

Annual status report 2011

Commercial Crayfish and Rocklobster Fishery



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Fishery Profile 2011

Key species Tropical rocklobster	Total number of commercial licences in 2010 28 'R' primary licences (93 tenders)
Total harvest from all sectors Approximately 130 t (+ 30 000 lobsters) [∞]	Commercial licences accessing the fishery in 2010 10
Commercial harvest 130 t (including 1.2 t taken under Indigenous fishing permits)	Fishery season 1 February 2010 –30 September 2010
Recreational harvest (2005) Approximately 17 000 lobsters (all of Qld estimate only)	Fishery symbols R
Indigenous harvest (2001) Customary purposes: approximately 13 000 lobsters taken for traditional or customary use (north Queensland estimate only).	Monitoring undertaken Catch levels against quota monitored in real time with catch and effort monitored through compulsory logbook.
Charter harvest No estimate of level of harvest for 2010—likely to be negligible	FOP days monitored in 2010 N/A
Allocation between sectors Primarily a commercial fishery. A total quantity of 5 t of tropical rocklobster is available annually to allow Indigenous fishing operations under Indigenous Fishing Permits. Harvest under these permits is reported as part of the commercial harvest.	Accreditation under the EPBC Act Exempt until 17 December 2015
Total exports Product from the commercial fishery is sold as whole live animals or as frozen tails on the export and domestic markets.	Logbook validation Intensive monitoring during the 2008 fishery season to track fishery catches against an initial catch limit of 200 t.
Commercial Gross Value of Production (GVP) Approximately \$5 million	Quota managed Catch quota system for the TRLF introduced in 2009 Total Allowable Commercial Catch of 195 t.

Key fish resources	Stock status
Ornate rocklobster (<i>Panulirus ornatus</i>)	Sustainably Fished
<p>Comments: Commercial harvest levels in 2010 were below the 195 t total allowable catch (TAC) introduced in 2009. Although the performance indicator for catch rates was trending down in 2010, it was well above the threshold level. The lower catch levels in 2010 are not a concern and resulted from lower participation levels. A proportion of the fleet moved north into the adjacent Australian Government managed Torres Strait fishery to take advantage of better catch rates for tropical rocklobsters in 2010. Given the lower catch levels were related to lower participation levels and the total harvest was below the TAC, tropical rocklobster is considered to be sustainably fished.</p>	

[∞] The total harvest estimate includes the latest recreational harvest estimate from 2005 and indigenous harvest estimate from 2001, based on the assumption that subsequent years of catch are similar for a gross total estimate.

Introduction

Queensland tropical rocklobsters are harvested by commercial, indigenous and recreational fishers. Although indigenous and recreational take of tropical rocklobsters may occur along the entire Queensland coast, the commercial fishery area is restricted to a specified region in far north Queensland and the Gulf of Carpentaria. The commercial harvest within the Gulf region is negligible. Fisheries Queensland, a service of the Department of Employment, Economic Development and Innovation (DEEDI), is responsible for the management of the Queensland Commercial Crayfish and Rocklobster Fishery (formerly Queensland East Coast Tropical Rocklobster Fishery; TRLF). To avoid confusion, this report will use the commonly recognised TRLF to refer to the Queensland Commercial Crayfish and Rocklobster Fishery.

This report covers fishing activity during the 2010 calendar year.

Fishery description

The TRLF is a dive-based, hand collection fishery that primarily targets the tropical rocklobster, *Panulirus ornatus*.

Fishing methods

The commercial fishery area for the east coast of Queensland comprises all tidal waters east of longitude 142° 31' 49" east, south of latitude 10° 41' south and north of latitude 14° south (Figure 1). The fishery also extends out to the 25 nautical mile (nm) seabed line along the Gulf of Carpentaria coast, south of latitude 10° 48' south. An agreement was reached in late 2009 between Fisheries Queensland, the Great Barrier Reef Marine Park Authority (GBRMPA) and industry to expand the fishery area to allow for exploratory fishing south of 14° south. It was agreed that current operators could apply for a general fisheries permit allowing fishing south to 16° south. All catch taken in the expanded fishery area is to be reported against quota holdings.

The recreational fishery extends south of the commercial fishery area to include the entire coast of Queensland, subject to state and Commonwealth marine park zoning provisions.

Quantifying the area and effort of indigenous fishing is difficult because of a lack of detailed information. It is most likely concentrated north of Townsville but may extend as far south as the Queensland/New South Wales border.

