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Annual report to the Western and Central Pacific Fisheries Commission

Part 1: Information on fisheries, research and statistics 2015 Australia

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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 of WCPFC species of interest reported in logbooks for the ETBF increased from 3796 t (including 22 t minor line) in 2014 to 4565 t in 2015 (including <1 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 8.22 million hooks in 2015. 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. Thirty-nine vessels reported longlining in the WCPFC Convention Area during 2015. Longline logbook catches of albacore increased from 561 t in 2014 to 733 t in 2015. Similarly, longline catches of bigeye tuna increased from 412 t in 2014 to 677 t in 2015. Longline catches of yellowfin tuna increased from 1470 t in 2014 to 1918 t in 2015. Longline catches of swordfish decreased from 1031 t in 2014 to 909 t in 2015. Longline catches of striped marlin increased slightly from 246 t in 2014 to 287 t in 2015 t while longline catches of skipjack increased slightly from ~2 t in previous years to 3.5 t in 2015.

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 2015, there were three vessels actively targeting tuna and billfish species using minor line in the ETBF (1 troll and 2 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 2015.

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. AFMA conducted a trial of e-monitoring (i.e. on-board, fixed-mount digital video cameras) in 2009–10 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 became compulsory from 1 July 2015 for vessels operating within the Australian Exclusive Economic Zone. As a minimum, 10 per cent of the hauls are reviewed and used to acquit information provided in logbooks. The total number of hooks observed from both the e-monitoring system and by human observers in 2015 was 482 623, which is 5.87 per cent of the hooks deployed.

In February 2016, the AFMA Commission agreed on total allowable commercial catches (TACCs) for the ETBF. These apply to the 2016–17 season which commenced on 1 March 2016. The TACCs for the five main target species are: albacore (2500 t); bigeye tuna (1056 t); swordfish (1373 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 and has a membership of several thousand 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. Thirty-nine vessels reported longlining in the WCPFC Convention Area during 2015, down from a peak of 180 in 1997 (Figure 1). Total longline effort increased from 6.93 million hooks in 2014 to 8.22 million hooks in 2015 (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 2015 fishing for striped marlin south of 15°S was 39. Thirty-seven vessels fished for albacore and 36 fished for swordfish south of 20°S; there was no effort for albacore north of the equator.

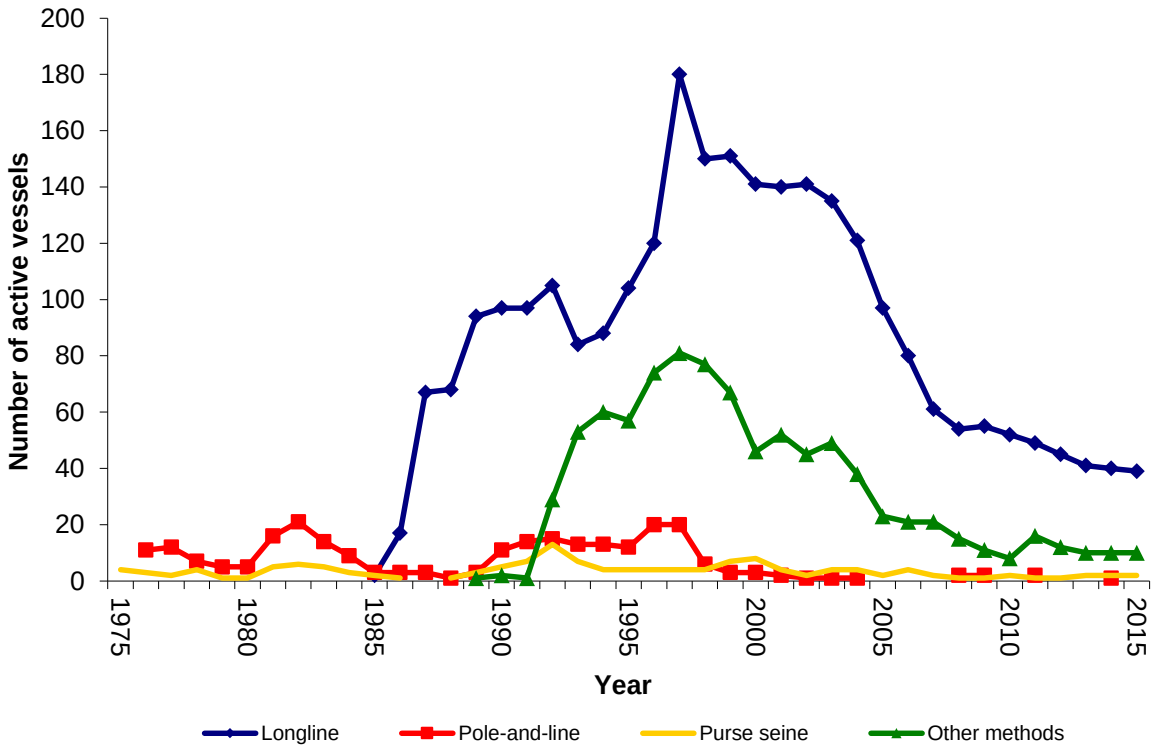


Figure 1. Historical annual vessel numbers for the Australian fleet, by gear (longline, purse seine, pole-and-line and other commercial methods [minor line including trolling, rod-and-reel and handline]) for the WCPFC Convention Area.

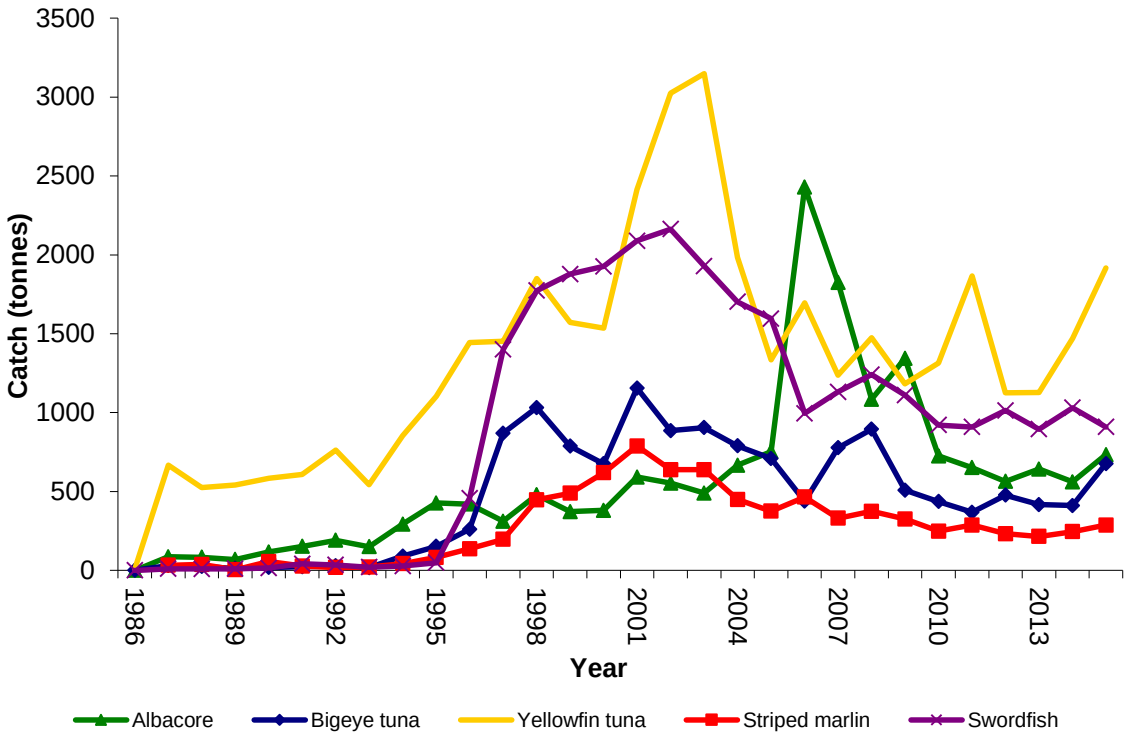
Table 1. Annual catch and effort estimates (whole weight) for the Australian fleet, by gear and primary species, for the WCPFC Convention Area, 2011–15.

