

9.14 SMT - Small tunas

SMT-1. Generalities

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, observer program from purse seine fleets have 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.

SMT-2. Biology

Small tuna species are widely distributed in the tropical and subtropical waters of the Atlantic Ocean and several are also distributed in the Mediterranean Sea and the Black Sea. Some species extend their range even into colder waters, like the North and South Atlantic Ocean. They often form large schools with other small sized tunas or related species in coastal and high seas waters.

Additional genetic analysis for a number of small tunas was done in 2024 under the Small Tunas Year Programme (SMTYP). Samples from Brazil, Côte d'Ivoire, EU-Spain, Gabon and Morocco all showed a lack of genetic differentiation for wahoo (WAH). For bonito (BON), new samples from Côte d'Ivoire were added to the existing data set, and their analysis confirmed the genetic separation between two populations: one in the North Atlantic Mediterranean and another in the Tropical Atlantic. Finally for little tunny (LTA), new samples from Tunisia and São Tomé e Príncipe show deep genetic differentiation at species level.

Generally, the small tuna species have a varied diet with a preference for small pelagics (e.g. clupeids, mullets, carangids, etc.). Small tunas are the prey of large tunas, marlins, sharks and marine mammals which at the same time are predators of small pelagics. The reproduction period varies according to species and areas and spawning generally takes place near the coast in oceanic areas, where the waters are warmer. A study conducted on the eastern coast of Tunisia has shown that the spawning area of the bullet tuna is offshore at the limit of the continental shelf and related to the high abundance of the zooplankton. A study recently carried out along the Gulf of Gabes (Ionian Sea-Mediterranean) indicated that the larvae of the bullet tuna were mainly concentrated between the isobaths 50 and 200 m, and the spawning grounds of this species were mainly offshore.

The growth rate currently estimated for these species is very rapid for the first two or three years, and then slows as they reach size-at-first maturity. Most small tuna species matures at small sizes, mostly between 30 and 50 cm, except wahoo for which size at first maturity varies between 92 and 110 cm. Information on the migration patterns of small tuna species is very limited, due to low tagging levels of these species. However, a new genetic study showed that there is a clear genetic heterogeneity for the bullet tuna among different geographical locations in the Mediterranean, suggesting that the population structure of this species in the Mediterranean is more complex than initially expected. In a recent preliminary genetic study conducted within the SMTYP for little tunny, it was observed a strong population structure, separating into two clades the individuals from EU-Portugal and Tunisia, and those from Senegal and Côte d'Ivoire. Also, recent studies of the population structure of Atlantic bonito in three areas - MD (Tunisia and EU-Spain); AT-NE (EU-Portugal and Morocco) and AT-SE (Côte d'Ivoire, Gabon and Senegal) - showed clear differential structure, being the location of Côte d'Ivoire the most genetically differentiated location.

Within the ICCAT Atlantic Ocean Tropical Tuna Tagging Programme (AOTTP), a total of nearly 8,000 little tunny were tagged off West Africa and western Atlantic between August 2016 and April 2019, with nearly 600 tags being recovered. This converts to a 7% tag recovery rate. Both tag releases and recoveries of little tunny have occurred in "coastal" waters between Mauritania and Côte d'Ivoire. The longest "time at liberty" observed (700 days) and migrated 929 nautical miles (NM). Little tunny have been tagged on both sides of the tropical Atlantic; however no cross-Atlantic movement has yet been reported, indicating rather coastal associated movements.

In 2018 and 2019, the open database provided in the 2016 Intersessional Meeting of the Small Tunas Species Group (ICCAT, 2017d) (Juan-Jordá *et al.*, 2016) with a thorough review of the Scombridae life history parameters was considered as a starting point for a meta-database of the Atlantic small tunas species, and the Group considered this proposal for updating and sharing parameters and useful references. The Group determined the main life history parameters to be compiled (for example, L_{INF} , k , t_0 , L_{50} , A_{50} , L_{MAX} , a (L-W), b (L-W), batch fecundity) and, that the areas defined by ICCAT previously (ICCAT Statistical Areas Map 4) were adequate for SMT and studies should be carried based on such spatial unities.

The updated database, available for all participants and stored in the ICCAT Owncloud, allowed for data mining, based on the most reliable parameters by region for each species and, spatial visualization of current status and data gaps in the life history parameters of SMT species were provided (**SMT-Table 2**). This information will be used to assess future research needs and for running Data Limit Models, when applicable.

SMT-3. Fisheries indicators

Small tunas are exploited mainly by coastal and artisanal fisheries, substantial catches are also made as target species and as bycatch by purse seine, mid-water trawl (i.e., pelagic fisheries of Mauritania), handline and small-scale gillnets. Unknown quantities of small tuna also comprise the incidental catches of some longline fisheries. The increasing importance of fish aggregating device (FAD) fisheries in the eastern Caribbean and in other areas has improved the efficiency of artisanal fisheries in catching small tunas. Various species are also caught by the sport and recreational fisheries.

Despite the scarce monitoring of various fishing activities in some areas, all the small tuna fisheries have high social and economic relevance for most of the coastal countries concerned and for many local communities, particularly in the Mediterranean Sea, in the Caribbean region and in West Africa.

SMT-Table 1 shows historical landings of small tunas for the 1990 to 2023 (current as of 21 September 2024). This table does not include species reported as “mixed” or “unidentified”, as was the case in the previous years, since these categories include large tuna species. Of the total 13 species included in the Small Tunas Species Group, the seven most important represent about 91% of Task 1 nominal catches between 1950 and 2023. These are: BON (31%), LTA (18%), FRI (13%), KGM (12%), SSM (9%), BLT (5%), and WAH (4%). In 1980, there was a marked increase in the reported landings compared to previous years, reaching a first peak of 145,492 t in 1988 (**SMT-Figure 1**). Reported landings for the 1989-1995 period decreased to about 95,900 t in 1995, and then an oscillation in the values in the following years, with a minimum of 69,117 t in 2008 and a maximum of 175,042 t in 2022. The annual trend in the total catches by species are shown in **SMT-Figure 2**. Overall trends in the small tuna catch may mask declining trends for individual species because annual landings are often dominated by the landings of single species. These fluctuations seem to be related to unreported catches, as these species generally comprise part of the bycatch and are often discarded, and therefore do not reflect the real catch.

Current estimate of total nominal landings of small tunas in 2023 is 129,931 t. The Committee pointed out the relative importance of small tuna fisheries in the Mediterranean and the Black Sea, which account for about 30% of the total small tuna catches (1950 to 2023) in the ICCAT area.

Despite the recent improvements in the statistical information provided to ICCAT by several countries, the Committee noted that uncertainties remain regarding the accuracy and completeness of reported landings in all areas. There is a general lack of information on the mortality of these species as bycatch.

However, after the adoption of the SMTYP in 2012, significant historical catches, catch and effort and size data from the artisanal fisheries in the west of Africa (Côte d’Ivoire, Morocco and Senegal) and from the Mediterranean Sea (EU-Italy and EU-Spain) were recovered and made available to the Secretariat.

SMT-4. State 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. The study found that the top 3 stocks at risk in the Atlantic Ocean that should deserve most of the managers’ attention were *E. alleteratus*, *A. solandri* and *S. cavalla*. This first analysis was very important in order to define priority species for stock assessment and biological data collection. However, this analysis will be improved by considering the five statistical ICCAT areas and the relevant fishing gears for each stock.

Also, as an initial attempt to provide stock status of the SMT, the lengths distributions and the reference points obtained from length frequencies for the small tuna species in the Task 2 database, pooled by species, year and considering the South and North Atlantic are plotted in **SMT-Figure 3**. To avoid growth overfishing, catch length compositions should consist of fish at a size at which the highest yield from a cohort occurs (L_{OPT}). While to avoid recruitment overfishing, catches should comprise almost exclusively mature individuals (i.e., fish be $>L_{50}$, the length at which 50% of fish are mature). Two reference points were used, i.e., P_{OPT} and P_{50} , the proportion of individuals in the catch size data that are greater than L_{OPT} and L_{50} , respectively. However, L_{OPT} is based on a per recruit analysis which ignores recruitment dynamics, for example the age/size structure and the distribution of a population which all determine productivity and hence sustainability and the formulation of robust management advice.

These data are re-plotted in **SMT-Figure 4** as an example of how they could be used as indicators of growth and recruitment overfishing. For example, if L_{OPT} is used as a target with a probability of 0.5 and a tolerance of ± 0.25 to allow limited fluctuations around the target; then in **SMT-Figure 4a** green indicated that length compositions meet this target and red when exceeded. For recruitment overfishing, if 0.6 is used as a limit for P_{50} , then any catches where less than 40% are mature fish are colored red (**SMT-Figure 4b**).

The plots show that in most cases poor yield optimization is occurring, but that recruitment overfishing is not. Although in two cases (WAH in the southern Atlantic and LTA in the North Atlantic) recruitment overfishing has increased in the recent period.

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 – LSPR and Length-based integrated mixed effects model – LIME) were applied for 10 and 6 stocks, respectively. Also, the integrated assessment LIME, which used catch and length data, was applied for 6 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 (**SMT-Table 3**).

