SCIENTIFIC COMMITTEE
TENTH REGULAR SESSION

Majuro, Republic of the Marshall Islands
6-14 August 2014

ANNUAL REPORT TO THE COMMISSION
PART 1: INFORMATION ON FISHERIES, RESEARCH, AND STATISTICS

WCPFC-SC10-AR/CCM-01

Australia

Australian Government
Department of Agriculture
ABARES

Annual report to the Western and Central Pacific Fisheries Commission

Part 1: Information on fisheries, research and statistics 2013 Australia

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Research by the Australian Bureau of Agricultural and Resource Economics and Sciences

July 2014

Scientific data were provided to the Commission in accordance with the decision relating to the provision of scientific data to the Commission on the 30th April 2014	YES

Cataloguing data

This publication (and any material sourced from it) should be attributed as: Hansen, S, Patterson, H, Hobsbawn, P & Larcombe, J 2014, *Annual report for the Western and Central Pacific Fisheries Commission Part 1: Information on fisheries, research and statistics 2013*, ABARES, Canberra, July. CC BY 3.0

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Acknowledgements

The authors wish to thank Rupert Summerson (ABARES) for creating the maps. The authors also acknowledge and appreciate the input of: Mary Stephan and Ilona Stobutzki (ABARES); Rob Campbell (CSIRO); Trent Timmiss, Steve Auld and Nigel Abery (AFMA); Mat Kertesz (Department of Environment); and Jenny Baldwin and Kelly Buchanan (Department of Agriculture).

Contents

Summary

Australian commercial fisheries for highly migratory species in the Western and Central Pacific Fisheries Commission (WCPFC) Convention Area are managed as part of the Eastern Tuna and Billfish Fishery (ETBF) (a mainly longline fishery with a small minor line component) and Eastern Skipjack Fishery (a purse seine fishery). The majority of fishing occurs in the longline sector of the ETBF and as such, this is the primary focus of the annual report.

Total catches reported in logbooks for the ETBF increased from 3799 t (including 14 t minor line) in 2012 to 3874 t (including 8 t minor line) in 2013. This is a decline from a peak of 8229 t in 2002. Longline fishing effort in the ETBF has fallen from a peak of 12.40 million hooks in 2003 to 6.76 million hooks in 2013. The decrease in fishing effort from 2003 levels is the result of the strength of the Australian dollar, increased operating costs and the surrender of permits under the structural adjustment component of the Australian Government Securing Our Fishing Future package, as well as the introduction of a quota management system. Forty-one vessels reported longlining in the WCPFC Convention Area during 2013. Longline logbook catches of albacore increased from 564 t in 2012 to 642 t in 2013. In contrast, longline catches of bigeye tuna decreased from 477 t in 2012 to 417 t in 2013. Longline catches of yellowfin tuna increased slightly from 1125 t in 2012 to 1128 t in 2013. Longline catches of swordfish decreased from 1014 t in 2012 to 895 t in 2013. Longline catches of striped marlin decreased slightly from 233 t in 2012 to 216 t in 2013 while longline catches of skipjack remained at ~3 t.

There are no dedicated minor line vessels in the ETBF; most minor line catches are reported by vessels (e.g. longline) on their way to and from fishing grounds. In 2013, there were 7 vessels actively targeting tuna and billfish species using minor line in the ETBF. The number of vessels reporting using minor line has steadily decreased in the ETBF from a peak of 52 vessels in 2001. This is partly due to the surrender of 49 per cent of permits under the structural adjustment component of the Australian Government Securing Our Fishing Future package, which was completed in 2006. Annual minor line effort in the ETBF increased from 73 lines in 2012 to 95 lines in 2013. There were no active vessels in the Eastern Skipjack Fishery (purse seine) in 2013.

The Australian Fisheries Management Authority (AFMA) observer program has deployed observers on domestic longliners since 2001, initially as part of a program to test the efficacy of seabird mitigation devices. Since July 2003, observers have been deployed more broadly across the fishery with the aim of collecting additional fishery data, including information on fishing gear and the size and species composition of catches. In 2013, observers monitored 416 868 hooks in the ETBF longline fishery (6.2 per cent of the total number of hooks deployed). AFMA conducted a trial of e-monitoring (i.e. on-board, fixed-mount digital video cameras) to evaluate the effectiveness of this technology for a range of fishery monitoring purposes and to conduct a cost–benefit analysis. AFMA intends that e-monitoring will begin to be implemented in the fishery from mid-2014.

In February 2014, the AFMA Commission agreed on total allowable commercial catches (TACCs) for the commercial sector of the ETBF. These apply to the 2014–15 season which commenced on 1 March 2014. The TACCs for the five main target species are: albacore (2500 t); bigeye tuna (1056 t); swordfish (1378 t); striped marlin (351 t); yellowfin tuna (2200 t).

1 Background

Australian commercial fisheries for highly migratory species in the Western and Central Pacific Fisheries Commission (WCPFC) Convention Area are managed as part of the Eastern Tuna and Billfish Fishery (ETBF) (a mainly longline fishery with a small minor line component) and Eastern Skipjack Fishery (a purse seine fishery). Note that scientific and common names are provided in Appendix I.

Longline

Japanese longliners began fishing off Australia's east coast in the late 1950s. Sporadic domestic longlining for yellowfin tuna commenced soon after in the early 1960s. The declaration of the Australian Fishing Zone (AFZ) in 1979 resulted in Japanese longliners being licensed to fish in Australian waters under bilateral agreements. In the early 1980s, longlining increased markedly after successful air freighting of fresh-chilled tuna to Japan. In the 1990s, effort expanded in the waters off northern Queensland, resulting in high catch rates of yellowfin and bigeye tuna.

In the mid-1990s, improved access to swordfish markets in the United States of America prompted many ETBF fishers to move to southern Queensland ports such as Mooloolaba to target swordfish. Japanese longliners were excluded from the AFZ from 1997. Longlining for swordfish has declined since early 2005 because of high fuel and bait costs, the introduction of a competitive total allowable catch (TAC) in 2006 (now an individual transferable quota system) and changes in the exchange rate.

Increased operating costs and fluctuating market returns saw many longliners targeting lower-value albacore during the first half of 2006. However, decreases in the price of albacore and unfavourable export conditions over the past several years, such as a strengthening Australian dollar, have prompted some longliners to move back to targeting bigeye tuna and swordfish.

Pole-and-line, purse seine and minor line

The pole-and-line fishery expanded rapidly in the 1950s with the introduction of live-bait-and-pole techniques for southern bluefin tuna and sporadic catches of skipjack and yellowfin tuna. Pole-and-line fishing decreased in the late-1990s with little to no fishing by Australian fleets in the WCPFC Convention Area since then. The introduction of purse seining in the 1970s also increased catches. After peaking at 7000 t in the early 1990s, purse-seine effort and catches of skipjack have decreased dramatically, with zero to very low effort and catches in recent years. Minor line effort has been decreasing in the fishery over time, with a peak number of vessels in 2001 (52). No dedicated minor line vessels remain in the fishery.

Recreational fishing

Recreational and charter anglers have taken tuna and billfish off eastern Australia since the early 1900s. During the 1970s, recreational vessels capable of operating offshore became more readily available and angling for tuna and billfish grew in popularity. The continental shelf is less than 8 nm offshore in some places along the southeast coast of Australia, allowing anglers to fish for tuna from shore at several locations. The Game Fishing Association of Australia (GFAA) was formed in 1938. In 2013, GFAA reported a membership of more than 8000 anglers, most based on the east coast of Australia. Many gamefishers tag and release much of their catch, especially marlins.

2 Flag state reporting

Domestic longlining catch and effort

Unless otherwise stated, all catch and effort levels in this report are derived from those reported in Australian Fisheries Management Authority (AFMA) logbooks. Forty-one vessels reported longlining in the WCPFC Convention Area during 2013, down from a peak of 180 in 1997 (Figure 1). Total longline effort decreased slightly from 6.82 million hooks in 2012 to 6.76 million hooks in 2013 (Table 1). Overall, effort has declined from the peak effort of 12.40 million deployed in 2003. This decline is mainly the result of the strength of the Australian dollar, increased operating costs, the surrender of permits under the structural adjustment component of the Australian Government Securing Our Fishing Future package, the introduction of hook limits in 2009 and the introduction of individual transferrable quota management in 2011. The number of vessels in 2013 fishing for striped marlin south of 15°S was 40. Forty vessels fished for albacore and 39 vessels fished for swordfish south of 20°S; there was no effort for albacore north of the equator.

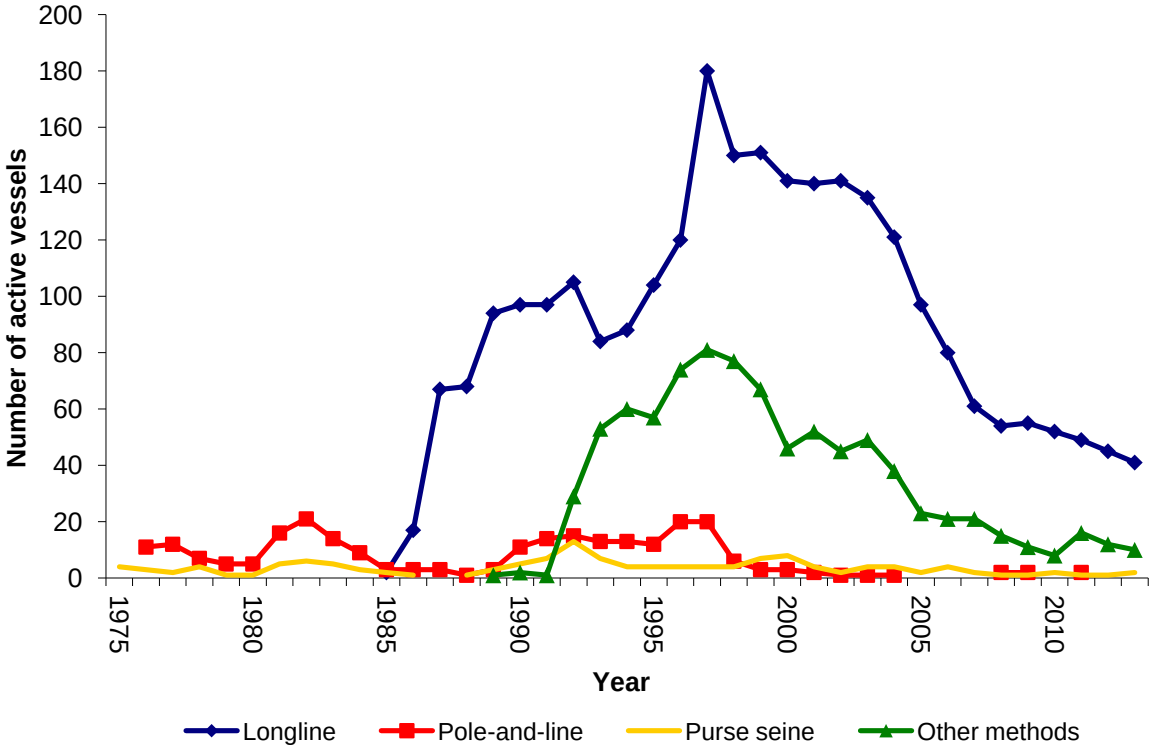


Figure 1. Historical annual vessel numbers for the Australian fleet, by gear (longline, purse seine, pole-and-line and other commercial methods [minor line including trolling, rod-and-reel and handline]) for the WCPFC Convention Area.

