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Australia's 2011 Review of the Southern Bluefin Tuna Fishery

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Summary

This report summarises catches and fishing activities in the Australian Southern Bluefin Tuna (SBT) Fishery up to and including the 2010–11 fishing season (December–November) and some preliminary results for the 2011–12 fishing season.

A total of 18 Australian commercial fishing vessels landed SBT in Australian waters in the 2010–11 fishing season for a total catch of 3958 t. A total of 97.8 per cent of the catch was taken by purse seine with the remainder taken by longline. Five purse seiners fished off South Australia for the farming operations during the 2010–11 fishing season, and live bait, pontoon-towing and feeding vessels were also involved. The majority of the Australian purse seine fishing commenced in mid December 2010 and finished in late March 2011, with some late catches in mid November 2011.

The catches for the 2009–10 and 2010–11 fishing seasons were 4091 t and 3958 t, respectively. Australia's SBT quota for the 2009–11 fishing season was set at 8030 t and fishers were permitted to take up to 5265 t (the previous quota) in the first year of this fishing season. Catches exceed the 8030 t quota by 19.07 t. Australia has voluntarily reduced their TAC for 2011–12 by 19.07 t.

During the 2010–11 fishing season, there were 21 purse seine shots observed where SBT were retained. The observer coverage for this period was 19.8 per cent of the total effort representing 12.2 per cent of the total catch. In the 2011–12 fishing season, observers monitored 11.1 per cent of purse seine shots where SBT were retained and 13.8 per cent of the estimated SBT catch.

In 2011, observers monitored 9.6 per cent of longline hook effort in the Eastern Tuna and Billfish Fishery (ETBF) during the corresponding months of the SBT migration through that fishery. Observers monitored 1.7 per cent of longline hook effort in the Western Tuna and Billfish Fishery (WTBF), where two vessels operated in the fishery during 2011.

Additional information required under resolutions and recommendations adopted at CCSBT15 in 2008, relating to vessel monitoring systems (VMS), transhipment and mitigation of interactions with ecologically related species are reported in *Australia's 2012 Compliance Action Plan for the Commission for the Conservation of Southern Bluefin Tuna*.

1 Introduction

This report summarises catches and fishing activities in the 2010–11 fishing season[1] of the Australian Southern Bluefin Tuna (*Thunnus maccoyii*; SBT) Fishery. It also provides preliminary data on the 2011–12 fishing season and a summary of the history of the Australian SBT Fishery. Caton et al. (1995) provides a more detailed historical description of the fishery.

The Australian domestic SBT catches for the 2010 and 2011 calendar years were 4200 t and 4206 t, respectively. By fishing season, the Australian domestic SBT catch was 4091 t in 2009–10 and 3958 t in 2010–11 (Table 1). Australia's SBT quota for the 2009–11 fishing season was set at 8030 t and fishers were permitted to take up to 5265 t (the quota from the 2008–09 season) in the first year of this fishing season (2009–10). Catches for this first year were well below the permitted take. However, catches over the entire 2009–11 fishing season exceeded the TAC by 19.07 t. To repay this overcatch, Australia has voluntarily reduced its TAC for 2011–12 fishing season by 19.07 t. This action is consistent with the guidelines in the CCSBT Compliance Plan-Corrective Actions Policy (Compliance policy guideline 3) adopted in October 2011 by CCSBT.

Table 1 Total domestic catch of SBT for calendar years and fishing seasons

Calendar Year	Catch (t)	Fishing Season	Catch (t)
1990	4586	1989–90	4849
1991	4489	1990–91	4316
1992	5248	1991–92	4894
1993	5373	1992–93	5212
1994	4700	1993–94	4937
1995	4508	1994–95	5080
1996	5128	1995–96	5188
1997	5316	1996–97	4978
1998	4897	1997–98	5097
1999	5552	1998–99	5232
2000	5257	1999–00	5257
2001	4853	2000–01	5247
2002	4711	2001–02	5262
2003	5827	2002–03	5391
2004	5062	2003–04	5120
2005	5244	2004–05	5248
2006	5635	2005–06	5308
2007	4813	2006–07	5234
2008	5033	2007–08	5234
2009	5108	2008–09	5242
2010	4200	2009–10	4091
2011	4206	2010–11	3958

[1] Various time periods (such as 'calendar year' and 'fishing season') can be used when describing Australia's SBT Fishery. Unless otherwise indicated, we have used fishing seasons in this report. The start and end dates of Australian fishing seasons have varied and are presented in Appendix 1.

2 Operational Constraints on Effort

Regulatory Measures

Domestic operations are managed through individual transferable quotas (ITQs) granted as Statutory Fishing Rights (SFRs) under the Southern Bluefin Tuna Management Plan 1995.