Catch data are still incomplete for some species, regions and fleets, hampering the use of catch-based methods. At the moment, length-based methods show a more promising applicability for small tunas, although representative length distributions are still limited for some stocks. The use of length-based methods depends on how representative is the length data distribution by stock, since the size data available in T2SZ comes from different fleets with different gear selectivity. To deal with this issue, the Group recommended using length-data from all gears combined in order to get a better representation of the length distribution of the population, assigning equal weight to each fishing gear. It is important for all CPCs to report size data from all gears in order to get a representation of the length distribution of the entire population. Other length data, ideally from fishery independent surveys, could complement this information and improve the assessments.

A data-limited Management Strategy Evaluation (MSE) was also performed as preliminary exercise for WAH in the Northwest only. The MSE pointed out that management procedures 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 (**SMT-Table 4**). The results from this initial exercise must be interpreted with caution because of considerable uncertainty in the parametrization of the operating model, which might strongly influence the performance of management procedures (MP)s.

The Group noted that PSA, Length-based model and, mainly MSE are good options in a data limited framework and that these approaches should be applied for the stocks which the assessment was not carried out yet and improve those already conducted when better data is available.

SMT-5. Outlook

There is no projection made by the Committee.

Additional work is being carried out under the SMTYP to address knowledge gaps as regards size data, stock identification and biological parameters, which are necessary for their assessment.

The Committee notes that the Atlantic Ocean Tropical Tuna Tagging Programme adopted by ICCAT was successfully tagging LTA, but more WAH should be tagged given that only one individual was recovered. The Committee also notes the need for an increase in the collection of information on recaptures of tagged fish by enhancement awareness campaigns, focusing on artisanal fisheries, particularly gillnet, small purse seine, longline and handline.

SMT-6. Effect of current regulations

There are no ICCAT regulations in effect for small tunas. Several regional and national regulations are in place.

SMT-7. Management recommendations

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-species, artisanal fisheries, etc.), information on fisheries data is difficult to collect, however proper monitoring programs should be implemented by the CPCs. Therefore, although the Group has improved in applying a range of Data-limited models, the robustness still needs to be evaluated before they can be used to provide management advice to the Commission. Also, although the Group recognize that the use of Data-Limit models are important for small tunas as the first step for stock assessment, given the importance of some of species in terms of catches, more robust methods, such as those used for data rich species, should be applied in a near future, when more complete data are available.

SMT-Table 1. Estimated catches (t) of small tuna species by area, gear, and flag.

			1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023			
BLT	TOTAL	ATL	2719	4251	4489	3238	3393	3203	2483	4750	1303	2920	1031	1037	1027	1649	1442	1817	2003	2049	2114	1152	1306	1292	1368	1537	1473	2053	2039	4838	7226				
	Landings	All cargo	2719	4051	4488	3248	3393	3203	2483	4514	1256	1026	1031	1037	1027	1669	1442	1817	2003	2049	2114	1152	1306	1292	1368	1537	1473	2053	2039	4838	7226				
	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				
	Landings	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	0	0	0				
		Brazil	38	153	649	418	55	55	38	149	1669	1	118	91	242	233	266	10	9	46	124	110	399	325	228	192	392	410	620	1691	2273	3345			
		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				
		Chile	60	50	45	45	45	45	45	45	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
		EU France	1330	1370	1040	1040	1040	1040	1040	1040	1040	0	0	0	0	0	0	32	19	26	0	14	12	14	14	6	28	15	17	30	35	40			
		Germany	189	123	164	136	0	94	184	223	255	383	103	269	381	291	291	291	291	291	291	291	291	291	291	291	291	291	291	291	291	291			
		Mexico	0	0	0	0	0	0	0	12	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 the Grenadines	19	20	10	22	17	15	23	24	24	0	0	0	0	0	0	0	0	0	0	11	0	0	0	5	0	9	6	0	0	3			
		Trinidad and Tobago	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			
		UK Bermuda	7	4	5	4	6	6	5	4	5	9	4	5	8	7	6	7	9	5	0	11	11	15	20	17	17	16	10	7	12	9	9		
		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	0	0	0	0	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			
		USA	492	582	447	547	707	617	326	474	334	414	675	225	831	422	649	619	911	967	1919	1326	585	761	1265	946	1074	756	1628	1054	2403	1027	1027		
		Venezuela	21	624	728	498	1014	1152	606	1052	1211	110	712	225	217	777	231	203	313	473	237	121	88	61	197	33	42	4	2	5	3	2			
		Algeria	223	156	287	287	287	287	287	287	287	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		Dominica	19	10	0	0	0	79	83	54	78	42	20	38	47	29	37	45	41	37	39	37	39	34	34	34	37	24	0	0	0	0	0		
		Dominican Republic	239	892	892	231	158	18	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		
		Jamaica	0	0	144	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		
		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	0		
		St Lucia	82	47	35	48	100	41	65	108	96	109	25	126	132	151	172	165	203	220	192	147	104	10	156	138	0	0	127	84	74	75	60		
		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	ATL	5300	4301	5009	3070	2393	2646	3912	5766	6041	3794	6233	4233	4617	6025	5187	7952	5494	6234	2653	3916	1571	2370	3340	4003	3463	5233	3203	3683	9018	14669			
	Landings	MED	5300	4301	5009	3070	2393	2646	3912	5766	6041	3794	6233	4233	4617	6025	5187	7952	5494	6234	2653	3916	1571	2370	3340	4003	3463	5233	3203	3683	9018	14669			
	Discards	ATL	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		
	Landings	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	0	0	0	0	0		
		Brazil	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		
		Chile	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		
		Germany	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 Ireland	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 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	0	0	0	0	0	0		
		EU Portugal	0	0	0	0	28	263	494	208	166	231	299	590	967	602	311	436	654	387	55	39	0	0	0	0	0	0	0	64	29	130	7	55	
		Liberia	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		
		Morocco	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		
		Sierra Leone	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		
		South Sudan	100	0	0	0	0	0	400	1028	460	122	102	139	22	0	23	48	67	119	366	703	352	345	336	62	125	75	134	64	19	32	0	0	
		Venezuela	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		
		Algeria	306	230	237	179	299	173	225	230	481	0	391	547	586	477	1134	806	970	1110	1236	577	1025	1984	1592	231	799	905	732	3802	3229	3251	0	0	
		EU Croatia	22	28	26	26	26	26	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	1124	1472	2296	604	487	660	1024	861	493	493	1001	845	1101	3083	3189	726	378	327	1620	265	733	1191	1088	2170	774	1020	986	511	26	564	981	0	0
		EU France	0	0	1	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	1400	1400	1426	1426	0	0	196	125	120	246	226	180	274	157	620	360	169	129	118	115	108	311	207	181	204	513	262	139	273	309	0	0	
		EU Italy	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	531	
		EU Malta	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
		Morocco	1726	621	1673	562	1140	682	763	256	621	246	326	50	199	35	83	336	525	237	171	811	200	0	442	50	96	91	52	43	0	0	0	0	
		Spain	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	0	
		Thailand	13	14	13	32	93	45	15	2306	932	969	1760	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Turkey	77	0	0	0	0	0	316	316	316	316	0	284	1020	1031	993	836	1073	1081	2152	907	863	162	476	407	474	367	462	1020	737	809	492	0	0
		Philippines	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