Table 1. Annual catch and effort estimates (whole weight) for the Australian fleet, by gear and primary species, for the WCPFC Convention Area, 2009–13.

Fishing method	Year	Effort [a]	Primary species (t)					
			Albacore	Bigeye	Skipjack	Yellowfin	Striped marlin	Swordfish
All gears	2009	-	1343.2	619.4	12.2	1203.0	325.9	1111.6
	2010	-	725.1	438.4	3.6	1315.3	248.5	921.4
	2011	-	651.7	388.7	2.0	1877.7	287.4	909.4
	2012	-	563.7	484.2	3.6	1130.1	232.9	1014.1
	2013	-	643.2	422.4	2.6	1128.7	215.6	895.0
Longline [b]	2009	8839	1343.2	619.4	10.5	1203.0	325.9	1111.6
	2010	7875	725.1	438.4	3.6	1315.3	248.5	921.4
	2011	6773	651.7	388.7	2.0	1877.7	287.4	909.4
	2012	6819	563.7	484.2	3.6	1130.1	232.9	1014.1
	2013	6755	643.2	422.4	2.6	1128.7	215.6	895.0
Purse seine	2009	396	0	0	0	0	0	0
	2010	273	0	0	0	0	0	0
	2011	66	0	0	0	0	0	0
	2012	82	0	0	0	0	0	0
	2013	74	0	0	0	0	0	0
Pole-and-line	2009	15	0	0	1.7	0	0	0
	2010	0	0	0	0	0	0	0
	2011	0	0	0	0	0	0	0
	2012	0	0	0	0	0	0	0
	2013	0	0	0	0	0	0	0

Note: **a** (Longline–number of hooks (000's); purse seine–search hours; pole-and-line–days fished). **b** Includes small catches from other commercial methods (minor line component including trolling, rod-and-reel and handline) to address issues of confidentiality.

Total longline catches in the ETBF reported in logbooks increased from 3799 t in 2012 to 3874 t in 2013. This is down from a peak of 8229 t in 2002. Historical annual catches for the Australian fleet in the WCPFC Convention Area, by primary species, are shown in Figure 2. Longline catches of albacore increased from 564 t in 2012 to 642 t in 2013 (547 t caught south of 20°S) while bigeye tuna longline catches decreased from 477 t in 2012 to 417 t in 2012. Longline catches of yellowfin tuna increased slightly from 1125 t in 2012 to 1128 t in 2013. Longline catches of swordfish decreased from 1014 t in 2012 to 895 t in 2013 (812 t caught south of 20°S). Longline catches of striped marlin decreased from 233 t in 2012 to 216 t in 2013 (197 t caught south of 15°S). Longline catches of skipjack remained the same in 2013 at ~3 t. Annual catch distributions of the main target species by the Australian longline fleet for 2009–13 are shown in Figure 3.

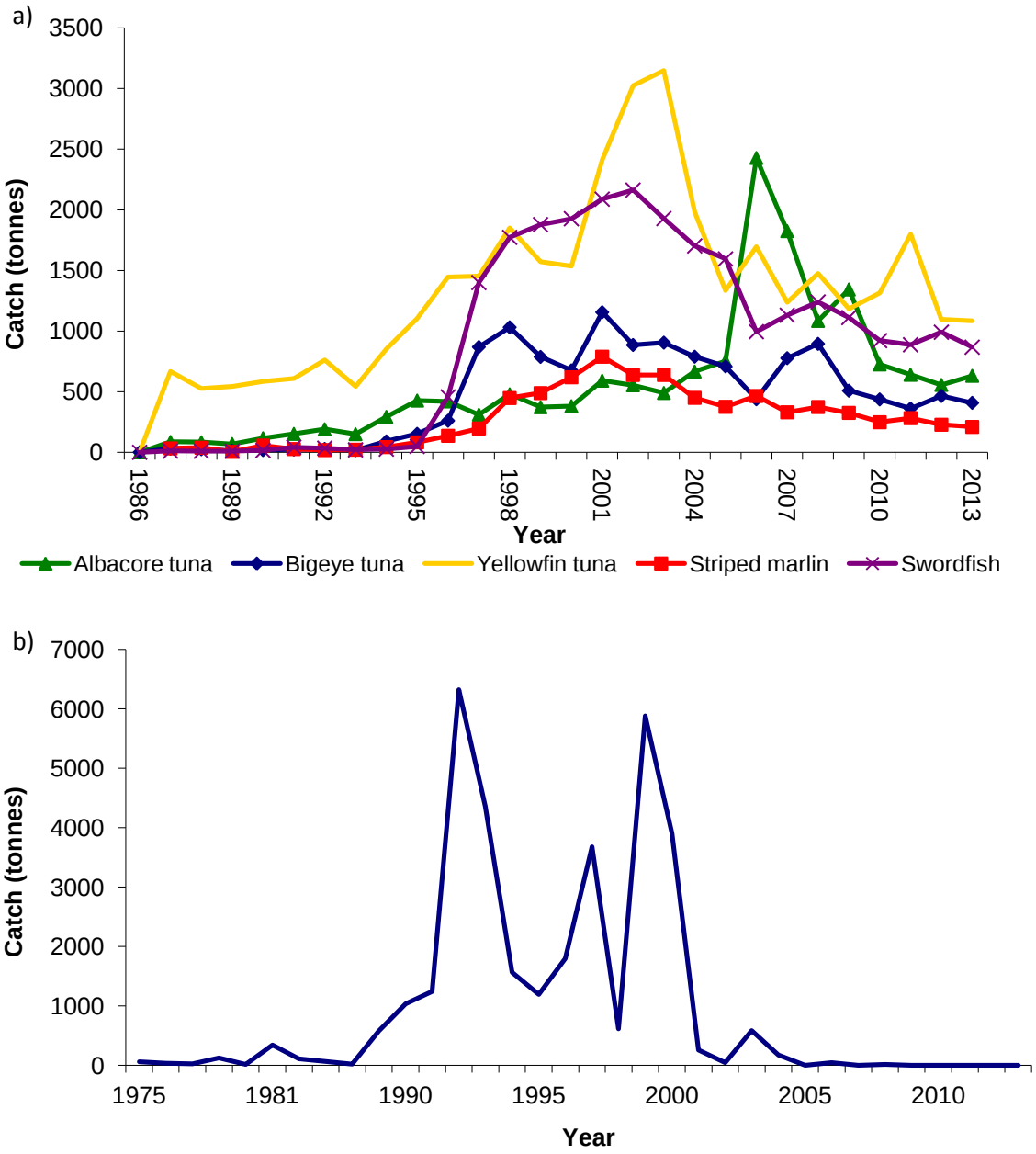
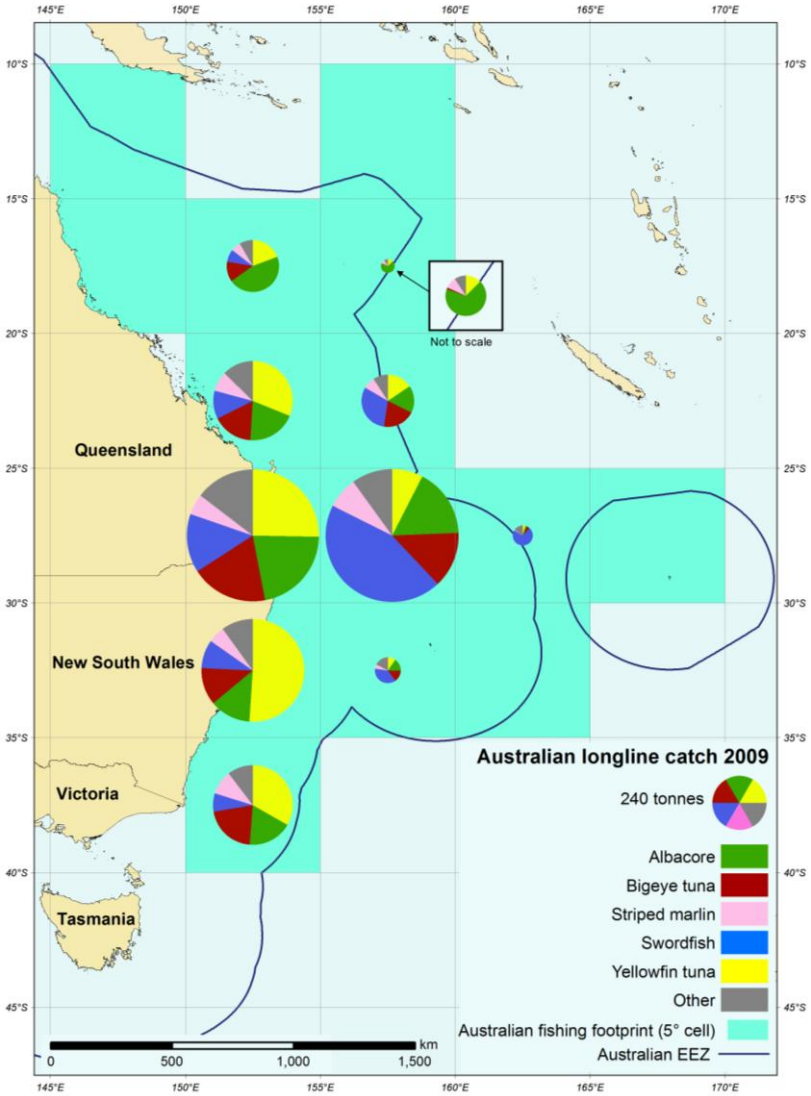
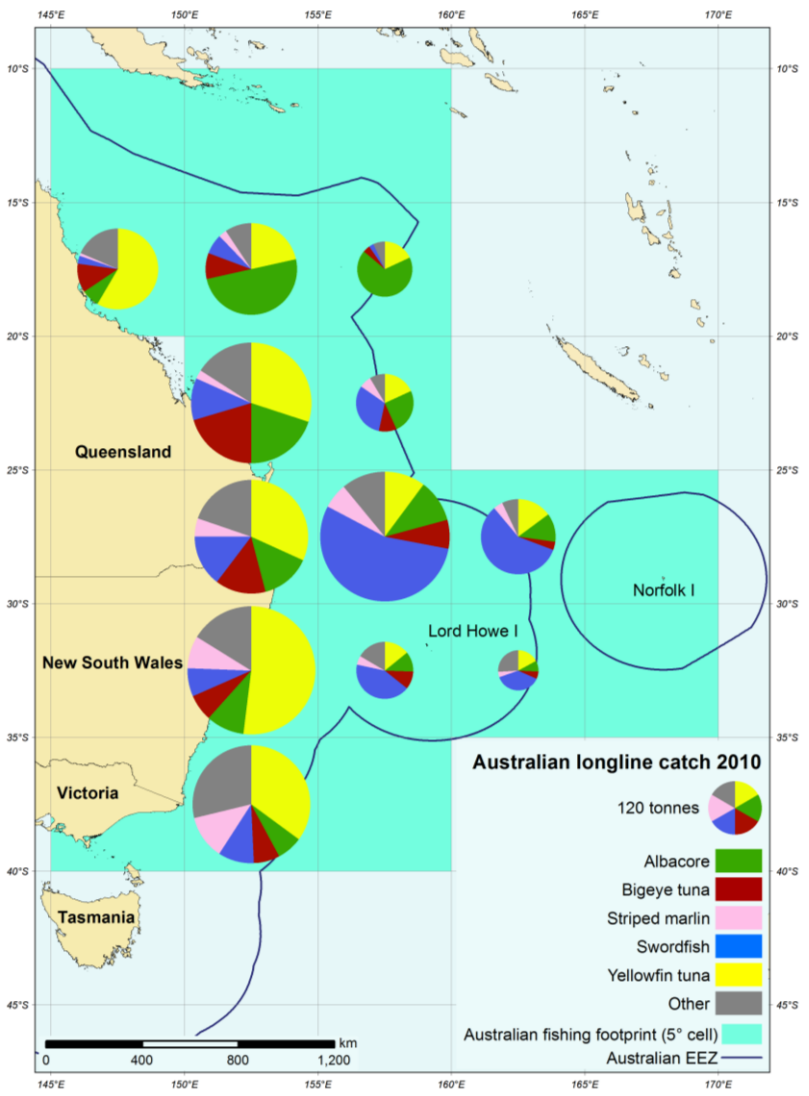


