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PART 1: INFORMATION ON FISHERIES, RESEARCH, AND STATISTICS

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ABARES

Annual report to the Western and Central Pacific Fisheries Commission

Part 1: Information on fisheries, research and statistics 2014 Australia

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

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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 decreased from 3874 t (including 8 t minor line) in 2013 to 3796 t in 2014 (including 22 t minor line). 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 6.93 million hooks in 2014. The decrease in fishing effort from 2003 levels is the result of the strength of the Australian dollar (affecting terms of trade), 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 vessels reported longlining in the WCPFC Convention Area during 2014. Longline logbook catches of albacore decreased from 643 t in 2013 to 561 t in 2014. Similarly, longline catches of bigeye tuna decreased slightly from 417 t in 2013 to 412 t in 2014. Longline catches of yellowfin tuna increased from 1128 t in 2013 to 1470 t in 2014. Longline catches of swordfish increased from 895 t in 2013 to 1031 t in 2014. Longline catches of striped marlin increased slightly from 216 t in 2013 to 246 t in 2014 t while longline catches of skipjack remained similar to previous years at ~2 t.

There are no dedicated minor line (including trolling, rod-and-reel and handline) vessels in the ETBF; most minor line catches are reported by vessels (e.g. longline) on their way to and from fishing grounds. In 2014, there were four vessels actively targeting tuna and billfish species using minor line in the ETBF (1 pole and line and 3 handline). 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. There were no active vessels in the Eastern Skipjack Fishery (purse seine) in 2014.

The Australian Fisheries Management Authority (AFMA) observer programme has deployed observers on domestic longliners since 2001, initially as part of a programme 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 2014, observers monitored 195 032 hooks in the ETBF longline fishery (2.8 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. E-monitoring of the fishery will be compulsory from 1 July 2015 for vessels operating within the Australian Exclusive Economic Zone.

In February 2015, the AFMA Commission agreed on total allowable commercial catches (TACCs) for the commercial sector of the ETBF. These apply to the 2015–16 season which commenced on 1 March 2015. The TACCs for the five main target species are: albacore (2500 t); bigeye tuna (1056 t); swordfish (1381 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 currency 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 extends 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 2014, 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 vessels reported longlining in the WCPFC Convention Area during 2014, down from a peak of 180 in 1997 (Figure 1). Total longline effort increased slightly from 6.76 million hooks in 2013 to 6.93 million hooks in 2014 (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 2014 fishing for striped marlin south of 15°S was 38. Thirty six vessels fished for albacore and swordfish south of 20°S; there was no effort for albacore north of the equator.

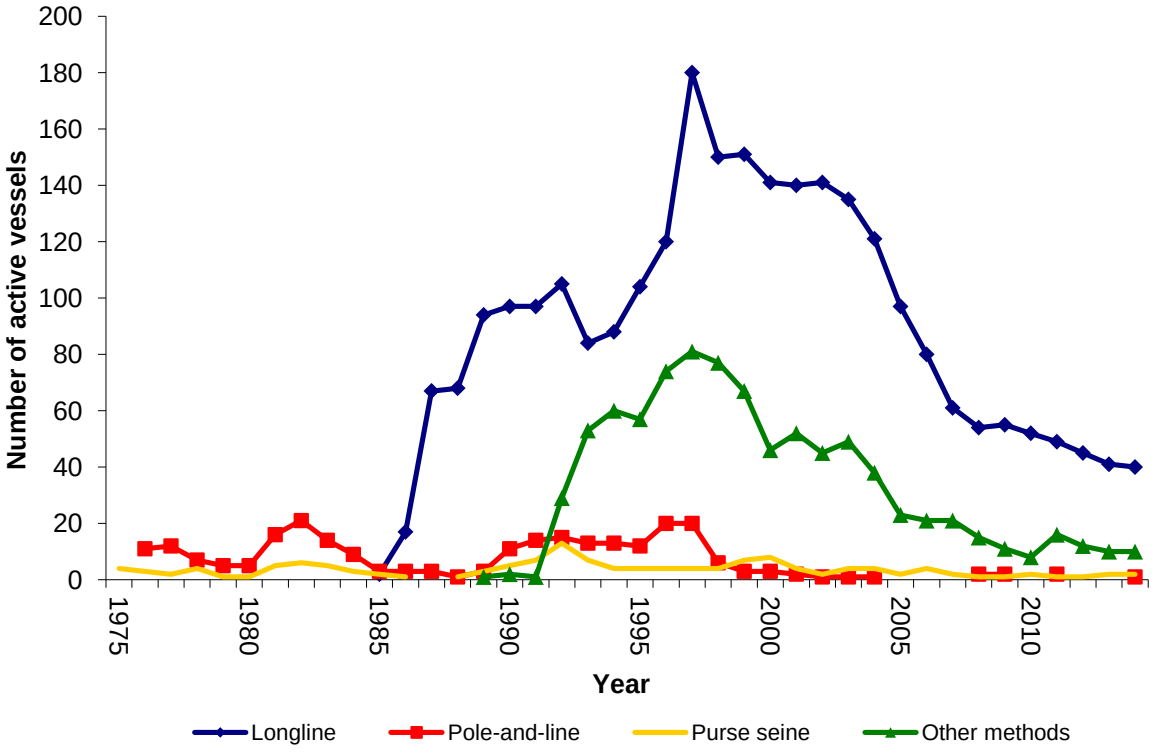


Figure 1. Historical annual vessel numbers for the Australian fleet, by gear (longline, purse seine, pole-and-line and other commercial methods [minor line including trolling, rod-and-reel and handline]) for the WCPFC Convention Area.

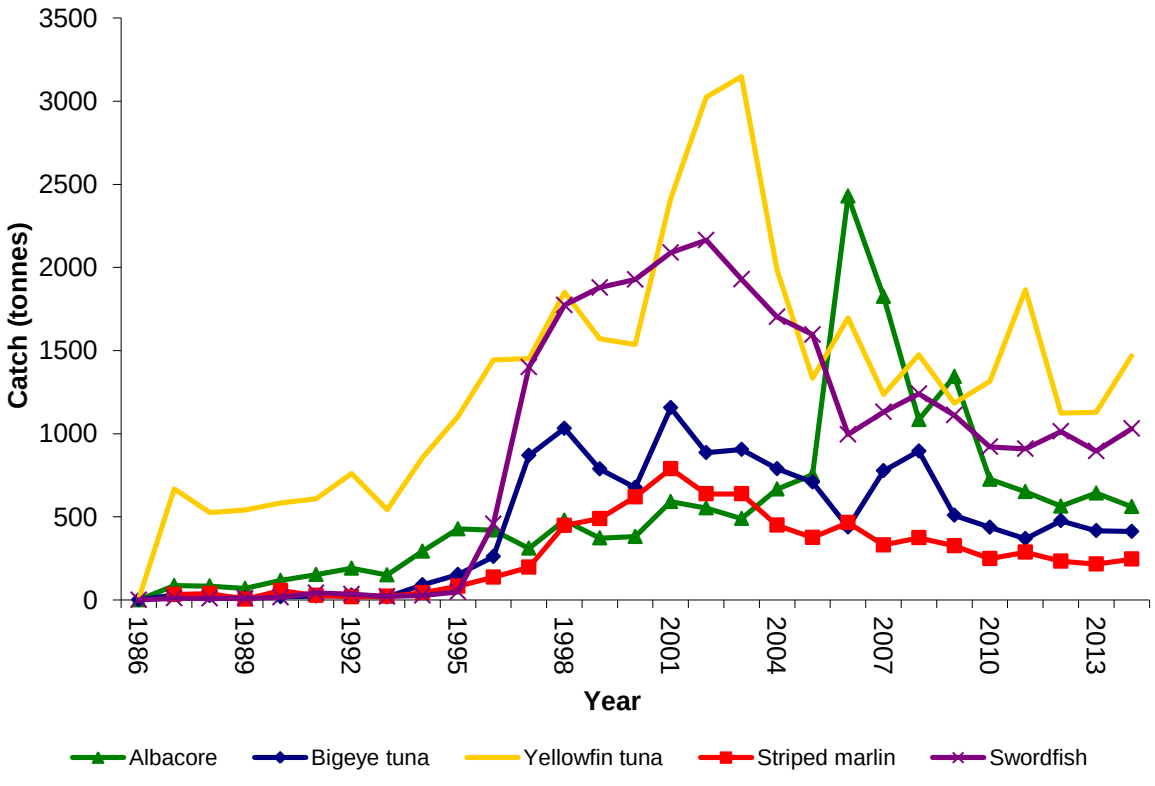
Table 1. Annual catch and effort estimates (whole weight) for the Australian fleet, by gear and primary species, for the WCPFC Convention Area, 2010–14.