Fishing method	Year	Effort [a]	Primary species (t)					
			Albacore	Bigeye	Skipjack	Yellowfin	Striped marlin	Swordfish
All gears	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
	2015	-	733.4	677.0	3.5	1918.0	287.3	909.5
Longline [b]	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
	2015	8218	733.3	676.6	3.5	1918.0	287.3	909.5
Purse seine	2011	0	0	0	0	0	0	0
	2012	0	0	0	0	0	0	0
	2013	0	0	0	0	0	0	0
	2014	0	0	0	0	0	0	0
	2015	0	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 increased from 3796 t in 2014 to 4565 t in 2015. 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 increased from 561 t in 2014 to 733 t in 2015 (584 t caught south of 20°S) while bigeye tuna longline catches also increased from 412 t in 2014 to 677 t in 2015. Longline catches of yellowfin tuna increased from 1473 t in 2014 to 1918 t in 2015. Longline catches of swordfish decreased from 1031 t in 2014 to 909 t in 2015 (883 t caught south of 20°S). Longline catches of striped marlin increased slightly from 246 t in 2014 to 287 t in 2015 (all of which was caught south of 15°S). Longline catches of skipjack increased slightly from ~2 t in previous years to 3.5 t in 2015. Annual catch distributions of the main target species by the Australian longline fleet for 2011–15 are shown in Figure 3.

a)



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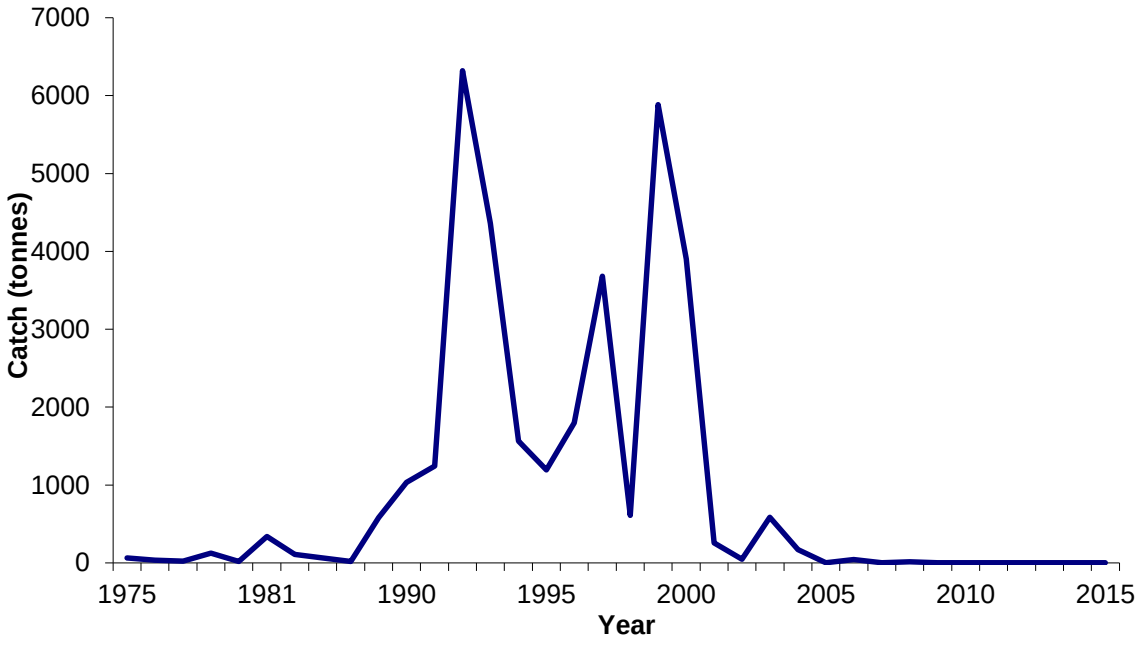
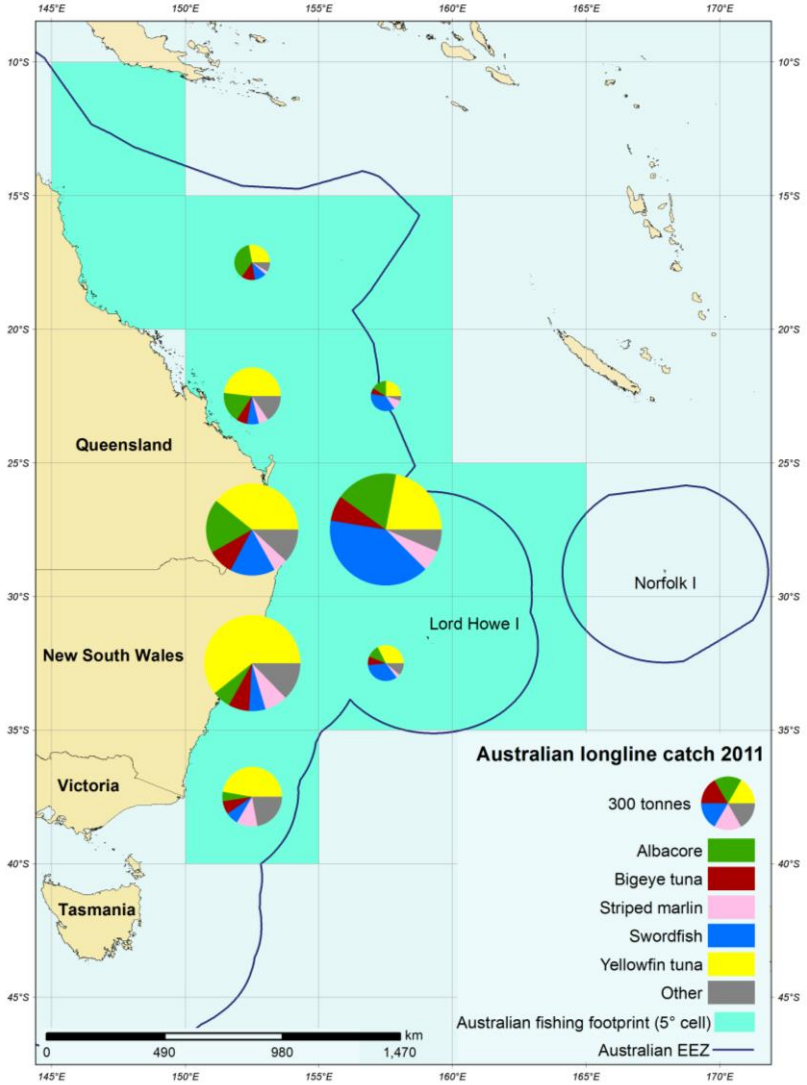
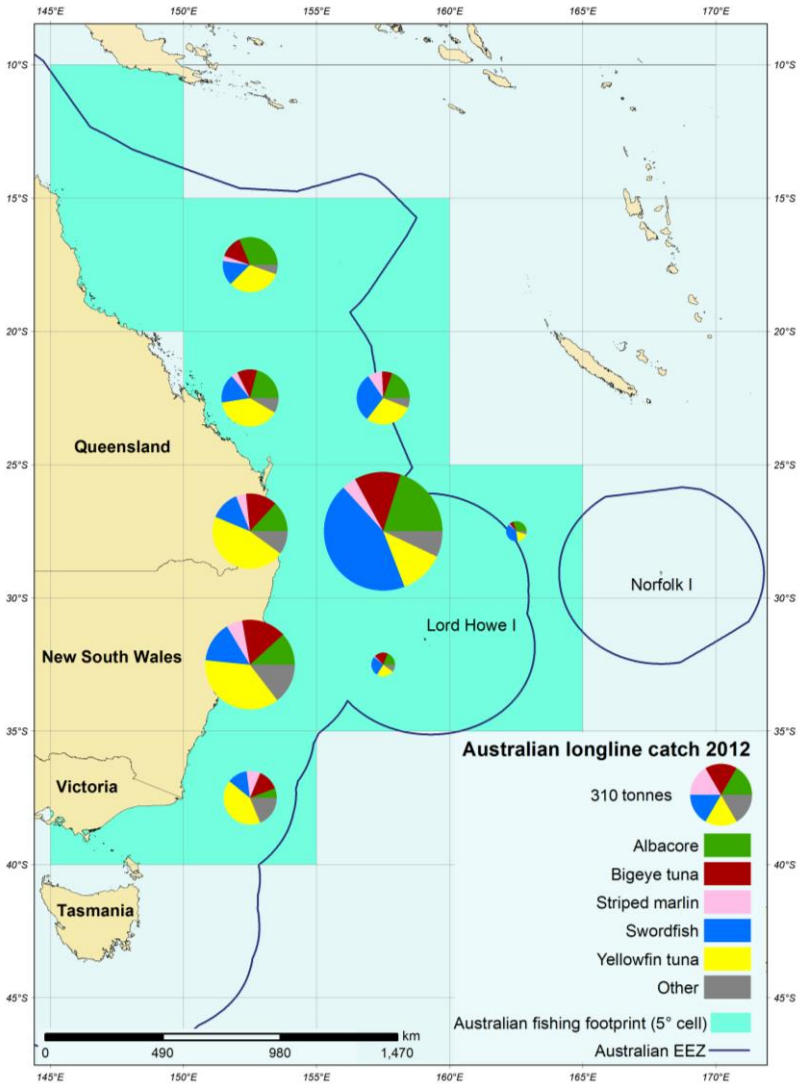


