

Southern Rock Lobster (2018)

Jasus edwardsii



Adrian Linnane: South Australian Research and Development Institute, **Caleb Gardner:** Institute for Marine and Antarctic Studies, University of Tasmania, **David Reilly:** Victorian Fisheries Authority, **Jason How:** Department of Fisheries, Western Australia

STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Western Australia, Victoria, Tasmania, South Australia	Southern Australia	NZRLF, SCCMF, SZRLF, TRLF, VRLF	Sustainable	Percentage of egg production relative to unfished level

NZRLF Northern Zone Rock Lobster Fishery (SA), SZRLF Southern Zone Rock Lobster Fishery (SA), TRLF Tasmanian Rock Lobster Fishery (TAS), VRLF Victorian Rock Lobster Fishery (VIC), SCCMF South Coast Crustacean Managed Fishery (WA)

STOCK STRUCTURE

Southern Rock Lobster is considered to be a single biological stock across southern Australia because the species occurs in a continuous distribution across this range and has extensive and protracted pelagic larval dispersal phase. The pelagic phyllosoma larval phase lasts around 12–18 months [Bruce et al. 2007]. Larval release occurs across the southern continental shelf, which is a high-current area, facilitating dispersal. Oceanographic modelling has also indicated that Southern Rock Lobster dispersal occurs over large spatial scales, indicating that there is a single biological stock [Bruce et al. 2007]. Genetic analyses also indicate that it is a single stock [Ovenden et al. 1992].

Here, assessment of stock status is presented at the biological stock level—Southern Australia.

STOCK STATUS

Southern Australia The most recent stock assessment reports [Anon 2018, Hartmann et al. 2013, Linnane et al. 2018 a,b] are used to inform the assessment of stock status and use data up to the end of the 2016–17 season. The same stock assessment model is used to analyse catch and effort plus size structure data for separate areas across South Australia, Victoria and Tasmania [Punt and Kennedy, 1997]. These spatial divisions are incorporated so that the assessment can take account of regional differences in growth, catchability, recruitment and other parameters. This modelling provides estimates of biomass and the closely related measure of egg production, which is used as the primary indicator of stock status. Egg production is the main indicator because it provides a direct measure of whether there is sufficient reproductive output to avoid risk of

recruitment impairment. A limit reference point for egg production is applied which is 20 per cent of the unfished level for the combined stock.

The combined outputs of the most recent assessments for each jurisdiction estimate that egg production in 2016–17 was 21 per cent of the unfished level. Consequently, the above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired.

Fishing mortality is reviewed annually in each jurisdiction across the range of the species with adjustments made in response to trends in the stock. The Western Australian fishery for Southern Rock Lobster occurs at the extreme of the range and the catch is minor at between 50 and 80 tonnes (t). Production is mainly from South Australia, Victoria and Tasmania with fishing mortality regulated in each of these jurisdictions by total allowable catches (TAC). The commercial component of the TAC is managed by individual transferable quota systems with all catch recorded at the point of unloading. Recreational catch is estimated using surveys with fishing mortality regulated using both input and output controls. Catches from all sectors are managed to remain within sustainable limits and, in South Australia and Tasmania, to within formally allocated sectoral access shares. On 1 July 2017, a three year pilot program was introduced in Victoria requiring all recreational fishers to tag the lobsters they catch and keep, and to report the use of tags. This will provide improved estimates of recreational catch, further enhancing the accuracy of annual stock assessments.

While the Southern Rock Lobster stock currently has egg production above the limit reference point of 20 per cent of unfished levels and fishing mortality managed to a level that indicates stock rebuilding will occur, there are aspects of the stock that are of concern. Importantly, the stock is only marginally above the limit reference point for egg production and any future decline will result in a classification of depleting or depleted. Conservative management action to rebuild stocks is required as indicated by: (i) the estimated level of egg production across the total stock is only marginally above the limit reference point (ii) larval dispersal modelling indicates that some areas are of greater importance for larval supply (source-sink dynamics) [Bruce et al. 2007], however, the identity of these areas remains poorly understood and therefore precautionary management should maintain high levels of egg production across the stock (iii) levels of egg production in some areas of the stock are at extremely low levels, specifically the Southern Zone of South Australia (< 10 per cent) [Linnane et al. 2018a], north western Tasmania (< 13 per cent) and eastern Tasmania (< 20 per cent) [Hartmann et al. 2013] and (iv) the abundance of undersize lobsters is at or near record lows in some parts of the stock, specifically in the western and eastern zones of the Victorian fishery [Anon. 2018] (although high elsewhere such as western Tasmania) [Hartmann et al. 2013].