Commercial divers use hookah to collect live lobsters by hand or using nooses. Spear guns and hand spearing are also permitted for both commercial and recreational fishers.

Recreational fishers, however, are not permitted to use SCUBA or hookah to take any fish, including lobster.

Key species

Commercial divers work from tender vessels (~ 5 m) operating to a mother ship (up to 20 m). There are limitations on the number of tenders and the number of divers allowed on each tender.

The key species is the tropical rocklobster, *Panulirus ornatus*. Three other tropical rocklobster species are sometimes harvested and sold as frozen tails (< 2% of the annual catch).

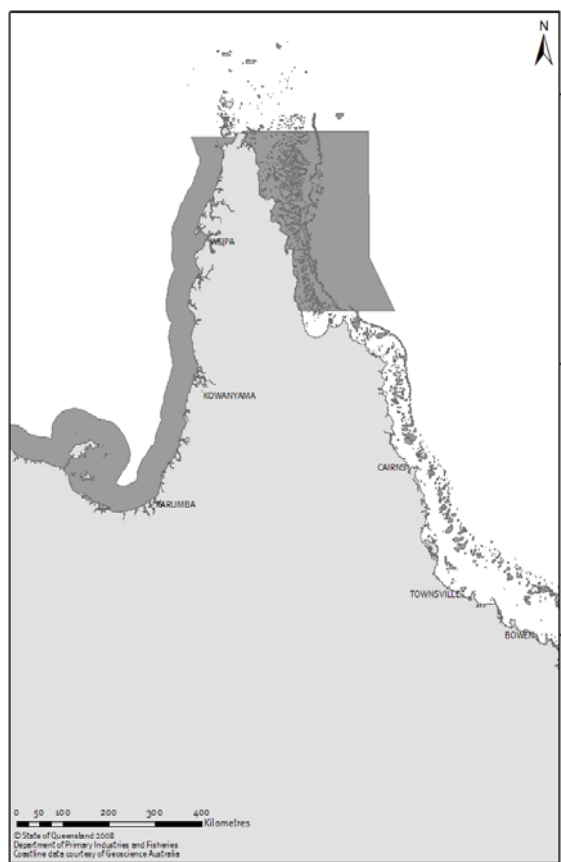


Figure 1. Boundary of the Queensland Tropical Rocklobster Fishery.

Main management methods used

Commercial fishery only:

- The TRLF is a limited entry fishery with restrictions placed on new primary boat and tender boat licences since 1996.
- The TRLF moved to a catch quota system for the 2009 fishery season. The allocation of individual transferable quota and the introduction of real time catch monitoring will ensure harvest levels remain within the Total Allowable Catch (TAC) of

195 t. The *Policy relating to individual catch entitlements in the Queensland Tropical Rock Lobster Fishery* contains further details of the quota arrangements.

Recreational fishery only:

- An in-possession limit of three per person / six per boat north of 14° S latitude, and five per person / ten per boat south of 14° S, applies for the recreational fishery. This is a combined limit for all *Panulirus* species. Recreational fishing regulations also apply to indigenous fishers where the harvest is not for traditional and customary purposes.

Commercial and recreational fishery:

- An annual seasonal closure is in place from 1 October to 31 January to reduce fishing mortality on breeding stocks. The closure applies to all commercial and recreational fishing within the commercial fishery area.
- Minimum size limit of 90 mm carapace length and 115 mm tail length for *Panulirus ornatus*. The carapace length limit does not apply when only the tails are retained.
- Mated (tar spotted) and egg-bearing female lobsters are not allowed to be taken by commercial or recreational fishers.

Catch statistics

Commercial

Quota records indicate that 130 t (67%) of the TAC was reached by the end of the 2010 fishery season (Table 1; Figure 2). Although the average catch rate per tender vessel of 49 kg/tender day in 2010 was lower than recent years, with the exception of the previous year, the catch rate remains the same as the long term average for the ten years prior (2000–2009). Most of the catch continues to be harvested by a small number of core vessels. This is only the second year of operation under quota management arrangements which are likely to influence fisher behaviour in harvesting to maximise profit. It is therefore difficult to interpret catch and effort trends from 2010 compared with previous years with certainty.

A number of commercial TRLF licences are dual endorsed to operate in both the Queensland and the Torres Strait lobster fisheries. The Torres Strait fishery produced relatively high catches during 2010, resulting in additional effort being applied to the Torres Strait stock and an equivalent reduction in fishing pressure in Queensland. Consequently the Queensland TRLF quota was not fully utilised in 2010. High catch rates are forecast to continue in the Torres Strait through 2011 and a similar level of effort is expected to be applied to the Queensland fishery.