Figure 2. Historical annual longline catch in the WCPFC Convention Area for (a) albacore, bigeye tuna and yellowfin tuna, as well as striped marlin and swordfish, and (b) purse seine catch skipjack tuna.

a)


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

b)


Queensland
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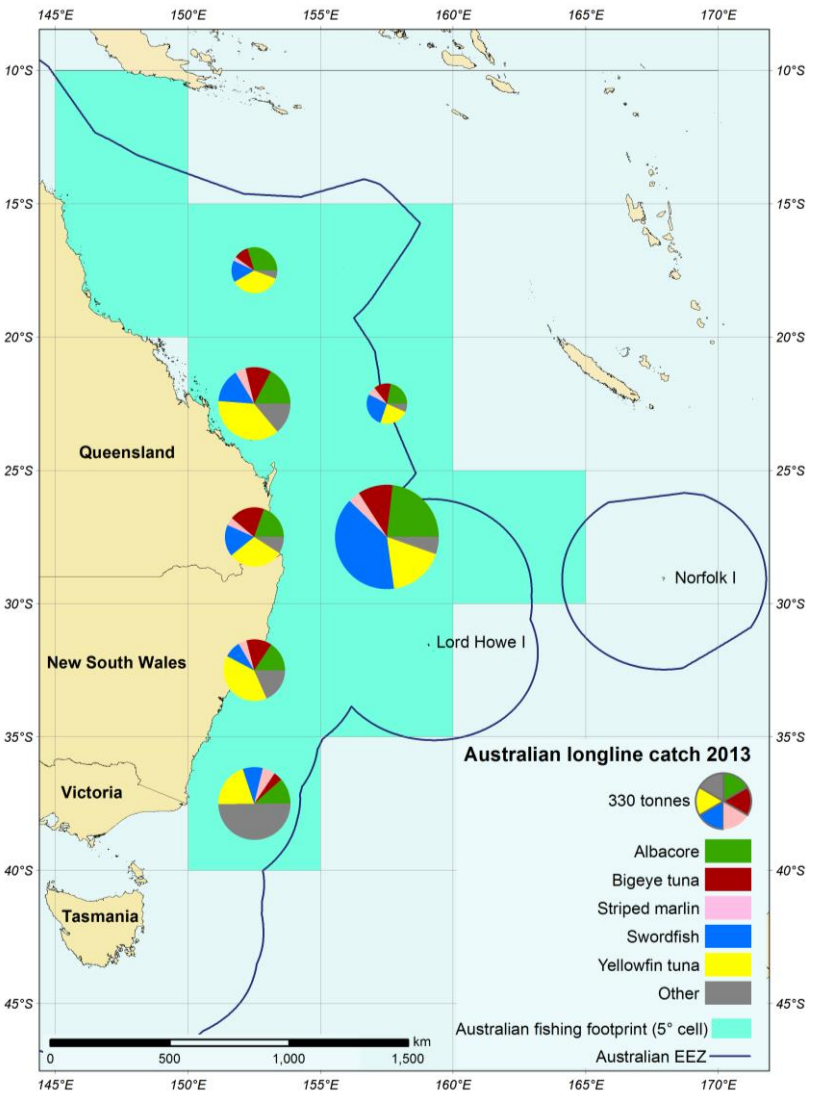
km

c)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Queensland
New South Wales
Victoria
Tasmania
Norfolk I
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330 tonnes
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Australian fishing footprint (5° cell)
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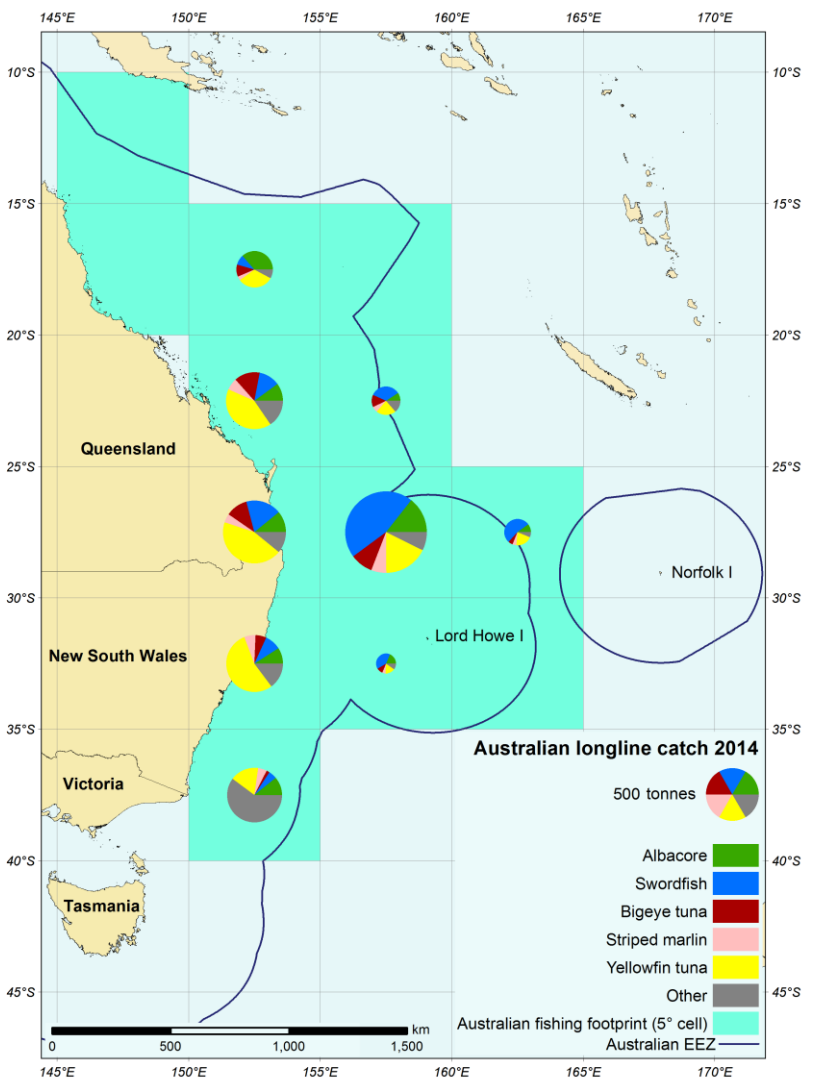
d)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Queensland
New South Wales
Victoria
Tasmania
Norfolk I
Lord Howe I
Australian longline catch 2014
500 tonnes
Albacore
Swordfish
Bigeye tuna
Striped marlin
Yellowfin tuna
Other
Australian fishing footprint (5° cell)
Australian EEZ
0
500
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km

e)

