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**2017 ANNUAL SCIENTIFIC OBSERVER REPORT FOR CHINESE TAIPEI  
TUNA LONGLINE FISHERY IN THE IATTC CONVENTION AREA**

**Summary**

This document provides summarized information of the deployment of Taiwanese scientific observers in IATTC Convention Area in 2017. In 2017, there were 26 observation trips conducted by Taiwanese scientific observers in the Convention Area with 11 observation trips' data retrieved. The complete information on our observers deployed will be updated next year.

**Keywords**

Longline, Taiwan, Scientific observer, Tuna fisheries

**Introduction**

In accordance with Resolution C-11-08, this document provides summarized information of the deployment of Taiwanese scientific observers on our tuna longline fishery in 2017. In 2017 there were 26 observation trips conducted on Taiwanese tuna longline vessels with 12 observation trips data retrieved completely.

**Training of the scientific observer**

To collect the scientific information of tuna longline fishery, the scientific observer program of deep-sea tuna fisheries of Taiwan was launched in 2001. Fisheries Agency (FA) is responsible for implementing the program and recruiting scientific observers. The qualification for observers is college graduated or senior high school graduated, and they are required the ability to live and work at sea. Candidate observers who have passed the examination will have to take a 3-week training courses, and only those who pass the training program and medical check will be qualified and deployed as scientific observers.

Observer training program includes basic safety training for seafaring, operations of navigation devices, mini-log thermometer and VMS system, identification of tunas, tuna-like species, sea turtles, seabirds, sharks and marine mammals, sampling skill for muscle tissue, otolith, stomach content and gonad, and data collection for fishing activities, catches and locations. After the training program, they are required to undergo at sea training on a training ship for one week and have a test in identifying the tuna and tuna-like species at local fish market.

**Results**

i) Number of observation trip and coverage rate estimate

Table 1 shows the summary of observation trips conducted in IATTC Convention Area with data retrieved in 2017. The preliminary observer coverage rate in this year was estimated at 4.03% by number of fishing operations, 13,012 operation with 524 observed. After all observer trips data retrieved completely, the observer coverage rate in 2017 be going to reach 9.73%.

ii) Observation records

Observers are required to record detailed information of each catch, including bycatch, onboard and discard with species identification during working hours. They are also required to take photo on the bycatch species according to the requirement of our observer program. The list of species recorded compiled from observation data in 2017 is shown in Table 2.

iii) Operation distributions of observed tuna longliners

Operation distributions of observed Taiwanese tuna longliners with observation data retrieved is shown in Fig 1.

