

## South Australian Charter Boat Fishery Data Summary



**Rogers, P. J., Tsolos, A. and Boyle, M. K.**

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**SARDI Aquatic Sciences  
PO Box 120 Henley Beach SA 5022**

**August 2020**

**Final Report to PIRSA Fisheries and Aquaculture**

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This report was compiled using South Australian Charter Boat Fishery (SACBF) logbook data supplied by licensed operators between the financial years of 2007/08 and 2018/19. SARDI acknowledges and appreciates the efforts and co-operation of the SACBF licence holders in submitting their catch and activity records for each trip. Louise Abfalter, Nicole Bowden (SARDI) provided assistance in gathering and quality controlling the data and information provided. This report was reviewed by Dr Craig Noell, and Dr Greg Ferguson (SARDI), Jane Ham (PIRSA Fisheries and Aquaculture), and formally approved for release by A/Research Director Mike Steer (SARDI).

## EXECUTIVE SUMMARY

This report summarises the nominal catch, fishing activity and client dynamics data for the South Australian Charter Boat Fishery (SACBF) between 2007/08 and 2018/19.

There were 98 licences in the SACBF in 2017/18. This declined by 5% to 93 licences in 2018/19. There were 58 and 59 active licences in the fishery in 2017/18 and 2018/19, respectively, representing a ~25% reduction over the past 12 years. The number of clients participating in the fishery and number of trips declined by 39.1% and 38.5%, respectively, between 2007/08 and 2018/19.

Total catch compositions across the fleet in 2017/18 consisted of King George Whiting (KGW) (42.7%), Snapper (16.4%), Bight Redfish (13.3%), Silver Trevally (3.8%), Australian Salmon (3.2%), Southern Calamari (2.8%), Southern Bluefin Tuna (SBT) (2.5%) and Southern Garfish (2.1%) in the SACBF. During 2018/19, the relative importance of these species in catches was similar with KGW (40.0%), Snapper (19.2%), Bight Redfish (13.6%), Australian Salmon (4.1%), Silver Trevally (3.5%), SBT (2.6%) and Southern Garfish (2.1%) supporting catches in the SACBF.

Annual total nominal catches of KGW ranged between 28,889 and 54,563 fish between 2007/08 and 2018/19, with a declining trend over the 12-year time-series. In 2017/18 and 2018/19, total nominal catches of KGW were 34,109 and 28,889, respectively.

Estimates of total annual catch (by weight) of KGW were 11.9 t in 2017/18 and 9.8 t in 2018/19. The number of under-size KGW that were released annually ranged between 2,202 and 8,848, with 3,656 and 3,046 fish released in 2017/18 and 2018/19, respectively.

Annual total nominal catches of Snapper ranged between 13,127 and 34,450 fish between 2007/08 and 2018/19, with a declining pattern over the 12-year time-series. Total nominal catches of Snapper were 13,127 and 13,854 in 2017/18 and 2018/19, respectively. Estimates of annual catches (by weight) of Snapper were 39.8 t in 2017/18 and 40.4 t in 2018/19. The number of under-size fish released annually ranged between 8,273 and 22,269, with 10,482 and 9,679 fish released in 2017/18 and 2018/19, respectively.

It should be noted that confidential data that constituted records provided by less than five licence holders, and may contravene Section 124 of the *South Australian Fisheries Management Act 2007* have been omitted from this report. Figures have been validated and do not take into account information not received or processed by the SARDI Aquatic Sciences Statistics Group. Information may be updated or altered by SARDI Aquatic Sciences without notice.

**Keywords:** Recreational fishing, tourism, catch composition.

## INTRODUCTION

This report provides a summary of logbook data collected by the South Australian Charter Boat Fishery (SACBF). It updates information provided in the previous report of Rogers *et al.* (2017). Some of the data compiled in this report are strictly confidential. The SACBF has an annual estimated value of \$3.4 M AUD based on available economic data for 2017/18 (Econsearch, 2019). The fishery supported 156 jobs and contributed \$13.8 M to South Australia's Gross State Product in the same period (Econsearch, 2019).

The SACBF is a commercial operation that provides recreational fishing clients with a platform to access fisheries resources, through the provision of purpose-built vessels that are run by qualified and experienced operators. The fishery commenced operations in July 2005 and is managed by PIRSA Fisheries and Aquaculture in accordance with provisions of the *Fisheries Management (Charter Boat Fishery) Regulations 2016* under the *South Australian Fisheries Management Act 2007*.

The fishery operates throughout South Australian waters and key target species include King George Whiting (KGW) (*Sillaginodes punctatus*), Snapper (*Chrysophrys auratus*), Bight Redfish (*Centroberyx gerrardi*), Australian Salmon (*Arripis* spp.), Snook (*Sphyraena novaehollandiae*), Silver Trevally (*Pseudocaranx dentex*), Southern Calamari (*Sepia australis*) and Southern Bluefin Tuna (SBT) (*Thunnus maccoyii*) (Steer and Tsolos 2016).

