

Queensland Spanner Crab Fishery

2011 fishing year report



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The Queensland Spanner Crab Fishery (SCF) is predominantly a commercial fishery that targets *Ranina ranina*. The majority of the catch is exported live to Asia, with a small quantity of crab sold as chilled cooked product to local and interstate markets. The fishery was the first in Queensland to be managed under a quota system. Spanner crab fishing is permitted in all Queensland coastal waters, from the New South Wales (NSW) border to the Northern Territory border (Figure 1). The fishery is concentrated in the area between Yeppoon in central Queensland and the Queensland–NSW border. The commercial fishery is divided spatially into two Managed Areas (A and B; Figure 1). Operators must hold a Primary Commercial Fishing Boat Licence endorsed with either a C2 and/or a C3 fishery symbol to harvest spanner crabs in Managed Area A or Managed Area B respectively. The managed areas are subject to different management arrangements (see table below).

This report provides an update to fishing statistics up to 31 Dec 2011.

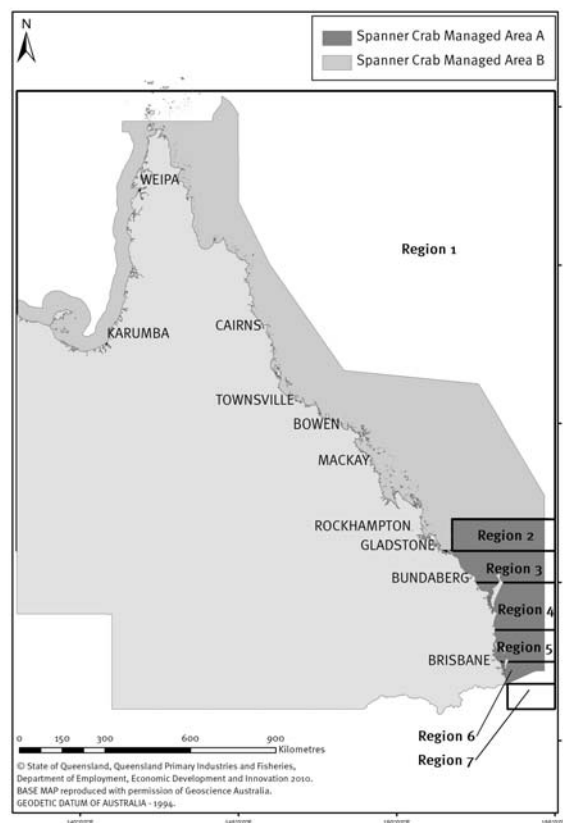


Figure 1: Queensland Spanner Crab Fishery managed areas and regional delineations.

Main features of the fishery

Feature	Details for 2011
Species targeted	Spanner crab (<i>Ranina ranina</i>)
Fishery symbols	C2 and/or C3
Current management regime	<i>Fisheries Act 1994</i> , <i>Fisheries Regulation 2008</i> . The fishery is also subject to marine park zoning under the <i>Commonwealth Great Barrier Marine Park Act 1975</i> and the <i>Queensland Marine Parks Act 2004</i> .
Gear	Commercial and Recreational <ul style="list-style-type: none"> Fishers are permitted to take spanner crabs using dillies. Legislation states that a dilly must have an area within its frame of no more than 1 m² and a net drop below its frame of no more than 10 cm. A dilly's net must have only one layer of mesh and each mesh in the layer must be square or rectangular. The mesh size of the net must be at least 25 mm. Inverted dillies or 'witches hats' have been prohibited for use since April 2010. Recreational <ul style="list-style-type: none"> Fishers are permitted to use a maximum of four dillies, collapsible traps or

