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Australian National Report on 2010 fishing activities to the South Pacific Regional Fisheries Management Organisation (SPRFMO) Science Working Group

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1 Description of Fisheries

This report provides a summary of the fishing activities undertaken by Australian-registered vessels in 2010 in the South Pacific Regional Fisheries Management Organisation (SPRFMO) area.

This summary excludes data from within the Exclusive Economic Zone (EEZ) of mainland Australia and external territories (e.g. Macquarie Island or Norfolk Island). Data are not reported for fisheries that operate in the Western and Central Pacific Fisheries Commission (WCPFC) area.

Operators in the SPRFMO area are currently authorised to target various species with mid-water and demersal trawl, traps, dropline, minor line, automatic longline, and longline. The vessels undertaking high seas fishing in the SPRFMO area do so under permits issued by the Australian Fisheries Management Authority (AFMA).

Australian vessels conducted no pelagic fishing, for *Trachurus* spp. in the SPRFMO Area during 2010.

Data presented are logbook records collected and reported by fishers. The data include records from 1987 to 2010. In 2011, the historic data extraction was reviewed during the development of the Australian bottom fishery impact assessment (CSIRO 2011). This review resulted in the removal of fishing records that appeared to be erroneous. This additional data cleaning resulted in a reduction of the number of active fishing vessels using trawl gear between 2002 and 2006 and a reduction of the number of active non-trawl fishing vessels between 1997 and 2007. The number of active trawl vessels was reduced by between 1 and 6 vessels in a given year. The number of trawl hours was reduced by between 13 and 21 trawl hours in any given year. There was relatively little change in the reported catches. The number of active non-trawl vessels was reduced between 1 and 3 vessels in a given year. There was relatively little change in the reported number of hooks and catch. The revised data set will be submitted to the SPRFMO Interim Secretariat.

1.1 Fleet composition

Three Australian vessels fished in the area of the SPRFMO in 2009 and 2010 (table 1). The vessels fished with various line methods (table 2). No demersal trawling has been recorded since 2008. There was no trawling or pelagic fishing in the SPRFMO area in 2010.

Table 1 The number of vessels that actively fished in the SPRFMO area, 2008–2010

Year	Vessels that actively fished pelagically			Vessels that actively bottom fished		
	2008	2009	2010	2008	2009	2010
Vessels	0	0	0	3	3	3
Catch (t)	0	0	0	174	60	95
Effort (*hooks)	0	0	0	751 300*	302 700*	332 808*

Table 2. Permitted fishing methods for the SPRFMO area, 2008–2010.

Classification	Gear type
Bottom gear	Demersal longline
	Demersal trawl
	Dropline
	Automatic longline
	Minor line
Pelagic gear	Mid-water trawl

1.2 Area of operations

Most fishing operations in 2010 were within the Australian fishing footprint (2002–06), however there were some dropline operations (7 shots) outside of the Australian fishing footprint. In 2011, AFMA revised the high seas permit conditions for vessels operating in the SPRFMO area. The new permit conditions restrict vessels to fishing within the Australian fishing footprint as defined by a series of coordinates.

In 2010, the fishing activity occurred between January and December. There were no changes in management (i.e. permit conditions) or fishing practices recorded in the fishery. As mentioned above, in 2011 additional management measures were included in the permit conditions as described in AFMA (2011).

2 Catch, Effort and CPUE

The total catch of all species taken by Australian vessels in 2010 was 95 tonnes. Redthroat emperor (*Lethrinus miniatus*), jackass morwong (*Nemadactylus macropterus*), yellowtail kingfish (*Seriola lalandi*), seabream (*Gymnocranius* spp.) and blue-eye trevalla (*Hyperoglyphe antarctica*) were the top five species caught by weight. These five species collectively comprised 98 per cent of the total catch (see Appendix A for species composition in 2010).

There was no fishing effort directed at, or catch of jack mackerel (*Trachurus*) species by Australian vessels operating in the SPRFMO area in 2010.

The catch, nominal effort and catch per unit effort (CPUE) are shown for key species in tables 3 and 4 for trawl and non-trawl fishing, respectively.