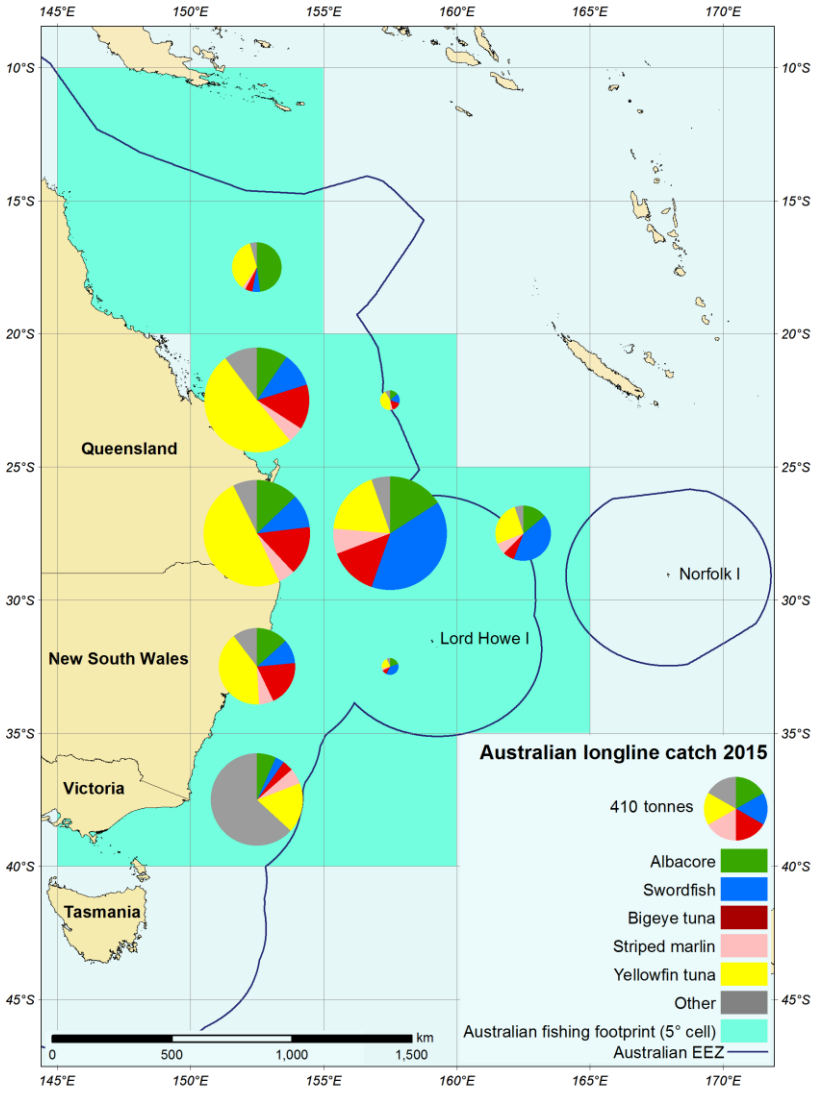


Figure 3 (a–e). Annual distributions of target species catch by the Australian longline fleet active in the WCPFC Convention Area, for 2011–15. Catches have been aggregated to five degree blocks to address issues of confidentiality and are scaled to the pie chart provided in the legend. Fishing footprint 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 2011–15 are presented in Table 2. Estimates of releases derived from logbooks are in Table 3. From July of 2015, the logbooks of the Australian longline fleet were subject to potential verification through close to 100 per cent electronic monitoring coverage. This has resulted in a rise in the levels of discards reported for 2015 in Table 3.

Since 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 2015. Of the 31 oceanic whitetips observed caught, 26 were released (21 alive and 5 in an undetermined condition) and 5 were dead. 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 and no retention was recorded in logbooks in 2015. In the 2015

calendar year 11 silky sharks were observed caught in the ETBF; 8 sharks were released alive and 3 were dead.

In addition, since 14 September 2014 hammerhead sharks must be reported by species under CITES listings. 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 2015. 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 2015, 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) decreased from 22 t in 2014 to <1 t in 2015. This catch was mainly composed of bigeye tuna (0.4 t). The number of vessels reporting using minor line in the ETBF has steadily decreased from a peak of 52 vessels in 2001 to 3 in 2015 (1 troll and 2 handline). Minor line effort for 2014 was 18 lines and for 2015 was 22 lines. 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 2011–15.

Group	Species	Longliners (t)					Other methods combined (t)				
		2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
Scalefish	Escolar	24.6	23.0	9.1	3.5	12.3	0.0	0.0	0.0	0.0	0.0
	Lancetfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mahi mahi	211.7	66.3	84.0	236.4	184.4	0.1	0.0	0.1	0.0	0.0
	Moonfish	24.9	22.9	12.8	13.1	10.6	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	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ray's bream	4.2	20.2	16.6	16.6	7.8	0.0	0.0	0.1	0.0	0.0
	Rudderfish	41.1	59.4	37.5	31.3	24.9	0.0	0.0	0.0	0.0	0.0
	Sailfish	0.7	0.8	1.1	0.7	0.4	0.0	0.0	0.0	0.0	0.0
	Shortbill spearfish	13.1	6.7	9.9	8.0	7.0	0.0	0.0	0.0	0.0	0.0
	Wahoo	20.6	13.4	17.6	7.7	5.8	0.0	0.0	0.0	0.0	0.0
	Subtotal	340.9	212.8	188.6	317.3	253.2	0.1	0.0	0.2	0.0	0.0
Sharks	Blacktip shark	4.9	3.6	1.5	0.0	0.0	9.6	0.0	0.1	0.0	0.0
	Blue shark	8.6	11.7	13.5	2.9	0.3	0.2	0.0	0.1	0.0	0.1
	Bronze whaler	9.6	7.2	4.3	2.4	0.7	4.4	4.0	2.5	0.0	0.0
	Dusky shark	1.8	5.1	2.8	0.4	0.3	5.2	3.0	0.0	0.0	0.0
	Hammerhead	4.9	3.9	3.2	1.0	0.3	0.0	0.0	0.0	0.0	0.0
	Longfin mako	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Oceanic whitetip	1.9	2.7	3.5	0.3	0.3	0.0	0.0	0.0	0.0	0.0
	Porbeagle	0.3	0.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Shortfin mako	46.1	58.9	38.5	26.2	20.3	4.1	4.3	0.4	0.1	0.0
	Silky shark	0	0.2	1.4	2.0	0.0	0.0	0.0	0.0	0.0	0.0
	Thresher shark	0.5	1.1	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0
	Tiger shark	3.5	5.0	3.1	0.7	0.2	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	82.2	99.7	72.9	36.1	22.5	23.5	11.3	3.1	0.1	0.1
	TOTAL	**423.1**	**312.5**	**261.5**	**353.4**	**275.7**	**23.6**	**11.3**	**3.3**	**0.1**	**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 2011–15.

Group	Species	2011	2012	2013	2014	2015
1026Scalefish	Black marlin	270	473	800	1044	1421
	Blue marlin	192	314	456	776	1442
	Escolar	176	399	260	76	405
	Lancetfish	8498	6657	9576	10 160	11 420
	Mahi mahi	346	127	131	559	935
	Moonfish	3	4	1	9	8
	Ocean sunfish	396	522	534	658	1505
	Oilfish	11	0	0	2	10
	Ray's bream	7	34	11	46	144
	Rudderfish	112	776	572	928	1026
	Sailfish	5	12	54	33	60
	Shortbill spearfish	41	11	49	27	62
	Wahoo	49	51	39	43	62
	Subtotal	10 106	9380	12 537	14 361	18 500
Sharks	Blacktip sharks	14	7	2	1	4
	Blue shark	3229	3180	6815	5385	9167
	Bronze whaler	975	322	328	411	755
	Dusky shark	304	379	412	496	1283
	Hammerhead	140	180	76	88	211
	Longfin mako	1	3	8	7	5
	Oceanic whitetip	291	239	442	604	1143
	Porbeagle	1	2	3	2	7
	Shortfin mako	355	400	448	305	1066
	Silky shark	69	47	110	202	514
	Thresher shark	132	165	118	283	596
	Tiger shark	102	200	168	151	375
	Whale shark	0	0	0	0	0
	Subtotal	5613	5124	8930	7935	15126
	TOTAL	**15 719**	**14 504**	**21 467**	**22 260**	**33 626**

Table 4. Catch and effort by Australian longliners, by primary species, within the AFZ and on the high seas, 2011–15. 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	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%)
	2015	8197	730.1	674.8	3.4	1915.5	286.1	906.8
		(99.8%)	(99.6%)	(99.7%)	(98.9%)	(99.9%)	(99.6%)	(99.7%)
High seas	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%)
	2015	20	3.2	1.7	0	2.4	1.2	2.6
		(0.2%)	(0.4%)	(0.3%)	(1.1%)	(0.1%)	(0.4%)	(0.3%)

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.