	crab pots at any time.
Main management methods	<p>The commercial fishery is managed by quota harvest controls and some apparatus (gear) limits, while the recreational fishery is managed by harvest and gear limitations per fisher:</p> <p>Commercial and Recreational</p> <ul style="list-style-type: none"> • Minimum size limits of 10 cm carapace length apply to all fishers. • Egg-bearing (berried) females are protected and are not allowed to be taken. • Spawning season closures apply to all fishers from midnight on 20 November to midnight on 20 December every year. <p>Commercial only</p> <ul style="list-style-type: none"> • Managed Area A has a commercial total allowable catch (TAC), divided among licence holders using an individual transferable quota (ITQ) system. The annual TAC for 2010–11 was 1923 t. • Managed Area B has a boat trip limit of 16 baskets. • Managed Area A has a maximum possession limit of 50 dillies on a boat, with only 45 allowed to be used at a time, and a maximum of 15 on a single line. • Managed Area B has a maximum possession limit of 35 dillies on a boat, with only 30 allowed to be used at a time and a maximum of 10 dillies on a single line. • Catch must be unloaded ashore before fishing operations move from one managed area to the other. • Commercial fishers operating in Managed Area A have the opportunity to apply for a General Fisheries Permit (GFP) entitling the holder to use more than 45 dillies. As of 2010, there were 22 GFPs issued with this entitlement. <p>Recreational only</p> <ul style="list-style-type: none"> • Recreational fishers are subject to a possession limit of 20 spanner crabs. • Recreational fishers are subject to a maximum possession limit of four pieces of apparatus per fisher.
Quota	Yes 1923 t
Fishing season	All year round, excluding closed season (20 November—20 December)
Commercial fishery licences	Total number of licences with a C2 symbol: 232 as at December 2011 Total number of licences with a C3 symbol: 346 as at December 2011 Commercial licences that reported catch: 61 (C2 and C3 combined)
Management changes in 2011	Nil
Accreditation under the EPBC Act	Part 13: accredited 19 January 2012 Part 13A: current accreditation expires 3 February 2017
Total annual harvest by sectors	Commercial: 1275 t (2011 logbook returns) Charter: Figure cannot be reported due to the less than five boat rule; however, catch is negligible when compared to commercial catch. Recreational: This species was not specifically reported on in the 2010 Statewide

	Recreational Fishing Survey ¹ , however catch was negligible when compared to commercial catch (based on catch of 'other crab' category).
GVP	GVP : Approximately \$5.2 million in 2011
Stock status	East Coast: Not fully utilised For more information refer to the 2012 Stock Status report.
Monitoring done in 2011	Commercial logbooks (CFISH), fishery independent monitoring – Long Term Monitoring Survey (LTMP) done in 2011
Compliance and enforcement	Units inspected by Queensland Boating and Fisheries Patrol in 2011: 83 (Commercial vessels: 35, majority of remainder were recreational fishers (private or charter). Offences detected in 2011: 31. This equates to compliance rates of 91% for commercial fishers and 84% for recreational fishers corresponding to an overall compliance rate of 89%. These offences do not include incorrectly marked crab pots below. Incorrectly marked crab pots seized from tidal waters in Queensland: 706
Complementary management	Queensland fisheries managers and researchers continue to work with their New South Wales counterparts towards complementary monitoring and research. In 2010, New South Wales Department of Primary Industries and Fisheries Queensland continued their annual cross-border fishery-independent survey, covering the entire east coast spanner crab stock.

¹ The 2010 Statewide Recreational Fishing Survey relates to the 12 month period from October 2010 to September 2011.

Spanner crab fishery summary

Catch and effort statistics

Commercial

Total catch, effort (days), licences and GVP in the SCF for 2008–11 are reported in Table 1.

Table 1: Commercial fishery catch, effort and economics in the spanner crab fishery 2008–2011 (Source: Fisheries Queensland CFISH Database, 04 April 2012).

	2009	2010	2011
Total catch (t)	1,167	1,130	1,275
Total effort (days)	3,479	3,282	3,575
Licences (active)	67	62	61
GVP (\$A million)	\$4.8	\$4.6	\$5.2
Dilly Lifts	946, 802	886, 217	1,077,467

Annual reported commercial spanner crab landings in Queensland increased in total commercial catch from 1,130 t harvested in 2010 to 1,275 t harvested in 2011 (13% increase). In 2011, the catch was harvested over 3,575 days (Table 1). The annual commercial catch for 2011 equates to approximately 70% of the available commercial TAC.

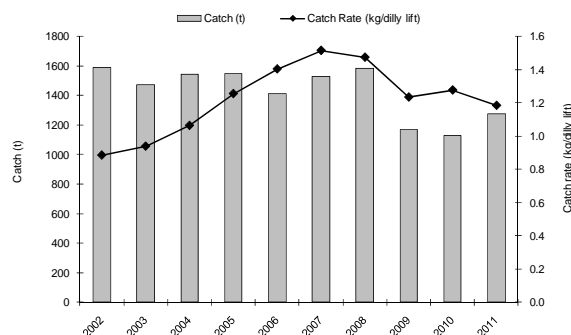


Figure 2: Total commercial catch (in tonnes) and nominal catch per unit effort (kg/day) of spanner crabs in the SCF 2002–11 (Source: Fisheries Queensland CFISH Database, 04 April 2012).