		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		
BOP		E Time + Princeps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	145	147	149	153	159	162	207	207	211	2	0	0	0	0	0		
		Suezal	814	732	1012	1209	2213	2550	2085	545	621	195	103	484	2304	1020	1380	4029	1677	2676	1453	514	1217	1711	1591	1226	1696	3992	1380	2915	2973	2460	
		Stara Lesna	0	0	0	0	0	0	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	0	0	0	0	0	0	
		St Vincent and Grenadines	0	0	0	0	0	0	0	0	0	0	15	18	0	16	23	27	15	6	20	0	0	0	0	0	0	0	0	0	0	0	
		Thailand and Tobago	703	169	266	220	30	117	117	56	452	100	200	81	7	16	38	68	68	14	9	16	16	0	16	16	16	16	16	16	16	16	
		UTC-Brazil 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	0	0	0	0	0	
		UTC-Tahiti and Cocos	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	128	116	156	182	76	83	142	120	139	44	70	48	40	97	47	20	47	189	94	73	101	96	61	0	0	0	0	0	0	0	0
		Venezuela	1661	1613	1530	1379	1659	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619
HCO		Chihuahua Tugay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	29	49	20	12	0	0	0	0	0	0	
		Argentina	4	138	100	130	12	68	19	235	1	129	269	110	0	0	0	220	59	6	33	0	0	0	0	0	0	0	0	0	0	0	
		Bolivia	0	0	0	0	230	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	0	0	0	0	0	0	0	0	0	0	6	16	16	9	4	0	0	0	0	1	2	7	1	0	2	6	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	0	0	0	0	0	0	0	
		San Juan and Puerto Rico	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
		St Lucia	1	1	1	1	0	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	0
		Togo	224	145	197	197	197	197	197	0	0	0	1583	1215	2398	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Uruguay	0	0	1	2	2786	1918	1174	3699	20	456	0	0	0	0	0	0	0	0	0	0	456	0	0	0	0	0	0	0	0	0	0
	MRD		Algeria	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
		ATL	418	506	277	327	511	475	405	350	597	0	609	575	684	910	1042	976	1009	355	333	614	304	716	452	593	811	302	369	485	1216	941	8
		CP	0	0	25	35	16	20	35	35	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		ESP	70	0	0	0	25	120	0	0	0	0	0	0	0	0	0	0	0	59	41	31	56	56	20	22	20	42	31	24	13	22	0
		ESP-Cyprus	344	652	690	697	313	43	14	34	441	34	344	272	215	449	53	149	249	514	442	483	515	539	314	324	433	320	233	190	233	190	233
		ESP-France	0	0	0	0	0	0	0	0	27	0	0	0	0	15	34	20	23	13	12	30	25	103	60	217	52	86	57	45	51	60	
		ESP-Greece	1581	2116	1752	1559	945	2135	1914	1550	1420	1338	1321	1390	845	1213	587	476	531	798	733	960	678	691	700	399	641	422	342	269	655	213	0
		ESP-Ireland	1828	1512	2233	2233	2233	4139	4159	4139	4579	2091	2090	1356	559	610	1323	1131	964	1197	472	1245	1033	750	697	340	605	616	370	499	480	456	0
		ESP-Mexico	0	0	2	0	0	0	0	0	0	1	2	11	2	3	6	3	6	1	2	3	6	1	2	3	6	1	2	3	6	1	2
		ESP-Norway	648	697	985	725	724	1442	1442	1128	1128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HCO		Egypt	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	
		Luxembourg	93	37	67	45	39	120	115	5	613	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Mexico	305	413	560	611	855	1350	1238	1183	1112	848	1251	0	0	0	0	0	0	1425	1415	1413	1407	867	1290	1993	1986	2079	2612	2498	1833	3330	0
		Turkey	10392	9944	12244	7510	24000	17930	12000	14460	6216	6000	5701	70737	29260	3965	6448	7036	2481	10019	35704	11316	19522	4578	32460	7378	39220	1378	22343	2555	40892	2083	0
		ESP-USA	380	360	0	75	75	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
		ESP-USA	2	6	10	12	12	14	17	17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		ESP-USA	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
		ESP-USA	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
		ESP-USA	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
		ESP-USA	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
BOP		ATL	721	763	2195	491	177	868	1207	3012	233	756	581	217	32	1047	533	449	287	377	681	662	922	2239	805	560	126	171	105	220	144	262	0
		CP	515	588	2064	254	47	553	1062	858	786	713	573	215	32	875	426	442	273	335	657	643	939	1261	743	222	104	119	63	193	99	124	0
		ESP	176	115	132	227	130	217	145	154	137	23	0	2	0	172	107	6	14	42	24	21	13	1079	62	38	22	52	43	27	47	138	0
		ESP-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
		ESP-Greece	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
		ESP-Ireland	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
		ESP-Mexico	598	524	2003	246	28	626	1048	830	780	706	505	132	0	634	391	273	199	213	642	555	667	1113	653	420	38	53	62	169	91	107	0
		ESP-Norway	16	63	60	5	10	35	14	38	6	70	70	78	26	240	33	106	33	116	14	84	72	48	78	72	66	66	0	0	0	15	0
		ESP-USA	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
		ESP-USA	153	92	119	224	128	216	135	145	128	0	0	0	0	0	0	0	0	0	9	7	3	3	2	2	1	0	1	0	0	4	5
BRS		ATL	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
		CP	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
		ESP	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
		ESP-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
		ESP-Greece	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
		ESP-Ireland	0	0	0	0	0	0	0	0	0	0	0	0	0	0																	

[illegible]

		1974	1975	1976	1977	1978	1979	1980	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023			
R. Vincent and Grenadines		0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	15	0	27	33	0	0	0			
Trinidad and Tobago		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			
UK: Bermuda		6	6	7	6	5	4	2	1	3	4	5	7	5	5	4	3	4	5	6	3	3	4	2	1	1	2	3	5	1	3	
UK: St. Helena		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		1142	1312	2230	2015	1346	1623	1209	1451	1166	1492	1302	765	1351	1401	963	1245	1772	1875	2797	2333	2661	3337	3019	2577	2286	2380	2346	2146	5225	2993	
Venezuela		2115	2112	1840	1840	2015	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247	
HCO		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	
MED	CP	439	352	344	440	384	562	494	487	148	0	150	116	107	96	142	119	131	96	6	157	341	294	444	299	242	233	195	792	312	0	
	EU-Croatia	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	25	44	37	43	31	19	42	34	31	49	72
	EU-Cyprus	25	10	19	19	19	16	19	19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	EU-España	0	15	18	9	15	0	0	82	32	0	41	262	116	202	212	86	299	488	441	235	300	456	384	486	289	640	493	413	578	456	
	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	0	0	0	0	0	0	0	355	132	125	132	0	112	69	72	183	140	165	301	276	363	289	271	591	299	409	655	955	490	644	554
	EU-Ireland	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-Italy	0	0	0	0	0	0	0	0	16	24	39	34	203	224	486	1100	365	304	669	557	442	0	992	930	1032	1513	1204	803	767	1027	
	EU-Malta	0	0	0	0	0	0	0	0	1	1	1	1	3	2	5	3	7	5	21	9	4	7	1	6	5	7	3	2	6	5	
	EU-Nepal	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-Libya	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-Morocco	0	0	0	45	52	0	5	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	102	1100	40	80	65	55	30	25	22
	EU-Syria	0	1	0	1	14	0	0	0	0	3	1	0	9	0	331	19	24	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	EU-Tunisia	156	153	270	350	417	390	370	370	330	0	0	0	0	103	133	163	148	155	304	230	0	0	0	0	0	0	0	0	0	0	0
	EU-Yemen	204	696	824	333	1113	752	1453	1036	960	637	633	0	0	0	0	0	0	810	800	803	798	5165	6323	12434	4032	6152	4924	2940	5827	6551	
EU-Yemen	0	0	0	0	0	200	750	750	750	0	568	207	1230	782	1074	1309	1046	1437	1645	1386	682	336	184	480	617	450	341	463	410	789		
HCO	Israel	119	213	119	119	119	119	119	119	119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NEI (MED)	200	200	200	200	200	200	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Palentine	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	
Landings (FP)		21	32	22	18	20	23	16	16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Landings (FP)	ATL	CP	Brazil	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	
	Cape Verde	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	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	
	Côte d'Ivoire	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-España	1127	454	2184	353	295	194	751	1197	209	456	208	213	1233	944	1181	1330	2057	1105	712	1102	1968	1892	1244	731	1103	831	329	752	569		
	EU-France	1169	272	391	540	777	541	621	1192	396	710	1058	367	205	262	122	241	901	1061	675	693	565	870	732	296	470	493	273	510	399	365	
	EU-Salvador	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	
	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	0	0	0	0	0	0
	Guinea-Bissau	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
	Guinea-Bissau	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
	Guinea-Bissau	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
	Guinea-Bissau	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
	Guinea-Bissau	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
	Guinea-Bissau	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
HCO	Miss. (Frag. (EU tropicals))	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-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
MED	CP	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
	EU-España	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
MAW	TOTAL	ATL																														

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
EU-France	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	46	45	38	159	61	79	58	61	51	107
EU-Portugal	0	0	0	0	0	0	0	0	0	0	1	0	3	3	4	3	9	9	10	2	0	0	0	0	0	0	0	0	0	0
EU-Salvador	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
Great Britain	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
Greenland	46	49	56	56	59	62	51	71	59	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Guinea-Equatorial	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
Korea Pop	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	14	12	9	13
Liberia	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
Morocco	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
Mozambique	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
Mozambique	0	0	0	0	0	0	0	0	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	0	0	0	0	0	0	0	0	0	0	0	0	91	240	120	86	111	99	210	373	228	0	109	0	77	123	111	20	0	0
S. Tomé e Príncipe	39	46	80	52	56	62	52	52	52	94	88	76	0	131	235	241	247	254	260	266	100	70	172	1	157	8	102	60	118	0
Senegal	0	0	1	0	0	5	0	0	5	0	1	1	0	0	2	6	0	11	24	0	3	7	0	0	0	0	0	28	89	55
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	0	0	0	0
St. Vincent and the Grenadines	28	16	23	10	65	52	46	311	17	40	60	0	241	29	24	31	40	31	5	32	24	9	11	126	92	27	30	0	16	21
Turkmenistan and Tobago	0	0	0	1	1	1	2	1	9	7	6	6	7	6	6	5	5	7	9	9	9	10	8	7	6	6	5	7	8	0
UK-Bermuda	50	93	99	105	108	104	61	56	91	87	88	83	86	124	117	101	81	100	88	75	76	86	92	68	82	60	67	76	68	0
UK-British Virgin Islands	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	4	1	1	0	0	0	0	1	3	0
UK-Ru. Islands	26	25	25	19	10	15	15	22	25	18	17	11	20	13	18	29	19	31	12	16	16	10	15	16	9	5	5	6	5	13
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
USA	391	764	608	750	614	858	640	633	846	789	712	558	89	1123	495	522	653	584	999	460	1027	1153	2060	1204	530	974	633	455	2959	1037
Venezuela	542	548	487	488	380	467	4	17	13	9	7	16	13	33	9	25	28	23	38	12	27	30	64	51	45	46	40	31	56	85
NCC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1132	1012	810	0	0	0	0	0	0	0	0
Chagos 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	0	0	0	0	0
Chagos	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
Chagos	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
NCO	125	40	30	30	30	30	30	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aruba	39	58	58	58	58	58	58	58	58	46	11	37	10	6	9	15	14	16	10	13	13	0	0	10	6	3	10	5	0	0
Dominica	0	0	0	325	112	31	35	35	35	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	0	0	0	0	0	0	0
Saba, Sint Eustazius and Nevis	0	0	0	0	0	0	0	0	0	0	7	6	7	0	0	0	0	0	0	0	0	0	6	9	14	13	0	9	0	0
St. Lucia	88	88	221	223	223	310	243	213	217	169	238	169	187	0	171	195	199	0	0	148	156	87	147	110	0	127	70	77	71	28
Landings(TP)	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
CP	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
Bahamas	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
Cape Verde	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
Cuba	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
Côte d'Ivoire	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-Russia	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
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	0	0	0	0	0
Guinea Pop	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
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	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	0	0	0	0	0
Discrete	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
CP	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
Korea Pop	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
Mozambique	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
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	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	0	0	0	0
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	0	0	0	0	0
NCC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104	108	86	0	0	0	0	0	0	0	0

SMT-Table 2. Three 3 colour classification indicating the missing parameters by species and areas. Grey squares represent the area where the species does not occur or is not exploited.

