

# Southern Garfish (2018)

*Hyporhamphus melanochir*



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## STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Western Australia	Western Australia South Coast	SCEMF    WL (SC)	Depleting	Catch, effort, CPUE trends, estimated biomass depletion
Western Australia	Western Australia West Coast	CSFNMF, CSFNMF    SWCBNF    WL (NC, GC, WC), SCEMF, SWCBNF, WL (NC    GC    WC), WL (SC)	Depleted	Catch, effort, CPUE, age composition, fishing mortality rate, SPR
Victoria	Victoria	CIF, OF, PPBWPF	Sustainable	Catch, effort, CPUE trends
Tasmania	Tasmania	SF	Depleting	Catch, effort, CPUE trends, age composition
South Australia	Northern Gulf St. Vincent	MSF	Depleted	Catch, effort, CPUE, harvest fraction, biomass, egg production
South Australia	Northern Spencer Gulf	MSF	Recovering	Catch, effort, CPUE, harvest fraction, biomass, egg production
South Australia	South Australia West Coast	MSF	Sustainable	Catch, effort, CPUE trends
South Australia	South-East	MSF    SZRLF, SZRLF	Sustainable	Catch, effort, CPUE trends
South Australia	Southern Gulf St. Vincent	MSF    SZRLF, SZRLF	Sustainable	Catch, effort, CPUE trends
South Australia	Southern Spencer	MSF    NZRLF, NZRLF	Sustainable	Catch, effort, CPUE

	Gulf		
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MSF Marine Scalefish Fishery (SA), NZRLF Northern Zone Rock Lobster Fishery (SA), SZRLF Southern Zone Rock Lobster Fishery (SA), SF Scalefish Fishery (TAS), CIF Corner Inlet Fishery (VIC), OF Ocean Fishery (VIC), PPBWPF Port Phillip Bay and Western Port Bay Fishery (VIC), CSFNMF Cockburn Sound (Fish Net) Managed Fishery (WA), SCEMF South Coast Estuarine Managed Fishery (WA), SWCBNF South West Coast Beach Net Fishery (Order) (WA), WL (SC) Open Access in the South Coast (WA), WL (NC || GC || WC) Open Access in the North Coast, Gascoyne Coast and West Coast Bioregions (WA), MSF || NZRLF Marine Scale Fishery (including Northern Zone Rock Lobster Fishery) (SA), MSF || SZRLF Marine Scale Fishery (including Southern Zone Rock Lobster Fishery) (SA), CSFNMF || SWCBNF || WL (NC, GC, WC) Various Fisheries combined due to 3 boat rule (WA), SCEMF || WL (SC) Various Fisheries combined due to 3 boat rule (WA)

## STOCK STRUCTURE

Southern Garfish has a wide distribution in Australia, extending from Lancelin in Western Australia, along the southern coast of mainland Australia and up the east coast to Eden in southern New South Wales, as well as the surrounding waters of Tasmania [Gomon et al. 2008].

There has been no research into the stock structure of Western Australian populations of Southern Garfish. However, given the limited dispersal typically displayed by Southern Garfish, and the large spatial separation between the west and south coasts of Western Australia, it is highly likely that the west and south coast support separate biological stocks of this species [Steer et al. 2009, Ye et al. 2002].

In Victoria, there has been no research into the stock structure for populations of Southern Garfish and they are assumed to constitute a single jurisdictional stock.

In Tasmania, differences in size and age composition between the north coast and the east coast indicate that there may be multiple biological stocks; however, no firm evidence exists at present, and current stock assessments assume a single state-wide biological stock [Moore et al. 2018].

A multidisciplinary otolith-based study (otolith chemistry and morphometrics) identified at least five biological stocks in South Australia: West Coast, Northern Spencer Gulf, Southern Spencer Gulf, Northern Gulf St. Vincent and Southern Gulf St. Vincent [Steer et al. 2009]. Given the level of spatial separation of Southern Garfish observed between the gulfs, it was assumed that Southern Garfish from the south east also comprised a separate biological stock.

Here, assessment of stock status is presented at the biological stock level—Western Australia West Coast and Western Australia South Coast; South Australia West Coast (Western Australia); Southern Spencer Gulf, Northern Spencer Gulf, Southern Gulf St. Vincent, Northern Gulf St. Vincent and South East (South Australia); Tasmania; and at the jurisdictional level—Victoria.

