



**SCIENTIFIC COMMITTEE  
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**STATUS OF OBSERVER DATA MANAGEMENT**

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**WCPFC-SC10-2014/ST IP-03**

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## 1. Introduction

Observer data management encompasses a number of activities that ensure the data collected by observers are made available for the work of the WCPFC in a form that is both representative and of acceptable quality. The underlying activity involved in Observer Data Management is the management and entry of the observer data into a standardised database system, but it also covers the many other related activities described in Williams (2011), for example.

The SPC/OFP has been processing observer data on behalf of their member countries for more than 15 years and the Seventh Regular Session of the Commission (6–10 December 2010) approved the continuation of this work in respect of the Regional Observer Programme (ROP) data in the short-medium term (Anon., 2010a, Anon., 2010b). The Tenth Regular Session of the Commission (3–7 December 2013; Anon., 2013) reconfirmed the Commission's support for ROP data processing with its inclusion in the indicative budget for the period 2014-2016.

The Pacific Island Forum Fisheries Agency (FFA) also processes observer data<sup>2</sup> for the US Multilateral Purse seine Treaty and these data are regularly incorporated into the ROP data submitted to the WCPFC. WCPFC members other than Pacific Island countries have also contributed to the ROP Database including Australia, Chinese Taipei, New Zealand and the USA.

The majority of the observer data processed by the SPC are ROP-defined purse seine trips<sup>3</sup> which have been designated as the highest priority for processing over the past 2-3 years. However, the WCPFC requirement for 5% observer coverage in the longline fishery (established in 2012) has resulted in increased submission of observer longline data in recent years and these data are now assigned equal priority for data processing as the purse seine observer.

The SPC/OFP also processes non-ROP observer data that are, *inter alia*, of importance to the scientific work of the WCPFC and so have been included in the description of observer data management and data summaries, presented in this paper.

This paper serves to provide an update on the status of ROP data management at SPC/OFP over the past twelve months, covering the following:

- Human resources involved in observer data management at SPC/OFP
- Achievements over the past 12 months
- Status of observer data entry and issues
- Future expectations

The SC is encouraged to review the information in this paper and provide suggestions for enhancements for future WCPFC meetings, as required.

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<sup>2</sup> SPC enters the length frequency data (PS-4 forms) for these observer programmes.

<sup>3</sup> ROP trips do not include that part of an observer trip conducted on a vessel fishing in their home waters (waters of national jurisdiction).

## 2. Human Resources for managing observer data

The team dedicated to managing and entering observer data is now fully supported under the WCPFC ROP Data Management project, since the termination of funding from the New Zealand-funded 'Pacific Economic Growth Observer Programme' and the New Caledonia government in May 2014 and December 2013, respectively. The current team comprises:

- Two (2) technical staff overseeing observer data management at SPC Noumea, but also coordinating and supporting observer data entry in other countries
  - Observer Data Manager
  - Observer Data Audit Officer
- Sixteen (16) observer Data Entry staff
  - One observer data registry officer at SPC Noumea;
  - Eleven (11) data entry staff at SPC Noumea;
  - Four (4) data entry staff at WCPFC Secretariat offices in Pohnpei;
- A new position (Regional E-Reporting Coordinator) has been established in the past year with the funding support from the International Seafood Sustainability Foundation (ISSF). The duties of this position cover, *inter alia*, aspects of observer data collection and management related to E-Reporting and E-Monitoring.

Staff movements over the past year include,

- Recruitment of one data entry staff member in late 2013 and three data entry staff at SPC Noumea in January 2014, to cover the requirements to enter longline observer data entry but also to replace staff who resigned in 2013;
- Commencement of the new Observer Data Manager – Mr. Icanus Tuiloma (effective January 2014). The resignation of the previous Observer Data Manager in August 2013 unfortunately meant that the most senior position was vacant for nearly six months which caused delays in database development, installations of observer database systems in SPC member countries, reduced database support internally at SPC and for the WCPFC (although the Observer Data Audit Officer absorbed some of this work).