Table 1. Fishery details for the Tropical Rocklobster Fishery, 2001–10 (Source: Fisheries Queensland CFISH database 18 April 2011).

Fishery descriptors	Year									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Primary boats	23	18	14	17	17	14	12	11	11	10
Primary days	2503	1392	496	710	678	1106	1159	1162	1002	582
Tender days	7817	4708	1987	2727	2014	3665	4109	3745	3947	2620
Weight (t) [#]	204	114	95	185	141	202	239	244	192 [‡]	130 [‡]
CPUE (kg/tender day)	26	24	48	68	70	55	58	65	48	49
Average primary days/boat	109	77	35	42	40	79	97	106	91	58
Average tender days/boat	340	262	142	160	118	262	342	340	359	262
Average catch (kg)/boat	8880	6345	6808	10 911	8273	14 458	19 896	22 172	17 364	12 878

[∇] The Primary boats row indicates the number of licences that fished each year.

[#] Total catch figures were calculated with a new conversion factor based on work by CSIRO (Dennis et al. 2008). The factor has been applied to all years and will account for slight differences in catches reported previously.

[‡] The total catch figure represents data provided through the Quota Monitoring Unit. Earlier data are based on estimated catch reported in logbooks.

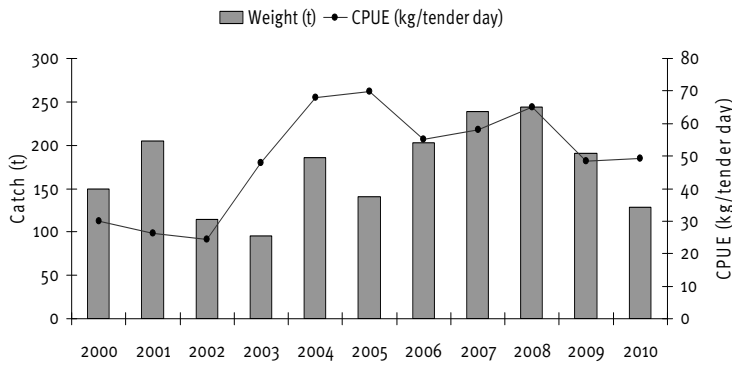


Figure 2. Reported commercial catch and effort for the Queensland Tropical Rocklobster Fishery, 2000–10 (Source: Fisheries Queensland CFISH database 18 April 2011).

Recreational

Recreational catch and effort are likely to be minimal within the commercial fishery area (north of 14°S) due to the remoteness from population centres.

No new recreational catch estimates are available. Fisheries Queensland commenced a further state-wide recreational fishing survey in 2010 and updated catch statistics will be available in mid 2012.

Charter

Logbooks indicate that no tropical rocklobsters were harvested by charter operations in Queensland during 2010.

Indigenous

There are no new estimates available for the harvest taken for traditional purposes in the commercial fishery area in 2010. Catch and effort for this sector are likely to be small, given the limited accessibility of offshore waters to Indigenous communities on the east coast of the fishery area and the limited lobster habitat accessible to fishers in the Gulf of Carpentaria. The National Recreational and Indigenous Fishing Survey estimated that approximately 13 000 lobsters were harvested in north Queensland waters by Indigenous fishers in 2001 (Henry & Lyle 2003).

The *Policy relating to individual catch entitlements in the Queensland Tropical Rock Lobster Fishery* makes provisions for a total quantity of 5 t of tropical rocklobster to be available annually for Indigenous fishing operations to take tropical rocklobster under Indigenous Fishing Permits (IFP). Take under these permits is reported as part of the commercial harvest. Two IFPs harvested 1.2 t in 2010.

Spatial issues/trends

The fishery area was expanded for the 2010 season to allow for exploratory fishing between latitude 14° south to 16° S (see *Changes to management arrangements* section for further details). The uptake of access to the expanded area during 2010 was very low. Fisheries Queensland is aware that catches in the Torres Strait fishery were high during 2010, resulting in reduced effort in the Queensland fishery and little incentive for exploratory fishery. Uptake of access to the expanded area during 2011 is also expected to be low for the same reasons and will be reported in the 2012 Annual Status Report.