## STOCK STATUS

### Northern Gulf St. Vincent

Southern Garfish are a primary species in South Australia's commercial multispecies, multi-gear and multi-sectoral Marine Scalefish Fishery. The most recent fishery assessment of Southern Garfish stock status was completed in 2018 and integrated catch and effort data from the commercial sector to the end of December 2017; state-wide estimates of recreational catch data; and population demographic information (sex, age, and length composition) [Steer et al. 2018].

The annual total commercial catch of Southern Garfish in Northern Gulf St. Vincent declined from a peak of 221 t in 2000 to the lowest level on record in 2016 (56.8 t) before increasing to 67.7 t in 2017. Total hauling net effort declined to its lowest level in 2017, where fishers expended 1 768 days catching Southern Garfish, representing a 29.8 per cent decline since 2011. Targeted nominal catch rates within the hauling net sector, have increased by 41 per cent since 2015 to 48.7 kg per fisher-day in 2017, returning to relatively moderate levels, but considerably less than the peak catch rate of 110 kg per fisher-day in 2000. The recent trend in hauling net effort was a result of management

arrangements that were implemented to reduce fishing activity during the peak winter season [Steer et al. 2018].

The primary measure for biomass is modelled estimates of fishable biomass and egg production [Steer et al. 2018]. The annual fishable biomass and egg production for Northern Gulf St. Vincent have remained relatively stable since 2014 at approximately 200 t and 11 per cent of unfished levels, respectively. Recruitment levels declined to 1.9 million recruits in 2015, which was 14.6 per cent lower than the long-term average. The above evidence indicates that the biomass of this stock is likely to be depleted and that recruitment is likely to be impaired.

The primary measure for fishing mortality is modelled estimates of harvest fraction [Steer et al. 2018]. High exploitation rates have been evident for the Northern Gulf St. Vincent stock and these peaked at 91 per cent in 2002. Since then, the annual harvest fraction has declined by approximately 3 per cent per year, dropping to a record low of 38.6 per cent in 2016. The above evidence indicates that current fishing mortality has been reduced by management to a level that should allow the stock to recover from its recruitment impaired state; however, measurable improvements are yet to be detected.

On the basis of the evidence provided above, the Northern Gulf St. Vincent biological stock is classified as a **depleted stock**.

### **Northern Spencer Gulf**

Historically, Northern Spencer Gulf has been the most productive region for Southern Garfish in South Australia and, in 2017, contributed to 55 per cent of the state-wide catch. Annual catch in this region has been relatively stable over the past three years averaging approximately 85 t, but these catches were the lowest on record, having declined from a peak of 271 t in 1990. Annual total hauling net effort declined to its lowest level in 2013, when fishers expended 2,226 days catching Southern Garfish. Effort then increased to 2 716 fisher-days in 2015 and has since remained above 2 400 fisher-days. Targeted catch rates in the dominant hauling net sector had declined from a peak of 130 kg.fisherday<sup>[-1]</sup> in 2012 to 68 kg.fisherday<sup>[-1]</sup> in 2016, but have increased to 83 kg.fisherday<sup>[-1]</sup> in 2017, to 64 per cent of the historical maximum.

The primary measure for biomass is modelled estimates of fishable biomass [Steer et al. 2018]. Fishable biomass has increased since 2003, at a rate of approximately 4 t.year<sup>[-1]</sup> (1.5 per cent), most likely in response to substantially declining exploitation rates. There was little change in fishable biomass from 2014 until 2016, remaining at approximately 280 t.year<sup>[-1]</sup>. Annual egg production has increased since 2005, reaching 11 per cent of unfished levels over the last decade. The above evidence indicates that the biomass of this stock is likely to be depleted and that recruitment is likely to be impaired. However, for the period since 2003, increased catch rates and the harvestable biomass indicator indicate a recovering stock.