iv) Supplement and update information

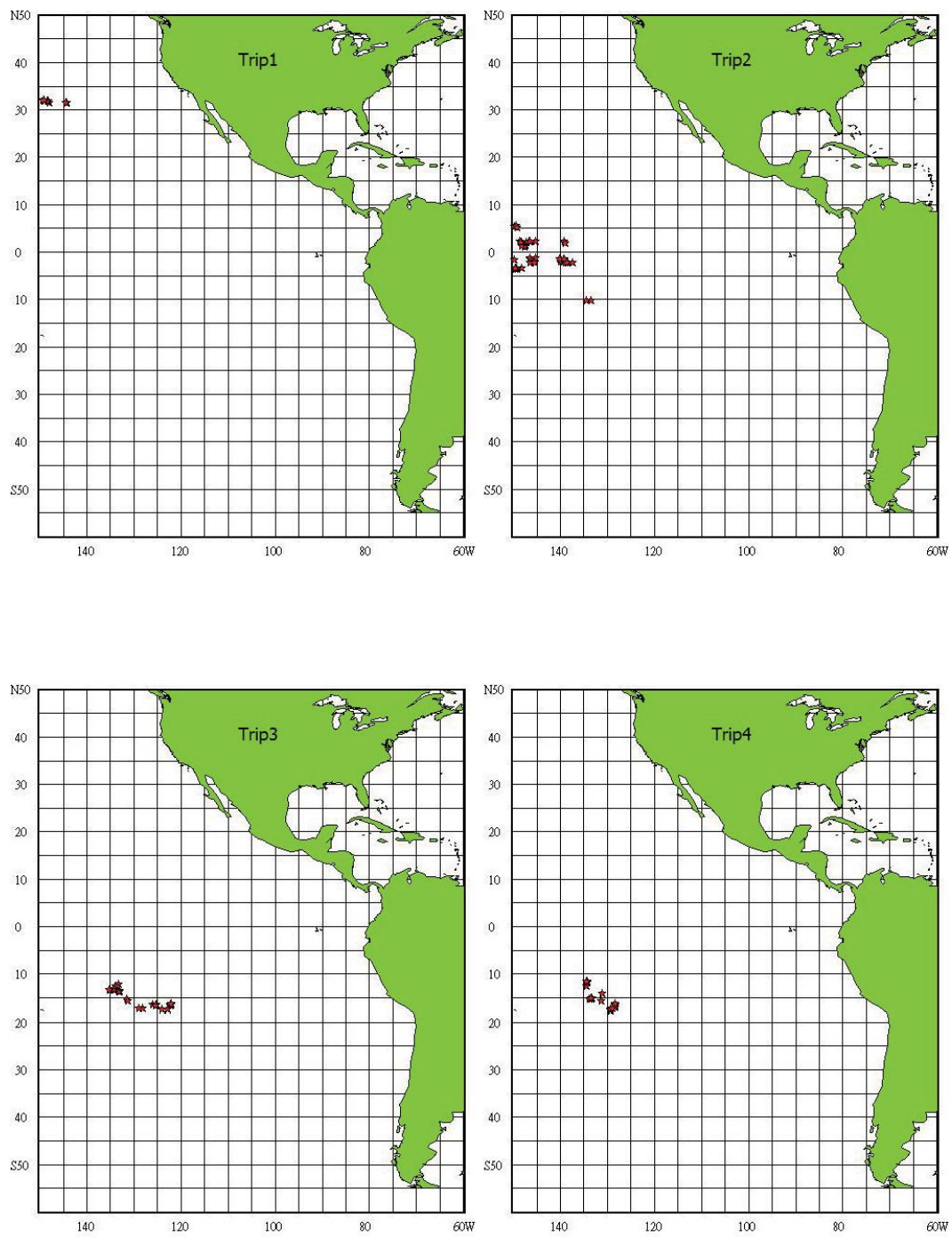
The summary information on observation data of 2016 and 2017 is presented in Table 3 with complete observation data of 2016.

