

Biological Sampling Newsletter

for Observers and Port Samplers

SPC-OFP Ecosystem Monitoring and Analysis

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Stomach sampling overview of the GEF-SAP project 2000-2005 & 3rd overview of stomach sampling of the GEF-OFM project 2005-2010.

Welcome to the June 2007 newsletter for the “Ecosystem monitoring and analysis” programme co-ordinated by SPC in Noumea. In this issue we provide an update to issue #2 of this newsletter on the stomach sampling undertaken to date in collaborations with the national observer programmes of the region.

PNG TAGGING PROJECT AND STOMACH SAMPLING

Since August 2006 in collaboration with other partners and funding agencies SPC has launched a new tagging project in the region. Field work has started in Papua New Guinea with 2 cruises of 3 months each and the second cruise just finished in May 2007. The first objective of this work was to tag tuna to obtain a better understanding of their movements, but it was also a great opportunity to collect biological samples.

During those 2 cruises, 61,718 conventional plastic tags and 506 electronic tags recording depth, temperature and position have been released; 65% of the fish tagged were skipjack, 34% were yellowfin and 1% were bigeye tuna. Concurrently 2,275 stomach, liver and muscle samples were collected; 51% of the fish sampled were skipjack, 40% were yellowfin, 1% were bigeye and 8% were other species such as dolphinfish, rainbow runner or silky shark.

This large sampling and tagging in the Bismarck Sea in PNG will allow us to assess the impact of the dense anchored FADs web on the movements and trophic strategy of the fish.



F/V Soltai 6 Solomon crew members and Ludwig Kumoru from PNG-NFA collecting samples during the PNG tagging trip

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RESULTS OF THE GEF-SAP PROJECT (2000-2005)

- Between 2000 and 2005, observers sampled 3112 stomachs (Figure 1 - Table 1).
- Of those 2800 stomachs have been examined, that is 51 more samples during the second quarter of 2007.
- 55 stomachs from New Caledonia and French Polynesia (Figure 2) remain stored in the SPC freezer and will be examined in the laboratory during the third quarter 2007.
- This component of the program was funded under the GEF-Oceanic Fisheries Management component of the Strategic Action Programme of the Pacific Small Island Developing States (SAP)

Table 1. Number of stomach samples collected and examined during the GEF-SAP Project 2000-2005; shaded cells are the numbers that changed since the last update in March 2007.

Observer Program	Number of stomach sampled	Number of stomach examined, entered in the database	Number of stomach that need to be examined	Number of sub-sample ¹ of stomachs or additional stomach not in the observer form	Number of stomach lost, missing, rotten or without data	Stomach entered in the database because of isotopes analysis but no stomach
Cook Islands	29	29	0			
Fiji	65	40	0		25	
1French Polynesia	573	526	4	12	52	
FSM	182	174	0		8	
FSMA	392	398	0	1		5
Marshall Islands	52	52	0			
New Caledonia	528	455	51	5	27	
Papua New Guinea	471	300	0		171	
Ship of Opportunity	71	75	0	5	1	
Solomon Islands	357	360	0	3		
SPC	362	360	0		2	
Wallis & Futuna	30	31	0	1		
Grand Total	3112	2800	55	27	286	5

¹ The sub-samples of stomachs are stomach samples from preys found in predator stomach

