CATCH COMPOSITION (2018-2022)

An approach to species interacting with the fishery
Catch and Discard composition
Update of catches data
Comparison of 2016 data with current catch

From "DEA data" (Electronic LogBook) 2018-2022
Source: SGP-MAPAMA

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ANNUAL REPORT 2022

FIP BLUES
Blue Shark Swordfish
EU Surface Longliners

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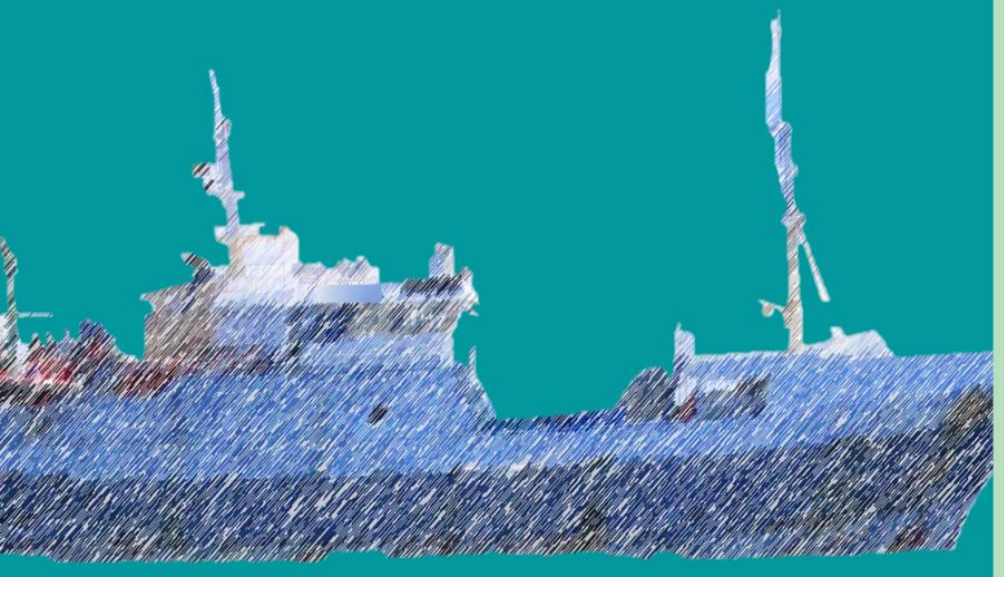


Contents:

Brief conclusion

Three species make up the large majority of the vessels' “catches” either for North, South or Whole Atlantic in terms of *all species interaction*:

Blue shark represents aprox. 71-75 % of the whole interactions and catches.
Swordfish represents aprox. 17-19 % of the whole interactions and catches.
Short fin mako represents aprox 3-5% of the whole interactions and catches, but decreasing highly since 2021 to levels of 0,5-3%

Big eye tuna, Escolar, Longbill spearfish, black marlin are the next species of the catch retained but representing most of the times a very low proportion, with less than the 1% of the total weight.

A group of about species would make up the large majority of the vessels' discards either for North, South or Whole Atlantic in terms of all species interaction since 2021:
Shortfin mako, around the 50% (South) and 71% (for North) of the discards, followed by different species of protected sharks and swordfish in different proportions.

In the following tables detailed figures for the composition of species interacting with the fleet are provided for North, South and whole Atlantic. Data are presented separately for Catch and Discard as well for “all species interacting”.

Blue shark and Swordfish keep being the target species in relatively close percentages of the total weight and small fin mako would represent around 3-5% of that total, so, primary species in terms of fishing management.

1. The Electronic Logbook: "DEA" and parameters

The "DEA" is the Spanish acronym for the Electronic Logbook system on board, connected to the headquarters of the department for fisheries control of the SGP in Madrid, under the competence of the MAPA.

SGP: the General Secretariat for Fisheries of the MAPA.
MAPA: the Spanish Ministry for Agriculture, Fisheries and Food.
SCRS: Standing Committee Research and Statistics of ICCAT.

The DEA is composed of mandatory fields that must be reported daily by a given vessel for every fishing campaign carried out in the ICCAT area, with the correspondent licence from the SGP-MAPA in accordance with the public Spanish administration legal requirements; and so with the European Union requirements and consequently with ICCAT obligations.

Data series extracted from the DEA of the fleet from 2018-2022 were provided to FIPBLUES by the SGP in Excel files, only for analytical purposes, with the correspondent obligation of confidentiality and data protection respect. So, please, as evaluators, we ask you to keep the same confidentially.

The DEA, the logbook, has several mandatory fields to be reported: information of the vessel, the gear, the geographic positions, the species, the weight, the fate of the fish, dates of work, sailing, etc. But, for analytical aims we focused mainly on these parameters:

Fleet Register: the fishing modality.
Sheet: sheet with data register for each vessel and each "fishing trip" or "campaign", reflecting every single fishing set (operation, deployment) during that campaign.
Departure date of the vessel
Return date of the vessel: date of arrival to port
Date of fishing SET
Date of Landing
Date of recording
Stock: target species and geographical distribution range.
Ocean: North Atlantic, South Atlantic
Or **FISHING AREA**: Middle East, Middle West, Northeast, Northwest, Southeast, Southwest, following the FAO Major Fishing Areas code, and also the "Subarea"- "Division" - "Hemisphere"
Fishing gear features
Species: in this report we use the names in English and the FAO alpha-3 code (AL3).
***Number of individuals** (optional).
Observations.
Sum of weight caught: added (aggregate) weight of all the individuals of a given species caught in each set.

*It should be noted that the *number of pieces* is optional, not mandatory. However, as part of our aim to improve information of the fishery, FIPBLUES aims at extending the record of this parameter for species retained on board and discards as far as possible. This is a measure in line with the will to collaborate with the SCRS work for stocks studies. The aim is to obtain a substantial improvement in data recording of the fishery at the end of the FIP at 2024.

The DEA data offers a valuable approach for the catches and discards recorded by every single vessel for every fishing campaign, which is not exactly the same the SGP will finally report to ICCAT. And that is just because of the logical differences between on-board estimation of weight following regulated size-weigh tables, conversion factors applied, etc. and the subsequent statistical adjustments of the rough data applied by the technical services of the SGP-MAPA in accordance with ICCAT methodologies.

However, these are the data directly wrote down by the vessel captain for each fishing campaign providing an excellent insight of the relation of the species interacting with the fishery, from target to by catch species.

Data management

Lot of those original data sheets with thousands of data have been managed and processed in order to generate information on species composition, catches and relative distribution. Thus, we have got fresh figures that make up the average catch composition of the FIPBLUES fleet, which species interact with the fishery, its total weight and the percentage of each species in the total weight of the catch. Consequentially, we can compare it with that catch composition of the full assessment in 2016 and assess how data recording has improved for target, primary, secondary and ETPs species.

Parameters to analyse

As mentioned above, after processing, selecting and filtering parameters of the rough data we synthetized our analysis in a file containing key parameters to produce data for the purposes of the catch species analysis. Those parameters providing information on catches and discards of species we take into account are:

Ano: Year.
Especie: Species, with the English name and the FAO alphanumeric code assigned for each species (AL3).
"Océano": this field refers to the hemisphere and it is given with three options to note: Shared – North – South until 2020. From 2021 it has been simplified to North and South.
Division: following the FAO areas code.
Peso Vivo: Live Weight, as aggregate weight of all specimens of a species caught in each set.
Num_Piezas*: number of individual of a species caught. This is optional, not mandatory.
Catch-Discarded: fate of the fish, Retained or Discarded, back in the sea.

Ano	Especie	Oceano (N, S)	División	PesoVivo	PesoConsumo	NumPiezas	Catch-Discard?
2018	**Swordfish (SWO)**	**Compartido**		245.356,42	254.234,42	128	Catch target
2018	Swordfish (SWO)	Compartido	34.3.3	21.963,62	21.963,62	0	Catch target
2018	Swordfish (SWO)	Compartido	34.3.4	97.195,07	97.195,07	0	Catch target
2018	Swordfish (SWO)	Compartido	34.3.5	498,75	498,75	0	Catch target
2018	Swordfish (SWO)	Compartido	34.4.2	125.698,98	134.576,98	128	Catch target
2018	Swordfish (SWO)	**Norte**	(en blanco)	177.876,55	181.116,55	616	Catch target
2018	Swordfish (SWO)	Norte	21.3.M	72.666,14	72.666,14	0	Catch target
2018	Swordfish (SWO)	Norte	21.3.N	21.282,66	21.282,66	0	Catch target
2018	Swordfish (SWO)	Norte	21.6.G	2.918,02	2.918,02	0	Catch target
2018	Swordfish (SWO)	Norte	21.6.H	56.551,44	56.551,44	0	Catch target
2018	Swordfish (SWO)	Norte	27.10.a	255.391,66	255.391,66	34	Catch target
2018	Swordfish (SWO)	Norte	27.10.b	43.541,68	43.541,68	0	Catch target
2018	Swordfish (SWO)	Norte	27.12.c	3.024,42	3.024,42	0	Catch target
2018	Swordfish (SWO)	Norte	27.8.e	1.299,14	1.299,14	0	Catch target
2018	Swordfish (SWO)	Norte	27.9.a	779,00	779,00	0	Catch target
2018	Swordfish (SWO)	Norte	27.9.b	25.078,99	25.078,99	0	Catch target

Species interactions

Interactions, in this case, meaning all species either caught or discarded in the fishery. The results extracted from the excel sheets come from combining the parameters shown above in order to produce a generic view of the fishery species composition.

The species composition is shown in the following tables following the geographical distribution of North Atlantic, South Atlantic or "Shared ocean" for the DEA data for the period 2018-2020; and simplified in North Atlantic and South Atlantic for the period 2021-2022.
Both numbers for catches and discards are added to the species weigh (kg) and relative percentage

Finally, once we have got the figures for this period 2018-2022, we compare the current data with those of the full assessment made in 2016 by the consulting Bureau Veritas in a previous study requested by the fleet to MSC (data "BV2016"). We show then the species and "weight %" of the species in BV2016 and the current FIPBLUES analysis data.

2. Why to address the FIPBLUES analysis in two periods

Data for period 2018-2020

In the DEA files 2018-2020 catches and discards are grouped by "OCEAN" with three possible options to classify: North, South and Shared.

North: It refers to the areas north of 05ºN of ICCAT areas, following the FAO areas codes.
South: It refers to the areas south of 05ºS of ICCAT areas, following the FAO areas codes.
"Ocean: Shared": it refers to the area between 05ºN and 05ºS as the system used by the SGP when providing those annual log book files.

Data for period 2021-2022

Since 2020 the DEA simplified the field "Ocean" (understood as "Hemisphere") giving just two options: North and South.

Approach

Therefore, we address the analysis taking into account this consideration and showing data separately for both periods as they are composed differently:
- Catches and Discards for 2018-2020
- Catches and Discards for 2021-2022

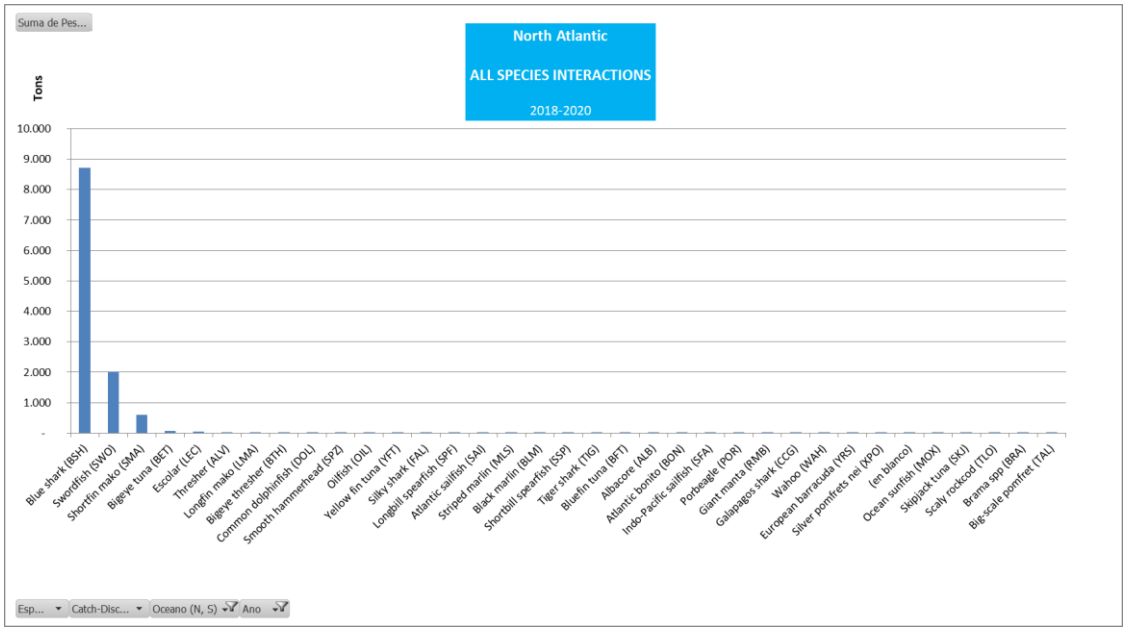
3. Results of the data analysis for the period 2018-2020

3.1. All species interacting with the fleet (Without differentiation between "catch" or "discard").

NORTH ATLANTIC: species interacting with the fleet (without differentiation between "catch" and "discard"). (in lightgreen the three main species).

NORTH ATLANTIC (2018-2020)		
Species	**Total Weight (kg)**	**Weight (%)**
Blue shark (BSH)	8.709.944	75,61%
Swordfish (SWO)	2.012.909	17,47%
Shortfin mako (SMA)	597.858	5,19%
Bigeye tuna (BET)	78.864	0,68%
Escolar (LEC)	60.322	0,52%
Thresher (ALV)	11.140	0,10%
Longfin mako (LMA)	9.744	0,08%
Bigeye thresher (BTH)	6.360	0,06%
Common dolphinfish (DOL)	5.263	0,05%
Smooth hammerhead (SPZ)	3.665	0,03%
Oilfish (OIL)	3.649	0,03%
Yellow fin tuna (YFT)	3.424	0,03%
Silky shark (FAL)	3.210	0,03%
Longbill spearfish (SPF)	2.155	0,02%
Atlantic sailfish (SAI)	2.115	0,02%
Striped marlin (MLS)	2.089	0,02%
Black marlin (BLM)	1.551	0,01%
Shortbill spearfish (SSP)	1.327	0,01%
Tiger shark (TIG)	600	0,01%
Bluefin tuna (BFT)	540	0,00%
Albacore (ALB)	518	0,00%
Atlantic bonito (BON)	464	0,00%
Indo-Pacific sailfish (SFA)	398	0,00%
Porbeagle (POR)	250	0,00%
Giant manta (RMB)	200	0,00%
Galapagos shark (CCG)	126	0,00%
Wahoo (WAH)	107	0,00%
European barracuda (YRS)	49	0,00%
Silver pomfrets nei (XPO)	39	0,00%

(en blanco)	39	0,00%
Ocean sunfish (MOX)	30	0,00%
Skipjack tuna (SKJ)	12	0,00%
Scaly rockcod (TLO)	10	0,00%
Brama spp (BRA)	7	0,00%
Big-scale pomfret (TAL)	3	0,00%
Total general	**11.518.980**	



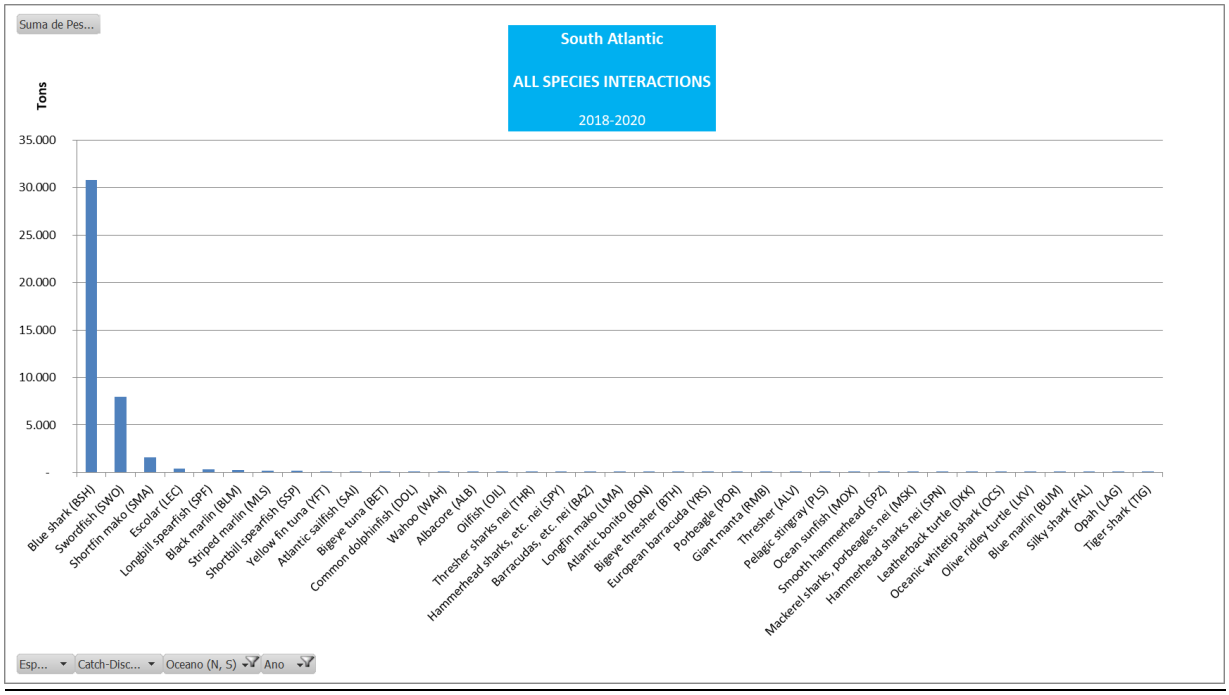
Three species make up the large majority of the vessels' catches: Blue shark (BSH), Swordfish (SWO) and Short fin mako (SMA).
Blue shark is by far the main species caught in the North Atlantic, representing 75,61 % of the total weight for the three years analysed. The second is the Swordfish with the 17,47% of the total weight (%); and the third one is the Short fin mako, representing a scarce 5% of the total weight (%) for this period.

Then, Big eye tuna (BET) and Escolar (LEC) are the next species of the catch retained but representing a very low proportion, with less than the 1% of the total weight.
The rest species represent scarcely hundredths or thousandths of the total weight, as shown in the table above.

SOUTH ATLANTIC: species interacting with the fleet (without differentiation between "catch" and "discard").