The Australian Fisheries Management Authority (AFMA) uses a risk-based compliance strategy for its Commonwealth fisheries. The compliance program includes targeted compliance operations to check fishing vessels at sea and at landing ports; a comprehensive audit trail from the time SBT are caught to the time they are exported, including random audits of fishing companies and export establishments; and an annual review of compliance risks leading to refined strategies for the following fishing season.

Australia has continued to use a combination of area restrictions, minimum quota holdings, fishery observers, and mandatory vessel monitoring systems (VMS) to reduce the incidental catch and mortality of SBT caught in the domestic longline fisheries. A habitat model incorporating archival tag and observer data with sea surface and sub-surface temperatures is used to predict likely areas of high SBT abundance in the longline fishery off the east coast, and hence the location of restricted access zones. In the Eastern Tuna and Billfish Fishery (ETBF), areas with a high probability of SBT interactions have been determined and are referred to as the Core Zone and Buffer Zone (see www.afma.gov.au/fisheries/tuna/etbf/mgt/zones.htm). Observer requirements were modified since the 2005–06 season so that the level of observer coverage depends on the amount of quota carried. To access the Core and Buffer zones, a minimum holding of 500 kg of SBT quota is now required. Requirements applicable to 2011 longline catches of SBT are given in Tables 2 and 3.

Table 2 Observer coverage requirements in the Core Zone of the ETBF, 2010

Initial quota holding	**Uncaught quota remaining**		
	1 kg – 500 kg	>500 kg – 10 t	>10 t
500 kg – 5 t	100%	50%	
>5 t – 10 t	100%	50%	
>10 t	100%	20%	20%

Table 3 Observer coverage requirements in the Buffer Zone of the ETBF, 2010

Initial quota holding	**Uncaught quota remaining**		
	1 kg – 500 kg	>500 kg – 10 t	>10 t
500 kg – 5 t	25%	25%	
>5 t – 10 t	25%	25%	
>10 t	25%	10%	10%

To improve compliance and management outcomes for the domestic SBT fishery, and to better meet international management obligations, Australia implemented a range of amendments to its Southern Bluefin Tuna Management Plan 1995 in February 2010. These included:

- The verified count procedures described in sections 22B.1 and 22B.2 of the Plan did not explicitly allow the flexibility to use stereo video cameras or other new technologies. As a result the current monitoring procedures described in sections 22B.1 and 22B.2 of the Plan were modified to allow the use of alternate technology such as stereo video.

- An amendment to extend the trial provision of Section 22CA. of the Plan to allow for the live release of fish for a further three seasons, ending in 2013.

Voluntary Measures

There are no voluntary measures that constrain operational effort.

3 Catch and Effort

In the 2010–11 fishing season, 97.8 per cent of the Australian catch of SBT was taken by purse seine with the remainder taken by longline (Table 4). Purse seine catch by fishing season with number of vessels and vessel search hours is given in Table 5. Australian catch by gear and State for the fishing seasons 1988–89 to 2010–11 is shown in Table 6. The Australian catch of SBT for the calendar years 2010 and 2011 is shown in Figure 1 and Figure 2, respectively.

Table 4 Catch of SBT by fishing method in 2009–10 and 2010–11 seasons

Season	Gear	State	Catch (t)
2009–10	Purse seine	South Australia	3931
	Longline	New South Wales	161
2010–11	Purse seine	South Australia	3872
	Longline	New South Wales	85
	Troll	Tasmania	1

Discards

During the 2011–12 fishing season, no discarding of SBT was observed or reported in logbooks collected in the purse seine fishery. However, two observed sets were aborted because fish were too small. All fish were released alive.

In the ETBF in 2011, south of 30°S and during the months of May to September, 451 SBT were observed to be caught, of which 255 were retained, 196 were discarded (194 of which were released alive) and none were tagged. Retained SBT ranged from 104–204 cm in length. ETBF logbooks for 2011 showed 1438 fish (84.2 t) of SBT were retained in the ETBF and 203 (12.4 per cent) were released.

No SBT were observed or were reported to be caught in the Western Tuna and Billfish Fishery (WTBF) in 2011.

4 Historical Catch and Effort

Australian commercial catch and effort (number of search hours and number of vessels) by fishing season in the purse seine fishery, for 1994–95 to 2011–12, are shown in Table 5. Catch by gear and State for the fishing seasons 1988–89 to 2010–11 is shown in Table 6.