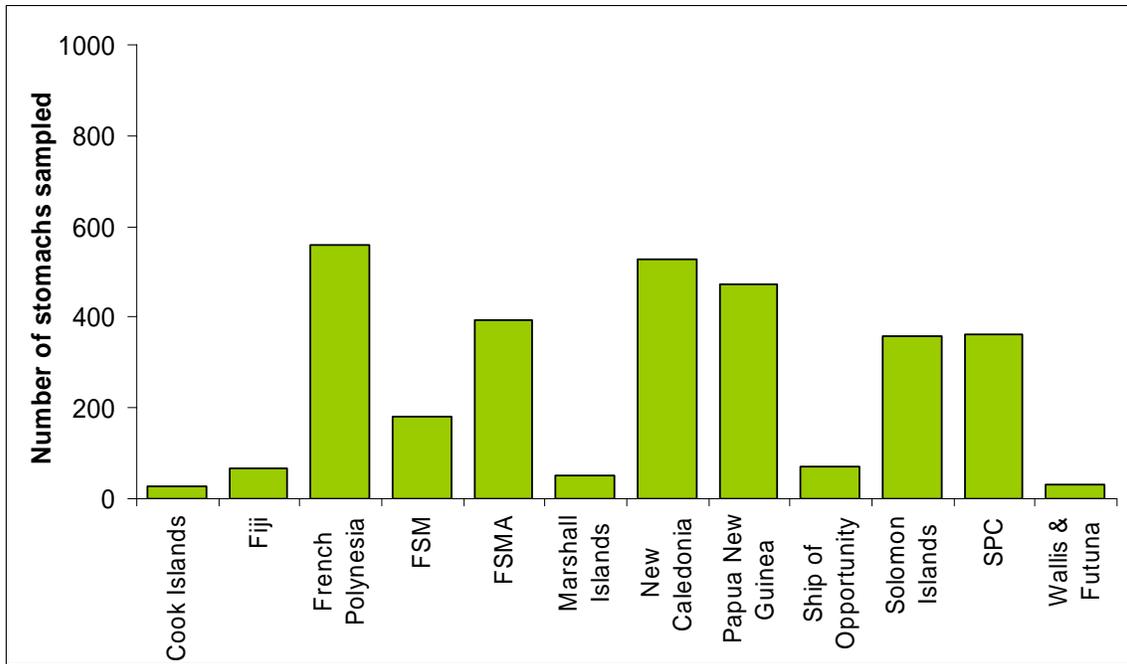


Figure 1. Number of stomachs collected by the different observer programmes during the GEF-SAP Project 2000-2005.