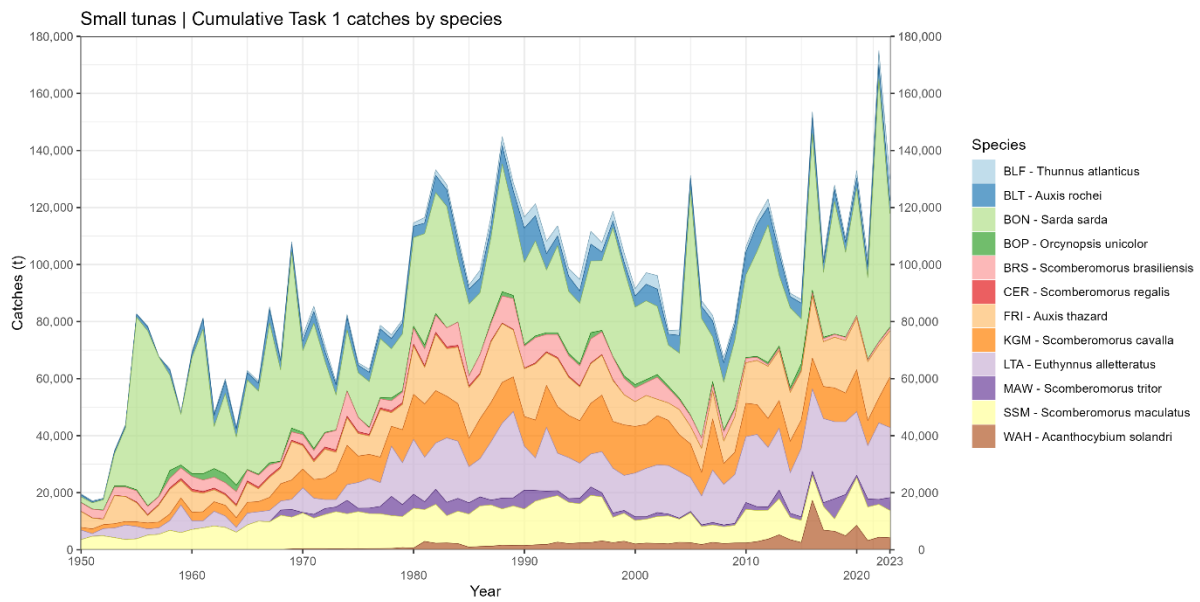
Species code	Areas				
	MEDI	NE	SE	NW	SW
BLF	out of range	out of range	out of range	Miss Tmax, T50 and Fmb	Miss Tmax, T50 and Fmb
BLT	Have all	miss L50, T50 and Fmb	miss a,b, Lmax Fmb	Miss all	Miss all
FRI	Miss all	Miss everything except Lmax and a,b,	Miss Lmax, L50, T50 and Fmb, a e b	Miss all	miss: Linf, K, t0, Tmax, T50, L50, Fmb
LTA	Have all	Miss T50, fmb	Miss all	Miss Fmb and T50	miss: Lmax, Linf, K, t0, Tmax, T50, L50, Fmb
BON	Have all	Miss T50, fmb	Miss all	Miss all	miss: Lmax, Linf, K, t0, Tmax, T50, L50, Fmb
BOP	Miss Fmb	miss: Linf, K, t0, Tmax, T50, L50, Fmb, a e b	Miss all	out of range	out of range
WAH	out of range	miss: Linf, K, t0, Tmax, T50, L50, Fmb, a e b	Miss all	Have all	miss: Linf, K, t0, Tmax, T50
BRS	out of range	out of range	out of range	Miss Fmb	Miss Fmb and T50
KGM	out of range	out of range	out of range	Have all	Miss Fmb
SSM	out of range	out of range	out of range	Miss Fmb	Miss all
CER	out of range	out of range	out of range	miss: Linf, K, t0, Tmax, T50, Fmb	Miss all
MAW	Miss all	miss: t0, Tmax, T50, Fmb	Miss all except Lmax	out of range	out of range
DOL	Miss Lmax, T50 and Fmb	Miss all except a and b	Miss all except Linf and k	Miss Lmax, T50 and Fmb	Miss L50, a,b, max, T50 and Fmb

SMT-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).

Data limited Assessments							
	Last year assessed	Length based		Catch based		Catch+Length	
		LBSPR	LIME	LBSPR	DBSRA	SSS	LIME
		Pons <i>et al.</i> (2019a)		Baibbat <i>et al.</i> (2019)	Pons <i>et al.</i> (2019b)		
		SPR	SPR		B/BMSY	B/BMSY	B/BMSY
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	--	--	--	--

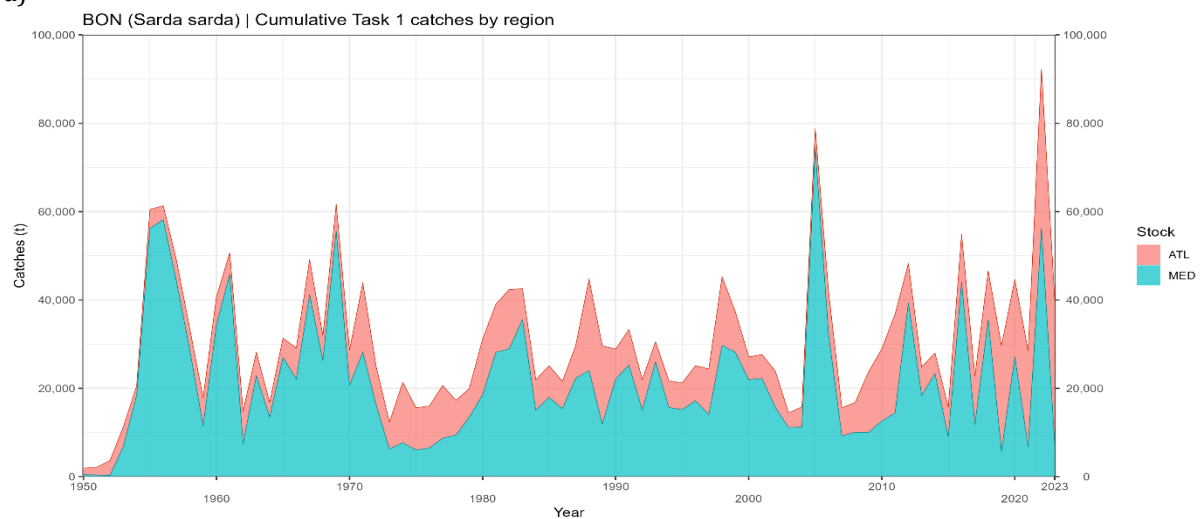
SMT-Table 4. Summary of the Northwest Atlantic wahoo management strategy evaluation results for selected MPs using the DLMtool package (Mourato *et al.*, 2019). Color cells coding is used to denote if the particular MP falls within acceptable performance metric criteria (green – acceptable and red – 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
Length-based methods					
LBSPR	0.74	0.93	0.65	0.120	0.86
minlenLopt1	0.75	0.95	0.72	0.110	0.83
matlenlim	0.75	0.96	0.74	0.095	0.81
Catch-based methods					
AvC	0.70	0.95	0.76	0.630	0.78
CC1	0.71	0.95	0.76	0.640	0.76
SPMSY	0.81	0.98	0.86	0.110	0.43
DBSRA	0.61	0.98	0.81	0.450	0.74
Fishing effort control methods					
curE	0.75	0.93	0.66	0.130	0.85
curE75	0.87	0.97	0.78	0.150	0.80