SOUTH ATLANTIC (2018-2020)		
Species	**Total Weight (kg)**	**Weight (%)**
Blue shark (BSH)	30.790.729	73,08%
Swordfish (SWO)	7.941.219	18,85%
Shortfin mako (SMA)	1.595.584	3,79%
Escolar (LEC)	379.863	0,90%
Longbill spearfish (SPF)	340.158	0,81%
Black marlin (BLM)	256.594	0,61%
Striped marlin (MLS)	202.947	0,48%
Shortbill spearfish (SSP)	178.309	0,42%
Yellow fin tuna (YFT)	109.016	0,26%
Atlantic sailfish (SAI)	82.666	0,20%
Bigeye tuna (BET)	81.768	0,19%
Common dolphinfish (DOL)	42.097	0,10%
Wahoo (WAH)	37.225	0,09%
Albacore (ALB)	20.211	0,05%
Oilfish (OIL)	17.036	0,04%
Thresher sharks nei (THR)	16.767	0,04%
Hammerhead sharks, etc. nei (SPY)	7.558	0,02%
Barracudas, etc. nei (BAZ)	6.194	0,01%
Longfin mako (LMA)	6.030	0,01%
Atlantic bonito (BON)	3.094	0,01%
Bigeye thresher (BTH)	3.015	0,01%
European barracuda (YRS)	2.772	0,01%
Porbeagle (POR)	2.087	0,00%
Giant manta (RMB)	1.380	0,00%
Thresher (ALV)	1.365	0,00%
Pelagic stingray (PLS)	1.163	0,00%
Ocean sunfish (MOX)	790	0,00%
Smooth hammerhead (SPZ)	790	0,00%
Mackerel sharks, porbeagles nei (MSK)	490	0,00%
Hammerhead sharks nei (SPN)	400	0,00%
Leatherback turtle (DKK)	250	0,00%
Oceanic whitetip shark (OCS)	225	0,00%
Olive ridley turtle (LKV)	200	0,00%
Blue marlin (BUM)	127	0,00%
Silky shark (FAL)	120	0,00%
Opah (LAG)	45	0,00%
Tiger shark (TIG)	35	0,00%

Total general	42.130.320	

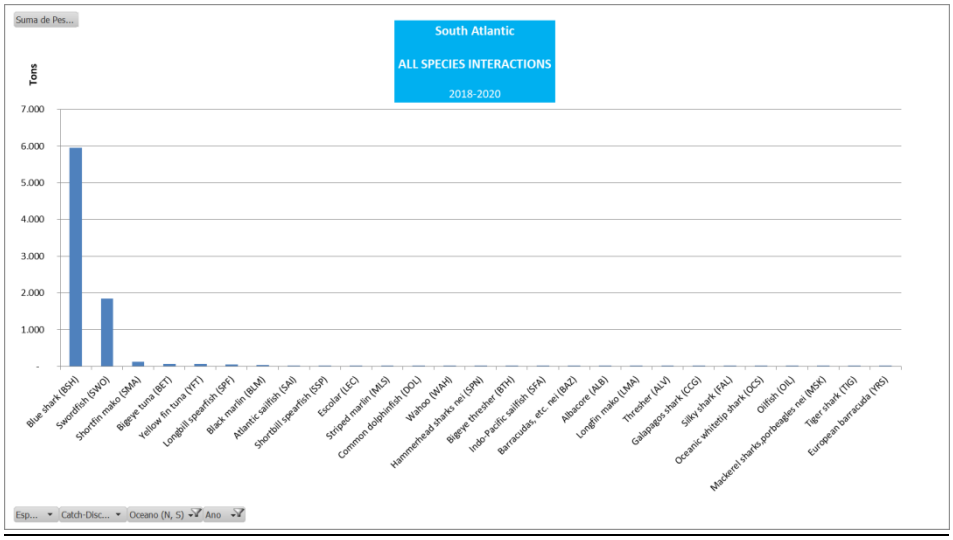


As in the North, the same three species make up the large majority of the species: Blue shark (BSH), Swordfish (SWO) and Short fin mako (SMA). Blue shark is by far the main species caught in the South Atlantic, representing 73,08 % of the total weight for the three years analysed. The second is the Swordfish with the 18,85% of the total weight (%); and the third one is the Short fin mako, representing 3,79% of the total weight (%) for this period.

Then, Escolar (LEC) and Longbill spearfish (SPF) are the next species of the list, but in a very low low proportion, with less than the 1% of the total weight. The rest species represent scarcely hundredths or thousandths of the total weight, as shown in the table above.

SHARED ATLANTIC: species interacting with the fleet (without differentiation between "catch" and "discard").

SHARED ATLANTIC (2018-2020)		
Species	**Total Weight (kg)**	**Weight (%)**
Blue shark (BSH)	5.945.546	72,44%
Swordfish (SWO)	1.850.755	22,55%
Shortfin mako (SMA)	132.605	1,62%
Bigeye tuna (BET)	62.634	0,76%
Yellow fin tuna (YFT)	62.288	0,76%
Longbill spearfish (SPF)	54.417	0,66%
Black marlin (BLM)	40.108	0,49%
Atlantic sailfish (SAI)	24.573	0,30%
Shortbill spearfish (SSP)	11.029	0,13%
Escolar (LEC)	7.528	0,09%
Striped marlin (MLS)	4.504	0,05%
Common dolphinfish (DOL)	2.264	0,03%
Wahoo (WAH)	2.070	0,03%
Hammerhead sharks nei (SPN)	1.735	0,02%
Bigeye thresher (BTH)	1.550	0,02%
Indo-Pacific sailfish (SFA)	1.062	0,01%
Barracudas, etc. nei (BAZ)	608	0,01%
Albacore (ALB)	585	0,01%
Longfin mako (LMA)	410	0,01%
Thresher (ALV)	300	0,00%
Galapagos shark (CCG)	253	0,00%
Silky shark (FAL)	240	0,00%
Oceanic whitetip shark (OCS)	200	0,00%
Oilfish (OIL)	124	0,00%
Mackerel sharks,porbeagles nei (MSK)	90	0,00%
Tiger shark (TIG)	70	0,00%
European barracuda (YRS)	9	0,00%
Total general	**8.207.558**	



The results for the intermediate zone named as “Shared” in the DEA reflect more less the same proportion for blue shark (72,44 %) but slightly higher for swordfish in relation to North and South, with 22,50% of the total weight; and lower for Short fin mako, representing only 1,62% of the total weight (%) for this period.

Then, Bigeye tuna (BET) and Yellow fin tuna (YFT) follows the rank with a scarce 1% (0,76%) for both species of the total weight. The rest species represent scarcely hundredths or thousandths of the total weight, as shown in the table above.

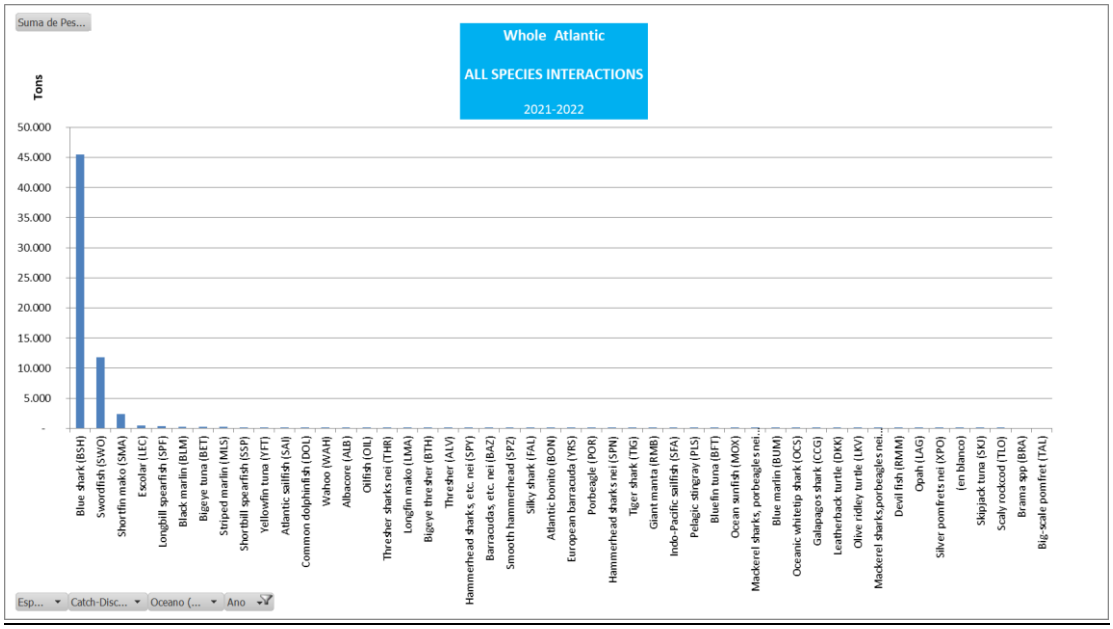
For the three zones it can be noted that the interactions with those prohibited shark species in the list (family Alopidae , family Sphyrnidae, oceanic whitetip shark, silky shark, porbeagle) is extremely low, currently less than 0,01% or even lower, almost zero. That is, interactions for that 3-year period is with just a few individuals.

WHOLE ATLANTIC: species interacting with the fleet (without differentiation between "catch" and "discard").

If we take the Ocean Atlantic as a whole, the species composition is as follows:

WHOLE ATLANTIC (2018-2020)		
Species	**Total Weight (kg)**	**Weight (%)**
Blue shark (BSH)	45.446.228	73,4236%
Swordfish (SWO)	11.810.845	19,0818%
Shortfin mako (SMA)	2.348.508	3,7943%
Escolar (LEC)	447.792	0,7235%
Longbill spearfish (SPF)	396.730	0,6410%
Black marlin (BLM)	299.397	0,4837%
Bigeye tuna (BET)	225.242	0,3639%
Striped marlin (MLS)	209.541	0,3385%
Shortbill spearfish (SSP)	190.665	0,3080%
Yellowfin tuna (YFT)	174.857	0,2825%
Atlantic sailfish (SAI)	109.384	0,1767%
Common dolphinfish (DOL)	49.624	0,0802%
Wahoo (WAH)	39.402	0,0637%
Albacore (ALB)	21.314	0,0344%
Oilfish (OIL)	20.809	0,0336%
Thresher sharks nei (THR)	17.287	0,0279%
Longfin mako (LMA)	16.185	0,0261%
Bigeye thresher (BTH)	15.075	0,0244%
Thresher (ALV)	12.850	0,0208%
Hammerhead sharks, etc. nei (SPY)	7.558	0,0122%
Barracudas, etc. nei (BAZ)	6.803	0,0110%
Smooth hammerhead (SPZ)	4.885	0,0079%
Silky shark (FAL)	3.630	0,0059%
Atlantic bonito (BON)	3.558	0,0057%
European barracuda (YRS)	2.830	0,0046%
Porbeagle (POR)	2.427	0,0039%
Hammerhead sharks nei (SPN)	2.135	0,0034%
Tiger shark (TIG)	1.715	0,0028%
Giant manta (RMB)	1.580	0,0026%
Indo-Pacific sailfish (SFA)	1.460	0,0024%
Pelagic stingray (PLS)	1.163	0,0019%
Bluefin tuna (BFT)	1.040	0,0017%
Ocean sunfish (MOX)	905	0,0015%
Mackerel sharks, porbeagles nei (MSK)	490	0,0008%
Blue marlin (BUM)	482	0,0008%
Oceanic whitetip shark (OCS)	425	0,0007%

Galapagos shark (CCG)	379	0,0006%
Leatherback turtle (DKK)	250	0,0004%
Olive ridley turtle (LKV)	200	0,0003%
Mackerel sharks,porbeagles nei (MSK)	90	0,0001%
Devil fish (RMM)	50	0,0001%
Opah (LAG)	45	0,0001%
Silver pomfrets nei (XPO)	39	0,0001%
(en blanco)	39	0,0001%
Skipjack tuna (SKJ)	12	0,0000%
Scaly rockcod (TLO)	10	0,0000%
Brama spp (BRA)	7	0,0000%
Big-scale pomfret (TAL)	3	0,0000%
Total general	**61.895.945**	



The results for the whole Atlantic keeps relatively the same proportion of the mains species in the total weight: blue shark (73,42 %), swordfish (19,01%) and Short fin mako (3,79%).
None of the rest of species get even the 1%: the Escolar (LEC) reaches less a scarce 0,72%, Longbill spearfish (SPF) only 0,64%, Black marlin (BLM) o,48% and Bigeye tuna (BET) a 0,36%.
Again, the interactions with those prohibited shark species in the list (family Alopidae , family Sphyrnidae, oceanic whitetip shark, silky shark, porbeagle) is extremely low, currently less than 0,01% or even lower, almost zero. That is, interactions for that 3-year period is with just a few individuals.

3.2 CATCH SPECIES (Catches and Rest Other Catch in original files).

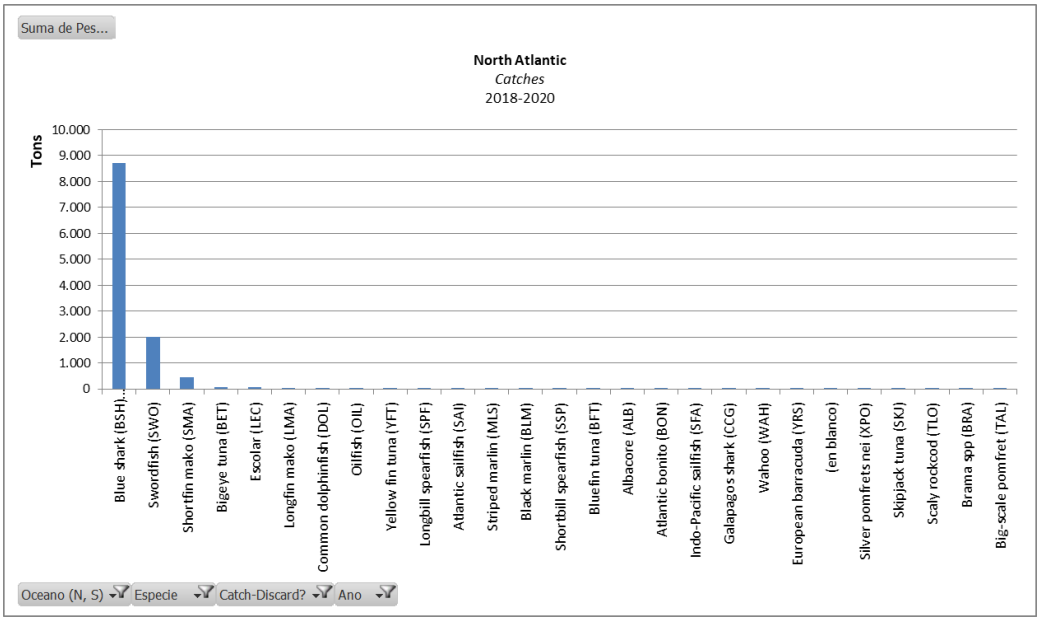
We show now the CATCH (retained on board) composition for 2018, 2019 and 2020, respectively for the North, South and Shared Ocean. This way we can see in detail the catches species composition for each year and monitoring the evolution of the catches of the species for the three years in each of the "Zones": North, South and Shared Ocean.

NORTH ATLANTIC CATCH SPECIES COMPOSITION 2018-2020. (Catches and Rest Other Catch in original files)

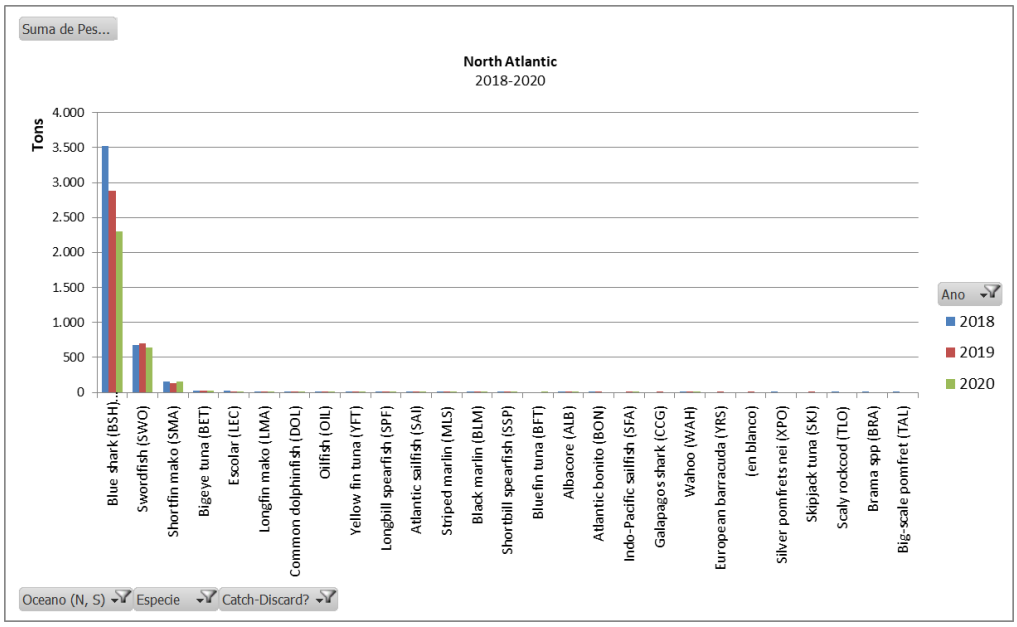
NORTH ATLANTIC (Species / Catches in kg)	2018	2019	2020	Total Weight (Kg)	Weight (%)
Blue shark (BSH)	3.521.896	2.887.009	2.300.886	8.709.791	76,78%
Swordfish (SWO)	677.078	695.723	639.164	2.011.966	17,74%
Shortfin mako (SMA)	161.863	131.269	156.574	449.706	3,96%
Bigeye tuna (BET)	26.998	30.196	21.590	78.784	0,69%
Escolar (LEC)	26.312	18.680	15.330	60.322	0,53%
Longfin mako (LMA)	5.559	3.863	321	9.744	0,09%
Common dolphinfish (DOL)	2.909	1.838	517	5.263	0,05%
Oilfish (OIL)	2.143	703	803	3.649	0,03%
Yellow fin tuna (YFT)	261	2.539	624	3.424	0,03%
Longbill spearfish (SPF)	546	1.366	244	2.155	0,02%
Atlantic sailfish (SAI)	660	884	572	2.115	0,02%
Striped marlin (MLS)	330	1.054	705	2.089	0,02%
Black marlin (BLM)	517	835	199	1.551	0,01%
Shortbill spearfish (SSP)	608	559	160	1.327	0,01%
Bluefin tuna (BFT)			540	540	0,00%
Albacore (ALB)	115	317	86	518	0,00%
Atlantic bonito (BON)	204	260		464	0,00%
Indo-Pacific sailfish (SFA)		387	10	398	0,00%
Galapagos shark (CCG)		126		126	0,00%
Wahoo (WAH)	34	12	61	107	0,00%
European barracuda (YRS)		49		49	0,00%
(en blanco)		39		39	0,00%
Silver pomfrets nei (XPO)	39			39	0,00%
Skipjack tuna (SKJ)		12		12	0,00%
Scaly rockcod (TLO)	10			10	0,00%
Brama spp (BRA)	7			7	0,00%
Big-scale pomfret (TAL)	3			3	0,00%
Total general	**4.428.092**	**3.777.719**	**3.138.386**	**11.344.197**	

Three species make up the large majority of the vessels' catches: Blue shark (BSH), Swordfish (SWO) and Short fin mako (SMA). Blue shark is by far the main species caught in the North Atlantic, representing a 76,78 % of the total weight for the three years analysed. The second is the Swordfish with the 17,74% of the total weight (%); and the third one is the Short fin mako, representing the 3,96% of the total weight (%) for this periods.

