



**Australian Government**

**Australian Bureau of Agricultural and  
Resource Economics and Sciences**

# **Australia's 2010 review of the Southern Bluefin Tuna Fishery**

P.I. Hobsbawn, H. Patterson, G. Begg

September 2011

Hobsbawn PI, Patterson H, Begg G 2011, Australia's 2010 review of the Southern Bluefin Tuna Fishery, ABARES report to the Commission for the Conservation of Southern Bluefin Tuna, Canberra, October.

© Commonwealth of Australia 2011

This work is copyright. The Copyright Act 1968 permits fair dealing for study, research, news reporting, criticism or review. Selected passages, tables or diagrams may be reproduced for such purposes provided acknowledgment of the source is included. Major extracts or the entire document may not be reproduced by any process without the written permission of the Executive Director, Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES).

The Australian Government acting through ABARES has exercised due care and skill in the preparation and compilation of the information and data set out in this publication. Notwithstanding, ABARES, its employees and advisers disclaim all liability, including liability for negligence, for any loss, damage, injury, expense or cost incurred by any person as a result of accessing, using or relying upon any of the information or data set out in this publication to the maximum extent permitted by law.

Postal address:

ABARES

GPO Box 1563

Canberra ACT 2601

Phone: +61 2 6272 2010

Fax: +61 2 6272 2001

Email: [info@abares.gov.au](mailto:info@abares.gov.au)

Web: [www.abares.gov.au](http://www.abares.gov.au)

The Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), was formed following the merger of the Australian Bureau of Agricultural and Resource Economics (ABARE) and the Bureau of Rural Sciences (BRS) in 2010-11.

## Acknowledgements

The authors thank Phil Sahlqvist, Rupert Summerson, Matt Daniel and Katrina Phillips for their assistance.

# Contents

Summary.....	1
1 Introduction .....	2
2 Operational Constraints on Effort .....	4
Regulatory Measures.....	4
3 Catch and Effort .....	6
Discards .....	6
4 Historical Catch and Effort.....	7
5 Annual fleet size and distribution .....	9
South Australia .....	9
Western Australia.....	9
New South Wales .....	9
Tasmania.....	9
Queensland.....	9
6 Historical fleet size and distribution .....	16
7 Fisheries monitoring.....	17
Catch disposal records.....	17
Australian daily fishing logbook and farm transit logbook .....	17
Farm disposal record .....	17
Observer program .....	17
8 Other factors .....	18
Import/export statistics.....	18
Markets.....	18
Observer coverage .....	18
Fish release trials .....	19
Ecologically related species .....	19
9 References .....	20
Appendix 1. SBT fishing season dates 1988–89 to 2010–11 .....	21
Appendix 2 ERS Interactions 2010.....	22

# Summary

This report summarises catches and fishing activities in the Australian Southern Bluefin Tuna (SBT) Fishery up to and including the 2009–10 fishing season (December–November) and some preliminary results for the 2010–11 season.

A total of 23 commercial fishing vessels landed SBT in Australian waters in 2009–10 for a total catch of 4091 t. A total of 96.0% of the catch was taken by purse seine with the remainder taken by longline. Six purse seiners fished off South Australia for the farm operations during the 2009–10 fishing season, but live bait, pontoon-towing and feeding vessels were also involved. Purse seine fishing commenced in early December 2009 and finished in late February 2010.

The 2008–09 and 2009–10 fishing year catches were 5242 t and 4091 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 quota from the 2008–09 season) in the first year of this fishing season (2009–10).

During the 2009–10 fishing season, there were seven purse seine shots observed where SBT were retained. The observer coverage for this period was 9.0% of the total effort representing 13.5% of the total catch. In 2010, observers also monitored 7.7% of longline hook effort in the Eastern Tuna and Billfish Fishery (ETBF) during the months and in the areas of the SBT migration through that fishery. Observers monitored 2.5% of longline hook effort in the Western Tuna and Billfish Fishery (WTBF), where three vessels operated in the fishery during 2009–10. In the 2010–11 fishing season, observers monitored 20.2% of purse seine sets where fish were retained (30.8% of total shots) and 12.4% of the estimated SBT catch.

Additional information required under resolutions and recommendations adopted at CCSBT15 in 2008, relating to vessel monitoring systems (VMS), transshipment and ecologically related species are reported in Australia's 2011 Compliance Action Plan.