Overall, many of these factors indicate a decline in productivity of the Southern Rock Lobster stock over time. In response, total allowable commercial catches have been reduced across south-eastern Australia over the past decade to reduce fishing mortality so that biomass and catch rates in most areas are expected to increase. Consequently, the above evidence indicates that the current level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

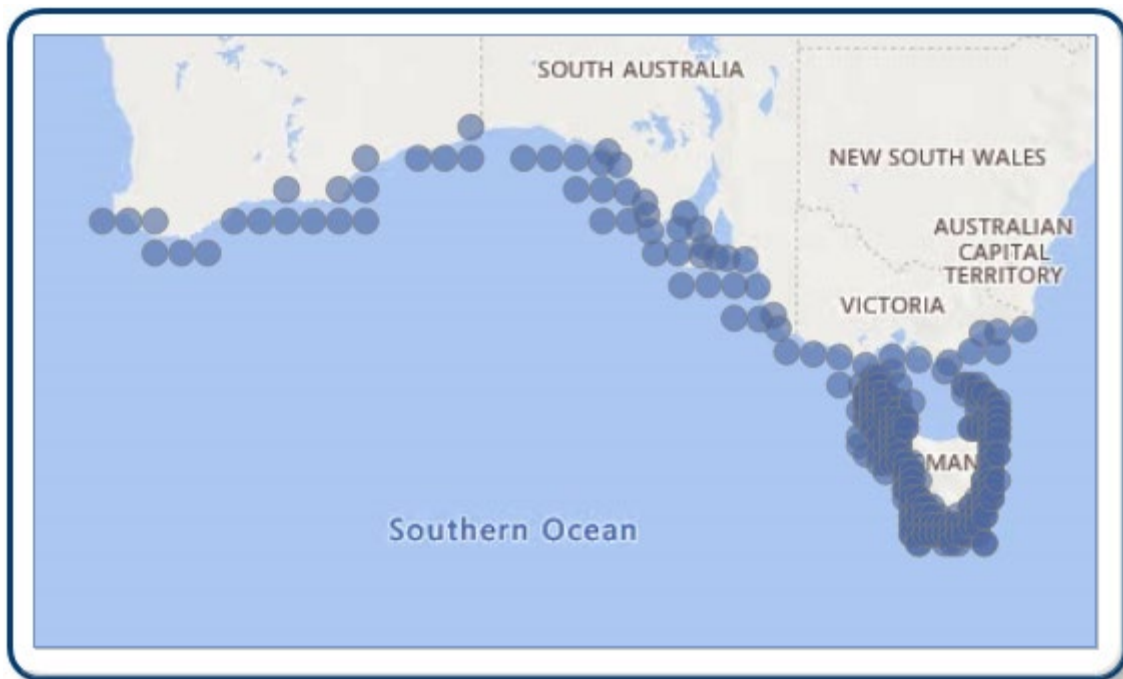
On the basis of the evidence provided above, the Southern Australia Southern Rock Lobster biological stock is classified as a **sustainable stock**.

BIOLOGY

Southern Rock Lobster biology [Gardner et al. 2006, Hobday and Ryan 1997, Linnane et al. 2008]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Southern Rock Lobster	20+ years, > 200 mm CL	59–122 mm C L, depending on region

DISTRIBUTION



Distribution of reported commercial catch of Southern Rock Lobster

TABLES

Commercial Catch Methods	South Australia	Tasmania	Victoria	Western Australia
Rock Lobster And Crayfish Traps And Pots	✓			
Traps and Pots		✓	✓	✓
Unspecified		✓	✓	

Fishing methods	South Australia	Tasmania	Victoria	Western Australia
Commercial				
Rock Lobster And Crayfish Traps And Pots	✓			
Traps and Pots		✓	✓	✓
Unspecified		✓		
Indigenous				
Coastal, Estuary and River Set Nets	✓	✓		

