0	10	9	10	10	12	6	7	6	9	5	4	4	4	4	5	4	4	5	4	3	3	2	3	3	1							
					St Vincent and Grenadines		23	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	5	0	9	6	0	0	3	8						
					Trinidad and Tobago		0	0	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	3							
					UK-Bermuda		5	4	5	9	4	5	8	7	6	7	9	8	11	11	15	20	17	17	17	16	10	7	12	9	9	9	8								
					UK-British Virgin Islands		0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0							
					UK-Turks and Caicos		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	0	0	0	0	0				
					USA		326	474	334	414	675	225	831	422	649	619	911	967	1919	1326	585	761	1265	946	1074	756	1628	1054	2403	2027	1232										
					Venezuela		696	1902	1211	319	732	225	237	777	231	293	331	473	237	191	200	161	294	146	120	74	61	26	22	8	5										
					NCO	Dominica		83	54	78	42	20	38	47	29	37	45	41	37	39	37	39	24	34	34	17	24	8	0	0	0	0	0	0	0	0	0				
						Dominican Republic		19	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	0	0	0				
						Jamaica		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2				
						Saint Kitts and Nevis		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	0	0	0	0				
						Sta Lucia		45	108	96	169	96	126	182	151	179	165	203	229	192	147	104	80	156	119	0	127	84	74	75	60	70									
						Discards		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	0	0	0	0	0			
						Mexico		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	0	0	0	0	0			
					BLT	TOTAL					3912	5796	6041	3794	6223	4231	4233	5617	6825	5557	7952	9484	6234	7653	3916	5571	5720	3348	4083	3432	3530	3686	5021	4469	4696						
						Landings					3912	5796	6041	3794	6223	4231	4233	5617	6825	5557	7952	9484	6234	7653	3916	5571	5720	3348	4083	3432	3530	3686	5021	4469	4696						
						Discards					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	0				
						BLT	Landings	ATL	CP	Algeria		225	230	481	0	391	547	586	477	1134	806	970	1119	1236	577	1025	1984	1592	231	799	905	732	1802	3229	2251	1939					
										EU-Croatia		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	0	0	0	
										EU-España		1024	861	493	495	1009	845	1101	3083	3389	726	3787	3227	1620	2654	735	1191	1081	2170	774	1026	986	511	266	981	425					
										EU-France		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	0	0	0	0
										EU-Greece		196	125	120	246	226	180	274	157	620	506	169	129	118	155	108	311	207	181	294	513	262	139	273	309	155					
EU-Italy											462	462	2452	1463	1819	866	143	158	342	732	574	653	613	892	0	1717	0	966	25	6	16	15	14	14							
EU-Malta											1	1	0	2	8	4	11	14	12	7	11	23	3	85	14	14	11	9	12	12	7	1	28	2	8						
Maroc											763	256	621	246	326	50	199	35	83	336	525	237	194	237	171	811	200	0	442	50	96	91	52	43	34						
Syria		0	0	0						0	0	0	0	0	0	0	0	99	75	87	81	84	83	83	0	0	0	0	0	0	0	0	0	0	0	0	0				
Tunisia		15	2300	932						989	1760	0	0	0	0	0	0	0	0	0	940	935	938	920	13	23	26	136	67	91	139	147	162	112							
Türkiye		316	316	316						0	284	1020	1031	993	836	1873	1081	2552	907	863	562	476	407	474	367	462	1070	737	809	482	803										
NCO	Palestine		0	0						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	130	81	21	104	48						
	Serbia & Montenegro		8	8						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	0					
	EU-France		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	0	0	0	0				
	EU-Croatia		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	0	0	0	0				
	Discards		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	0	0	0	0	0			
	EU-France		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	0	0	0	0	0			
	EU-Croatia		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	0	0	0	0	0			