Table 5 Purse seine catch and effort for seasons 1994–95 to 2011–12

Season	Estimated catch (t)[a]	Actual catch (t)	No. catcher vessels	Vessel search hours	No. sets	No. 1° squares fished
1994–95	2179	2009	5	526	104	5
1995–96	2859	3442	6	631	89	11
1996–97	3134	2505	7	769	118	13
1997–98	3916	3629	7	671	143	8
1998–99	4418	4991	7	972	129	3
1999–00	4746	5131	8	764	107	5
2000–01	5100	5162	8	799	129	2
2001–02	5400	5234	7	1309	159	3
2002–03	5188	5375	7	1276	150	5
2003–04	5299	4874	6	1202	160	4
2004–05	5225	5215	8	1168	139	4
2005–06	5463	5302	7	1304	156	6
2006–07	5091	5230	6	1459	160	8
2007–08	4530	5211	7	1217	134	2
2008–09	4348	5017	7	1156	139	7
2009–10	3323	3931	6	417	78	3
2010–11	3840	3872	5	835	106	5
2011–12[b]	4328	4463	5	1150	153	7

[a]Estimated catch is derived from logbook data while actual catch is derived from landing data.

[b]The 2011–12 figures provided are preliminary because the fishing season does not finish until November 2012.

Figure 1 Australian SBT catch in the 2010 calendar year, by 5 degree squares

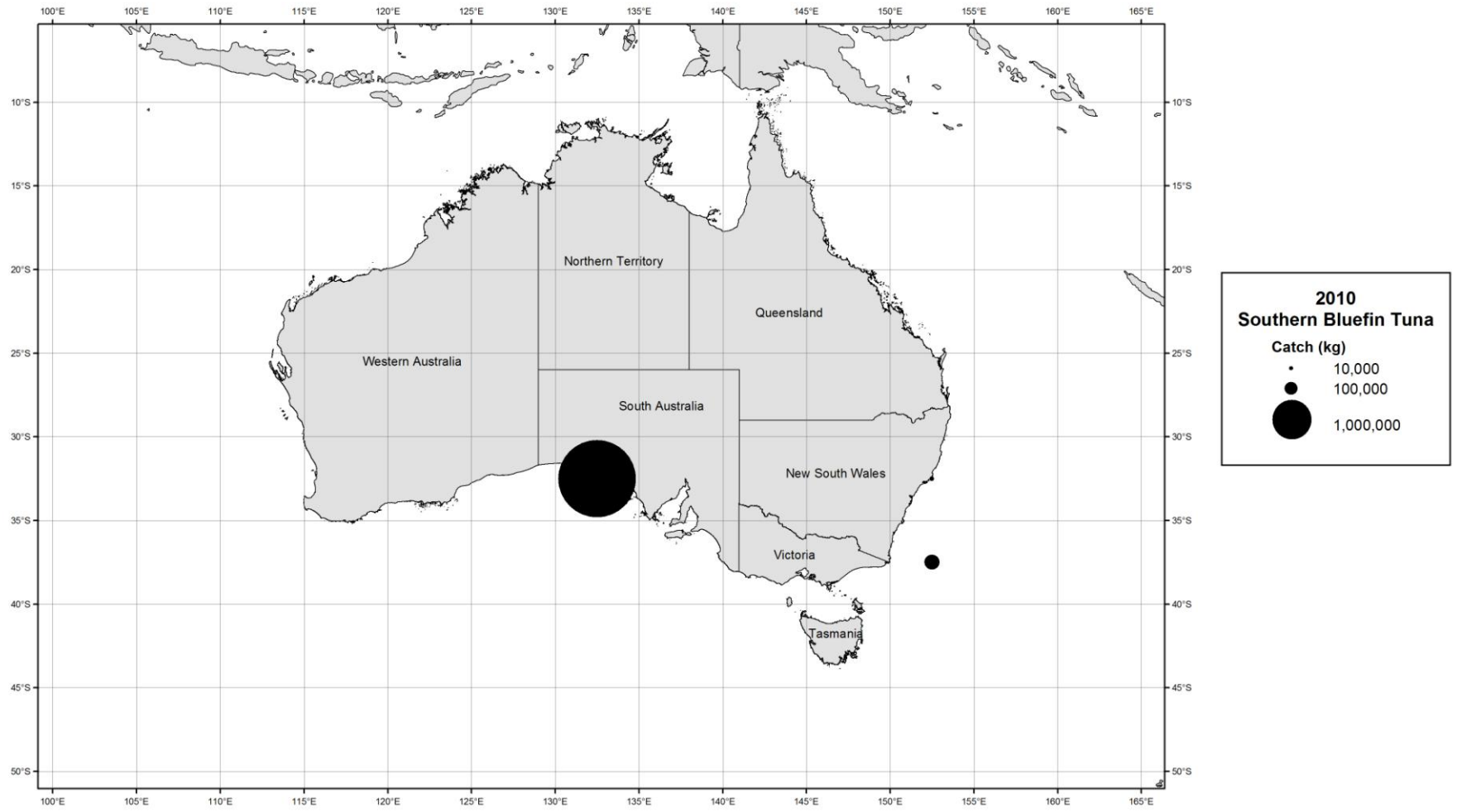

Figure 2 Australian SBT catch in the 2011 calendar year, by 5 degree squares

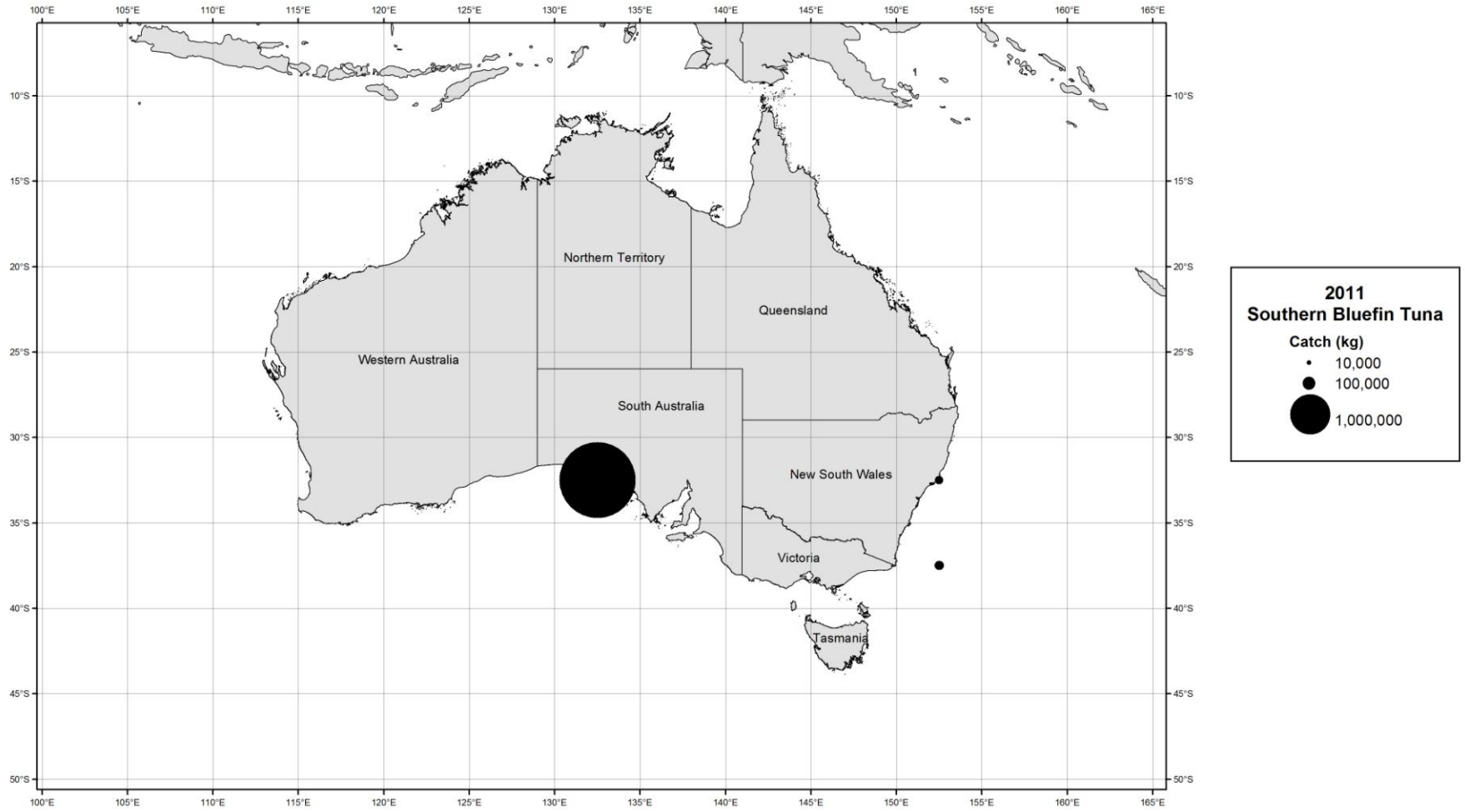

Table 6 Australian catch by gear and state for fishing seasons 1988–89 to 2010–11