Fishing method	Year	Effort [a]	Primary species (t)					
			Albacore	Bigeye	Skipjack	Yellowfin	Striped marlin	Swordfish
All gears	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
	2014	-	561.3	430.3	2.2	1473.8	245.6	1030.7
Longline [b]	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	642.3	416.6	2.6	1127.6	215.6	895.0
	2014	6928	561.3	430.3	2.1	1472.8	245.6	1030.7
Purse seine	2010	290	0	0	0	0	0	0
	2011	149	0	0	0	0	0	0
	2012	82	0	0	0	0	0	0
	2013	51	0	0	0	0	0	0
	2014	158	0	0	0	0	0	0

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

Total longline catches in the ETBF reported in logbooks decreased from 3874 t in 2013 to 3796 t in 2014. This is down from a peak of 8229 t in 2002. Historical catches for the Australian fleet in the WCPFC Convention Area, by primary species, are shown in Figure 2. Longline catches of albacore decreased from 642 t in 2013 to 561 t in 2014 (450 t caught south of 20°S) while bigeye tuna longline catches decreased from 417 t in 2013 to 412 t in 2014. Longline catches of yellowfin tuna increased from 1128 t in 2013 to 1473 t in 2014. Longline catches of swordfish increased from 895 t in 2013 to 1031 t in 2014 (994 t caught south of 20°S). Longline catches of striped marlin increased from 216 t in 2013 to 246 t in 2014 (246 t caught south of 15°S). Longline catches of skipjack remained at ~2 t. Annual catch distributions of the main target species by the Australian longline fleet for 2010–14 are shown in Figure 3.

a)



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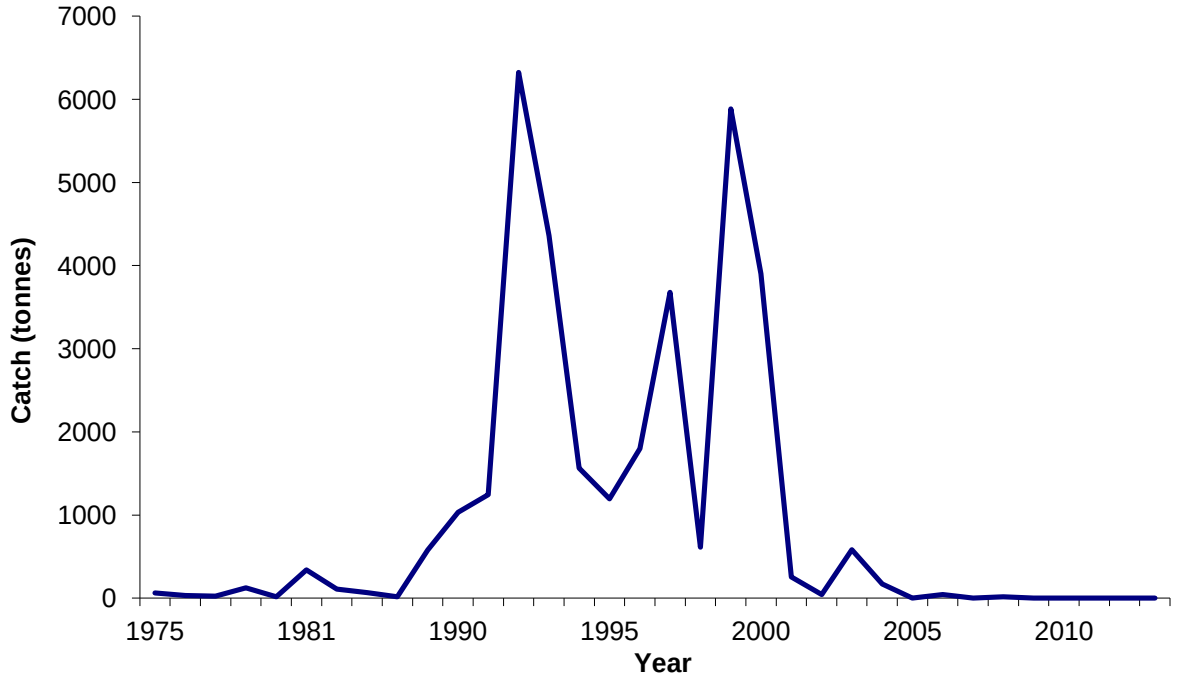
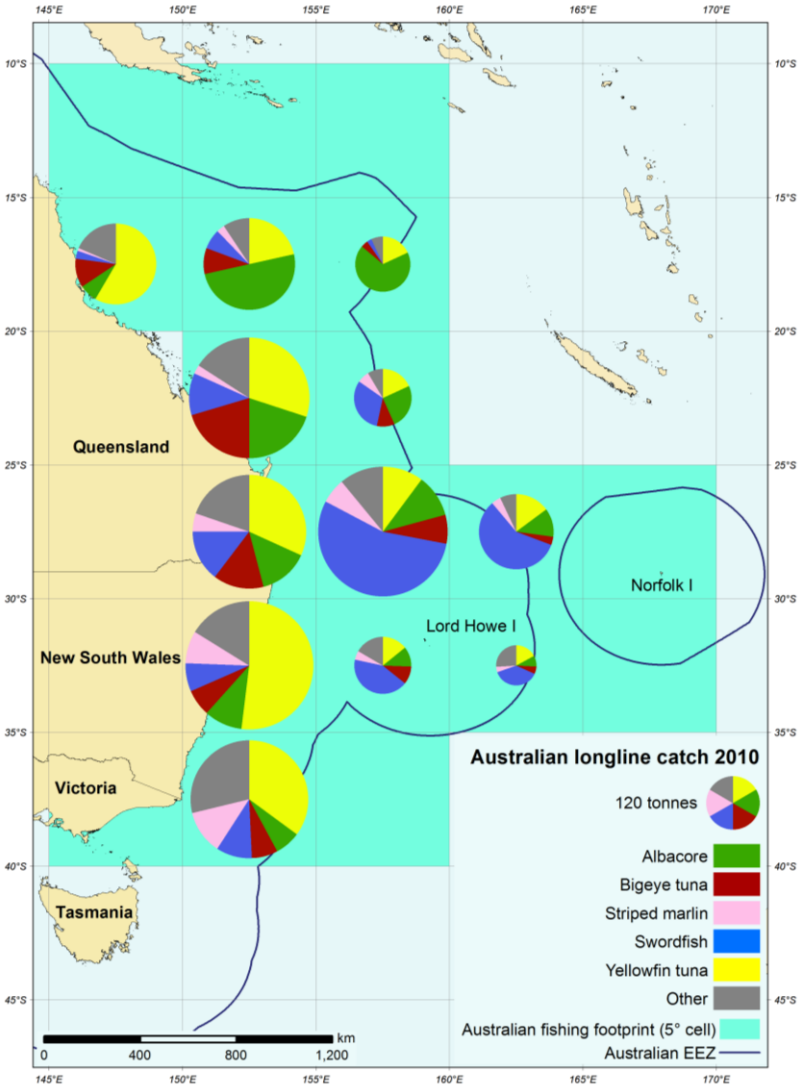


Figure 2. Historical annual longline catch in the WCPFC Convention Area for (a) albacore, bigeye tuna and yellowfin tuna, as well as striped marlin and swordfish, and (b) purse seine catch skipjack tuna.