Diving		✓		✓
Rock Lobster And Crayfish Traps And Pots	✓	✓		✓
Recreational				
Coastal, Estuary and River Set Nets	✓	✓		
Diving	✓	✓	✓	✓
Rock Lobster And Crayfish Traps And Pots	✓	✓		✓
Traps and Pots			✓	
Management Methods				
	South Australia	Tasmania	Victoria	Western Australia
Commercial				
Gear restrictions	✓	✓	✓	✓
Limited entry	✓	✓	✓	✓
Size limit	✓	✓	✓	✓
Spatial closures	✓	✓	✓	✓
Temporal closures	✓	✓	✓	✓
Total allowable catch	✓	✓	✓	
Indigenous				
Bag limits	✓	✓		✓
Customary fishing permits			✓	
Size limit	✓	✓		✓
Recreational				
Bag limits	✓	✓	✓	✓
Gear restrictions	✓	✓	✓	✓
Size limit	✓	✓	✓	✓
Spatial closures	✓	✓	✓	✓
Temporal closures	✓	✓	✓	✓
Active Vessels				

	South Australia	Victoria	Western Australia
	63 Licences in NZRLF, 180 Licences in SZRLF,	59 Licence Holders in VRLF,	14 in SCCMF, &3 in Charter,

NZRLF Northern Zone Rock Lobster Fishery(SA)

SZRLF Southern Zone Rock Lobster Fishery(SA)

VRLF Victorian Rock Lobster Fishery(VIC)

SCCMF South Coast Crustacean Managed Fishery (WA)

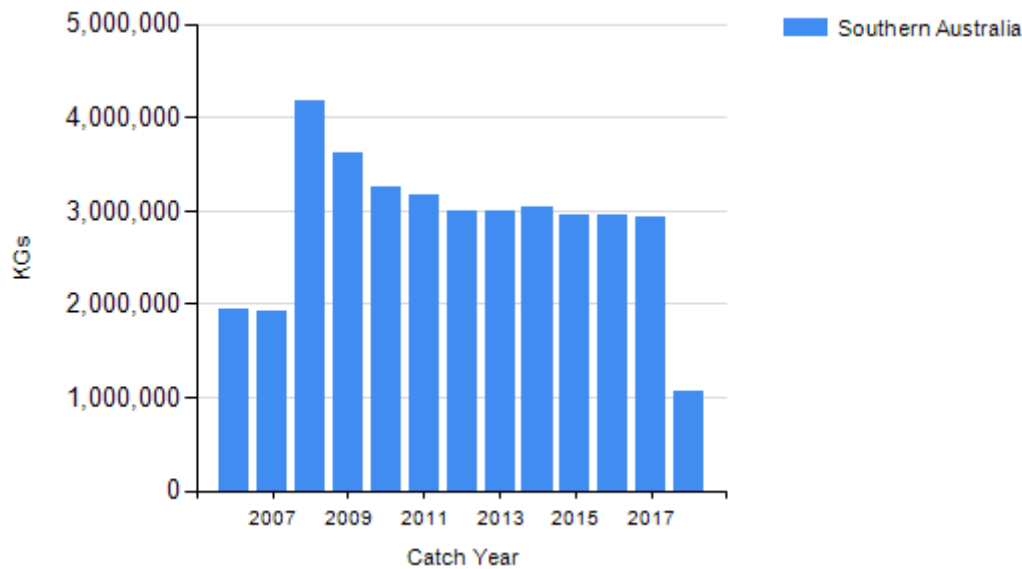
Charter Tour Operator(WA)

Catch	South Australia	Tasmania	Victoria	Western Australia
Commercial	320.913t in NZRLF, 1237.72t in SZRLF,	1060.23t in TRLF,	279.537t in VRLF,	35.365t in SCCMF,
Indigenous	Unknown	Unknown	Unknown (No catch under permit)	Unknown
Recreational	75 t	72.3 t	Unknown	< 5 tonnes

NZRLF Northern Zone Rock Lobster Fishery (SA), SZRLF Southern Zone Rock Lobster Fishery (SA), TRLF Tasmanian Rock Lobster Fishery (TAS), VRLF Victorian Rock Lobster Fishery (VIC), SCCMF South Coast Crustacean Managed Fishery (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.

CATCH CHART



Commercial catch of Southern Rock Lobster - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

ENVIRONMENTAL EFFECTS on Southern Rock Lobster

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