Total effort for the trawl fishery reduced from 104 trawl hours in 2006 to zero trawl hours in 2008, 2009 and 2010. Total number of active vessels in the trawl fishery declined from 12 in 1998 and 2000, to two in 2007 and zero in 2008, 2009 and 2010. The nominal CPUE for orange roughy (*Hoplostethus atlanticus*) in the trawl fishery shows substantial variation over time, with no clear trend. Other species caught by the trawl fishery, including smooth oreo dory (*Pseudocyttus maculatus*), spiky oreo dory (*Neocyttus rhomboidalis*), alfonsino (*Beryx decadactylus*) and cardinal fish (Apogonidae) also show fluctuations in CPUE over time.

Total effort (number of hooks) in the demersal longline and dropline fishery declined from 751,300 hooks in 2008 to 332,808 hooks in 2010. The number of active vessels in the demersal longline and dropline fishery peaked at five active vessels in 2006 and then reduced to three active vessels in 2008, 2009 and 2010.

Table 3. Number of active high seas vessels, effort and annual catch of the major species using trawl gear in the SPRFMO area, 1987–2010. No trawl effort or catch were recorded for the SPRFMO area in 2008, 2009 and 2010.

Year	No. Vessels	Effort (Trawl h)	Catch of major species (t) (nominal CPUE t/trawl h)						Total Catch (t)
			Orange roughy	Smooth oreo	Spikey oreo	Alfonsino	Cardinal-fishes	Other species	
1987 – 1990 ¹	6	105	9 (0.08)	0 (0)	0 (0)	0 (0)	0 (0)	8	17
1991 – 1993 ¹	6	85	367 (4.31)	1 (0.01)	107 (1.26)	0 (0)	0 (0)	4	479
1994	7	257	192 (0.74)	0 (0)	6 (0.02)	0 (0)	2 (0)	3	203
1995 – 1996 ¹	6	62	21 (0.34)	12 (0.19)	10 (0.16)	0 (0)	52 (0.84)	2	98
1997	10	396	1458 (3.68)	505 (1.27)	448 (1.13)	1 (0)	15 (0.03)	41	2468
1998	12	916	3098 (3.38)	420 (0.46)	620 (0.68)	1 (0)	2 (0)	3	4143
1999	10	777	2514 (3.23)	106 (0.137)	89 (0.11)	8 (0.01)	1(0)	4	2720
2000	12	752	948 (1.26)	123 (0.16)	86 (0.11)	4 (0)	7 (0)	1	1170
2001	9	307	751(2.45)	13 (0.04)	31 (0.10)	1 (0)	0 (0)	3	799
2002	8	196	376 (1.91)	6 (0.03)	67 (0.34)	3 (0.01)	0 (0)	3	453
2003	9	102	166 (1.62)	6 (0.06)	63 (0.61)	2 (0.02)	0 (0)	1	238
2004	5	48	369 (7.72)	22 (0.46)	12 (0.26)	1 (0.02)	0 (0)	1	406
2005	3	29	207 (7.19)	74 (2.58)	1 (0.02)	81 (2.81)	0 (0)	14	377
2006	3	104	166 (1.60)	0 (0)	0 (0)	209 (2.02)	0 (0)	75	451
2007	2	70.7	148 (2.09)	0 (0)	1 (0.01)	86 (1.21)	2 (0.02)	16	253
2008	0	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0	0
2009	0	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0	0
2010	0	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0	0

Note:¹Data were combined to ensure > 5 vessels.

Table 4. Number of active high seas vessels and annual catch of major species using non-trawl gear in the SPRFMO area, 1997–2010.

Year	No. Vessels	Catch of major species (t) 1997 – 2010					Total catch (t)
		Morwong*	Blue eye trevalla	Ocean blue eye trevalla	Yellowtail kingfish	Other spp.	
1997	1	1	6	0	0	3	9
1998	3	31	26	0	15	34	106
1999	4	29	22	0	13	26	90
2000	1	79	6	0	14	19	117
2001	3	43	21	35	5	53	157
2002	3	81	27	66	32	38	244
2003	3	16	30	13	1	24	84
2004	3	0	2	7	0	8	18
2005	2	1	4	0	0	4	9
2006	5	10	8	0	22	20	59
2007	2	7	16	0	1	24	48
2008	3	24	3	0	25	125	177
2009	3	13	4	0	11	79	106
2010	3	23	6	0	19	59	106

Note: *Morwong catch from 1997 to 2009 is combined *Nemadactylus macropterus* and *Nemadactylus* spp. All morwong catch for 2010 is *Nemadactylus macropterus*.