a)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Queensland
New South Wales
Victoria
Tasmania
Lord Howe I
Norfolk 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
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800
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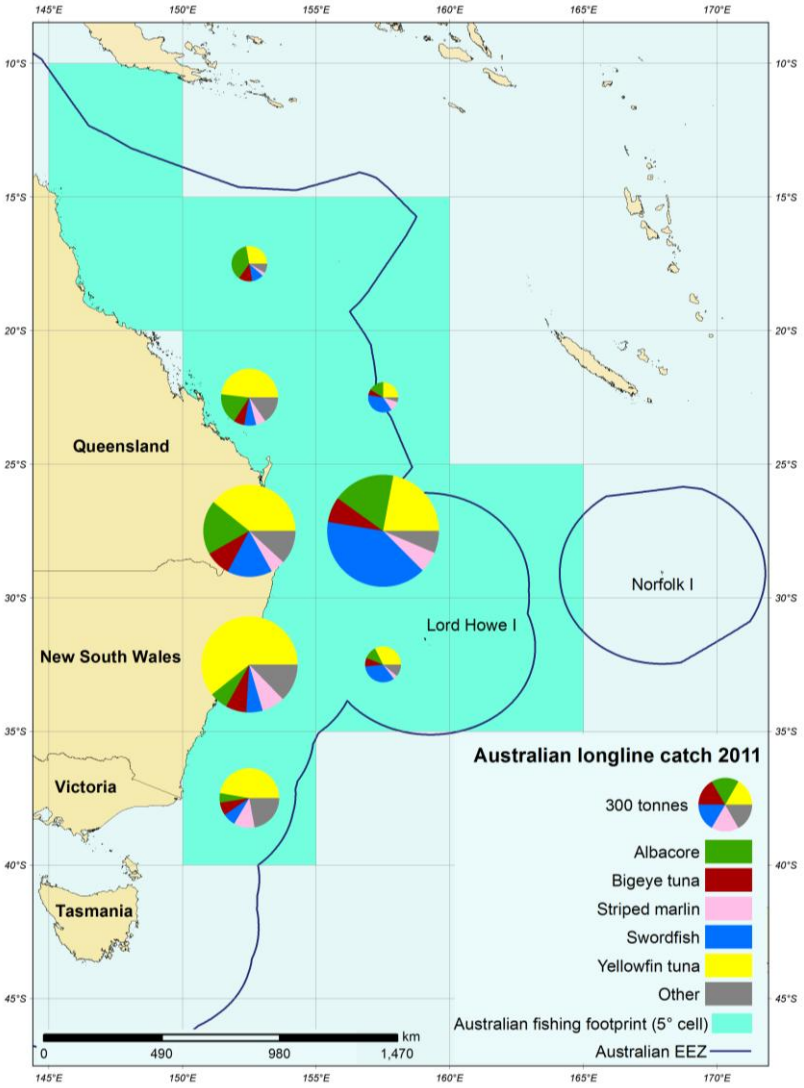
b)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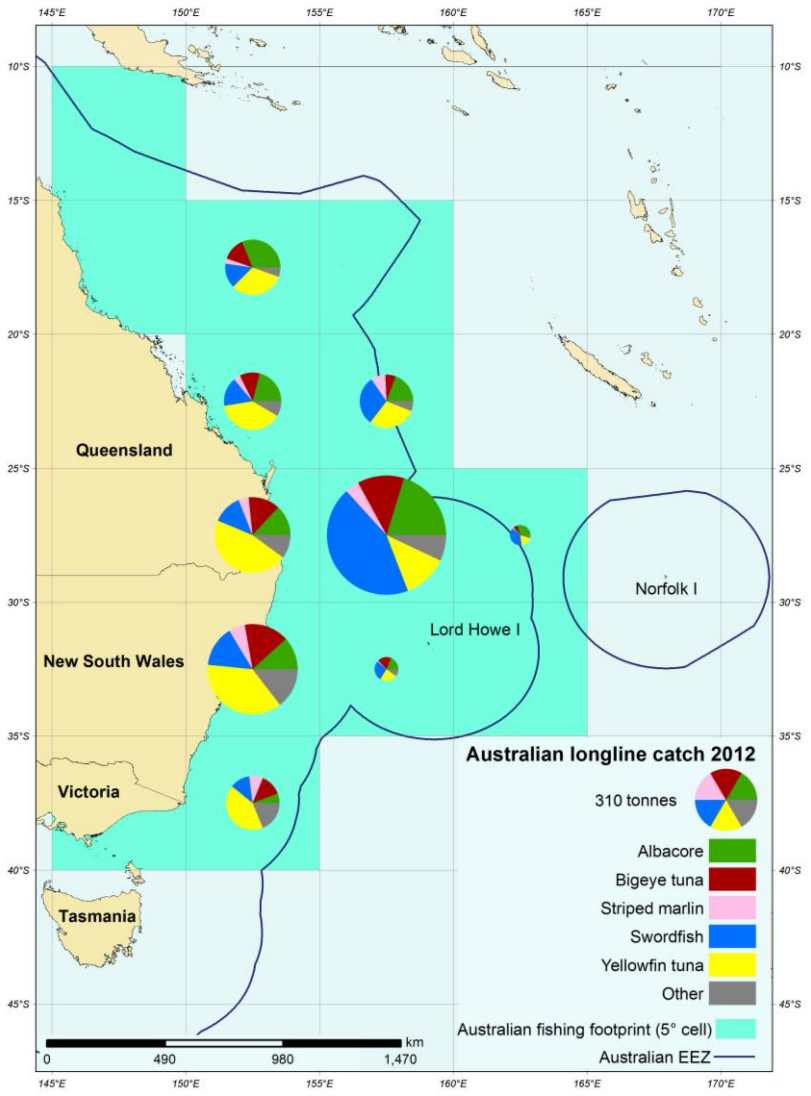
Queensland
New South Wales
Victoria
Tasmania
Lord Howe I
Norfolk I
Australian longline catch 2011
300 tonnes
Albacore
Bigeye tuna
Striped marlin
Swordfish
Yellowfin tuna
Other
Australian fishing footprint (5° cell)
Australian EEZ
km
0
490
980
1,470

c)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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
km
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490
980
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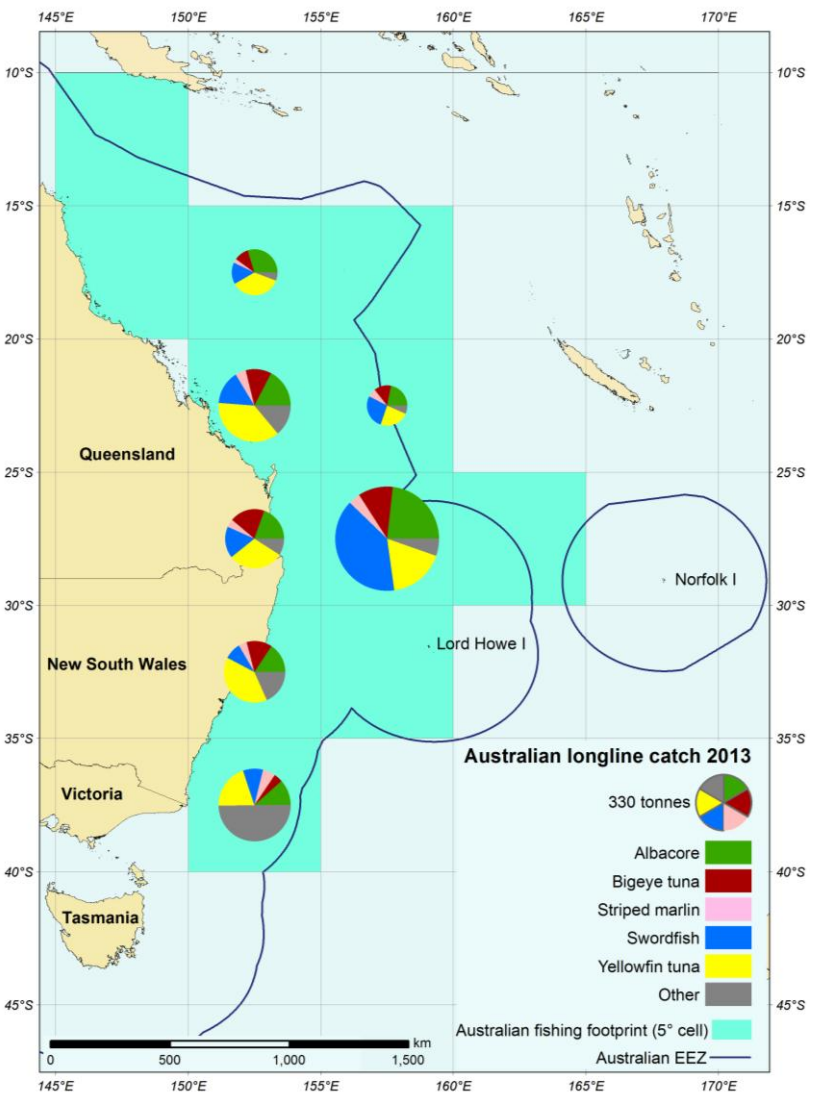
d)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New South Wales
Victoria
Tasmania
Lord Howe I
Norfolk I
Australian longline catch 2013
330 tonnes
Albacore
Bigeye tuna
Striped marlin
Swordfish
Yellowfin tuna
Other
Australian fishing footprint (5° cell)
Australian EEZ
km
0
500
1,000
1,500