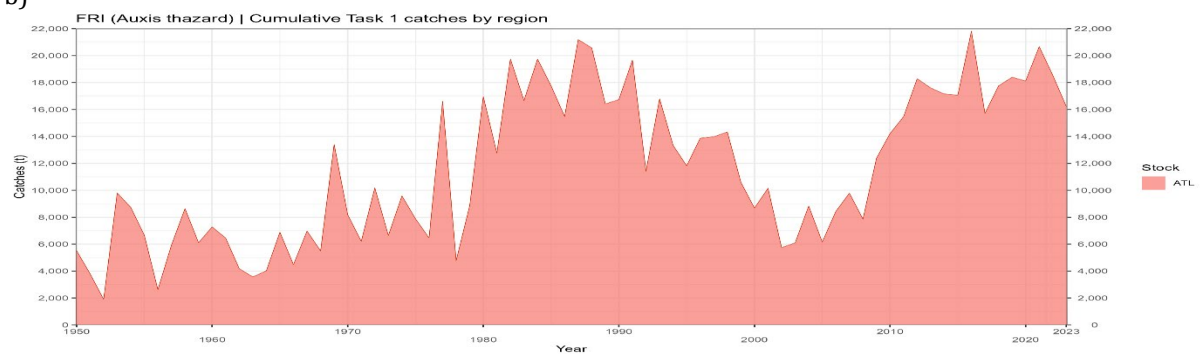


SMT-Figure 1. Estimated landings (t) of small tunas (combined) in the Atlantic and Mediterranean, 1950-2023. The data for the last three years are incomplete.

a)

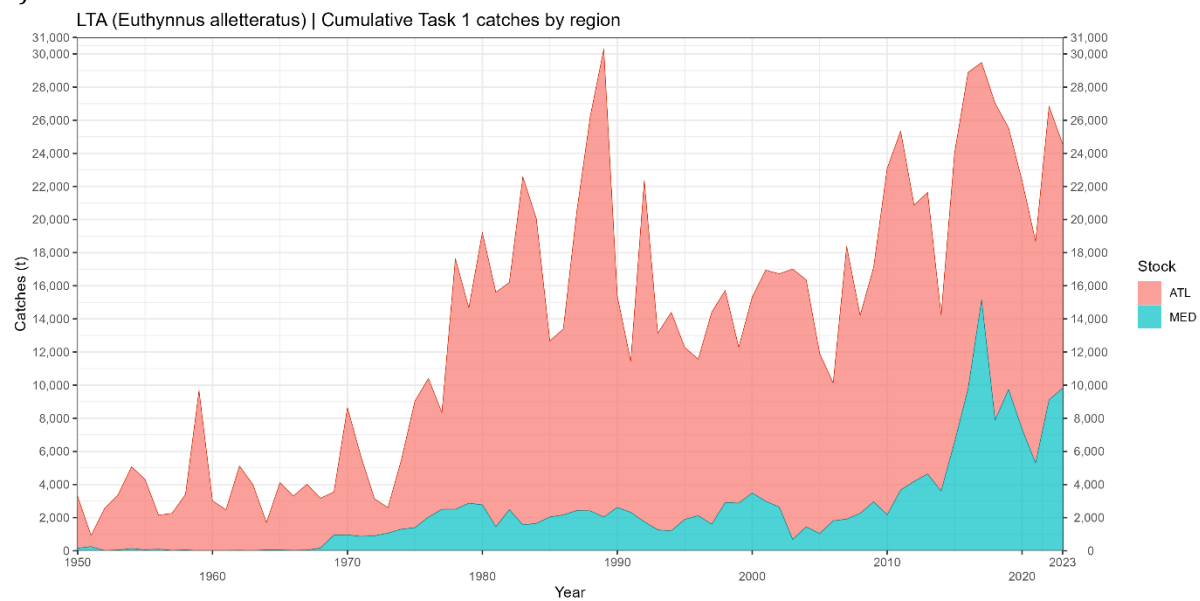


b)

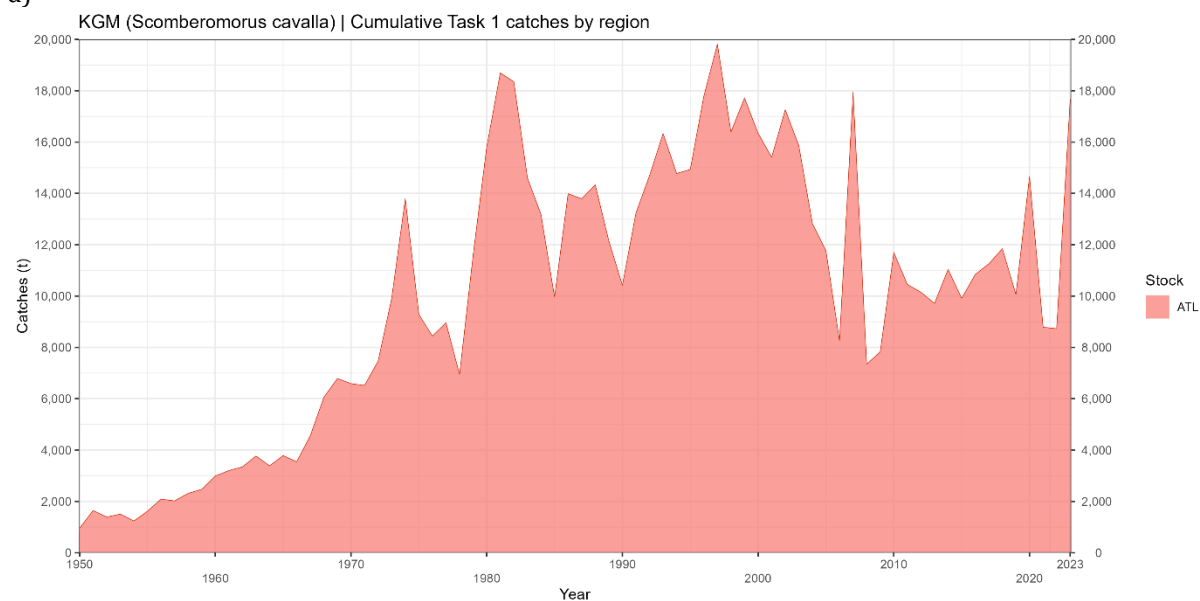


SMT-Figure 2. Estimated landings (t) of the major species of small tunas in the Atlantic and Mediterranean, 1950-2023. The data for the last years are incomplete.

c)

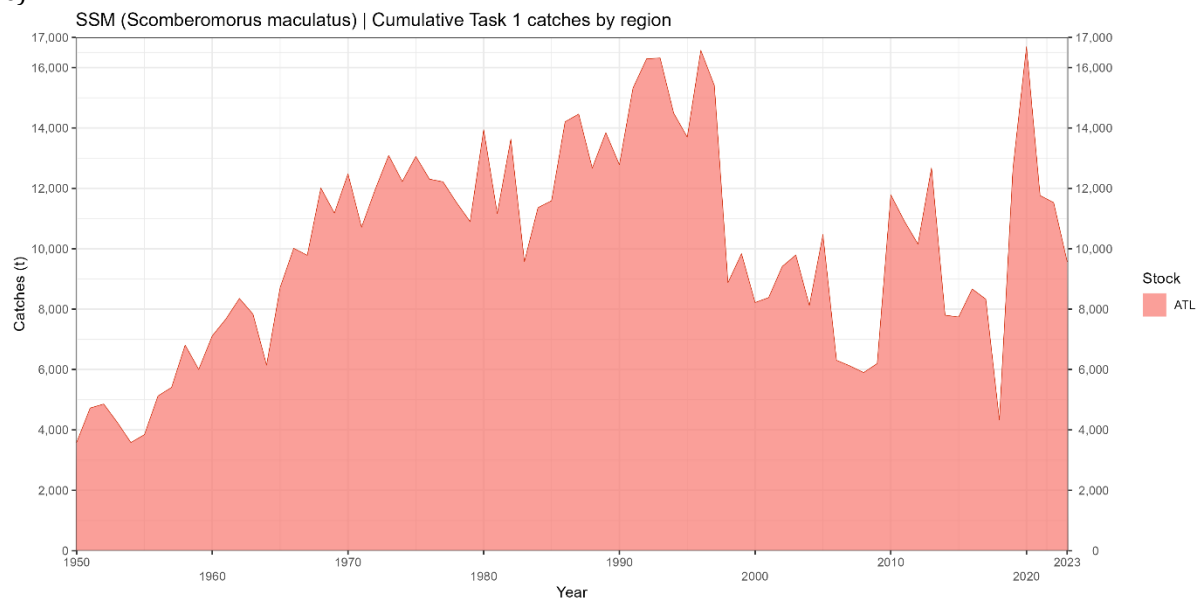


d)