## OBJECTIVE

This report summarises trends in client dynamics, fishing activity, catch composition and nominal catches in the SACBF between 2007/08 and 2018/19.



## **METHODS**

### **Catch statistics**

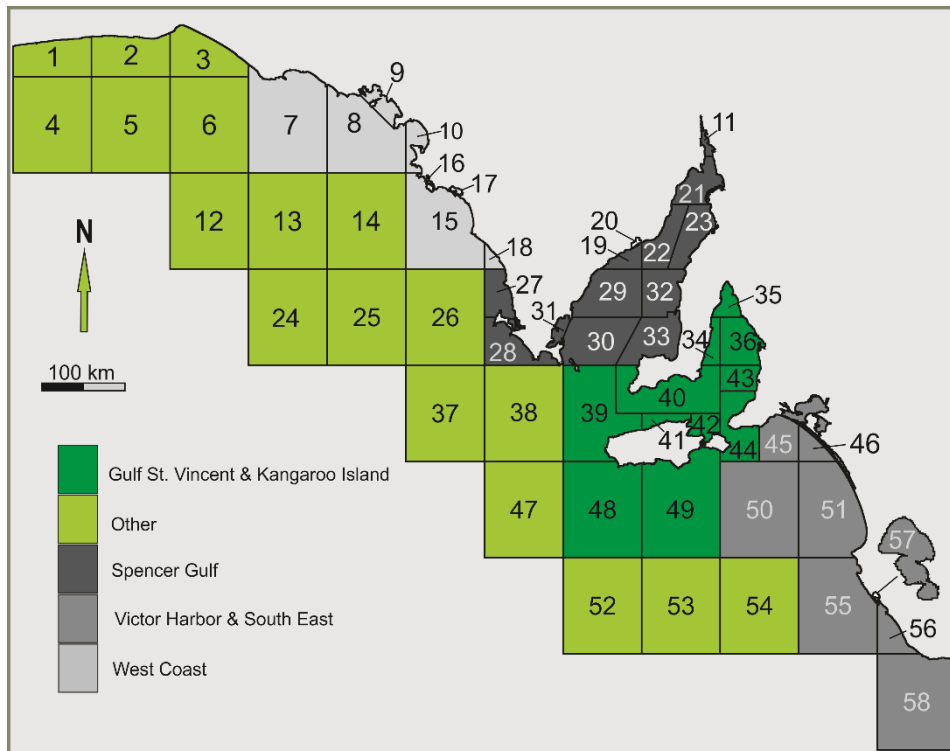
The SACBF operators are required to log their daily fishing activities, including specific details of the type of fishing activity, area of operation, number of clients, fishing time, gear used, targeted species and number of individuals retained (nominal catch). Additional information is collected for KGW and Snapper, including the number of released legal and under-size fish, and the estimated combined weight. These data must be submitted to SARDI Aquatic Sciences within 15 days after the end of each month. Metrics used in this report include the nominal catch or counts of individuals of each species retained by fishing activity type by region/gear, counts of individuals of each species released (< or > minimum legal length, MLL), and estimated weights for KGW and Snapper.

### **Spatial structure of the fishery**

South Australian State waters are divided into amalgamated marine fishing areas (MFAs) against which fishing activities are reported (Fig. 1). These areas are outlined in Knight (2010) and underpinned by the *Management Plan for the South Australian Charter Boat Fishery* (PIRSA, 2019). Nominal catch data were aggregated across the SACBF operators to provide annual totals by financial year at the State and regional level for key species. The MFAs are amalgamated into five regions. These include the West Coast, Spencer Gulf/Coffin Bay, Gulf St. Vincent/Kangaroo Island, Victor Harbor/South East, and 'Other'. The latter region is approximated by the area of the eastern and central Great Australian Bight (GAB) from near Cape Catastrophe, Eyre Peninsula out to the continental shelf slope to the South Australian - Western Australian border, and offshore areas to the south of Kangaroo Island (Fig. 1).

### **Quality assurance of data**

Validation of the SACBF logbook data includes cross-checking and code-driven queries that are activated during the entry of data and reporting phases (Steer and Tsolos 2016). Regular random checks of current and historic data are carried out as standard procedure.



**Figure 1.** The marine fishing areas of the South Australian Charter Boat Fishery and amalgamated marine fishing regions.

## RESULTS

### Fishery activity

The total number of registered licences in the SACBF declined from a peak of 109 to 93 (~14.7%) between 2009/10 and 2018/19 (Table 1). The number of active licences in the fishery ranged from 74–79 between 2007/08 and 2013/14. The number of clients participating in the fishery and number of trips declined by 39.1% and 38.5%, respectively, between 2007/08 and 2018/19. Active licences remained stable from 2014/15 to 2018/19. Over the most recent 5-year period, client participation decline by 15% and ranged between 13,364 and 15,646 clients.