e)

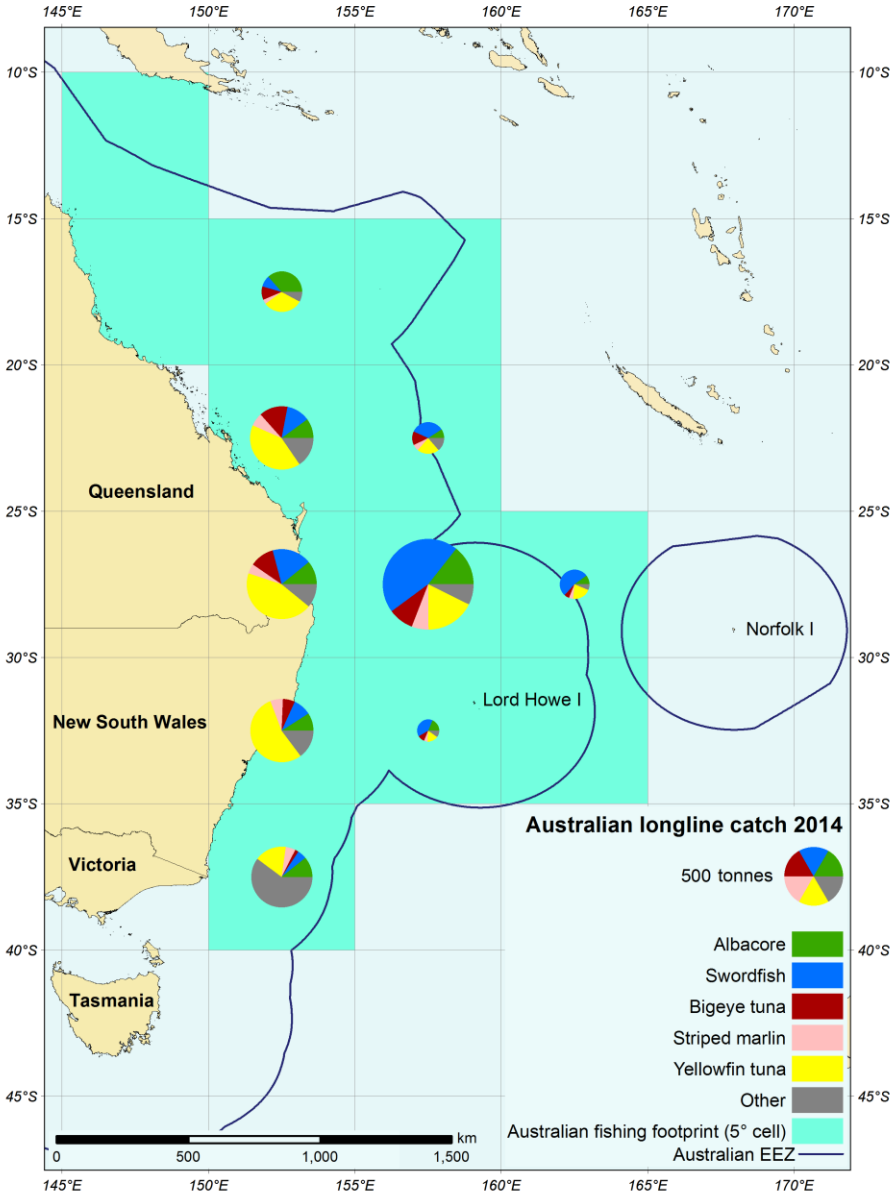


Figure 3 (a–e). Annual distributions of target species catch by the Australian longline fleet active in the WCPFC Convention Area, for 2010–14. Catches have been aggregated to five degree blocks to address issues of confidentiality and are scaled to the pie chart provided in the legend. Fishing footprint shows the total extent of waters fished 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 2010–14 are presented in Table 2. Estimates of releases derived from logbooks are in Table 3. 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 in 2014. Of the 40 oceanic whitetips observed caught, 35 were released alive, two were dead, the fate of one is unknown and two were retained. Appropriate compliance measures, including warnings and education, were applied by AFMA in response. Similarly, from 1 July 2014, retention of silky sharks has been prohibited. In the 2014 calendar year 15 silky sharks were observed caught in the ETBF; all 15 sharks were released alive.

In addition, under CITES listings hammerhead sharks must be reported by species from 14 September 2014. For the purposes of this report however, we have continued to group

hammerheads into a single group for consistency in data presentation. Further restrictions on shark catches in the ETBF can be found at http://www.afma.gov.au/wp-content/uploads/2014/08/ETBF-management-arrangements-booklet-2015.pdf.

Retention of both blue marlin and black marlin by commercial longliners has been prohibited since 1998 and no retained catches were recorded in 2014. 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).

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

In 2014, there were no active purse-seine vessels in the Eastern Skipjack Fishery and no interactions with whale sharks were recorded (CMM 2012-06). Total minor line catches in the ETBF (including pole and line, trolling, rod-and-reel and handline) increased from 8 t in 2013 to 22 t in 2014. This catch was mainly composed of bigeye tuna (18.8 t). The number of vessels reporting using minor line in the ETBF has steadily decreased from a peak of 52 vessels in 2001 to 4 in 2014 (1 pole and line and 3 handline). Minor line effort for 2013 was 95 lines and, for 2014, while not available, was most likely higher than this given the increase in catch. Minor line effort peaked in 2007 with 975 lines. 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 very small proportion of total catches and occurred inside the AFZ.

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 2010–14.