The primary measure for fishing mortality is modelled estimates of harvest fraction [Steer et al. 2018]. Over the past 15 years the annual estimates of harvest fraction have declined at a rate of approximately 2 per cent per year to substantially lower values in 2016 (49.3 per cent) and 2017 (54.8 per cent). In addition, the continual increases in the minimum hauling net mesh size from 30 mm to 32mm in 2012, to 34 mm in 2015, and to 35 mm in 2017 were specifically implemented to promote the recovery of the resource by reducing the mortality of small Southern Garfish. The above evidence indicates that the current level of fishing mortality should allow the stock to recover from its recruitment impaired state.

On the basis of the evidence provided above, the Northern Spencer Gulf biological stock is classified as a **recovering stock**.

**South  
Australia  
West Coast**

Southern Garfish are a primary species in South Australia's commercial multispecies, multi-gear and multi-sectoral Marine Scalefish Fishery. The most recent assessment of Southern Garfish was completed in 2018 and used data to the end of December 2017 [Steer et al. 2018].

The primary measures for biomass and fishing mortality are catch, effort and catch rate. A small amount of Southern Garfish is landed by the commercial sector on the West Coast. Since 2005, total catch has been  $< 10 \text{ t.yr}^{-1}$ , which is  $< 2$  per cent of the state-wide total annual catch. The implementation of commercial netting restrictions in this region has contributed to the continuous reduction in hauling net effort since the late 1950s [Steer et al. 2018]. Targeted catch rates by approximately 11 dab net fishers have remained high ( $> 42 \text{ kg.fisherday.yr}^{-1}$ ) since 2015, reflecting a relatively high abundance of Southern Garfish in the region. The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. Furthermore, the above evidence indicates that the current level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

On the basis of the evidence provided above, the South Australia West Coast biological stock is classified as a **sustainable stock**.

**South-East**

The primary measure for biomass and fishing mortality is catch and catch rates. Few Southern Garfish are landed by the commercial sector in the South East. During the 2000s, total catch has generally been  $< 1.0 \text{ t.yr}^{-1}$ , rarely exceeding 0.3 per cent of the annual state-wide catch of Southern Garfish. Contemporary catch rates have exceeded  $20 \text{ kg.fisherday}^{-1}$  and were similar to those attained during the late 1980s. The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. Furthermore, the above evidence indicates that the current level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

On the basis of the evidence provided above, the South East biological stock is classified as a **sustainable stock**.

**Southern  
Gulf St.  
Vincent**

The primary measures for biomass and fishing mortality are catch, effort and catch rate. The history of this regional fishery is characterised by relatively low levels of fishing activity and commercial catch. Prior to 1993, the commercial catch of Southern Garfish from southern Gulf St. Vincent was equally shared between the hauling net and dab net sectors. Since then, the hauling net sector has declined, with a steady reduction in fishing effort. In 2006, dab nets became the dominant gear type. Hauling nets were removed from this region by implementation of a voluntary net buy-back scheme and spatial netting closures in 2005. Prior to this management restructure, the commercial catch of Southern Garfish from this region rarely exceeded 10 per cent of the state-wide harvest, which was reduced to  $< 5$  per cent by these measures. Since 2005, total catch from this region has generally been  $< 13 \text{ t.yr}^{-1}$ . Over the last three years targeted dab net effort has declined to the lowest levels on record; while associated catch rates have remained relatively strong, indicating that the current level of fishing mortality is unlikely to cause the stock to become recruitment impaired. The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. Furthermore, the above evidence indicates that the current level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

On the basis of the evidence provided above, the Southern Gulf St. Vincent biological stock is classified as a **sustainable stock**.

**Southern  
Spencer**

The primary measures for biomass and fishing mortality are catch, effort and catch rate. Large areas of Southern Spencer Gulf have been closed to

**Gulf** commercial hauling net fishing since 2005, and as a result the relative contribution of this region to the state-wide catch has decreased from approximately 10 per cent up to 2005 to 3 per cent over the past nine years. The hauling net sector historically accounted for approximately 30 per cent of the total catch of this stock, which peaked at 71.2 t in 1998. However, it has been considerably eroded through spatial restrictions imposed in 2005 to become almost exclusively fished by the dab net sector. Total catch of Southern Garfish in this region has not exceeded 15 t since 2009. Targeted dab net effort remained relatively stable at approximately 120 fisher-days from 2011 to 2014, before increasing above 210 fisher-days in 2015, 2016 and 2017. Targeted dab net CPUE peaked at 55.6 kg.fisherday<sup>[-1]</sup> in 2010, dropping to 38.5 kg.fisherday<sup>[-1]</sup> in 2012 before returning to 52.4 kg.fisherday<sup>[-1]</sup> in 2016. In 2017, targeted dab net CPUE was 35.6 kg.fisherday<sup>[-1]</sup>, representing a 32 per cent reduction over the last year. The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. Furthermore, the above evidence indicates that the current level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

On the basis of the evidence provided above, the Southern Spencer Gulf biological stock is classified as a **sustainable stock**.