In addition to the cadre of staff dedicated to observer data management, there are several other SPC/OFP staff involved in this area, including:

- Fishery Monitoring Section staff in the observer support unit (3), who are regularly called on for their knowledge and expertise in resolving issues identified in the observer data during data entry;
- Head of OFP Data Management Section, who works with the Observer data manager on strategy, priorities related to observer data management, human resources issues, preparation of ROP data for inclusion in stock assessments and related analytical work, and responding to requests for ROP data summaries from the WCPFC Secretariat;
- SPC core (non-ROP) data entry staff members have contributed, at no expense to WCPFC, approximately four person-months during 2013 in reducing the backlog in processing ROP data.
- Fishery Monitoring Section staff who organize the printing and distribution of observer workbooks to SPC member observer programmes who are providers to the ROP.
- Fishery Monitoring and Data Management Section staff, who are involved in the provision of scanners and associated software in the offices of fisheries administrations for the electronic provision of scanned observer work books to SPC/OFP.
- OFP staff on duty travel and Pacific Island participants at regional meetings, who are used as 'mules' to ensure scanned data are brought back to SPC/OFP for processing.

### 3. Achievements over the past twelve months

The work related to observer data management achieved over the past twelve months includes,

- SPC technical staff visited WCPFC offices in October 2013 and June 2014 to install the latest version of the database (TUBs), provide ongoing technical support and training to the WCPFC Observer Data Entry staff within the offices of the WCPFC Secretariat. SPC staff also visited the offices of FFA in January 2014 to install the latest version of the observer database system (TUBs) used to enter US Treaty purse seine observer data.
- SPC technical staff undertook extensive travel over the past year related to observer data management work, including participation in the WCPFC E-Reporting and E-Monitoring workshop (Honiara - March 2014) and trips to Solomon Islands (January 2014), PNG (May 2014), Fiji (June 2014) and Tonga (July 2014) to install the latest version of the observer database system (TUBs) and provide training in how to use this system.
- The installation of the observer database systems (TUBs) in SPC member country offices will increase over the next few years as countries become better resourced to manage the entry of their own observer data. At this stage, the TUBs system is installed on a trial basis only so that countries can familiarise with the system and determine how many staff will be required to manage the entry of ALL their observer data. We will report the progress with the progress of the implementation of the in-country TUBs database systems next year.
- An MOU with Fiji Fisheries was established in July 2014 to support two dedicated observer data entry staff to entry the observer data generated from their national observer programme (which is currently the largest LONGLINE observer programme of the Pacific Islands countries with 120+ trips per year). These positions will eventually be integrated into the Fiji Fisheries, and technical support will be provided by both SPC Noumea and SPC Suva.
- The First Observer Data Management Workshop (OTDW) was financed through the WCPFC-administered Japan Trust Fund and conducted over one week in early March 2014. This workshop aimed to provide Pacific Island national observer programmes with the skills and knowledge to use the latest observer reporting tools, so they can better manage their observer placements and readily produce observer data summaries to satisfy their data-related obligations to the WCPFC, while also fulfilling their own national reporting requirements. The presentations and recommendations from the workshop are available at <http://www.spc.int/oceanfish/en/meetingsworkshops/observer-tuna-data-workshops>.
- A new web-based Observer (TUBs) database Reporting module was developed over the past six months and deployed in March/April 2014. It has a comprehensive set of reports (currently 65 reports) covering a wide range of observer data summaries including a set of reports specifically designed to produce some of the WCPFC CMM reporting output requirements related to observer data. This system is likely to expand over the coming years to meet the requirements of not only national observer programmes, but also SPC, the WCPFC Secretariat and FFA.
- The on-board purse seine observer data entry trials (Observer E-Reporting) in the Federated States of Micronesia (FSM) and the Republic of Marshall Islands (RMI) have continued over the past year with more observers and equipment being deployed. There have been THIRTEEN (13) trips conducted since August 2013 and the procedures for post-trip debriefing, auditing and import into the regional observer databases are now well established. The import into the national observer database will be one of the objectives for the coming year. More detailed information is available in Hosken et al. (2014b) and <http://www.spc.int/oceanfish/en/ofpsection/data-management/spc-members/e-reporting>.
- A collaborative project involving several stakeholders (National and Regional Fisheries Authorities/Agencies and the fishing industry) looking at the potential of E-Monitoring video on-board a longline vessel commenced in early 2014. Two trips have been completed and

the project outline and a preliminary review of the information collected on the first two trips are available in Hosken et al. (2014a).