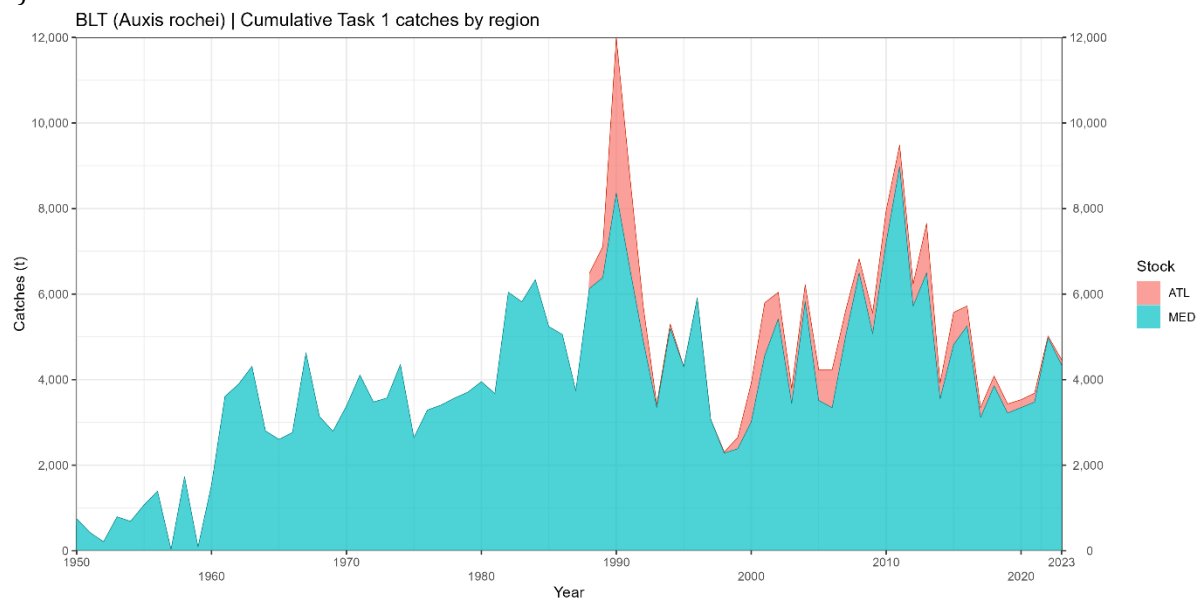


SMT-Figure 2. Estimated landings (t) of the major species of small tunas in the Atlantic and Mediterranean, 1950-2023. The data for the last years are incomplete.

e)

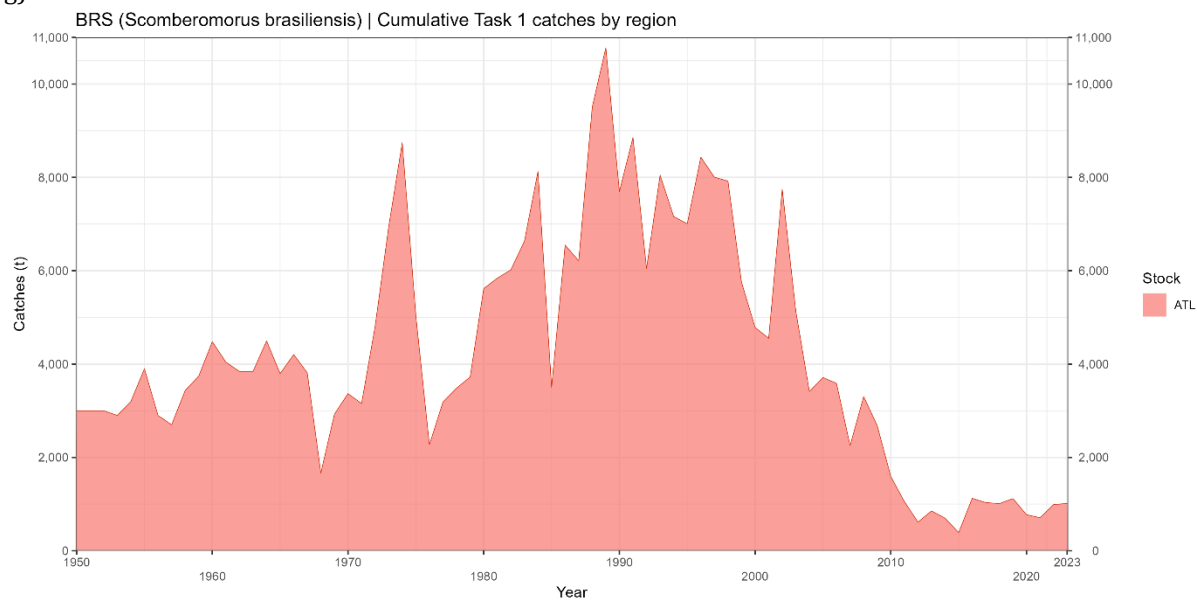


f)

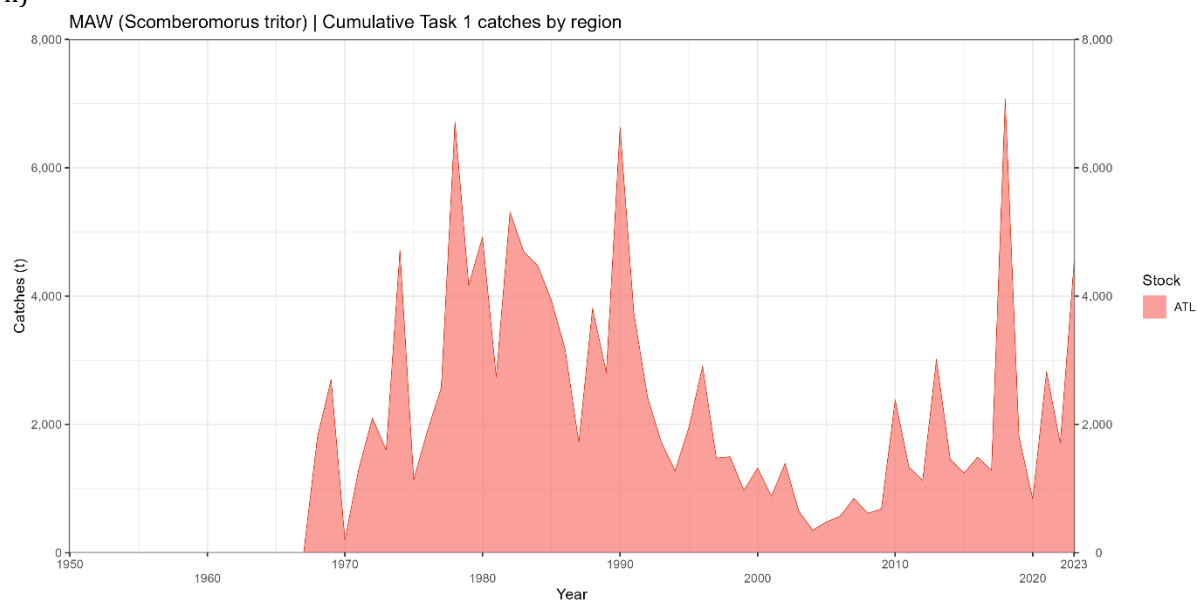


SMT-Figure 2. Estimated landings (t) of the major species of small tunas in the Atlantic and Mediterranean, 1950-2023. The data for the last years are incomplete.

g)

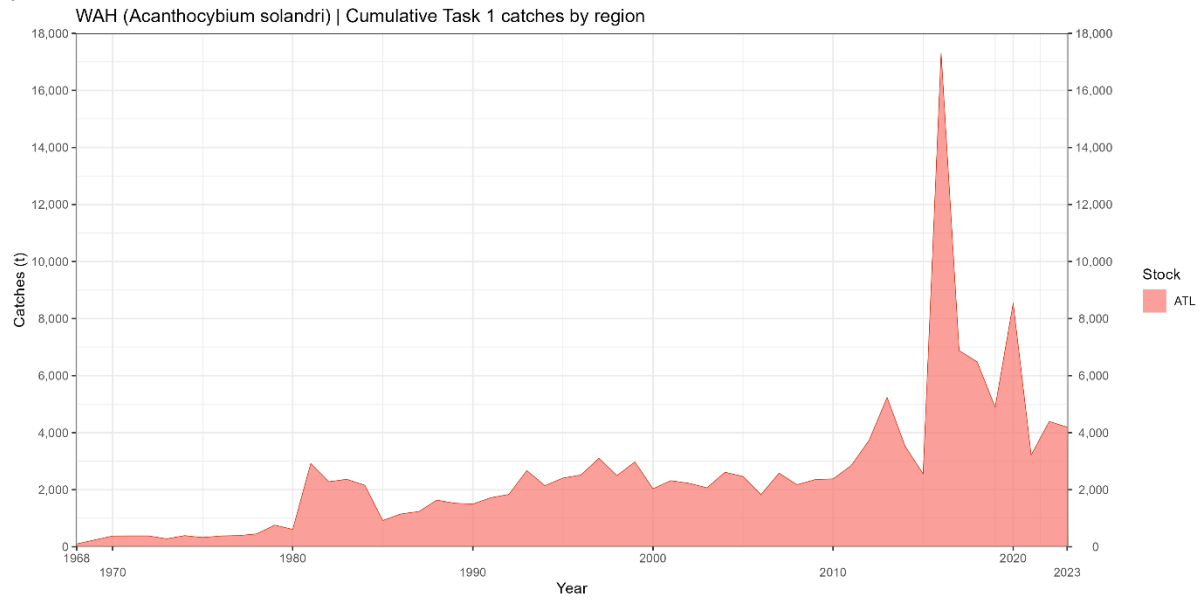


h)

