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IMPLEMENTATION OF THE IATTC REGIONAL OBSERVER PROGRAM FOR
TRANSSHIPMENTS AT SEA IN ACCORDANCE WITH RESOLUTION [C-22-03](#)

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The following acronyms are used in this document:

BLZ	Belize	IDN	Indonesia	MHL	Marshall Islands	PYF	French Polynesia
CHN	China	JPN	Japan	PAN	Panama	TWN	Chinese Taipei
EUR	European Union	KOR	Korea	PER	Peru	VUT	Vanuatu
FJI	Fiji	LIB	Liberia	PHL	Philippines	WSM	Samoa
BET	Bigeye	SHK	Sharks	SWO	Swordfish	YFT	Yellowfin

1. INTRODUCTION

The IATTC regional observer program to monitor transshipments at sea by carrier vessels in the eastern Pacific Ocean (EPO) authorized to receive tuna and tuna-like species and sharks from large-scale tuna longline fishing vessels (LSTLFVs) is regulated by [Resolution C-22-03](#). This resolution was approved in 2022 and amends and replaces Resolution C-12-07, which in turn amended and replaced Resolution C-11-09 to establish a program for transshipments by large fishing vessels.

One of the changes in the current resolution was that it would be reviewed at the 2023 annual meeting and, if necessary, measures would be *“adopted for the effective authorization, monitoring and control of transshipments with vessels not included in the IATTC Regional Vessel Register.”* This review ultimately resulted in no amendments to the resolution.

Paragraph 21 of Resolution C-22-03 establishes that *“Each year, the Director shall present a report on the implementation of this Resolution to the annual meeting of the Commission, which shall review compliance (...)”*. Four years ago, the practice of presenting this report separately in the different Committees of the Commission was established: the financial aspects in the Committee on Administration and Finance (CAF) ([CAF-10-03](#)); matters of compliance in the Review Committee (COR) ([IATTC website](#)); and the operational aspects of the program, including catch data, transshipments, areas, etc., in this Scientific Advisory Committee (SAC).

Six IATTC Members fund and participate in the program through their authorized large-scale tuna longline fishing vessels (LSTLFVs): China, Japan, Korea, Panama, Chinese Taipei, and Vanuatu. No transshipments of Panamanian longline vessels were recorded in 2023, but their carrier vessels did receive transshipments.

2. IMPLEMENTATION AND PARTICIPATION

2.1. Participation

The Secretariat maintains on the Commission website the [List of carrier vessels](#) authorized to receive transshipments at sea ([Regional Vessel Register](#)), which is continually updated with information supplied by the participants on additions or removals of carrier vessels or changes in their data. As of 30 March 2024, the list includes 90 carrier vessels from seven CPCs¹ (Table 1). This list includes carrier vessels from the six participants in the program, plus five from Liberia, the latter as a Cooperating non-Member of the IATTC.

It is important to note that, to date, there are no vessels on the list of authorized carrier vessels that are not under the flag of a CPC. Recently, the Secretariat received an inquiry from a country that is not a CPC of the IATTC regarding the requirements for registering vessels on the list of carrier vessels authorized to receive transshipments at sea. The response given was that they should, at least, first obtain Cooperating non-Member status in accordance with Resolution C-07-02. The goal is to have better control of authorized carrier vessels in terms of compliance. It should be noted that this recommendation comes from the recently approved transshipment guidelines by the FAO.

TABLE 1. Flag of carrier vessels authorized to receive transshipments at sea, May 2023							
CPC	CHN	JPN	KOR	LIB	PAN	TWN	VUT
Número de buques	17	4	12	5	46	4	2

Paragraph 5 of Resolution C-22-03 requires each CPC participating in the program to identify the tuna longline vessels authorized to transship fish at sea, which in turn must be listed on the IATTC Regional Vessel Register (see [List of authorized large longline vessels](#)). Likewise, each CPC must provide a list of its carrier vessels authorized to receive transshipments at sea. Also, each CPC must notify the carrier vessels authorized for transshipment at sea from its longline vessels. This information is included in the last column of the list (*"CPC that authorizes use of this carrier for transshipment from its longline vessels"*). The following is an example of a Panamanian carrier vessel that was authorized to receive transshipments at sea by longline vessels from different CPCs.

Carrier vessel	Flag	IMO no.	LOA m	Company	CPC that authorizes use of this carrier for transshipment from its longline vessels
Chikuma	PAN	9666493	127.81	Ocean Wide Shipping	JPN, PAN, TWN

2.2. Observers on board

2.2.1. Safety on board

As previously reported, MRAG has provided observers with emergency alert devices, with which they can send an immediate signal to the MRAG office, and there is a protocol to follow in case of emergencies ([MRAG Americas: IATTC Observer Program - Emergency Action Plan](#)).

The reports by observers on carrier vessels include a section for recording situations or incidents that affect the performance of their functions, such as harassment or matters related to their well-being. All information recorded in this section, and any other related to possible non-compliance with working conditions for observers, is reported to the flag CPC for its consideration.

Another issue included in observer reports is that the emergency drills required by the [International Convention for the Safety of Life at Sea](#) (SOLAS Convention, Chapter III Part B-1, rule 19, Points 2.2 and 2.3)

¹ IATTC Members and Cooperating non-Members

are carried out only in very few cases. This requirement, a safety issue both for observers and crews, should be complied with because the Antigua Convention, Article VII (*Functions of the Commission*), paragraph n), lists as one of the functions “*promote the application of any relevant provision of the Code of Conduct and of other relevant international instruments*”, which covers not only the SOLAS Convention, but also the [International Convention for the Prevention of Pollution from Ships](#) (MARPOL), which governs situations such as fuel spills at sea.