Then, Big eye tuna (BET) and Escolar (LEC) are the next species of the catch retained but representing a very small proportion, with less than the 1% of the catch.



Evolution 2018-2020



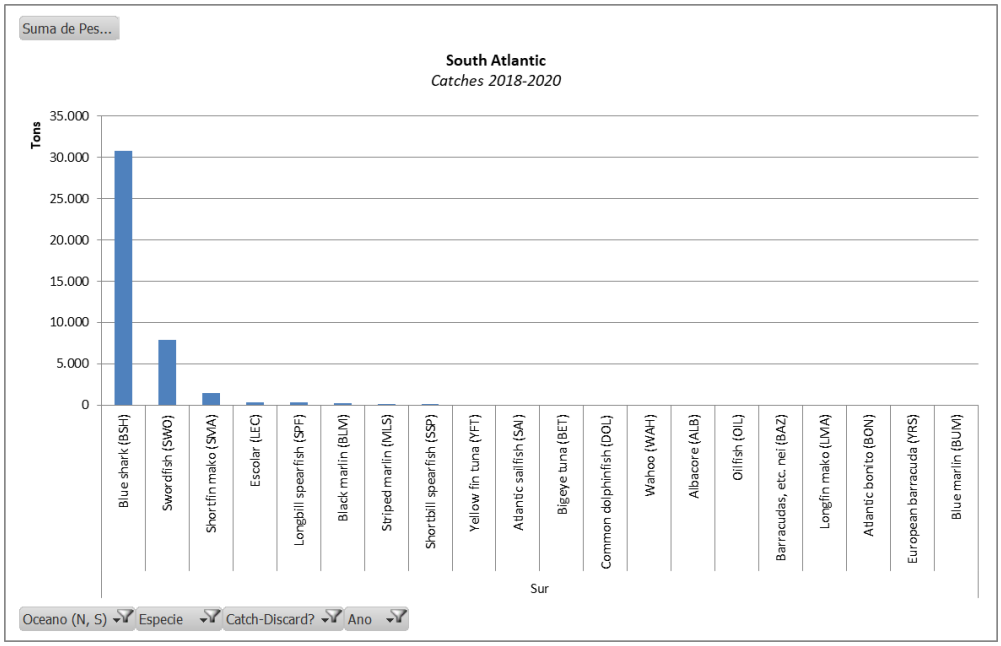
SOUTH ATLANTIC CATCH SPECIES COMPOSITION 2018-2020. (Catches and Rest Other Catch in original files

SOUTH ATLANTIC (Species // catches in kg)	2018	2019	2020	Total Catches	Weight (%)
Blue shark (BSH)	11.999.533	9.807.020	8.982.981	30.789.534	73,31%
Swordfish (SWO)	2.799.656	2.752.807	2.350.949	7.903.412	18,82%
Shortfin mako (SMA)	481.869	774.337	282.639	1.538.845	3,66%
Escolar (LEC)	92.417	241.989	45.372	379.778	0,90%
Longbill spearfish (SPF)	79.272	194.342	66.544	340.158	0,81%
Black marlin (BLM)	60.794	163.406	32.144	256.344	0,61%
Striped marlin (MLS)	48.026	132.989	21.932	202.947	0,48%
Shortbill spearfish (SSP)	18.032	147.031	13.247	178.309	0,42%
Yellow fin tuna (YFT)	55.790	120	53.026	108.936	0,26%
Atlantic sailfish (SAI)	46.782	483	35.401	82.666	0,20%
Bigeye tuna (BET)	44.109		37.474	81.583	0,19%
Common dolphinfish (DOL)	6.652	26.684	8.762	42.097	0,10%
Wahoo (WAH)	5.933	26.724	4.568	37.225	0,09%
Albacore (ALB)	12.407	27	7.732	20.166	0,05%
Oilfish (OIL)	3.633	11.786	1.617	17.036	0,04%
Barracudas, etc. nei (BAZ)	903	5.291		6.194	0,01%
Longfin mako (LMA)		6.030		6.030	0,01%
Atlantic bonito (BON)	546	2.247	284	3.076	0,01%
European barracuda (YRS)	295	2.391	85	2.772	0,01%
Blue marlin (BUM)			127	127	0,00%
Total general	**15.756.648**	**14.295.704**	**11.944.884**	**41.997.236**	

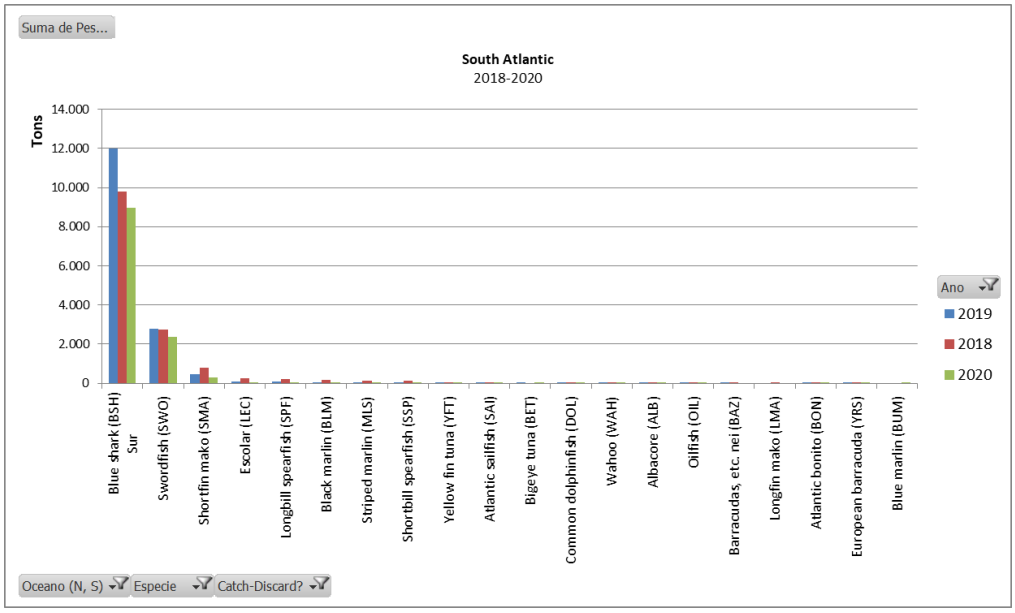
The same tree species make up the large majority of the vessels' catches in the South Atlantic: Blue shark (BSH), Swordfish (SWO) and Short fin mako (SMA).

Again the blue shark is by far the main species caught in the North Atlantic, representing a 73,31 % of the total weight for the three years analysed. The second is the Swordfish with the 18,8 2% of the total weight (%); and the third one is the Short fin mako, representing the 3,66% % of the total weight (%) for this periods. It can be noted than the relation is almost the same for the North Atlantic.

Then, Escolar (LEC), the Longbill spearfish (SPF) and the Black marlin (BLM) follow that list but representing also a very small proportion, each one with less than the 1% of the catch.



Evolution 2018-2020



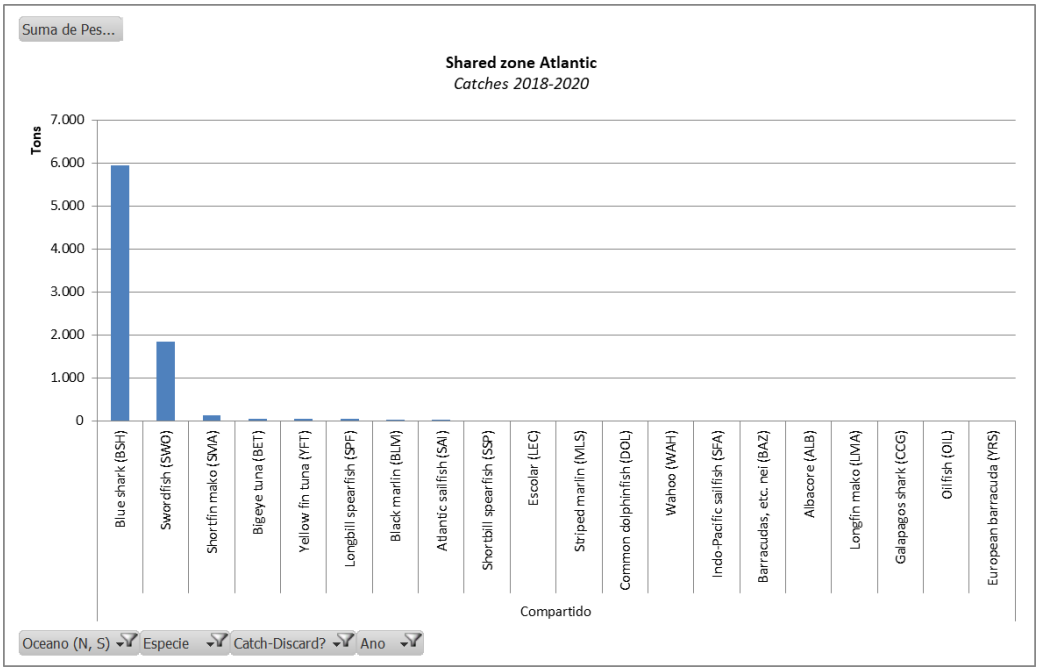
ATLANTIC "SHARED ZONE" CATCH SPECIES COMPOSITION 2018-2020.

(Catches and Rest Other Catch in original files)

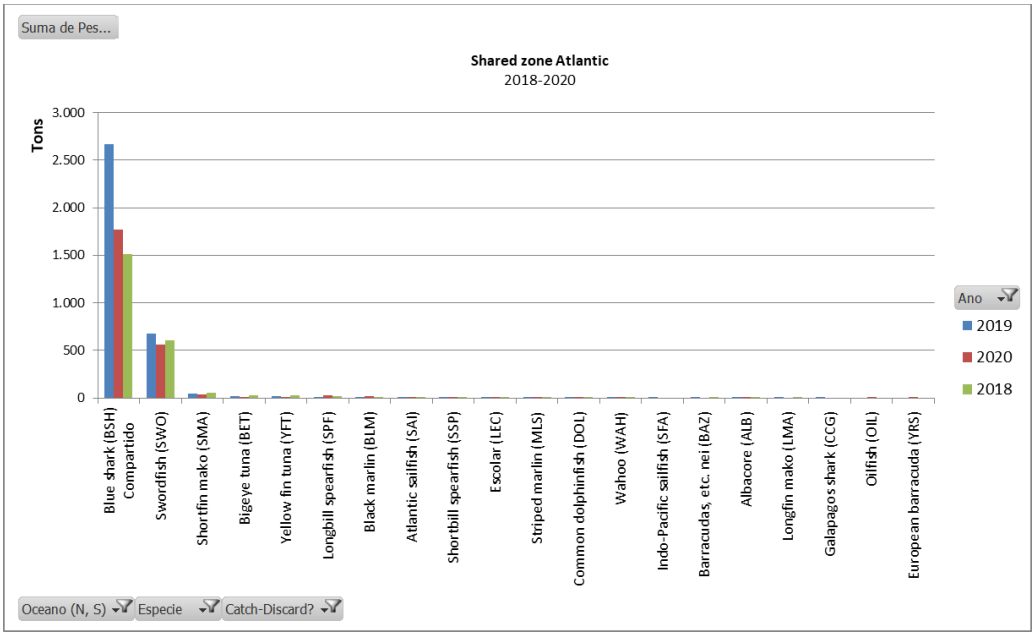
"SHARED ZONE" ATLANTIC (Species // catches in kg)	2018	2019	2020	Total Catches	Weight (%)
Blue shark (BSH)	2.663.870	1.769.168	1.512.276	5.945.314	72,53%
Swordfish (SWO)	675.057	564.024	606.364	1.845.445	22,51%
Shortfin mako (SMA)	46.597	32.960	53.048	132.605	1,62%
Bigeye tuna (BET)	16.745	13.764	31.825	62.334	0,76%
Yellow fin tuna (YFT)	20.923	10.351	31.013	62.288	0,76%
Longbill spearfish (SPF)	10.203	29.424	14.789	54.417	0,66%
Black marlin (BLM)	14.556	15.626	9.926	40.108	0,49%
Atlantic sailfish (SAI)	10.708	9.472	4.254	24.434	0,30%
Shortbill spearfish (SSP)	967	398	9.664	11.029	0,13%
Escolar (LEC)	3.041	3.332	1.155	7.528	0,09%
Striped marlin (MLS)	2.475	1.323	706	4.504	0,05%
Common dolphinfish (DOL)	1.074	568	562	2.204	0,03%
Wahoo (WAH)	834	400	801	2.035	0,02%
Indo-Pacific sailfish (SFA)	1.062			1.062	0,01%
Barracudas, etc. nei (BAZ)	91		517	608	0,01%
Albacore (ALB)	155	108	322	585	0,01%
Longfin mako (LMA)	312		99	410	0,01%
Galapagos shark (CCG)	253			253	0,00%
Oilfish (OIL)		124		124	0,00%
European barracuda (YRS)		9		9	0,00%
Total general	**3.468.925**	**2.451.051**	**2.277.320**	**8.197.297**	

The same tree species make up the large majority of the vessels' catches in the intermediate zone between the two hemispheres: Blue shark (BSH), Swordfish (SWO) and Short fin mako (SMA).The blue shark is by far the main species caught in the North Atlantic, representing a 72,53 % of the total weight for the three years analysed. The second is the Swordfish with a higher relation that the other two parts, with the 22,51% of the total weight (%); and the third one is the Short fin mako with a scarce 1,62% of the total weight (%).

Then, Bigeye tuna (BET), Yellow fin tuna (YFT) and Longbill spearfish (SPF) are the next but also in very low proportion, with less than the 1% of the catch each.



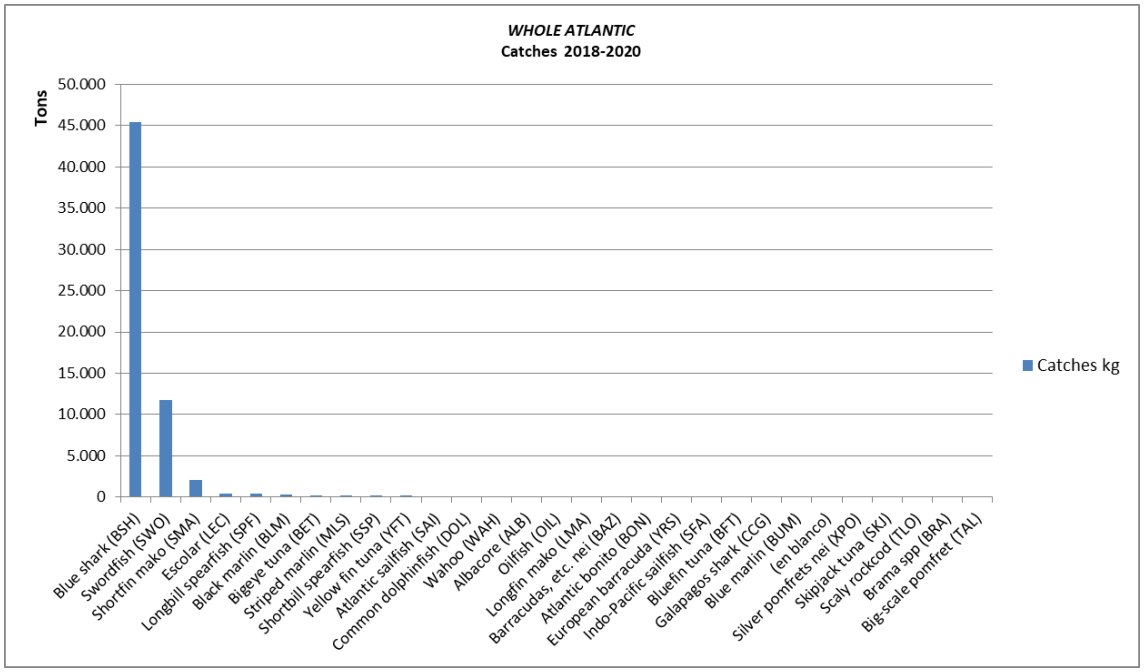
Evolution 2018-2020



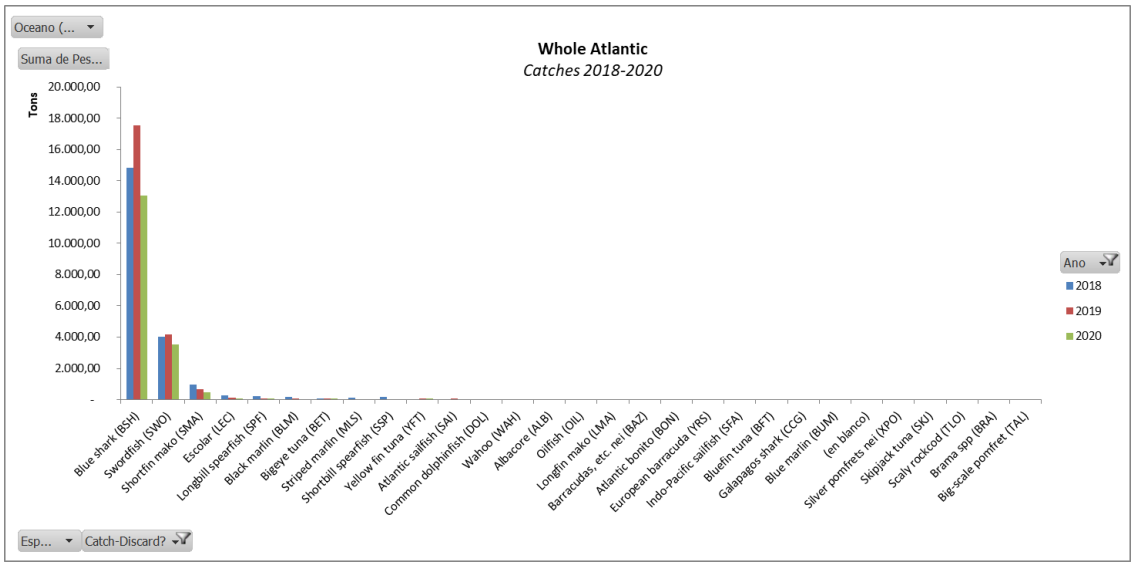
WHOLE ATLANTIC CATCH SPECIES COMPOSITION 2018-2020.

