

# Ornate Rock Lobster (2016)

*Panulirus ornatus*



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## STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Commonwealth, Northern Territory, Queensland	North-Eastern Australia	CRF, TRLDF, TSRLF	Sustainable	Biomass, fishing mortality
Western Australia	Western Australia	N/A	Negligible	

TSRLF Torres Strait Rock Lobster Fishery (CTH), TRLDF Tropical Rock Lobster Developmental Fishery (NT), CRF Crayfish and Rock Lobster Fishery (QLD), N/A Not Applicable (WA)

## STOCK STRUCTURE

Ornate Rock Lobster populations in northern Queensland (managed by Queensland), the Coral Sea (managed by the Commonwealth) and the Torres Strait (managed by the Torres Strait Protected Zone Joint Authority) are thought to comprise a single North-eastern Australian biological stock, as a result of mixing of larvae in the Coral Sea[1]. Water movement models in Torres Strait predict that larvae are likely to be transported into the Gulf of Carpentaria[2], indicating that the north-eastern stock encompasses this region as well. Stock assessments have not been carried out for the complete biological stock, but have been conducted on the various parts of it.

Although Ornate Rock Lobster is also present in northern Western Australia, biological stock structures in this region have not been studied and the relationship with the North-eastern Australian stock is unknown.

Here, assessment of stock status is presented at the biological stock level—North-eastern Australia; and at the management unit level—Western Australia.

## STOCK STATUS

**North-Eastern Australia** Stock status for the entire Ornate Rock Lobster biological stock has been established using evidence from the Torres Strait, Queensland and Coral Sea

parts of the biological stock.

For the Torres Strait part of the biological stock, the most recent assessment[3,4] estimated that spawning stock biomass in 2015 was 80 per cent of the unfished (1973) level[4]. This part of the stock is not considered to be recruitment overfished[4]. The model-generated nominal total allowable catch (TAC) for 2015 was 894 tonnes (t), of which 495 t was caught. This level of fishing pressure is unlikely to cause this part of the stock to become recruitment overfished[3].

For the Queensland part of the biological stock, the most recent stock assessment[5] estimated that biomass at the start of 2008 was 60–70 per cent of the unfished (1988) level. A TAC of 195 t was introduced for the commercial fishery in 2009. The TAC was based on a conservative 80 per cent of the estimated maximum sustainable yield for the Queensland portion of the stock. The commercial catch since 2009 has been below the TAC[6,7]. This part of the stock is not considered to be recruitment overfished, and this level of fishing pressure is unlikely to cause this part of the stock to become recruitment overfished.

No quantitative stock assessments have been carried out for the Coral Sea part of the biological stock, but there is only limited targeting of Ornate Rock Lobster in this area and catches are low. Estimates of density on Coral Sea reefs, inferred from fishers' catch rates, suggest that lobster abundance is likely to be many times higher than would be required to support the total historical catch (less than 10 t)[8]. This part of the stock is not considered to be recruitment overfished. Additionally, no commercial catch was recorded in 2015. Therefore, this level of fishing pressure is unlikely to cause this part of the biological stock to become recruitment overfished.

Only small annual catches (less than 200 kg) of Ornate Rock Lobster have been recorded in the Northern Territory under a developmental permit in the Gulf of Carpentaria. There has never been a targeted fishery for this species in this jurisdiction, and the small catches recorded are highly unlikely to influence the biomass of this stock.

On the basis of the evidence provided above, the North-eastern Australian biological stock is classified as a **sustainable stock**.