The annual compliance report includes cases of possible non-compliance by carrier vessels with observers on board.

2.2.2. Procedures and logistics

The procedure for requesting the placement of an observer begins with the corresponding request through the carrier vessel's company and through the Fisheries Agency of the vessel's country. The observer request is sent to the IATTC, who forwards it to the program coordinator at MRAG once it is confirmed that it is eligible for placement, mainly that the vessel is on the list of authorized carrier vessels. The coordinator addresses the request with the deployment of the IATTC observer and coordinates with the carrier vessel's company the place and date of the observer's embarkation or any changes in the schedule.

MRAG also maintains communication with the carrier vessel companies to establish estimates to allow for long-term planning and to ensure that MRAG has enough observers to meet the needs. During the reporting period, observers were deployed on 17 different carrier vessels.

Sometimes, a vessel moves between the WCPFC and IATTC areas and the observer remains on board, which reduces deployment costs.

The main tasks of the observer, as specified by Resolution C-22-03, are as follows:

- a) Record and report upon the transshipment activities carried out;
- b) Verify the position of the vessel when engaged in transshipping;
- c) Observe and estimate products transshipped;
- d) Verify and record the name of the LSTLV concerned and its registration number;
- e) Verify the data contained in the transshipment declaration;
- f) Certify the data contained in the transshipment declaration;
- g) Countersign the transshipment declaration;
- h) Issue a report of the carrier vessel's transshipping activities every 15 days;
- i) Establish general reports compiling the information collected in accordance with the requirements of the IATTC program and provide the captain the opportunity to include therein any relevant information.

Tasks a and c are the priority tasks performed by the observers and occupy most of their time through counting, identifying and recording the weights of the transshipped species and the movements of the carrier vessel. As agreed with MRAG, reports are submitted every 15 days summarizing the daily transshipment activity.

LSTLV reports including product counts and weights are obtained by the second officer of the carrier vessel (CV) from the captains of the LSTLV; then, they are made available to the IATTC observer within the first two hours of transshipment. IATTC observers receive a copy of the LSTLV numbers and weights report within the first two hours of transshipment. Transshipment declarations are prepared by the second officer of the CV within the first two hours of transshipment and given to the IATTC observer for signature, certification and verification. A copy of the transshipment declaration is provided directly to the IATTC

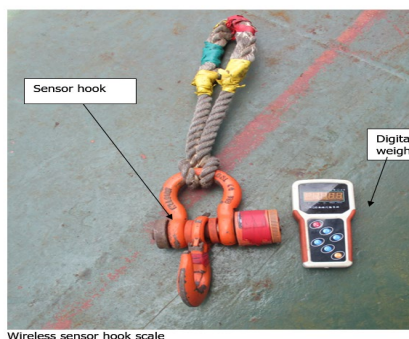
observer during transshipment.

2.3. Estimation of weight of the transshipped product

Observers are tasked with estimating the weight of the transshipped product by species and species group they count during their observation period(s). The main objective is to verify the weights recorded by the carrier vessel and the LSTLVs on the transshipment declaration. There are five options to perform this task; one of them, which is commonly used, is the following:

Total weight of product = Average weight by species x Total count of species by observer

Other options involve electronic hook-scales on the vessels. However, very few carrier vessels are equipped with these devices.



Transshipments in which there is a difference of more than 10% between the amount of product calculated by the observer and the amount reported on the transshipment declaration are forwarded to the flag CPC to investigate whether there could be any possible negligence in completing the declaration or falsification of data. The general response from the CPCs in the Review Committee is that the differences are due to the fact that these are calculations or estimates and therefore it is normal that differences exist.

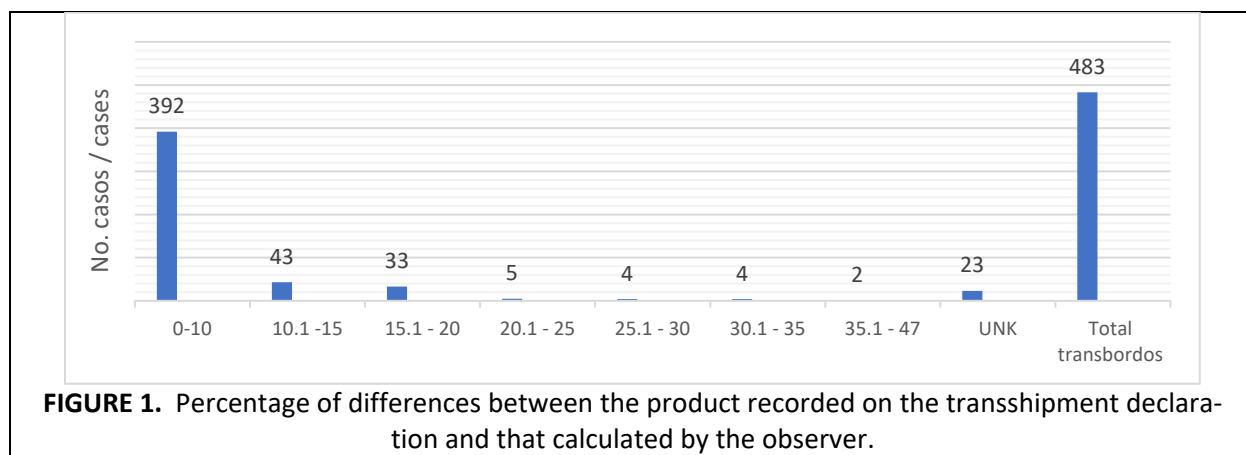
At the 14th SAC meeting, a recommendation was made to examine whether the issue of discrepancies in the reports between the tuna calculated by the observer and that reported on the transshipment declaration was significant. To this end, observers were asked to carefully monitor and report details of all transshipments, verifying—for each one—the difference between their calculations of transshipped fish and that reported on the transshipment declaration.