Fishing	Western Australia				South Australia				New South Wales			Tasmania			Large Longliners			Australia Total				Total
Season	**Albany Pole**	**Esperance Pole**	**Long-line**	**Total**	**Pole & Purse Seine**	**Farm Cages**	**Long-line**	**Total**	**Pole & Purse Seine**	**Long-line**	**Total**	**Troll**	**Long-line**	**Total**	**Aust. Charter**	**Joint-venture**	**Total**	**Domestic Surface**	**Domestic Long-line**	**Total Long-line**	**RTMP**	**All Gears**
1988–89	204	221	0	425	4872	0	0	4872	0	1	1	2	0	2	0	684	684	5299	1	685	0	5984
1989–90	133	97	0	230	4199	0	0	4199	0	6	6	14	0	14	0	400	400	4443	6	406	0	4849
1990–91	175	45	0	220	2588	0	0	2588	0	15	15	57	0	57	255	881	1136	2865	15	1151	300a	4316
1991–92	17	0	0	17	1629	138	14	1781	34	90	124	36	20	56	59	2057	2116	1854	124	2240	800	4894
1992–93	0	0	0	0	716	722	68	1506	16	238	254	23	44	67	0	2735	2735	1477	350	3085	650	5212
1993–94	0	0	0	0	621	1294	55	1970	0	286	286	7	105	112	0	2299	2299	1922	446	2745	270	4937
1994–95	0	0	0	0	908	1954	2	2864	0	157	157	4	109	113	0	1295	1295	2866	268	1563	650	5080
1995–96	0	0	0	0	1447	3362	0	4809	28	89	117	0	262	262	0	0	0	4837	351	351	0	5188
1996–97	0	0	0	0	2000	2498	0	4497	7	229	236	2	242	244	0	0	0	4507	472	472	0	4978
1997–98	0	0	0b	0	916	3488	0b	4403	0c	475	475	0d	219	219	0	0	0	4433	664	664	0	5097
1998–99	0	0	0b	0	28	4991	0b	5018	0c	97	97	0d	116	116	0	0	0	5016	216	216	0	5232
1999–00	0	0	0b	0	0	5130	13	5143	0	114	114	0	0d	0	0	0	0	5130	127	127	0	5257
2000–01	0	0	0b	0	0	5162	6	5168	0	32	32	0	0d	0	0	0	0	5162	38	38	0	5247
2001–02	0	0	7	7	0	5234	0	5234	0	22e	22e	0	0d	0	0	0	0	5234	29	29	0	5262
2002–03	0	0	0f	0	0	5375	0	5375	0	17	17	0	0	0	0	0	0	5375	17	17	0	5391
2003–04	0	0	0f	0	0h	4874	0g	4874	0	226e	226e	0	20	20	0	0	0	4874	247	247	0	5120
2004–05	0	0	0	0	0	5214	0	5214	0	35	35	0	0	0	0	0	0	5214	35	35	0	5248
2005–06	0	0	0	0	0	5302	0	5302	0	6	6	0	0	0	0	0	0	5302	6	6	0	5308
2006–07	0	0	0	0	0	5230	0	5230	0	4	4	0	0	0	0	0	0	5230	4	4	0	5234
2007–08	0	0	0	0	0	5211	0	5211	0	23	23	0	0	0	0	0	0	5211	23	23	0	5234
2008–09	0	0	0	0	2	5015	0	5017	11	213	225	0	<1	<1	0	0	0	5029	213	213	0	5242
2009–10i	0	0	0	0	0	3931	0	3931	0	161	161	0	0	0	0	0	0	3931	161	161	0	4091
2010–11j	0	0	0	0	0	3872	0	3872	0	85	85	1	0	1	0	0	0	3872	85	85	0	3958

See footnotes on following page. Note that 'RTMP' refers to the Real Time Monitoring Program.

a Note that a further 700 t of Australian quota was 'frozen' (not allocated) in 1990–91.
b 1997–98 and 1998–99 WA and SA non-farm catches are included in SA pole and purse seine catch, and in 1999–00 and 2000–01 WA longline catch is included in SA longline due to confidentiality guidelines.
c 1997–98 to 1998–99 NSW pole and purse seine catches are included in NSW longline catch due to confidentiality guidelines.
d 1997–98 and 1998–99 TAS troll catches are included in TAS longline, and in 1999–00, 2000–01 and 2001–02 TAS longline catch is included in NSW longline due to confidentiality guidelines.
e 2001–02 and 2003–04 NSW longline catch also includes QLD longline catch due to confidentiality guidelines.
f 2002–03 and 2003–04 WA longline catch is included in NSW longline due to confidentiality guidelines.
g 2003–04 SA longline catch is included in NSW longline due to confidentiality guidelines.
h 2003–04 additional SA purse seine catch that did not go into farm cages is included in SA farm cages catch due to confidentiality guidelines.
i Year 1 of the 2009–11 fishing season (2009–10).
j Year 2 of the 2009–11 fishing season (2010–11).

5 Annual fleet size and distribution

In the 2010–11 fishing season, a total of 18 commercial fishing vessels landed SBT in Australian waters.

South Australia

The one- to five-year-old SBT, which school from late spring to autumn in surface waters of the eastern Great Australian Bight, South Australia, were fished by five purse seiners during the 2010–11 fishing season. Various live bait, pontoon-towing and feeding vessels were also involved. The majority of Australian purse seine fishing commenced in mid December 2010 and finished in late March 2010, with some late catches in mid November 2011.

Western Australia

There were no SBT caught off Western Australia in 2010–11.

New South Wales

In 2010–11, 12 domestic longliners reported landing SBT from the area of the fishery for older juveniles and adults in deeper waters off New South Wales.

Tasmania

There was one vessel that caught SBT by trolling off Tasmania in 2010–11.

Queensland

There were no SBT caught off Queensland in 2009–10.