Group	Species	Longliners (t)					Other methods combined (t)				
		2010	2011	2012	2013	2014	2010	2011	2012	2013	2014
Scalefish	Escolar	27.2	24.6	23.0	9.1	3.5	0.0	0.0	0.0	0.0	0.0
	Lancetfish	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mahi mahi	259.2	211.7	66.3	84.0	236.4	0.0	0.1	0.0	0.1	0.0
	Moonfish	35.1	24.9	22.9	12.8	13.1	0.0	0.0	0.0	0.0	0.0
	Ocean sunfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Oilfish	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ray's bream	13.0	4.2	20.2	16.6	16.6	0.0	0.0	0.0	0.1	0.0
	Rudderfish	88.9	41.1	59.4	37.5	31.3	0.0	0.0	0.0	0.0	0.0
	Sailfish	1.0	0.7	0.8	1.1	0.7	0.0	0.0	0.0	0.0	0.0
	Shortbill spearfish	16.6	13.1	6.7	9.9	8.0	0.0	0.0	0.0	0.0	0.0
	Wahoo	19.6	20.6	13.4	17.6	7.7	0.0	0.0	0.0	0.0	0.0
	Subtotal	612.4	425.2	269.4	501.0	662.1	0.0	1.2	0.0	0.2	0.0
Sharks	Blacktip shark	0.8	4.9	3.6	1.5	0.0	0.0	9.6	0.0	0.1	0.0
	Blue shark	13.2	8.6	11.7	13.5	2.9	0.0	0.2	0.0	0.1	0.0
	Bronze whaler	9.5	9.6	7.2	4.3	2.4	0.0	4.4	4.0	2.5	0.0
	Dusky shark	2.8	1.8	5.1	2.8	0.4	5.3	5.2	3.0	0.0	0.0
	Hammerhead	3.2	4.9	3.9	3.2	1.0	0.0	0.0	0.0	0.0	0.0
	Longfin mako	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	Oceanic whitetip	2.9	1.9	2.7	3.5	0.3	0.0	0.0	0.0	0.0	0.0
	Porbeagle	0.3	0.3	0.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0
	Shortfin mako	45.1	46.1	58.9	38.5	26.2	0.4	4.1	4.3	0.4	0.1
	Silky shark	0	0	0.2	1.4	2.0	0.0	0.0	0.0	0.0	0.0
	Thresher shark	0.2	0.5	1.1	0.4	0.2	0.0	0.0	0.0	0.0	0.0
	Tiger shark	3.7	3.5	5.0	3.1	0.7	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	82.0	82.2	99.7	72.9	36.1	5.7	23.5	11.3	3.1	0.1
	TOTAL	**694.5**	**507.4**	**369.1**	**573.9**	**698.2**	**5.7**	**24.7**	**11.3**	**3.3**	**0.1**

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 2010–14.

Group	Species	2010	2011	2012	2013	2014
Scalefish	Black marlin	293	270	473	800	1044
	Blue marlin	254	192	314	456	776
	Escolar	40	176	399	260	76
	Lancetfish	15 396	8498	6657	9576	10 129
	Mahi mahi	198	346	127	131	559
	Moonfish	3	3	4	1	9
	Ocean sunfish	273	396	522	534	658
	Oilfish	1	11	0	0	2
	Ray's bream	18	7	34	11	46
	Rudderfish	135	112	776	572	928
	Sailfish	2	5	12	54	33
	Shortbill spearfish	56	41	11	49	27
	Wahoo	19	49	51	39	43
	Subtotal	16 688	10 106	9380	12 537	14 330
Sharks	Blacktip sharks	9	14	7	2	1
	Blue shark	4441	3229	3180	6815	5384
	Bronze whaler	288	975	322	328	411
	Dusky shark	237	304	379	412	496
	Hammerhead	33	140	180	76	88
	Longfin mako	1	1	3	8	7
	Oceanic whitetip	227	291	239	442	604
	Porbeagle	0	1	2	3	2
	Shortfin mako	326	355	400	448	305
	Silky shark	29	69	47	110	202
	Thresher shark	52	132	165	118	279
	Tiger shark	68	102	200	168	151
	Whale shark	0	0	0	0	0
	Subtotal	5711	5613	5124	8930	7930
	TOTAL	**22 399**	**15 719**	**14 504**	**21 467**	**22 260**

Table 4. Catch and effort by Australian longliners, by primary species, within the AFZ and on the high seas, 2010–14. 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	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	6725	650.4	367.5	2.0	1857.6	284.5	896.5
		(99.5%)	(99.9%)	(99.6%)	(100.0%)	(99.6%)	(99.0%)	(98.6%)
	2012	6727	557.9	471.9	2.7	1118.4	231.3	999.6
		(99.0%)	(99.0%)	(99.0%)	(100.0%)	(99.4%)	(99.3%)	(98.6%)
	2013	6707	630.5	412.8	2.6	1121.9	212.8	871.1
		(99.0%)	(98.0%)	(98.9%)	(99.5%)	(99.4%)	(98.5%)	(96.9%)
	2014	6857	554.6	407.0	2.1	1461.2	243.4	1012.4
		(99.0%)	(98.8%)	(98.9%)	(100.0%)	(99.4%)	(99.1%)	(98.2%)
High seas	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	37	0.9	1.4	0	8.2	2.9	13.0
		(0.5%)	(0.1%)	(0.4%)	(0.0%)	(0.4%)	(1.0%)	(1.4%)
	2012	65	5.9	4.8	0	7.2	1.8	14.6
		(1.0%)	(1.0%)	(1.0%)	(0.0%)	(0.6%)	(0.8%)	(1.4%)
	2013	70	12.9	4.5	0	6.4	3.3	27.4
		(1.0%)	(2.0%)	(1.1%)	(0.0%)	(0.6%)	(1.5%)	(3.1%)
	2014	71	6.8	4.5	0	8.6	2.2	18.3
		(1.0%)	(1.2%)	(1.1%)	(0.0%)	(0.6%)	(0.9%)	(1.8%)

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.

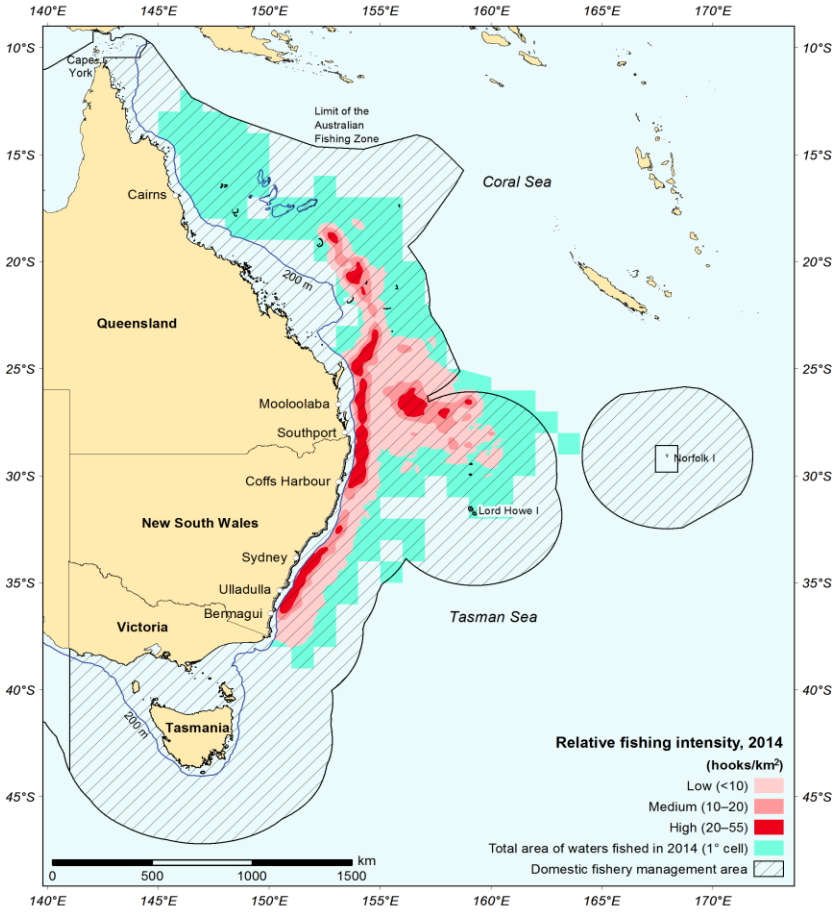


Figure 4. Longline effort distribution in the Eastern Tuna and Billfish Fishery (2014). Fishing footprint shows the total extent of waters fished at a spatial resolution of one degree square.

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 1400+ hooks. Fishers commonly operate around 150 days per year. Most trips are between 2 and 15 days and typically range from 40–300 nm from port. 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. 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 2010 to 2014. 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	0–50	Unknown	
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
2014	18	21	0	40	2*	1	0	43

*Note that the size of one purse seine vessel was not recorded but is most likely in the category listed.