A review of all carrier vessel trips in 2023 was conducted to determine how many carrier vessels and how many transshipments had differences of more than 10% in the trips made in 2023. This review resulted in the following:

- Data for 23 carrier vessel trips with transshipments in 2023 are included (see Appendix 4).
- In these 23 trips, 483 transshipments were made.
 - For 390 of these transshipments (81%), there was no difference of more than 10% between the fish reported on the transshipment declaration and that calculated by the observer.
 - For 86 of these transshipments (18%), the 10% difference was exceeded and will be forwarded to the flag authorities of the carrier vessel for investigation. For one trip, we do not have the observer data to determine the differences (7 transshipments).
- One carrier vessel company has been identified as responsible for 67 cases exceeding the 10% difference in 2023, i.e., 78% of the cases, while 18 other vessels contributed to the remaining 20%.

This situation will be presented to the Review Committee to recommend solutions to the IATTC.

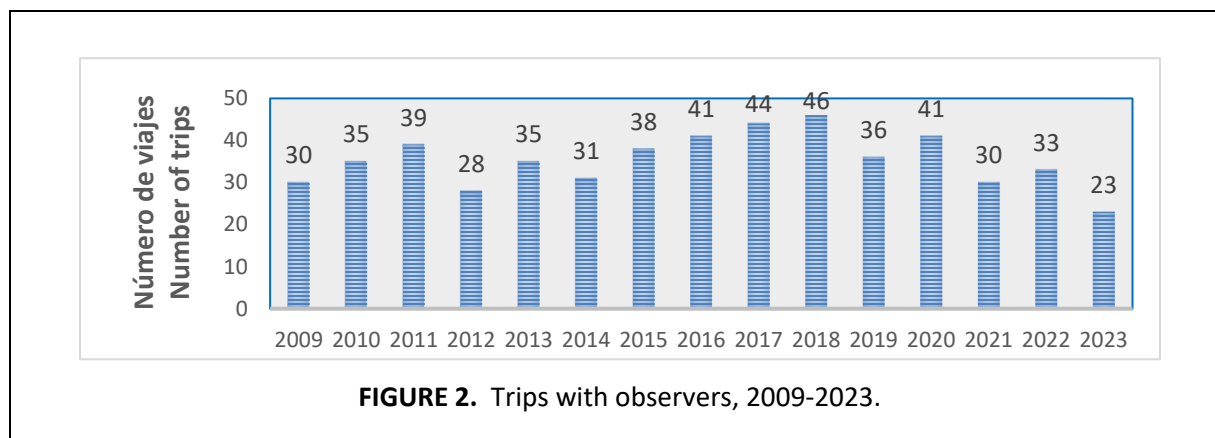
Figure 1 shows the distribution of cases with differences exceeding 10%. It can be seen that most of the cases fall within the 10 to 20% range, suggesting that the differences stem from the calculation process, which relies on estimations made by the observers.



It has been previously discussed in the SAC that experimental work should be carried out to see if the use of scales could help to resolve the doubts regarding the differences between the tuna calculated by the observer and that recorded on the transshipment declaration. The Nature Conservancy, a non-governmental organization, has initiated work of this kind, and in this project, they are also working with electronic monitoring on a carrier vessel and have requested support to continue the work. Perhaps the Committee could recommend that the Commission participate in this work.

3. RESULTS TO DATE

In 2023, a total of 483 transshipments in the EPO were monitored during 23 trips. Through MRAG, observers were placed on all these trips.



In 2023, the number of transshipments (483) was 23% lower than in 2022 (630) (**Figure 3**), while the number of days observers spent at sea was 2,650 in 2022 and 2,683 in 2023, i.e., they increased by 1.2%.

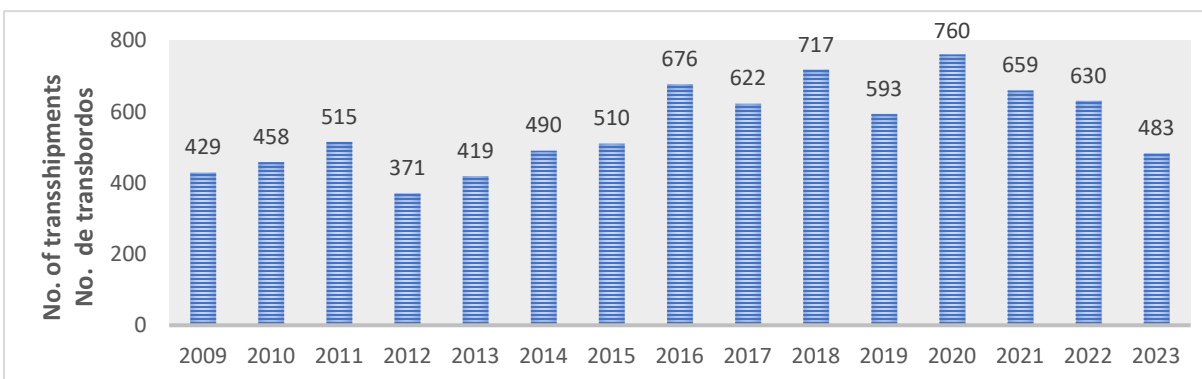


FIGURE 3. Transshipments at sea in the EPO, 2009-2023.