- The observer data quality control system was enhanced over the past year, including the following work:
  - All purse seine observer data have now been migrated from the legacy FOXPRO observer database system to the TUBS MS SQL SERVER. There remains only a few historical pole-&-line and longline observer data which has some issues to resolve before importing them into TUBS SQLServer;
  - Solomon Islands and PNG have the full version of TUBS Access installed on their respective sites. The WCPFC Secretariat and FFA are also using TUBS Access to enter observer trip data (the FSM national programme and US Treaty data, respectively) and these data are regularly audited and then imported into the regional TUBS dataset on monthly basis ;
  - Data quality summary reports have been provided to national observer programmes such FMOB, SBOB, PGOB, KIOB, MHOB and TOOB for debriefing and refresher training provided by SPC & FFA and also for their annual performance appraisal;
  - The observer debriefing systems is now a module within Observer Programme Management system (OPM) and it can be access through the FFA's IMS portal;
- The regional observer master list database incorporates VMS trips, data entered into the various TUBS systems and observer trip placement lists supplied by national observer programmes. The regional observer master trip list database continues to be enhanced and populated with observer trip lists provide by SOME national observer programmes, and we request ALL observer programmes to submit their observer trip placement lists in the future. We also plan to collaborate with FFA to import the basic observer trip details from the national OPM systems into the regional observer master list in the future. This database is fundamental to both tracking the amount of data not yet provided and identifying trips where data have been rejected by the national programme; the tables showing purse seine observer data coverage presented in this paper were sourced from the regional observer master list. Currently the regional observer trip list only caters for purse seine trips but in the future we plan to extend this database to cover longline trips.

The FFA-developed Observer Programme Management System (OPM) continues to be deployed throughout the region and most of their member countries are now covered; this system is designed, *inter alia*, to manage the process of observer placements from national and subregional observer programmes and centralise the base observer trip information in one area.

#### 4. Status of Observer data entry and issues

Table 1 shows the status of observer data entered by SPC as at 15<sup>th</sup> July 2014 and Table 2 provides an indication of the available purse-seine observer data processed by fleet. Table 3 provides an indication of the longline observer data submitted to SPC by fleet, and the approximate coverage of the data provided.

The summaries of observer data provisions presented herein continue to be constrained by a number of factors, including:

- i. **Accurate information on the complete number of vessel trips by gear and flag in the WCPFC Convention Area.** This information is used as the 'base' with which to determine observer coverage. For purse seine, VMS data provides the best source of information to determine vessel trips by gear and flag, but there are several issues in using VMS data for the longline gear as a basis for determining coverage, the main issue being how to deal with transshipments at sea and accessibility of complete VMS data. Ideally, the full provision of

operational data would be the best source of information to determine vessel trips for the purpose of determining coverage.

- ii. **Accurate information on the actual number of observer trips by observer programme, gear and flag.** At this stage, we have accurate information on the observer data received, but do not have complete information on the actual observer trips undertaken which would provide a means of better determining coverage and where we should be focussing efforts to obtain the data. Some progress has been made in the past two years (see “regional observer trip list database” in Section 3 above), but there remains data yet to be provided.
- iii. **Assignment of an ROP trip in the unprocessed data.** The assignment of a trip as an ROP or a non-ROP trip (or part of a trip as ROP) can only be determined after the data have been processed since it depends on where the fishing activity occurred.
- iv. **Distinction between fleets.** The breakdown of the major longline fleets (i.e. China, Chinese Taipei and Japan) into the smaller-vessel offshore versus the larger-vessel distant-water fleets, as per the annual catch estimates, has not been undertaken at this stage;

#### 4.1 Purse seine

Observer data for an estimated 82% (1,358 trips) of observer purse seine trips conducted (but excluding those rejected by the observer programme and trips with unknown status) during 2011 have been received at SPC at the time of writing this paper. SPC has also received observer data for an estimated 75% (1,380 trips) of purse seine trips undertaken in 2012, and an estimated 63% (1,055 trips) of trips undertaken in 2013 have been received.