**Table 1.** Activity patterns and client participation in the fishery between 2007/08 and 2018/19.

Financial year	Number of clients	No. of trips	Licences	Active licences
2007/08	21,941	3,636	108	78
2008/09	21,431	3,561	108	79
2009/10	21,846	3,552	109	77
2010/11	20,095	3,322	109	77
2011/12	23,710	3,566	109	77
2012/13	23,532	3,391	109	75
2013/14	19,227	2,830	105	74
2014/15	15,136	2,389	105	61
2015/16	15,646	2,607	102	61
2016/17	14,461	2,393	100	59
2017/18	14,382	2,412	98	58
2018/19	13,364	2,238	93	59

### Species composition of catches

A total of 68 species (or species groups) were caught and retained in the SACBF between 2007/08 and 2018/19 including two undefined 'other' groups. The nominal catch dataset for the SACBF is resolved to either a single species, or a species group in each case. The overall number of fish, molluscs, crustaceans, cephalopods, sharks and rays of all species (or species group) caught and retained in the SACBF across the 12-year reporting period was 1,407,729.

Annual catches of all taxa inclusive of all species (or species groups) ranged between 72,303 and 153,468 individuals (mean, SD: 117,311  $\pm$  29,740). The most recent estimate of total catch of 72,303 in 2018/19 was 9.5% lower than the previous year ( $n_{2017/18} = 79,852$ ) (Table 2). A total of 14 species accounted for 95% of the total annual catches in the SACBF in both 2017/18 and 2018/19 (Table 2).

Total nominal catches of key species, including KGW (34,109; 42.7%), Snapper (13,127; 16.4%), Bight Redfish (10,604; 13.3%), Silver Trevally (3,033; 3.8%), Australian Salmon (2,524; 3.2%), Southern Calamari (2,257; 2.8%), SBT (1,962; 2.5%), Southern Garfish (1,707; 2.1%), Snook (1,515; 1.9%), and Swallowtail (1,491; 1.9%) supported the fishery in 2017/18 (Table 2). During 2018/19, the relative importance of the key species in catches was similar with KGW (28,889; 40.0%), Snapper (13,854; 19.2%), Bight Redfish (9,830; 13.6%), Australian Salmon (2,969; 4.1%), Silver Trevally (2,539; 3.5%), SBT (1,849; 2.6%), Southern Garfish (1,533; 2.1%), Swallowtail (1,519; 2.1%) and Snook (1,510; 2.1%) supporting catches (Table 2).

Other key species (or groups) that individually had lower overall proportional nominal catches (<1%), and for which detailed catch and effort data were collected include, Blue Crab, Sweep, Gummy Shark, Australian Herring, Yellowtail Kingfish, Flathead spp., Samsonfish, Swallowtail, and Leatherjacket spp.

## King George Whiting

There was a declining pattern in annual nominal catch of KGW over the 12-year time-series. Annual total nominal catches of KGW ranged between 28,889 and 54,563 fish (mean, SD:  $42,134 \pm 10,346$ ) between 2007/08 and 2018/19 (Table 2). Total nominal catches of KGW were 34,109 and 28,889 in 2017/18 and 2018/19.

Estimated total annual catches by weight ranged from 9.6–19.1 t (mean, SD:  $14.4 \pm 3.7$ ), with 11.9 t and 9.8 t taken in 2017/18 and 2018/19 (Table 3). The number of under-size KGW (< MLL) that were released annually ranged between 2,202 and 8,848 (mean, SD:  $4,883 \pm 1855$ ), with 3,656 and 3,046 fish released in 2017/18 and 2018/19. The MLL of KGW is 30 cm east of longitude 136° E and 32 cm west of longitude 136° E. The proportion of legal-size KGW retained (as a percentage of all fish released) remained high and relatively stable (86–93%) across all years (Fig 2a).

## Snapper

There was a declining pattern in annual nominal catch of Snapper over the 12-year time-series. Annual total nominal catches of Snapper ranged between 13,127 and 34,450 fish (mean, SD:  $23,428 \pm 7,589.9$ ) from 2007/08 to 2018/19 (Table 2). Total nominal catches of Snapper were 13,127 and 13,854 in 2017/18 and 2018/19.

Estimated total annual catches of Snapper by weight ranged from 39.8 – 92.9 t (mean, SD:  $65.4 \pm 20.6$ ), with 39.8 t and 40.4 t taken in 2017/18 and 2018/19, respectively (Table 3).