EXECUTIVE SUMMARY SMT

BON		TOTAL		27151	27637	23925	14424	15832	78767	41951	15628	16814	23710	28921	36783	48280	24847	27993	15706	54868	22757	46584	29676	44619	28546	92232	39405	102489		
		ATL		5179	5400	8208	3307	4584	4391	9648	6381	6772	13691	16338	22341	8959	6482	4640	6712	10930	10959	11093	23931	17458	21818	36028	31960	49147		
		MED		21972	22237	15717	11117	11248	74376	32303	9247	10042	10019	12584	14442	39321	18365	23352	8993	43938	11798	35491	5745	27160	6728	56204	7445	53342		
		Landings	ATL	5179	5400	8208	3307	4584	4391	9648	6381	6772	13691	16338	22341	8959	6482	4640	6712	10930	10959	11093	23929	17458	21818	36024	31953	49143		
			MED	21972	22237	15717	11117	11248	74376	32303	9247	10042	10019	12584	14442	39321	18365	23352	8993	43938	11798	35491	5745	27160	6728	56204	7445	53342		
		Discards	ATL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	5	7	4		
			MED	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		
		Landings	ATL	118	118	118	0	0	138	0	931	0	1962	1997	131	267	1134	2	3	3	2	0	0	5	5	2	1068	9		
			CP	Angola	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
				Barbados	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
				Belize	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	10	0	0	0	0	0	0		
				Brazil	0	0	0	0	90	0	0	0	0	0	171	0	38	0	1	2	1	23	15	0	0	0	5	2		
				Curaçao	0	0	0	0	0	0	0	0	0	539	539	539	0	0	0	0	0	0	0	0	0	0	0	0		
				Côte d'Ivoire	0	0	0	0	3	0	3	13	755	3	0	26	3	16	6	3510	42	2725	1757	6244	687	590	1739	0		
				EU-Denmark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
				EU-España	12	10	5	23	9	2	15	14	13	36	45	57	7	44	28	10	31	18	16	20	3	8	10	5		
				EU-France	32	0	18	0	0	0	122	59	25	208	241	102	245	288	333	422	290	195	115	62	60	43	56	56		
				EU-Germany	0	0	38	0	0	0	0	0	0	0	0	0	0	6	0	4	89	14	0	13	1	25	25	0		
				EU-Ireland	0	0	0	0	48	0	0	0	56	125	91	108	100	0	0	0	0	0	0	0	0	0	0	0		
				EU-Latvia	416	396	639	0	0	0	0	0	1019	2231	34	48	29	0	0	0	0	0	6604	518	522	1414	712	1309		
				EU-Lithuania	0	0	793	0	0	0	0	0	0	0	0	0	0	0	0	0	78	686	385	596	138	903	313	1652		
				EU-Netherlands	0	0	0	0	0	0	344	539	539	0	2047	104	1075	54	11	124	79	39	91	71	82	141	72	1086		
				EU-Portugal	162	47	61	40	50	38	318	439	212	124	476	461	321	184	22	25	570	368	257	382	168	248	148	757	504	
				Gabon	0	0	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
				Gambia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	724	732	715		
				Great Britain	0	0	0	0	0	35	0	0	30	71	113	4	0	0	0	0	0	0	0	0	0	0	0	1		
				Grenada	7	10	10	0	0	0	0	0	0	0	0	0	0	0	1	2	2	1	0	1	1	0	2	0		
				Guinea Ecuatorial	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	59	32	0	3	4	5	6	4	35		
				Mauritania	2163	1700	2019	928	989	1411	1655	1053	1419	2523	109	145	235	89	90	174	850	1417	4081	5679	5470	4516	10512	17888	19623	
				Mexico	1293	1113	1032	1238	1066	654	1303	1188	1113	1063	1046	1080	1447	1534	1115	1110	1188	1361	1440	1258	954	693	430	6619	13081	
				Norway	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0		
				Panama	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
				Russian Federation	0	574	1441	461	16	79	316	259	52	368	1042	2293	848	125	416	308	850	666	573	617	1281	908	6989	732	2032	
				S Tomé e Príncipe	0	0	0	0	0	0	0	0	145	147	149	153	158	162	267	207	211	2	0	0	0	0	0	0		
				Senegal	286	545	621	195	183	484	2304	1020	1380	4029	1677	2876	1453	514	1217	1711	1581	1226	1696	3982	1380	2915	2460	6573		
				Sierra Leone	11	245	44	0	0	0	0	0	0	0	0	0	0	0	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		
				St Vincent and Grenadines	0	0	0	15	18	0	16	23	27	15	6	20	0	0	0	0	0	0	0	0	0	0	0	0		
				Trinidad and Tobago	117	56	452	188	280	81	7	16	38	68	68	14	9	16	16	0	16	16	16	16	16	16	16	10		
				UK-British Virgin Islands	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	2		
				UK-Turks and Caicos	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	142	120	139	44	70	68	40	97	47	50	47	189	94	73	101	96	61	62	197	107	140	66	176	168	123	
				Venezuela	2	0	61	13	0	16	18	19	12	38	10	21	7	4	9	0	0	0	0	0	0	0	0	0		
			NCC	Chinese Taipei	0	0	0	0	0	0	0	0	0	0	0	0	18	29	40	20	12	0	0	0	0	0	0	0		
			NCO	Argentina	19	235	1	129	269	110	0	0	220	59	6	33	0	0	0	0	0	0	0	0	0	0	0	0		
				Dominica	0	0	0	0	6	16	16	9	4	0	0	0	0	1	2	7	1	0	2	6	0	0	0			
				Saint Kitts and Nevis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	1	0	0			
				Sta Lucia	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
				Togo	0	0	0	0	1583	1215	2298	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
				Ukraine	399	231	656	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
			MED	CP	Algeria	405	350	597	0	609	575	684	910	1042	976	1009	355	353	614	504	716	452	593	811	302	369	485	1216	841	825
				EU-Bulgaria	35	35	35	0	0	0	0	0	0	16	8	96	6	5	8	68	13	23	4	32	1	45	1	44		
				EU-Croatia	0	0	0	0	0	0	0	0	0	59	41	31	56	56	34	20	22	28	42	31	24	13	22	19		
				EU-Cyprus	14	0	10	10	6	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
				EU-España	342																									