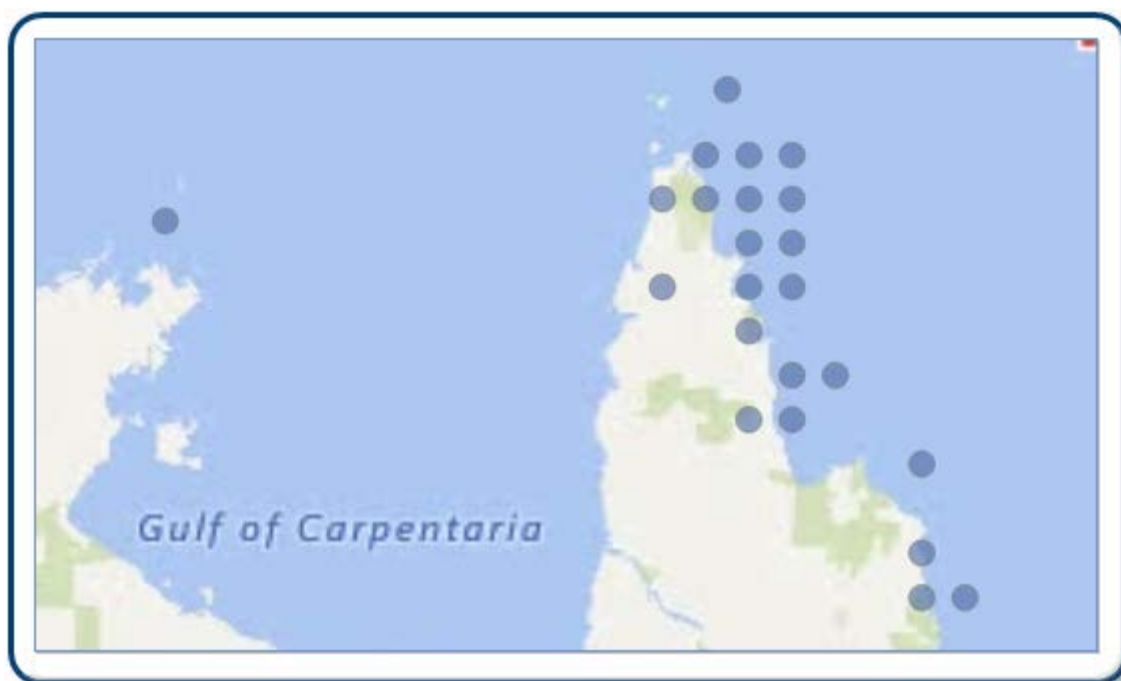
**Western Australia** Stock status for Western Australia is reported as negligible as a result of low catches. No commercial catch is taken from Western Australia. Very small catches are taken by charter operators (504 individuals retained since 2000) and recorded in recreational surveys.

## BIOLOGY

Ornate Rock Lobster biology[9–11]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Ornate Rock Lobster	3–5+ years; >150 mm <u>CL</u>	2–3 years; ~100 mm <u>CL</u>

## DISTRIBUTION



Distribution of reported commercial catch of Ornate Rock Lobster

**TABLES**

<b>Commercial Catch Methods</b>	<b>Commonwealth</b>	<b>Northern Territory</b>	<b>Queensland</b>	<b>Western Australia</b>
Diving	✓	✓	✓	
Unspecified				✓
<b>Fishing methods</b>				
	<b>Commonwealth</b>	<b>Northern Territory</b>	<b>Queensland</b>	<b>Western Australia</b>
<b>Commercial</b>				
Diving	✓	✓	✓	
Unspecified				✓
<b>Indigenous</b>				
Diving	✓	✓	✓	
<b>Recreational</b>				
Diving	✓	✓	✓	
<b>Management Methods</b>				
	<b>Commonwealth</b>	<b>Northern Territory</b>	<b>Queensland</b>	<b>Western Australia</b>
<b>Commercial</b>				
Gear restrictions	✓	✓	✓	✓
Limited entry	✓	✓	✓	✓
Prohibition on			✓	

take of egg-bearing and tar-spot females				
Seasonal closures			✓	✓
Size limit	✓		✓	✓
Spatial closures	✓	✓	✓	
Total allowable catch	✓		✓	✓
Vessel restrictions	✓	✓	✓	✓
<b>Indigenous</b>				
Bag limits				✓
Gear restrictions	✓			
<b>Recreational</b>				
Gear restrictions		✓	✓	
Possession limit		✓	✓	
Prohibition on take of egg-bearing and tar-spot females		✓	✓	
Seasonal closures			✓	
Size limit			✓	
Spatial closures		✓	✓	

<b>Active Vessels</b>	<b>Commonwealth</b>	<b>Northern Territory</b>	<b>Queensland</b>
	0 Vessel in CSF,	1 Permit in TRLDF,	9 License in CRF,

CSF Coral Sea Fishery(CTH)

TRLDF Tropical Rock Lobster Developmental Fishery(NT)

CRF Crayfish and Rock Lobster Fishery(QLD)