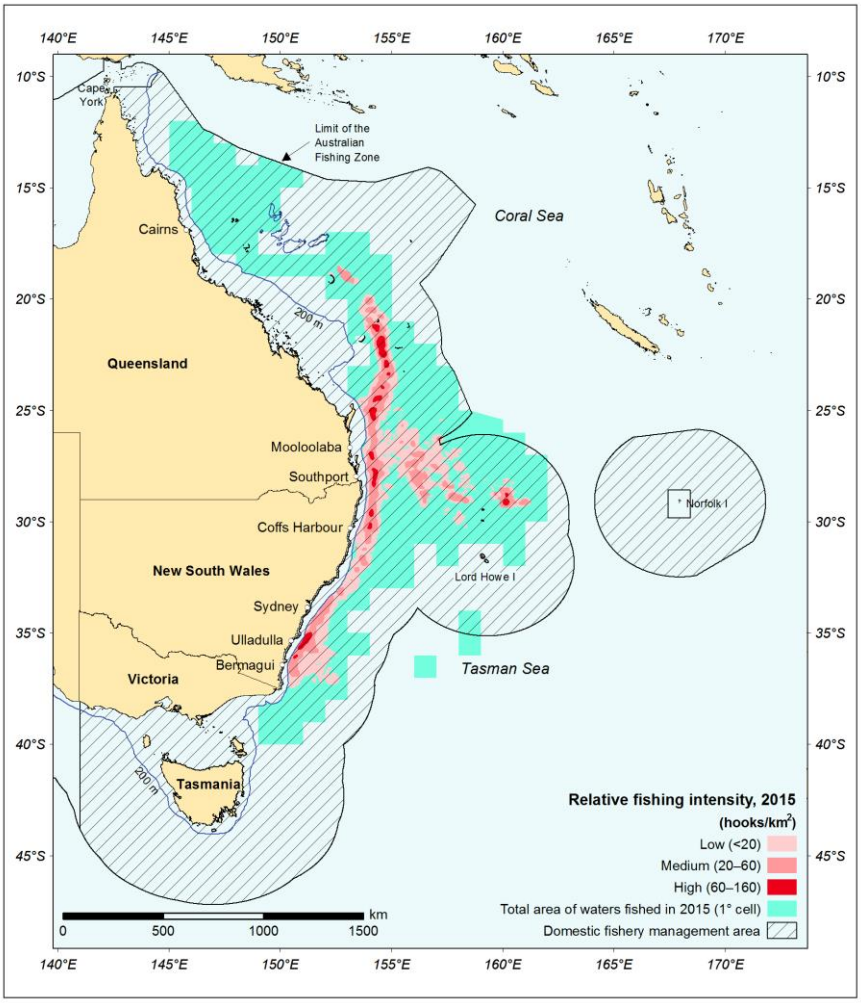


Figure 4. Longline effort distribution in the Eastern Tuna and Billfish Fishery (2015). Fishing footprint shows the total extent of waters fished at a spatial resolution of one degree square.

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, targeting WCPFC species, for 2011 to 2015. 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	
2011	23	25	1	49	0	2	0	51
2012	22	22	1	45	0	0	0	45
2013	19	21	1	41	0	0	0	41
2014	18	21	0	40	0	1	0	41
2015	16	23	0	39	0	0	1	40

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 2015, interactions were recorded with 6 green turtles (5 alive; 1 dead), 13 leatherback turtles (all alive), 3 loggerhead turtles (all alive), 2 hawksbill turtles (both dead), 6 unidentified turtles (4 alive, 1 dead, 1 unknown condition), 8 black-browed albatrosses (4 alive and 4 dead), 6 unidentified albatrosses (all dead), 1 flesh footed shearwater (dead), 2 unidentified seabirds (both dead), 1 melon-headed whale (alive), 3 short-finned pilot whales (all alive), 1 baleen whale (alive), 2 unidentified whales (both alive) and 4 common dolphin (3 alive and 1 dead). From July of 2015, the logbooks of the Australian longline fleet were subject to potential verification through close to 100 per cent electronic monitoring coverage. This has resulted in a rise in the level of interactions with species of special interest reported for 2015 in Table 6.

Observed captures are reported in Table 7. In 2015, there were 7 observed captures of sea turtles (3 alive, 1 dead and 3 released in an unknown state) and 5 captures of seabirds (alive).

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 2015, 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 2015.

Table 6. Interactions with species of special interest recorded in logbooks for the Australian longline fleet in the WCPFC Convention Area, 2011–15. Interactions not identified to species level are noted as unspecified (unspec).

Group	Common name	2011	2012	2013	2014	2015
Seabirds	Black-browed albatross	0	0	0	1	8
	Shy albatross	0	0	0	1	0
	Yellow-nosed albatross	0	0	0	0	0
	Albatrosses (unspec)	0	0	0	0	6
	Sooty shearwater	0	0	0	0	0
	Flesh-footed shearwater	0	0	0	0	1
	Birds (unspec)	0	0	0	0	2
	Subtotal	0	0	0	2	17
Turtles	Green turtle	6	4	6	7	6
	Hawksbill turtle	0	0	0	0	2
	Leatherback turtle	2	5	7	4	13
	Loggerhead turtle	0	0	3	2	3
	Turtles (unspec)	1	1	0	1	6
	Subtotal	9	10	16	14	30
Mammals	Melon-headed whale	0	0	0	0	1
	Baleen whales	0	0	0	0	1
	Short-finned pilot whale	2	0	0	0	3
	Whales (unspec)	0	0	0	0	2
	Common dolphin	0	0	0	0	4
	Dolphin (unspec)	0	0	1	0	0
	New Zealand fur seal	0	0	1	0	0
	Subtotal	2	0	2	0	11
	TOTAL	**11**	**10**	**18**	**16**	**58**

Table 7. Observed captures of species of special interest for the Australian longline fleet in the WCPFC Convention Area, 2011–15. Interactions not identified to species level are noted as unspecified (unspec).

Group	Common name	2011	2012	2013	2014	2015
Seabirds	Black-browed albatross	0	0	0	2	0
	Shy albatross	0	1	0	0	4
	Albatrosses (other)	3	0	0	0	0
	Cape petrel	1	0	0	0	0
	Great crested tern	1	0	0	0	0
	Wilson's storm petrel	0	0	0	0	1
	Subtotal	5	1	0	2	5
Turtles	Green turtle	10	5	6	1	2
	Hawksbill turtle	0	0	0	0	0
	Leatherback turtle	2	3	2	1	3
	Loggerhead turtle	0	0	1	2	0
	Pacific (Olive) Ridley	1	0	0	0	1
	Turtles (unspec)	0	1	0	0	1
	Subtotal	13	9	9	4	7
Mammals	Dolphin (unspec)	0	0	2	0	0
	Long-finned pilot whale	2	0	0	0	0
	Short-finned pilot whale	0	0	0	1	0
	Australian fur seal	0	0	4	0	0
	Subtotal	2	0	6	1	0
	TOTAL	**20**	**10**	**15**	**7**	**12**

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). 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
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
2015	32	1807	87	4.8	4	0.046

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
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
2015	31	6413	396	6.2	1	0.003

