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STATUS OF OBSERVER DATA MANAGEMENT

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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 entry of the observer data into a standardised database system, but it also covers the following activities:

- Scanning of hard-copy observer data for transmission to SPC/OFP and for data archiving purposes;
- On receipt at SPC/OFP, the pre-entry screening of the scanned data for completeness (i.e. all forms are available), data registration and preparation of 'batches' for data entry;
- Ongoing technical support for the observer database system (provided by database developers);
- Ongoing training of observer data entry staff (covering the database system, tuna fisheries and the type of data collected by the observer);
- Ongoing supervision and support of the data entry team, including the setting of priorities for data entry and the day-to-day support in resolving issues with the data;
- Auditing of the processed data (which is a function aligned with the debriefing process);
- Auditing and importing electronic observer data that are provided in a non-standard format;
- Data quality control and assignment of data quality indicators in the observer database;
- Extraction of the data to satisfy the ROP definition which are then transmitted to the WCPFC Secretariat
- Development, installation and training with respect to database query tools (e.g. the Observer Trip Viewer System) and reports provided to the users of the data;
- Provision of ad hoc data summaries to users, as required.

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 majority of the observer data processed by the SPC are ROP-defined purse seine trips² which are currently designated as the highest priority for processing. 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.

Williams (2011) notes the progress made in the provision of observer data over the past twelve months, in particular:

- The authorization for SPC/OFP to release ROP data to the WCPFC has now been provided by all Pacific Island countries (that hold ROP data) to the SPC/OFP for processing;
- The authorization for the release of FSM Arrangement and US Multilateral treaty purse seine observer data, defined as ROP data, to the WCPFC (May 2011);
- The provision of ROP trip data for a Chinese Taipei longline vessel fishing in 2009/2010;
- The provision of ROP trip data for a US longline vessel fishing in 2010;
- The provision of observer data to the SPC/OFP for 30+ trips conducted on Philippines purse seine vessels operating in Philippine waters (non-ROP trips) in 2010;
- The provision of observer data to the SPC/OFP for 6 trips conducted on Vietnamese longline vessels operating in Vietnam waters (non-ROP trips).

² ROP trips do not include that part of an observer trip conducted on a vessel fishing in their home waters (waters of national jurisdiction).

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

- Human resources involved in observer data management at SPC/OFP
- Current issues with observer data management
- Initiatives for distributing observer data processing
- Future expectations

This paper is a work-in-progress and will be enhanced for future WCPFC meetings to include information relevant to the work of the Commission, as required.

2. Human Resources for managing observer data

Over the past four months, the team dedicated to managing observer data has grown significantly as a result of funds provided under the WCPFC ROP Data Management project, the New Caledonian government and the New Zealand-funded 'Pacific Economic Growth Observer Programme'. The current team comprises:

- Two (2) technical staff overseeing observer data management
 - Observer Data Manager (commenced 13th June 2011)
 - Observer Data Audit Officer (commenced 13th June 2011)
- Twelve (12) observer Data Entry staff
 - Four data entry staff at SPC Noumea (recruited in 2010; covered by New Caledonia and WCPFC funds)
 - Four data entry staff at SPC Noumea (recruited in 2nd quarter 2011 and covered by WCPFC funds;
 - Two data entry staff at SPC Pohnpei (recruited in 2nd quarter 2011 and covered by WCPFC funds;
 - Two data entry staff at SPC Noumea (to be recruited in 3rd quarter 2011)

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

- The Data Registry clerk, who spends at least 80% of her time on observer data management work;
- The Fisheries Database Analyst/Developer, who has been responsible for the observer database development, installation and training prior to the establishment of the two new technical positions;
- 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 and human resources issues;
- 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.

The observer data entry staff are required to successfully complete the 1-2 week full-time observer training course to understand the tuna fisheries and the data collected by observers. The four new data entry recruits at SPC Noumea undertook the course in early July 2011, with two data entry staff from the Forum Fisheries Agency (FFA) and the Observer Data Manager and Data Audit Officer. The data entry staff at SPC Pohnpei are expected to undertake similar training in the coming months.

After an initial familiarisation period and training, the newly recruited data entry staff are approaching the rate of data entry required to cover the incoming data.