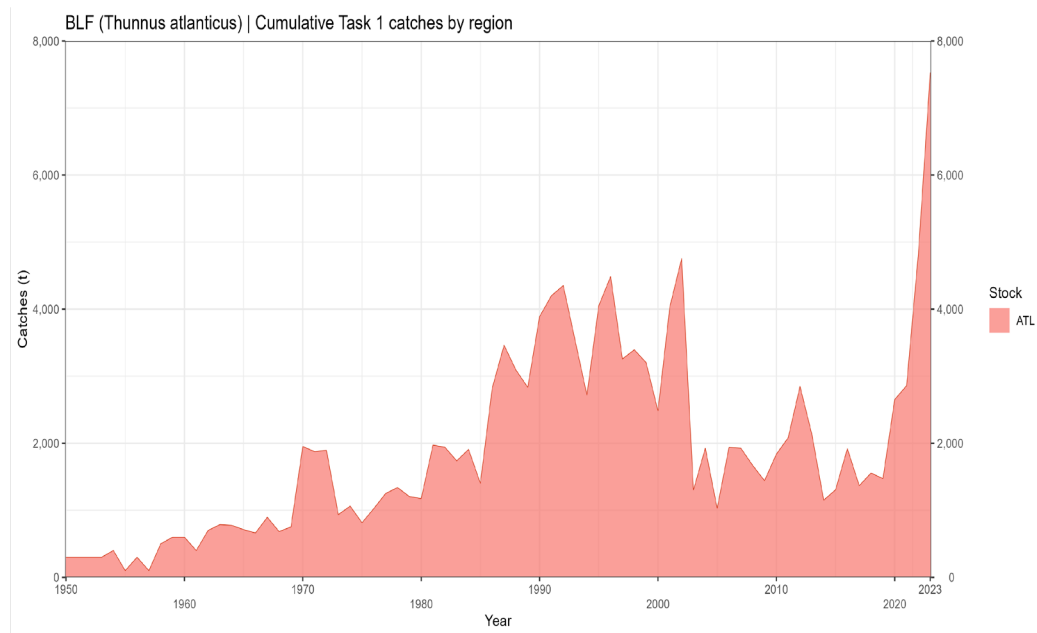


SMT-Figure 2. Estimated landings (t) of the major species of small tunas in the Atlantic and Mediterranean, 1950-2023. The data for the last years are incomplete.

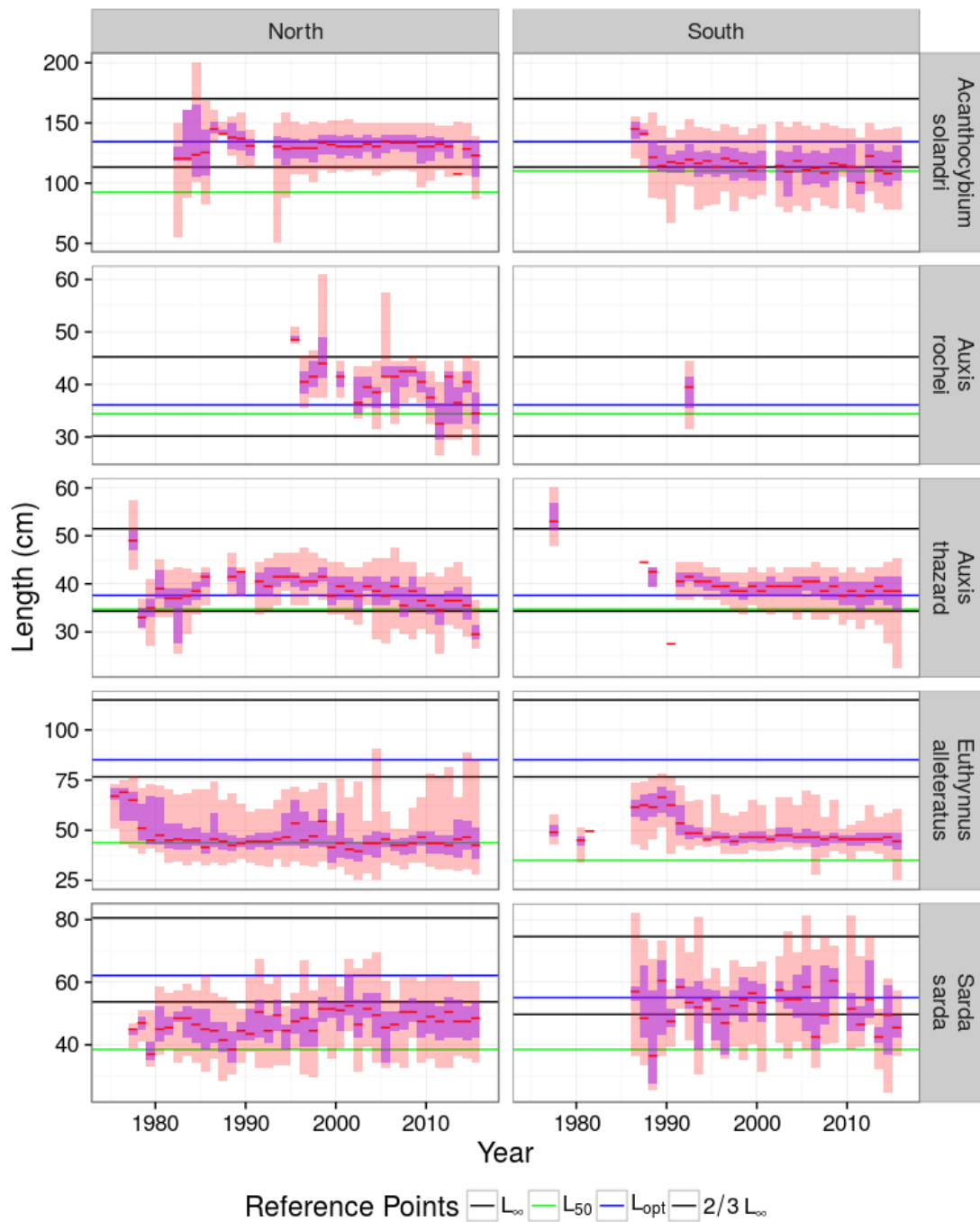
i)



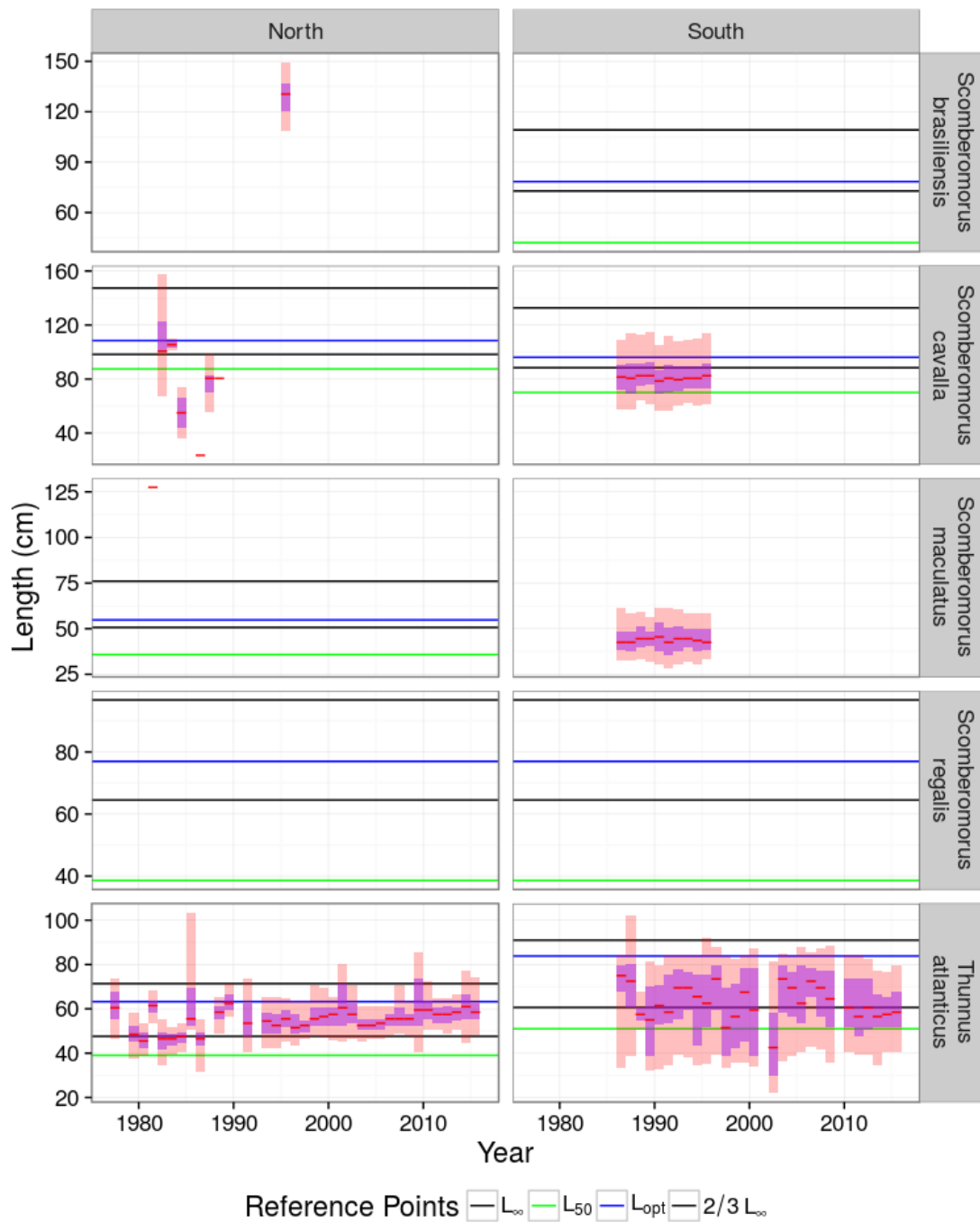
j)