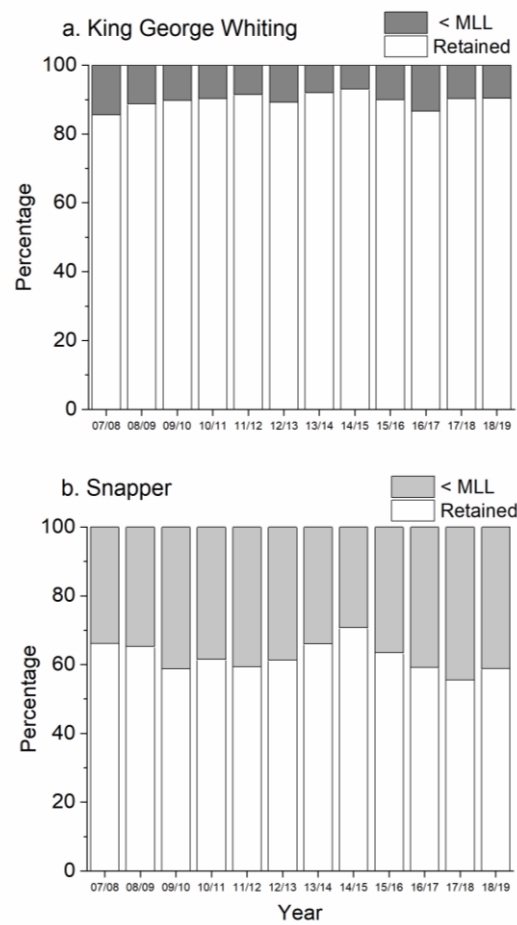
The MLL for Snapper is 38 cm. The number of under-size fish (< MLL) that were released annually ranged between 8,273 and 22,269 (mean, SD:  $14,143.8 \pm 4,683.9$ ), with 10,482 and 9,679 fish released in 2017/18 and 2018/19, respectively. The proportion of legal-size Snapper retained (as a percentage of all fish released) remained high and relatively stable (53.9 – 63.7%) across all years (Fig 2b).

**Table 2.** Nominal catches of species or group by financial year between 2007/08 and 2018/19. Annual totals are formatted in order of importance from highest to lowest across the 12-year time series. Values in bold are annual totals. King George Whiting = KGW, Southern Bluefin Tuna = SBT and Southern Rock Lobster = SRL. Confidential data = grey cells.

Species or group	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	Totals
KGW	52,531	54,563	49,788	54,327	54,563	42,289	35,526	29,469	35,424	34,125	34,109	28,889	<b>505,603</b>
Snapper	34,450	30,830	31,828	28,562	28,865	25,569	22,233	20,071	16,801	14,946	13,127	13,854	<b>281,136</b>
Bight Redfish	14,903	15,624	17,872	14,034	16,922	17,397	14,454	11,746	12,557	8,970	10,604	9,830	<b>164,913</b>
A. Salmon	6,732	7,051	6,075	1,954	4,815	5,694	7,112	4,556	5,657	3,566	2,524	2,969	<b>58,705</b>
Swallowtail	4,930	6,509	5,952	5,306	6,971	7,919	3,766	2,795	1,933	1,372	1,491	1,519	<b>50,463</b>
S. Trevally	3,796	3,465	4,693	5,479	4,529	4,540	3,700	4,466	5,326	3,933	3,033	2,539	<b>49,499</b>
S. Garfish	1,365	6,259	6,327	6,710	7,117	2,310	4,450	3,958	3,143	1,620	1,707	1,533	<b>46,499</b>
S. Calamari	2,137	2,244	3,348	2,307	7,401	6,571	4,572	3,167	2,816	2,364	2,257	1,371	<b>40,555</b>
Snook	5,376	3,406	4,260	5,280	4,861	3,575	1,726	2,501	2,340	3,841	1,515	1,510	<b>40,191</b>
Sweep	2,177	3,449	2,809	2,202	2,758	2,420	2,418	1,272	931	956	483	368	<b>22,243</b>
A. Herring	2,718	2,864	3,240	1,658	1,259	2,120	2,312	2,050	1,314	923	854	436	<b>21,748</b>
SBT	554	736	1,035	1,144	1,552	1,739	1,824	2,320	2,393	1,866	1,962	1,849	<b>18,974</b>
Leatherjacket spp.	1,932	1,969	1,850	1,711	2,342	2,016	1,901	973	1,159	1,107	964	963	<b>18,887</b>
Red Mullet	2,373	2,059	1,770	1,263	888	1,270	1,367	913	1,053	972	531	429	<b>14,888</b>
Blue Crab	1,424	1,497	1,383	761	1,112	677	1,018	434	1,612	1,514	945	986	<b>13,363</b>
Blue Mackerel	224		1,220	495	1,889	1,311			220		213	289	<b>8,519</b>
Flathead spp.	1,120	1,260	930	657	766	531	420	400	431	755	527	547	<b>8,344</b>
Wrasse spp.	608	717	1,059	584	830	949	632	638	667	716	534	236	<b>8,170</b>
School Whiting		580		178									<b>7,203</b>
Morwong	686	576	637	574	747	780	550	571	715	452	304	441	<b>7,033</b>
Gummy Shark	248	292	460	293	453	656	446	556	414	316	414	367	<b>4,915</b>
'Other' species	406	463	333	233	248	480	429	137	455	330	411	340	<b>4,255</b>
Razorfish													<b>2,871</b>
Yellowtail Kingfish	118	55	115	121	142	224	132	139	229	138	119	126	<b>1,658</b>
School Shark	83	76	93	45	133	101	256	119	83	79	178	137	<b>1,383</b>
Samsonfish	97	71	144	107	168	242	110	92	144	30	106	48	<b>1,359</b>
Blue Morwong	101	63	86	61		37	45	66		83	66	44	<b>751</b>
SRL	23	48	55			40	40	100		84	81		<b>740</b>
Barracouta	225	183	151			0	0	1	2	12			<b>665</b>
W. Blue Groper	101	49	81	73	40	27	45	30	39	18	30		<b>561</b>
Albacore			18	60							0	0	<b>442</b>
Striped Trumpeter	85					0							<b>356</b>
Cuttlefish spp.	34	25	26	44	23	66							<b>281</b>
Ling	43	48		17						41			<b>219</b>
Bronze Whaler	39	11	23	14	7	15	17	8	3	13	11	33	<b>194</b>
Weedy Whiting	47												<b>143</b>
<b>Totals</b>	<b>143,276</b>	<b>147,991</b>	<b>147,984</b>	<b>136,611</b>	<b>153,468</b>	<b>132,721</b>	<b>113,842</b>	<b>94,891</b>	<b>98,326</b>	<b>86,464</b>	<b>79,852</b>	<b>72,303</b>	<b>1,407,729</b>