Figure 4 shows the transshipments (total tonnage of the catches) in the EPO from 2017 to 2023, by flag of the fishing vessel. China and Chinese Taipei are the participants with the largest amount of fish transshipped in the EPO. A total of 211 longline vessels participated in transshipments in 2023, of which 48% were from China, 30% from Chinese Taipei, 4% from Japan, 13% from Korea, and 5% from Vanuatu. No transshipments by Panamanian longline vessels were recorded in 2023.

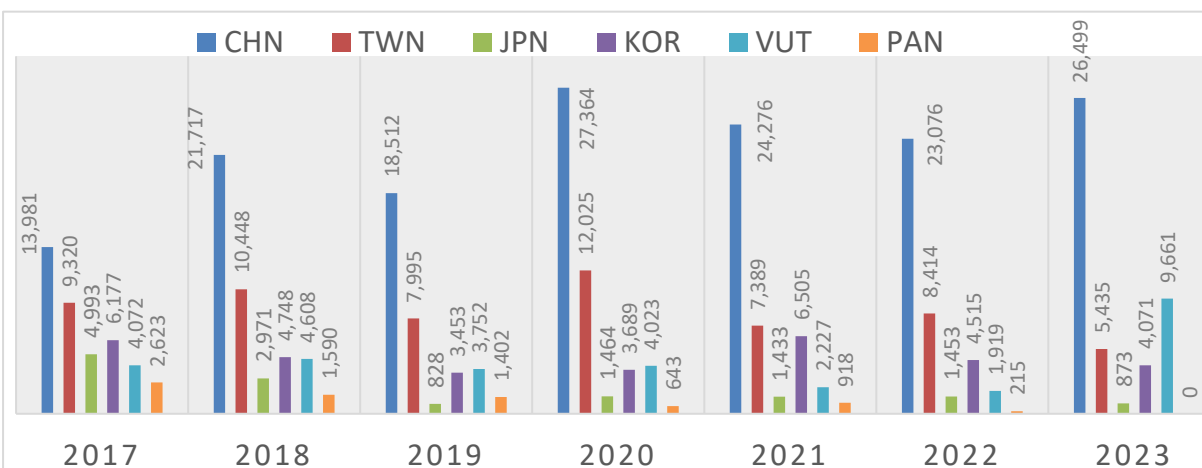


FIGURE 4. Transshipped product in the EPO, by flag, 2017-2023.

Appendix 1 contains the data on product transshipped in the EPO from 2009-2023, broken down by species and flag of the fishing vessel. **Appendix 2** lists trips by carrier vessels and ports of boarding and disembarkation of observers in 2023.

The total tonnage of the catches transshipped under the program during 2023 (37,839 t) was 11% lower than in 2022 (42,763 t) (**Figure 5**).

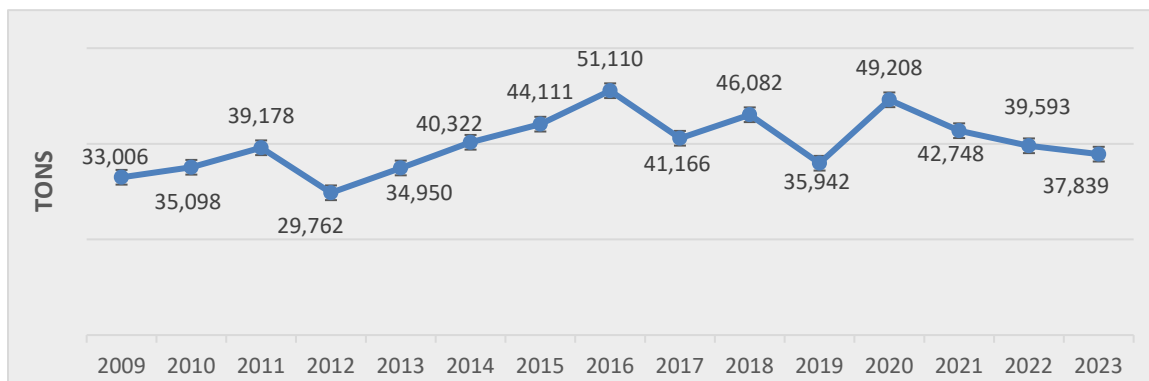


FIGURE 5. Total transshipped tonnage in the EPO, 2009-2023.

In 2023, the weights of the predominant fish species are: albacore (*Thunnus alalunga*) with 60%, followed by bigeye tuna (*Thunnus obesus*) with 19%, yellowfin tuna (*Thunnus albacares*) with 6%, and swordfish (*Xiphias gladius*) with 4%, as shown in **Figure 6**.

In accordance with Resolution C-12-07, sharks have been included in transshipment declarations since 2013. Prior to this, they were grouped with other species. In 2023, the total transshipped was 399 t, representing 1% of the total.