6 Historical fleet size and distribution

Catches of SBT were reported as early as the 1920s off the east coast of Australia, but significant commercial fishing for SBT did not commence until the early 1950s with the establishment of a pole-and-live-bait fishery off New South Wales, South Australia and, later (1970s), Western Australia. Purse seine gear overtook pole as the main fishing method and catches peaked at 21 500 t in 1982. The bulk of this early Australian catch of SBT was canned. Following quota reductions in 1983–84, the Western Australian pole fishery closed down and the south-eastern fishery began to target larger juveniles to supply the Japanese sashimi market. Surface catches were further reduced between 1989 and 1995 when about half of the Australian total allowable catch (TAC) was taken by Australia–Japan joint venture longliners in the Australian Fishing Zone (AFZ). The joint venture ceased in late 1995. From 1992 to 1998, domestic longliners operating off Tasmania and New South Wales also took approximately 5–10 per cent of the total Australian catch.

In 1990–91, about 20 t of SBT tuna were transferred to fattening cages in Port Lincoln, South Australia, to enhance their value. Use of the Australian SBT TAC in 'farming' operations increased from 3 per cent of the TAC in 1991–92 to 98 per cent in 1999–2000 and has remained at similar high levels since.

Following declaration of the AFZ in 1979, Japanese longliners fished in Australia's waters under a range of bilateral conditions, real time monitoring program and joint-venture arrangements until 1997 when Japanese longliners were excluded from all AFZ fishing operations following failure to reach agreement on a global TAC within the CCSBT.

7 Fisheries monitoring

There are a series of logbooks and associated catch records that are required by law to be completed by fishers and fish receivers and sent to AFMA for the purposes of monitoring, compliance and research. The type of form used is dependent on the type of method used to catch SBT in the fishery. All of the data provided from logbooks and catch disposal records must be supplied to AFMA within specified time periods specific to each record.

Catch disposal records

Catch disposal records for SBT are to record SBT taken by fishers for purposes other than farming. They must be signed by the fishing concession holder and the first receiver immediately after unloading the catch. Catch disposal records provide a means of verifying logbook data.

Australian daily fishing logbook and farm transit logbook

A logbook form is required to be completed by fishers when using pelagic longlining or when fishing with minor line methods. The Australian Pelagic Longline Daily Fishing Log is required to be completed for longline fishing. In the purse seine sector, the master of the catcher vessel (with quota assigned) is required to complete the Australian Purse Seine and Pole Daily Fishing Log (for farmed SBT only). A specific logbook called the Farm Transit Log is completed by the holder of the SBT carrier vessel permit or representative, and provided to the monitoring company which undertakes the fish count when fish are transferred from tow cages to farm cages.

Farm disposal record

A specific process has been designed to obtain data to allow for research and monitoring from farming operations. An agent acting on AFMA's behalf monitors the farming operations. All mortalities that occur during the capture and towing operations must be recorded on the appropriate form and must be available for inspection if requested by AFMA.

When SBT are transferred from tow cages to the fish farms, a video record must be carried out by the AFMA-contracted monitoring company. The video recording is then used to undertake a count of the fish that are transferred into the fish farm. This count of captured fish is multiplied by the average fish weight (derived from a 40-fish sample) and decremented from quota using the Farm Disposal Record. The AFMA agent monitors and verifies catches for 100 per cent of SBT transferred into farms.

Catch documentation scheme

The CCSBT Catch Documentation Scheme (CDS) came into effect in Australia on 1 January 2010, replacing the Trade Information Scheme (TIS) that had operated since 1 June 2000. Under this scheme, no SBT may be accepted for domestic sale, export or import, without the correct accompanying CCSBT CDS documents.

Copies of all CCSBT CDS documents issued and received by AFMA are provided to the CCSBT on a quarterly basis, which forms an integral part of AFMA's auditing procedures wherein AFMA analyses, identifies discrepancies and reconciles all CCSBT CDS documents submitted by Australia. Further, at the end of each fishing season, AFMA conducts an audit of all farming companies and SBT fish receivers. Each season about 10 per cent of farming companies also

undergo a level 2 audit, which includes a full audit conducted in person by fisheries officers who review all company records including spreadsheets, feed boat logs, dive logs, sales and export documentation. In addition, AFMA fisheries officers may also conduct targeted compliance operations to inspect fishing boats at sea, in port, and also conduct random audits of fishing companies, fish receivers and export establishments.

Further details concerning Australia's administration of the CCSBT CDS are reported in *Australia's Compliance Action Plan for the Commission for the Conservation of Southern Bluefin Tuna 2012* (CCSBT-CC/1209/Compliance Action Plan–Australia).