# 1 Introduction

This report summarises catches and fishing activities in the 2009–10 fishing year<sup>1</sup> of the Australian Southern Bluefin Tuna (*Thunnus maccoyii*; SBT) Fishery. It also provides preliminary data on the 2010–11 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 2009 and 2010 calendar years were 5108 t and 4199 t, respectively. By fishing season, the Australian domestic SBT catch was 5242 t in 2008–09 and 4091 t in 2009–10 (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.

**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

<sup>1</sup> 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.

---

2006	5635	2005–06	5308
2007	4813	2006–07	5234
2008	5033	2007–08	5234
2009	5108	2008–09	5242
2010	4199	2009–10	4091

---

## 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 fishery. 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](http://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 2010 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 kgs	>500 kgs – 10 t	>10 t
500 kgs – 5 t	100%		
>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 kgs	>500 kgs – 10 t	>10 t
500 kg – 5 t	25%		
>5 t – 10 t	25%	25%	
>10 t	25%	10%	10%

To improve compliance and management outcomes for the domestic 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.

### 3 Catch and Effort

In the 2009–10 fishing season, 96.0% 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 2009–10 is shown in Table 6. The Australian catch of SBT for the calendar years 2009 and 2010 is shown in Figure 1 and Figure 2, respectively.

**Table 4 Catch of SBT by fishing method in 2008–09 and 2009–10 seasons**

Season	Gear	State	Catch (t)
2008–09	Purse seine	South Australia	5015
	Longline	New South Wales and Tasmania	
	Pole-and-line		
	Purse seine	New South Wales	
2009–10	Purse seine	South Australia	3931
	Longline	New South Wales	160

Insufficient data were available in 2010 to provide an estimate of the total recreational catch. The main areas for recreational fishing in 2010 were South Australia, Victoria and Tasmania. Recreational fishing data for Tasmania and South Australia are available for 2008 (see Section 4).

#### Discards

During the 2010–11 fishing season, no discarding of SBT was observed or reported in logbooks collected in the purse seine fishery. However, 11 observed sets were aborted because of nil catch; fish were too small; there were too few fish; or the fish escaped. Where released, the fish were released alive.

In 2010, in the ETBF, south of 30°S and during the months of May to September, 14 observers monitored 79 626 hooks of a total of 1 032 087 hooks deployed, representing 7.7% observer coverage of longline effort during the SBT migration. For the fishery as a whole, 3.6% of hooks were observed in 2010. The total number of SBT caught while observers were on board was 1280 of which 564 were retained, 716 were discarded (711 of which were released alive) and none were tagged. The average length of observed discards in 2010 was 113.5 cm, and for 2002 to 2006 ranged from 130.3–160.0 cm. ETBF logbooks for 2010 showed 2812 fish (151.8 t) of SBT were retained in the ETBF and 1662 (37.1%) were released.

In 2010, 2.5% of longline hook effort was observed in the Western Tuna and Billfish Fishery (WTBF). Three vessels participated in this fishery in 2010, and no SBT were observed to be caught in 2010 but logbooks reported that six SBT were caught and released.

## 4 Historical Catch and Effort

Australian catch and effort (number of search hours and number of vessels) by fishing season in the purse seine fishery, for 1994–95 to 2010–11, are shown in Table 5. Catch by gear and State for the fishing seasons 1988–89 to 2009–10 is shown in Table 6.

**Table 5 Purse seine catch and effort for seasons 1994–95 to 2010–11**

Season	Estimated catch (t)	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	5015	7	1156	139	7
2009–10	3323	3998	6	417	78	3
2010–11*	3786	3802	5	816	104	5

\*Note that the 2010–11 figures provided are preliminary because the fishing season does not finish until November 2011.

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 (Rowse et al. 2008). Between 1998 and 2002, indicative estimates of annual recreational catches ranged between 3 t and 85 t with the highest catches occurring around Tasmania (Table 7). These data are indicative estimates only and are based on a range of different data sources. No estimates of total Australian recreational catch of SBT have been available since 2003.

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 statewide telephone-diary survey and charter fishery logbooks (PIRSA unpublished data) was 29.1 t.

## 5 Annual fleet size and distribution

In the 2009–10 fishing season, a total of 23 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 six purse seiners during the 2009–10 fishing season, but various live bait, pontoon-towing and feeding vessels were also involved. Fishing commenced in early December 2009 and finished in late February 2010.

### Western Australia

Six SBT were caught and released off Western Australia in 2009–10.