A total of 90% (1,191 trips) of the observer data received at SPC for 2011 observer activities have now been entered (excluding the trips awaiting resolution at SPC). A total of 96% (1,261 trips) of observer data received at SPC for 2012 activities have now been entered (excluding the trips awaiting resolution at SPC). A total of 72% (695 trips) of observer data received at SPC for 2013 activities have now been entered (excluding the trips awaiting resolution at SPC).

As reported in previous years, the ‘problematic’ trip data held at SPC awaiting resolution are mainly due to (i) incomplete or poor quality scanned data submissions, or (ii) issues in the data which result in the trip being set aside pending further information/review all of which prevent the trip data being entered. More stringent procedures, new scanning software and equipment have resulted in an improvement in the quality of scans (and less problems) over the past year.

SPC insists that the observer trip data rejected by the observer programmes still be submitted to ensure all observer trip data are available, and that the problems encountered can be reviewed and referred to in future training, debriefing and data quality control procedures.

For the data received at SPC, only 3% (37 trips) of those received for 2011 activities are still awaiting rescans of data, 5% (60 trips) of those received for 2012, but 13% (87 trips) of those received in 2013 have problems that need to be resolved before the data are ready for entry.

The breakdown of processed purse-seine observer data by fleet (Table 2) shows that the coverage for the main purse seine fleets is generally better than 80% of data received for 2011 and 2012, but priority in processing 2013 observer data for the following major fleets (Chinese Taipei, PNG, Philippines and Korea) would then provide more representative information

Information on the trips “with unknown status” will require considerable effort to follow-up with flag and coastal states, in the absence of any observer trip reporting obligations.

## 4.2 Longline

The available information on longline observer data (Table 3) is provisional and continues to be constrained by the several issues, some of which are listed above. At this stage, it is only been possible to present longline observer summaries of data PROVIDED to SPC, which may not be the full list of actual longline observer trips CONDUCTED. TCC9 considered a proposal for clearer guidelines to CCMs on their obligation for longline observer coverage which would also facilitate the way the WCPFC could subsequently measure coverage (WCPFC & SPC-OFP, 2013); WCPFC10 subsequently assigned this task to the considered by the Regional Observer Programme Inter-sessional Working Group (IWG-ROP) (Anon, 2013).

*247. The Chair reminded WCPFC10 that TCC9 had also recommended that if the IWG-ROP is re-constituted, it should consider issues associated with observer coverage targets for longline fleets (TCC9 Report, para. 225).*

Nonetheless, based on available information, Table 3 shows that some domestic-based longline fleets (not bound by ROP coverage rates) are achieving coverage better than 5%, but that some of the major longline fleets will require a significant number of observer trips to achieve the ROP target coverage of 5%.

## 5. Future expectations

There are now several observer data entry teams<sup>4</sup> operating throughout the region entering data into a standardised observer database system (TUBs) and supported by the two technical positions (Observer Data Manager and Observer Data Audit Officer) based in SPC Noumea. There continues to be a lag in the provision of observer data which leads to a lag in the observer data processing, but the situation is gradually improving as resources both at the national and regional level are now more adequate and more experienced in dealing with observer data management.

The TUBs Observer database will continue to be deployed in the offices of Pacific Island member countries in the next few years with the burden for data processing at SPC and the WCPFC offices reducing over time.