**Tasmania** Between 1995 and 2005 commercial catches of Southern Garfish in Tasmanian waters were relatively stable and ranged between 80–100 t per annum. A sharp decline to 31 t in 2007 coincided with a reduction in average size and truncation of older age classes in the catch, which may have resulted from heavy fishing pressure and/or a period of poor recruitment. As a result, seasonal closures were introduced in 2009 to protect spawning fish. By 2012, there was evidence of an increase in the size of Southern Garfish landed, a greater range of age classes present and increasing catch per unit effort, which collectively was interpreted to indicate stock recovery over that period. Catches fluctuated between 40 and 60 t up until 2013 after which they again trended downwards, with 16 t taken in 2017, the lowest catch on record [Moore et al. 2018]. Catch rates for both dipnet and beach seine have also declined sharply over the past four years [Moore et al. 2018]. The above evidence indicates that the current level of fishing pressure is likely to cause the stock to become recruitment impaired.

On the basis of the evidence provided above, the Tasmania biological stock is classified as a **depleting stock**.

**Victoria** In Victoria, Southern Garfish are predominantly landed in the Corner Inlet and Port Phillip Bay Fisheries using haul seines where 76 t and 870 kg were landed in 2017 respectively. Catches in the Corner Inlet Fishery (CIF) range from 13 t to 90 t between 2000 and 2017 [VFA 2017]. Catch rates (haul seines) in the CIF declined from 1979–90 (average 26 kg/shot) to a historical low in 1996–97 (7.4 kg/shot) [Conron et al. 2016]. Over the period 2001–02 to 2004–05, catch rates appeared to stabilise around the long-term average of 20 kg/shot [VFA 2017]. In 2014–15, catch rates dropped to well below the long-term average, following a declining trend in the five year average catch rate since 2004–05 [VFA 2017]. In 2017, catch increased to 76 t which was 58 t above the previous year's catch; while CPUE significantly increased to 32 kg/shot which was 23 per cent per cent above the historical long-term average catch rate obtained from 1979–90 [VFA unpublished data]. These changes indicate that abundance of this stock is subject to rapid fluctuations as a result of inter-annual recruitment variability. Catches in the Port Phillip Bay and Western Port Fishery (PPBWPF) have fluctuated between 4 t in 2014 and 44 t in 2001. As the effort in the Port Phillip Bay fishery started to reduce due to the buy-out of most fishing licences in April 2016, catches in 2017 decreased to 870 kg [VFA unpublished data]. Catch rates for the Port Phillip Bay Fishery have been declining since 2011–12 and by 2014–

15 were still at about half the long-term average [Conron et al. 2016].

The majority of recreational catch of Southern Garfish comes from Port Phillip Bay. In 2000–01, it was estimated that 25 t was taken by the Victorian recreational fishery, constituting 3.4 per cent of the state-wide recreational catch of all species in marine waters. Recreational catch rates of Southern Garfish by anglers in Port Phillip Bay have declined slightly since 2004–05 [Henry and Lyle 2003]. As the CIF largely dominates the catch and most commercial fishers no longer land Southern Garfish in the PPBWPF, greater emphasis on the CIF was used to determine the status of the stock.

The above evidence indicates that the stock is unlikely to be depleted and that recruitment is unlikely to be impaired. Furthermore, the above evidence indicates that the current level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

On the basis of the evidence provided above, Southern Garfish in Victoria is classified as a **sustainable stock**.

**Western  
Australia  
South Coast**

In the past five years (2013–17), 65 per cent of South Coast commercial landings of Southern Garfish were from a single estuary, Wilson Inlet. The current assessment of the Wilson Inlet stock is based on commercial catch and catch rate trends. Southern Garfish taken elsewhere on the South Coast are not assessed.

