

Blue Grenadier (2016)

Macruronus novaezelandiae



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Commonwealth	Commonwealth Trawl Sector	SESSF (CTS)	Sustainable	Spawning stock biomass, fishing mortality
Commonwealth	Great Australian Bight Trawl Sector	SESSF (GABTS)	Sustainable	Current and historical fishing pressure

SESSF (CTS) Southern and Eastern Scalefish and Shark Fishery (Commonwealth Trawl Sector) (CTH), SESSF (GABTS) Southern and Eastern Scalefish and Shark Fishery (Great Australian Bight Trawl Sector) (CTH)

STOCK STRUCTURE

Comparative analysis of otolith chemistry and shape indicates two biological stocks of Blue Grenadier: one in the region of the Southern and Eastern Scalefish and Shark Fishery (Great Australian Bight Trawl Sector) (Commonwealth) and the other in the region of the Southern and Eastern Scalefish and Shark Fishery (Commonwealth Trawl Sector) (Commonwealth) (SESSF [CTS])[1]. There is some evidence that Blue Grenadier from the western Tasmanian and eastern Bass Strait regions of the SESSF (CTS) may constitute separate sub-stocks, but these are currently assessed and managed as a single Commonwealth Trawl Sector stock[2].

Here, assessment of stock status is presented at the biological stock level—Commonwealth Trawl Sector and Great Australian Bight Trawl Sector (Commonwealth).

STOCK STATUS

Commonwealth Trawl Sector Blue Grenadier in the Commonwealth Trawl Sector (SESSF [CTS]) and the Gillnet, Hook and Trap Sector (Commonwealth) (SESSF [GHTS]) of the Southern and Eastern Scalefish and Shark Fishery (Commonwealth) is managed under a multiyear total allowable catch (TAC). The SESSF (CTS) accounts for the majority of the catch. Given the relatively low catch from the SESSF (GHTS) from the area of the SESSF (CTS), the biological stock is referred to in this report as the Commonwealth Trawl Sector biological stock.

The Blue Grenadier stock assessment was updated in 2013 with new catch-

at-age and catch rate data up to 2012, as well as estimates of spawning biomass from acoustic surveys (industry-based) and egg survey indices of female spawning biomass[3]. The assessment estimated a large recruitment event in 2010. The stock was assessed as being above the target reference point at 77 per cent of unfished biomass in 2012, and trending upwards. This stock is not considered to be recruitment overfished[4].

Blue Grenadier was managed under multiyear TACs of 4700 tonnes (t) for the 2009–10 to 2011–12 seasons, and 5208 t for the 2012–13 and 2013–14 seasons. The 2013 assessment estimated an increased 3-year recommended biological catch of 8810 t, starting in 2014–15. A 2014–15 TAC of 6800 t was implemented after consideration of industry's preference for a cautious approach to increasing the TAC, to promote economic stability[5]. The multiyear TAC increased to 8796 t in the 2015–16 season. Reported landings in 2015–16 were 1754 t, of which 1745 t was taken in the SESSF (CTS). Discard estimates have been variable, ranging between six per cent in 2012 and 32 per cent in 2014[6]. Discard estimates are not yet available for 2015. This level of fishing pressure is unlikely to cause the stock to become recruitment overfished.

On the basis of the evidence provided above, the Commonwealth Trawl Sector biological stock is classified as a **sustainable stock**.

Great Australian Bight Trawl Sector

There have been no stock assessments for the Southern and Eastern Scalefish and Shark Fishery (Great Australian Bight Trawl Sector) (Commonwealth) biological stock of Blue Grenadier, and no estimates of fishing mortality or biomass have been made. A catch trigger of 400 t is in place; if this is exceeded, data collection and the development of an assessment plan are required. A cease-to-fish catch trigger of 500 t also applies[7].

This Blue Grenadier biological stock is targeted on the upper continental slope (around 200–700 m). Fishing effort on the Great Australian Bight continental slope has decreased since 2005, with commercial catches of Blue Grenadier reducing from a peak catch of 423 t in 2005–06 to a low of 3 t in 2015–16. There are large areas of slope habitat across the Great Australian Bight and Western Australia, with fishing generally limited to a small area. It is therefore likely that parts of this biological stock remain unfished. The above evidence indicates that the biomass of this stock is unlikely to be recruitment overfished and the current level of fishing pressure is unlikely to cause the stock to become recruitment overfished.

On the basis of the evidence provided above, the Great Australian Bight Trawl Sector (Commonwealth) biological stock is classified as a **sustainable stock**.

BIOLOGY

Blue Grenadier biology[1]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Blue Grenadier	25 years; 1 100 mm <u>TL</u> , weight 6 kg	4–5 years, females 640 mm <u>TL</u> , males 570 mm <u>TL</u>

DISTRIBUTION



Distribution of reported commercial catch of Blue Grenadier

TABLES

Commercial Catch Methods	Commonwealth
Danish Seine	✓
Demersal Pair Trawl	✓
Midwater Trawl	✓
Otter Trawl	✓

Fishing methods	Commonwealth
Commercial	
Midwater Trawl	✓
Otter Trawl	✓
Recreational	
Hand Line, Hand Reel or Powered Reels	✓

Management Methods	Commonwealth
Commercial	

Limited entry	✓
Spatial closures	✓
Total allowable catch	✓
Trigger limits	✓

Active Vessels	Commonwealth
	38 Vessel in SESSF (CTS), 3 Vessel in SESSF (GABTS), 18 Vessel in SESSF (GHTS),