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 the Environment on a quarterly basis. A summary of these interactions, from logbooks, is presented in Table 6. Life status of the animal involved in the interaction is also recorded. In 2014, interactions were recorded with 6 green turtles (5 alive; 1 unknown condition), 4 leatherback turtles (all alive), 1 unidentified turtle (alive), one black-browed albatross (dead) and one shy albatross (dead).

Observed captures are reported in Table 7. In 2014, there was one observed capture of a marine mammal (alive), 4 captures of sea turtles (4 alive) and two captures of seabirds (dead).

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 2014, 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 2014.

Table 6. Interactions with species of special interest recorded in logbooks for the Australian longline fleet in the WCPFC Convention Area, 2010–14. Interactions not identified to species level are noted as unspecified (unspec).

Group	Common name	2010	2011	2012	2013	2014
Seabirds	Black-browed albatross	0	0	0	0	1
	Shy albatross	0	0	0	0	1
	Yellow-nosed albatross	1	0	0	0	0
	Albatrosses (unspec)	1	0	0	0	0
	Sooty shearwater	2	0	0	0	0
	Subtotal	4	0	0	0	2
Turtles	Green turtle	7	6	4	6	6
	Hawksbill turtle	1	0	0	0	0
	Leatherback turtle	11	2	5	7	4
	Loggerhead turtle	4	0	0	3	0
	Turtles (unspec)	2	1	1	0	1
	Subtotal	25	9	10	16	11
	Melon-headed whale	1	0	0	0	0
	Short-finned pilot whale	2	2	0	0	0
	Dolphin (unspec)	0	0	0	1	0
	New Zealand fur seal	0	0	0	1	0
	Subtotal	4	2	0	2	0
	TOTAL	**33**	**11**	**10**	**18**	**13**

Table 7. Observed captures of species of special interest for the Australian longline fleet in the WCPFC Convention Area, 2010–14. Interactions not identified to species level are noted as unspecified (unspec).

Group	Common name	2010	2011	2012	2013	2014
Seabirds	Black-browed albatross	0	0	0	0	2
	Shy albatross	0	0	1	0	0
	Yellow-nosed albatross	1	0	0	0	0
	Albatrosses (other)	0	3	0	0	0
	Cape petrel	0	1	0	0	0
	Great crested tern	0	1	0	0	0
	Subtotal	1	5	1	0	2
Turtles	Green turtle	1	10	5	6	1
	Hawksbill turtle	1	0	0	0	0
	Leatherback turtle	2	2	3	2	1
	Loggerhead turtle	1	0	0	1	2
	Pacific (Olive) Ridley	0	1	0	0	0
	Turtles (unspec)	0	0	1	0	0
	Subtotal	5	13	9	9	4
Mammals	Dolphin (unspec)	0	0	0	2	0
	Long-finned pilot whale	0	2	0	0	0
	Short-finned pilot whale	3	0	0	0	1
	Australian fur seal	0	0	0	4	0
	Subtotal	3	2	0	6	1
	TOTAL	**9**	**20**	**10**	**15**	**7**

Table 8a and 8b. Effort and observed seabird captures by fishing year for the ETBF south of 30°S (a) and for 23°N – 30°S (b) . No seabird captures have been observed north of 23°N as there was no effort. 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). Note that 4500 hooks could not be included as location of the set was not provided. 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
2010	35	2441	108	4.4	1	0.009
2011	39	2228	144	6.5	2	0.014
2012	35	2071	141	6.8	1	0.007
2013	31	1890	98	5.2	0	0.0
2014	26	1567	49	3.1	2	0.041

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
2010	45	5434	176	3.2	0	0.0
2011	45	4534	275	6.1	3	0.011
2012	40	4721	257	5.4	0	0.0
2013	32	4887	319	6.5	0	0.0
2014	34	5357	146	2.7	0	0.0

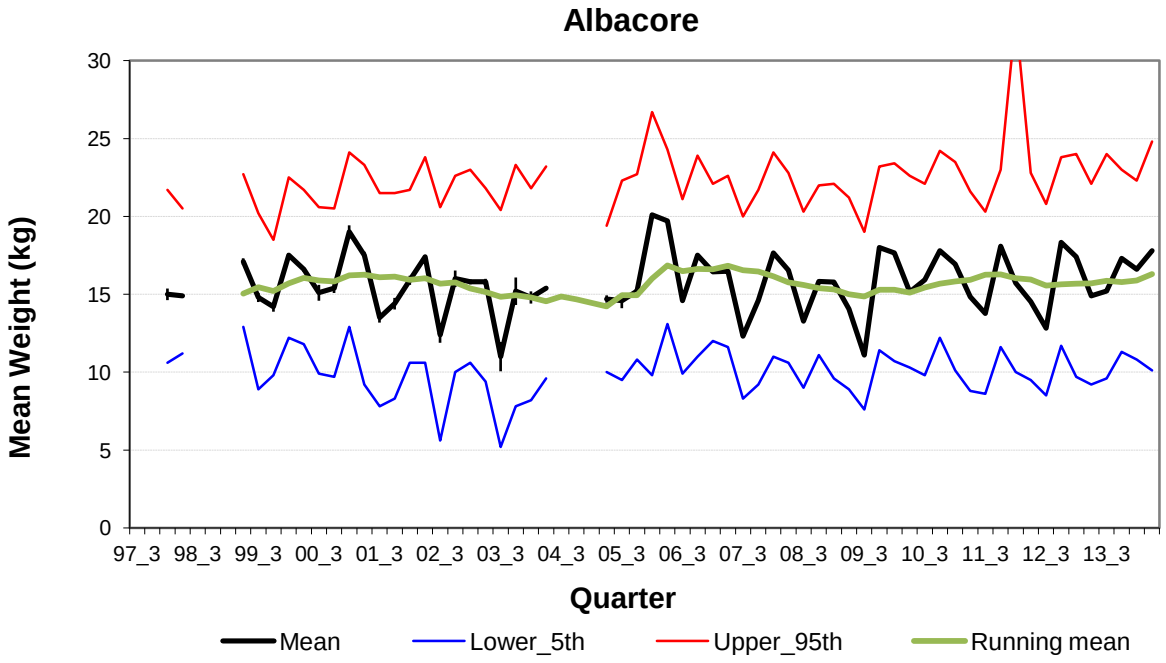
Table 9. Number of observed seabird captures in the ETBF, 2014, by species and area.

Species	South of 30°S	North of 23°N	23°N–30°S	Total Captures
Black-browed albatross	2	0	0	2
Total	**2**	**0**	**0**	**2**

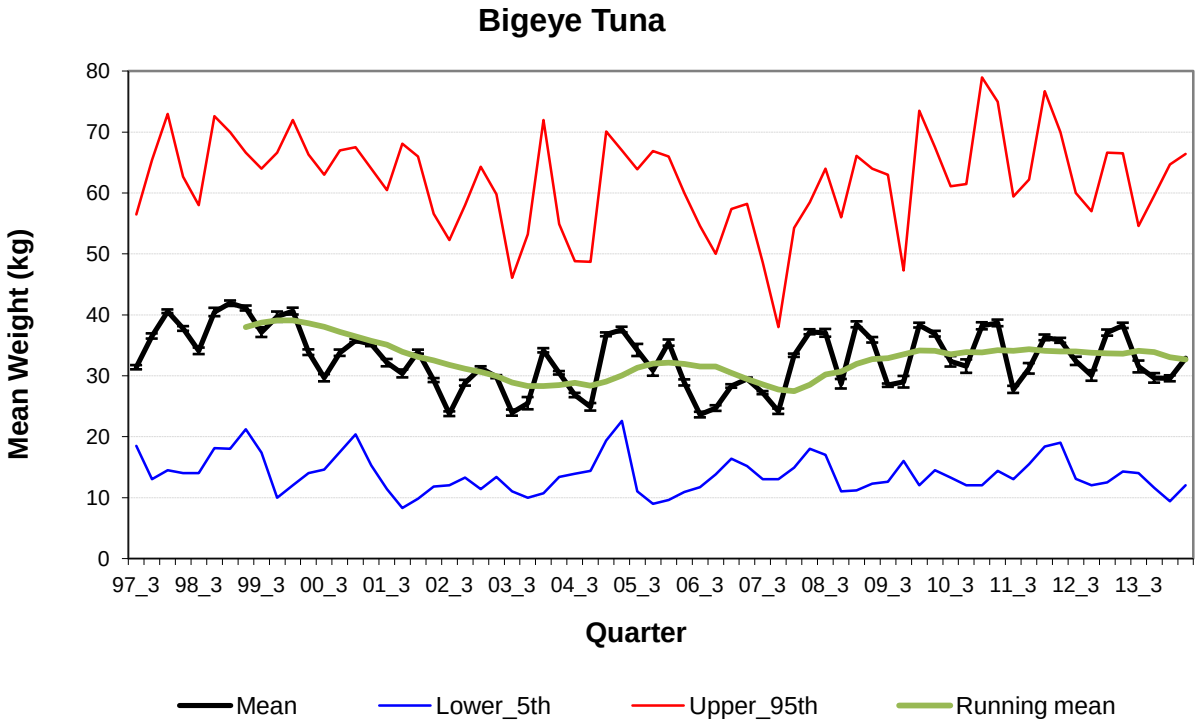
Trends in size composition of retained catch