(Catches and Rest Other Catch in original files)

WHOLE ATLANTIC (Species // catches in kg)	Shared	North	South	Total Catches	Weight (%)
Blue shark (BSH)	5.945.314	8.709.791	30.789.534	45.444.638	73,85%
Swordfish (SWO)	1.845.445	2.011.966	7.903.412	11.760.823	19,11%
Shortfin mako (SMA)	132.605	449.706	1.538.845	2.121.156	3,45%
Escolar (LEC)	7.528	60.322	379.778	447.627	0,73%
Longbill spearfish (SPF)	54.417	2.155	340.158	396.730	0,64%
Black marlin (BLM)	40.108	1.551	256.344	298.003	0,48%
Bigeye tuna (BET)	62.334	78.784	81.583	222.700	0,36%
Striped marlin (MLS)	4.504	2.089	202.947	209.541	0,34%
Shortbill spearfish (SSP)	11.029	1.327	178.309	190.665	0,31%
Yellow fin tuna (YFT)	62.288	3.424	108.936	174.648	0,28%
Atlantic sailfish (SAI)	24.434	2.115	82.666	109.215	0,18%
Common dolphinfish (DOL)	2.204	5.263	42.097	49.564	0,08%
Wahoo (WAH)	2.035	107	37.225	39.367	0,06%
Albacore (ALB)	585	518	20.166	21.269	0,03%
Oilfish (OIL)	124	3.649	17.036	20.809	0,03%
Longfin mako (LMA)	410	9.744	6.030	16.185	0,03%
Barracudas, etc. nei (BAZ)	608		6.194	6.803	0,01%
Atlantic bonito (BON)		464	3.076	3.540	0,01%
European barracuda (YRS)	9	49	2.772	2.830	0,00%
Indo-Pacific sailfish (SFA)	1.062	398		1.460	0,00%
Bluefin tuna (BFT)		540		540	0,00%
Galapagos shark (CCG)	253	126		379	0,00%
Blue marlin (BUM)			127	127	0,00%
(en blanco)		39		39	0,00%
Silver pomfrets nei (XPO)		39		39	0,00%
Skipjack tuna (SKJ)		12		12	0,00%
Scaly rockcod (TLO)		10		10	0,00%
Brama spp (BRA)		7		7	0,00%
Big-scale pomfret (TAL)		3		3	0,00%
Total general	**8.197.297**	**11.344.197**	**41.997.236**	**61.538.729**	



Evolution 2018-2020



The results for the catches in whole Atlantic keeps relatively the same proportions for al interactions in whole Atlantic:

- blue shark (73,85 %), swordfish (19,11%) and Short fin mako (3,45%).

-None of the rest of species get even the 1%: escolar (0,73%), Longbill spearfish (0,64%) only 0,64%, Black marlin (0,48%), Bigeye tuna (0,36%.)

Again, the interactions with those prohibited shark species in the list (family Alopidae , family Sphyrnidae, oceanic whitetip shark, silky shark, porbeagle) is extremely low, currently less than 0,01% or even lower for each specie, almost zero.

3.3 DISCARD (Discarded species - not retained on board - in the original files).

We show now the DISCARD (discarded; not retained on board) composition for 2018, 2019* and 2020, respectively for the North, South and Shared Ocean. This way we can see in detail what species make the discards for each year and monitoring the evolution of the discards for each species for the three years in each of the "Zones": North, South and Shared Ocean.

*2019 discards data seems to be incomplete or, at least there seem to be missing data for this specific field in the original files for North, South and Shared. It could be due to an error when processing data or just a mistake when preparing the data packs for FIPBLUES. We will revise this error with the SGP in order to correct and re-adjust data. However, it is not affecting too much for the purpose of this report for the determination of the species for catch and discards composition

There are 2.597 kg that could probably correspond to Short fin mako North, but it is not indicated in the Excel cell as such. Therefore, those data are not included in the graph.
On the other hand, we had got some separate sheets with data of discards of Short fin mako (Marrajo dientuso) and Swordfish (Pez espada), but without specifying North or South.
Excel cell as such. Therefore, those data are not included in the graph.

On the other hand, we had got some separate sheets with data of discards of Short fin mako (Marrajo dientuso) and Swordfish (Pez espada), but without specifying North or South.

SMA 2018	**Suma de Peso** (Kg)
Marrajo dientuso	363.845
SMA 2019	**Suma de Peso**
Marrajo dientuso	310.518

SWO 2018	**Suma de Peso** (Kg)
Pez espada	40.659
SWO 2019	Suma de Peso
Pez espada	60.093

(Similarly, this error will be revised with the SGP in order to correct and re-adjust data).

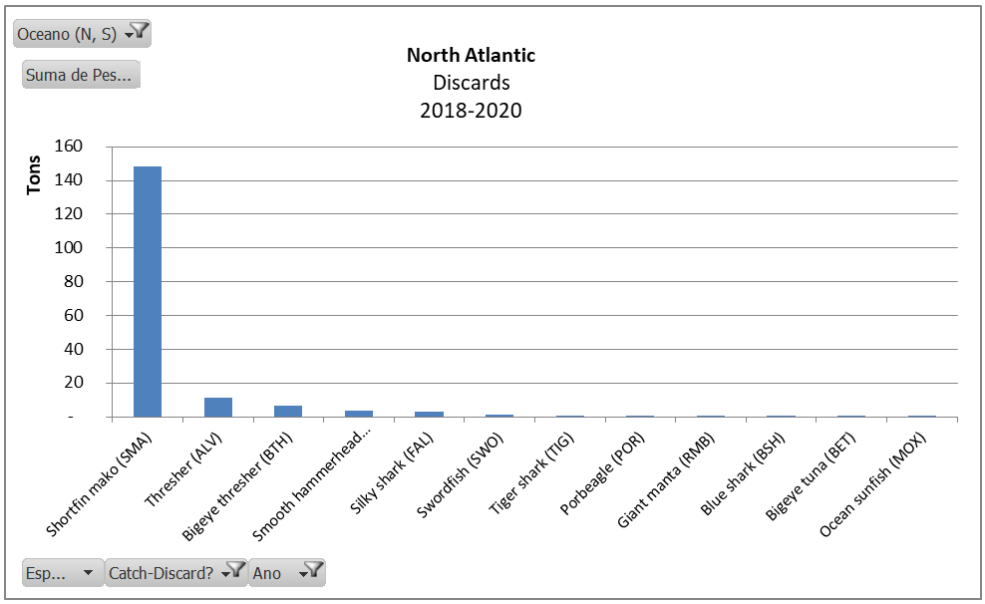
NORTH ATLANTIC DISCARD SPECIES COMPOSITION 2018-2020. (Discards in original files)

Therefore, the list of discards species results in the following table:

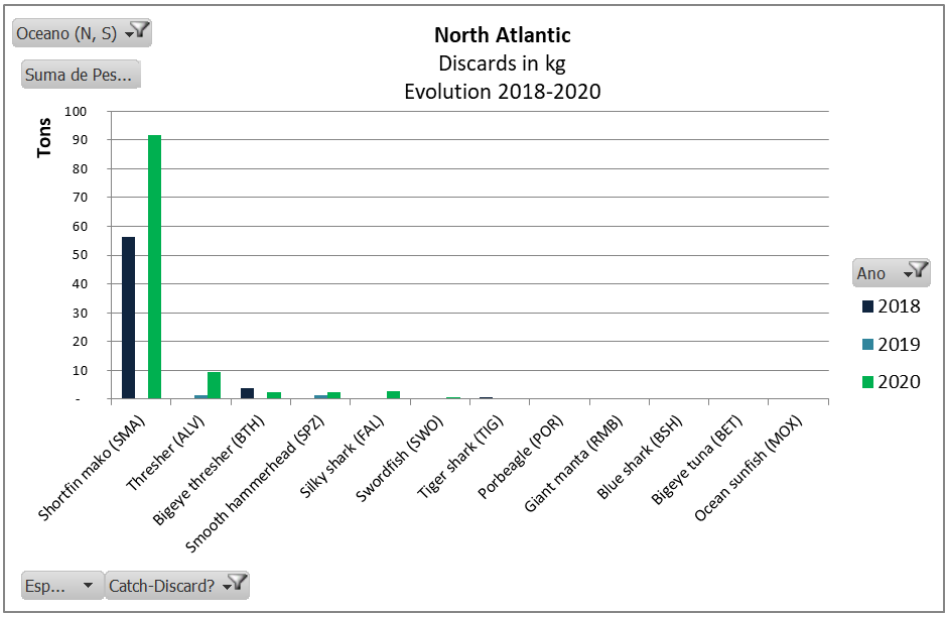
North Atlantic (Species // discards in kg)	**2.018**	**2.019**	**2.020**	**Total Weight (kg)** discards	**Weight (%)**
Shortfin mako (SMA)	56.301	-	91.851	148.152	84,76%
Thresher (ALV)	250	1.370	9.520	11.140	6,37%
Bigeye thresher (BTH)	3.860		2.500	6.360	3,64%
Smooth hammerhead (SPZ)		1.345	2.320	3.665	2,10%
Silky shark (FAL)		385	2.825	3.210	1,84%
Swordfish (SWO)	343	-	600	943	0,54%
Tiger shark (TIG)	450		150	600	0,34%

Porbeagle (POR)			250	250	0,14%
Giant manta (RMB)	200			200	0,11%
Blue shark (BSH)	153			153	0,09%
Bigeye tuna (BET)	80			80	0,05%
Ocean sunfish (MOX)	30			30	0,02%
Total general	61.667	3.100	110.016	174.783	

Taking into consideration the data in both tables, discards in North Atlantic keeps are composed mostly by swordfish and sma mako, in logical relation with their significance weight in the whole interactions amount. Then is followed by the Thresher, Bigeye thresher, Smooth hammerhead, and Silky shark, all protected sharks.



Evolution 2018-2020


Oceano (N, S)
Suma de Pes...
North Atlantic
Discards in kg
Evolution 2018-2020
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90
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-
Shortfin mako (SMA)
Thresher (ALV)
Bigeye thresher (BTH)
Smooth hammerhead (SPZ)
Silky shark (FAL)
Swordfish (SWO)
Tiger shark (TIG)
Porbeagle (POR)
Giant manta (RMB)
Blue shark (BSH)
Bigeye tuna (BET)
Ocean sunfish (MOX)
Ano
2018
2019
2020
Esp...
Catch-Discard?

SOUTH ATLANTIC DISCARD SPECIES COMPOSITION 2018-2020. (Discards in original files)

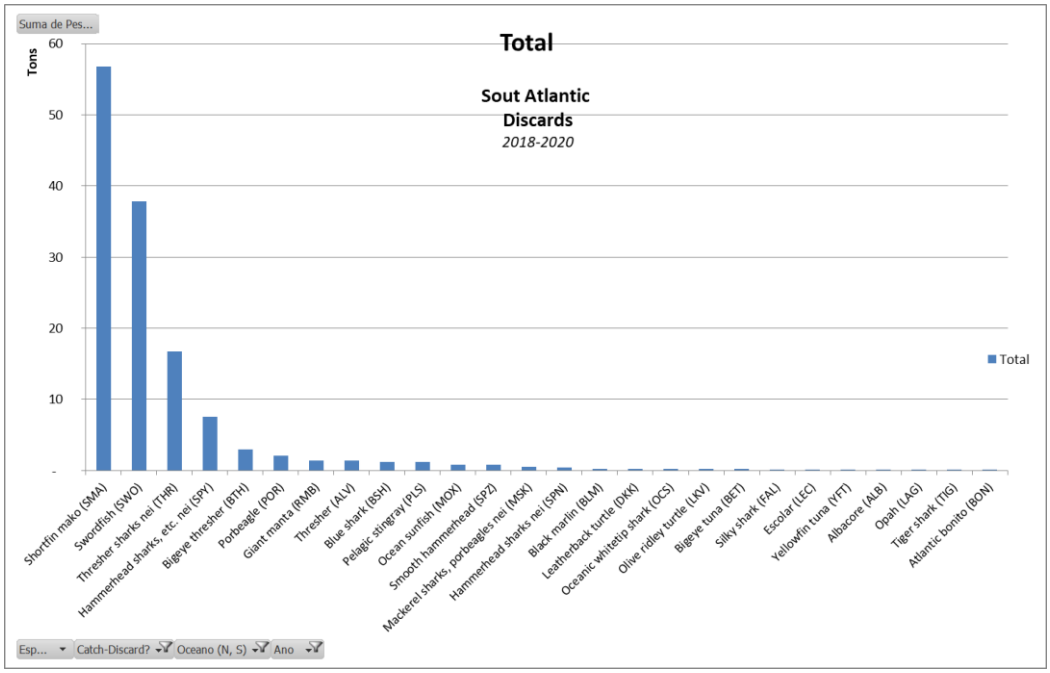
*There are 545 kg that could probably correspond to discard of short fin mako South, but it is not indicated in the Excel cell as such. Therefore, those data are not included in the graph.

It could be due to an error when processing data or just a mistake when preparing the data packs for FIPBLUES. We will revise this error with the SGP in order to correct and re-adjust data. However, it is not affecting too much for the purpose of this report for the determination of the species for catch and discards composition.

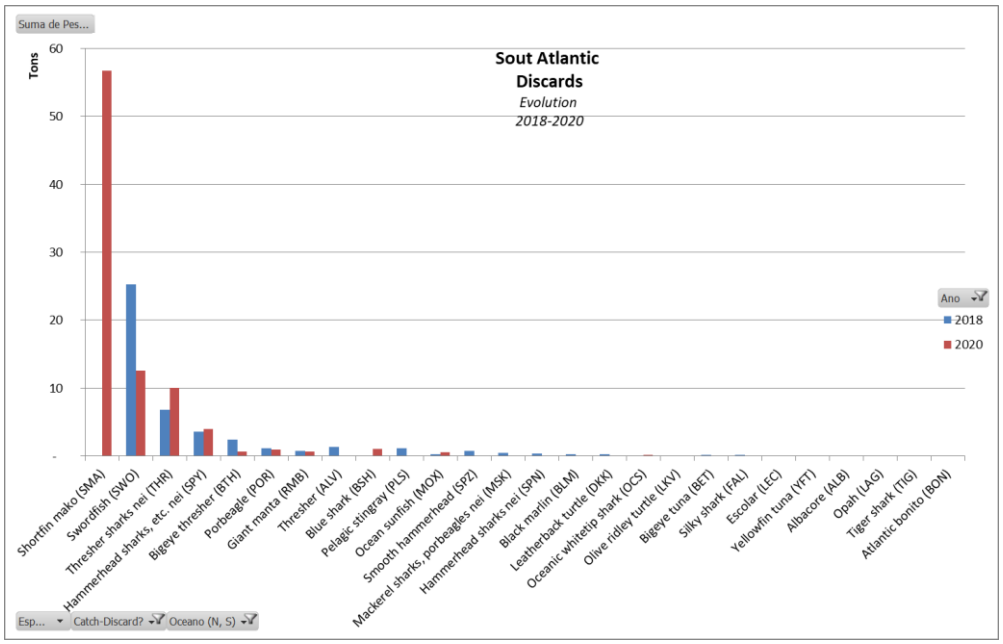
Therefore, the list of discards species results in the following table:

Taking into consideration the absence of data for 2019 but the other data alone, discards in South Atlantic keeps more or less the same relation as north.

South Atlantic (Species // discards in kg)	2018	2020	Total Weight (kg)	Weight (%)
Shortfin mako (SMA)	45	56.694	56.739	42,63%
Swordfish (SWO)	25.250	12.557	37.807	28,41%
Thresher sharks nei (THR)	6.770	9.997	16.767	12,60%
Hammerhead sharks, etc. nei (SPY)	3.560	3.998	7.558	5,68%
Bigeye thresher (BTH)	2.405	610	3.015	2,27%
Porbeagle (POR)	1.160	927	2.087	1,57%
Giant manta (RMB)	730	650	1.380	1,04%
Thresher (ALV)	1.365		1.365	1,03%
Blue shark (BSH)	102	1.093	1.195	0,90%
Pelagic stingray (PLS)	1.163		1.163	0,87%
Ocean sunfish (MOX)	220	570	790	0,59%
Smooth hammerhead (SPZ)	790		790	0,59%
Mackerel sharks, porbeagles nei (MSK)	490		490	0,37%
Hammerhead sharks nei (SPN)	400		400	0,30%
Black marlin (BLM)	250		250	0,19%
Leatherback turtle (DKK)	250		250	0,19%
Oceanic whitetip shark (OCS)	100	125	225	0,17%
Olive ridley turtle (LKV)	100	100	200	0,15%
Bigeye tuna (BET)	185		185	0,14%
Silky shark (FAL)	120		120	0,09%
Escolar (LEC)	45	40	85	0,06%
Yellowfin tuna (YFT)		80	80	0,06%
Albacore (ALB)		45	45	0,03%
Opah (LAG)		45	45	0,03%
Tiger shark (TIG)		35	35	0,03%
Atlantic bonito (BON)	18		18	0,01%
Total general	**45.518**	**87.566**	**133.084**	



Evolution 2018-2020



"SHARED ZONE" ATLANTIC DISCARD SPECIES COMPOSITION 2018-2020.