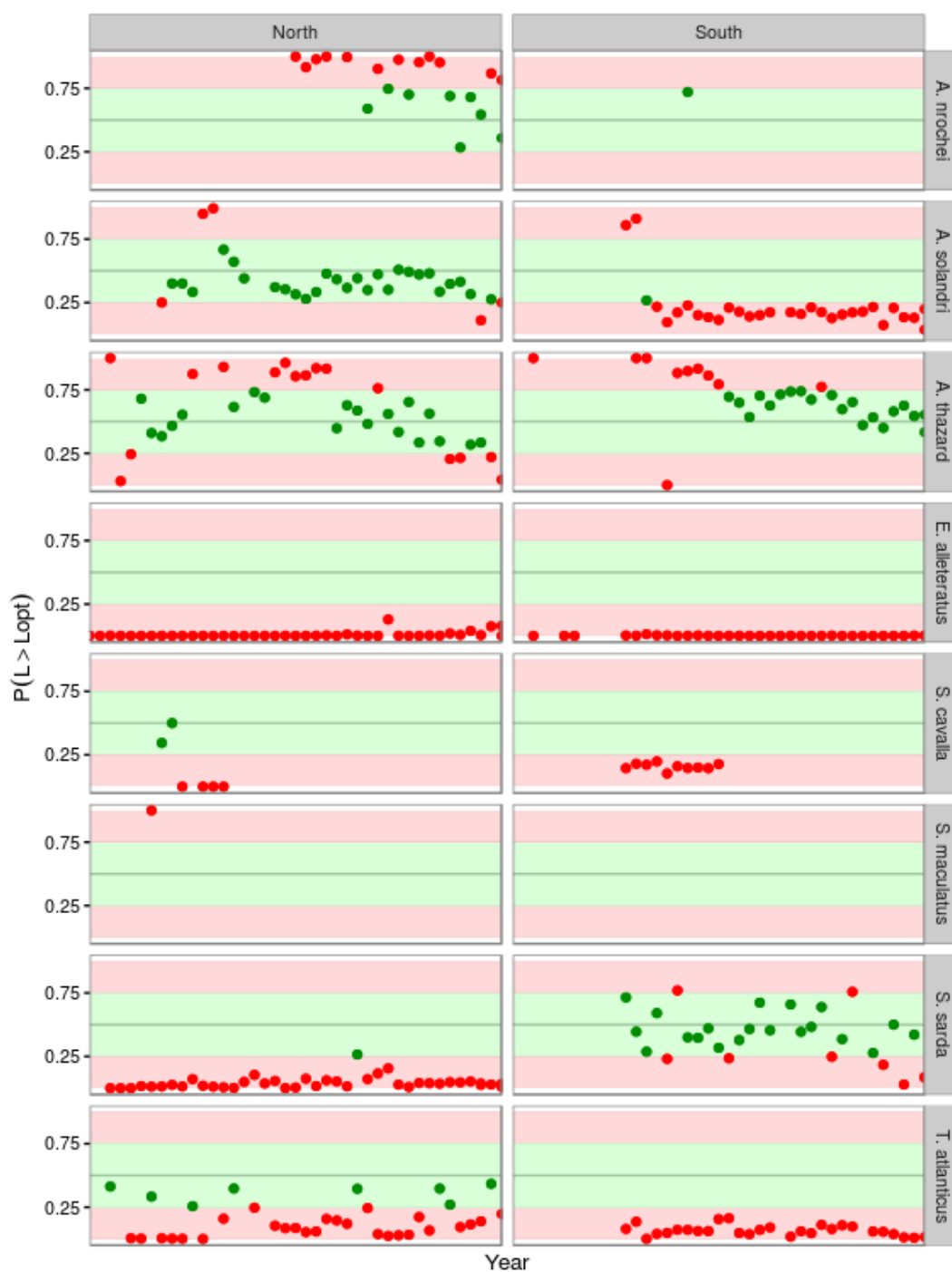
SMT-Figure 2. Estimated landings (t) of the major species of small tunas in the Atlantic and Mediterranean, 1950-2023. The data for the last years are incomplete.



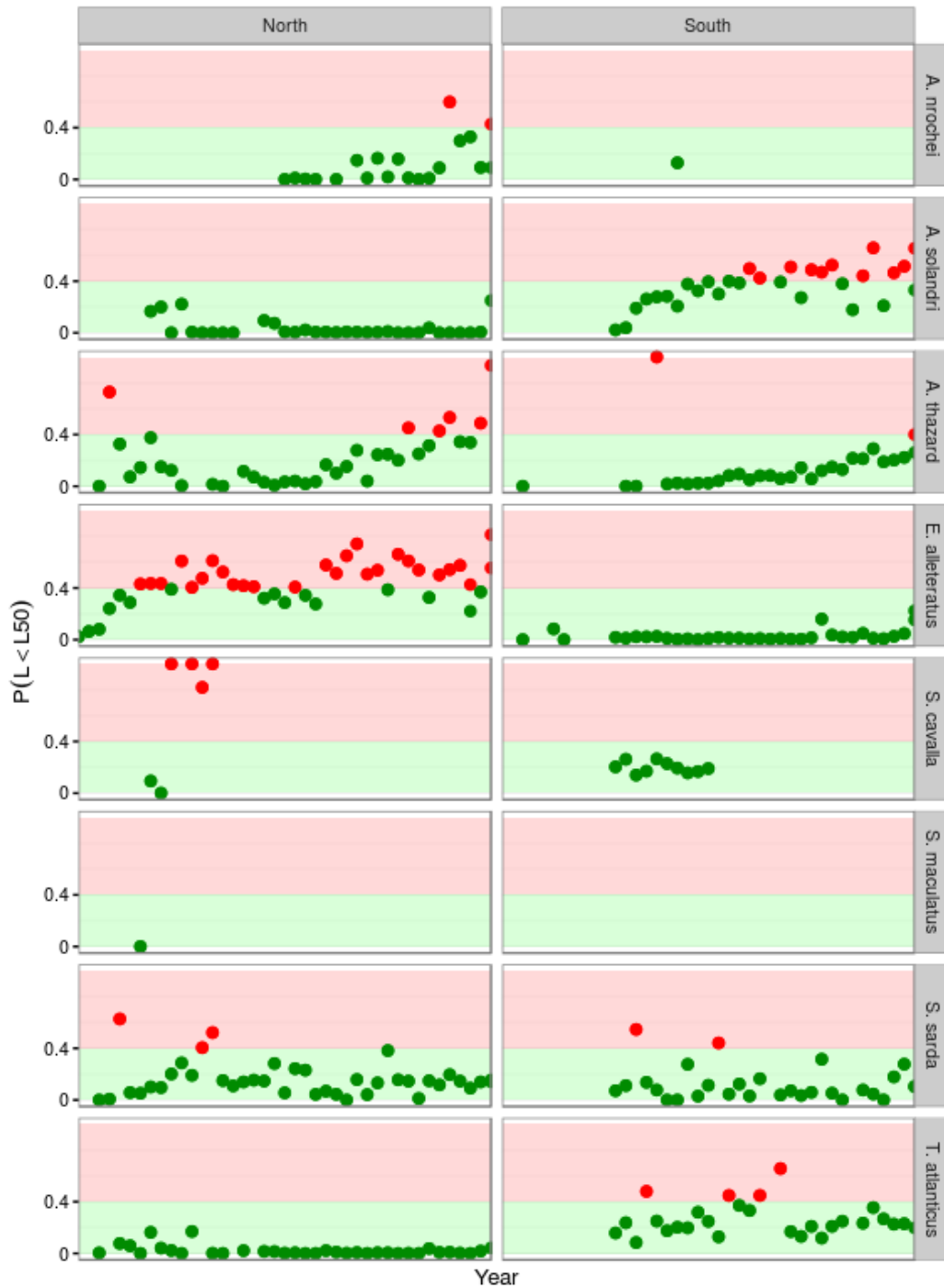
SMT-Figure 3a. Length distributions and reference points by species and Atlantic region for version 4 of Task 2 size data. The horizontal lines show the reference points i.e. asymptotic length (L_{∞}), length at 50% mature (L_{50}) and two estimates of the size at which a cohort reaches its maximum biomass (L_{opt}) and its proxy ($2/3 \sim L_{\infty}$). The bars show the length distributions, i.e. median, interquartiles (5%, 95%).



SMT-Figure 3b. Length distributions and reference points by species and Atlantic region for version 4 of Task 2 size data. The horizontal lines show the reference points i.e. asymptotic length (L_{∞}), length at 50% mature (L_{50}) and two estimates of the size at which a cohort reaches its maximum biomass (L_{opt}) and its proxy ($2/3 \sim L_{\infty}$). The bars show the length distributions, i.e. median, interquartiles (5%, 95%).



SMT-Figure 4a. Proportion of length distributions greater than L_{OPT} by species and Atlantic region. 50% is used as a target reference point and so catches where the proportions of individuals greater than L_{OPT} is >25% and <75% are coloured green.



SMT-Figure 4b. Proportion of length distributions less than L_{50} by species and Atlantic region; 40% is used as a limit reference point and so when the proportion of individuals less than L_{50} is $>40\%$ is coloured red.