The commercial catch in Wilson inlet followed an increasing trend from 1990 until 2013, when it peaked at 9.9 tonnes (t). The catch has since declined and was 2.4 t in 2017, below the 20 year (1997–2016) average of 4.2 t. Stock reduction modelling (catch- $MSY$ , Martell and Froese 2013) of annual catches reported since the 1950s suggests that biomass is declining and is currently around 30 per cent of the unfished level, although with wide confidence intervals. With the exception of 2017, most catches over the past decade have been above the estimated  $MSY$ .

The standardised commercial catch rate in 2017 (6 kg/gear day) was slightly above 50 per cent of the average (11 kg/day) during the period 2000–16). However, catch rates may not be a reliable index of abundance for this stock due to a lack of precise estimates of targeted commercial effort for Southern Garfish.

This evidence suggests that the biomass has declined but the stock is not yet considered to be depleted. The stock is not considered to be recruitment impaired. If the catch remains around the 2017 level in future, the stock is unlikely to become recruitment impaired.

On the basis of this evidence, the Western Australia South Coast biological stock is classified as a **depleting stock**.

**Western  
Australia  
West Coast**

Until 2017, Cockburn Sound, which is within the Perth metropolitan zone, was the main fishery for Southern Garfish in the West Coast Bioregion (WCB). About 80 per cent of commercial landings and an estimated 50 per cent of recreational landings of this species in the WCB were taken in Cockburn Sound [Smith et al. 2017]. In 2017, a total fishing closure for Southern Garfish was implemented in the Perth metropolitan zone. The current assessment of the Cockburn Sound stock is based on commercial and recreational catch rate trends up to 2017, age structure from historic (1998–99) and recent (2010–11) years, fishing mortality (from catch curves) and spawning potential ratio (SPR, from per recruit analyses).

Catch rates in Cockburn Sound followed a declining trend after the late 1990s, which accelerated after 2011 after an unprecedented marine heatwave event

along the west coast [Pearce et al. 2011]. The stock appears to have suffered poor recruitment during the heatwave. At this time, the age structure was heavily truncated, with older fish absent from the population, and SPR estimates suggested that the stock biomass was around 20 per cent of the unfished level [Smith et al. 2017]. A further decline in catch and catch rates after that time suggested a further decline in stock level [Smith et al. 2018].

The above evidence indicates that the stock is likely to be recruitment impaired.

On the basis of the evidence provided above, the Western Australia West Coast biological stock is classified as a **depleted stock**.

## BIOLOGY

**Southern Garfish biology** [Smith et al. 2017, Ye et al. 2002]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Southern Garfish	South Australia: 10 years, 380 mm TL Tasmania: 9.5 years, 460 mm TL Western Australia: 12 years, 430 mm TL	Western Australia: 12 months, 230 mm TL South Australia: 18 months, 190 mm TL Victoria: 19 months, 210 mm TL Tasmania: 22 months, 200 mm TL

## DISTRIBUTION



Distribution of reported commercial catch of Southern Garfish

## TABLES

Commercial Catch Methods	South Australia	Tasmania	Victoria	Western Australia
Beach Seine				✓
Dab Net	✓			
Dip Net		✓		
Gillnet				✓

Hand Line, Hand Reel or Powered Reels				✓
Haul Seine		✓		✓
Hook and Line			✓	
Lift nets				✓
Net			✓	✓
Seine Nets	✓			
Unspecified	✓	✓	✓	✓

<b>Fishing methods</b>				
	<b>South Australia</b>	<b>Tasmania</b>	<b>Victoria</b>	<b>Western Australia</b>
<b>Commercial</b>				
Beach Seine				✓
Dab Net	✓			
Dip Net		✓		
Gillnet				✓
Haul Seine		✓		✓
Hook and Line			✓	
Net			✓	
Seine Nets	✓			
Unspecified	✓	✓		✓
<b>Indigenous</b>				
Dab Net	✓			
Hook and Line	✓			
<b>Recreational</b>				
Beach Seine		✓		
Dab Net	✓	✓		
Hook and Line	✓	✓	✓	✓
Net			✓	