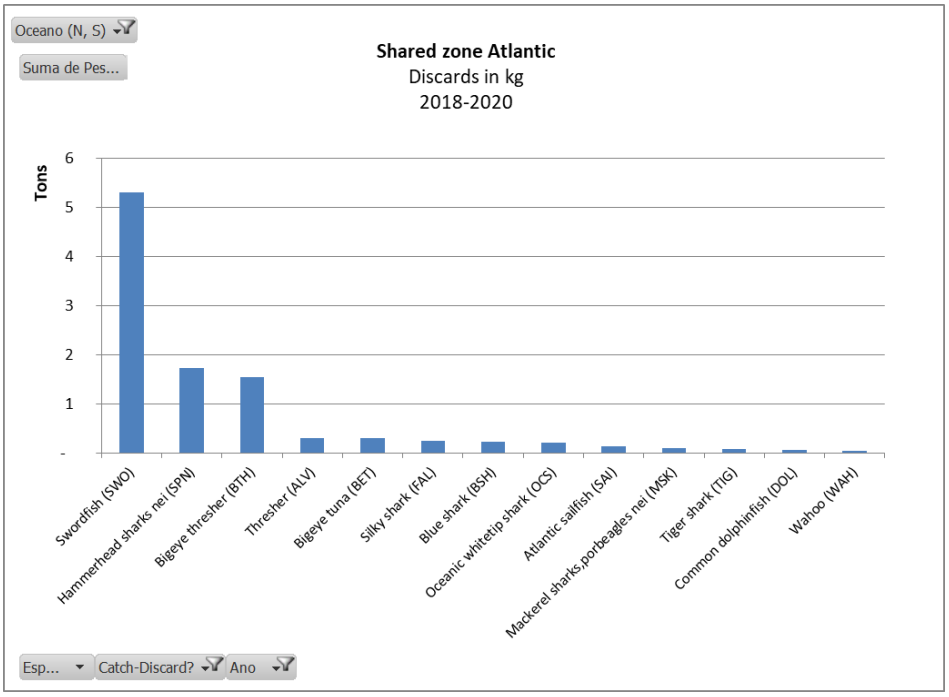
(Discards in original files)

**idem: no data 2019.*

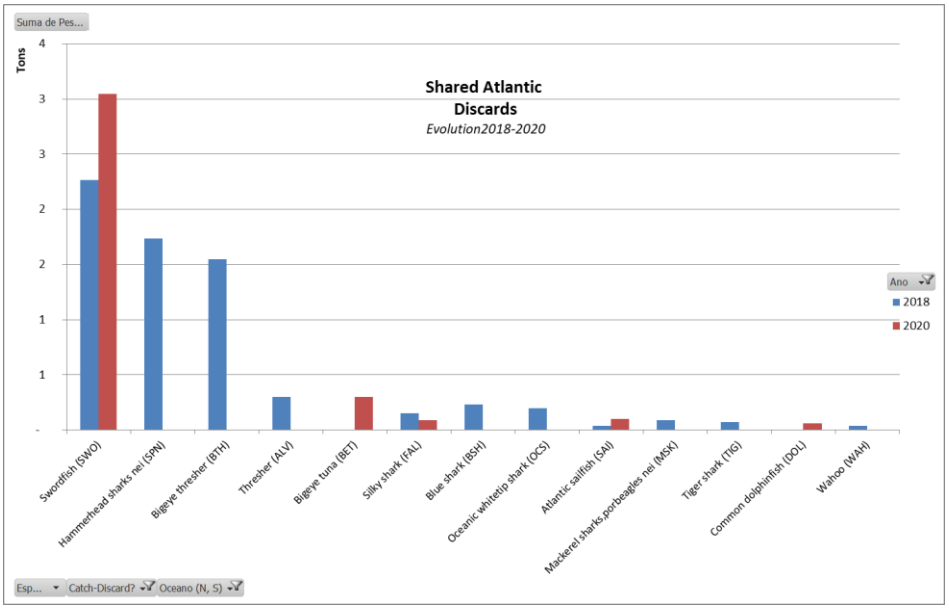
It could be due to an error when processing data or just a mistake when preparing the data packs for FIPBLUES. We will revise this error with the SGP in order to correct and re-adjust data. However, it is not affecting too much for the purpose of this report for the determination of the species for catch and discards composition.

Shared zone Atlantic (Species // discards in kg)	2.018	2.019	2.020	Total Discards	Weight (%)
Swordfish (SWO)	2.265		3.045	5.310	51,75%
Hammerhead sharks nei (SPN)	1.735			1.735	16,91%
Bigeye thresher (BTH)	1.550			1.550	15,11%
Thresher (ALV)	300			300	2,92%
Bigeye tuna (BET)			300	300	2,92%
Silky shark (FAL)	150		90	240	2,34%
Blue shark (BSH)	232			232	2,26%
Oceanic whitetip shark (OCS)	200			200	1,95%
Atlantic sailfish (SAI)	39		100	139	1,35%
Mackerel sharks,porbeagles nei (MSK)	90			90	0,88%
Tiger shark (TIG)	70			70	0,68%
Common dolphinfish (DOL)			60	60	0,58%
Wahoo (WAH)	35			35	0,34%
Total general	6.666		3.595	10.261	

In the equatorial zone, discards are mostly composed of Swordfish, Hammerhead sharks nei, Bigeye thresher and Thresher, followed for species of tuna.



Evolution 2018-2020



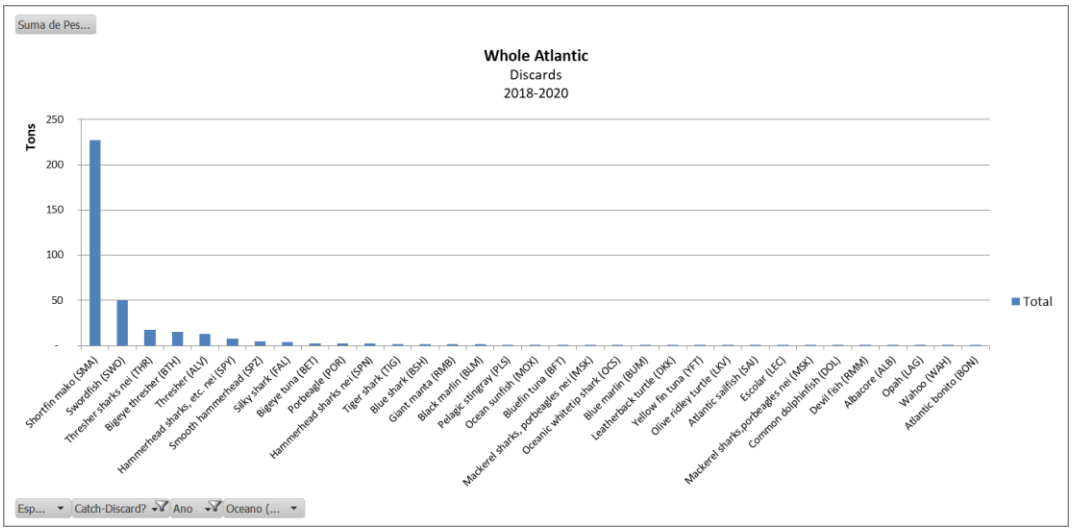
WHOLE ATLANTIC DISCARD SPECIES COMPOSITION 2018-2020.

(Discards in original files). **idem: no data 2019.*

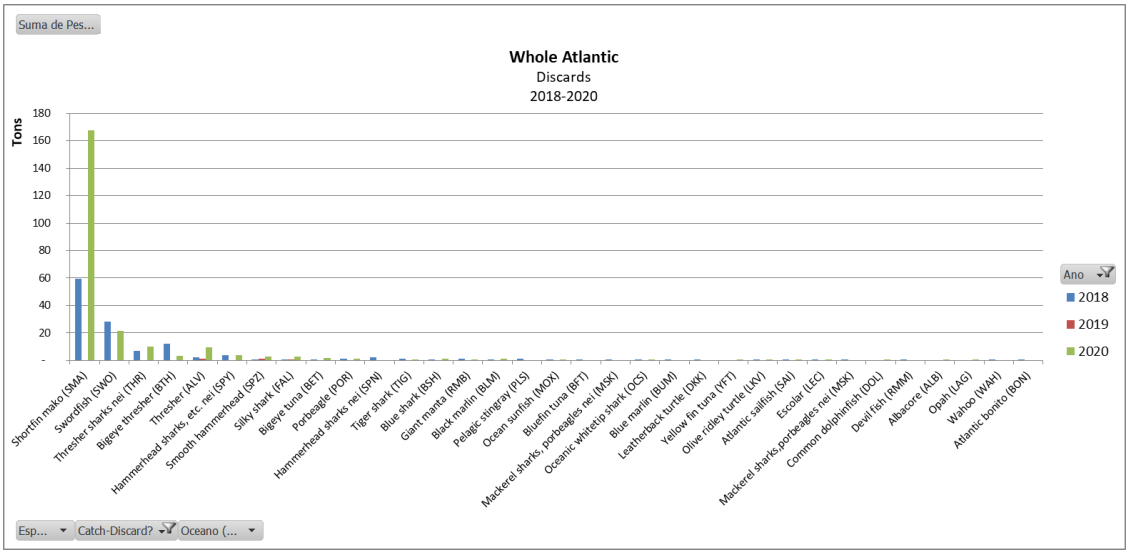
WHOLE ATLANTIC (Species // catches in kg)	("en blanco") (no identif.zone)	South	North	Shares	´En blanco´ (no identif.zone)	Total Catches	Weight (%)
Shortfin mako (SMA)	22.461	56.739	148.152			227.352	63,65%
Swordfish (SWO)	5.962	37.807	943	5.310		50.022	14,00%
Thresher sharks nei (THR)	520	16.767				17.287	4,84%
Bigeye thresher (BTH)	4.150	3.015	6.360	1.550		15.075	4,22%
Thresher (ALV)	45	1.365	11.140	300		12.850	3,60%
Hammerhead sharks, etc. nei (SPY)		7.558				7.558	2,12%
Smooth hammerhead (SPZ)	430	790	3.665			4.885	1,37%
Silky shark (FAL)	60	120	3.210	240		3.630	1,02%
Bigeye tuna (BET)	469	185	80	300	1.508	2.542	0,71%
Porbeagle (POR)	90	2.087	250			2.427	0,68%
Hammerhead sharks nei (SPN)		400		1.735		2.135	0,60%
Tiger shark (TIG)	1.010	35	600	70		1.715	0,48%
Blue shark (BSH)	10	1.195	153	232		1.590	0,45%
Giant manta (RMB)		1.380	200			1.580	0,44%
Black marlin (BLM)	1.144	250				1.394	0,39%
Pelagic stingray (PLS)		1.163				1.163	0,33%
Ocean sunfish (MOX)	85	790	30			905	0,25%
Bluefin tuna (BFT)	500					500	0,14%
Mackerel sharks, porbeagles nei (MSK)		490				490	0,14%
Oceanic whitetip shark (OCS)		225		200		425	0,12%
Blue marlin (BUM)	355					355	0,10%
Leatherback turtle (DKK)		250				250	0,07%
Yellow fin tuna (YFT)	129	80				209	0,06%
Olive ridley turtle (LKV)		200				200	0,06%
Atlantic sailfish (SAI)	30			139		169	0,05%
Escolar (LEC)	80	85				165	0,05%

Mackerel sharks,porbeagles nei (MSK)				90		90	0,03%
Common dolphinfish (DOL)				60		60	0,02%
Devil fish (RMM)	50					50	0,01%
Albacore (ALB)		45				45	0,01%
Opah (LAG)		45				45	0,01%
Wahoo (WAH)				35		35	0,01%
Atlantic bonito (BON)		18				18	0,01%
Total general	37.580	133.084	174.783	10.261	1.508	357.216	

Taking into consideration the absence of data for 2019 but the other availability of, discards data alone for Shortfin mako and Swordfish, these are the main component of the discards, although for different reasons.



Evolution 2018-2020



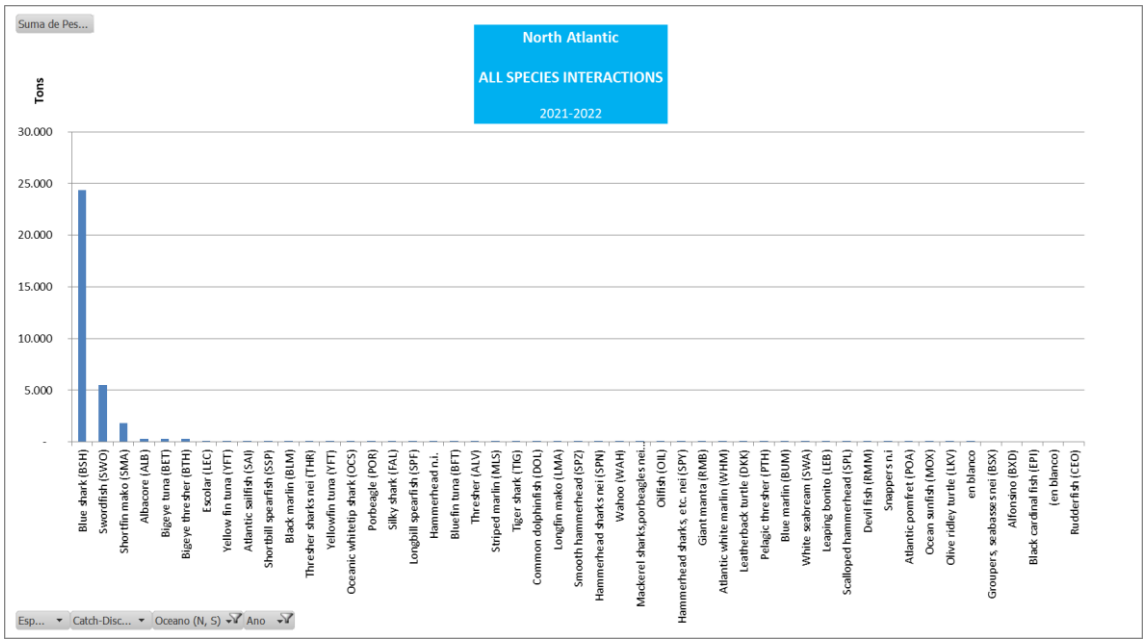
4. RESULTS OF THE DATA ANALYSIS FOR THE PERIOD 2021-2022

4.1. ALL SPECIES INTERACTING WITH THE FLEET (Without differentiation between "catch" or "discard").

NORTH ATLANTIC:species interacting with the fleet (without differentiation between "catch" and "discard").

NORTH ATLANTIC (2021-2022)		
Species	**Total Catches (kg)**	**Weight (%)**
Blue shark (BSH)	24.359.657	73,28%
Swordfish (SWO)	5.465.464	16,44%
Shortfin mako (SMA)	1.829.947	5,50%
Albacore (ALB)	276.396	0,83%
Bigeye tuna (BET)	275.159	0,83%
Bigeye thresher (BTH)	273.825	0,82%
Escolar (LEC)	110.814	0,33%
Yellow fin tuna (YFT)	105.183	0,32%
Atlantic sailfish (SAI)	59.197	0,18%
Shortbill spearfish (SSP)	53.854	0,16%
Black marlin (BLM)	53.813	0,16%
Thresher sharks nei (THR)	51.544	0,16%
Yellowfin tuna (YFT)	49.032	0,15%
Oceanic whitetip shark (OCS)	43.305	0,13%
Porbeagle (POR)	37.588	0,11%
Silky shark (FAL)	37.402	0,11%
Longbill spearfish (SPF)	29.335	0,09%
Hammerhead n.i.	23.992	0,07%
Bluefin tuna (BFT)	19.285	0,06%
Thresher (ALV)	18.595	0,06%
Striped marlin (MLS)	13.218	0,04%
Tiger shark (TIG)	9.906	0,03%
Common dolphinfish (DOL)	9.616	0,03%
Longfin mako (LMA)	6.660	0,02%
Smooth hammerhead (SPZ)	6.316	0,02%
Hammerhead sharks nei (SPN)	6.168	0,02%
Wahoo (WAH)	4.981	0,01%
Mackerel sharks,porbeagles nei (MSK)	4.950	0,01%
Oilfish (OIL)	1.863	0,01%
Hammerhead sharks, etc. nei (SPY)	1.629	0,00%

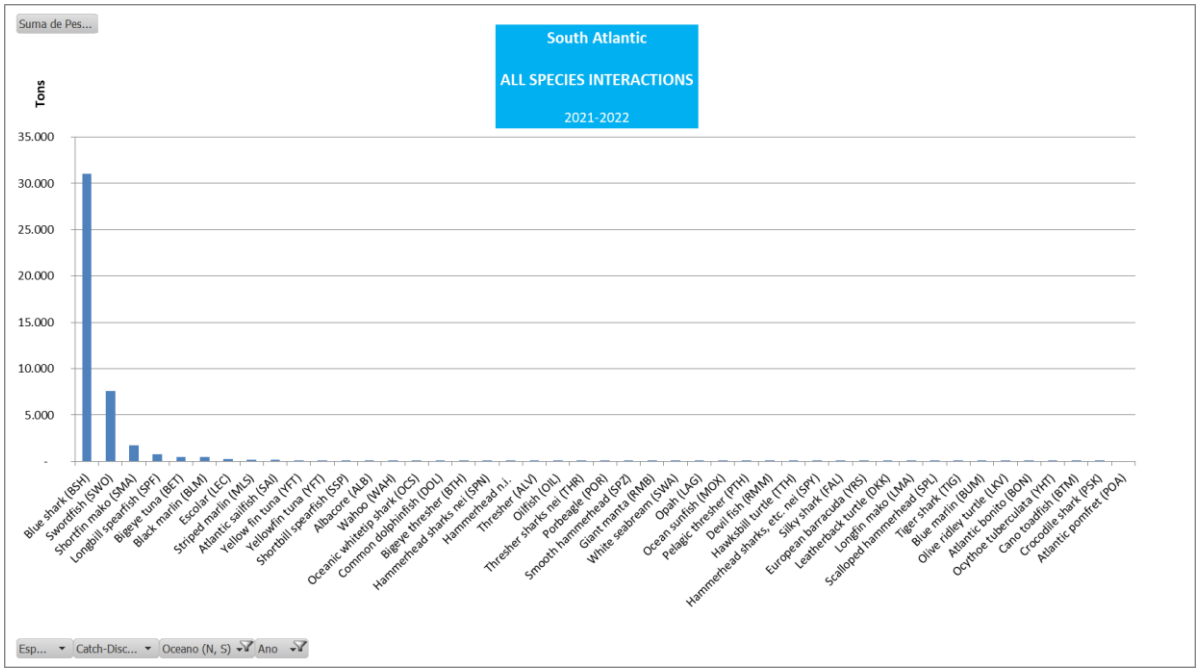
Giant manta (RMB)	1.580	0,00%
Atlantic white marlin (WHM)	492	0,00%
Leatherback turtle (DKK)	480	0,00%
Pelagic thresher (PTH)	260	0,00%
Blue marlin (BUM)	200	0,00%
White seabream (SWA)	180	0,00%
Leaping bonito (LEB)	160	0,00%
Scalloped hammerhead (SPL)	150	0,00%
Devil fish (RMM)	120	0,00%
Snappers n.i	120	0,00%
Atlantic pomfret (POA)	78	0,00%
Ocean sunfish (MOX)	42	0,00%
Olive ridley turtle (LKV)	28	0,00%
en blanco	8	0,00%
Groupers, seabasses nei (BSX)	-	0,00%
Alfonsino (BXD)	-	0,00%
Black cardinal fish (EPI)	-	0,00%
(en blanco)	-	0,00%
Rudderfish (CEO)	-	0,00%
Total general	33.242.591	



SOUTH ATLANTIC: species interacting with the fleet (without differentiation between "catch" and "discard").