**Table 3.** King George Whiting and Snapper captured and retained (estimated weight; tonnes) and numbers released relative to minimum legal length (MLL) regulations between 2007/08 and 2018/19. KGW MLL = 30 cm (E of 136° E) and 32 cm (W of 136° E) and Snapper MLL = 38 cm.

Species and metric	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19
KGW												
Estimated weight retained (t)	18.6	19.1	17.9	18.2	18.1	13.9	11.8	9.6	12.3	11.6	11.9	9.8
> MLL released (count)	1,170	867	613	780	499	649	472	246	434	543	732	392
< MLL released (count)	8,848	6,899	5,697	5,857	5,070	5,085	3,079	2,202	3,923	5,232	3,656	3,046
Snapper												
Estimated weight retained (t)	90.5	86.7	92.9	84.1	77.4	71.4	59	52.3	47.4	43.6	39.8	40.4
> MLL released (count)	2,967	3,080	2,624	1,887	1,884	2,075	1,263	1,219	668	684	759	913
< MLL released (count)	17,603	16,341	22,269	17,861	19,690	16,133	11,415	8,273	9,661	10,319	10,482	9,679



**Figure 2.** Percentage of (a) King George Whiting and (b) Snapper retained and released (<MLL) between 2007/08 and 2018/19. KGW MLL = 30 cm (E of 136° E) and 32 cm (W of 136° E) and Snapper MLL = 38 cm.



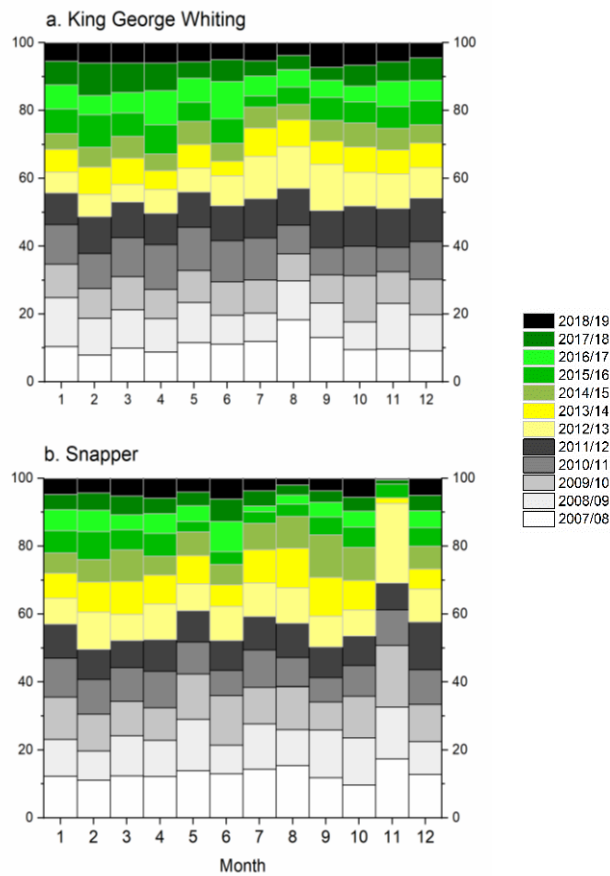
### Seasonal patterns in catches

#### King George Whiting

Percentage nominal catches of KGW were highest in autumn and winter in most years (Fig. 3a). During 2017/18, the catches of KGW were highest in February and lowest between July and September. In 2018/19, catches were marginally highest during September and October.

#### Snapper

Snapper catches were generally consistent across months with the exceptions of peaks during spring during some years (Fig. 3b). Peaks in percentage nominal catch were prominent during November in 2009/10 and 2012/13. This was prior to the implementation of seasonal closures. In 2017/18 and 2018/19, catches of Snapper were highest during June and lowest in August.



**Figure 3.** Seasonal patterns in percentage nominal catches of (a) King George Whiting and (b) Snapper.

## **Regional patterns in catch**

### Gulf St Vincent and Kangaroo Island

Catch compositions in the Gulf St. Vincent and Kangaroo Island region during 2017/18 and 2018/19 mostly comprised KGW, Snapper, Bight Redfish, Silver Trevally and Australian Salmon. (Table 4).