Logbook data continue to show high catches of spanner crabs in September and October.

Catches during these months contributed 30% to the total spanner crab commercial landings in 2011.

Catch per unit effort (CPUE) decreased from 1.3 kg/dilly lift in 2010 to 1.2 kg/dilly lift in 2011 (Figure 2).

Regions

Catch rate (kg/pot lift) decreased in all regions since last year. Regions 2, 3, 4, 5 and 6 decreased by 23%, 27%, 3%, 9% and 14% respectively (Figure 3).

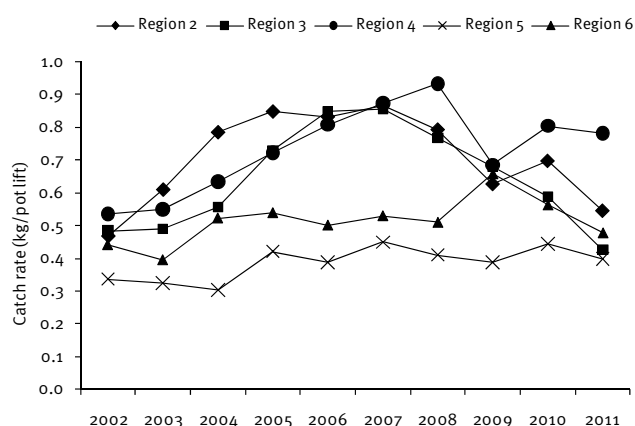


Figure 3: Catch rate (kg/pot lift) of the locations within Managed Area A in the Spanner Crab Fishery 2000–2011. (Source: Fisheries Queensland CFISH database, 04 April 2012).

Regions 2 and 3 continued to record lower numbers of fishers than recorded in the past decade, resulting in a decrease in fishing days, catch and subsequently catch rate. The number of fishers in Region 6 declined since last year as did the number of days, catch and subsequently catch rate. The number of fishers, fishing days and pot lifts increased in both Region 4 and 5, however catch rate decreased slightly in both regions.

Charter

Data from charter logbooks indicated that the charter sector caught less than 5 t of spanner crab in 2011, which equates to less than 1% of Queensland's estimated total landings of spanner crabs for this year. The exact amount and catch locations cannot be reported due to the less than five boat rule.

Recreational

A statewide survey recreational fishing survey spanning twelve months was done during 2010/2011 (SWRFS). Only seven fishing events reported harvesting spanner crabs during the 12 month survey; indicating that the recreational catch is small. As expected, the estimate for spanner crab harvest based on these seven events had a high relative standard error (53%) and is considered unreliable.

In summary, the recreational catch of spanner crabs is considered to be minimal compared to the commercial catch.

To find out more about the survey, refer to: http://www.daff.qld.gov.au/28_18273.htm.

Spatial issues/trends

In 2011, the majority of the spanner crab catch (nearly 85%) was taken from waters south of Baffle Creek (24.5° S – the southern most point of the Great Barrier Reef Marine Park Zoning). In 2011, as in 2010, the most productive region was offshore from Double Island Point. This was followed by the offshore area associated with Gladstone, the offshore area associated with Fraser Island, the area between Double Island Point and Noosa Heads, and the area off the Sunshine Coast (Figure 4).

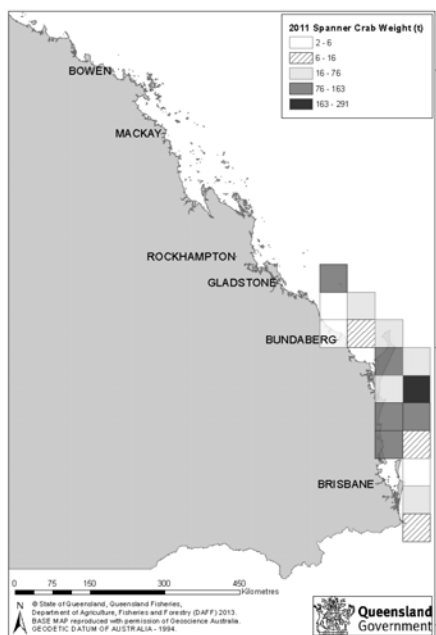


Figure 4: Spatial distribution of commercial catch (tonnes) in the Spanner Crab Fishery in 2011

(Source: Fisheries Queensland CFISH database, May 2012).