SOUTH ATLANTIC (2021-2022)		
Species	**Total Catches (kg)**	**Weight (%)**
Blue shark (BSH)	30.979.832	71,42%
Swordfish (SWO)	7.629.080	17,59%
Shortfin mako (SMA)	1.767.631	4,07%
Longbill spearfish (SPF)	746.717	1,72%
Bigeye tuna (BET)	498.132	1,15%
Black marlin (BLM)	470.759	1,09%
Escolar (LEC)	253.729	0,58%
Striped marlin (MLS)	207.251	0,48%
Atlantic sailfish (SAI)	200.937	0,46%
Yellow fin tuna (YFT)	141.626	0,33%
Yellowfin tuna (YFT)	138.333	0,32%
Shortbill spearfish (SSP)	91.955	0,21%
Albacore (ALB)	60.918	0,14%
Wahoo (WAH)	29.907	0,07%
Oceanic whitetip shark (OCS)	29.265	0,07%
Common dolphinfish (DOL)	25.623	0,06%
Bigeye thresher (BTH)	17.634	0,04%
Hammerhead sharks nei (SPN)	16.065	0,04%
Hammerhead n.i.	14.655	0,03%
Thresher (ALV)	13.005	0,03%
Oilfish (OIL)	7.864	0,02%
Thresher sharks nei (THR)	4.750	0,01%
Porbeagle (POR)	4.500	0,01%
Smooth hammerhead (SPZ)	4.270	0,01%
Giant manta (RMB)	4.205	0,01%
White seabream (SWA)	4.089	0,01%
Opah (LAG)	2.831	0,01%
Ocean sunfish (MOX)	2.040	0,00%
Pelagic thresher (PTH)	1.580	0,00%
Devil fish (RMM)	1.570	0,00%
Hawksbill turtle (TTH)	1.265	0,00%
Hammerhead sharks, etc. nei (SPY)	1.080	0,00%
Silky shark (FAL)	1.005	0,00%
European barracuda (YRS)	946	0,00%
Leatherback turtle (DKK)	898	0,00%
Longfin mako (LMA)	647	0,00%
Scalloped hammerhead (SPL)	600	0,00%

Tiger shark (TIG)	555	0,00%
Blue marlin (BUM)	530	0,00%
Olive ridley turtle (LKV)	253	0,00%
Atlantic bonito (BON)	130	0,00%
Ocythoe tuberculata (YHT)	77	0,00%
Cano toadfish (BTM)	60	0,00%
Crocodile shark (PSK)	10	0,00%
Atlantic pomfret (POA)	-	0,00%
Total general	43.378.807	100

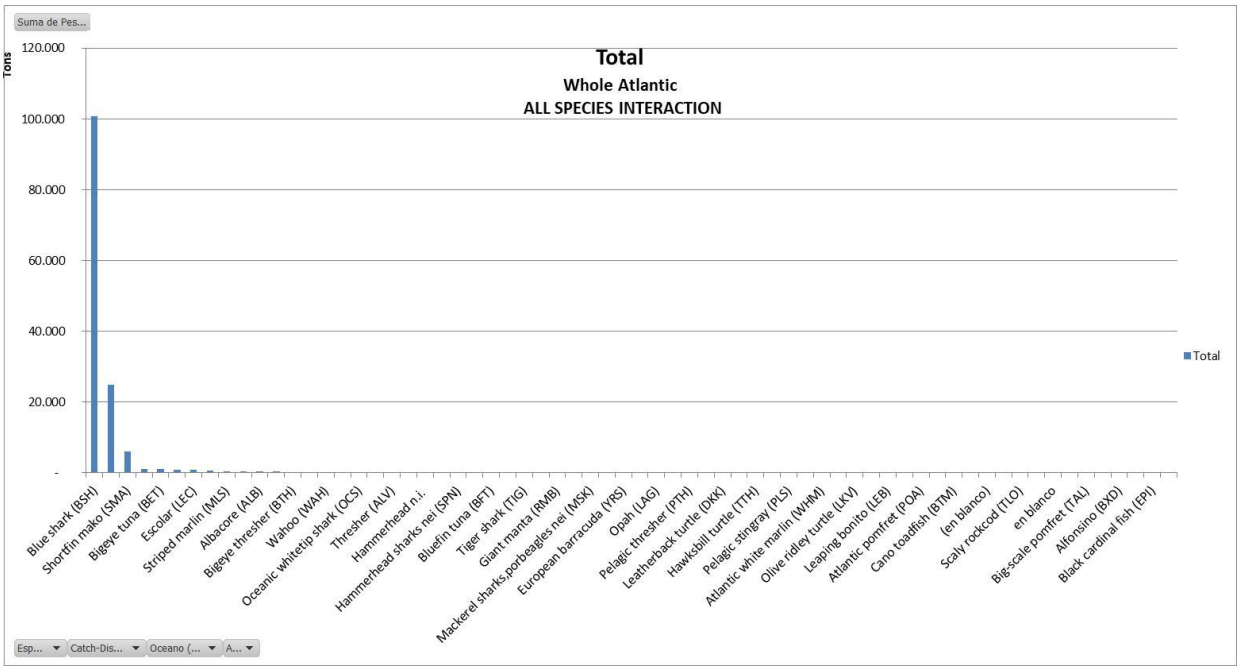


WHOLE ATLANTIC: species interacting with the fleet (without differentiation between "catch" and "discard").If we take the Ocean Atlantic as a whole, the species composition is as follows:

WHOLE ATLANTIC (2021-2022)		
Species	**Total Weight (kg)**	**Weight (%)**
Blue shark (BSH)	100.785.717	72,76%
Swordfish (SWO)	24.905.529	17,98%
Shortfin mako (SMA)	5.946.086	4,29%
Longbill spearfish (SPF)	1.172.782	0,85%
Bigeye tuna (BET)	998.533	0,72%
Black marlin (BLM)	823.968	0,59%
Escolar (LEC)	812.335	0,59%
Yellowfin tuna (YFT)	609.031	0,44%
Striped marlin (MLS)	430.010	0,31%
Atlantic sailfish (SAI)	369.517	0,27%
Albacore (ALB)	358.627	0,26%
Shortbill spearfish (SSP)	336.474	0,24%
Bigeye thresher (BTH)	306.534	0,22%
Common dolphinfish (DOL)	84.863	0,06%
Wahoo (WAH)	74.290	0,05%
Thresher sharks nei (THR)	73.581	0,05%
Oceanic whitetip shark (OCS)	72.995	0,05%
Porbeagle (POR)	44.515	0,03%
Thresher (ALV)	44.450	0,03%
Silky shark (FAL)	42.037	0,03%

Hammerhead n.i.	38.647	0,03%
Oilfish (OIL)	30.536	0,02%
Hammerhead sharks nei (SPN)	24.368	0,02%
Longfin mako (LMA)	23.492	0,02%
Bluefin tuna (BFT)	20.325	0,01%
Smooth hammerhead (SPZ)	15.471	0,01%
Tiger shark (TIG)	12.176	0,01%
Hammerhead sharks, etc. nei (SPY)	10.267	0,01%
Giant manta (RMB)	7.365	0,01%
Barracudas, etc. nei (BAZ)	6.803	0,00%
Mackerel sharks,porbeagles nei (MSK)	5.040	0,00%
White seabream (SWA)	4.269	0,00%
European barracuda (YRS)	3.776	0,00%
Atlantic bonito (BON)	3.688	0,00%
Opah (LAG)	3.316	0,00%
Ocean sunfish (MOX)	2.987	0,00%
Pelagic thresher (PTH)	1.840	0,00%
Devil fish (RMM)	1.740	0,00%
Leatherback turtle (DKK)	1.628	0,00%
Indo-Pacific sailfish (SFA)	1.460	0,00%
Hawksbill turtle (TTH)	1.265	0,00%
Blue marlin (BUM)	1.212	0,00%
Pelagic stingray (PLS)	1.163	0,00%
Scalloped hammerhead (SPL)	750	0,00%
Atlantic white marlin (WHM)	492	0,00%

Mackerel sharks, porbeagles nei (MSK)	490	0,00%
Olive ridley turtle (LKV)	481	0,00%
Galapagos shark (CCG)	379	0,00%
Leaping bonito (LEB)	160	0,00%
Snappers n.i	120	0,00%
Atlantic pomfret (POA)	78	0,00%
Ocythoe tuberculata (YHT)	77	0,00%
Cano toadfish (BTM)	60	0,00%
Silver pomfrets nei (XPO)	39	0,00%
(en blanco)	39	0,00%
Skipjack tuna (SKJ)	12	0,00%
Scaly rockcod (TLO)	10	0,00%
Crocodile shark (PSK)	10	0,00%
en blanco	8	0,00%
Brama spp (BRA)	7	0,00%
Big-scale pomfret (TAL)	3	0,00%
Groupers, seabasses nei (BSX)	-	0,00%
Alfonsino (BXD)	-	0,00%
Rudderfish (CEO)	-	0,00%
Black cardinal fish (EPI)	-	0,00%
(en blanco)		0,00%
Total general	**138.517.923**	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ALL SPECIES INTERACTION
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120.000
100.000
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-
Total
Blue shark (BSH)
Shortfin mako (SMA)
Bigeye tuna (BET)
Escolar (LEC)
Striped marlin (MLS)
Albacore (ALB)
Bigeye thresher (BTH)
Wahoo (WAH)
Oceanic whitetip shark (OCS)
Thresher (ALV)
Hammerhead n.i.
Hammerhead sharks nei (SPN)
Bluefin tuna (BFT)
Tiger shark (TIG)
Giant manta (RMB)
Mackerel sharks,porbeagles nei (MSK)
European barracuda (YRS)
Opah (LAG)
Pelagic thresher (PTH)
Leatherback turtle (DKK)
Hawksbill turtle (TTH)
Pelagic stingray (PLS)
Atlantic white marlin (WHM)
Olive ridley turtle (LKV)
Leaping bonito (LEB)
Atlantic pomfret (POA)
Cano toadfish (BTM)
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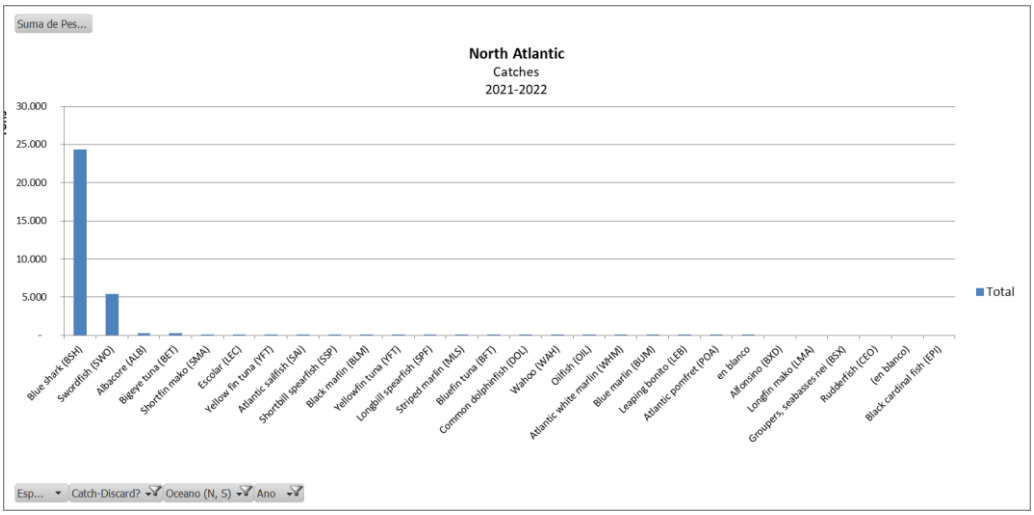
4.2. CATCH SPECIES (Catches and Rest Other Catch in original files).

We show now the CATCH (retained on board) composition for 2021 and 2022, respectively for the North and South (there is not "Shared" since 2021) This way we can see in detail the catches species composition for each year and monitoring the evolution of the catches of the species for the two years I each zone: North and South.

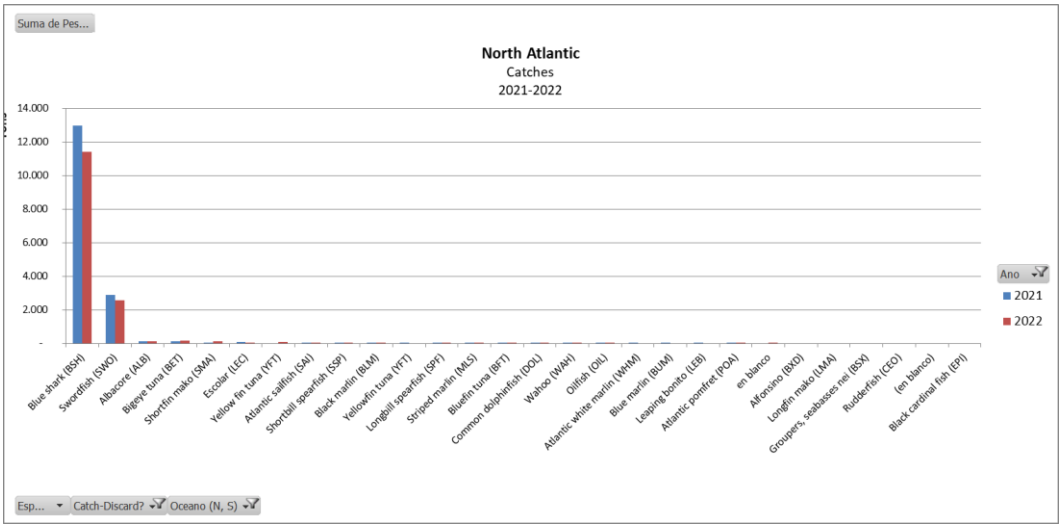
NORTH ATLANTIC CATCH SPECIES COMPOSITION 2021-2022. (Catches and Rest Other Catch in original files)

NORTH ATLANTIC (Species // catches in kg)	2.021	2.022	Total Weight (kg)	Weight (%)
Blue shark (BSH)	12.953.167	11.396.207	24.349.373	78,58%
Swordfish (SWO)	2.886.997	2.557.412	5.444.409	17,57%
Albacore (ALB)	141.006	135.390	276.396	0,89%
Bigeye tuna (BET)	119.638	154.933	274.571	0,89%
Shortfin mako (SMA)	26.498	112.684	139.182	0,45%
Escolar (LEC)	77.141	33.673	110.814	0,36%
Yellow fin tuna (YFT)		105.183	105.183	0,34%
Atlantic sailfish (SAI)	25.941	33.089	59.030	0,19%
Shortbill spearfish (SSP)	29.330	24.524	53.854	0,17%
Black marlin (BLM)	5.761	48.052	53.813	0,17%
Yellowfin tuna (YFT)	49.032		49.032	0,16%
Longbill spearfish (SPF)	6.491	22.844	29.335	0,09%
Striped marlin (MLS)	4.287	8.931	13.218	0,04%
Bluefin tuna (BFT)	7.676	2.339	10.015	0,03%
Common dolphinfish (DOL)	4.193	5.423	9.616	0,03%
Wahoo (WAH)	533	4.448	4.981	0,02%
Oilfish (OIL)	1.547	316	1.863	0,01%
Atlantic white marlin (WHM)	492		492	0,00%
Blue marlin (BUM)	200		200	0,00%
Leaping bonito (LEB)	160		160	0,00%
Atlantic pomfret (POA)	52	26	78	0,00%
en blanco		8	8	0,00%
Alfonsino (BXD)	-		-	0,00%
Longfin mako (LMA)	-		-	0,00%
Groupers, seabasses nei (BSX)	-		-	0,00%
Rudderfish (CEO)	-		-	0,00%
(en blanco)	-		-	0,00%

Black cardinal fish (EPI)		-	-	0,00%
Total general	16.340.141	14.645.481	30.985.622	