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MAW	TOTAL	ATL	1321	881	1393	646	352	480	571	847	616	684	2384	1333	1128	3016	1460	1243	1489	1286	7066	1810	839	2823	1710	4523	5422
	Landings	All gears	1321	881	1393	646	352	480	571	847	616	684	2384	1333	1128	3016	1460	1243	1489	1286	7066	1804	839	2823	1710	4523	5422
	Discards		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0
	Landings	CP	0	0	0	0	0	0	0	0	86	1650	249	221	1247	0	3	1	2	1	0	1	2	0	3	1	0
		Angola	0	0	0	0	2	0	66	0	1	0	0	0	90	35	47	76	122	5827	601	305	392	312	186	639	0
		Côte d'Ivoire	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		EU-Ireland	0	0	298	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		EU-Lithuania	0	0	0	0	0	0	0	1	1	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		EU-Netherlands	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
		Gabon	102	53	48	82	67	37	87	93	17	22	30	34	46	42	13	37	21	56	87	137	42	195	191	384	257
		Gambia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	724	789	810
		Mauritania	0	0	0	0	0	0	207	319	176	203	275	193	152	110	434	493	524	164	191	79	206	2042	381	2693	3308
		Russian Federation	0	0	0	15	0	0	1	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
		S Tomé e Príncipe	6	6	6	6	21	12	13	0	91	93	96	98	100	102	105	13	11	72	0	26	107	38	34	35	35
		Senegal	987	617	794	532	262	431	196	435	329	278	331	749	610	1426	870	649	856	870	961	961	178	154	68	434	372
		NCO	205	205	205	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Ukraine	21	0	42	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Discards	CP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0
		Gabon	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
SSM	TOTAL		8220	8383	9414	9793	8119	10472	6308	6118	5900	6199	11788	10916	10156	12684	7798	7741	8669	8332	4332	12654	16691	11763	11530	9573	7990
	Landings	All gears	8220	8383	9414	9793	8119	10472	6308	6118	5900	6199	11788	10916	10156	12684	7798	7741	8669	8332	4332	12654	16691	11763	11530	9573	7990
		CP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
		Angola	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
		Belize	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
		EU-France	0	0	0	0	0	0	0	0	0	0	0	11	3	14	18	11	16	6	4	0	0	0	0	0	0
		EU-Portugal	0	0	0	0	1	26	16	0	2	20	7	2	0	0	0	1	0	0	0	0	0	0	0	0	0
		Gabon	0	0	265	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Grenada	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0
		Mexico	4168	3701	4350	5242	3641	5723	3856	3955	4155	4251	4128	4026	3321	3581	3857	4077	3820	3701	4321	3870	2968	2157	1535	2220	1971
		UK-British Virgin Islands	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	3893	4524	4613	4552	4477	4747	2425	2147	1746	1946	7639	6871	6829	9089	3922	3652	4825	4611	6	8778	13722	9605	9994	7350	6019
		NCC	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	5	11	0	0	0	0	0	0	0	0
		Chinese Taipei	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
		NCO	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
		Dominica	158	158	158	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Dominican Republic	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
		Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	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	0	0	0	0	0	0	0	0	0
		Sta Lucia	0	1	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Outlook

The standard fisheries indicators used to provide management advice to the Commission are not available for the small-tuna stocks/species due to the lack of required information to apply currently stock assessment frameworks adopted by SCRS. Please see the additional supporting information for the information available on the scientific literature on the status of some of the species/stocks under the Small Tunas Species Group.

Management recommendation

The provision of robust management advice by the SCRS relies on accurate reporting of Task 1 and 2 data and life history parameters. However, due to the nature of small tuna fisheries (i.e., multi-gear, multi-stocks, artisanal fisheries, etc.), information on fisheries data is difficult to collect, therefore proper monitoring programmes should be implemented by CPCs. Although the Committee has started actions aiming at applying a range of data-limited stock assessment models, their robustness still needs to be evaluated before they can be used to provide management advice to the Commission. Moreover, although the Committee recognize that the use of data-limited models is important for small tunas as the first step for stock assessment, given the relevance of the catches of some of species and their economic importance for coastal States, more robust methods, such as those used for data rich species, should be applied in the near future, as more complete data become available.