Figure 2. Historical annual longline catch in the WCPFC Convention Area for (a) albacore, bigeye and yellowfin tuna, as well as striped marlin and swordfish, and (b) purse seine catch skipjack tuna.

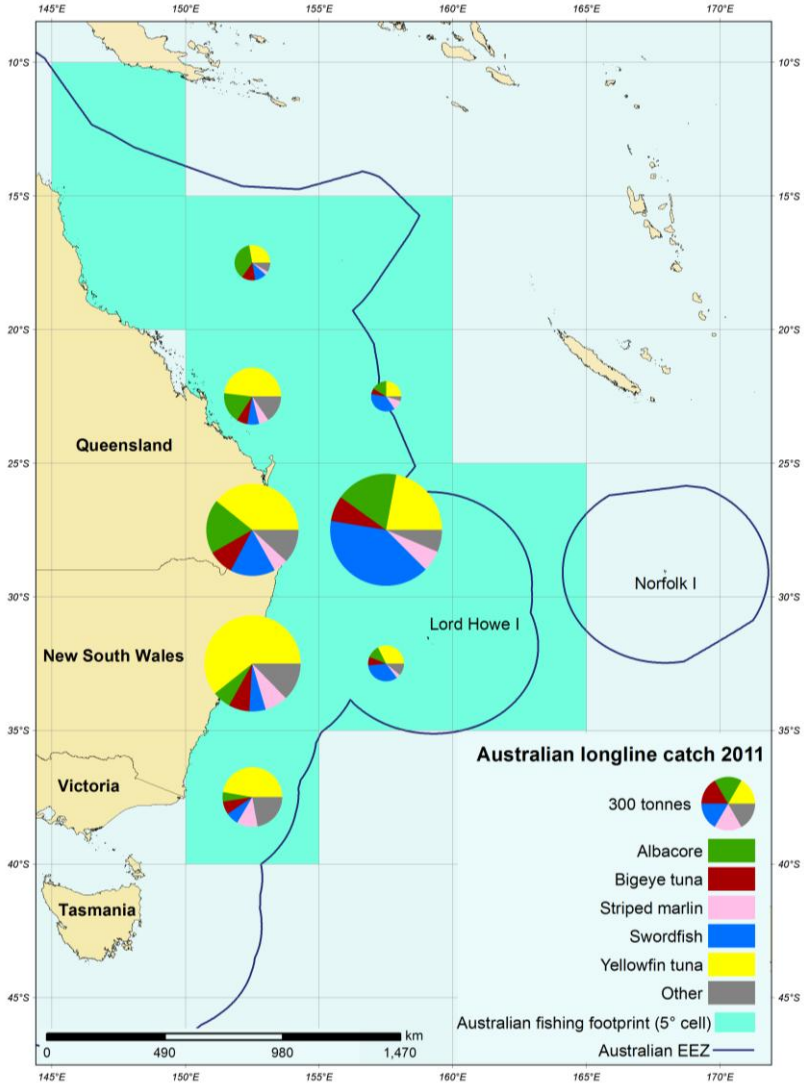
a)


Not to scale
Queensland
New South Wales
Victoria
Tasmania
Australian longline catch 2009
240 tonnes
Albacore
Bigeye tuna
Striped marlin
Swordfish
Yellowfin tuna
Other
Australian fishing footprint (5° cell)
Australian EEZ
km
0
500
1,000
1,500

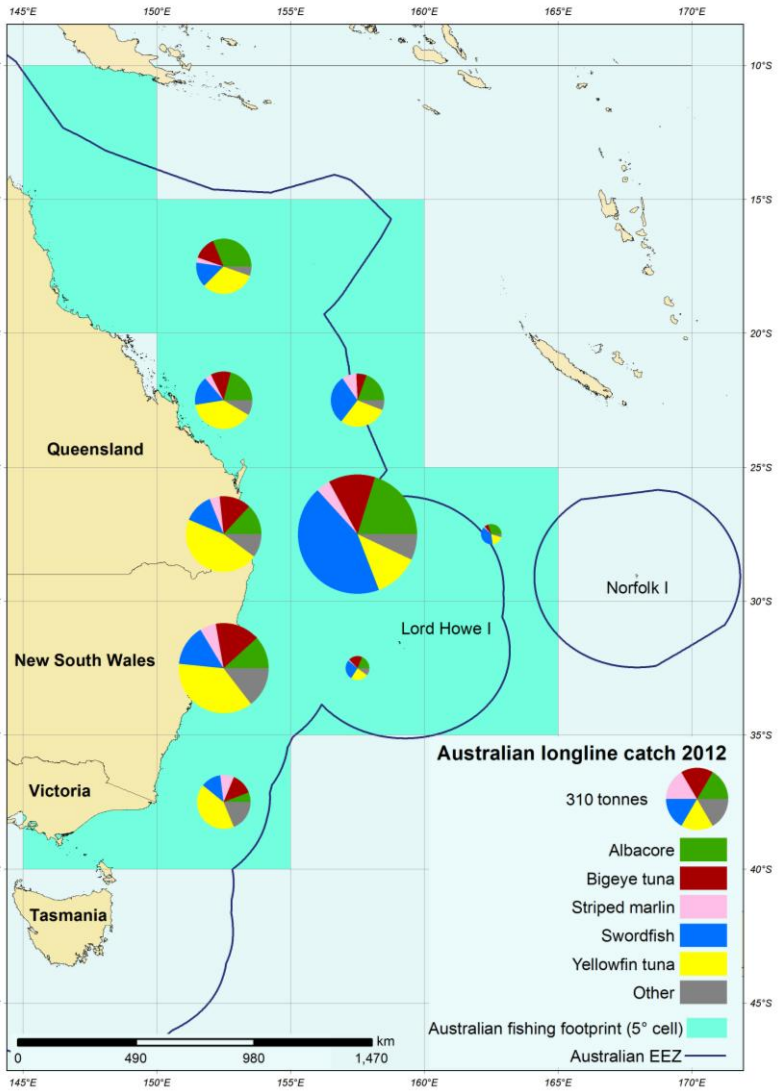
b)


Queensland
New South Wales
Victoria
Tasmania
Norfolk I
Lord Howe I
Australian longline catch 2010
120 tonnes
Albacore
Bigeye tuna
Striped marlin
Swordfish
Yellowfin tuna
Other
Australian fishing footprint (5° cell)
Australian EEZ
km
0
400
800
1,200

c)


Queensland
New South Wales
Victoria
Tasmania
Lord Howe I
Norfolk I
Australian longline catch 2011
300 tonnes
Albacore
Bigeye tuna
Striped marlin
Swordfish
Yellowfin tuna
Other
Australian fishing footprint (5° cell)
Australian EEZ
0
490
980
1,470
km

d)


Queensland
New South Wales
Victoria
Tasmania
Lord Howe I
Norfolk I
Australian longline catch 2012
310 tonnes
Albacore
Bigeye tuna
Striped marlin
Swordfish
Yellowfin tuna
Other
Australian fishing footprint (5° cell)
Australian EEZ
0
490
980
1,470
km

e)

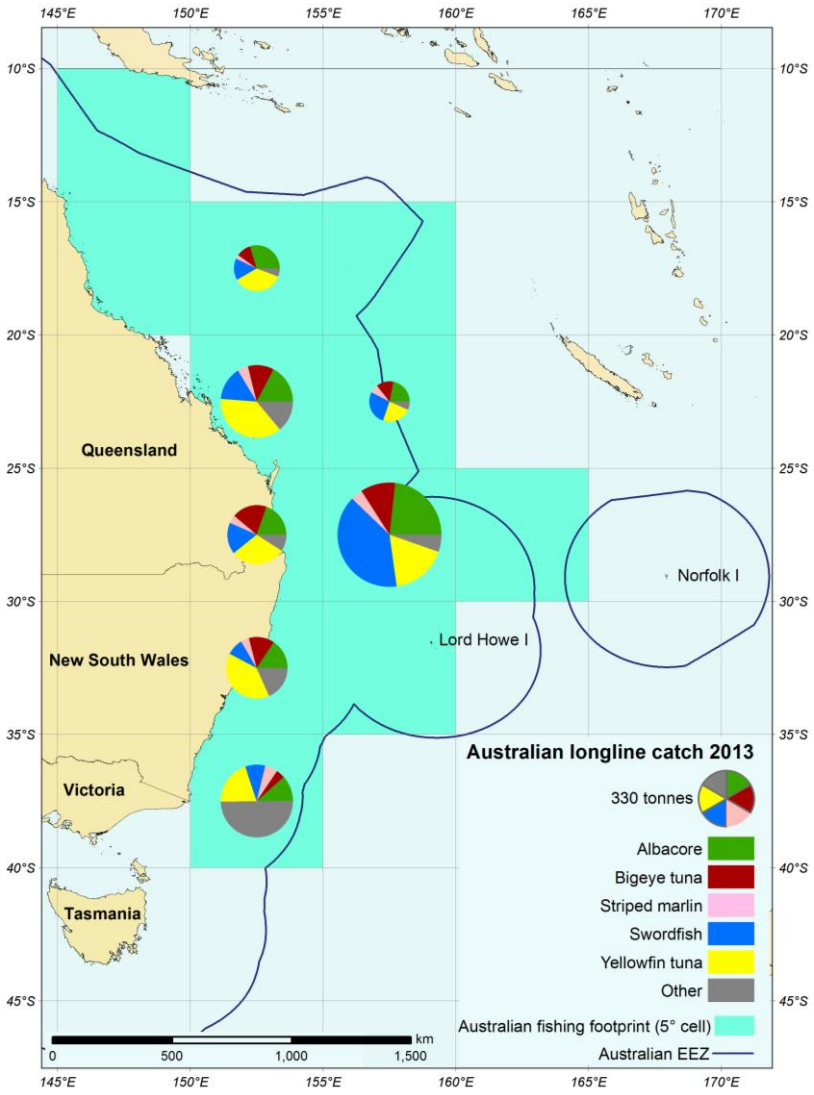


Figure 3 (a–e). Annual distributions of target species catch by the Australian longline fleet active in the WCPFC Convention Area, for 2009–13. Catches have been aggregated to five degree blocks to address issues of confidentiality and are scaled to the pie chart provided in the legend. Fishing footprint shows the total area of waters fished by all vessels in the fishery at a spatial resolution of five degree square.