3. Current issues in ROP data management

There are a number of areas that continue to delay the availability of processed observer data for the work of the WCPFC. The most important constraints, and plans for attempting to resolve them are:

- The overwhelming stress on the resources of national and regional observer programmes as a result of the CMM 2008-01 requirement for 100% coverage in the purse-seine fishery has meant that countries have been severely delayed in scanning and sending their data to SPC for processing. Tables 1 and 2, and Figure 1 provide a provisional summary of 2010 observer data that have been made available to the SPC/OFP as at the beginning of July 2011. Most countries have now been provided with at least one scanner and SPC/OFP has developed specific scanning software to facilitate the scanning of observer data and to ensure that the quality of scan is adequate. There has been a noted improvement in the provision of data in recent months and initiatives such as the provision of external hard-drives to transport the scanned data and improved usage of the internet to transfer scanned data, are two areas that are currently under investigation;
- Due to the delay in recruiting dedicated observer data management staff, a significant backlog of data (to be entered) has built up. Prioritisation to select the most important data to enter will be used as an interim measure until the backlog has been resolved;
- There have been a number of data quality issues identified over the past year and this is expected to improve with the recruitment of the Observer Data Quality Officer.

4. Initiatives for distributing observer data processing

In addition to increasing resources for processing observer data over the past 12-18 months (refer to Section 2 above), the following initiatives for trialling the distribution of observer data processing were undertaken in the past six months:

- The SPC-developed TUBs Observer database system was installed on a trial basis in the Marshall Islands in 2010, and was installed for trial in the Philippines Bureau of Fisheries and Aquatic Resources (BFAR) offices in February 2011. The latest version of TUBs is becoming more stable and will potentially be available for additional trial sites in country fisheries offices in the coming year;
- Two data entry staff were recruited at the SPC Pohnpei office in June 2011 to enter some of the data collected by the FSM NORMA national observer programme. There may be consideration for increasing the number of data entry staff in FSM, depending on the need for support/supervision and the general success of this initiative;
- In June 2011, one FSM NORMA observer was provided with a laptop containing the SPC-developed TUBs Observer database system and was trained to use this system. The observer is currently conducting a trial of data entry on-board a US purse seine vessel and will be specifically debriefed on his return to evaluate the success of this initiative. Further trials of on-board observer data processing are planned for the coming year.

5. Future expectations

The data entry staff required to enter the significant increase in observer data collected throughout the region since January 2010 has only recently reached near full complement but there is now a significant backlog of observer data entry to cover. In the short term, the core SPC data entry staff

(i.e. those staff not recruited for ROP data entry) will attempt to contribute to covering some of the backlog of purse seine observer data entry, but this will result in delays in the processing of other types of data (logsheets and port sampling data). At the current rate of processing, it may be at least another year before the backlog of purse seine observer data entry will be cleared, although the additional data entry burden that the implementation of 5% observer coverage in the longline fishery (January 2012) will bring has not yet been factored in.

SPC data management staff, including those not dedicated to observer data management, will continue to investigate options for distributing observer data entry in the coming year to the extent that resources (human and financial) are available, noting that on-site support, comprising an experienced observer coordinator and technical database person, is expected to be an essential requirement for these initiatives.

It is hoped that the problems in scanning and transmitting observer data to SPC/OFP and the WCPFC Secretariat (ROP data only) will continue to improve over the coming year.

6. References

- Anonymous. 2010a. Report of the Seventh Regular Session of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. 7–11 December 2010, Honolulu, Hawaii, USA. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia.
- Anonymous. 2010b. Annual Report to the Commission – Regional Observer Programme. Meeting Document WCPFC7-2010/26. Seventh Regular Session of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPFC7). 7–11 December 2010, Honolulu, Hawaii, USA. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia.
- Williams, P.G. 2011. Scientific data available to the Western and Central Pacific Fisheries Commission. Working Paper SC7 ST WP–1. Seventh Regular Session of the WCPFC Scientific Committee (SC7), 9–17 August 2011, Pohnpei, FSM. Oceanic Fisheries Programme, Secretariat of the Pacific Community, Noumea, New Caledonia.