**Table 1. Summary of 12 observation trip with data retrieved in the IATTC Convention Area in 2017.**

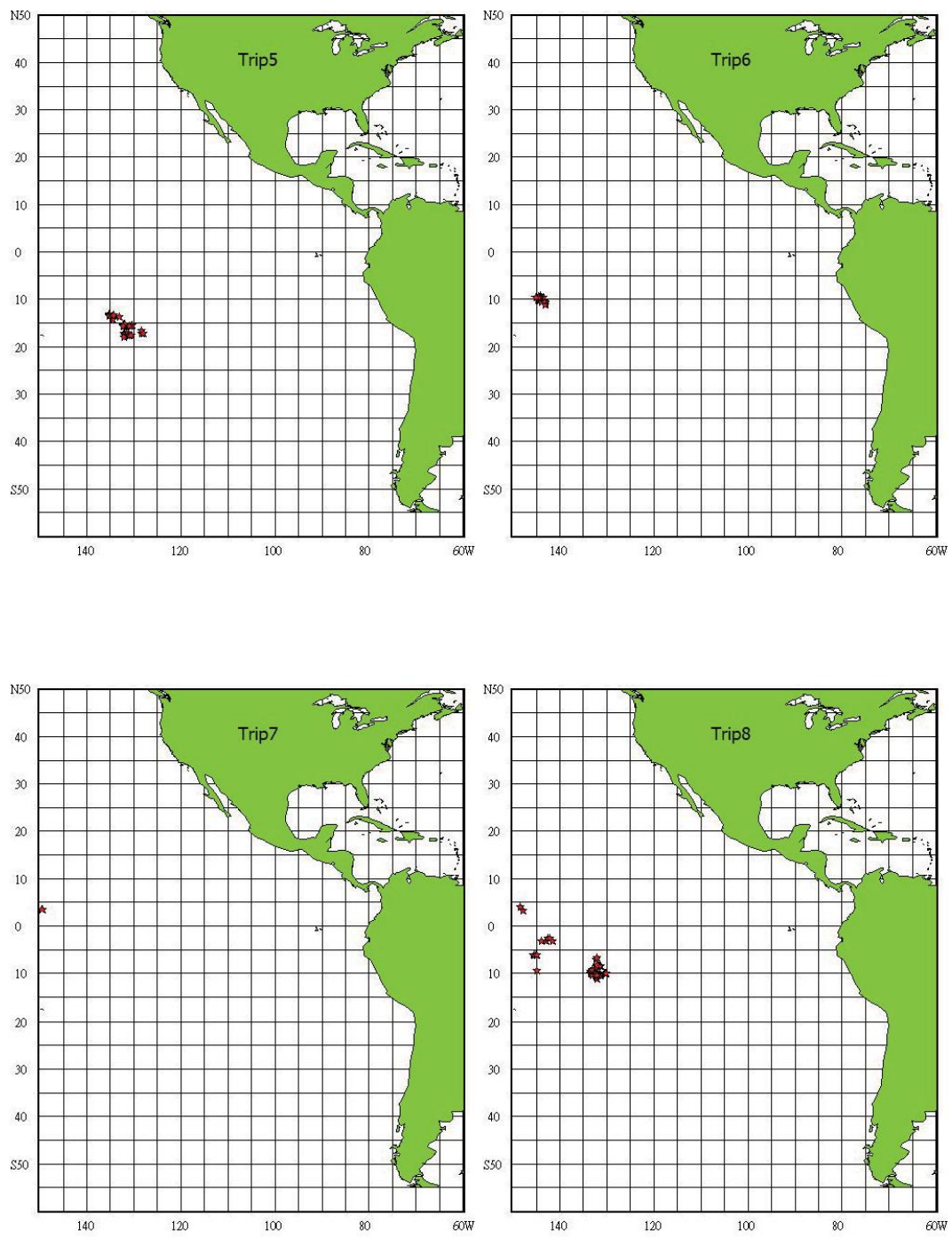
<b>TRIP ID</b>	<b>Range of latitude</b>	<b>Range of longitude</b>	<b>Start date of operation</b>	<b>End date of operation</b>	<b>Number of operation observed</b>	<b>Number of hooks observed</b>
Trip1	31.5N-32.1N	149.3W-144.4W	2017/01/02	2017/01/10	8	36000
Trip2	10.1S-5.6N	149.6W-133.6W	2017/01/02	2017/03/10	48	149770
Trip3	17.3S-12.1S	135.3W-122.2W	2017/01/02	2017/02/13	32	124460
Trip4	17.5S-11.4S	134.6W-128.4W	2017/01/01	2017/02/20	40	152000
Trip5	18S-13.1S	135.3W-128.1W	2017/01/01	2017/02/16	39	152320
Trip6	11S-9.1S	145.1W-143.2W	2017/02/17	2017/03/24	31	114000
Trip7	3.6N-3.6N	149.5W-149.5W	2017/03/10	2017/03/10	1	2400
Trip8	11S-4.1N	148.3W-130.2W	2017/03/12	2017/11/04	77	194720
Trip9	9.3S-2.4N	150W-140.2W	2017/04/26	2017/08/11	68	159200
Trip10	9S-7.3S	146.1W-144.4W	2017/07/20	2017/10/15	74	193650
Trip11	13.4S-1.5S	143.7W-122.1W	2017/05/31	2017/10/24	106	302240
Total					524	1,580,760

**Table 2. List of species recorded compiled from the data of 12 observation trips in the IATTC Convention Area in 2016(Unit: Number of individual).**