Table 5. Retained catch for the five species with the highest catch in the bottom longline and dropline fishery in the SPRFMO area, 2008–2010.

Common name	Species name	2008 (t)	2009 (t)	2010 (t)
Redthroat emperor	<i>Lethrinus miniatus</i>	60	16	33
Yellowtail kingfish	<i>Seriola lalandi</i>	25	9	19
Seabream	<i>Gymnocranius</i> spp.	21	10	13
Blue-eye trevalla	<i>Hyperoglyphe antarctica</i>	3	4	6
Morwong	<i>Nemadactylus macropterus</i> & <i>Nemadactylus</i> spp.	24	13	23*

*All morwong catch for 2010 is *Nemadactylus macropterus*.

3 Fisheries Data Collection and Research Activities

Australian vessels require a permit from AFMA to fish in the SPRFMO area. The permits are issued for a period of up to 12 months. Satisfactory compliance with previous permit conditions is one factor in deciding whether to grant new fishing permits. As part of the permit requirements Australia collects detailed information on fishing trips. All Australian flagged vessels fishing on the high seas are required to have a vessel monitoring system (VMS) to verify certain logbook information.

No changes to fisheries data collection or research activities were recorded in the fishery in 2010.

3.1 Logbooks

Since 2002, the permit conditions have included the requirement to record daily catch and effort data in logbooks on a shot-by-shot basis, including position of fishing operations. Fishers are also required to record discards and bycatch in the logbooks. AFMA distributes, collects and processes these logbooks. Disposal of the catch is also monitored by AFMA through catch disposal records. The logbook and catch disposal record data have been submitted to the SPRFMO Interim Secretariat, in line with the SPRFMO data standards (adopted 28 January 2011).

3.2 Vessel Monitoring System

VMS has been required in all Commonwealth fisheries since 1 July 2007, including vessels fishing on the high seas. The AFMA VMS is based on Automatic Location Communicators (ALCs) with a built-in Global Positioning System (GPS) fitted to each vessel nominated against a Commonwealth fishing concession. These ALCs transmit data on vessel registration, date, time, vessel position, course and speed via Inmarsat communications satellites to a land earth station. The frequency and accuracy of the VMS position reports meet the SPRFMO data standards.

These data are transferred via a 'virtual private network' (VPN) internet link to the AFMA head office in Canberra. At AFMA, vessel tracks are displayed as plots on a digitised marine chart and can be automatically cross referenced against spatial rules set in fisheries management plans. AFMA requires all vessels on the high seas vessels to comply with a stringent installation and maintenance standard for all ALC reporting.

3.3 Research

No research beyond the biological sampling and length composition data collected by Australian observers was conducted in the SPRFMO area in 2010.

4 Biological Sampling and Length/Age Composition of Catches

Length–frequency data were collected by Australian observers in the SPRFMO area in 2010. Length–frequency data for 2010 will be provided in the observer data submission to SPRFMO by 30 September 2011.

5 Summary of Observer and Port Sampling Programs

5.1 Observer Program

The 2010 permit conditions for bottom fishing in the SPRFMO area required 100 per cent observer coverage on all vessels permitted to use demersal trawl gear. As noted above, in 2010, there was no trawl fishing by Australian vessels in the SPRFMO area.

A minimum of 10 per cent observer coverage was required on vessels using other demersal fishing methods. The level of observer coverage on the active non-trawl vessels in the SPRFMO area in 2010 was approximately 17 per cent.

AFMA has recruited and trained observers since its establishment in 1992. Approximately twenty observers are currently employed in the AFMA observer program. They are sourced from universities and the maritime industries from around Australia and have demonstrated experience in collecting biological data at sea, fisheries research methodologies and collection of associated scientific data. Observers also hold marine radio operators certificate of proficiency (or similar qualifications and/or experience), a sea safety certificate and medical certificate, and have completed an AFMA observer training course.