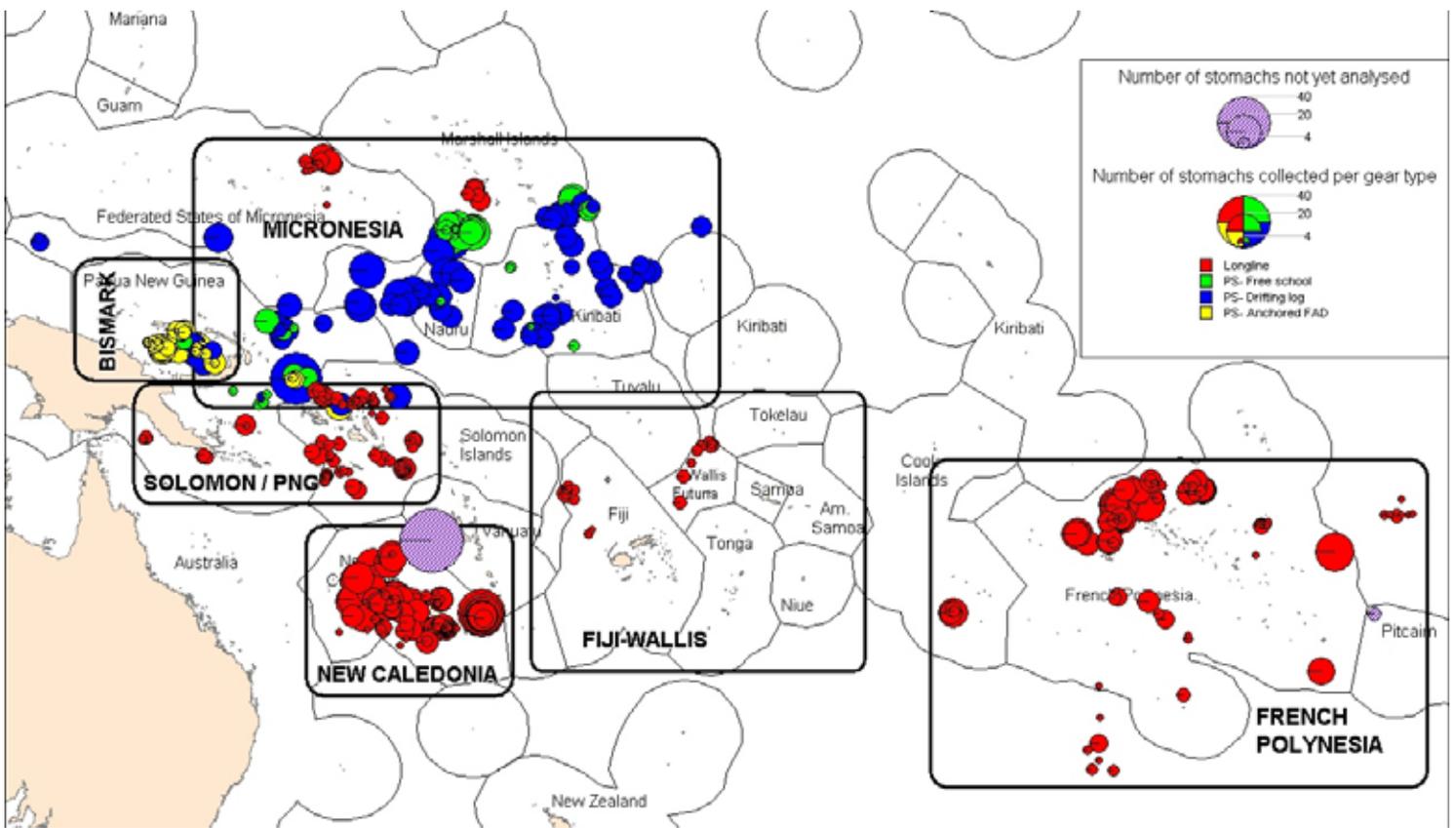


Figure 2. Geographic distribution of the samples collected/analysed and the samples collected but not yet analysed during the GEF-SAP Project 2000-2005.

2005 – 2010 PROJECT PLAN

The stomach analysis is continuing during the GEF- funded project “Pacific Islands Oceanic Fisheries Management Project (OFM)” 2005 – 2010, and will contribute to answering 4 key fisheries management objectives:

1. complete the dataset of stomach samples to obtain a valid description of the trophic structure of the pelagic ecosystem,
2. collect samples from different gear types in the same area to describe the diet of different parts of the fish populations,
3. collect samples from seamounts to establish their impact on the diet of tuna and other pelagic predators,
4. collect samples around anchored FADs in the Bismarck Sea to determine their impact on the diet of tuna and other pelagic predators.

To reach these objectives the strong collaboration with the observer programmes will need to continue.



Myctophids and other deep-sea fish found in a swordfish stomach at the lab at SPC Noumea.

PRIORITY AREAS FOR SAMPLING IN 2006 -2010 ARE:

- Micronesia area for purse seine samples of free-school, and FAD associated schools of skipjack and large specimens of yellowfin and bigeye (more than 80 cm), bycatch specimens should also be collected.
- Micronesia area for longline samples of all tuna species and bycatch specimens.
- Bismarck Sea for purse seine anchored FAD samples of all tuna species and bycatch specimens
- Fiji- Wallis area including Tonga, Samoa, American Samoa and Cook Islands for longline samples of all tuna species and bycatch specimens
- Solomon-PNG area for longline samples of all tuna species and bycatch specimens.
- More samples from French Polynesia and New Caledonia are still required but are of a lower priority.
- Recording and reporting the presence of seamounts in the vicinity of sampling would be beneficial.

2006 – 2007 RESULTS

The second phase of the sampling started in July 2006 and observers have sampled 2538 stomachs of which 374 have been analysed and entered in the database (Table 2,Figure 3).

In Papua New Guinea, and particularly in the Bismarck Sea, SPC scientists in collaboration with Papua New Guinea observers continued the collection of samples from around FADs, seamounts and within free schools, during the second tuna tagging cruise (Figure 4). The second cruise commenced in February 2007 and finished at the end of May 2007.

Since March 2007, samples have been collected in New Caledonia and in Papua New Guinea.

Table 2. Number of stomach samples collected and examined during the GEF-OFM Project 2005-2010 as of 30 June 2007; shaded cells are the numbers that changed since the last update.