### New South Wales

In 2009–10, 16 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 were no SBT caught off Tasmania in 2009–10.

### Queensland

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

Figure 1 Australian SBT catch in the 2009 calendar year

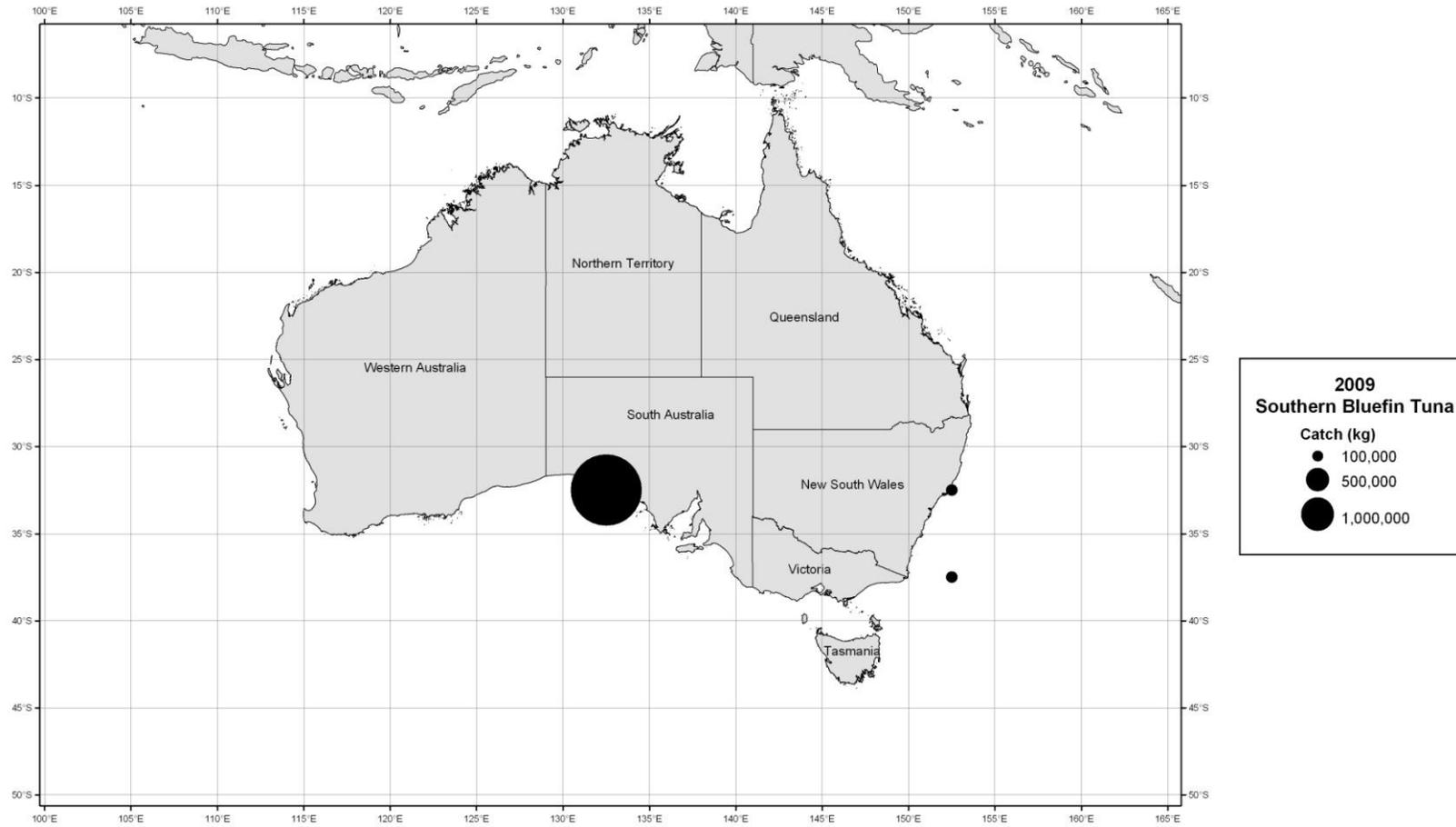


Figure 2 Australian SBT catch in the 2010 calendar year

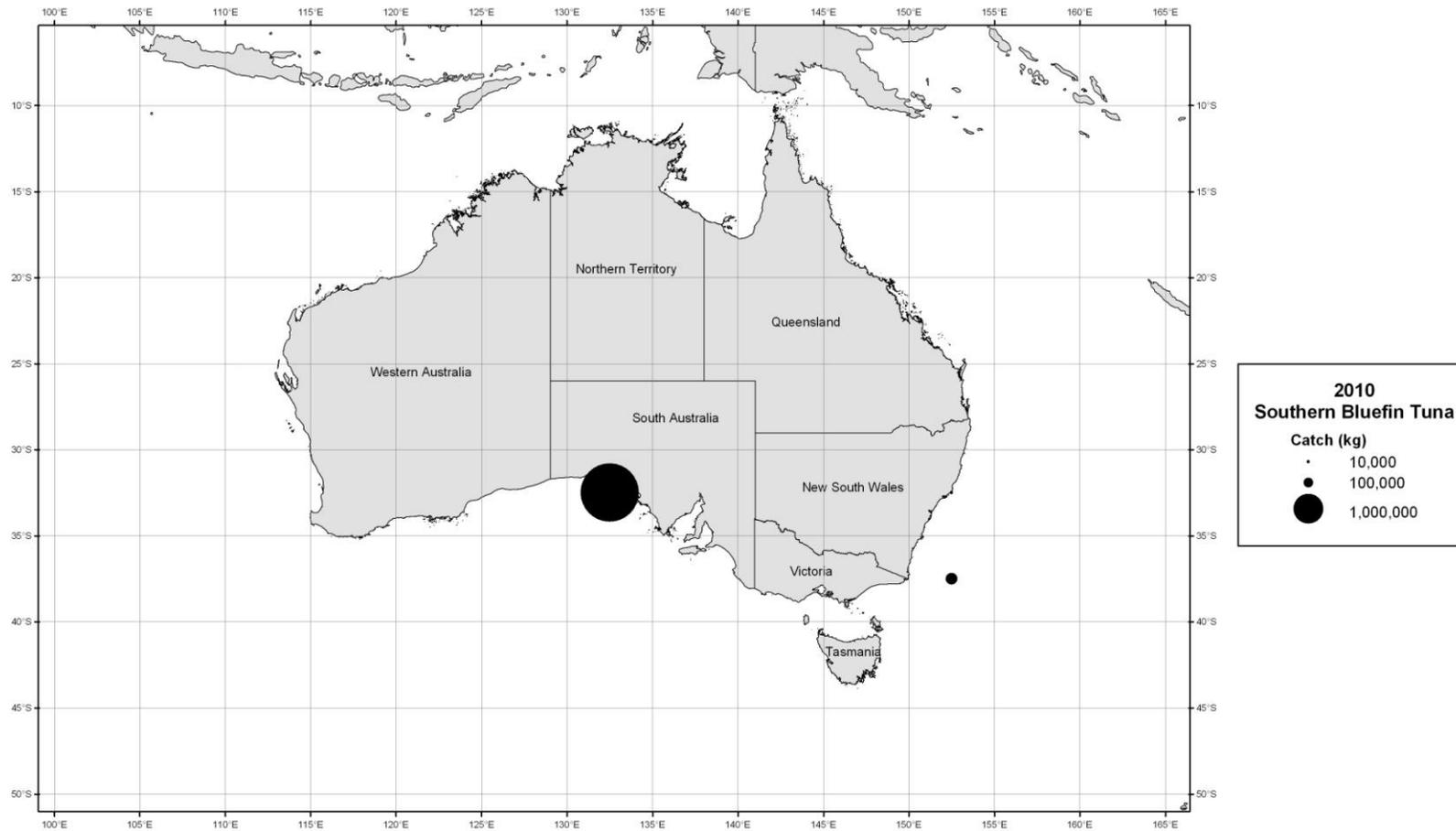


Table 6 Australian catch by gear and state for fishing seasons 1988–89 to 2009–10

Fishing Season	Western Australia				South Australia			New South Wales			Tasmania			Large Longliners			Australia Total			Total		
	Albany Pole	Esperance Pole	Long-line	Total	Pole & Purse Seine	Ranch 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	300 <sup>a</sup>	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	0 <sup>b</sup>	0	916	3488	0 <sup>b</sup>	4403	0 <sup>c</sup>	475	475	0 <sup>d</sup>	219	219	0	0	0	4433	664	664	0	5097
1998–99	0	0	0 <sup>b</sup>	0	28	4991	0 <sup>b</sup>	5018	0 <sup>c</sup>	97	97	0 <sup>d</sup>	116	116	0	0	0	5016	216	216	0	5232
1999–00	0	0	0 <sup>b</sup>	0	0	5130	13	5143	0	114	114	0	0 <sup>d</sup>	0	0	0	0	5130	127	127	0	5257
2000–01	0	0	0 <sup>b</sup>	0	0	5162	6	5168	0	32	32	0	0 <sup>d</sup>	0	0	0	0	5162	38	38	0	5247