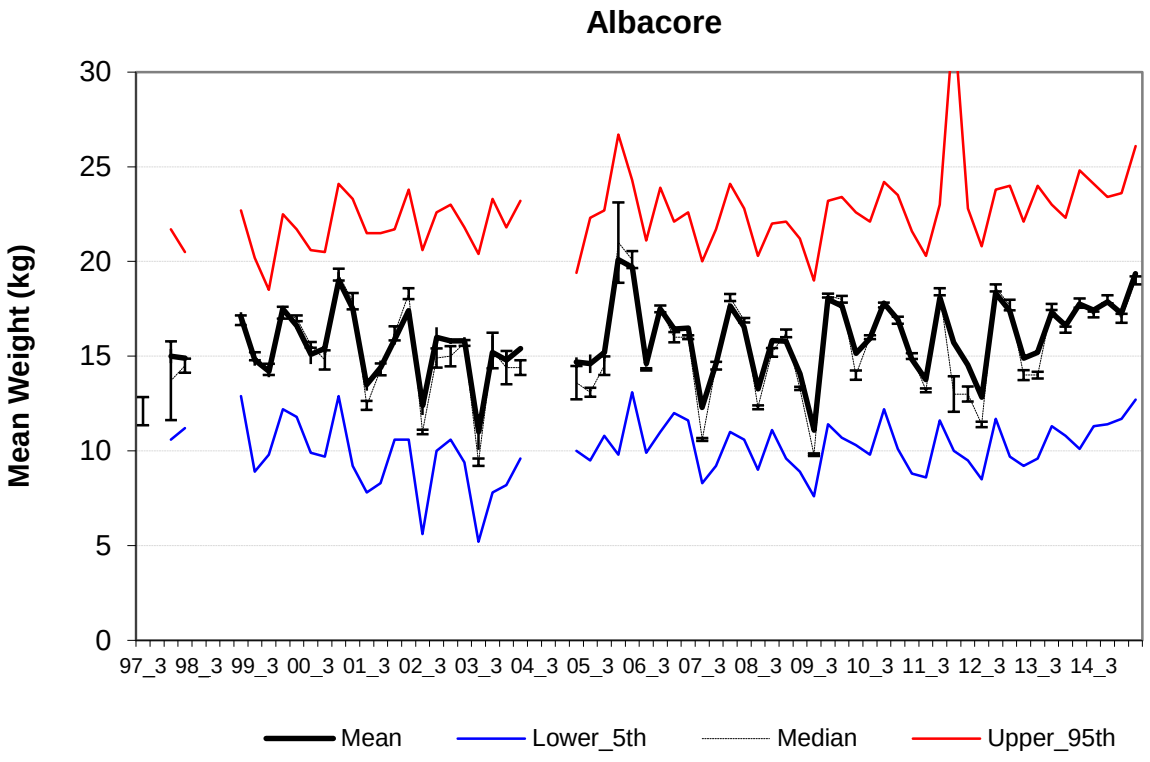
Table 9. Number of observed seabird captures in the ETBF, 2014, by species and area.

Species	South of 30°S	North of 23°N	23°N–30°S	Total Captures
Shy albatross	4	0	0	4
Wilson's storm petrel	0	0	1	1
Total	**1**	**0**	**1**	**5**

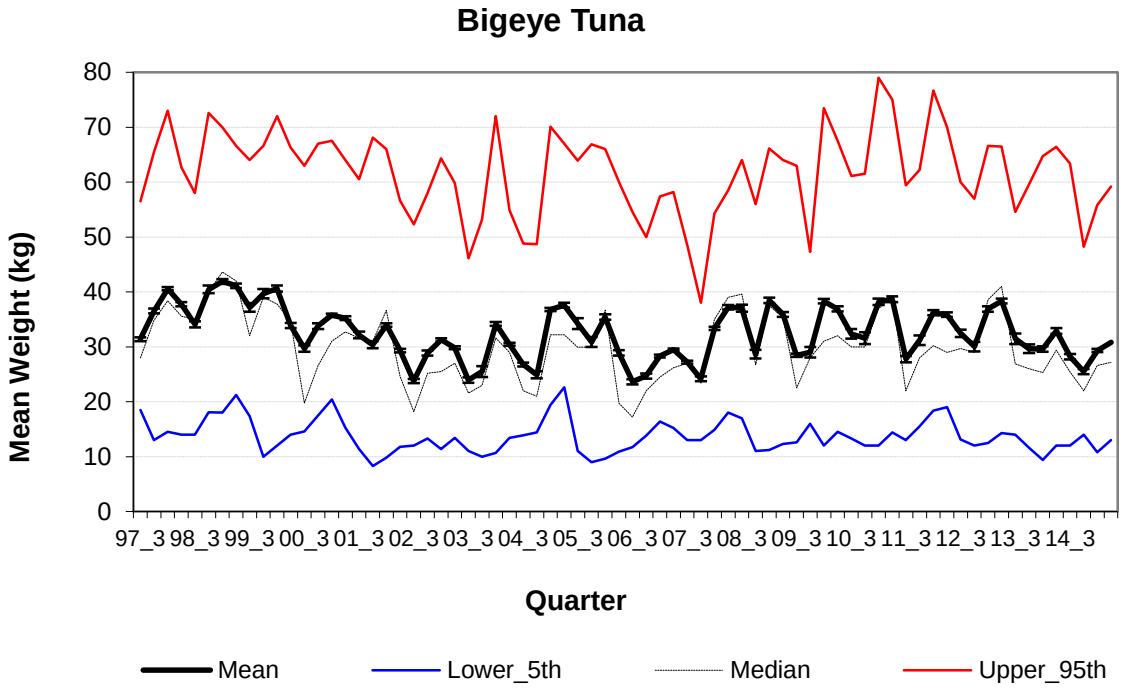
Trends in size composition of retained catch

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 remained stable around this weight until 2013 but has decreased to around 30 kg in 2015. 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 an increasing trend reaching around 46 kg by the start of 2015. 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 63 kg during 2015. The 8-quarter running mean whole weight of albacore has varied between 14–17 kg between 1999 and 2014 with a low of around 14 kg in 2004 and a high of around 17 kg in 2006. A high mean weight of around 17 kg has also been observed in 2015.

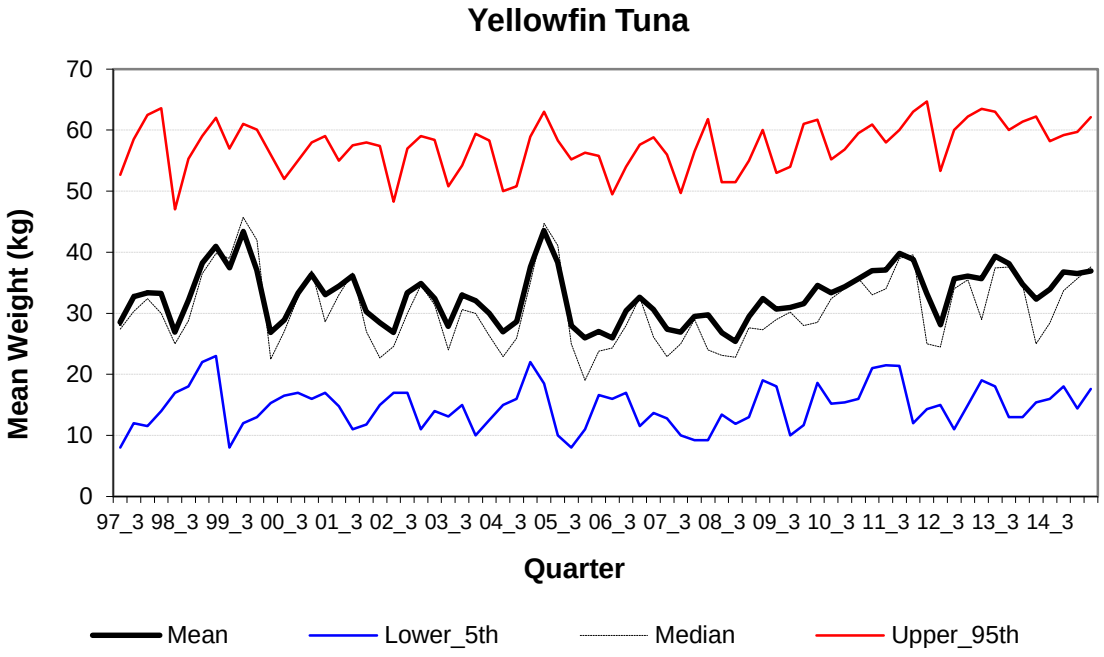
a)