The size composition (based on processed weights) of yellowfin tuna shows both seasonal and inter-annual 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, decreasing slightly in 2014. 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 since remained near this value. 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 decreased slightly to around 64 kg during 2014. The running mean whole weight of albacore has varied between 14–17 kg between 1999 and 2014 but shows no trend over this period.

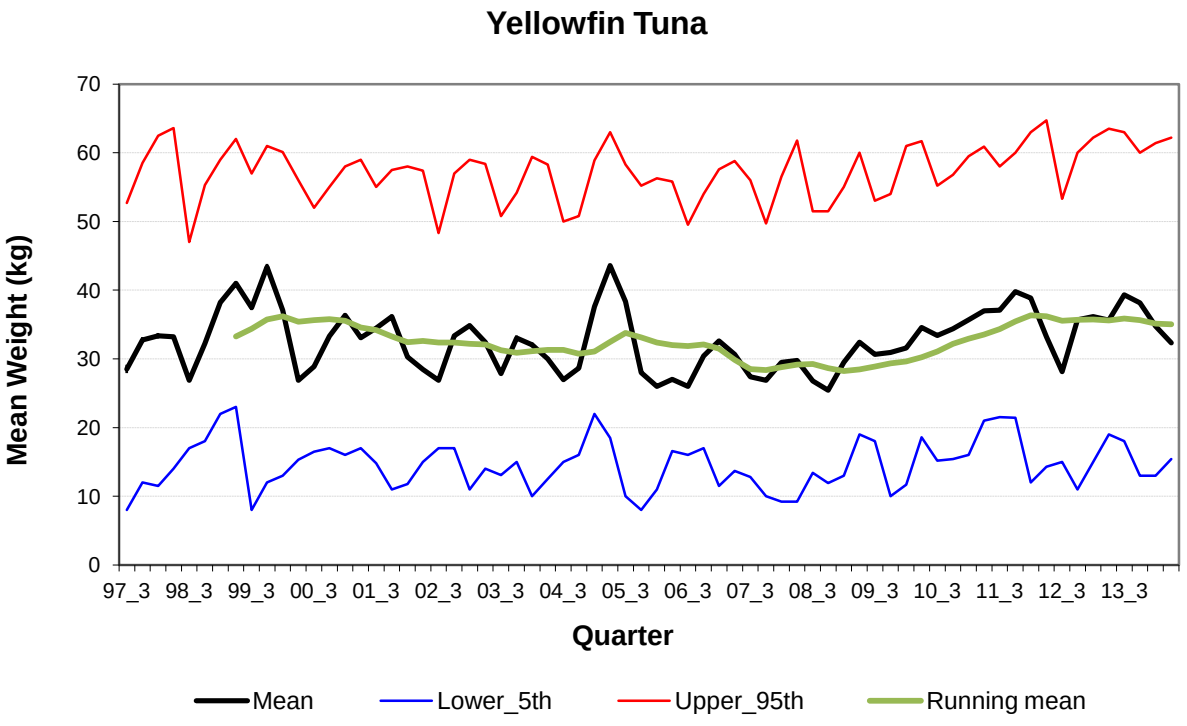
a)



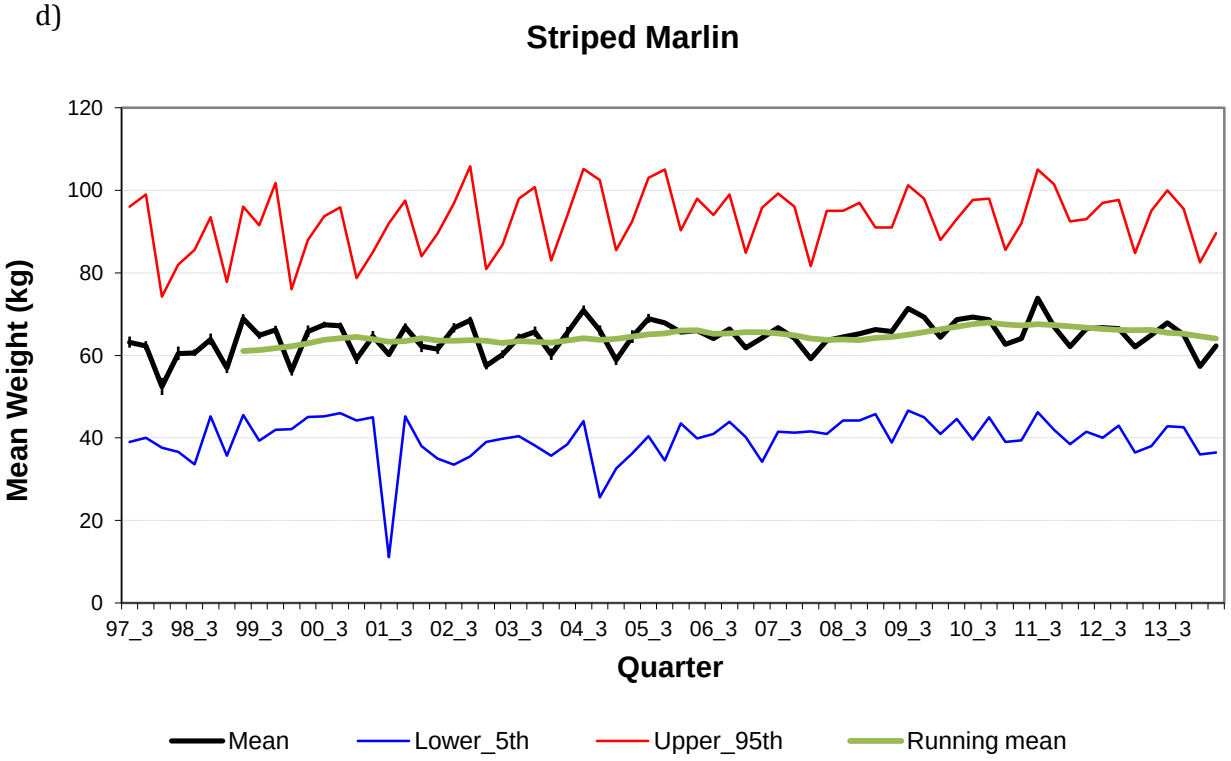
b)


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 13_3
Quarter
Mean
Lower_5th
Upper_95th
Running mean

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 13_3
Quarter
Mean
Lower_5th
Upper_95th
Running mean

d)



e)