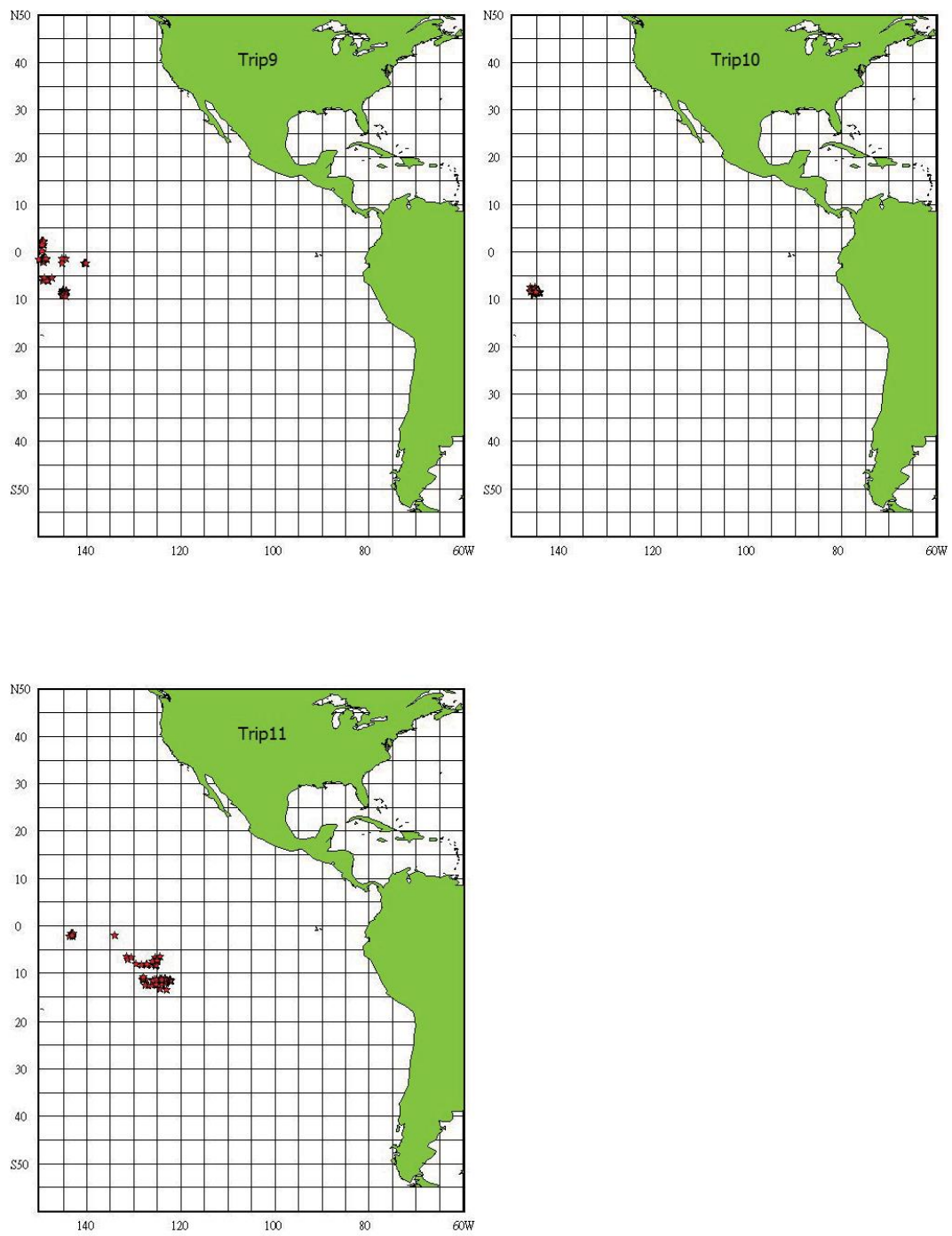
<u>Cruises</u> <u>Species</u>	Trip1	Trip2	Trip3	Trip4	Trip5	Trip6	Trip7	Trip8	Trip9	Trip10	Trip11	Total
ALB	158	0	420	1005	1134	311	0	6	50	61	115	3260
ALX	3	0	283	94	89	6	0	41	49	0	55	620
BAR	0	0	0	0	2	6	0	1	0	0	0	9
BET	140	211	8	28	37	31	1	222	537	294	692	2201
BIL	0	6	0	0	0	0	0	0	0	0	0	6
BLM	0	0	0	0	0	0	1	0	1	0	1	3
BLZ	0	0	0	0	0	0	0	0	0	4	15	19
BRZ	0	27	4	2	1	3	0	204	71	171	359	842
BSH	14	20	39	5	37	17	0	105	107	96	216	656
BTH	0	16	0	0	0	0	0	114	3	13	11	157
BUM	0	17	7	8	47	12	0	12	25	0	0	128
CEO	0	0	0	0	0	0	0	1	0	0	0	1
DBO	0	0	0	0	0	0	0	1	0	0	0	1
DKK	0	2	0	0	0	0	0	0	0	0	0	2
DKN	2	0	0	0	0	0	0	0	0	0	0	2
DOL	0	3	0	1	1	0	0	14	0	1	34	54
FAL	0	9	0	0	1	1	2	18	7	0	1	39
LAG	0	2	0	0	2	0	0	7	10	6	24	51
LEC	2	25	11	0	5	16	0	93	173	295	1153	1773
LMA	0	9	0	0	0	0	0	0	0	0	8	17
MLS	2	7	0	0	2	0	0	6	6	1	15	39
MOX	0	0	0	0	0	0	0	7	1	0	5	13
OCS	0	7	0	0	2	2	0	2	5	0	2	20
OIL	0	0	0	0	0	3	0	4	5	2	3	17
OTH	0	11	0	0	1	36	0	0	0	0	0	48
PLS	1	0	2	0	1	0	0	0	34	0	0	38
PSK	0	4	0	0	0	0	0	1	4	0	18	27
PTH	0	0	0	0	1	1	0	0	0	0	2	4
SFA	0	0	0	0	0	0	0	4	1	0	0	5
SKJ	4	6	56	38	36	28	0	6	6	0	13	193
SKX	0	0	0	0	0	0	0	48	0	0	0	48
SMA	4	0	0	0	1	0	0	1	0	0	9	15
SPF	0	0	0	0	2	0	0	1	0	0	0	3
SPZ	0	0	0	0	0	0	0	1	0	0	3	4
SSP	0	0	7	12	10	7	0	37	5	4	28	110
STI	0	0	0	3	2	0	0	87	0	41	9	142
SWO	2	77	1	1	6	1	0	84	105	68	315	660
TTL	0	0	0	0	0	0	0	0	0	0	1	1
TTX	0	1	0	0	0	0	0	0	0	0	0	1
TUN	0	1	0	0	0	0	0	0	0	0	0	1
WAH	7	8	50	104	58	30	0	18	26	8	69	378
YFT	12	32	9	105	45	143	0	46	166	101	166	825
Total	351	501	897	1406	1523	654	4	1192	1397	1166	3342	12433