Australia's 2010 review of the Southern Bluefin Tuna Fishery

ABARES

2001-02	0	0	7	7	0	5234	0	5234	0	22 <sup>e</sup>	22 <sup>e</sup>	0	0 <sup>d</sup>	0	0	0	0	5234	29	29	0	5262
2002-03	0	0	0 <sup>f</sup>	0	0	5375	0	5375	0	17	17	0	0	0	0	0	0	5375	17	17	0	5391
2003-04	0	0	0 <sup>f</sup>	0	0 <sup>h</sup>	4874	0 <sup>g</sup>	4874	0	226 <sup>e</sup>	226 <sup>e</sup>	0	20	0	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	0	5015	0	5015	0	227 <sup>i</sup>	227 <sup>i</sup>	0	0	0	0	0	0	5015	22	227	0	5242
2009-10	0	0	0	0	0	3931	0	3931	0	160	160	0	0	0	0	0	0	3931	160	160	0	4091

See footnotes on following page.

---

<sup>a</sup> Note that a further 700 t of Australian quota was 'frozen' (not allocated) in 1990–91.

<sup>b</sup> 1997–98 and 1998–99 WA and SA non-ranch 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.

<sup>c</sup> 1997–98 to 1998–99 NSW pole and purse seine catches are included in NSW longline catch due to confidentiality guidelines.

<sup>d</sup> 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.

<sup>e</sup> 2001–02 and 2003–04 NSW longline catch also includes QLD longline catch due to confidentiality guidelines.

<sup>f</sup> 2002–03 and 2003–04 WA longline catch is included in NSW longline due to confidentiality guidelines.

<sup>g</sup> 2003–04 SA longline catch is included in NSW longline due to confidentiality guidelines.

<sup>h</sup> 2003–04 additional SA purse seine catch that did not go into ranch cages is included in SA ranch cages catch due to confidentiality guidelines.

<sup>i</sup> 2008–09 SA pole-and-line catch, NSW purse seine catch and TAS longline catch included in NSW longline catch due to confidentiality guidelines.

---

**Table 7 Indicative estimates of recreational catch (t) by Australian recreational fishers, 1994 to 2010.**

<b>Year</b>	<b>Recreational Catch (t)</b>
1994	16
1995	insufficient data
1996	insufficient data
1997	insufficient data
1998	38
1999	3
2000	10
2001	60
2002	85
2003	insufficient data
2004	insufficient data
2005	insufficient data
2006	insufficient data
2007	insufficient data
2008	insufficient data
2009	insufficient data
2010	insufficient data

## 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% 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% of the TAC in 1991–92 to 98% 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.

### Observer program

An observer program for the purse seine sector 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.

## 8 Other factors

### Import/export statistics

The CCSBT Catch Documentation Scheme (CDS) came into effect on 1 January 2010 and replaced the Trade Information Scheme (TIS) that had operated since 1 June 2000. The 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 import markets. The CDS documents all transshipments, 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 2010 calendar year, Australia exported 6164.8 t of SBT. The great majority of Australian exports were received by Japan (6093.2 t, ~99% of exports). A further 26.6 t (0.4% of exports) was exported to the USA and 30 t (0.5% of exports) to destinations in Asia. A small amount (359 kg) imported into Australia from New Zealand and consumed domestically.

### Observer coverage

#### Purse seine

During the 2009–10 fishing season, there were seven shots observed where SBT were retained. The observer coverage for this period was 9.0% of the total effort representing 13.5% of the total catch.

The purse seine observer program for the 2010–11 fishing season monitored fishing and tow operations between 33°23'–33°50'S and 132°13'–132°41'E in January, February and March 2011. Two Australian observers monitored 21 purse seine sets where fish were retained and 11 sets that were aborted because of nil catch, fish that were too small, too few fish or because the fish escaped. Where released, the fish were released alive. This represents 20.2% of the total sets in which fish were taken in the 2010–11 fishing season and 30.8% of all sets. From these observations, an estimated 470 t of SBT were caught during observed sets, representing 12.4% of the estimated tonnage caught for the 2010–11 season. The observers recorded a total of three mortalities during purse seine operations.