Annual retained catch estimates of major non-target, associated and dependent species, including sharks, by the Australian longline fleet from 2009–13 are presented in Table 2. Estimates of discards from logbooks are in Table 3, including discards of oceanic whitetips. From 1 January 2013, retention of oceanic whitetip sharks by all commercial vessels has been prohibited, although a small amount of retention was recorded in logbooks and four oceanic whitetips were observed to be retained in the ETBF in early 2013. Appropriate compliance measures, including warnings and education, were applied by AFMA in response. Observer records indicate that of the 49 oceanic whitetips observed to be caught, 39 were released alive while six were dead and four were retained. Retention of both blue marlin and black marlin by commercial longliners has been prohibited since 1998 and no retained catches were recorded in 2013. Historically, the vast majority of the catch and effort by Australian longliners has been taken within the AFZ, with little effort on the adjacent high seas (Table 4).

Table 2. Annual retained catch estimates (tonnes) of major non-target, associated and dependent species, including sharks, by the Australian fleet, by gear (longliners and other methods combined), in the WCPFC Convention Area, for 2009–13.

Group	Species	Longliners (t)					Other methods combined (t)				
		2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Scalefish	Escolar	43.9	27.2	24.6	23.0	9.1	0.0	0.0	0.0	0.0	0.0
	Lancetfish	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mahi mahi	131.6	259.2	211.7	66.3	84.0	0.1	0.0	0.1	0.0	0.1
	Moonfish	74.2	35.1	24.9	22.9	12.8	0.0	0.0	0.0	0.0	0.0
	Ocean sunfish	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Oilfish	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	Ray's bream	34.9	13.0	4.2	20.2	16.6	0.0	0.0	0.0	0.0	0.1
	Rudderfish	147.7	88.9	41.1	59.4	37.5	0.0	0.0	0.0	0.0	0.0
	Sailfish	0.8	1.0	0.7	0.8	1.1	0.0	0.0	0.0	0.0	0.0
	Shortbill spearfish	13.8	16.6	13.1	6.7	9.9	0.0	0.0	0.0	0.0	0.0
	Southern bluefin tuna	194.8	151.8	84.3	56.6	312.4	10.0	0.0	1.1	0.0	0.0
	Wahoo	28.4	19.6	20.6	13.4	17.6	0.0	0.0	0.0	0.0	0.0
	Subtotal	670.4	612.4	425.2	269.4	501.0	10.1	0.0	1.2	0.0	0.2
Sharks	Blacktip shark	0.3	0.8	4.9	3.6	1.5	0.0	0.1	9.9	0.2	0.1
	Blue shark	23.1	13.2	8.6	11.7	13.5	0.0	0.7	0.6	0.3	0.1
	Bronze whaler	14.8	9.5	9.6	7.2	4.3	0.0	1.4	7.4	5.6	2.5
	Dusky shark	3.9	2.8	1.8	5.1	2.8	0.0	0.0	0.0	0.0	0.0
	Hammerhead	3.3	3.2	4.9	3.9	3.2	0.0	0.0	0.0	0.0	0.0
	Longfin mako	0.4	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
	Oceanic whitetip	3.7	2.9	1.9	2.7	3.5	0.0	0.0	0.0	0.0	0.0
	Porbeagle	0.1	0.3	0.3	0.2	0.6	0.0	0.0	0.0	0.0	0.0
	Shortfin mako	64.7	45.1	46.1	58.9	38.5	0.0	0.4	4.1	4.3	0.4
	Silky shark	0.1	0	0	0.2	1.4	0.0	0.0	0.0	0.0	0.0
	Thresher shark	0.6	0.2	0.5	1.1	0.4	0.0	0.0	0.0	0.0	0.0
	Tiger shark	4.3	3.7	3.5	5.0	3.1	0.0	0.0	0.0	0.0	0.0
	Whale shark	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subtotal	119.3	82.0	82.2	99.7	72.9	0.0	5.7	23.5	11.3	3.1
	TOTAL	**790**	**694.5**	**507.4**	**369.1**	**573.9**	**10.1**	**2.6**	**23.2**	**10.4**	**3.3**

Table 3. Annual longline discard estimates (numbers) of major non-target, associated and dependent species, including sharks, by the Australian fleet in the WCPFC Convention Area, for 2009–13.

Group	Species	2009	2010	2011	2012	2013
Scalefish	Black marlin	227	293	270	473	792
	Blue marlin	284	254	192	314	451
	Escolar	117	40	176	399	260
	Lancetfish	28 775	15 396	8498	6657	9576
	Mahi mahi	114	198	346	127	131
	Moonfish	4	3	3	4	1
	Ocean sunfish	206	273	396	522	534
	Oilfish	0	1	11	0	0
	Ray's bream	28	18	7	34	11
	Rudderfish	315	135	112	776	572
	Sailfish	49	2	5	12	54
	Shortbill spearfish	82	56	41	11	49
	Southern bluefin tuna	1755	1662	203	244	1200
	Wahoo	51	19	49	51	39
	Subtotal	31 987	18 350	10 309	9624	13 670
Sharks	Blacktip sharks	2	9	14	7	2
	Blue shark	2800	4441	3229	3180	6815
	Bronze whaler	403	288	975	322	328
	Dusky shark	716	237	304	379	412
	Hammerhead*	41	33	140	180	76
	Longfin mako	1	1	1	3	8
	Oceanic whitetip	147	227	291	239	442
	Porbeagle	1	0	1	2	3
	Shortfin mako	468	326	355	400	448
	Silky shark	15	29	69	47	110
	Thresher shark	137	52	132	165	118
	Tiger shark	169	68	102	200	168
	Whale shark	0	0	0	0	0
	Subtotal	4900	5711	5613	5124	8930
	TOTAL	**36 887**	**24 061**	**15 922**	**14 748**	**22 600**

*Note that hammerhead species are generally combined in the category "hammerhead".

Table 4. Catch and effort by Australian longliners, by primary species, within the AFZ and on the high seas, 2009–13. Proportions of catch and effort within the AFZ versus the high seas are provided in parentheses.

	Year	Effort ('000 hooks)	Primary species catch (t)					
			Albacore	Bigeye	Skipjack	Yellowfin	Striped marlin	Swordfish
Within AFZ	2009	8794	1338.7	507.1	9.9	1182.1	325.6	1092
		(99.5%)	(99.6%)	(99.6%)	(100.0%)	(99.9%)	(99.6%)	(98.2%)
	2010	7825	724.9	436.0	3.3	1309.8	246.5	900.4
		(99.4%)	(99.9%)	(99.8%)	(100.0%)	(99.6%)	(99.2%)	(97.7%)
	2011	6561	639.0	360.3	2.0	1791.1	279.4	874.5
		(97.0%)	(98.1%)	(97.7%)	(100.0%)	(96.0%)	(97.2%)	(96.2%)
	2012	6558	551.4	460.8	2.7	1090.3	279.4	977.4
		(96.5%)	(97.8%)	(96.7%)	(100.0%)	(96.9%)	(97.2%)	(96.4%)
	2013	6437	618.5	403.0	2.6	1078.3	206.4	840.0
		(95.3%)	(96.3%)	(96.7%)	(99.5%)	(95.6%)	(95.7%)	(93.9%)
High seas	2009	45	4.9	1.8	0	1.2	1.4	19.5
		(0.5%)	(0.4%)	(0.4%)	(0%)	(0.1%)	(0.4%)	(1.8%)
	2010	50	0.2	1.0	0	5.3	1.9	20.9
		(0.6%)	(0.1%)	(0.2%)	(0.0%)	(0.4%)	(0.8%)	(2.3%)
	2011	201	12.3	8.3	0	74.5	8.0	34.4
		(3.0%)	(1.9%)	(2.3%)	(0.0%)	(4.0%)	(2.8%)	(3.8%)
	2012	235	12.3	15.7	0	35.1	6.5	36.3
		(3.5%)	(2.2%)	(3.3%)	(0.0%)	(3.1%)	(2.8%)	(3.6%)
	2013	318	23.8	13.6	0.01	49.4	9.2	55.0
		(4.7%)	(3.7%)	(3.3%)	(0.5%)	(4.4%)	(4.3%)	(6.1%)

Pole-and-line, purse seine and minor line catch and effort

In 2013, there were no active purse-seine vessels in the Eastern Skipjack Fishery. Total minor line catches in the ETBF (including trolling, rod-and-reel and handline) decreased from 14 t in 2012 and 8 t in 2013. The number of vessels reporting using minor line in the ETBF has steadily decreased from a peak of 52 vessels in 2001 to 7 in 2013. Minor line effort increased marginally from 73 lines in 2012 to 95 lines in 2013. This is a decrease from a peak of 975 lines in the ETBF in 2007. Effort in the minor line sector does not follow the same declining trend over time as the number of active vessels, as the peak effort in 2007 was during a year with only 21 vessels active. Minor line catches comprised a small proportion of total catches and occurred inside the AFZ.

Fishing patterns

Fishing patterns vary with target species, location and season. The management area of the ETBF extends from Cape York, at the northern tip of Queensland, to the border between Victoria and South Australia, including waters around Tasmania (Figure 4). In the WCPFC Convention Area, skipjack tuna are fished from southern New South Wales to north-eastern Tasmania.