SPC will continue to expand the work in conducting observer E-Reporting and E-Monitoring trials in collaboration with their member countries in the coming years, with an expectation of larger-scale implementation, if and when national fisheries authorities are adequately resourced and prepared to venture down this path. SPC will also continue to collaborate with other E-Reporting projects involving observer data, as required; for example with the Observer E-Reporting initiatives of the Papua New Guinea National Fisheries Authority (PNG/NFA) and the Parties to the Nauru Agreement (PNA) (see Karis et al, 2014).

The trials for observer data collection using E-Reporting and E-Monitoring is already changing the way technical support and training is provided to national observer programmes, with the proposal to establish dedicated positions (E-Reporting officers) at the national level now seen as fundamental to deal with the day-to-day management of observer and logbook E-Reporting.

SPC will continue to work closely with the WCPFC Secretariat over the coming year on the following areas:

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<sup>4</sup> SPC Noumea, WCPFC Secretariat, FFA and Fiji Fisheries are undertaking complete observer data entry. PNG/NFA, Solomon Islands and Tonga Fisheries are currently entering some observer data on a trial basis.



- Where required, provide technical advice and support to address the recommendations from the WCPFC E-Reporting and E-Monitoring Workshop (conducted in March 2014);
- Provide advice, as required, on the E-Reporting standardised data fields and protocols;
- Continued support for the WCPFC ROP data entry;
- Continued provision of ROP data to the WCPFC on a regular basis;
- Continued support in responding to requests to disseminate ROP data according to the WCPFC data dissemination rules;
- Continued work in satisfying WCPFC requirements for ROP data reports mainly aligned to their requirements for CMM monitoring.

SPC will also continue to work with the Pacific Islands Forum Fisheries Agency (FFA) and the PNA office to improve efficiencies in observer data management, particularly since the TUBs system has now been adopted as the regional standard in FFA/PNA member countries and the TUBs reporting system is fully integrated into the FFA-developed national IMS portals.

## 6. References

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## Tables

**Table 1. Summary of the provision and processing of Purse seine Observer data**

As at July 2014													
YEAR	1. Estimated Purse seine TRIPS	2. TRIPS with unknown status	3. TRIPS available for data entry	4. TRIPS received at SPC		5. TRIPS processed at SPC			6. Problems awaiting resolution at SPC			7. TRIPS not yet sent by Obsv. Progs.	
				Trips	%	Trips	% of total available trips	% of trips received without problems	Trips	% of total available trips	% of received	Trips	% of total
2010	1,865	299	1,566	1,444	92%	1,237	79%	90%	75	5%	6%	122	8%
2011	2,119	468	1,651	1,358	82%	1,191	72%	90%	37	2%	3%	293	18%
2012	2,178	343	1,835	1,380	75%	1,261	69%	96%	60	3%	5%	455	25%
2013	2,213	526	1,687	1,055	63%	695	41%	72%	87	5%	13%	632	37%

### Notes

- CATEGORY 1** represents estimated trips determined from VMS data. These trips exclude the Philippines and Indonesian domestic fisheries, purse seine trips undertaken completely outside the tropical waters (20°N-20°S). ). In some instances, trips identified in the VMS data where no fishing actually took place (e.g. returning to home port in Asia for annual maintenance) may have been included in the "Estimated" trips.
- CATEGORY 2** represents trips of unknown status and is essentially the difference between VMS trips (**CATEGORY 1**) and those trips that SPC has a record of having taken place (**CATEGORY 3**). In some instances, trips identified in the VMS data where no fishing actually took place (e.g. returning to home port in Asia for annual maintenance) may have been included in the "Estimated" trips. This category may also include fishing trips without an observer on-board.
- CATEGORY 3** covers (i) data received at SPC and (ii) basic trip information provided by observer programmes indicating an observer trip took place, but data have yet to be provided.
- CATEGORY 7** is essentially the difference between **CATEGORY 3** and **CATEGORY 4**.
- There remain some trips which do not yet have the length frequency data received/entered (PS-4 forms).