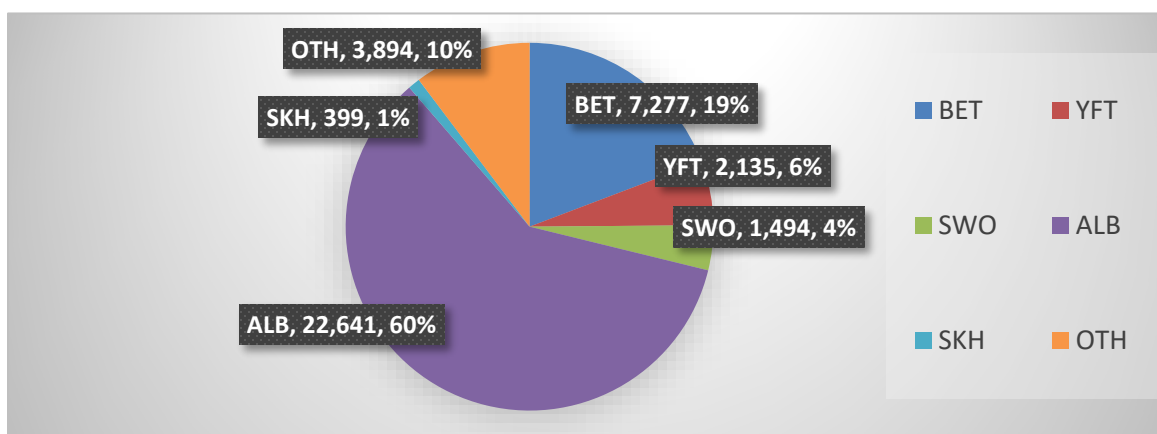


FIGURE 6. Total tonnage transshipped in the EPO, by species, 2023.

In the case of albacore tuna (the main species that is transshipped), questions have been raised regarding the area where it is caught. In this regard, it is only known whether it was caught in the EPO, including the overlap area (although it is possible to differentiate whether it was specifically caught in the overlap area), as well as in the western Pacific Ocean. The catch areas for 2023 are as follows (**Table 2**).

TABLE 2. Transshipped albacore catches in the IATTC-regulated area, 2023 (t)		
Catch area	Catch amount (t)	Percentage
Entire Pacific	28,941	100 %
IATTC-regulated area without overlap area	6,660	23 %
Western Pacific without overlap area	19,663	68 %
Overlap area	2,618	9 %

Since 2013, observers record where the transshipped tuna originated: Western Pacific (WPO), EPO or IATTC-WCPFC overlap area. In 2023, about 62% of the transshipped tuna was caught in the EPO, including the overlap area (**Table 3**), and around 37% in the WPO.

TABLE 3. Tonnage of catches in the Pacific Ocean in 2023 and transshipped in the EPO, by fishing vessel flag and area of origin					
Participant	Area of catch				Total
	EPO	Overlap area	WPO	Unknown	
China	23,389	2,137	14,068	18	39,611
Japan	873	0	0	0	873
Korea	3,062	948	2,596	0	6,606
Panama	0	0	0	0	0
Chinese Taipei	2,297	3,205	3,709	163	9,374
Vanuatu	429	460	1,541	59	2,489
Total	30,050	6,750	21,913	240	58,953

Table 4 shows the catch limits for bigeye tuna established for 2023 in Resolution C-21-04 and the catches in the EPO recorded by the transshipment program. There were catch limit transfers to Korea and China by Japan in 2023 for 6,000 and 2,000 metric tons, respectively. Nevertheless, the data from the transshipment program show that the limits were not exceeded even without considering these transfers.

TABLE 4. Bigeye catch limits in Resolution C-21-04 and bigeye catches in the EPO recorded by the transshipment program, in tons, 2023				
CPC	Catch limit (C-21-04)	EPO catches transshipped in the EPO		
		EPO	Overlap area	Total
China	2,507	1,062	243	1,305
Japan	32,732	497	0	497
Korea	11,947	2,253	552	2,805
Chinese Taipei	7,555	988	1,005	1,993
United States	750	Does not make transshipments		

The geographic locations of transshipments made during 2020-2023 in the Pacific Ocean and in the EPO are shown in **Appendix 3**.

4. ITEMS FOR DISCUSSION

The SAC is encouraged to discuss the following items:

- Is there any other information the SAC would like to receive about the transshipment program?
- Could the transshipment information be used in any other way for scientific purposes?
- Should the possibility of recording transshipped sharks at the species level continue to be pursued?

APPENDIX 1. Quantity of product transshipped in the eastern Pacific Ocean, 2009-2023, by species or group and flag of fishing vessel, in tons.