Additional supporting information

Available informaton on the status of the stocks

In 2017, a Productivity and Susceptibility Analysis (PSA) was carried out for the small tuna caught by longline and purse seine fisheries in the Atlantic. Results showing that the top three stocks at risk in the Atlantic Ocean that should deserve most of the managers' attention were *E. alleteratus*, *A. solandri* and *S. cavalla*.

In 2018, preliminary results on the implementation of data-limited approaches for small tunas using simulation testing were provided and improved in 2019, when different approaches for the stock assessment of Atlantic and Mediterranean small tunas were carried out. Catch-based assessment models (Depletion based stock reduction analysis - DBSRA - and Simple stock synthesis - SSS) and Length based models (Length-based spawning potential ratio - LBSPR and Length-based integrated mixed effects model - LIME) were applied for 10 and six stocks, respectively. Also, the integrated assessment LIME, which used catch and length data, was applied for six small tuna stocks. Only LTA in the Southeast and WAH in the North West would show signs of overfishing for most of the models applied, deserving special attention in the future (**Table 3**).

Table 3. Summary of the current state of knowledge on the current stock status for small tunas in the Atlantic Ocean and the Mediterranean. Results taken from Pons *et al.*, 2019a. Red indicates values below reference levels (overfished) and green above reference values (not overfished).

<i>Data limited assessments</i>							
	<i>Last year assessed</i>	<i>Length based</i>		<i>LBSPR</i>	<i>Catch based</i>		<i>Catch+Length</i>
		<i>LBSPR</i>	<i>LIME</i>		<i>DBSRA</i>	<i>SSS</i>	<i>LIME</i>
		Pons <i>et al.</i> (2019a)		Baibbat <i>et al.</i> (2019)	Pons <i>et al.</i> (2019b)		
		SPR	SPR		B/B _{MSY}	B/B _{MSY}	B/B _{MSY}
LTA_SE	2014-2016	0.13	0.27	--	0.69	0.94	1.83
BON_NE	2014-2016	0.23	0.71	0.34	1.63	1.98	2.02
WAH_NW	2014-2016	0.37	0.29	--	1.02	1.34	0.86
WAH_NE	2014-2016	0.55	0.38	--	--	--	--
BON_Med	2014-2016	0.59	0.22	--	--	--	--
LTA_Med	2014-2016	0.66	0.62	--	1.88	2.33	1.08
LTA_NW	2014-2016	0.66	0.48	--	--	--	--
FRI_SE	2014-2016	0.79	0.53	--	1.79	2.65	1.10
FRI_NE	2014-2016	0.83	0.46	--	1.64	2.50	1.29
LTA_NE	2014-2016	0.90	1.00	--	--	--	--

A data-limited MSE was also performed as preliminary exercise for Northwest WAH. The MSE pointed out that MPs based on catch-based methods are the most acceptable with respect a variety of performance metrics, while simulations for the length-based and fishing effort control methods did not present as satisfactory results (**Table 4**). The results from this initial exercise must be interpreted with caution because of considerable uncertainty in the parametrization of the OM, which might strongly influence the performance of MPs.

Table 4. Summary of the Northwest Atlantic wahoo MSE results for selected MPs using the DLMtool package (Mourato *et al.*, 2019). Colour cells coding is used to denote if the particular MP falls within acceptable performance metric indicators (green – acceptable and red – not satisfied). Probability of not overfishing (**PNOF**; $F < F_{MSY}$); probability of spawning biomass being higher than half of spawning biomass at maximum sustainable yield (**P50**; $SB > 0.5 SB_{MSY}$); probability of spawning biomass being higher than spawning biomass at maximum sustainable yield (**P100**; $SB > SB_{MSY}$); probability of average annual variability in yield being lower than 20% (**AAVY**; Prob. $AAVY < 20\%$); probability of average yield being higher than half of reference yield (**LTY**; Prob. $Yield > 0.5 Ref. yield$). Acceptable management procedures were defined as those that supported **PNOF**>70%, **P50**>90%, **P100**>70%, **AAVY**>50% and **LTY**>50%.

Management Procedures	PNOF	P50	P100	AAVY	LTY
<i>Length-based methods</i>					
<i>LBSPR</i>	0.74	0.93	0.65	0.120	0.86
<i>minlenLopt1</i>	0.75	0.95	0.72	0.110	0.83
<i>matlenlim</i>	0.75	0.96	0.74	0.095	0.81
<i>Catch-based methods</i>					
<i>AvC</i>	0.70	0.95	0.76	0.630	0.78
<i>CC1</i>	0.71	0.95	0.76	0.640	0.76
<i>SPMSY</i>	0.81	0.98	0.86	0.110	0.43
<i>DBSRA</i>	0.61	0.98	0.81	0.450	0.74
<i>Fishing effort control methods</i>					
<i>curE</i>	0.75	0.93	0.66	0.130	0.85
<i>curE75</i>	0.87	0.97	0.78	0.150	0.80