**Table 2. Summary of Purse seine Observer data received at SPC, by year and flag**

2011								
FLEET	1. Estimated Purse seine TRIPS	2. TRIPS with unknown status	3. TRIPS available for data entry	4. TRIPS received at SPC		5. TRIPS processed at SPC		
				Trips	%	Trips	% of total available trips	% of total trips recvd
China	99	17	82	47	57%	41	50%	87%
Ecuador	57	18	39	25	64%	18	46%	72%
Spain	35	23	12	9	75%	6	50%	67%
FSM	70	16	54	46	85%	37	69%	80%
Japan	276	81	195	163	84%	147	75%	90%
Kiribati	75	23	52	23	44%	21	40%	91%
Korea	281	61	220	168	76%	147	67%	88%
Marshall Is.	102	25	77	62	81%	57	74%	92%
New Zealand	25	14	11	9	82%	6	55%	67%
PNG / PH / Vanuatu	503	72	431	392	91%	341	79%	87%
Solomon Islands	52	40	12	12	100%	9	75%	75%
El Salvador	17	2	15	7	47%	7	47%	100%
Tuvalu	7	2	5	4	80%	4	80%	100%
Chinese Taipei	262	43	219	174	79%	134	61%	77%
USA	258	31	227	217	96%	216	95%	100%
	2119	468	1651	1358	82%	1191	72%	88%

2012								
FLEET	1. Estimated Purse seine TRIPS	2. TRIPS with unknown status	3. TRIPS available for data entry	4. TRIPS received at SPC		5. TRIPS processed at SPC		
				Trips	%	Trips	% of total available trips	% of total trips recvd
China	85	9	76	33	43%	30	39%	91%
Ecuador	46	21	25	15	60%	11	44%	73%
Spain	34	15	19	16	84%	9	47%	56%
FSM	76	36	40	39	98%	37	93%	95%
Japan	291	55	236	199	84%	195	83%	98%
Kiribati	81	20	61	44	72%	41	67%	93%
Korea	304	41	263	166	63%	137	52%	83%
Marshall Is.	96	10	86	59	69%	59	69%	100%
New Zealand	23	8	15	15	100%	15	100%	100%
PNG / PH / Vanuatu	477	38	439	336	77%	299	68%	89%
Solomon Islands	60	32	28	19	68%	19	68%	100%
El Salvador	15	1	14	6	43%	1	7%	17%
Tuvalu	10	2	8	5	63%	5	63%	100%
Chinese Taipei	287	37	250	163	65%	142	57%	87%
USA	293	18	275	264	96%	261	95%	99%
	2178	343	1835	1379	75%	1261	69%	91%

**Table 2. Summary of Purse seine Observer data received at SPC, by year and flag (continued)**

2013								
FLEET	1. Estimated Purse seine TRIPS	2. TRIPS with unknown status	3. TRIPS available for data entry	4. TRIPS received at SPC		5. TRIPS processed at SPC		
				Trips	%	Trips	% of total available trips	% of total trips recvd
China	120	9	111	52	47%	47	42%	90%
Ecuador	51	30	21	17	81%	16	76%	94%
Spain	30	7	23	21	91%	18	78%	86%
FSM	66	56	10	4	40%	4	40%	100%
Japan	283	89	194	136	70%	116	60%	85%
Kiribati	92	22	70	43	61%	17	24%	40%
Korea	294	68	226	174	77%	110	49%	63%
Marshall Is.	95	11	84	60	71%	54	64%	90%
New Zealand	26	15	11	10	91%	7	64%	70%
PNG / PH / Vanuatu	474	88	386	320	83%	183	47%	57%
Solomon Islands	48	40	8	5	63%	4	50%	80%
El Salvador	26	15	11	9	82%	7	64%	78%
Tuvalu	10	1	9	7	78%	3	33%	43%
Chinese Taipei	303	77	226	142	63%	63	28%	44%
USA	299	2	297	55	19%	46	15%	84%
	2217	530	1687	1055	63%	695	41%	66%