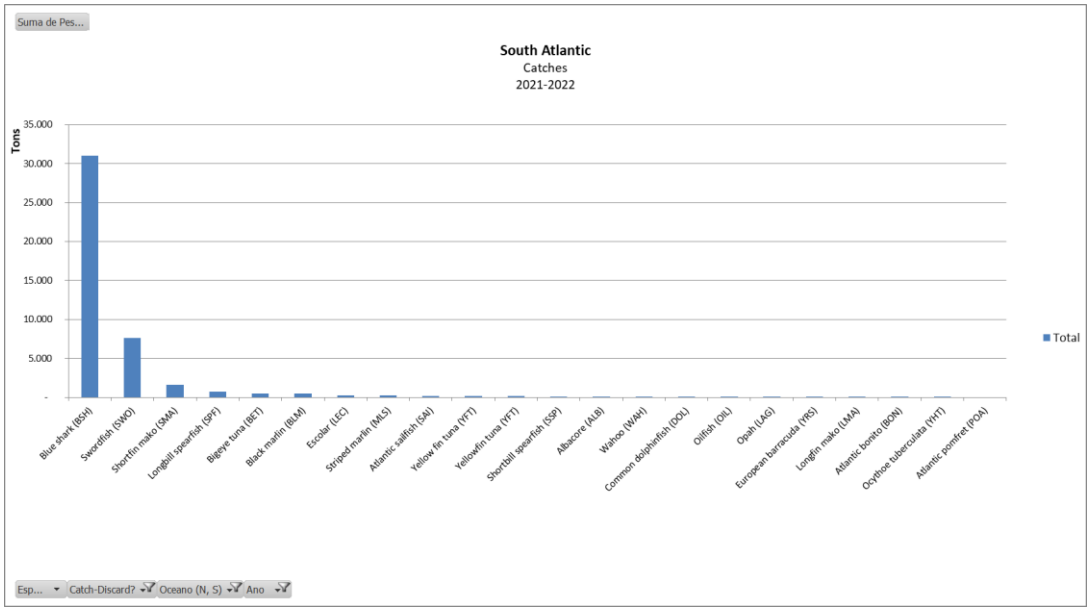


Evolution 2021-2022

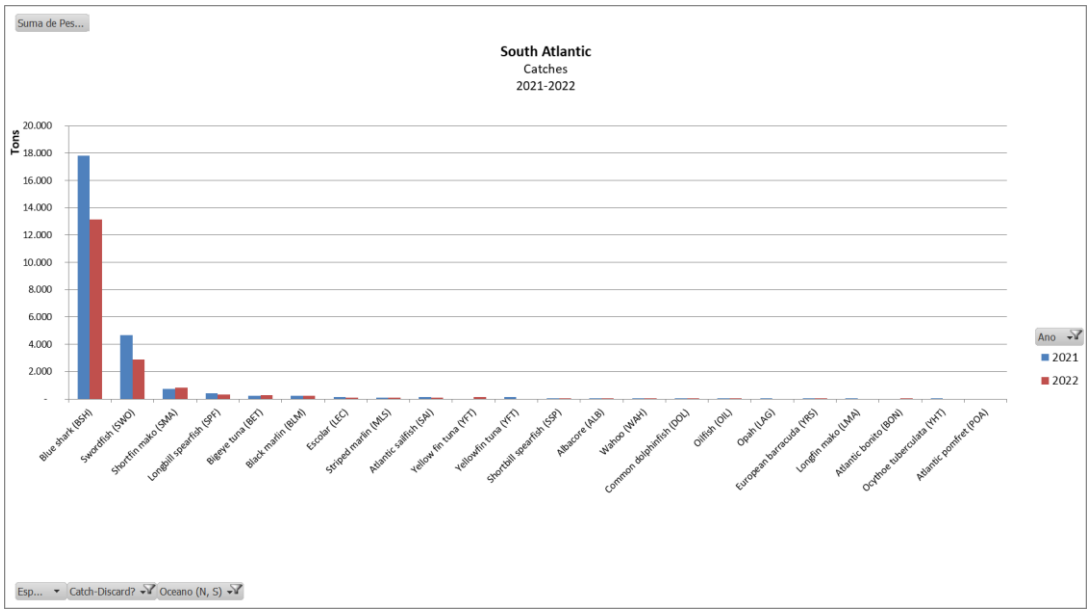


SOUTH ATLANTIC CATCH SPECIES COMPOSITION 2021-2022. (Catches and Rest Other Catch in original files

SOUTH ATLANTIC (Species // catches in kg)	2021	2022	Total catches	Weight (%)
Blue shark (BSH)	17.824.211	13.148.950	30.973.162	72,0157%
Swordfish (SWO)	4.689.634	2.888.589	7.578.223	17,6201%
Shortfin mako (SMA)	755.166	825.658	1.580.824	3,6756%
Longbill spearfish (SPF)	426.843	319.544	746.387	1,7354%
Bigeye tuna (BET)	225.163	272.389	497.552	1,1569%
Black marlin (BLM)	219.043	251.546	470.589	1,0942%
Escolar (LEC)	146.427	107.290	253.717	0,5899%
Striped marlin (MLS)	92.790	114.461	207.251	0,4819%
Atlantic sailfish (SAI)	117.548	83.354	200.902	0,4671%
Yellow fin tuna (YFT)		141.626	141.626	0,3293%
Yellowfin tuna (YFT)	138.333		138.333	0,3216%
Shortbill spearfish (SSP)	29.185	62.770	91.955	0,2138%
Albacore (ALB)	33.548	27.370	60.918	0,1416%
Wahoo (WAH)	19.801	10.086	29.887	0,0695%
Common dolphinfish (DOL)	17.923	7.700	25.623	0,0596%
Oilfish (OIL)	4.360	3.484	7.844	0,0182%
Opah (LAG)	2.831		2.831	0,0066%
European barracuda (YRS)	391	555	946	0,0022%
Longfin mako (LMA)	142		142	0,0003%
Atlantic bonito (BON)		130	130	0,0003%
Ocythoe tuberculata (YHT)	77		77	0,0002%
Atlantic pomfret (POA)	-		-	0,0000%
Total general	24.743.415	18.265.502	43.008.917	



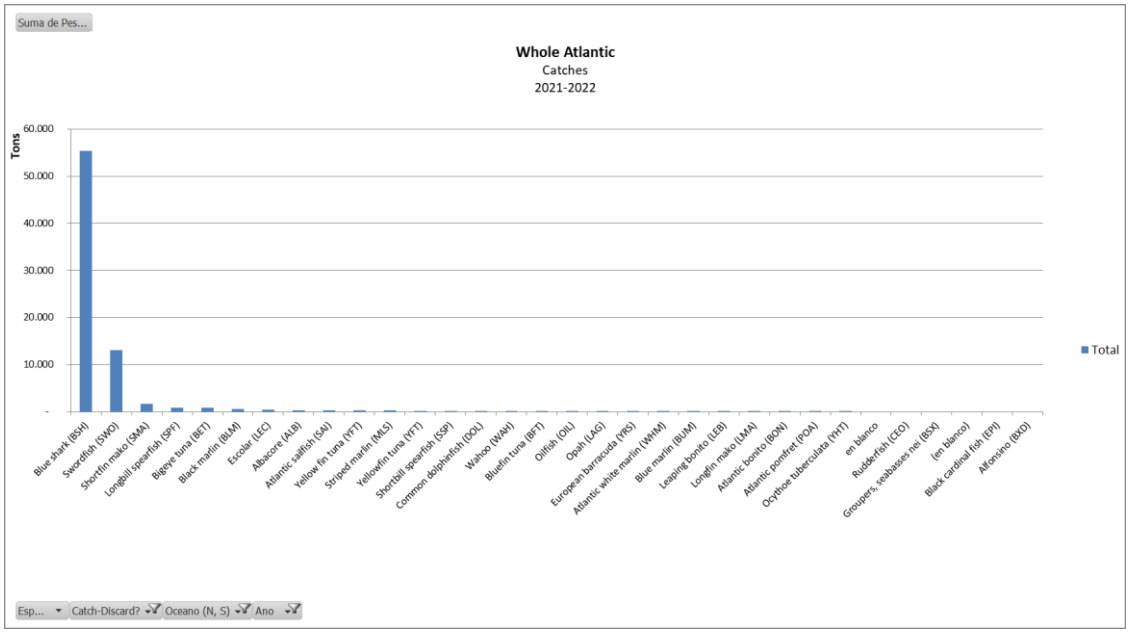
Evolution 2021-2022



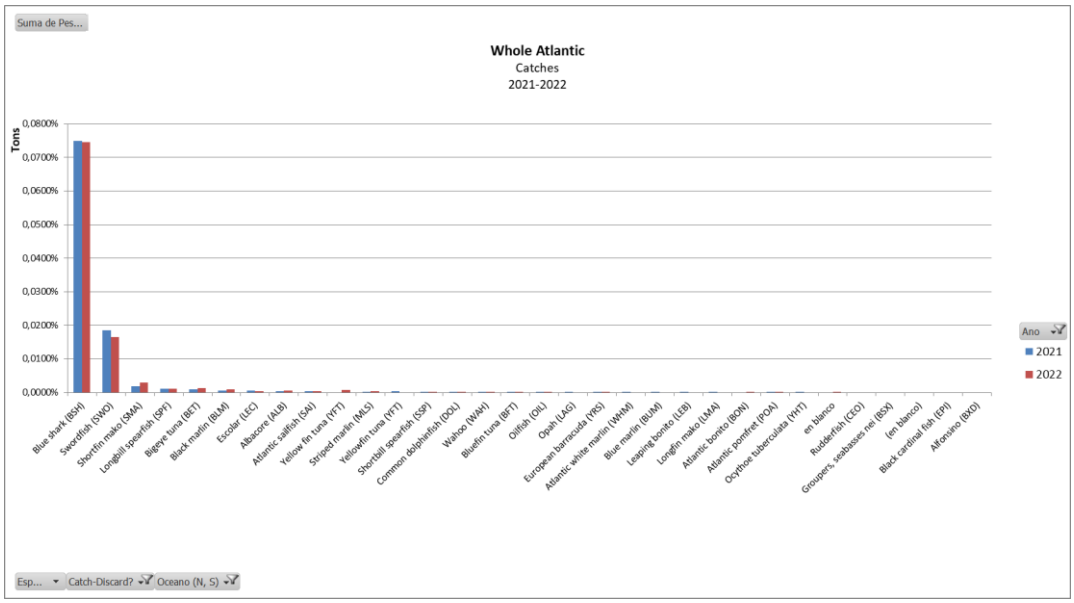
WHOLE ATLANTIC CATCH SPECIES COMPOSITION 2021-2022.

(Catches and Rest Other Catch in original files)

WHOLE ATLANTIC (Species // catches in kg)	2021	2022	Total Catches	Weight (%)
Blue shark (BSH)	30.777.378	24.545.157	55.322.535	74,7657%
Swordfish (SWO)	7.576.630	5.446.001	13.022.631	17,5994%
Shortfin mako (SMA)	781.664	938.342	1.720.006	2,3245%
Longbill spearfish (SPF)	433.334	342.388	775.722	1,0484%
Bigeye tuna (BET)	344.801	427.322	772.123	1,0435%
Black marlin (BLM)	224.804	299.598	524.402	0,7087%
Escolar (LEC)	223.568	140.963	364.531	0,4926%
Albacore (ALB)	174.554	162.760	337.314	0,4559%
Atlantic sailfish (SAI)	143.489	116.443	259.931	0,3513%
Yellow fin tuna (YFT)		246.809	246.809	0,3336%
Striped marlin (MLS)	97.077	123.392	220.469	0,2980%
Yellowfin tuna (YFT)	187.365		187.365	0,2532%
Shortbill spearfish (SSP)	58.515	87.294	145.809	0,1971%
Common dolphinfish (DOL)	22.116	13.123	35.238	0,0476%
Wahoo (WAH)	20.334	14.534	34.868	0,0471%
Bluefin tuna (BFT)	7.676	2.339	10.015	0,0135%
Oilfish (OIL)	5.907	3.800	9.707	0,0131%
Opah (LAG)	2.831		2.831	0,0038%
European barracuda (YRS)	391	555	946	0,0013%
Atlantic white marlin (WHM)	492		492	0,0007%
Blue marlin (BUM)	200		200	0,0003%
Leaping bonito (LEB)	160		160	0,0002%
Longfin mako (LMA)	142		142	0,0002%
Atlantic bonito (BON)		130	130	0,0002%
Atlantic pomfret (POA)	52	26	78	0,0001%
Ocythoe tuberculata (YHT)	77		77	0,0001%
en blanco		8	8	0,0000%
Rudderfish (CEO)	-		-	0,0000%
Groupers, seabasses nei (BSX)	-		-	0,0000%
(en blanco)	-		-	0,0000%
Black cardinal fish (EPI)		-	-	0,0000%
Alfonsino (BXD)	-		-	0,0000%
Total general	41.083.556	32.910.983	73.994.539	



Evolution 2021-2022



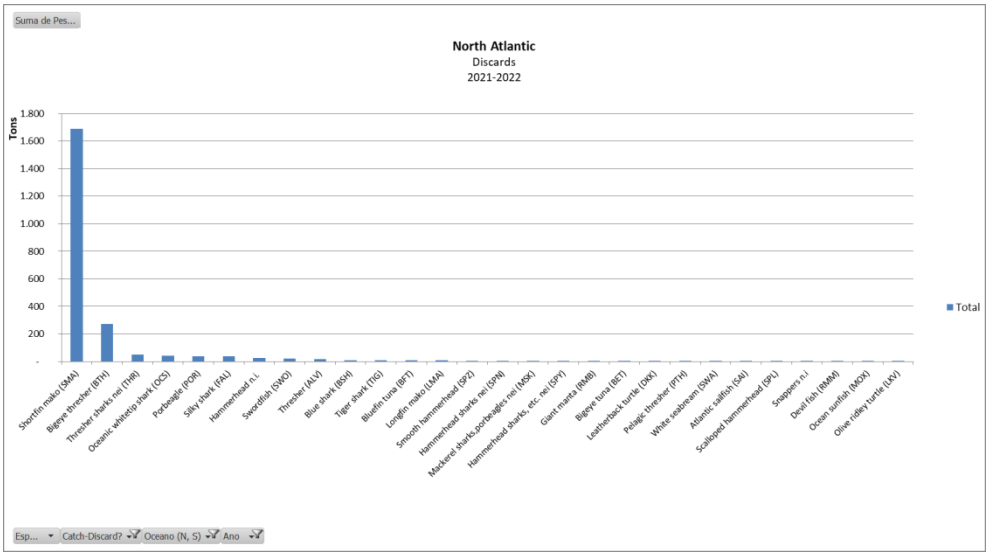
4.3 DISCARD (Catches and Rest Other Catch in original files).

We show now the DISCARD (discarded; not retained on board) composition for 2021 and 2022 for the North and South Atlantic. This way we can see in detail what species make the discards for each year and monitoring the evolution of the discards for each species for the two years in each of the "Zones": North and South.

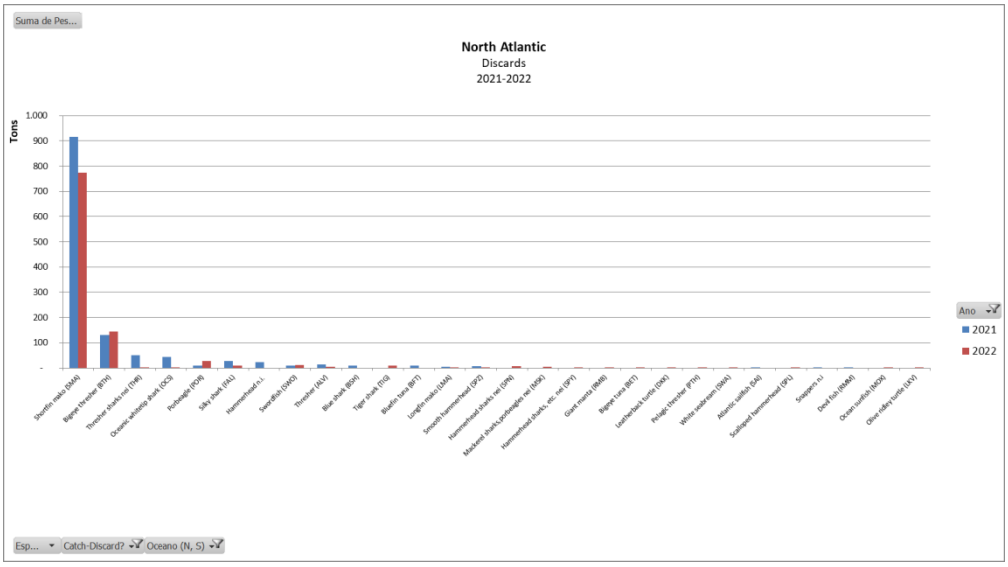
NORTH ATLANTIC DISCARD SPECIES COMPOSITION 2021-2022. (Discards in original files)

Therefore, the list of discards species results in the following table:

North Atlantic (Species // discards in kg	2021	2022	Total Discards	Weight (%)
Shortfin mako (SMA)	916.313	774.452	1.690.765	74,91%
Bigeye thresher (BTH)	129.859	143.966	273.825	12,13%
Thresher sharks nei (THR)	51.414	130	51.544	2,28%
Oceanic whitetip shark (OCS)	43.145	160	43.305	1,92%
Porbeagle (POR)	9.473	28.115	37.588	1,67%
Silky shark (FAL)	27.725	9.677	37.402	1,66%
Hammerhead n.i.	23.992		23.992	1,06%
Swordfish (SWO)	9.545	11.510	21.055	0,93%
Thresher (ALV)	13.055	5.540	18.595	0,82%
Blue shark (BSH)	10.284		10.284	0,46%
Tiger shark (TIG)		9.906	9.906	0,44%
Bluefin tuna (BFT)	9.270		9.270	0,41%
Longfin mako (LMA)	3.990	2.670	6.660	0,30%
Smooth hammerhead (SPZ)	6.000	316	6.316	0,28%
Hammerhead sharks nei (SPN)		6.168	6.168	0,27%
Mackerel sharks,porbeagles nei (MSK)		4.950	4.950	0,22%
Hammerhead sharks, etc. nei (SPY)		1.629	1.629	0,07%
Giant manta (RMB)		1.580	1.580	0,07%
Bigeye tuna (BET)		588	588	0,03%
Leatherback turtle (DKK)		480	480	0,02%
Pelagic thresher (PTH)		260	260	0,01%
White seabream (SWA)		180	180	0,01%
Atlantic sailfish (SAI)	167		167	0,01%
Scalloped hammerhead (SPL)		150	150	0,01%
Snappers n.i	120		120	0,01%
Devil fish (RMM)	120		120	0,01%
Ocean sunfish (MOX)		42	42	0,00%
Olive ridley turtle (LKV)		28	28	0,00%
Total general	1.254.472	1.002.497	2.256.969	