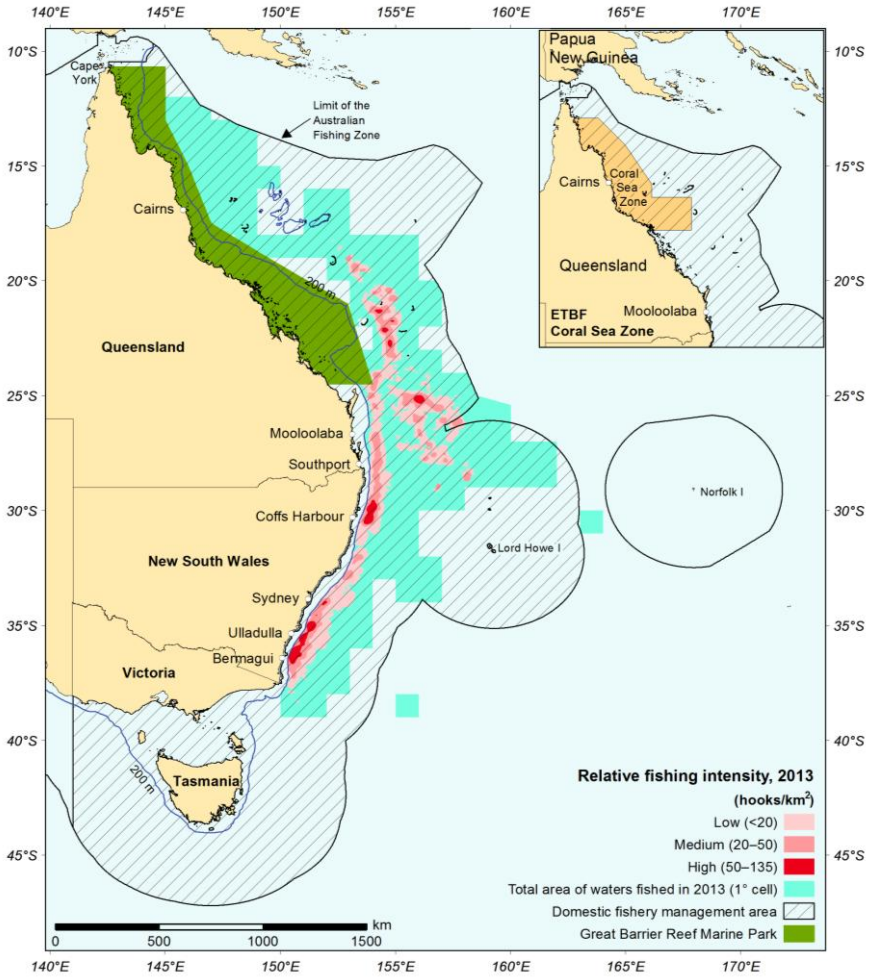


Figure 4. Longline effort distribution in the Eastern Tuna and Billfish Fishery (2013). Fishing footprint shows the total area of waters fished by all vessels in the fishery at a spatial resolution of one degree square.

Fleet operations

Domestic longlining vessels are mostly 15–25 m long and use monofilament gear (Table 5). Vessels usually conduct one longline operation per day, or night, depending on the target species. A typical longline set will comprise about 1200+ hooks. Fishers commonly operate around 150 days per year. Most trips are between 2 and 15 days; however, occasionally trips may extend up to 30 days. Typical fishing trips range from 40–300 nm from port, though some vessels may range up to 1000 nm or further to fish. The catch is gilled and gutted (depending on species) and stored on ice, in ice slurry or in refrigerated brine.

Historically, most purse-seiners were 20–25 m long, but several were 40–45 m. Most poling vessels were 15–20 m long. Purse seine and pole-and-line fishers often use satellite thermal

imagery and spotters in aircraft to locate schools of fish. There are no longer any dedicated minor line vessels; most minor line catches are reported by vessels (e.g. longline) on their way to and from fishing grounds.

Table 5. Number of Australian vessels, by gear and size category, active in the WCPFC Convention Area, for 2009 to 2013. Gross registered tonnes (GRT) is the unit for vessel size.

Year	Longline				Purse seine	Pole-and-line	Troll	Total
Vessel size (GRT)	≤50	51–200	201–500	Subtotal	≤500	50–150	Unknown	
2009	27	27	1	55	1	2	0	58
2010	26	25	1	52	2	0	0	54
2011	23	25	1	49	1	2	0	52
2012	22	22	1	45	1	0	0	46
2013	19	21	1	41	2	0	0	43

Species of special interest

Australia implements a mandatory reporting scheme for fisheries interactions with protected species, which includes species of special interest. Interactions with these species are recorded by fishers in their logbooks and are reported to AFMA. These interactions are then forwarded to the Department of Environment on a quarterly basis. A summary of these interactions is presented in Table 6. Life status of the animal involved in the interaction is also recorded. In 2013, interactions were recorded with 6 green turtles (4 alive; 2 dead), 7 leatherback turtles (all alive), 3 loggerhead turtles (all alive), an unidentified dolphin (alive) and a New Zealand fur seal (alive). No interactions with sea birds were recorded.

Observed captures are reported in Table 7. In 2013, there were 6 observed captures of marine mammals (all alive), 9 captures of sea turtles (4 alive) and zero interactions with seabirds.

Sea turtles

In 2009, Australia formally submitted The Eastern Tuna and Billfish Fishery Sea Turtle Mitigation Plan (the mitigation plan) (AFMA 2009) and it took effect 1 January 2010. However, in response to the turtle interaction rates in the ETBF under the plan, AFMA revoked the mitigation plan and from the start of the 2013 fishing season (1 March 2013) and onwards require the use of large circle hooks in Australia's shallow-set pelagic longline fisheries targeting swordfish, consistent with CMM2008-03. Mitigation requirements in the ETBF for sea turtles are reported in Appendix II.

Seabirds and marine mammals

Australia has extensive mitigation measure requirements for seabirds in the ETBF which are shown in Appendix II. More specific seabird interaction information, including the observed capture rate and captures by species and area for 2013, is presented in Table 8 and Table 9.

CMM 2011-03 regarding the intentional setting of purse-seine gear on cetaceans entered into force on 1 January 2013. Such setting practices are prohibited in Australian purse-seine fisheries

since the introduction of the *Environmental Protection and Biodiversity Act 1999*. There were no reported interactions with cetaceans in purse-seine fisheries in 2013.

Table 6. Interactions with species of special interest recorded in logbooks for the Australian longline fleet in the WCPFC Convention Area, 2009–13. Interactions not identified to species level are noted as unspecified (unspec).

Group	Common name	2009	2010	2011	2012	2013
Seabirds	Black-browed albatross	4	0	0	0	0
	Shy albatross	0	0	0	0	0
	Wandering albatross	0	0	0	0	0
	Yellow-nosed albatross	0	1	0	0	0
	Albatrosses (unspec)	0	1	0	0	0
	Sooty shearwater	0	2	0	0	0
	Shearwater (unspec)	0	0	0	0	0
	Subtotal	4	4	0	0	0
Turtles	Green turtle	1	7	6	4	6
	Hawksbill turtle	1	1	0	0	0
	Leatherback turtle	3	11	2	5	7
	Loggerhead turtle	5	4	0	0	3
	Pacific (Olive) Ridley	0	0	0	0	0
	Turtles (unspec)	3	2	1	1	0
	Subtotal	13	25	9	10	16
Mammals	False killer whale	0	0	0	0	0
	Humpback whale	1	0	0	0	0
	Melon-headed whale	0	1	0	0	0
	Short-finned pilot whale	4	2	2	0	0
	Dolphin (unspec)	0	0	0	0	1
	New Zealand fur seal	0	0	0	0	1
	Seal (unspec)	0	0	0	0	0
	Subtotal	7	4	2	0	2
	TOTAL	**24**	**33**	**11**	**10**	**18**

Table 7. Observed captures of species of special interest for the Australian longline fleet in the WCPFC Convention Area, 2009–13. Interactions not identified to species level are noted as unspecified (unspec).

Group	Common name	2009	2010	2011	2012	2013
Seabirds	Black-browed albatross	3	0	0	0	0
	Shy albatross	1	0	0	1	0
	Southern royal albatross	0	0	0	0	0
	Wandering albatross	0	0	0	0	0
	Yellow-nosed albatross	0	1	0	0	0
	Albatrosses (other)	1	0	3	0	0
	Flesh-footed shearwater	0	0	0	0	0
	Short-tailed shearwater	0	0	0	0	0
	Sooty shearwater	0	0	0	0	0
	Wedge-tailed shearwater	0	0	0	0	0
	Petrels, prions and shearwaters	0	0	0	0	0
	Cape petrel	0	0	1	0	0
	Great crested tern	0	0	1	0	0
	Subtotal	5	1	5	1	0
Turtles	Green turtle	1	1	10	5	6
	Hawksbill turtle	1	1	0	0	0
	Leatherback turtle	5	2	2	3	2
	Loggerhead turtle	4	1	0	0	1
	Pacific (Olive) Ridley	0	0	1	0	0
	Turtles (unspec)	0	0	0	1	0
	Subtotal	11	5	13	9	9
Mammals	Dolphin (unspec)	0	0	0	0	2
	Long-finned pilot whale	0	0	2	0	0
	Short-finned pilot whale	0	3	0	0	0
	Australian fur seal	0	0	0	0	4
	Subtotal	0	3	2	0	6
	TOTAL	**16**	**9**	**20**	**10**	**15**

Table 8a and 8b. Effort and observed seabird captures by fishing year for the ETBF south of 30°S (a) and 23°N – 30°S (b) . No seabird captures have been observed north of 23°N. For each year, the table gives number of longline vessels, total number of hooks (000's), number of observed hooks (000's), observer coverage (percentage of hooks that were observed), number of observed captures and the capture rate (captures per thousand hooks). Mitigation methods provided in Appendix II.

a) South of 30°S

Year	Fishing effort (000's hooks)				Observed seabird captures	
	Number of vessels	Number of hooks	Observed hooks	% hooks observed	Capture number	Capture rate
2009	47	2056	217	10.6	4	0.018
2010	38	2459	109	4.4	1	0.009
2011	46	2251	142	6.3	2	0.014
2012	39	2094	150	7.1	1	0.007
2013	35	1905	103	5.4	0	0.0

b) 23°N – 30°S

Year	Fishing effort (000's hooks)				Observed seabird captures	
	Number of vessels	Number of hooks	Observed hooks	% hooks observed	Capture number	Capture rate
2009	51	6794	346	5.1	1	0.003
2010	45	5416	176	3.2	0	0.0
2011	46	4511	275	6.1	3	0.011
2012	42	4699	249	5.3	0	0.0
2013	33	4850	314	6.5	0	0.0