		Atunes-Tunas			SWO	SKH	OTR	Total
		BET	YFT	ALB				
2009	CHN	6,392	1,281	433	978		502	9,586
	JPN	4,736	1,218	767	627		657	8,004
	KOR	2,460	324	79	323		553	3,739
	PHL	72	34	-	-		-	106
	TWN	2,564	586	1,655	320		363	5,487
	VUT	964	237	3,828	108		1,053	6,190
	Total	17,186	3,679	6,762	2,356		3,128	33,112
2010	BLZ	81	13	10	3		2	110
	CHN	3,674	748	429	583		470	5,902
	JPN	6,623	1,942	819	1,049		1,502	11,935
	KOR	2,957	459	102	372		891	4,781
	PER	80	15	3	7		3	107
	TWN	4,535	987	1,431	539		730	8,223
	VUT	1,321	259	1,963	131		330	4,005
	Total	19,271	4,424	4,756	2,684		3,928	35,063
2011	BLZ	90	9	76	19		17	212
	CHN	5,363	1,157	436	815		755	8,526
	JPN	5,198	1,111	1,819	1,247		1,622	10,997
	KOR	4,263	574	253	486		1,015	6,591
	TWN	2,246	413	3,269	271		1,123	7,323
	VUT	1,160	228	3,609	166		366	5,529
	Total	18,319	3,492	9,463	3,004		4,899	39,178
2012	CHN	3,690	840	389	772		429	6,121
	JPN	5,894	1,359	1,340	1,185		1,162	10,938
	KOR	1,257	130	55	166		257	1,866
	TWN	2,476	395	2,015	398		664	5,949
	VUT	1,226	160	2,996	157		348	4,888
	Total	14,543	2,884	6,796	2,678		2,860	29,762
2013	BLZ	246	40	20	52	16	30	404
	CHN	3,635	798	3,400	583	114	758	9,289
	IDN	102	16	2	16	0	2	138
	JPN	5,756	1,126	735	1,162	9	784	9,571
	KOR	3,947	519	199	487	294	579	6,026
	TWN	1,771	386	1,463	245	335	676	4,876
	VUT	763	160	2,853	161	34	316	4,285
	Total	16,221	3,045	8,672	2,706	801	3,144	34,590
2014	BLZ	38	1	1	5	0	0	45
	CHN	4,418	1,142	8,068	906	115	1,477	16,127
	IDN	18	7	3	1	6	28	62
	JPN	3,850	919	337	858	0	755	6,719
	KOR	2,585	481	118	287	170	391	4,032
	PAN	172	76	13	37	34	56	388