<b>Management Methods</b>				
	<b>South Australia</b>	<b>Tasmania</b>	<b>Victoria</b>	<b>Western Australia</b>
<b>Commercial</b>				
Effort limits	✓		✓	
Gear restrictions	✓	✓	✓	✓
Licence			✓	
Limited entry	✓	✓	✓	✓
Size limit	✓	✓		
Spatial closures	✓	✓	✓	✓
Temporal	✓	✓		



<b>closures</b>				
<b>Vessel restrictions</b>				✓
<b>Indigenous</b>				
<b>Bag limits</b>	✓			
<b>Customary fishing permits</b>			✓	
<b>Size limit</b>	✓			
<b>Recreational</b>				
<b>Bag and possession limits</b>				✓
<b>Bag limits</b>	✓	✓	✓	✓
<b>Gear restrictions</b>	✓		✓	
<b>Licence</b>		✓	✓	
<b>Licence (boat-based sector)</b>				✓
<b>Size limit</b>	✓	✓		
<b>Spatial closures</b>			✓	

<b>Active Vessels</b>	<b>South Australia</b>	<b>Tasmania</b>	<b>Victoria</b>	<b>Western Australia</b>
	87 Licences in MSF, 1 Licences in NZRLF, 2 Licences in SZRLF,	21 Vessels in SF,	17 Licence Holders in CIF, 2 Licence Holders in OF, 6 Licence Holders in PPBWPF,	&lt;3 in CSFNMF, 14 in SCEMF, 3 in SWCBNF, 8 in WL (SC), &lt;3 in WL (NC    GC    WC),

**MSF** Marine Scalefish Fishery(SA)

**NZRLF** Northern Zone Rock Lobster Fishery(SA)

**SZRLF** Southern Zone Rock Lobster Fishery(SA)

**SF** Scalefish Fishery(TAS)

**CIF** Corner Inlet Fishery(VIC)

**OF** Ocean Fishery(VIC)

**PPBWPF** Port Phillip Bay and Western Port Bay Fishery (VIC)

**CSFNMF** Cockburn Sound (Fish Net) Managed Fishery(WA)

**SCEMF** South Coast Estuarine Managed Fishery(WA)

**SWCBNF** South West Coast Beach Net Fishery (Order)(WA)

**WL (SC)** Open Access in the South Coast(WA)

**WL (NC || GC || WC)** Open Access in the North Coast, Gascoyne Coast and West Coast Bioregions(WA)

<b>Catch</b>	<b>South</b>	<b>Tasmania</b>	<b>Victoria</b>	<b>Western</b>
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	Australia			Australia
<b>Commercial</b>	164.838t in MSF, 9.861t in MSF    NZRLF, 7.143t in MSF    SZRLF,	16.3529t in SF,	76.5369t in CIF, 0.8695t in PPBWPF,	0.835t in CSFNMF    SWCBNF    WL (NC, GC, WC), 4.62t in SCEMF    WL (SC),
<b>Indigenous</b>	Unknown	Unknown	Unknown (No catch under permit)	
<b>Recreational</b>	79 t (2013/14 survey) [Giri and Hall 2015]	2 t (in 2012–13 survey)	21 t (2006–07)	<1 t in 2015/16 (boat-based only)

MSF Marine Scalefish Fishery (SA), NZRLF Northern Zone Rock Lobster Fishery (SA), SZRLF Southern Zone Rock Lobster Fishery (SA), SF Scalefish Fishery (TAS), CIF Corner Inlet Fishery (VIC), OF Ocean Fishery (VIC), PPBWPF Port Phillip Bay and Western Port Bay Fishery (VIC), CSFNMF Cockburn Sound (Fish Net) Managed Fishery (WA), SCEMF South Coast Estuarine Managed Fishery (WA), SWCBNF South West Coast Beach Net Fishery (Order) (WA), WL (SC) Open Access in the South Coast (WA), WL (NC || GC || WC) Open Access in the North Coast, Gascoyne Coast and West Coast Bioregions (WA), MSF || NZRLF Marine Scale Fishery (including Northern Zone Rock Lobster Fishery) (SA), MSF || SZRLF Marine Scale Fishery (including Southern Zone Rock Lobster Fishery) (SA), CSFNMF || SWCBNF || WL (NC, GC, WC) Various Fisheries combined due to 3 boat rule (WA), SCEMF || WL (SC) Various Fisheries combined due to 3 boat rule (WA),