<b>Catch</b>	<b>Commonwealth</b>	<b>Northern Territory</b>	<b>Queensland</b>	<b>Western Australia</b>
<b>Commercial</b>	495t in TSRLF,	0.2032t in	123.405t in	

		TRLDF,	CRF,	
<b>Indigenous</b>	Unknown		13 000 lobsters (in 2001)	
<b>Recreational</b>	Unknown		Unknown	

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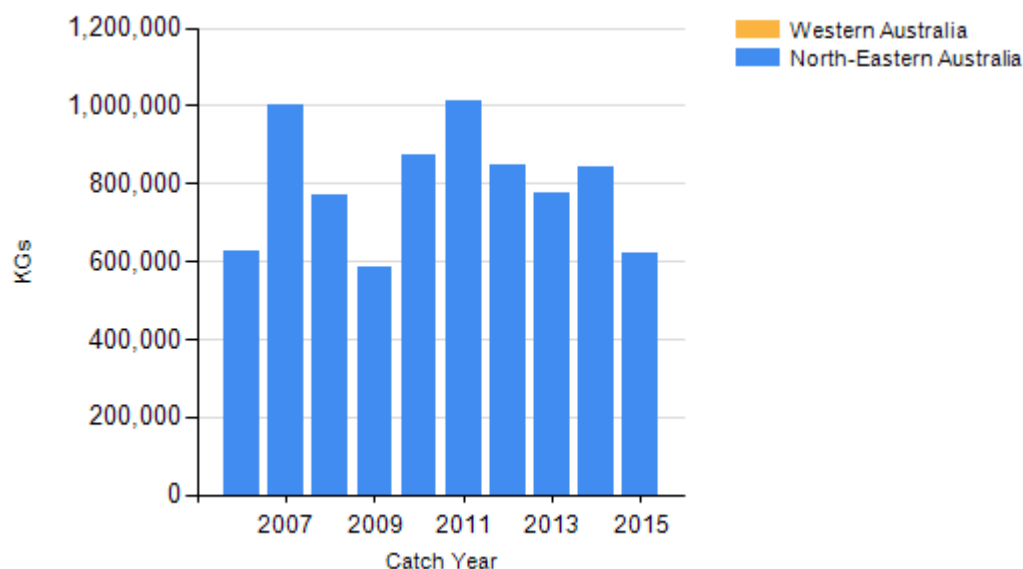
**a Commonwealth – Recreational** The Australian Government does not manage recreational fishing in Commonwealth waters. Recreational fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters, under its management regulations.

**b Commonwealth – Indigenous** The Australian Government does not manage non-commercial Indigenous fishing in Commonwealth waters, with the exception of the Torres Strait. In general, non-commercial Indigenous fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters. In the Torres Strait, both commercial and non-commercial Indigenous fishing is managed by the Torres Strait Protected Zone Joint Authority (PZJA) through the Australian Fisheries Management Authority (Commonwealth); the Department of Agriculture, and Fisheries (Queensland); and the Torres Strait Regional Authority. The PZJA also manages non-Indigenous commercial fishing in the Torres Strait.

**c Queensland – Indigenous** In Queensland, under the Fisheries Act 1994, Indigenous fishers are able to use prescribed traditional and non-commercial fishing apparatus in waters open to fishing. Size and possession limits, and seasonal closures do not apply to Indigenous fishers. Further exemptions to fishery regulations may be applied for through permits.

**d Indigenous (catch)** This specifically refers to non-commercial Indigenous catch. Commercial Indigenous catch in the Torres Strait is included under ‘commercial’.

## CATCH CHART



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

## EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

- Fishing for Ornate Rock Lobster has little direct impact on the marine environment or other fish species, since hand-collection fishing methods allow careful selection of catch[8]. Under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) the Torres Strait Tropical Rock Lobster Fishery (Commonwealth) was granted export approval/accreditation on 7 May 2014 for a period of three years, which is valid until 4 May 2017. Associated with the recent approvals are recommendations

for improving estimates of Ornate Rock Lobster harvest, developing and implementing long-term management arrangements (management plan), and developing resource-wide assessments of the stock.

#### ENVIRONMENTAL EFFECTS on Ornate Rock Lobster

- The abundance of Ornate Rock Lobster is highly influenced by environmental conditions, which affect settlement and recruitment. Ocean current and wind patterns affect transport of larvae and create variability in abundance. These variations should be taken into account in setting total allowable catches[1,10].

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