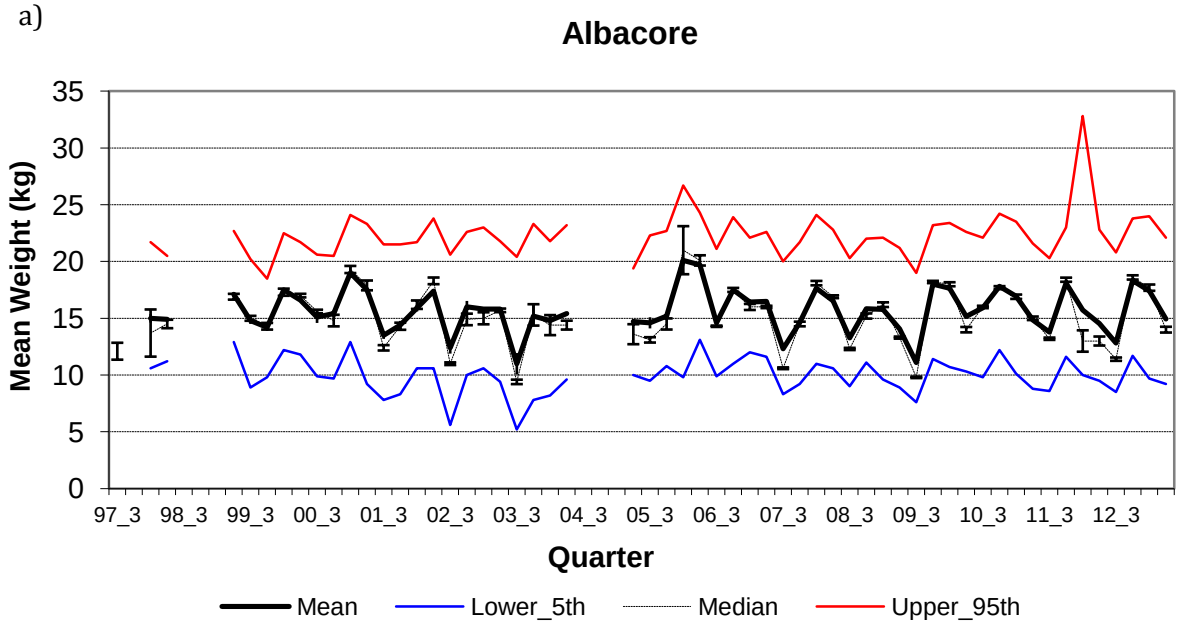
Table 9. Number of observed seabird captures in the ETBF, 2013, by species and area. Source: AFMA observer database.

Species	South of 30°S	North of 23°N	23°N–30°S	Total Captures
Nil	0	0	0	0
Total	**0**	**0**	**0**	**0**

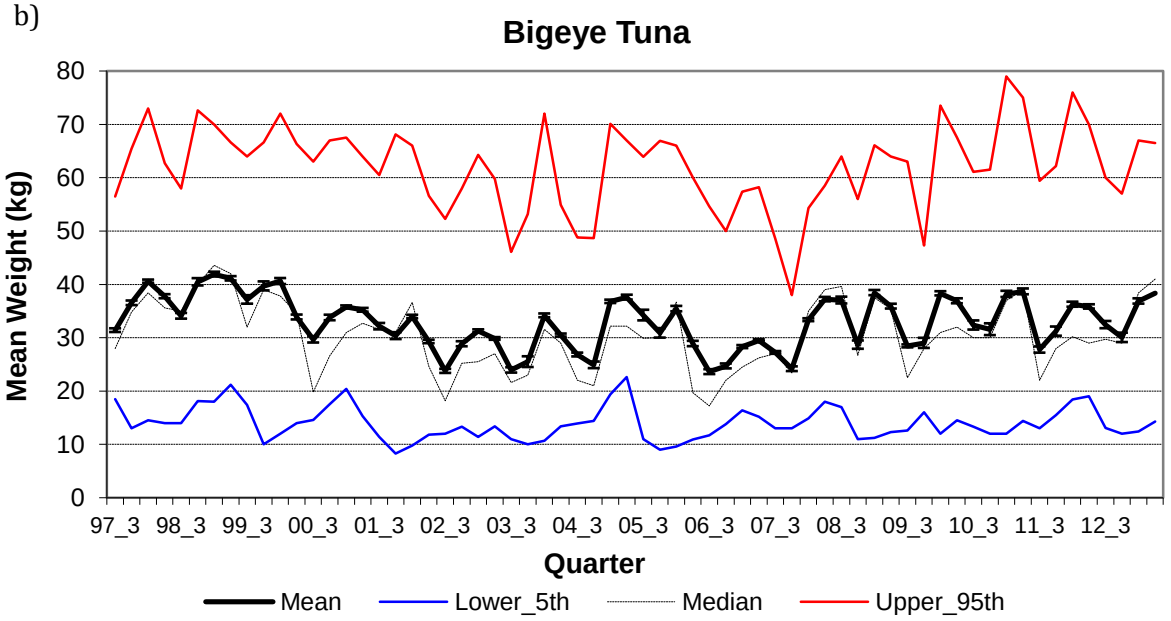
Trends in size composition of retained catch

The size composition (based on processed weights) of yellowfin tuna shows both seasonal and interannual variation with the 8-quarter running mean remaining between 31–36 kg during the decade from 1997 to 2006 before decreasing to be below 30 kg between 2007 and 2009. This mean then increased to around 36 kg during the first quarter of 2012 and has since remained near this value. The 8-quarter running mean processed weight of bigeye tuna decreased from around 39 kg in the late 1990s to around 28 kg in 2004 then increased to 32 kg in late 2006 before decreasing again to 27 kg by late 2007. It increased again to around 34 kg by 2010 and has since remained stable around this weight. The running mean processed weight of swordfish shows a steady decline from around 53 kg in the late 1990s to around 40 kg in late 2007, but since then has shown a small increase reaching 44 kg by the start of 2012 and has remained near this value to mid-2013. The running mean processed weight of striped marlin increased from around 62 kg during the first quarter of 2000 to 68 kg during the last quarter of 2010 and has remained around 66 kg over the past few years. The running mean whole weight of albacore has varied between 14–17 kg between 1999 and 2013 but shows no trend over this period.

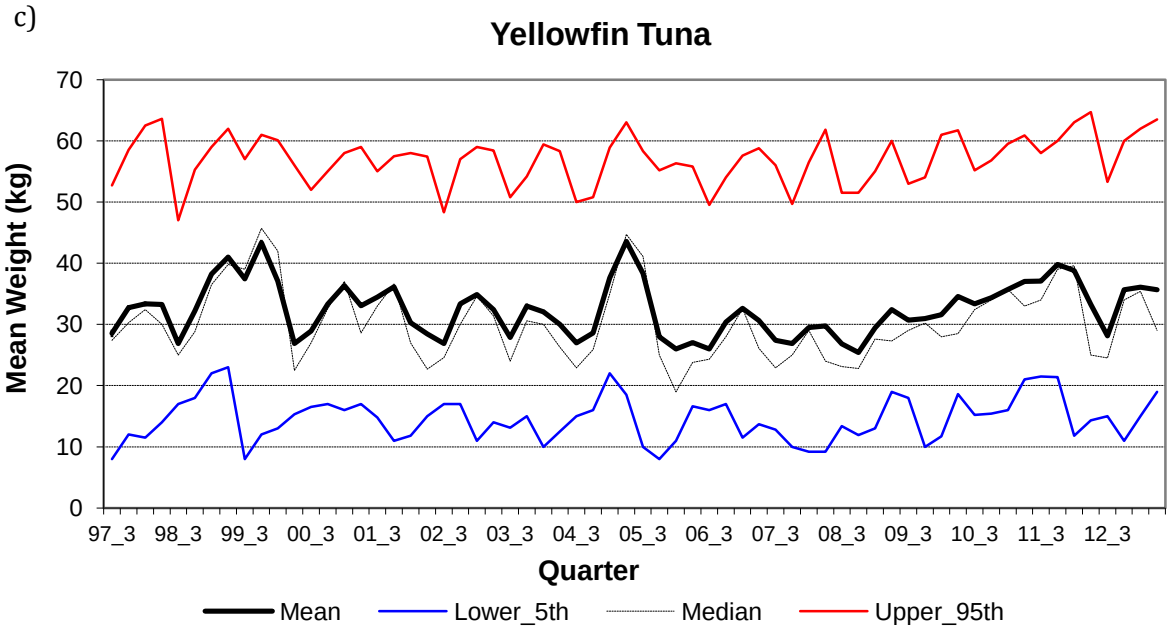
a)



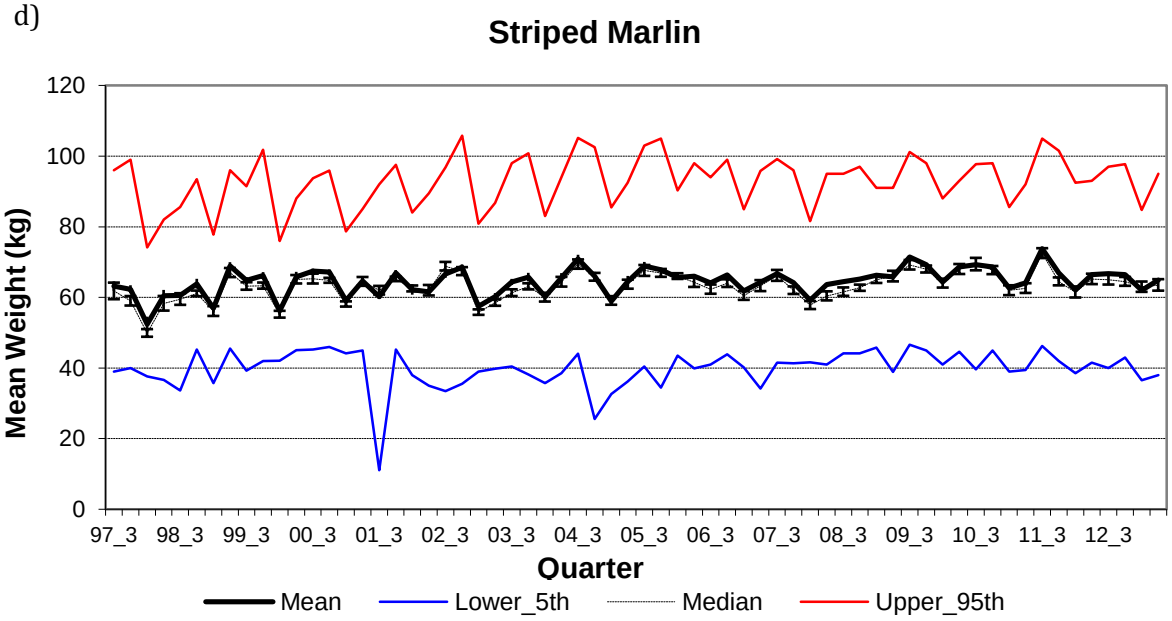
b)


Bigeye Tuna
Mean Weight (kg)
0
10
20
30
40
50
60
70
80
97_3 98_3 99_3 00_3 01_3 02_3 03_3 04_3 05_3 06_3 07_3 08_3 09_3 10_3 11_3 12_3
Quarter
Mean
Lower_5th
Median
Upper_95th

c)