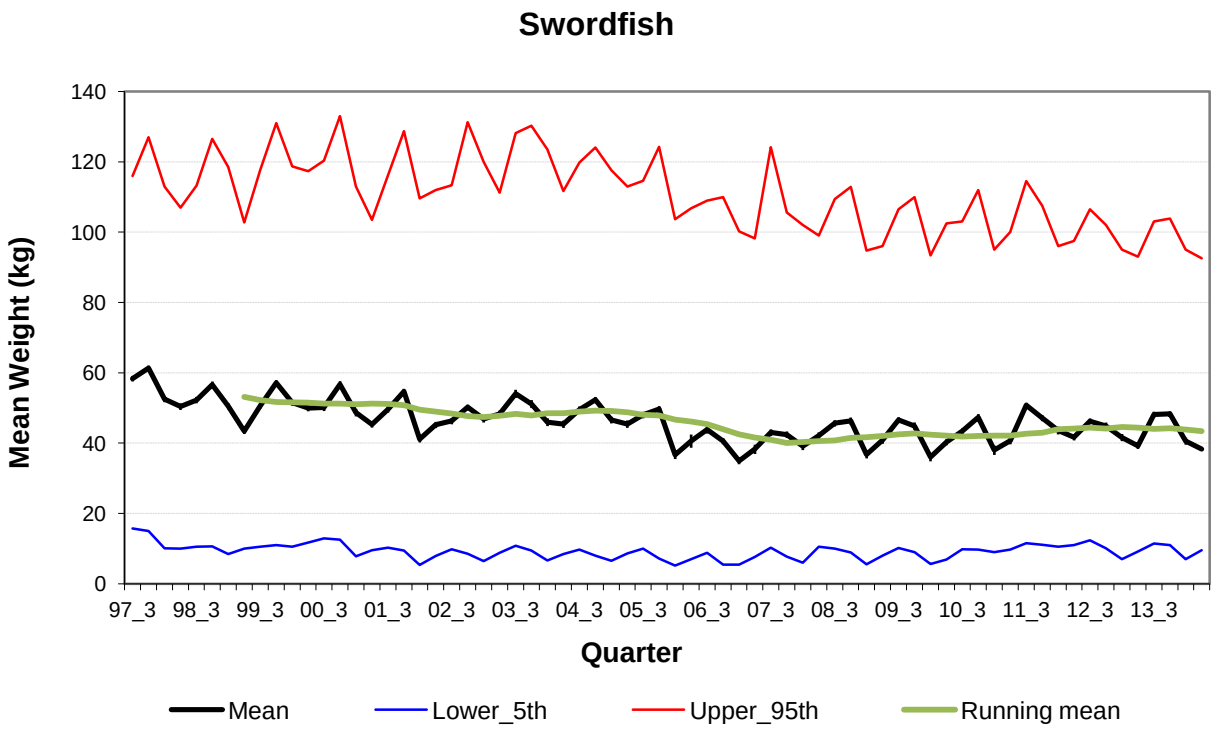


Figure 5 (a–e). Time series of quarterly mean, 8 month running mean, lower 5th and upper 95th percentiles processed weights of a) albacore, b) bigeye tuna, c) yellowfin tuna, d) striped marlin and e) swordfish sampled across the entire ETBF based on the data collected from the port sampling programme.

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

During 2013–14, the gross value of production (GVP) for the ETBF was $31.2 million, representing a 22 per cent increase from 2012–13. Yellowfin tuna accounted for the highest proportion of total GVP, contributing $14.4 million or 46 per cent of value. In 2013–14, production volume of yellowfin tuna and unit price increased by 26 per cent and 15 per cent, respectively. Swordfish contributed $7.2 million, or 23 per cent of total GVP in 2013–14. The volume and unit price for swordfish increased by 11 per cent and 35 per cent, respectively. This resulted in a 53 per cent increase from 2012–13 in the gross value of ETBF swordfish production. Bigeye tuna contributed $4.7 million to GVP or 15 per cent of the total. The production volume remained largely unchanged from 2012–13, however real unit prices increased by 6 per cent.

5 Dispatch of catch

In 2013–14, the principal destination for Australian exports of fresh, chilled or frozen albacore, bigeye and yellowfin tuna (the three key species of tuna caught in the WCPFC) was Japan. Out of the 1118 t of fresh, chilled or frozen albacore, bigeye and yellowfin Australia exported in 2013–14, Japan received 570 t (51 per cent). This was followed by the United States (219 t or 20 per cent), Spain (143 t or 13 per cent) and Samoa (107 t or 10 per cent).

In value terms, Japan received 61 per cent ($4.8 million) of Australian exports of fresh, chilled or frozen albacore, bigeye and yellowfin tuna in 2013–14, with the United States and Spain accounting for 26 per cent ($2.0 million) and 5 per cent ($0.4 million), respectively.

Swordfish is the second highest species group landed in the ETBF with the export market for Australian swordfish dominated by the United States and Japan. In 2013–14, the United States imported 251 t of swordfish, representing 57 per cent of total Australian swordfish exports. This was followed by Japan with 43 per cent (192 t). In value terms, the shares of Australian swordfish exports to the United States and Japan were also 57 per cent ($2.2 million) and 43 per cent ($1.7 million), respectively.

6 Onshore developments

Nil

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. Business conditions (particularly the terms of trade) have improved recently and this may provide opportunity for increased fishing activity within management restrictions.

In February 2015, the AFMA Commission agreed on total allowable commercial catches (TACCs) for the commercial sector of the ETBF. These apply to the 2015–16 season which commenced on 1 March 2015. The TACCs for the five main target species are: albacore (2500 t); bigeye tuna (1056 t); swordfish (1381 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. From 1 July 2015 logbooks will be verified through e-monitoring.

Observer programme

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 2014, observers monitored 195 032 hooks in the longline fishery (2.8 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 will be compulsory for all ETBF longline vessels from 1 July 2015. E-monitoring will replace human observers in the ETBF for all in-zone observer requirements

Port sampling programme

The collection of individual processed fish weights from processors receiving longline caught fish from the ETBF commenced in mid-1997. The programme 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 17 year period from July 1997 to June 2014 over 1.62 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 2013 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 251 828 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 769 923 fish (including 490 616 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, 2010–14.

Gear	Year	Operational catch & effort coverage	Observer coverage	Port sampling coverage					
				YFT	BET	ALB	SWO	STM	SKJ
Longline[a]	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	100	6.2	81	87	12	90	84	0
	2014[b]	100	2.8	82	93	15	92	73	0
Purse seine	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
	2014	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 2014

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 programme. Weight estimates are also derived from the size-monitoring programme, 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 2014.

Table 11. Annual catch estimates (converted whole weights) for the ETBF for 2010–14 derived from catch disposal records. Estimates are in tonnes.

Year	Albacore	Yellowfin	Bigeye	Striped marlin	Swordfish	Other	Total
2010	872.3	1549.0	521.9	278.6	1176.1	839.2	5237.1
2011	771.0	2156.5	445.1	330.2	1080.5	617.7	5401.0
2012	708.8	1258.9	552.7	261.8	1156.8	425.4	4364.4
2013	772.9	1341.2	488.9	251.0	1062.1	317.5	4233.6
2014	736.8	1685.1	489.8	273.2	1182.8	862.4	5230.1

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 2014 there was a 97.9 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 programme 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 programmes, key areas of research over the last twelve 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 southwest Pacific swordfish (Wilcox 2012)
- Determination of swordfish growth and maturity relevant to the southwest Pacific stock (Farley ongoing)

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 programme (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)
- Data management, assessment and implementation of harvest strategies for Australia's tropical tuna fisheries (Campbell ongoing)
- Developing innovative approaches to improve CPUE standardisation for Australia's multi-species longline fisheries (Campbell ongoing)
- Development of an approach to harvest strategy management of internationally managed multi-species fisheries (Hillary et al. in final stages)

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)
- The effects of propeller turbulence on sink rates of baited hooks (Robertson & Candy 2014)
- Development of an underwater bait setting system (Robertson et al. 2015)

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 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*
Whale shark	*Rhincodon typus*
Yellowfin tuna	*Thunnus albacares*
Yellow-nosed albatross	*Thalassarche chlororhynchos*

Appendix B: Mandatory mitigation measures in the ETBF 2015

(Source: AFMA website: http://www.afma.gov.au/wp-content/uploads/2014/08/ETBF-management-arrangements-booklet-2015.pdf

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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