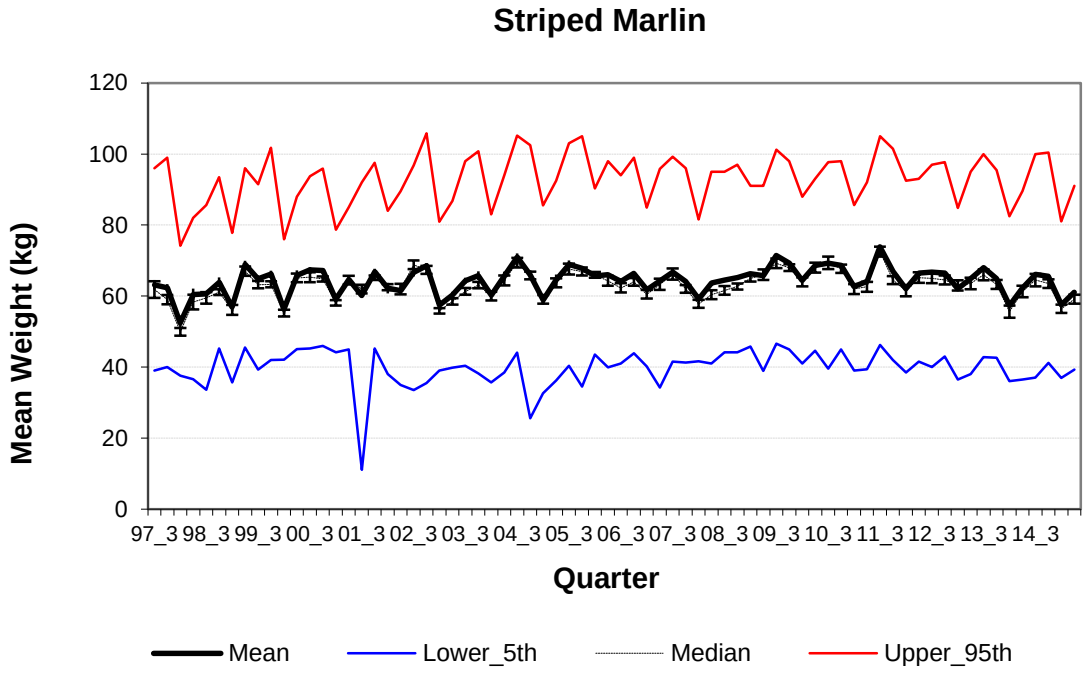
b)


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 14_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 13_3 14_3
Quarter
Mean
Lower_5th
Median
Upper_95th

d)



e)

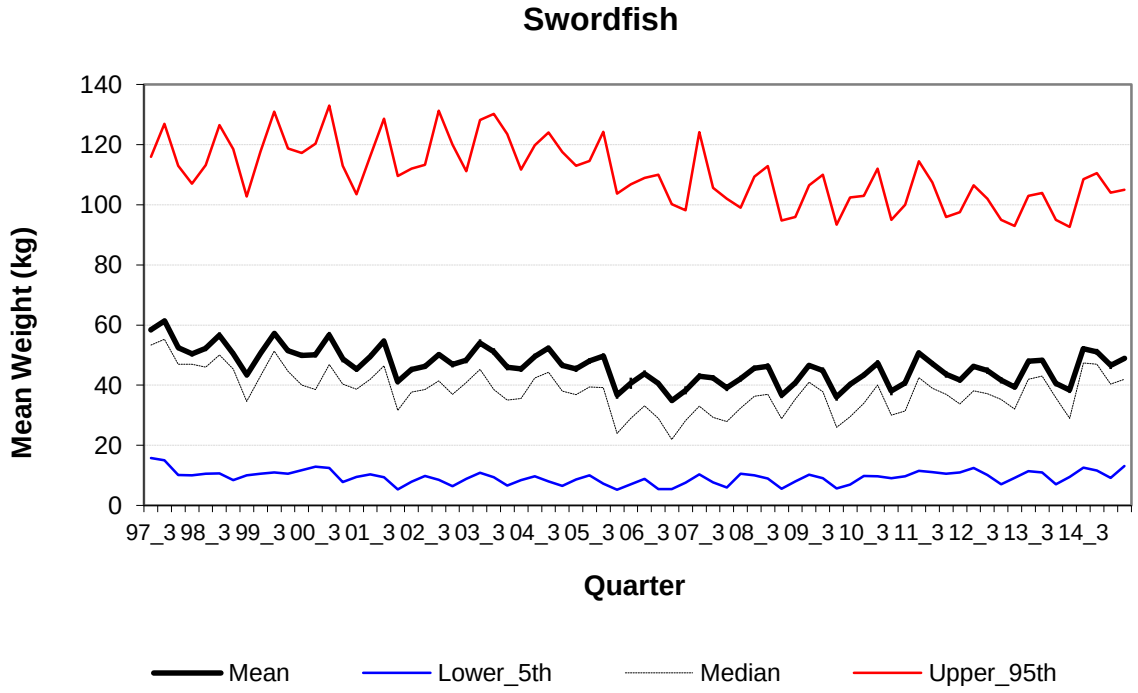


Figure 5 (a–e). Time series of quarterly mean, 8 month running mean, lower 5th and upper 95th percentiles processed weights of a) albacore, b) bigeye tuna, c) yellowfin tuna, d) striped marlin and e) swordfish sampled across the entire ETBF based on the data collected from the port sampling programme.

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 2014–15, the gross value of production (GVP) for the ETBF was $35.0 million, representing a 12 per cent increase from 2013–14. Yellowfin tuna accounted for the highest proportion of total GVP, contributing $17.3 million or 50 per cent of value. In 2014–15, production volume of yellowfin tuna increased by 20 per cent partially offset by a unit price decrease of 4 per cent. Swordfish contributed $6.8 million, or 19 per cent of total GVP in 2014–15. The volume for swordfish decreased by 7 per cent partially offset by a unit price increase of 2 per cent. This resulted in a 5 per cent decrease from 2013–14 in the gross value of ETBF swordfish production. Bigeye tuna contributed $5.4 million to GVP or 16 per cent of the total. The production volume increased by 31 per cent from 2013–14, however real unit prices decreased by 12 per cent.

5 Dispatch of catch

In 2014–15, 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 1572 t of fresh, chilled or frozen albacore, bigeye and yellowfin Australia exported in 2014–15, Japan received 760 t (48 per cent). This was followed by the United States (485 t or 31 per cent), Thailand (134 t or 9 per cent) and American Samoa (93 t or 6 per cent).

In value terms, Japan received 51 per cent ($6.6 million) of Australian exports of fresh, chilled or frozen albacore, bigeye and yellowfin tuna in 2014–15, with the United States and Thailand accounting for 38 per cent ($4.9 million) and 3 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 2014–15, the United States imported 315 t of swordfish, representing 66 per cent of total Australian swordfish exports. This was followed by Japan with 33 per cent (159 t). In value terms, the shares of Australian swordfish exports to the United States and Japan were 71 per cent ($3.1 million) and 29 per cent ($1.3 million), respectively.

As agreed by the Commission, the information required for the mass balance trial is included in Appendix C.

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 2016, the AFMA Commission agreed on total allowable commercial catches (TACCs) for the ETBF. These apply to the 2016–17 season which commenced on 1 March 2016. The TACCs for the five main target species are: albacore (2500 t); bigeye tuna (1056 t); swordfish (1373 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.