Yellowfin Tuna
Mean Weight (kg)
0
10
20
30
40
50
60
70
97_3 98_3 99_3 00_3 01_3 02_3 03_3 04_3 05_3 06_3 07_3 08_3 09_3 10_3 11_3 12_3
Quarter
Mean
Lower_5th
Median
Upper_95th

d)



e)

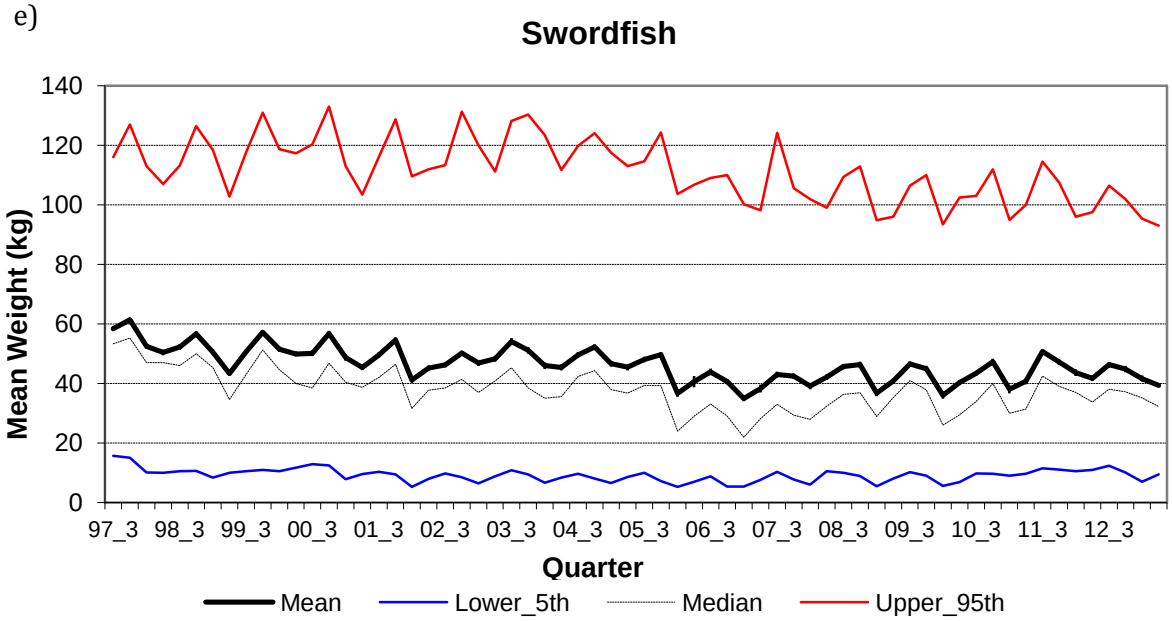


Figure 5 (a–e). Time series of quarterly mean, medium, lower 5th and upper 95th percentiles processed weights of a) albacore, b) bigeye tuna, c) yellowfin tuna, d) striped marlin and e) swordfish sampled across the entire ETBF based on the data collected from the port sampling program.

3 Coastal state reporting

There are currently no foreign fishing vessels licensed to operate in the AFZ. Japanese longliners were licensed to operate in the eastern AFZ from the late 1950s until November 1997.

4 Socio-economic factors

The gross value of production (GVP) for the ETBF decreased from $28.7 million in 2011–12 to $24.8 million in 2012–13 (2012–13 dollars), representing a 13 per cent decline. Yellowfin tuna remains the largest contributor to the total GVP of the fishery, accounting for $11.4 million or 46 per cent. Historically, yellowfin tuna has been the dominant species in the fishery in gross value terms, with the exception of 2007–08, when bigeye tuna was the dominant species following a historical high catch in that year. In 2012–13, the production volume of yellowfin tuna and unit price both fell by 5 per cent. This resulted in a 10 per cent decline in the gross value of yellowfin tuna production in the ETBF. In 2012–13, swordfish GVP was $4.6 million, accounting for approximately 18.5 per cent of total fishery GVP. This represents a 21 per cent decline in GVP compared with the previous year. The volume and unit price for swordfish declined by 15 per cent and 7 per cent, respectively. The production quantity of bigeye tuna increased in 2012–13 by 12 per cent. However, given the 17 per cent decline in the unit price of bigeye tuna, the GVP declined by 7 per cent to $5 million.

5 Dispatch of catch

The principal destination for Australian exports of tuna and swordfish is Japan, which received 50 per cent of total tuna exports (in volume terms; excluding southern bluefin tuna) and almost 70 per cent of total swordfish exports in 2012–13. Other markets for Australian tuna, in volume terms, included Thailand (12 per cent), New Zealand (11 per cent), American Samoa (9 per cent) and the United States (6 per cent). In 2012–13, the United States was the second largest export market for Australian swordfish and received 31 per cent of total swordfish exports.

In value terms, Japan received 60 per cent of Australian exports of tuna and swordfish in 2012–13, with New Zealand and the United States accounting for 11.5 per cent and 9 per cent, respectively. Japan is the main export market for bigeye and fresh yellowfin tuna. In 2012–13, the main export market for fresh albacore was Japan. Historically, skipjack tuna has mostly been canned and sold domestically; however, the sole remaining cannery in Australia (Port Lincoln) closed in early 2010.

6 Onshore developments

As part of the Australian Government Securing Our Fishing Future package, there was a substantial investment in onshore development, some of which benefited fishers in the ETBF. Funding was available through the Onshore Business Assistance and Fishing Community Assistance components of the package to assist businesses and communities affected by the reductions in fishing activity as a result of the package. Investments include the purchasing of new equipment, redevelopment and upgrade of facilities, diversification and expansion of operations and the development of programs aimed at increasing consumer awareness, some of which benefited fishers in the ETBF. This package was finalised in 2006.

7 Future prospects for the fishery

Commercial operators view the Australian skipjack fisheries as an important development opportunity because significant catching capacity exists in Port Lincoln, South Australia. Currently, catches are low as a result of variability in the availability of skipjack tuna in the AFZ, variable participation levels, low profit margins and the closure of the Port Lincoln cannery; however, there is room for development in this fishery. Current business conditions are less than favourable, but activity and catches could increase, within management restrictions, if these conditions change.

In February 2014, the AFMA Commission agreed on TACCs for the commercial sector of the ETBF. These apply to the 2014–15 season which commenced on 1 March 2014. The TACCs for the five main target species are: albacore (2500 t); bigeye tuna (1056 t); swordfish (1378 t); striped marlin (351 t); yellowfin tuna (2200 t).

8 Status of data collection systems

Logbook data collection and verification

AFMA introduced a logbook for domestic longliners in 1986. The logbook has been revised on several occasions. The latest (AL06—Australian Pelagic Longline Daily Fishing Log) was introduced in 2007; vessels began submitting AL06 logbooks in November 2007. Return of logbooks by Australian longliners improved when, in 1995, it became a condition of fishing permits and has been close to 100 per cent in recent years. Logbooks have also been introduced for the skipjack tuna purse-seine fisheries; PS01—Australian Purse Seine Daily Fishing Log was distributed in July 2002 with the first skipjack tuna catch recorded in this logbook in December 2003. Weights from catch disposal records are verified; weights recorded on logbooks are an estimate only.

Observer program

AFMA observers have been deployed on domestic longliners since 2001. From July 2003, observers have been deployed more broadly across the fishery with more general duties, such as the collection of data on fishing gear and the size and species composition of catches. In 2013, observers monitored 416 868 hooks in the longline fishery (6.2 per cent of the total number of hooks deployed in the fishery) (Table 10).

AFMA also implemented a trial of e-monitoring (i.e. on-board, fixed-mount digital video cameras) to evaluate the effectiveness of this technology for a range of fishery monitoring purposes and to conduct a cost–benefit analysis (Piasente et al. 2012). E-monitoring was made available as a voluntary option for boats in the ETBF from 1 July 2011 and AFMA intends it will begin to be implemented as compulsory equipment on boats working in the ETBF from mid-2014.

Port sampling program

The collection of individual processed fish weights from processors receiving longline caught fish from the ETBF commenced in mid-1997. The program mainly focuses on the five principal target species in the fishery (yellowfin tuna, bigeye tuna, albacore, swordfish and striped marlin), though data on a range of other species have also been collected. Data are collated on a financial year basis (July–June the following year). During the 16 year period from July 1997 to June 2013 over 1.55 million individual fish weights pertaining to the five main target species have been collected. Coverage rates (per cent of landed fish sampled) for the target species are generally high, and between 2006 and 2012 have averaged around 72 per cent for yellowfin tuna, 84 per cent for bigeye tuna, 86 per cent for swordfish and 76 per cent for striped marlin; for albacore 16 per cent of landed fish have been individually sampled (Table 10). Individual fish weights for another 247 770 fish from 45 non-target species have also been collected. Bulk weights for binned albacore (covering between 45–68 per cent of the catch since 2006) and some other species are also collected. Where both the total binned weight and the number of fish have been recorded, these bulk weights cover 711 448 fish (including 455 870 albacore).

Table 10. Estimated annual coverage of operational catch and effort (logbooks), observer data (per cent hooks) and port sampling (per cent coverage rate for the five main target species of individual fish weights collected from processors receiving longline caught fish in the ETBF) for the Australian fleet, active in the WCPFC Convention Area, 2009–13.

Gear	Year	Operational catch & effort coverage	Observer coverage	Port sampling coverage					
				YFT	BET	ALB	SWO	STM	SKJ
Longline[a]	2009	100	6.4	78	87	23	87	82	0
	2010	100	3.6	81	98	24	95	83	0
	2011	100	6.2	80	93	22	94	81	0
	2012	100	5.9	80	88	12	86	77	0
	2013[b]	100	6.2	79	81	13	83	78	0
Purse seine	2009	100	2.3	0	0	0	0	0	0
	2010	100	2.6	0	0	0	0	0	0
	2011	100	0	0	0	0	0	0	0
	2012	100	0	0	0	0	0	0	0
	2013	100	0	0	0	0	0	0	0

[a] includes fish taken by minor line

[b] sampling rates for all species (except skipjack) pertain only to January–June in 2013

Abbreviations: yellowfin tuna (YFT), bigeye tuna (BET), albacore (ALB), striped marlin (STM), swordfish (SWO) and skipjack (SKJ)

Sources: Robert Campbell (CSIRO) and AFMA observer database

Unloading/transhipment

Catch disposal records are the formal method for monitoring unloads, and were implemented in the ETBF in January 2006 (Table 11). Catch disposal records are completed by both the fisher and licensed fish receiver at the point of unload to obtain accurate data on fish numbers and verified weight by species. Skippers tend to under-estimate the weights reported in logbooks for most species, so the catch disposal record data have been reported in domestic official statistics since 2007. Compliance checks are conducted on unloads as part of a risk based compliance program. Weight estimates are also derived from the size-monitoring program, and are likely to be more accurate than logbook data for that part of the time series.

