Pacific sea cucumber dataset from the Secretariat of the Pacific Community, Reef Fisheries Observatory

Kim Friedman[1]

The Reef Fisheries Observatory at the Secretariat of the Pacific Community is currently in the final stages of a European Union-funded research programme (PROCFish-Coastal and COFish), which has been examining coastal reef fisheries in 17 countries and territories across the Pacific since 2002. This work entailed a multidisciplinary assessment of fish, invertebrates and socioeconomic factors, at a minimum of four sites per country, to identify active fisheries (using a mixture of visual censuses, creel surveys and closed-structure questionnaires). A major part of this work focused on sea cucumbers and the importance of these commercial inshore resources to coastal communities (see Figs. 1 and 2).

The diversity and abundance of invertebrate species, including sea cucumbers, were independently determined using a range of survey techniques, including broad-scale assessment (using a "manta tow") and finer scale surveys of shallow water environments (day and night assessments of lagoon and barrier reef) and deeper water environments (lagoon floor). The invertebrate assessment team, like the fish team, dived for approximately a week at each site, and collated a wide-ranging series of distribution and density estimates with related habitat descriptors, for sea cucumber stocks under a range of fishing pressures. These results provide the first opportunity to make a truly comparable assessment of sea cucumber stock status across the Pacific region (see example of one site's records in Table 1).

As we have mostly completed the in-water surveys, we are now consolidating and analysing data, and anyone wishing to access or add to the dataset, in the interest of delivering the best outcomes possible for our understanding of these fisheries, is welcome to contact the scientist in charge of these assessments, Dr Kim Friedman (kimf@spc.int).

We are especially interested in contrasting the Pacific experience with information from pristine or highly impacted fisheries. Any data from well-protected reserves or extremely overfished sites would help to give added contrast to the Pacific situation. We hope to bring a novel and informative series of overviews to the attention of managers and researchers in 2008 and 2009, and will be these reports and papers available in the year ahead.

Figure 1.
A community bringing wet sea cucumbers to agents in Vitu Levu (Fiji Islands).

Figure 2.
A sea cucumber fisherman processing his catch in Wallis (Wallis and Futuna).

1. Senior Reef Fisheries Scientist, Secretariat of the Pacific Community, Reef Fisheries Observatory. Email: kimf@spc.int

Table 1. Sea cucumber species records from an example PROCFish site.

Species	Common name	Comm. value[5]	Broad scale transects (n = 72)			Reef benthos (n = 22), and soft benthos (n = 13) stations			Other stations Reef front = 9 RF Reef slope = 6 MOP			Other stations scuba lagoon deep = 6 Ds Night search = 2 Ns		
			D[1]	DwP[2]	PP[3]	D	DwP	PP	D	DwP	PP	D	DwP	PP
Actinopyga echinites	Deepwater redfish	M/H				16.0	52.1	31 SBt						
A. lecanora	Stonefish	M/H				1.9 3.2	41.7 41.7	5 RBt 8 SBt						
A. mauritiana	Surf redfish	M/H				3.8	41.7	9 RBt	5.2	11.8	44 RF			
A. miliaris	Blackfish	M/H	0.4	15.7	3				0.4	3.9	11 RF	0.4	2.4	17 Ds
A. x.	No name as yet	M				3682.7	6839.3	54 SBt				1204.4	2408.9	50 Ns
Bohadschia argus	Leopardfish	M	24.3	60.3	40	41.7 12.8	183.3 166.7	23 RBt 8 SBt	0.9 5.1	3.9 30.3	22 RF 17 MOP	0.8 13.3	4.8 26.7	17 Ds 50 Ns
B. similis	False sandfish	L				496.8	1291.7	38 SBt				75.6	151.1	50 Ns
B. vitiensis	Brown sandfish	L				439.1	815.5	54 SBt				1528.9	1528.9	100 Ns
Holothuria atra	Lollyfish	L	24.1	49.5	49	125.0 897.4	171.9 897.4	73 RBt 100 SBt	3.9 11.4	8.8 13.6	44 RF 83 MOP	44.4	44.4	100 Ns
H. coluber	Snakefish	L				5.7 67.3	62.5 175.0	9 RBt 38 SBt				13.3	26.7	50 Ns
H. edulis	Pinkfish	L	19.4	66.5	29	30.3 105.8	133.3 343.8	23 RBt 31 SBt						
H. fuscogilva[4]	White teatfish	H										5.2	7.7	67 Ds
H. fuscopunctata	Elephant trunkfish	M	0.2	16.7	1				1.7	15.7	11 RF	3.6	21.4	17 Ds
H. scabra	Sandfish	H				455.1	1479.2	31 SBt						
H. whitmaei [4]	Black teatfish	H	3.9	23.6	17	3.8	41.7	9 RBt	1.3 7.6	5.9 22.7	22 RF 33 MOP	1.6	4.8	33 Ds
Pearsonothuria graeffei	Flowerfish	L	3.9	21.8	18				2.2 2.5	9.8 15.2	22 RF 17 MOP			
Stichopus chloronotus	Greenfish	H/M	23.6	70.8	33	109.8 25.6	302.1 111.1	36 RBt 23 SBt	2.2	6.5	33 RF			
S. herrmanni	Curryfish	H/M	7.2	32.3	22				1.3	7.6	17 MOP	0.4	2.4	17 Ds
S. horrens	Dragonfish	M/L				1.9 19.2	41.7 83.3	5 RBt 23 SBt						
S. vastus	Brown curry	H/M				17445.5	20617.4	85 SBt				1471.1	2942.2	50 Ns
Synapta sp.	-	-				22.4	58.3	38 SBt				4.4	8.9	50 Ns
Thelenota ananas	Prickly redfish	H	5.6	30.8	13	1.9	41.7	5 RBt	3.5 3.8	10.5 7.6	33 RF 50 MOP	4.8	9.6	50 Ds
T. anax	Amberfish	M	0.2	16.7	1							3.2	6.3	50 Ds

Notes: [1] D = mean density per hectare; [2] DwP = mean density per hectare for transects or stations where the species was present; [3] PP = percentage presence (units where the species was found); [4] There has been a recent variation to sea cucumber taxonomy which has changed the name of the black teatfish in the Pacific from *H. nobilis* to *H. whitmaei*. There is also the possibility of a future change in the white teatfish name. [5] L = low value; M = medium value; H= high value