### Spencer Gulf and Coffin Bay

Catch compositions in the Spencer Gulf and Coffin Bay Peninsula region during 2017/18 were dominated by KGW, Snapper, Bight Redfish and Southern Calamari. In 2018/19, KGW, Snapper, Bight Redfish remained important, with catches of Southern Garfish increasing from the previous year (Table 5). Catches of Southern Calamari decreased between 2017/18 and 2018/19.

### West Coast

The nominal catch data for key species were largely confidential off Eyre Peninsula in 2017/18 and 2018/19 due to the low number of operators in this region (Table 6).

### Victor Harbor and South-east

Catch compositions in the Victor Harbor and South-east regions were supported by SBT and Snapper in 2017/18, with large components of the remainder of the dataset being confidential due to low numbers of operators (Table 7). Catches largely comprised of SBT and Snapper during 2018/19.

### Other

Annual catch compositions for key species in the 'Other' region were largely confidential due to the low number of operators (Table 8).

**Table 4.** Catch composition and fishing activities in Gulf St Vincent/Kangaroo Island region. King George Whiting = KGW, Southern Bluefin Tuna = SBT and Confidential data = grey cells.

Species	Activity	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19
A. Salmon	Game	0	0	0	0						0		
	Inshore	6,135	6,426	5,756	1,674	4,040	4,883	6,780	4,274	5,507	3,329	2,406	2,634
	Offshore												
Bight Redfish	Deepwater	0	0	0	0	0	0	0	0		0	0	0
	Game		0	0				155		419			
	Inshore	3,270	2,879	4,167	3,813	4,374	4,424	3,599	3,474	4,252	4,105	4,134	3,503
	Offshore	9,159	11,031	9,842	6,971	8,844	9,638	8,496	5,542	4,745	3,009	3,906	3,551
Blue Crab	Crab Lift Net					0	0		0	0			
	Inshore	436					0			1,086	1,182	659	342
Garfish	Crab Lift Net	0	0		0	0	0	0	0	0	0	0	0
	Inshore	803	1,638	3,223	2,689	1,213	937	3,263	2,059	793	1,273	835	
Gummy Shark	Deepwater	0	0	0	0	0	0	0	0		0	0	0
	Game		0	0	0							0	
	Inshore	156	195	329	175	269	387	307	310	228	165	216	183
	Lobster Pot	0	0	0	0	0	0	0	0	0	0		0
	Offshore	51	60	62	34	52	144	47	70	67	34	63	
KGW	Deepwater	0	0	0	0	0	0	0	0		0	0	0
	Game			0									0
	Inshore	30,902	33,638	27,959	28,315	20,954	18,110	15,133	12,542	17,510	14,614	13,111	9,740
	Offshore	414	823	616	704	769	382	641	743	785	632	725	541
Samsonfish	Game	0	0	0	0			0	0	0	0	0	0
	Inshore									15			
	Offshore		28	118		117	171	90		22			
School Shark	Game	0	0	0	0	0	0	0			0	0	0
	Inshore	32	43	56	18	87	25	184	18	21	15	96	60
	Offshore	39					25					33	
Snapper	Game	0								103			
	Inshore	9,774	9,040	9,492	9,470	11,513	12,934	12,908	10,110	9,831	9,234	7,434	7,420
	Lobster Pot		0				0			0	0		0
	Offshore	4,077	4,887	3,362	1,620	1,662	1,734	1,647	1,146	1,271	932	925	1,364
Snook	Game	0	0	0	0					0			
	Inshore	4,287	2,637	2,804	4,117	3,542	2,617	837	1,107	798	1,888	1,143	755
	Offshore	0							0		0		
SBT	Game			118	185	482	478	539	592	426	275	250	416
	Inshore				0	304	458	323	617	538	419	504	307
	Offshore		125				257	311	361	532	450	375	339
S. Calamari	Crab Lift Net	0	0		0	0	0	0	0	0	0	0	0
	Game	0	0	0	0	0	0	0	0		0	0	0
	Inshore	1,450	756	1,768	816	1,316	1,644	1,841	840	630	721	1,006	537
	Offshore											0	
S. Trevally	Crab Lift Net		0	0	0	0	0	0	0	0	0	0	0
	Deepwater	0	0	0	0	0	0	0	0		0	0	0
	Game	0	0	0						92		0	
	Inshore	2,170	1,929	2,812	3,160	2,357	2,620	1,767	2,450	3,088	2,060	1,878	1,028
	Lobster Pot	0	0	0	0		0	0	0	0	0	0	0
	Offshore	346	943	953	962	1,307	1,163	1,003	1,136	1,365	693	643	838

**Table 5.** Annual patterns in catch composition and fishing activities in Spencer Gulf and Coffin Bay Peninsula region. King George Whiting = KGW, Southern Bluefin Tuna = SBT and Confidential data = grey cells.