There was no transhipment in the ETBF in 2013.

Table 11. Annual catch estimates (converted whole weights) for the ETBF for 2009–13 derived from catch disposal records. Estimates are in tonnes.

Year	Albacore	Yellowfin	Bigeye	Striped marlin	Swordfish	Other	Total
2009	1522.8	1386.8	726.4	360.6	1315.0	775.0	6086.7
2010	872.3	1549.0	521.9	278.6	1176.1	839.1	5237.0
2011	771.0	2156.5	445.1	330.2	1080.5	616.3	5399.4
2012	708.8	1258.9	552.7	261.8	1156.8	423.0	4362.2
2013	772.6	1341.2	488.8	249.6	1061.9	284.9	4199.0

Other

AFMA introduced the compulsory requirement for all Commonwealth endorsed fishing vessels to be fitted with Integrated Computer Vessel Monitoring Systems (ICVMS) in 2007. For 2013–14 (up to March 2014), there was a 97.4 per cent compliance rate of all Commonwealth nominated vessels that had a fully operational and functioning unit. Compliance with ICVMS requirements has increased markedly since mid 2008. AFMA uses the ICVMS to assist in planning inspections and operations, to assist the observer program in deploying scientific observers and to actively monitor compliance with closed areas.

A range of data is also collected via individual research projects (see the Research Activities section for more information).

9 Research activities

The Australian Government and the fishing industry allocate considerable funds to fishery research and monitoring each year. In addition to the logbook and observer programs, key areas of research over the last ten years and ongoing research include:

Biological research projects

- Reproductive dynamics of swordfish in the domestic longline fishery off eastern Australia (Young & Drake 2002)
- Age and growth of bigeye tuna from the eastern and western AFZ (Farley et al. 2003)
- Age and growth of swordfish from Australian waters (Young & Drake 2004)
- Population biology and habitat preferences of striped marlin in eastern Australia (Keller & Davie 2009)
- Population biology of albacore tuna in the Australian region (Farley et al. 2012)
- Spatial dynamics of swordfish in the south Pacific Ocean (Evans et al. 2012)
- Defining regional connections in south-west Pacific swordfish (Wilcox 2012)

Assessment-related research projects

- Dynamics of the interactions of the fishery and swordfish on seamounts off eastern Australia (Campbell & Hobday 2003)
- Migration and habitat preferences of bigeye tuna on the east coast of Australia (Gunn et al. 2005)
- Stock assessment of striped marlin in the south-western Pacific Ocean (Langley et al. 2006)
- Developing harvest strategies for the ETBF (AFMA 2007)
- Developing robust stock-status indicators (Basson & Dowling 2008)
- Updating the stock assessment of swordfish in the south Pacific Ocean (Kolody et al. 2008)
- Determining the depths fished and the effective longline effort targeted at various species in the ETBF (Campbell & Young 2010)
- Integrated evaluation of management strategies for tropical multi-species long-line fisheries (Kolody et al. 2010)
- Eastern Tuna and Billfish size monitoring program (Williams et al. ongoing)
- Integrated analysis and assessment supporting implementation of the management and harvest strategy framework within the ETBF (Campbell 2011)
- Predicting the impact of hook decrementation on the distribution of fishing effort in the ETBF (Wilcox et al. 2011)

- Analysis of recreational fishing catch and effort data to support the striped marlin stock assessment (Ghosn et al. 2012)
- Standardisation of commercial catch and effort data to support the stock assessment of striped marlin (Campbell 2012)
- Changes in fishing strategies in the ETBF in response to the introduction of quota management (Preece et al. 2012)

Ecological research projects

- Ecological risk assessment for the effects of fishing (Webb et al. 2007)
- Rapid quantitative assessment (Zhou et al. 2007)
- Determining the ecological impacts of longline fishing in the ETBF (Young et al. 2009)

Bycatch research projects

- A review of byproduct interactions and economics in Australia's tuna and billfish fisheries (Bromhead et al. 2005)
- Marine turtle mitigation in Australia's pelagic longline fishery (Robins et al. 2007)
- The effects of bycatch mitigation measures, such as circle hooks and wire leaders, on target and non-target catches (Ward et al. 2008)
- Effect of line shooters on the sink rates of pelagic longlines and the affect on seabird interactions (Robertson et al. 2010a)
- Factors affecting the sink rates of baited hooks and the impact on seabird interactions in pelagic longline fisheries (Robertson & van den Hoff 2010; Robertson et al. 2010b; Robertson & Candy 2013)
- Branch line weighting regimes to reduce the incidental catch of seabirds in pelagic longline fisheries (Robertson et al. 2013)
- Estimating turtle bycatch rates in the ETBF (Tennant et al. ongoing)

Appendix A: Common and Scientific Names

Common names	Scientific names
Albacore	*Thunnus alalunga*
Albatrosses (other)	*Diomedeidae* spp.
Australian fur seal	*Arctocephalus pusillus doriferus*
Australian sea lion	*Neophoca cinerea*
Bigeye tuna	*Thunnus obesus*
Black marlin	*Makaira indica*
Black-browed albatross	*Thalassarche melanophrys*
Blacktip sharks	*Carcharhinus* spp.
Blue marlin	*Makaira nigricans*
Blue shark	*Prionace glauca*
Bronze whaler shark	*Carcharhinus brachyurus*
Buller's albatross	*Thalassarche bulleri*
Cape petrel	*Daption capense*
Common dolphin	*Delphinus delphis*
Dusky shark	*Carcharhinus obscurus*
Escolar	*Lepidocybium flavobrunneum*
False killer whale	*Pseudorca crassidens*
Flatback turtle	*Natator depressa*
Flesh-footed shearwater	*Puffinus carneipes*
Great skua	*Catharacta skua*
Great-winged petrel	*Pterodroma macroptera*
Green turtle	*Chelonia mydas*
Grey-headed albatross	*Thalassarche chrysostoma*
Hammerhead shark	*Sphyrna* spp.
Hawksbill turtle	*Eretmochelys imbricata*
Humpback whale	*Megaptera novaeangliae*

Lancetfish	*Alepisaurus* sp.
Leatherback turtle	*Dermochelys coriacea*
Loggerhead turtle	*Carretta carretta*
Mahi mahi	*Coryphaena hippurus*
Melon-headed whale	*Peponcephala electra*
Moonfish (opah)	*Lampris guttatus*
New Zealand fur seal	*Arctocephalus fosteri*
Northern bluefin tuna	*Thunnus orientalis*
Ocean sunfish	*Mola mola*
Oceanic whitetip shark	*Carcharhinus longimanus*
Oilfish	*Ruvettus pretiosus*
Pacific (olive) ridley turtle	*Lepidochelys olivacea*
Petrels, prions and shearwaters	*Procellariidae* spp.
Ray's bream	*Brama brama*
Rudderfish	*Centrolophus niger*
Sailfish	*Istiophorus platypterus*
Scalloped hammerhead	*Sphyrna lewini*
Shortbill spearfish	*Tetrapturus angustirostris*
Shortfin mako	*Isurus oxyrinchus*
Short-finned pilot whale	*Globicephala macrorhynchus*
Short-tailed shearwater	*Puffinus tenuirostris*
Shy albatross	*Thalassarche cauta*
Silky shark	*Carcharhinus falciformis*
Skipjack tuna	*Katsuwonus pelamis*
Smooth hammerhead	*Sphyrna zygaena*
Sooty shearwater	*Puffinus griseus*
Southern bluefin tuna	*Thunnus maccoyii*
Southern royal albatross	*Diomedea epomophora*
Striped marlin	*Tetrapturus audax*

Swordfish	*Xiphias gladius*
Thresher shark	*Alopias vulpinus*
Tiger shark	*Galeocerdo cuvier*
Wahoo	*Acanthocybium solandri*
Wandering albatross	*Diomedea exulans*
Wedge-tailed shearwater	*Puffinus pacificus*
Westland petrel	*Procellaria westlandica*
Yellowfin tuna	*Thunnus albacares*
Yellow-nosed albatross	*Thalassarche chlororhynchos*

Appendix B: Mandatory mitigation measures in the ETBF 2014

(Source: AFMA website: http://www.afma.gov.au/wp-content/uploads/2010/06/ETBF-management-arrangements-booklet-2014-FINAL.doc**)**

Seabirds

At all times you must:

- Carry an assembled tori line on board
- Carry either:
    - 1000 weighted swivels each weighing at least 60 g; or
    - 1000 weights each weighting at least 40 g
- Not discharge offal while setting
- Not discharge offal while hauling. An exemption for small boats may be given by AFMA.

When you are fishing south of 25°S you must:

- Deploy a tori line before commencing a shot
- Use only thawed bait
- Weight longlines with either a minimum of:
    1) 60 g swivels at a distance of no more than 3.5 m from each hook ; or
    2) 98 g swivels at a distance of no more than 4 m from each hook; or
    3) 40 g weights at each hook with dead, non-frozen baits.
- At all times carry 1000 weighted swivels each weighing at least 60 g or 1000 weights to be used at each hook each weighing at least 40 g
- Not discharge offal while setting
- Not discharge offal while hauling. An exemption for small boats may be given.

When you are fishing north of 25°S you must:

- Carry an assembled tori line onboard
- At all times carry 1000 weighted snoods each weighing at least 60 g or 1000 weights to be used at each hook each weighing at least 40 g.

Note: The mandatory requirement to carry 1000 weighted snoods does not apply to vessels permitted to operate inside the Coral Sea Zone. A holder can gain exemption from the

requirements to carry a tori line and 1000 weighted snoods if they agree not to fish south of latitude 25° South.

Your tori line must be:

- At least 100 m long
- Set up from a position on the boat that allows it to stay above the water for at least 90 m;
- Have streamers attached at least every 3.5 m
    - Streamers should be maintained ensuring that their lengths are as close to the water as possible.
- Have a drogue at the end of the line to give sufficient drag to meet the 90 m aerial coverage criteria.

Sea turtles

Circle hooks

Large circle hooks must be used if less than eight hooks per bubble are set.

De-hooking device

At all times you must carry on board a minimum of one de-hooking device, with the following specifications:

- The device must enable the hook to be secured and the barb shielded so that the barb does not re-engage with the fish while the hook is being removed
- The device must be blunt with all edges rounded
- Where more than one size of hook is to be carried, a de-hooking device (or devices) must be carried that can be used with all hooks on the boat; and
- The shaft of the device must be a minimum of 1.5 metres in length.

Line cutting device

At all times you must carry on board a minimum of one line cutting device. The line cutting device must be constructed and used in accordance with the following specifications:

- The device must be constructed to allow the line to be cut as close to the hook as possible;
- The blade of the device must be enclosed in a blunt rounded (arc-shaped) cover with the hook exposed on the inside of the arc; and
- The shaft of the device must be a minimum of 1.5 metres in length.

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