Observers collect a range of data on vessel characteristics, fishing activity, catch composition, discarding and bycatch. There have been no changes to the requirements regarding observers in 2010.

5.2 Port Sampling Program

The disposal of the catch is monitored through catch disposal records. As noted above these data have been submitted to the SPRFMO Interim Secretariat.

Appendix

Taxa recorded as caught in the SPFRMO area in 2010 from Australian vessel logbook data.

Common name	Taxonomic name
Amberjack	<i>Seriola dumerili</i>
Blacktip rockcod	<i>Epinephelus fasciatus</i>
Blue-eye Trevalla	<i>Hyperoglyphe antarctica</i>
Boarfish	<i>Pseudopentaceros richardsoni</i>
Broadnose sevengill shark	<i>Notorynchus cepedianus</i>
Common coral trout	<i>Plectropomus leopardus</i>
Conger eels	Family Congridae
Coral perch	<i>Trachyscorpia</i> spp.
Eastern gemfish	<i>Rexea solandri</i>
Flame snapper	<i>Etelis coruscans</i>
Green jobfish	<i>Aprion virescens</i>
Gummy shark	<i>Mustelus antarcticus</i>
Hapuku	<i>Polyprion oxygeneios</i>
Jackass morwong	<i>Nemadactylus macropterus</i>
Latchet	<i>Pterygotrigla polyommata</i>
Longfin grouper	<i>Epineplelus quoyanus</i>
Maori rockcod	<i>Epinephelus undulatostratus</i>
Orange perch	<i>Lepidoperca pulchella</i>
Pink ling	<i>Genypterus blacodes</i>
Rainbow runner	<i>Elegatis bipinnulata</i>
Redfish	<i>Centroberyx affinis</i>
Redthroat emperor	<i>Lethrinus miniatus</i>
Reef ocean perch	<i>Helicolenus Percoides</i>
Ribaldo	<i>Mora moro</i>
Robinson's bream	<i>Gymnocranius grandoculis</i>
Rockcods	<i>Aethaloperca</i> spp., <i>Anyperodon</i> spp. & <i>Epinephelus</i> spp.
Rosy snapper	<i>Pristipomoides filamentosus</i>
Rusty jobfish	<i>Aphareus rutilans</i>
School shark	<i>Galeorhinus galeus</i>
Sea breams unspecified	<i>Gymnocranius</i> spp.
Sea perches unspecified	<i>Lutjanus</i> spp.
Silver scabbardfish	<i>Lepidopus caudatus</i>
Silver trevally	<i>Pseudocaranx dentex</i>
Splendid alfonso	<i>Beryx splendens</i>
Spotcheek Emperor	<i>Lethrinus rubrioperculatus</i>
Starry triggerfish	<i>Abalistes stellaris</i>
Striped trumpeter	<i>Latris lineata</i>
Sweetlips	<i>Diagramma pictum</i> (<i>Diagramma labiosum</i>)
Tiger shark	<i>Galeocerdo cuvier</i>
Tomato rockcod	<i>Cephalopholis sonnerati</i>

Common name	Taxonomic name
Trevally	Family Carangidae
Trumpeter	<i>Latridopsis</i> spp.
Western pigfish	<i>Bodianus vulpinus</i>
Whaler sharks	<i>Carcharhinus</i> spp.
Yellow-banded snapper	<i>Lutjanus adetii</i>
Yellowtail kingfish	<i>Seriola lalandi</i>
Banded rockcod and convict grouper	<i>Epinephelus ergastularius</i> & <i>E. septemfasciatus</i>
Sweetlips	Family Haemulidae except <i>Pomadasys</i> spp.
Wreakfishes	<i>Polyprion</i> spp.

References

CSIRO Marine and Atmospheric Research. 2011. Bottom Fishery Impact Assessment. Report to the Australian Fisheries Management Authority (AFMA). SPRFMO Paper SWG-10-DW-01a.

Australian Fisheries Management Authority (AFMA). 2011. High seas: conservation and management measures to prevent significant adverse impacts on vulnerable marine ecosystems. SPRFMO Paper SWG-10-DW-01b.