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 in 2009–10 (Piasente et al. 2012). E-monitoring became compulsory for all ETBF longline vessels from 1 July 2015. E-monitoring replaces human observers in the ETBF for all in-zone observer requirements. At least 10 per cent of video footage of all hauls will be reviewed to verify the accuracy of logbooks which are required to be completed for 100 per cent of shots. This review rate may be increased in some cases. Noting 2015 was a transition year where human observers were still being used for part of the year, a total of 482 623 hooks were observed from both the e-monitoring system and by human observers. This equates to a coverage rate of 5.87 per cent of the total hooks set (Table 10).

Table10. Summary of longline observer coverage (by hooks) for 2015. The data is derived from both human observers and e-monitoring for 2015.

CCM Fleet	Fishery	No. of Hooks			Days fished			Days at sea			No. of trips			See notes
		Total est.	Obs.	%	Total est.	Obs.	%	Total est.	Obs.	%	Total est.	Obs.	%	
Australia	Domestic	8.22 million	482 623	5.87										Nil

Port sampling programme

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 18 year period from July 1997 to June 2014 over 1.706 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 for the 5-year period between 2010 and 2014 have averaged around 80 per cent for yellowfin tuna, 91 per cent for bigeye tuna, 91 percent for swordfish and 81 per cent for striped marlin; for albacore 17 per cent of landed fish have been individually sampled (Table 11). Individual fish weights for another 253 974 fish from 45 non-target species have also been collected. Bulk weights for binned albacore (covering on average 57 per cent of the catch between 2010 and 2014) 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 820 125 fish for 30 species (including 518 649 albacore).

Table 11. 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, 2011–15.

Gear	Year	Operational catch & effort coverage	Observer coverage	Port sampling coverage					
				YFT	BET	ALB	SWO	STM	SKJ
Longline[a]	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	100	2.8	80	91	15	90	79	0
	2015[b]	100	5.8[c]	78	88	14	94	83	0
Purse seine	2011	0	0	0	0	0	0	0	0
	2012	0	0	0	0	0	0	0	0
	2013	0	0	0	0	0	0	0	0
	2014	0	0	0	0	0	0	0	0
	2015	0	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 2015

[c] as 2015 was a transition year to e-monitoring, the observer rate is derived from both human observers and e-monitoring; future coverage rates will just be from e-monitoring.

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 12). 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 2015.

Table 12. Annual catch estimates (converted whole weights) for the ETBF for 2011–15 derived from catch disposal records. Estimates are in tonnes.

Year	Albacore	Yellowfin	Bigeye	Striped marlin	Swordfish	Other	Total
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	736.9	1685.3	489.9	273.5	1183.1	862.5	5231.2
2015	949.0	2177.0	785.1	347.4	1149.9	1039.6	6448.0

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 2015 there was a 96.9 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 et al. completed)

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)
- Data management, assessment and implementation of harvest strategies for Australia's Tropical Tuna Fisheries (CSIRO, ongoing)
- Developing innovative approaches to improve CPUE standardisation for Australia's multi-species longline fisheries (CSIRO, ongoing)
- ETBF size monitoring program (WW-Fisheries)
- Development of an approach to harvest strategy management of internationally managed multi-species fisheries (Hillary et al. completed)
- Determination of the spatial dynamics and movement rates of the principal target species within the Eastern Tuna and Billfish Fishery and connectivity with the broader western and central Pacific Ocean - beyond tagging (CSIRO, July 2016 – June 2019, funding pending)

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 effect 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 2016

(Source: AFMA website: http://www.afma.gov.au/wp-content/uploads/2014/08/ETBF-management-arrangements-booklet-2016.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.

Appendix C: Mass Balance Trial

Table 13a. Minimum requirements for disposal of species (export) in 2013.

Flag CCM	Catch location	Gear code	Species	Destination	Net weight (processed) kg	Estimated whole weight kg
Australia	CCM EEZ	LL	Albacore	Japan	14120	15532
Australia	CCM EEZ	LL	Albacore	Samoa (American)	71240	78364
Australia	CCM EEZ	LL	Albacore	Spain	97766	10753
Australia	CCM EEZ	LL	Albacore	Thailand	32893	36182
Australia	CCM EEZ	LL	Albacore	USA	29830	32813
Australia	CCM EEZ	LL	Bigeye tuna	Japan	325450	357995
Australia	CCM EEZ	LL	Bigeye tuna	Korea	44	48
Australia	CCM EEZ	LL	Bigeye tuna	Spain	92432	101675
Australia	CCM EEZ	LL	Bigeye tuna	USA	7889	8678
Australia	CCM EEZ	LL	Skipjack	Spain	579	869
Australia	CCM EEZ	LL	Swordfish	Hong Kong	30	45
Australia	CCM EEZ	LL	Swordfish	Japan	150288	225432
Australia	CCM EEZ	LL	Swordfish	New Zealand	300	450
Australia	CCM EEZ	LL	Swordfish	USA	181569	272204
Australia	CCM EEZ	LL	Yellowfin tuna	Hong Kong	118	130
Australia	CCM EEZ	LL	Yellowfin tuna	Japan	162917	179209
Australia	CCM EEZ	LL	Yellowfin tuna	Korea	315	347
Australia	CCM EEZ	LL	Yellowfin tuna	Macau	84	92
Australia	CCM EEZ	LL	Yellowfin tuna	USA	100059	110065

Table 13b. Minimum requirements for disposal of species (domestic market) in 2013.

Flag CCM	Catch location	Gear code	Species	Destination	Net weight (processed) kg	Estimated whole weight kg
Australia	CCM EEZ	LL	Albacore	Domestic	na	502566
Australia	CCM EEZ	LL	Bigeye tuna	Domestic	na	20604
Australia	CCM EEZ	LL	Skipjack	Domestic	na	2460
Australia	CCM EEZ	LL	Swordfish	Domestic	na	563870
Australia	CCM EEZ	LL	Yellowfin tuna	Domestic	na	1051158

na = not available

Table 14a. Receipt and redistribution of species (imports) in 2013.

Import CCM	Species	Export CCM	Gear code	Export year	Harvest year	Net weight (processed) kg	Estimated whole weight kg
Australia	Albacore	New Zealand	na	2013	na	4286	4715
Australia	Bigeye tuna	Fiji	na	2013	na	186	205
Australia	Bigeye tuna	Indonesia	na	2013	na	2985	3284
Australia	Bigeye tuna	New Zealand	na	2013	na	793	872
Australia	Bigeye tuna	Vanuatu	na	2013	na	102	112
Australia	Skipjack	New Zealand	na	2013	na	1008	1512
Australia	Skipjack	Thailand	na	2013	na	221624	332436
Australia	Swordfish	Bangladesh	na	2013	na	1506	2259
Australia	Swordfish	Fiji	na	2013	na	731	1828
Australia	Swordfish	Indonesia	na	2013	na	50949	113223
Australia	Swordfish	New Zealand	na	2013	na	112251	169571
Australia	Swordfish	Seychelles	na	2013	na	3239	4859
Australia	Swordfish	Sri Lanka	na	2013	na	2922	7305

Australia	Swordfish	Vietnam	na	2013	na	5700	14250
Australia	Yellowfin tuna	Fiji	na	2013	na	3954	4349
Australia	Yellowfin tuna	French Polynesia	na	2013	na	666	733
Australia	Yellowfin tuna	Indonesia	na	2013	na	43286	47615
Australia	Yellowfin tuna	Maldives	na	2013	na	61118	67230
Australia	Yellowfin tuna	New Zealand	na	2013	na	105	116
Australia	Yellowfin tuna	Seychelles	na	2013	na	936	1030
Australia	Yellowfin tuna	Solomon Islands	na	2013	na	4206	4627
Australia	Yellowfin tuna	Sri Lanka	na	2013	na	4005	4406
Australia	Yellowfin tuna	Vanuatu	na	2013	na	20416	22458
Australia	Yellowfin tuna	Vietnam	na	2013	na	8500	9350

na = not available

Table 14b. Receipt and redistribution of species (re-import) in 2013.

Import CCM	**Species**	**Export CCM**	**Gear code**	**Export year**	**Harvest year**	**Net weight (processed) kg**	**Estimated whole weight kg**
Australia	Swordfish	New Zealand	na	2013	na	200	300

na = not available

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