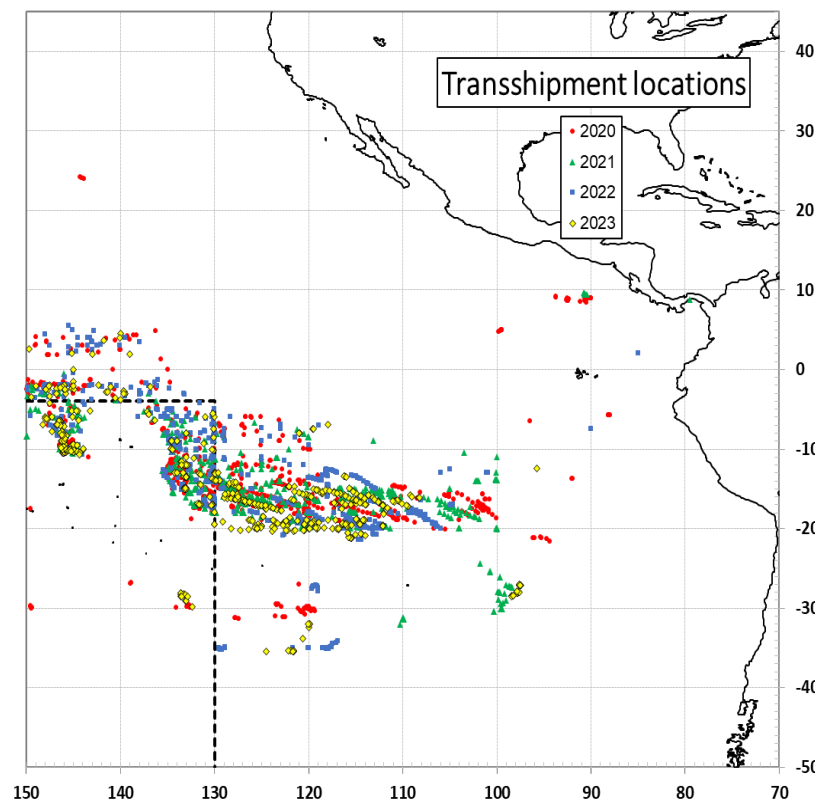
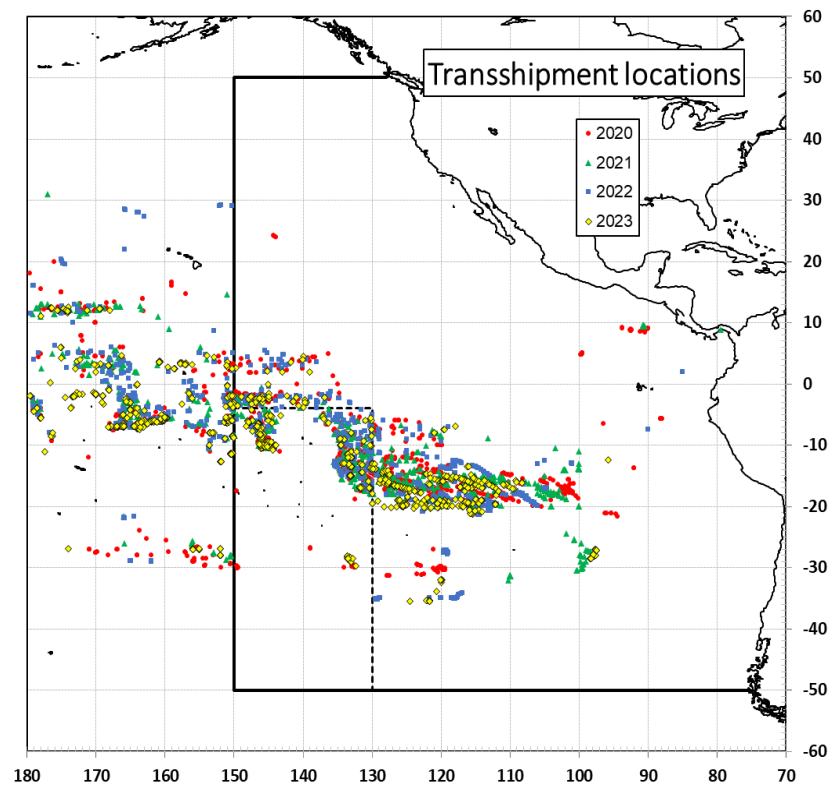
		Atunes-Tunas			SWO	SKH	OTR	Total
		BET	YFT	ALB				
	TWN	2,924	626	3,238	547	258	780	8,373
	VUT	818	269	2,593	142	118	256	4,195
	Total:	14,822	3,521	14,371	2,782	701	3,743	39,941
2015	CHN	5,690	1,897	6,631	888	130	1,323	16,558
	JPN	4,201	766	367	829	0	761	6,925
	KOR	4,347	525	154	545	252	813	6,636
	PAN	522	116	447	17	56	163	1,321
	TWN	2,267	639	1,379	508	215	392	5,400
	VUT	1,381	429	4,249	194	202	620	7,075
	Total	18,407	4,373	13,228	2,982	855	4,072	43,916
2016	CHN	4,572	1,898	14,064	1,169	157	1,559	23,419
	JPN	2,395	581	285	685	61	671	4,678
	KOR	3,661	672	246	524	0	711	5,815
	PAN	463	85	346	320	164	309	1,687
	TWN	2,983	679	2,315	844	445	1,118	8,385
	VUT	1,815	357	3,756	353	334	512	7,126
	Total	15,889	4,272	21,012	3,895	1,160	4,881	51,110
2017	CHN	3,428	899	7,462	693	18	1,481	13,981
	JPN	2,812	546	358	790	0	488	4,993
	KOR	4,073	710	286	517	0	591	6,177
	PAN	640	129	921	109	381	444	2,623
	TWN	4,354	580	1,410	1,160	419	1,343	9,265
	VUT	1,801	429	725	311	322	484	4,072
	Total	17,109	3,292	11,161	3,579	1,140	4,830	41,111
2018	CHN	3,647	1,162	13,247	966	397	2,299	21,717
	JPN	1,531	260	313	477	29	360	2,971
	KOR	2,964	679	228	310	0	567	4,748
	PAN	251	55	924	133	70	157	1,590
	TWN	3,454	780	3,173	1,289	455	1,295	10,448
	VUT	2,237	516	575	547	237	496	4,608
	Total	14,084	3,452	18,461	3,722	1,189	5,175	46,082
2019	CHN	2,327	1,118	11,984	566	160	2,357	18,512
	JPN	518	62	113	38	0	97	828
	KOR	1,941	710	325	158	0	319	3,453
	PAN	191	115	160	725	82	129	1,402
	TWN	2,555	873	2,250	591	395	1,331	7,995
	VUT	1,241	369	782	561	253	548	3,752
	Total	8,773	3,248	15,613	2,639	889	4,780	35,942
2020	CHN	2,031	1,063	20,648	447	234	2,941	27,364
	JPN	837	221	103	139	0	164	1,464
	KOR	2,215	691	248	171	0	364	3,689
	PAN	6	2	610	4	14	8	643
	TWN	3,743	1,164	3,014	1,226	845	1,993	12,025
	VUT	1,551	403	862	691	170	346	4,023

		Atunes-Tunas			SWO	SKH	OTR	Total
		BET	YFT	ALB				
	Total	10,383	3,543	25,485	2,718	1,263	5,815	49,208
2021	CHN	1,691	918	18,702	382	17	2,567	24,276
	JPN	809	284	51	118	0	172	1,433
	KOR	4,028	1,400	349	274	2	452	6,505
	PAN	62	20	698	116	0	23	918
	TWN	2,268	505	2,627	884	140	934	7,359
	VUT	798	127	757	327	50	199	2,258
	Total	9,655	3,254	23,184	2,101	208	4,346	42,748
2022	CHN	1,633	509	18,308	421	0	2,206	23,076
	JPN	760	201	195	111	0	186	1,453
	KOR	2,639	854	481	242	0	298	4,515
	PAN	78	33	0	104	0	0	215
	TWN	3,518	867	1,482	1,262	359	927	8,414
	VUT	1,100	159	54	259	117	229	1,919
	Total	9,728	2,622	20,521	2,400	476	3,846	39,593
2023	CHN	1,540	774	20,909	473	0	2,804	26,499
	JPN	497	151	56	82	0	86	873
	KOR	2,761	626	211	213	0	261	4,071
	PAN	0	0	0	0	0	0	0
	TWN	1,932	479	1,463	576	300	684	5,435
	VUT	547	104	2	149	99	59	961
	Total	7,277	2,135	22,641	1,494	399	3,894	37,839

APPENDIX 2. 23 trips by carrier vessels that carried IATTC observers to monitor transshipments in the eastern Pacific Ocean, 2023.