Observer Program	Number of stomachs sampled	Number of stomachs examined, entered in the database	Number of stomachs that need to be examined
Cook Islands	34		34
French Polynesia	105	67	38
FSM	51		51
New Caledonia	60		60
SPC ²	2275	307	1968
Samoa	13		13
Total	2538	374	2164

² PNG tagging trip

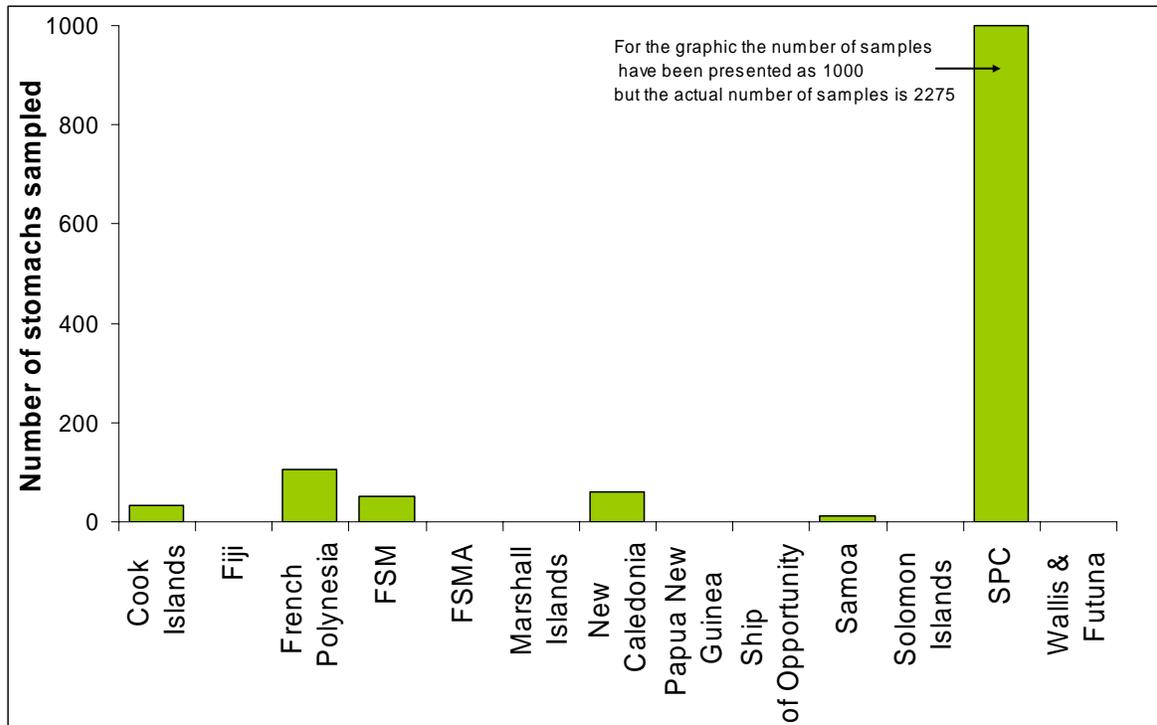


Figure 3. Number of stomachs collected by the different observer programmes during the GEF-OFM Project 2005-2010 as of 30 June 2007.