The commercial fishery extends into the Gulf of Carpentaria however this is essentially unfished (Pitcher et al. 2005). Commercial logbook records indicate that catches west of the tip of Cape York have averaged less than 500 kg per year since 2000.

Socio-economic characteristics and trends

The majority of the TRLF product is live lobsters and the remainder is sold as lobster tails (Pitcher et al. 2005). The TRLF was worth approximately \$5 million in landings in 2010. Trends in gross value of production (GVP) generally mirror the catch history for the fishery. However, given this was only the second season operating under new quota arrangements that can potentially constrain supply, it is difficult to assess trends in GVP with confidence. Future trends will be assessed to see if the new management arrangements initiate any response in the market for live lobsters.

Another concern for the market is the recent issues surrounding the banning of Australian Rocklobster imports from China. The recent restrictions on Chinese importers avoiding state taxes and the flow on effects to industry are yet to be established.

Biological and ecological information

Monitoring programs

Compulsory daily commercial logbooks provide catch trend data that are assessed by Fisheries Queensland.

Summaries of the data are provided to the Queensland Tropical Rock Lobster Working Group for consideration and review by industry. These data summaries are also provided to the Torres Strait Tropical Rock Lobster Resource Assessment Group (RAG).

Bycatch

The hand collection methods used mean that there are no non-retained species or bycatch in the fishery.

Interactions with protected species

Interactions with protected species from this hand collection fishery are negligible. No interactions were reported in 2010.

Fishery impacts on the ecosystem

The fishery is conducted in a way that minimises the impact of fishing on the ecosystem. Collection methods generally do not physically harm the environment and fishery waste products are minimal (limited processing into tails at sea) and are readily absorbed into the food chain.

Other ecosystem impacts

The TRLF operates within the Great Barrier Reef Marine Park and is subject to spatial zoning arrangements that are designed to protect the biodiversity and health of the marine park. These arrangements include designated

areas protected from commercial and recreational fishing. A large section of the TRLF north of Shelburne Bay is protected from commercial and recreational fishing and provides refuge for tropical rocklobsters. Being a dive-based fishery, additional refugia within the fishery area is also likely in waters deeper than 40 m. These areas may provide additional recruits in to the fishery through the protection of brood stock.

Sustainability Assessment

Performance against fishery objectives

Fisheries Queensland implemented a Performance Measurement System (PMS) for the TRLF in 2008. An assessment of the performance of the fishery in meeting its management objectives is provided in Table 2.

Fisheries Queensland conducted a minor review of the PMS in early 2011. The revised version is awaiting final implementation.

The TRLF PMS can be found at:

http://www.dpi.qld.gov.au/cps/rde/dpi/hs.xsl/28_1106_o_ENA_HTML.htm

Table 2: Performance measures and outcomes for the Tropical Rocklobster Fishery.

Performance measure	Performance
<i>Target species</i>	
Biomass levels fall below 40% of virgin biomass.	<i>Not measured (future measure)</i> An agreed estimate of virgin biomass for the East Coast TRL resource is yet to be calculated. Stock dynamics modelling suggest recruits to the East Coast originate from both the Torres Strait and Queensland. In order to gain meaningful stock parameter estimates, stock assessment models would need to be developed to incorporate stock parameters from both jurisdictions. This performance measure will remain aspirational until a method for assessing the fishery is developed, at which time a more appropriate performance measure may also be developed.
The harvest levels for the fishery exceed the estimated maximum sustainable yield (MSY).	<i>Not triggered</i> Total harvest in 2010 (130 t) was below the fishery TAC and the suggested ranges of MSY estimates derived from the stock assessment (191 to 242 t). It is widely thought that the estimates of MSY are conservative.
The slope of the line for the linear regression of the average standardised catch per unit effort (CPUE) over the previous five years increases by 15 kg/tender day or decreases by 5 kg/tender day.	<i>Not triggered</i> Standardised CPUE over the previous five years decreased by approximately 3.1 kg/tender day.

Performance measure	Performance
<i>Ecosystem impacts</i>	
A significant negative impact on the ecosystem is identified as a direct result of fishing activities in the East Coast Tropical Rocklobster Fishery.	<i>Not triggered</i> Fisheries Queensland is not aware of any information in 2010 indicating unsustainable negative impacts of removing commercial target TRL species on the ecosystem.
<i>Social</i>	
>10% of the active vessels in the fleet are used to commit an offence under the Fisheries Regulation 2008.	<i>Not Triggered</i> One commercial vessel (10%) committed one offence recorded in 2010 (this is detailed in the Compliance report section).