The observers also monitored one tow operation and recorded two SBT mortalities during that towing operation.

#### Longline

In 2010, in the ETBF, south of 30°S and during May to September (where SBT are usually caught), 14 observers monitored 79 626 hooks of a total of 1 032 087, representing 7.7% observer coverage of longline effort. For the fishery as a whole, 3.6% of hooks were observed in 2010. The total number of SBT caught while observers were on board was 1280, of which 564 were retained, 716 were discarded (711 of which were released alive) and none were tagged. Retained SBT ranged from 57–195 cm in length. The average length of observed discards in 2010 was 113.5 cm, and for 2002 to 2006 ranged from 130.3–160.0 cm. ETBF logbooks for 2010 showed 151.8 t (2812 fish) of SBT were retained in the ETBF and 1662 (37.1%) were discarded. In 2010, 2.5% of longline hook effort was

observed in the Western Tuna and Billfish Fishery (WTBF). Three vessels participated in this fishery in 2010, and no SBT were observed or reported to be caught.

## 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 fSBT 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.

## Ecologically related species

At the CCSBT Commission Meeting in 2008 (CCSBT 15) it was agreed that members would take steps to mitigate the impact of fishing for SBT on ecologically related species (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 2010 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.

## 9 References

Caton, A.E. and P.J. Ward. 1996. Arrangements on fisheries between the governments of Australia and Japan on tuna longlining. Annex to Ward P.J. (Ed.). 1996. Japanese longlining in eastern Australian waters 1962–1990. Bureau of Resource Sciences, Canberra

Forbes, E., Tracey, S. and J. Lyle. 2009. Assessment of the 2008 recreational gamefish fishery of southeast Tasmania, with particular reference to southern bluefin tuna. Tasmanian Aquaculture and Fisheries Institute, University of Tasmania, Hobart

Hobsbawn, P.I, Patterson, H and Begg, G 2011. Australia's 2009–10 Southern Bluefin Tuna Fishing Season. Working Paper CCSBT-ESC/1109/ SBT Fisheries-Australia, sixteenth meeting of the Scientific Committee of the Commission for the Conservation of Southern Bluefin Tuna, Bali, Indonesia, July 2011.

Rowell M., Moore, A., Sahlqvist, P. and G. Begg. 2008. Estimating Australia's recreational catch of southern bluefin tuna. Working Paper CCSBT-ESC/0809/17, thirteenth meeting of the Scientific Committee of the Commission for the Conservation of Southern Bluefin Tuna, Rotorua, New Zealand, September 2008

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

<b>Fishing Season</b>	<b>Start Date</b>	<b>End Date</b>
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
2009–10	1 December 2009	30 November 2010
2010–11	1 December 2010	30 November 2011

## Appendix 2 ERS Interactions 2010

### Eastern Tuna and Billfish Fishery (south of 30°S from May to September)

Common name	Scientific name	Number Caught	Number Released Alive	Number Released Dead
Leatherback turtle	<i>Dermochelys coriacea</i>	1	1	0
Mollymawk	Unknown	1	1	0
Yellow-nosed albatross	<i>Diomedea chlororhynchos</i>	1	0	1

Common Name	Scientific Name	Number Kept	Number Released
Thresher shark	<i>Alopias vulpinus</i>	2	5
Porbeagle	<i>Lamna nasus</i>	1	0
Tiger shark	<i>Galeocerdo cuvier</i>	48	19
Longfin mako	<i>Isurus paucus</i>	0	1
Manta ray	<i>Manta birostris</i>	0	2
Dusky shark	<i>Carcharhinus obscurus</i>	1	44
Blacktip sharks	<i>Carcharhinus spp.</i>	10	0
Bronze whaler	<i>Carcharhinus brachyurus</i>	34	3
Shortfin mako	<i>Isurus oxyrinchus</i>	619	87
Stingray	Dasyatididae family	0	7
Blue shark	<i>Prionace glauca</i>	65	1990
Hammerhead shark	<i>Sphyrna spp.</i>	22	0

### Southern Bluefin Tuna Fishery (purse seine)

Common name	Scientific name	Number caught	Number released alive	Number released dead
Seal	Unknown	1	1	0