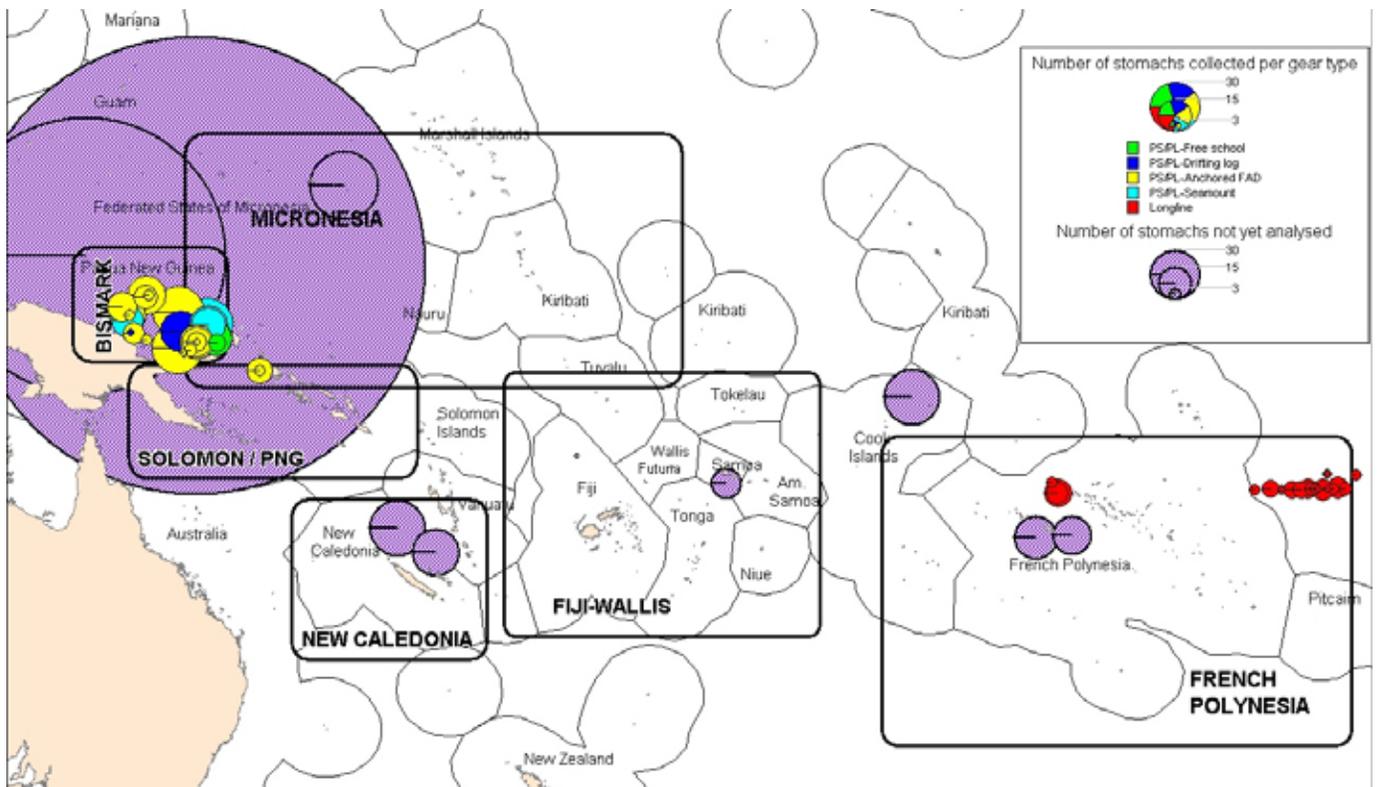


Figure 4. Geographic distribution of the samples collected/analysed and the samples collected/not yet analysed during the GEF-OFM Project 2005-2010 as of 30 June 2007.

ADDITIONAL INFORMATION

An overview of the GEF-SAP 2000-2005 sampling programme and the strategy for the new GEF-OFM 2005-2010 was sent to the observer programmes in July 2006 and this report has been presented during the Second Scientific Committee of the Western and Central Pacific Fisheries Commission in Manila in August 2006; it is available at http://www.wcpfc.int/sc2/pdf/SC2_EB_IP6.pdf.

YOUR HELP IS VITAL

The success of this project is dependent upon the efforts of the observers. If you are experiencing difficulties with collecting, storing and transporting of samples or delays in payment please contact Caroline Sanchez (carolines@spc.int), Valérie Allain (valeriea@spc.int), Peter Sharples (peterbs@spc.int) or Siosifa Fukofuka (siosifaf@spc.int) who will attempt to resolve these logistical and/or training issues.

NEXT NEWSLETTER: END OF JUNE – BEGINNING OF JULY 2007

Your comments on the content of this report are welcome, please send them to Valérie Allain (valeriea@spc.int) and/or Caroline Sanchez (carolines@spc.int).