Species	Activity	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19
A. Salmon	Game	0	0	0	0	0	0	0	0	0	0	0	0
	Inshore	446	494	279	265	588	564	189	38		220	50	199
	Offshore	0		0			0	0	0		0		
Bight Redfish	Game		0				0	0		0	0		0
	Inshore	322		922	1,404	1,458	668	386		24			1,423
	Offshore			581									
Blue Crab	Crab Lift Net						0				0	0	0
	Inshore	657	626	804		677	641	660		402			521
Garfish	Inshore	560	4,621	3,080	4,021	5,904	1,373	1,187	1,899	2,350	347	870	1,094
	Offshore	0	0	0	0	0	0	0	0	0	0		0
Gummy Shark	Inshore		15	19		22	10				15	18	
	Offshore	0	0		0				0	0			
KGW	Deepwater	0	0	0	0	0	0	0	0		0	0	0
	Game	0	0				0	0	0		0	0	0
	Inshore	18,348	18,144	20,014	23,463	31,006	21,971	18,183	15,126	16,204	17,956	18,959	17,903
	Offshore		0	0			759						
Samsonfish	Inshore			0		0	0	0					
	Offshore	0			0	0	0	0			0		
School Shark	Inshore		15	6	0	9	15						
	Offshore	0	0	0				0	0				
Snapper	Game	0	0				0	0	0	0	0	0	0
	Inshore	17,122	15,726	16,910	15,569	13,907	9,379	6,933	7,349	4,919	4,359	3,993	4,290
	Offshore		0			169	787	179					
Snook	Inshore	947	479	1,171	949	1,202	827	874	1,389	1,501	1,944	364	724
	Offshore	0	0	0	0	0	0	0	0	0	0		0
SBT	Game	68	49	100									
	Inshore									0			
	Offshore	0											
S. Calamari	Deepwater	0	0	0	0	0	0	0	0		0	0	0
	Game	0	0	0	0	0	0	0		0	0	0	0
	Inshore	536	1,407	1,476	1,460	6,062	4,565	2,683	2,282	2,139	1,594	1,202	791
	Offshore	0	0	0	0	0		0	0	0	0		
S. Trevally	Deepwater	0	0	0	0	0	0	0	0		0	0	0
	Game		0		0	0	0	0	0	0	0	0	0
	Inshore	652	365	533	989	312	297	587	692	608	1,074	423	647
	Offshore							0					

**Table 6.** Annual patterns in catch composition and fishing activities in the West Coast region. King George Whiting = KGW, Southern Bluefin Tuna = SBT and Confidential data = grey cells.

Species	Activity	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19
A. Salmon	Game	0	0		0	0	0	0		0	0	0	0
	Inshore	136							0				
	Offshore	0				0		0	0	0	0		0
Bight Redfish	Game	0	0	0	0	0		0		0	0	0	0
	Inshore	313	386	786	408	316				1,135			
	Offshore	934								0			0
Blue Crab	Crab Lift Net			0			0	0	0				
	Game	0	0	0		0	0	0	0	0	0	0	0
	Inshore				0	0			0				0
Garfish	Inshore		0	0	0	0	0	0	0	0	0	0	0
Gummy Shark	Inshore												
	Offshore		0		0		0	0	0	0	0	0	0
KGW	Game	0	0	0			0	0	0	0	0	0	0
	Inshore	2,488	1,880	675	1,098	1,121		1,198	758	538			
	Offshore				0					0			0
Samsonfish	Game	0	0		0	0	0	0		0	0	0	0
	Inshore					0	0						
	Offshore		0	0		0	0	0	0	0	0		0
School Shark	Inshore										0	0	
	Offshore		0		0	0	0	0	0	0	0	0	0
Snapper	Game		0			0	0	0	0	0	0	0	0
	Inshore	823	553	854	650	542		330	1,089	558			
	Offshore		227							0			0
Snook	Game	0		0		0	0	0	0	0	0	0	0
	Inshore	99							0				
	Offshore		0			0	0	0	0	0	0	0	0
SBT	Game									0	0		0
	Inshore			0		0							
	Offshore			0			0	0	0	0	0		0
S. Calamari	Inshore												
	Offshore		0	0	0	0	0	0		0			0
S. Trevally	Inshore											0	
	Offshore					0				0			0

**Table 7.** Annual patterns in catch composition and fishing activities in the Victor Harbor/South East region. King George Whiting = KGW, Southern Bluefin Tuna = SBT and Confidential data = grey cells.