Current sustainability status and concerns

The fishery is regarded as being managed in a precautionary and sustainable manner. The TRLF is considered to be fully exploited if the commercial quota were fully utilised. A stock assessment model was revised in 2008 with new catch data that suggested a range of MSY estimates between 191 to 242 t. On this basis the commercial TAC was conservatively set at 195 t for the 2009 season and the estimates of MSY are used as a reference level for target species stock sustainability in the PMS. Fisheries Queensland is working towards improving the stock assessment methodology or developing alternate stock indicators for the fishery to provide more robust estimates of MSY.

Research

Recent research and implications

Fisheries Queensland keeps abreast of current research on tropical rocklobster through its representation on both the Queensland Tropical Rock Lobster Working Group and the Torres Strait Tropical Rock Lobster Resource Assessment Group (RAG). No new research results were made available for the reporting period that pertains to the TRLF.

Collaborative research

Annual monitoring and biomass assessment are undertaken by the CSIRO in the Torres Strait TRL Fishery, which operates on the same stock as the TRLF. The outputs from these assessments inform the management and the development of research priorities in the TRLF.

CSIRO are currently developing a Management Strategy Evaluation (MSE) for the Torres Strait fishery ("An integrated management strategy evaluation (MSE) for the Torres Strait tropical rock lobster population"). Fisheries Queensland is on the steering committee for this project and Queensland data will be incorporated into the model as appropriate. The project's objectives are to compile relevant biological, economic and social data for the Torres Strait TRL fishery and to incorporate this into a MSE to assist with the process of setting a TAC. The project is due for completion in the first half of 2012.

Fishery management

Compliance report

During 2010, 27 units, including 16 commercial fishing vessels, were inspected in the TRLF. A total of two offences were detected during the course of these inspections corresponding to a compliance rate of 93% on units inspected (commercial compliance = 93%; recreational compliance = 91%) (Table 3). Offences are reported as either a Fisheries Infringement Notice (FIN); Caution (FIN Caution or official caution issued by Legal); or Prosecution (to proceed by complaint summons).

Table 3: Offences recorded in the TRLF in 2010.

OFFENCE	FIN	Prosecution	Caution
Fail to give required information to the Chief Executive in stated way or by stated time	1	-	-
Recreational fisher take or posses regulated fish	1	-	-

Note: One offence was by a commercial TRL fisher. The other offence was by a commercial operator from another fishery taking TRL recreationally.

Changes to management arrangements in the reporting year

An agreement was reached in late 2009 between Fisheries Queensland, the Great Barrier Reef Marine Park Authority (GBRMPA) and industry to expand the commercial fishery area to allow for exploratory fishing south of 14° south. It was agreed that current operators could apply for a general fisheries permit allowing fishing south to 16° south. All catch taken in the expanded fishery area is to be reported against quota holdings.

Communication and education

Education forms an important component of the compliance strategy for all of Queensland’s fisheries. Queensland Boating and Fishing Patrol (QBFP) are proactive in their education programs which include attending events, such as boating and fishing shows and Seafood Industry events, to liaise with fishers; delivering lectures; utilising various forms of media to release important information; answering enquiries; and conducting extensive one on one education with both commercial and recreational fishers during the course of field patrols and inspections. During inspections officers hand out recreational fishing guides and flyers which contain information on size and in-possession limits and answer queries from commercial fishers on an ad hoc basis. Education plays a particularly important role when new legislation is implemented and QBFP make every effort to ensure that all fishers have a good understanding of their rights and responsibilities.

Complementary management

Tropical rocklobster species in the adjacent Torres Strait Protected Zone waters are managed under the jurisdiction of the Torres Strait Protected Zone Joint Authority and under the Australian Government *Torres Strait Fisheries Act 1984*. Tropical rocklobster stocks in

the Gulf of Carpentaria outside the Torres Strait Protected Zone are managed under Queensland law.

Tropical rocklobsters in the Queensland TRLF are considered the same stock as those from Torres Strait and Papua New Guinean waters (Pitcher et al. 2005). This research suggests that Queensland TRLF stocks supply recruits to both the northern fishery regions and highlights the need for complementary management across the region. Synergies in management controls between the Queensland TRLF Torres Strait TRL Fishery include the main seasonal closure, minimum size limits and recreational bag limits.

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Information compiled by

Megan Leslie and Anthony Reolofs

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Front cover image

Ornate rocklobster (*Panulirus ornatus*)