Tables and Figures

Table 1. Provisional purse-seine observer trips undertaken in 2010, by major observer programme

2010 Observer trips					
Observer Programme	(Estimated) Trips undertaken	Trip data received at SPC	%	Trip data not yet received	%
FSM	350	62	18%	288	82%
Kiribati	200	92	46%	108	54%
RMI	82	49	60%	33	40%
Nauru	5	5	100%	0	0%
PNG	400	300	75%	100	25%
Solomons	214	184	86%	30	14%
US MLT	285	179	63%	106	37%
FSM Arr.	221	146	66%	75	34%
Total	1757	1017	58%	740	42%

Notes

1. Values in red are approximate number of trips determined from anecdotal information.
2. Provisional values in blue are from Tim Park (pers. comm.)
3. Some of the FSM Arrangement trips may be counted in the national programme trips and the FSM Arrangement trips may not account for those FSM Arrangement vessels covered under the Regional Arrangement (RA) between RMI and FSM, for example.

Table 2. Provisional purse-seine observer trips undertaken in 2010, by flag

2010 Estimated PS trips			
Flag	Estimated trips	Obs. Trips (available data)	%
CN	89	46	52%
EC	10	7	70%
ES	13	13	100%
FM	60	34	57%
JP	267	107	40%
KI	25	10	40%
KR	380	175	46%
MH	80	24	30%
NZ	25	2	8%
PG	320	193	60%
PH	190	78	41%
SB	60	3	5%
SV	13	0	0%
TV	12	5	42%
TW	317	140	44%
US	310	173	56%
VU	32	7	22%
TOTAL	2203	1017	46%

Notes

1. "Estimated trips" are provisional and based on the best combination of available logsheet and VMS data for the WCPFC Convention Area. These values exclude the domestic fisheries of the Philippines and Indonesia, but include trips by the domestic fleets based in PNG and the Solomon Islands which fish in their archipelagic waters.
2. 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.
3. "Obs. Trips" represent the observer data provided to SPC as at 25th July 2011, although a number of these trips are not yet be processed.

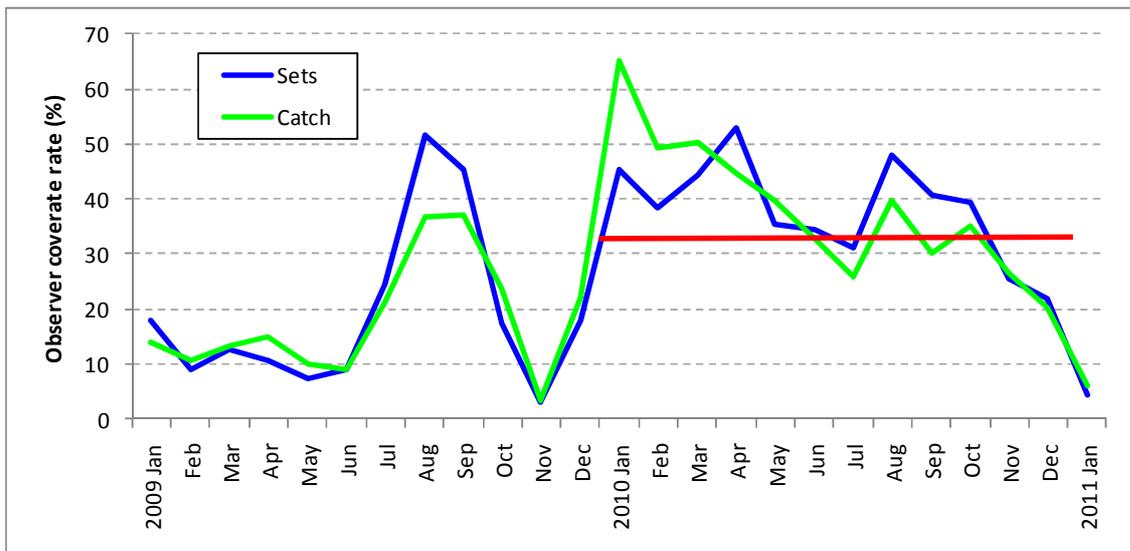


Figure 1. Coverage of purse seine observer data processed at SPC as at 4 July 2011, expressed as the percentage of observed to total sets (sets) and observed to total catch (catch). Activities in archipelagic waters and in the domestic purse seine fisheries of Indonesia and Philippines are excluded. Observer data represent the data that have been processed only. Red line represents the average coverage of processed observer data for 2010, as at 4 July 2011 (32.2%).