Species	Activity	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19
A. Salmon	Game	0	0	0	0	0	0	0			0	0	0
	Inshore				0					0	0		0
Bight Redfish	Game	0	0	0		0			0	0	0	0	0
	Inshore												
	Offshore	0	0							0			
Gummy Shark	Deepwater	0	0	0	0	0		0	0	0			
	Game	0	0	0							0		
	Inshore										0		
	Offshore												61
KGW	Game	0	0	0	0	0	0		0	0	0	0	0
	Inshore				602			0	0	0			
	Offshore	0	0	0	0	0		0	0	0	0	0	
Samsonfish	Offshore	0	0	0	0	0	0		0	0	0	0	0
School Shark	Deepwater	0	0	0	0	0	0	0	0			0	
	Game	0	0		0	0						0	0
	Inshore		0				0				0		
	Offshore	0	0										
Snapper	Deepwater	0	0	0	0	0	0	0	0	0	0	0	
	Game	0	0							0			
	Inshore	1,477	284	990	1,111	749	253		54				192
	Lobster Drop Net	0	0	0	0	0	0	0	0		0	0	0
	Lobster Pot	0	0	0	0	0	0	0	0	0		0	0
	Offshore												
Snook	Game	0		0	0	0	0		0	0	0	0	0
	Inshore	0						0	0		0	0	
SBT	Deepwater	0	0	0		0	0	0	0		0	0	0
	Game								367	403	269	168	253
	Inshore	0	0				0				0		
	Offshore		0				0			0			
S. Calamari	Inshore	0	0		0	0	0	0	0	0	0		0
	Offshore	0	0	0	0	0	0	0	0	0		0	0
S. Trevally	Inshore							0	0				0

**Table 8.** Annual patterns in catch composition and fishing activities in 'Other' region. King George Whiting = KGW, Southern Bluefin Tuna = SBT and Confidential data = grey cells.

Species	Activity	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19
A. Salmon	Inshore	0	0	0	0	0		0	0	0	0	0	0
	Offshore					0	0	0	0			0	0
Bight Redfish	Deepwater	0	0	0	0	0		0	0	0	0	0	0
	Game		0	0	0	0	0	0			0		
	Inshore		0									0	
	Offshore												
Gummy Shark	Inshore	0	0	0	0	0	0	0		0	0	0	0
	Offshore	0				0		0	0				
KGW	Game	0	0	0	0		0	0	0	0	0	0	0
	Inshore		0			128	0					0	0
	Offshore	0		0	0	0	0	0	0			0	0
Samsonfish	Game		0	0	0	0	0	0	0	0	0	0	0
	Inshore		0	0	0	0	0	0	0		0	0	
	Offshore			0					0				0
School Shark	Inshore	0	0	0	0	0		0	0		0	0	0
	Offshore		0		0	0		0	0	0			
Snapper	Game	0	0	0	0	0	0	0	0		0	0	0
	Inshore		0							0	0	0	0
	Offshore							0					0
Snook	Game		0	0	0	0	0	0	0	0	0	0	0
	Inshore		0	0	0	0	0		0	0	0	0	0
	Offshore	0	0	0		0	0	0	0	0		0	0
SBT	Deepwater	0	0	0	0	0		0	0	0	0	0	0
	Game	66											
	Inshore	0	0		0	0		0			0	0	0
	Offshore	0	0		0	0			0				
S. Calamari	Game		0	0	0	0	0	0	0	0	0	0	0
	Inshore		0	0	0	0	0	0	0			0	0
	Offshore				0	0		0	0		0	0	0
S. Trevally	Game		0	0	0	0	0			0	0	0	0
	Inshore		0		0	0	0	0	0			0	0
	Offshore					0		0	0				0

## DISCUSSION

The SACBF continued to target a suite of finfish and shark species across the geographical range of the fishery during 2017/18 and 2018/19. The targeted species represent a combination of high quality sport-fishing, culinary and photographic opportunities for fishers. Client numbers and effort measures showed a continuation of the contraction of the SACBF as discussed in previous reports (Steer and Tsolos 2016; Rogers *et al.* 2017).

The compositions of catches by clients in 2017/18 and 2018/19 were dominated by KGW, Snapper, Bight Redfish, Australian Salmon, Silver Trevally, SBT and Southern Calamari. The proximity of the main ports to these popular fish stocks in gulf, coastal and shelf waters partially explains the observed regional trends in the nominal catch compositions.

Nominal catches of KGW were the highest of all species taken by clients in the SACBF, yet the estimated total annual catch was the lowest of the historical range during 2018/19. Similarly, and in-line with these lower catches, annual numbers of under-sized KGW that were released were below the long-term average in 2017/18 and 2018/19. The proportion of legal KGW retained was high across all years, reflecting that a key driver of client motivation for targeting the species is the high eating qualities. Estimated total annual catches of Snapper by weight were also below the long-term average, however, the number of sub-legal fish released annually was still significant at 10,482 in 2017/18 and 9,679 in 2018/19. The survival rates of released under-sized Snapper in each sector of the fishery represents important information for sustainable management of the stock and will be investigated during the current FRDC funded project (2019-044) led by SARDI. Survival rates of line-caught Snapper will be estimated using acoustic-accelerometer tagging approaches, and scientific observer programs in the South-east of SA will seek to assess the rates of release and survival of under-size fish when they are released in different fishing scenarios.

Seasonal patterns in nominal catches of KGW and Snapper in the SACBF reflected the availability of stocks, clientele dynamics and management shifts towards spatial and temporal closures in regions of biological importance (e.g. spawning areas). Other factors likely to drive the differences in seasonality and catch compositions between the gulf and shelf areas include fishing habitat characteristics and relationships between seasonal water temperatures and prey availability for the large-bodied predatory species (e.g. SBT, Australian Salmon and sharks).



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