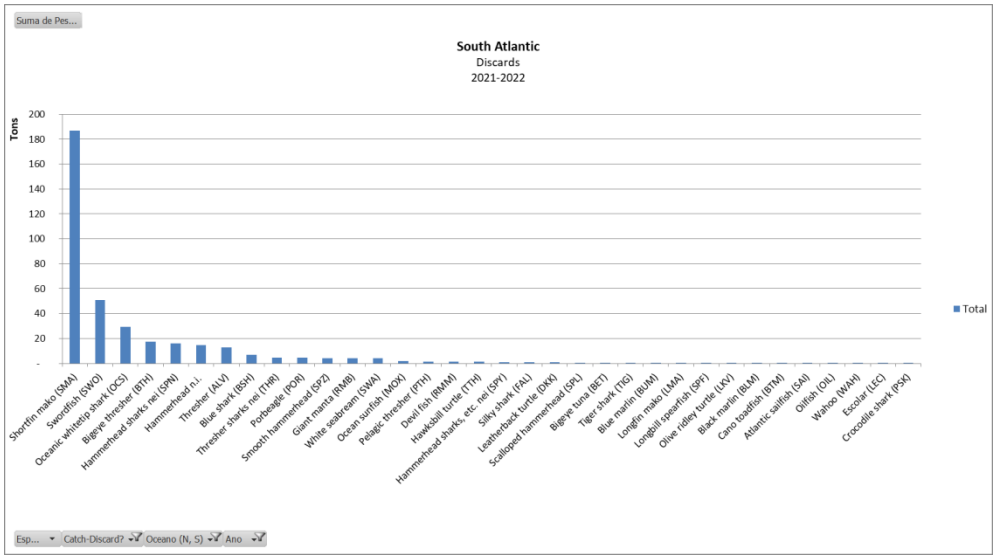


Evolution 2021-2022

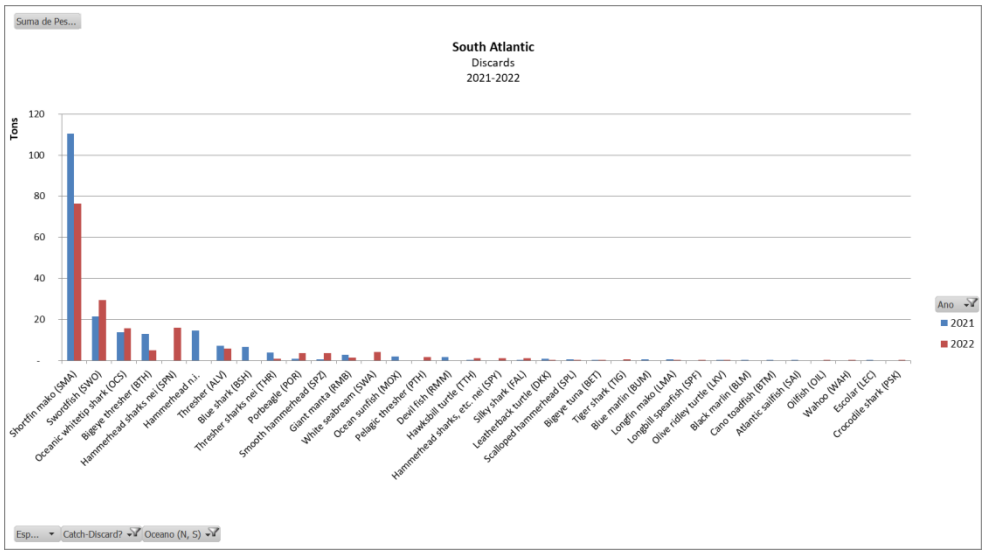


SOUTH ATLANTIC DISCARD SPECIES COMPOSITION 2021-2022. (Discards in original files)

Sout Atlantic (Species // discards in kg	2021	2022	Total Discards	Weight (%)
Shortfin mako (SMA)	110.331	76.476	186.807	50,50%
Swordfish (SWO)	21.420	29.437	50.857	13,75%
Oceanic whitetip shark (OCS)	13.695	15.570	29.265	7,91%
Bigeye thresher (BTH)	12.814	4.820	17.634	4,77%
Hammerhead sharks nei (SPN)		16.065	16.065	4,34%
Hammerhead n.i.	14.655		14.655	3,96%
Thresher (ALV)	7.220	5.785	13.005	3,52%
Blue shark (BSH)	6.670		6.670	1,80%
Thresher sharks nei (THR)	3.820	930	4.750	1,28%
Porbeagle (POR)	890	3.610	4.500	1,22%
Smooth hammerhead (SPZ)	685	3.585	4.270	1,15%
Giant manta (RMB)	2.785	1.420	4.205	1,14%
White seabream (SWA)		4.089	4.089	1,11%
Ocean sunfish (MOX)	2.040		2.040	0,55%
Pelagic thresher (PTH)		1.580	1.580	0,43%
Devil fish (RMM)	1.570		1.570	0,42%
Hawksbill turtle (TTH)	250	1.015	1.265	0,34%
Hammerhead sharks, etc. nei (SPY)		1.080	1.080	0,29%
Silky shark (FAL)	10	995	1.005	0,27%
Leatherback turtle (DKK)	698	200	898	0,24%
Scalloped hammerhead (SPL)	540	60	600	0,16%
Bigeye tuna (BET)	240	340	580	0,16%
Tiger shark (TIG)		555	555	0,15%
Blue marlin (BUM)	530		530	0,14%
Longfin mako (LMA)	435	70	505	0,14%
Longbill spearfish (SPF)		330	330	0,09%
Olive ridley turtle (LKV)	165	88	253	0,07%
Black marlin (BLM)	170		170	0,05%
Cano toadfish (BTM)	60		60	0,02%
Atlantic sailfish (SAI)	35		35	0,01%
Oilfish (OIL)		20	20	0,01%
Wahoo (WAH)		20	20	0,01%
Escolar (LEC)	12		12	0,00%
Crocodile shark (PSK)		10	10	0,00%
Total general	201.740	168.150	369.890	



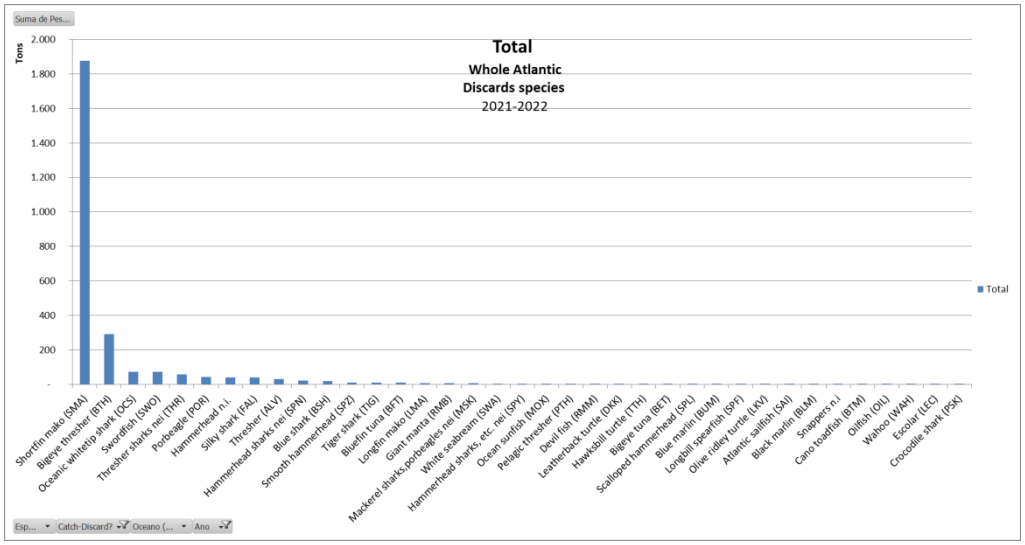
Evolution 2021-2022



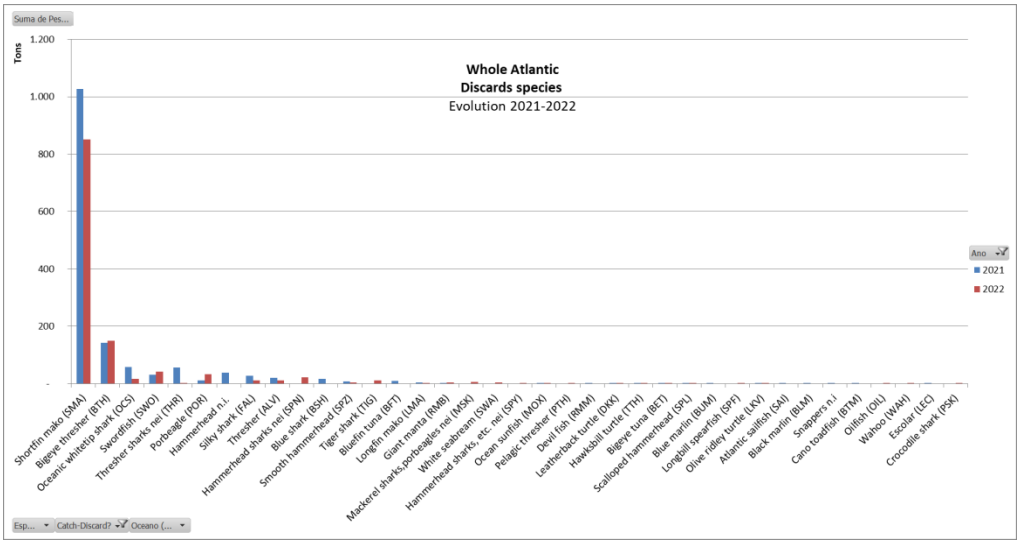
WHOLE ATLANTIC DISCARD SPECIES COMPOSITION 2021-2022.

(Discards in original files).

Whole Atlantic (Species // discards in kg	2021	2022	Total discards	Weight (%)
Shortfin mako (SMA)	1.026.644	850.928	1.877.572	71,48%
Bigeye thresher (BTH)	142.673	148.786	291.459	11,10%
Oceanic whitetip shark (OCS)	56.840	15.730	72.570	2,76%
Swordfish (SWO)	30.965	40.947	71.912	2,74%
Thresher sharks nei (THR)	55.234	1.060	56.294	2,14%
Porbeagle (POR)	10.363	31.725	42.088	1,60%
Hammerhead n.i.	38.647		38.647	1,47%
Silky shark (FAL)	27.735	10.672	38.407	1,46%
Thresher (ALV)	20.275	11.325	31.600	1,20%
Hammerhead sharks nei (SPN)		22.233	22.233	0,85%
Blue shark (BSH)	16.954		16.954	0,65%
Smooth hammerhead (SPZ)	6.685	3.901	10.586	0,40%
Tiger shark (TIG)		10.461	10.461	0,40%
Bluefin tuna (BFT)	9.270		9.270	0,35%
Longfin mako (LMA)	4.425	2.740	7.165	0,27%
Giant manta (RMB)	2.785	3.000	5.785	0,22%
Mackerel sharks,porbeagles nei (MSK)		4.950	4.950	0,19%
White seabream (SWA)		4.269	4.269	0,16%
Hammerhead sharks, etc. nei (SPY)		2.709	2.709	0,10%
Ocean sunfish (MOX)	2.040	42	2.082	0,08%
Pelagic thresher (PTH)		1.840	1.840	0,07%
Devil fish (RMM)	1.690		1.690	0,06%
Leatherback turtle (DKK)	698	680	1.378	0,05%
Hawksbill turtle (TTH)	250	1.015	1.265	0,05%
Bigeye tuna (BET)	240	928	1.168	0,04%
Scalloped hammerhead (SPL)	540	210	750	0,03%
Blue marlin (BUM)	530		530	0,02%
Longbill spearfish (SPF)		330	330	0,01%
Olive ridley turtle (LKV)	165	116	281	0,01%
Atlantic sailfish (SAI)	202		202	0,01%
Black marlin (BLM)	170		170	0,01%
Snappers n.i	120		120	0,00%
Cano toadfish (BTM)	60		60	0,00%
Oilfish (OIL)		20	20	0,00%
Wahoo (WAH)		20	20	0,00%
Escolar (LEC)	12		12	0,00%
Crocodile shark (PSK)		10	10	0,00%
Total general	1.456.212	1.170.647	2.626.859	



Evolution discards 2021-2022



5. Comparison catch composition data bv2016 vs. updated data 2022 FIPBLUES (2018-2022)

5.1. COMPARISON OF "ALL SPECIES INTERACTING WITH THE FLEET FOR NORTH ATLANTIC. (Without differentiation between "catch" or "discard")":

BV2016 vs DATA FIPBLUES 2022

Based on the results of the full assessment for MSC carried out by Bureau Veritas in 2016 for one of the OPP, once new data have been produced (upadating), we can proceed to compare the composition of species for both studies.

We follow the scheme in the full assessment BV2016 reflected in the table below. Data from BV206 were included in the columns as "Species", "Data BV2016 (2010- 2014)" and "MSC Species Category ". We add the global figure for each of the species, in case there is data. At the same time, in our data we are noting not mentioned in the BV2016 study.

We can now compare the Weight and the fraction of the total weight representing each species (%) then and now; or noting the species not included in that time but included now, etc. etc.

That data of BV2016 study came from: "Table 3-11. List of fish and shark species interacting with the Spanish swordfish longline fleet operating in the North Atlantic (source ICCAT database and IEO report to ARVI) and species composition according to client's logbook data (2010-2014). MSC species classification for P2 is presented in the last column. Those species reported as caught species by IEO or ICCAT but not reported by the client (*) are classified as Secondary Minor or ETP as appropriate".

ALL INTERACTIONS North Atlantic	**Data BV2016** (2010- 2014)		**MSC Species Category**	**Data DEA** (ALL SPECIES) (2018-2020)		**Data DEA** (ALL SPECIES) (2021-2022)	
Species	**Weight** (%)	**Total catches**		**Weight** (%)	**Total catches**	**Weight** (%)	**Total catches**
Swordfish	13,8200	8.154.858	P1_Target stock Primary Main	17,47%	2.012.909	16,44%	5.465.464
Blue shark	76,4513	45.112.082	P1_Target stock Primary Main	75,61%	8.709.944	73,28%	24.359.657
Escolar	0,3579	211.160	Secondary Minor	0,52%	60.322	0,33%	110.814
Oilfish	0,0439	25.890	Secondary Minor	0.03	3.649	0,01%	1.863
Opah	*		Secondary Minor				
Wahoo	0,0043	2.552	Secondary Minor	0,00%	107	0,01%	4.981
Yellowfin tuna	0,1966	115.981	Primary	0,03%	3.424	0,15%	49.032

			Minor				
Albacore	0,6429	379.338	Primary Minor	0,00%	518	0,83%	276.396
Bigeye tuna	1,5366	906.684	Primary Minor	0,68%	78.864	0,83%	275.159
Atlantic sailfish	0,1265	74.628	Primary Minor	0,02%	2.115	0,18%	59.197
Atlantic blue marlin	0,1443	85.123	Primary Minor			0,00%	200
Atlantic white marlin	0,0014	853	Primary Minor			0,00%	492
Unidentified billfish spp	0,4023	237.389					
Longbill Spearfish	0,0942	55.578	Secondary Minor	0,02%	2.155	0,09%	29.335
Dolphinfish	0,0946	55.815	Secondary Minor	0,05%	5.263	0,03%	9.616
Atlantic bonito	0,0062	3.646	Secondary Minor	0,00%	464		
Shortbill spearfish	0,0400	23.611	Secondary Minor	0,01%	1.327	0,16%	53.854
Striped marlin	0,0063	3.695	Secondary Minor	0,02%	2.089	0,04%	13.218
Bigeye thresher	*		ETP	0,06%	6.360	0,82%	273.825
Thresher	*		ETP	0,10%	11.140	0,06%	18.595
Shortfin mako	5,8954	3.478.735	Primary Main	5.19%	597.858	5,50%	1.829.947
Longfin mako	0,0445	26.268	Secondary Minor	0,08%	9.744	0,02%	6.660
Porbeagle	*		Primary Minor	0,00%	250	0,11%	37.588
Silky shark	*		Secondary Minor	0,03%	3.210	0,11%	37.402
Oceanic whitetip shark	*		Secondary Minor			0,13%	43.305
Tiger shark	*		Secondary Minor	0,01%	600	0,03%	9.906
Scalloped hammerhead	*		ETP			0,00%	150
Great hammerhead	*		ETP				
Smooth hammerhead	*		ETP	0,03%	3.665	0,02%	6.316
Crocodile shark	*		Secondary Minor				
Pelagic stingray	*		Secondary Minor				
Long Snouted Lancetfish	*		Secondary Minor				
Unidentified shark spp	0,0910	53.71					

In the list of BV2026 there were some species without references in the current review of species. This may mean that those species are not interacting with the fleet or in a way significantly enough, according to the DEA (log book) registers for the last 5 years. We will revise other data sources to confirm this is right.

5.2. COMPARISON OF "ALL SPECIES INTERACTING WITH THE FLEET FOR SOUTH ATLANTIC. (Without differentiation between "catch" or "discard")"

ALL INTERACTIONS South Atlantic	**Data BV2016** (2010- 2014)		**MSC** Species Category	**Data DEA** (ALL SPECIES) (2018-2020)		**Data DEA** (ALL SPECIES) (2021-2022)	
Species	**Weight** (%)	**Total catches**		**Weight** (%)	**Total catches**	**Weight** (%)	**Total catches**
Swordfish	25,1134	18.969.653	P1_Target stock	18,8492	7.941.219	17,59	7.629.080
Blue shark	59,1222	44.658.616	Primary Main	73,0845	30.790.729	71,42	30.979.832
Escolar	1,1279	851.990	Secondary Minor	0,9016	379.863	0,58	253.729
Oilfish	0,3931	296.913	Secondary Minor	0,04	17.036	0,02	7.863
Opah	*		Secondary Minor	0,00	45	0,01	2.831
Wahoo	0,0146	10.991	Secondary Minor	0,09	37.225	0,07	29.907
Yellowfin tuna	0,4993	377.183	Primary Minor	0,26	109.016	0,65	279.959
Albacore	0,6070	458.542	Primary Minor	0,05	20.211	0,14	60.917
Bigeye tuna	3,0047	2.269.647	Primary Minor	0,1941	81.768	1,15	498.132
Atlantic sailfish	0,6472	488.894	Primary Minor	0,1962	82.666	0,46	200.937
Atlantic blue marlin	0,2031	153.408	Primary Minor	0,00	127	0,00	530,00
Atlantic white marlin	0,0025	1.910	Primary Minor				
Unidentified billfish spp	1,9387	1.464.396					
Black marlin	0,2344	177.048	Secondary Minor	0,61	256.594	1,09	470.759
Dolphinfish	0,3976	300.369	Secondary Minor	0,10	42.097	0,0	25.622
Atlantic bonito	0,0783	59.181	Secondary Minor	0,01	3.094	0,00	130,
Shortbill spearfish	0,0455	34.399	Secondary Minor	0,4232	178.309	0,21	91.955
Striped marlin	0,0272	20.531	Secondary Minor	0,48	202.947	~~0,48%~~	207.251
Barracuda	0,0080	6.018	Secondary Minor	0,0147	6.194,27		
Snake mackerel	0,0566	42.737	Secondary Minor				
Long snouted lancetfish	*		Secondary Minor				

Bigeye thresher	*		ETP	0,01	3.015	0,04	17.634,00
Thresher	*		ETP	0,00	1.365	0,0	13.005,00
Shortfin mako	5,4456	4.113.413	Primary Main	3,7873	1.595.584	4,07	1.767.631
Longfin mako	0,0004	319	Secondary Minor	0,01	6.030	0,0	647,00
Porbeagle	*		Primary Minor	0,0050	2.087	0,01	4.500
Silky shark	*		Secondary Minor	0,0003	120	0,00	1.005
Oceanic whitetip shark	*		Secondary Minor	0,00	225	0,07	29.265
Tiger shark	*		Secondary Minor	0,00	35	0,00	555
Scalloped hammerhead	*		ETP			0,00	600
Great hammerhead	*		ETP				
Smooth hammerhead	*		ETP	0,00	790	0,01	4.270
Crocodile shark	*		Secondary Minor			0,00	10
Pelagic stingray	*		Secondary Minor	1.163	0,00		
Unidentified shark spp	1,0326	779.960					
	Total	**75.536.118**					