**Notes**

- CATEGORY 1** represents estimated trips determined from VMS data. These trips exclude the Philippines and Indonesian domestic fisheries, purse seine trips undertaken completely outside the tropical waters (20°N-20°S). In some instances, trips identified in the VMS data where no fishing actually took place (e.g. returning to home port in Asia for annual maintenance) may have been included in the "Estimated" trips.
- CATEGORY 2** represents trips of unknown status and is essentially the difference between VMS trips (**CATEGORY 1**) and those trips that SPC has a record of having taken place (**CATEGORY 3**). In some instances, trips identified in the VMS data where no fishing actually took place (e.g. returning to home port in Asia for annual maintenance) may have been included in the "Estimated" trips. This category may also include fishing trips without an observer on-board.
- CATEGORY 3** covers (i) data received at SPC and (ii) basic trip information provided by observer programmes indicating an observer trip took place, but data have yet to be provided.
- "PNG / PH / Vanuatu"** represent a combination of vessels chartered to PNG and flagged to Philippines and Vanuatu, but also those vessels flagged to Philippines and Vanuatu that are not chartered to PNG. The reason for combining these fleets is that VMS data used to determine coverage does NOT take into account chartering arrangements while the observer data does take into account chartering arrangements.

**Table 3. Summary of Longline Observer data received at SPC, by year and flag**

2012 OBSERVER DATA				
Flag	Total Estimated	RECEIVED at SPC	%	See NOTE
Australia	439	0	0%	1
Belize	10	0	0%	
Cook Islands	141	7	5%	1
China	1763	8	0%	
Spain	19	0	0%	
Fiji	864	66	8%	
FSM	414	7	2%	
Indonesia	17	0	0%	4
Japan	1632	5	0%	4
Kiribati	31	0	0%	
Korea	350	8	2%	
Marshall Islands	60	0	0%	1
New Caledonia	332	22	7%	1
New Zealand	264	15	6%	1
French Polynesia	665	41	6%	1
PNG	190	10	5%	1
Philippines	9	0	0%	
Samoa	924	2	0%	1
Chinese Taipei	3025	67	2%	
Tonga	44	2	5%	1
Tuvalu	31	0	0%	
USA	772	222	29%	
Vanuatu	388	25	6%	
Vietnam	400	0	0%	
	12,784	507	4%	

2013 OBSERVER DATA				
Flag	Total Estimated	RECEIVED at SPC	%	See NOTE
Australia	400	0	0%	1
Belize	9	1	11%	
Cook Islands	112	5	4%	1
China	1838	10	1%	
Spain	23	0	0%	
Fiji	820	64	8%	
FSM	337	2	1%	
Indonesia	23	0	0%	4
Japan	1673	0	0%	4
Kiribati	20	1	5%	
Korea	292	13	4%	
Marshall Islands	61	1	2%	1
New Caledonia	308	23	7%	1
New Zealand	241	15	6%	1
French Polynesia	815	39	5%	1
PNG	70	6	9%	1
Philippines	2	0	0%	
Samoa	320	10	3%	1
Chinese Taipei	2709	22	1%	
Tonga	27	8	30%	1
Tuvalu	21	0	0%	
USA	918	245	27%	
Vanuatu	386	49	13%	
Vietnam	400	0	0%	
	11,825	514	4%	

**Notes**

1. Estimated trips determined from VMS and raised logbook data and represent the best information at hand. It assumes that a trip is defined as the time between a port departure and port return. This definition does NOT take into account transshipment at sea which would normally terminate a trip (it is not possible to determine this definition of a trip at this stage).
2. This fleet is known to have most of not all trips as non-ROP trips. These tables include non-ROP trips since it assumes that domestic fleets fish exclusively within their waters of national jurisdiction. This may not be the case in some instances and will be refined in future versions of this table.
3. Estimates of some trips (e.g. US and Vietnam trips in their waters of national jurisdiction) are currently not available. For the US, this represents ROP trips only, as provided to the WCFCPC.
4. Some domestic fleets fishing entirely in their national waters have not been listed in this table (e.g. the Japanese Coastal, the Indonesian domestic) since (i) estimates trips are not available and (ii) these trips would not be defined as ROP trips.