IATTC trip	Departure date	Departure port		Arrival date	Arrival port	
501	23-oct-22	Busan	KOR	23-Jan-23	Apia	Samoa
504	14-nov-22	Busan	KOR	5-feb-23	Kaohsiung	
505	23-dec-22	Tongyeong-si	KOR	20-mar-23	Busan	KOR
506	1-Jan-23	Kaohsiung		27-mar-23	Kaohsiung	
507	2-feb-23	Kaohsiung		17-apr-23	Kaohsiung	
508	6-jan-23	Kaohsiung		8-mar-23	Kaohsiung	
509	18-jan-23	Busan	KOR	20-mar-23	Busan	KOR
510	7-jan-23	Busan	KOR	21-mar-23	Busan	KOR
512	27-feb-23	Balboa	PAN	3-april-23	Balboa	PAN
513	28-april	Busan	KOR	28-jun-23	Busan	KOR
515	23-jun-23	Busan	KOR	21-sep-23	Busan	KOR
516	12-may-23	Busan	KOR	30-jul-23	Busan	KOR
517	8-jun-23	Kaohsiung		6-sep-23	Kaohsiung	
519	31-aug-23	Busan	KOR	15-nov-23	Busan	KOR
520	7-aug-23-	Kaohsiung		7-nov-23	Kaohsiung	
521	11-sep-23	Kaohsiung		22-nov-23	Kaohsiung	
522	6-sep-23	Busan	KOR	20-nov-23	Busan	KOR
523	13 -sep-23	Busan	KOR	15-nov-23	Busan	KOR
525	5-oct-23-	Busan	KOR	29-dec-23	Busan	KOR
526	2-oct-23	Cristobal	PAN	6-nov-23	Cristobal	PAN
527	1-nov-23	Busan	KOR	12-jan-24	Busan	KOR
528	23-oct-23	Busan	KOR	2-feb-24	Busan	KOR
529	4-nov-23	Kaohsiung		13-jan-24	Kaohsiung	

APPENDIX 3. Transshipment geographic locations in the Pacific Ocean (top) and in the EPO (bottom), 2020-2023.



APPENDIX 4

Differences between the weights recorded on the transshipment declarations and those estimated by the observer. Trips made in 2023 by carrier vessels.					
IATTC trip No.	No. of transshipments in the trip	No. of transshipments with a difference of less than 10%	No. of transshipments with a difference of more than 10%	Difference with respect to previous column	Total difference considering all transshipments in the trip
501	16	16	0	--	3.5
504	7	NA	NA	NA	
505	7	7	0	--	-0.06
506	37	37	0	--	-1.77
507	25	24	1	-21.9	-6.87
508	21	17	4	-25.5	
				-11.5	
				-14.7	
				-11.07	
509	37	27	10	-17.8	-7.57
				-10.8	
				-12.7	
				-14.06	
				-11.27	
				-13.9	
				-14.6	
				-19.9	
				15.6	
				-10.6	
510	32	30	2	-18.87	-3.84
				-15.56	
511		No transshipments in the EPO. Only in WCPFC.			
512	2	2	0	--	-0.68
513	5	5	0	--	-0.35
514		No transshipments in the EPO. Only in WCPFC.			
515	27	23	4	-14.3	-5.27
				-12.6	
				-11.8	
				-11.3	
516	28	26	2	-13.9	-4.4
				-11.3	
517	5	4	1	-13.9	
518		No transshipments in the EPO. Only in WCPFC.			
519	29	28	1	-16.15	0.23
520	16	16	0	--	0.4
521	25	24	1	-12.7	3.4
522	47	17	30	-13.6	-12.52
				-16.2	
				-27.9	

Differences between the weights recorded on the transshipment declarations and those estimated by the observer. Trips made in 2023 by carrier vessels.					
IATTC trip No.	No. of transshipments in the trip	No. of transshipments with a difference of less than 10%	No. of transshipments with a difference of more than 10%	Difference with respect to previous column	Total difference considering all transshipments in the trip
				-12.7	
				-12	
				-19.6	
				-17	
				-13.7	
				-21.2	
				-18.9	
				-32.2	
				-19.3	
				-17.8	
				-16.8	
				-15.6	
				-15.2	
				-14.9	
				-23.4	
				-21.6	
				-11.1	
				-32.7	
				-11.5	
				-19	
				-20.4	
				-17.1	
				-19.8	
				-15.9	
				-15.2	
				-18.5	
				-32.7	
523	20	13	7	-12.7	-0.87
				-18.9	
				-10.6	
				-12.7	
				-10.3	
				-11.4	
				-28.6	
524					
525	1	1	0	--	0.16
526	6	6	0	--	-0.62
527	45	26	19	-10.41	-7.67
				-11.48	
				-17.08	

Differences between the weights recorded on the transshipment declarations and those estimated by the observer. Trips made in 2023 by carrier vessels.					
IATTC trip No.	No. of transshipments in the trip	No. of transshipments with a difference of less than 10%	No. of transshipments with a difference of more than 10%	Difference with respect to previous column	Total difference considering all transshipments in the trip
				-10.48	
				-14.07	
				-12.97	
				-11.27	
				-25.09	
				-10.99	
				-13.28	
				-15.97	
				-12.22	
				-11.96	
				-17.56	
				-25.37	
				-17.43	
				-12.2	
				-12.16	
				-22.4	
528	16	16	0	--	
529	29	25	4	-16.2	-1.19
				-17.6	
				-42.7	
				-15.4	