Observer program

An observer program for the purse seine fleet operating out of Port Lincoln has been in place since the 2002–03 season, and for the longline sector (ETBF) since 2002. The monitoring arrangements in the SBT Fishery continue to be reviewed and refined in order to improve monitoring and compliance. Since 2000, in order to minimise the risk of non-quota take of SBT by longliners off New South Wales, access to the waters through which SBT migrate, during the time that Core and Buffer zones are in place, has been restricted to vessels holding SBT quota.

Observer coverage

Purse seine

During the 2010–11 fishing season, there were 21 shots observed where SBT were retained. The observer coverage for this period was 19.8 per cent of the total effort representing 12.2 per cent of the total catch.

The purse seine observer program for the 2011–12 fishing season is still in progress as the season does not finish until November 2012. To date the program has monitored fishing and tow operations between 33°27'–35°52'S and 132°07'–136°07'E in January and February 2012. Australian observers monitored 17 purse seine sets where fish were retained and two shots that were aborted because fish were too small. Where released, the fish were released alive. This represents 11.1 per cent of the total sets in which fish were taken in the 2011–12 fishing season. From these observations, an estimated 597 t of SBT were caught during observed sets, representing 13.8 per cent of the estimated tonnage caught for the 2011–12 season. The observers recorded a total of eight mortalities during purse seine operations. One observer monitored 1 tow operation and recorded 16 SBT mortalities during that towing operation.

Longline

In 2011, in the ETBF, south of 30°S and during May to September (where SBT are usually caught), 9 observers monitored 92 577 hooks of a total of 961 868, representing 9.6 per cent observer coverage of longline effort. For the fishery as a whole, 6.3 per cent of hooks were observed in 2011. The total number of SBT caught while observers were on board was 451, of which 255 were retained, 196 were discarded (194 of which were released alive) and none were tagged. Retained SBT ranged from 104–204 cm in length. ETBF logbooks for 2011 showed 84.2 t (1438 fish) of SBT were retained in the ETBF and 203 (12.4 per cent) were discarded. In 2011, 1.7 per cent of longline hook effort was observed in the (WTBF). Two vessels participated in this fishery in 2011, and no SBT were observed or reported to be caught.

8 Other factors

Import/export statistics

The CCSBT CDS provides a way to track and validate the flow of legitimately caught SBT from the point of catch to the first point of sale on domestic or export markets. The CDS documents all transhipments, domestic landings, exports, imports and re-exports. Each whole fish undergoing one of these processes is issued a uniquely numbered tag. The tag number and details of that fish are recorded on a Catch Tagging Form so that the fish may be tracked. Transfers of SBT into and between farms in the farm sector must also be documented.

Markets

In the 2011 calendar year, Australia exported 7233.9 t of SBT. The great majority of Australian exports were received by Japan (7175.0 t, ~99 per cent of exports). A further 54.1 t (0.7 per cent of exports) was exported to destinations in Asia, while small amounts were exported to the USA (2.4 t) and other locations (2.4 t). A small amount (285 kg) was imported into Australia from New Zealand and consumed domestically.

Fish release trials

In response to the operational characteristics of the SBT Fishery, AFMA and the fishing industry agreed to undertake a trial encompassing two fishing seasons, commencing in the 2007–08 fishing season, to investigate a mechanism to allow a single release of live fish to avoid exceeding Australia's national allocation of SBT. The first release of the trial was conducted on 6 April 2008.

Approximately 2000 SBT (39 t) were released at 35°14.5'S, 135°36.5'E. To select the release site, an aerial survey of three preferred release sites was conducted on 4 April 2008. These sites were selected because they were known as locations where wild SBT were found. The final release site was selected because it had a strong presence of wild SBT indicating that the area was suitable habitat for the released SBT. The infrastructure to undertake the release and aerial spotting was provided by industry and observed by two government officials. No mortalities were recorded during the tow and release of fish.

The second release took place on 17 March 2010 at 35°12.4'S, 135°45.4'E. The 2010 release lasted approximately 3 hours 20 minutes during which time divers estimated that 500 SBT were released. The release was observed by an AFMA Compliance Officer and the Protec Marine representative. All SBT were released alive and vigorous with no mortalities observed during the release. Each release complied with a standard set of procedures and was considered a success.

The live release trial was reviewed in 2010 and an extension of the trial implemented for an additional three years expiring in 2013. The first release of the new trial period was undertaken on 1 May 2011. An estimated 1000 SBT were released at 35°13'S, 135°37'E, an area selected because of the presence of wild SBT. The release was observed by an AFMA Compliance officer and the Protec Marine representative. The release was considered a success with only two mortalities recorded.

Stereo-video commercial trial

In 2011, the commercial trial of stereo-video technology in the SBT Fishery was used to record SBT from eight transfers made from three cages. In total, 23 018 SBT were counted from the stereo-video recordings and overall stereo-video technology was demonstrated to be robust under commercial operating conditions. Technical details of the commercial trail were reported to the CCSBT Compliance Committee Meeting in 2011 (Anon. 2011; CCSBT-CC/1110/11).