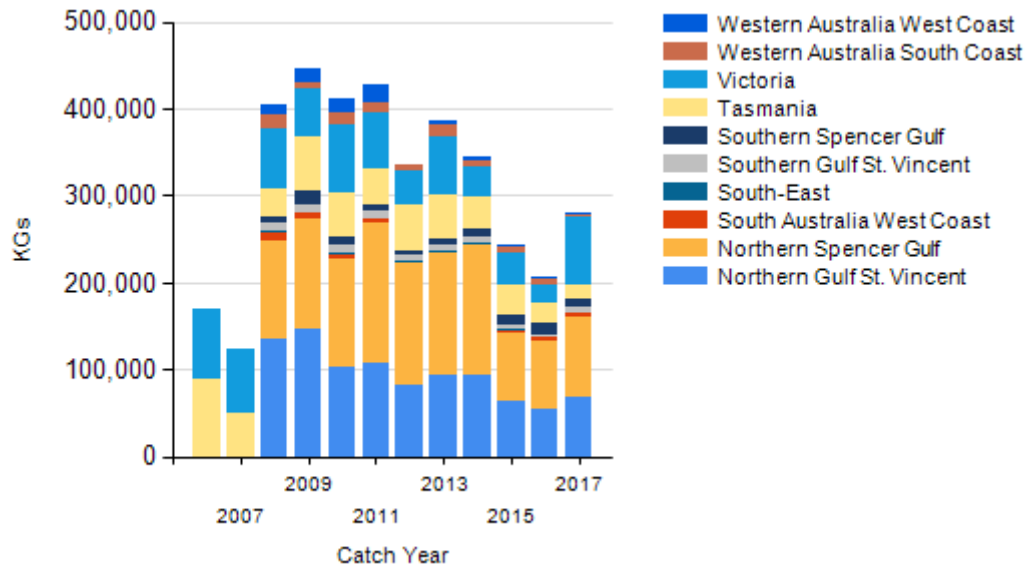
**Victoria – Indigenous (management methods)** In Victoria, regulations for managing recreational fishing may not apply to fishing activities by Indigenous people. Victorian traditional owners may have rights under the Commonwealth's *Native Title Act 1993* to hunt, fish, gather and conduct other cultural activities for their personal, domestic or non-commercial communal needs without the need to obtain a licence. Traditional Owners that have agreements under the *Traditional Owner Settlement Act 2010* (Vic) may also be authorised to fish without the requirement to hold a recreational fishing licence. Outside of these arrangements, Indigenous Victorians can apply for permits under the *Fisheries Act 1995* (Vic) that authorise fishing for specific Indigenous cultural ceremonies or events (for example, different catch and size limits or equipment). There were no Indigenous permits granted in 2017 and hence no Indigenous catch recorded.

**South Australia – Commercial (catch)** Data for the Northern Zone Rock Lobster Fishery (South Australia) and the Southern Zone Rock Lobster Fishery (South Australia) have been combined because of confidentiality requirements.

**Tasmania – Recreational (management methods)** In Tasmania, a recreational licence is required for fishers using dropline or longline gear, along with nets, such as gillnet or beach seine. e Tasmania – Indigenous (management methods) In Tasmania, Indigenous people engaged in fishing activities in marine waters are exempt from holding recreational fishing licences, but must comply with all other fisheries rules as if they were licensed. Additionally, recreational bag and possession limits also apply. If using pots, rings, set lines or gillnets, aborigines must obtain a unique identifying code (UIC). The policy document Recognition of Aboriginal Fishing Activities for issuing a Unique Identifying Code (UIC) to a person for Aboriginal Fishing activity explains the steps to take in making an application for a UIC

**Western Australia – Recreational (catch)** Current shore-based recreational catch and effort in Western Australia is unknown. State-wide surveys of boat-based fishing are conducted regularly, most recently in 2015/16 [Ryan et al. 2017].

## CATCH CHART



Commercial catch of Southern Garfish - note confidential catch not shown

## EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

### ENVIRONMENTAL EFFECTS on Southern Garfish

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