**Fig 1. The operation locations of observed Taiwanese tuna longliners with data retrieved in Inter-American Tropical Tuna Convention Area in 2017.**



**Fig.1 cont.**



**Fig.1 cont.**

**Acknowledgement**

We greatly appreciate all scientific observers for their efforts to collect valuable data and samples on Taiwanese longline vessels. We would also like to express special thanks to all crew members of the observed longline vessels for their understanding and cooperation with our observer program.



Table 3.

1. Country	TW	TW
2. Fishing year	2016	2017*
3. Total catches of the longline fleet (T)	16,115 MT	17,504 MT
4. Total fishing days in the year of the longline fleet	11,815	14,254
5. Percent coverage of fishing effort by observers (considered as fishing days)	7.67%	10.41%
6. Total catch by vessels with observers on board	601 MT	311 MT
7. Species composition of catches in vessels with observers on board	<b>WEIGHT:</b> ALB(45.93%),BET(28.43%),YFT(5.30%),SWO(7.94%),BUM(3.91%),MLS(1.13%),SKX(2.79%),OTH(4.57%) <b>NUMBER:</b> ALB(64.62%),BET(14.36%),YFT(4.22%),SWO(3.44%),BUM(1.30%),MLS(0.45%),SKX(2.22%),OTH(9.40%)	<b>WEIGHT:</b> ALB(22.60%),BET(38.82%),YFT(8.01%),SWO(10.68%),BUM(2.52%),MLS(0.74%),SKX(5.37%),OTH(11.25%) <b>NUMBER:</b> ALB(29.69%),BET(19.77%),YFT(7.22%),SWO(5.91%),BUM(1.09%),MLS(0.35%),SKX(5.21%),OTH(30.77%)
8. Number of vessels with observers on board	19	12
9. Number of sea turtles caught incidentally on trips with observers	2	4
10. Sea turtles caught incidentally were released?	2	4
11. Number of sharks caught in trips with observers	1,323	987
12. Number of rays captured on trips with observers	508	178
13. Number of billfishes captured in trips with observers	1,686	951
14. Number of hooks used on fishing trips with observer	2,887,581	1,587,780
15. Type of hooks used	J hook:5% circle hook:36% Other type:59%	J hook:22% tuna hook:34% circle hook:22% Other hook:22%

Year	2016	2017*
Observer data on the number of OCS released with fate information (C-11-10)	4(alive), 8(dead), 6(unknow)	6(alive), 13(dead), 2(unknow)

Observer data on the number of RMB released with fate information (C-15-04)**	0	0
Observer data on the number of RMV released with fate information (C-15-04)***	0	0

\* The data of 2017 is still in preliminary for observer data being not retrieved completely.

\*\* RMB: *Manta* rays

\*\*\* RMV: *Mobula* rays