SESSF (CTS) Southern and Eastern Scalefish and Shark Fishery (Commonwealth Trawl Sector)(CTH)

SESSF (GABTS) Southern and Eastern Scalefish and Shark Fishery (Great Australian Bight Trawl Sector)(CTH)

SESSF (GHTS) Southern and Eastern Scalefish and Shark Fishery (Gillnet Hook and Trap Sector)(CTH)

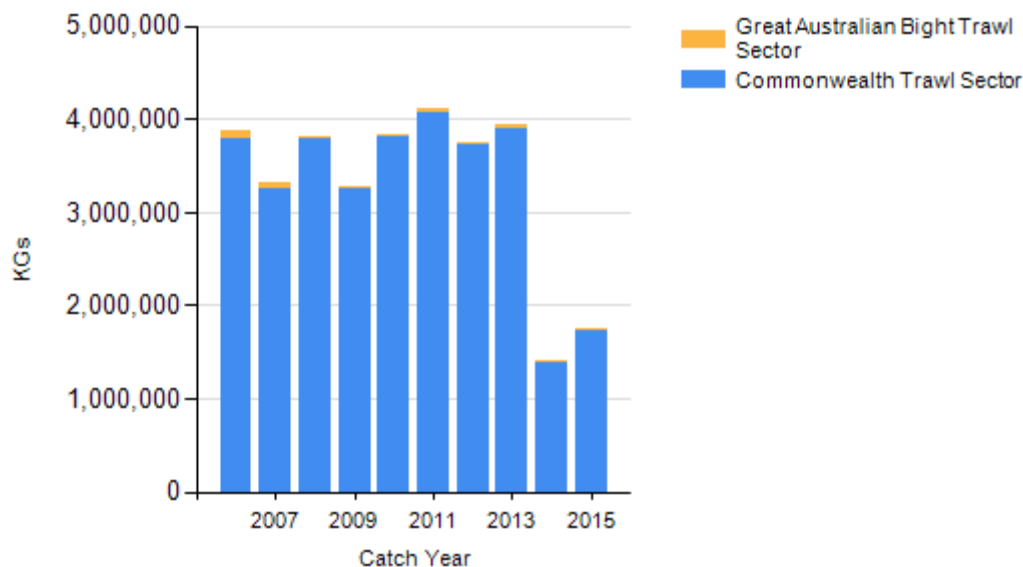
Catch	Commonwealth
Commercial	1744.57t in SESSF (CTS), 2.877t in SESSF (GABTS),
Indigenous	Unknown
Recreational	Unknown

SESSF (CTS) Southern and Eastern Scalefish and Shark Fishery (Commonwealth Trawl Sector) (CTH), SESSF (GABTS) Southern and Eastern Scalefish and Shark Fishery (Great Australian Bight Trawl Sector) (CTH),

a Commonwealth – Recreational The Commonwealth does not manage recreational fishing in Commonwealth waters. Recreational fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters, under its management regulations.

b Commonwealth – Indigenous The Australian government does not manage non-commercial Indigenous fishing in Commonwealth waters, with the exception of Torres Strait. In general, non-commercial Indigenous fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters.

CATCH CHART



Commercial catch of Blue Grenadier - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

- There is bycatch in the fish trawl sector. In 2006, mandatory requirements for otter trawls to use 90 mm square-mesh codend panels were introduced in an effort to reduce the catch of small species and juvenile fish[8].
- Interactions also occur with animals protected under the *Environment Protection and Biodiversity Conservation Act 1999*, including marine mammals (dolphins, seals and sea lions), seabirds, some shark species and seahorses and pipefish (syngnathids). These interactions are reported quarterly by the Australian Fisheries Management Authority (AFMA)[9] and on-board observer programs are used to validate the reporting in commercial logbooks.
- In 2007, the South East Trawl Fishing Industry Association released an industry code of practice that aims to minimise interactions with fur seals, as well as addressing the environmental impacts of the fishery more generally[10]. Operators have developed other mitigation protocols that have further reduced seal mortalities, including using breakaway ties that keep the net closed until it is below depths that seals regularly inhabit, adopting techniques to close the trawl opening during recovery to minimise opportunities for seals to enter the net, switching off gantry lights that are not required during night trawling to avoid attracting bait species and seals, and dumping offal only when the boat is not engaged in deploying or hauling gear[10].
- The AFMA mandated individual vessel seabird management plans[11]. The seabird action plans are used in the Southern and Eastern Scalefish and Shark Fishery (Commonwealth Trawl Sector) (SESSF [CTS]) to mitigate the impacts of trawling on seabirds. From 1 May 2017, all vessels in the SESSF (CTS) and Southern and Eastern Scalefish and Shark Fishery (Great Australian Bight Trawl Sector) (Commonwealth) (SESSF [GABTS]) fisheries must use one of the following mitigation devices: sprayers; bird bafflers; or pinkies with zero discharge of fish waste[12].
- The effects of trawl fishing on the marine environment are assessed through an environmental risk assessment and risk management framework and mitigated through spatial closures, and the implementation of bycatch and discard workplans[13,14] in the SESSF (CTS) and SESSF (GABTS) fisheries.

ENVIRONMENTAL EFFECTS on Blue Grenadier

- Changes in ecosystem structure and function due to changes in climate may affect larval recruitment of Blue Grenadier[15]. Stock assessments indicate substantial interannual recruitment variability, with occasional years of very high recruitment, which are probably environmentally driven[3].

References

STATUS OF AUSTRALIAN FISH STOCKS REPORT
Blue Grenadier (2016)

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