Recreational catch

Overall, the data available on recreational catch of SBT is extremely limited, but an initial review revealed high year-to-year variability in catches and the locations in which SBT were taken (Rowsell et al. 2008). Between 1998 and 2002, indicative estimates of annual recreational catches ranged between 3 t and 85 t. However, these data were derived from a range of different sources and are unlikely to be robust.

Some recreational catch data are available from previous State surveys. For the 2008 recreational SBT season (January–July), catch estimates are available for Tasmanian and South Australian waters only. The Tasmanian estimate, obtained from on-site surveys and charter logbooks (Forbes et al. 2009) was 14 t. The South Australian catch estimate, from a state-wide telephone-diary survey and charter fishery logbooks (PIRSA unpublished data) was 29.1 t.

Insufficient data were available in 2011 to provide an estimate of the total recreational catch. The main areas for recreational fishing in 2011 were the continental shelf waters off south-east Tasmania, South Australia, and western Victoria. In addition, a survey of recreational SBT fishers was conducted in western Victoria in March to July 2011 using onsite survey methods at boat launching ramps (Green et al. 2012). The survey estimated that a total of 19 700 SBT were retained during the survey period, weighing about 240 t.

Australia is progressing a project working with State jurisdictions to develop a methodology to provide robust estimates of total Australian recreational catch which will commence prior to the 2012–13 recreational fishing season. The project will combine information from all states where SBT are caught by recreational fishers, from targeted SBT fishing surveys, indicators of activity levels and other recreational monitoring projects.

Mitigation

Australia collects data on ecologically related species (ERS) and reports these on an annual basis to the scientific committees of IOTC and WCPFC and to the Extended Commission of the CCSBT and its subsidiary bodies (including the Compliance Committee on an annual basis, and the Ecologically Related Species Working Group when this working group meets). Australia also implements best-practice mitigation measures for ERS. Full details on current mitigation measures are reported in *Australia's Compliance Action Plan for the Commission for the Conservation of Southern Bluefin Tuna 2012* (CCSBT-CC/1209/Compliance Action Plan–Australia).

Ecologically related species

At the annual CCSBT Extended Commission meeting in 2008 (CCSBT 15), it was agreed that members would take steps to mitigate the impact of fishing for SBT on ERS (Recommendation to Mitigate the Impact on Ecologically Related Species of Fishing for Southern Bluefin Tuna). As part of this recommendation, members are to collect data on and report ERS interactions while

fishing for SBT. Appendix 2 details the 2011 interactions with sharks, turtles and seabirds in the SBT Fishery (purse seine) and in the ETBF (longline) south of 30°S from May to September, when SBT are caught in that fishery.

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Appendix 1. SBT fishing season dates 1988–89 to 2010–11

Fishing Season	Start Date	End Date
1988–89	1 October 1988	30 September 1989
1989–90	1 October 1989	30 September 1990
1990–91	1 October 1990	30 September 1991
1991–92	1 October 1991	31 October 1992
1992–93	1 November 1992	31 October 1993
1993–94	1 November 1993	31 October 1994
1994–95	1 November 1994	15 December 1995
1995–96	16 December 1995	15 December 1996
1996–97	16 December 1996	30 November 1997
1997–98	1 December 1997	30 November 1998
1998–99	1 December 1998	30 November 1999
1999–00	1 December 1999	30 November 2000
2000–01	1 December 2000	30 November 2001
2001–02	1 December 2001	30 November 2002
2002–03	1 December 2002	30 November 2003
2003–04	1 December 2003	30 November 2004
2004–05	1 December 2004	30 November 2005
2005–06	1 December 2005	30 November 2006
2006–07	1 December 2006	30 November 2007
2007–08	1 December 2007	30 November 2008
2008–09	1 December 2008	30 November 2009
2009–11[a]	1 December 2009	30 November 2011
2011–12	1 December 2011	30 November 2012

[a] Note that 2009–11 was a two-year season

Appendix 2 ERS Interactions in 2011

	Purse seine (2010–11)[a]	**Longline (2011)**[b]
Total number of hooks (shots for PS)	106	1 321 700
Percentage of hooks (shots) observed	19.8%	7.5%
Total number of observed seabird interactions (mortality)	0(0)	4(2)
Total number of observed shark interactions (mortality)	0(0)	1120(244)
Total number of observed sea turtle interactions (mortality)	0(0)	9(2) - 2 unknown[c]

[a] Purse seine data are provided for the 2010–11 fishing season (December 2010–November 2011) while longline data are provided for the 2011 calendar year.

[b] Longline includes data from the WTBF and the ETBF; the ETBF data are only for south of 30°S from May to September, when SBT are caught in that fishery.

[c] Nine sea turtle interactions were observed with longline gear resulting in two mortalities; the condition of two other turtles was not recorded by the observer so it is unknown