Socioeconomic characteristics

Spanner crab prices across the board have remained relatively similar to previous years, at approximately \$4/kg.

In 2011, as in 2010, 56% of the licences holding a C2 and/or C3 symbol generated their entire annual fishing income from the Spanner Crab Fishery (Figure 5).

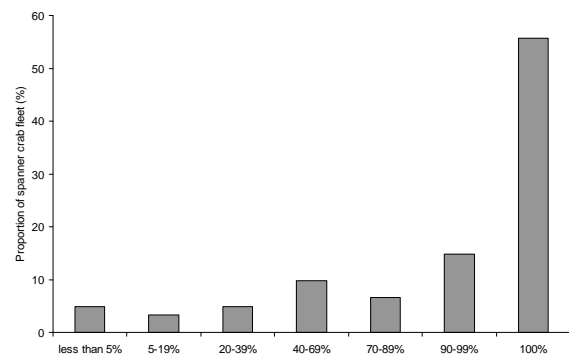


Figure 5: Contribution of spanner crab harvest to fishing vessel's annual fishing income in 2011 (Source: Fisheries Queensland CFISH database, May 2012).

In 2011, 20% of fishers who operated in the Queensland Spanner Crab Fishery earned less than \$10,000, suggesting that fishing provides only part of their income. At the higher end of the income bracket, 18% of fishers in 2011 earned above \$150,000.

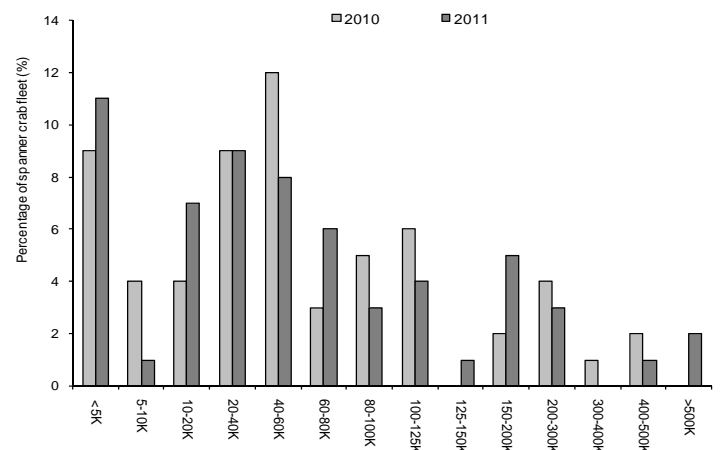


Figure 6: Income distribution of licence holders in the Spanner Crab Fishery in 2010 and 2011 (Source: Fisheries Queensland CFISH database, May 2012).

Monitoring Programs

Fishery independent monitoring

Fishery independent monitoring of spanner crab stocks is conducted in Managed Area A of the Queensland fishery and in New South Wales as part of a collaborative arrangement which monitors the shared spanner crab stock. Regional delineations for fishery independent monitoring are identical to those used in the commercial sector (except for New South Wales) (Figure 1).

Between 2000 and 2011, the Long Term Monitoring Program (LTMP) fishery independent spanner crab survey has undertaken approximately 41,150 and 4,180 individual dilly lifts, in QLD and NSW respectively. In QLD, 81% of the overall catch was males, compared with NSW where 60% were males.

The number of crabs caught during the 2011 survey was higher than the number caught in the 2010 survey, and was the second highest catch (in numbers) for all surveys.

In NSW, the numbers of crabs caught was lower than was caught in the 2010 survey, though still somewhat higher than historical overall catch (table 4).

Year	Male crabs (nos)	Female crabs (nos)	Male crabs - % above MLCL*	Female crabs - % above MLCL*
2000	4774	855	62	15
2001	4786	526	66	13
2002	3329	440	75	13
2003	4328	695	72	10
2005	6250	1269	67	11
2006	6923	1198	69	13
2007	5870	1059	63	14
2008	7833	1141	67	12
2009	4759	876	59	15
2010	5817	1146	62	13
2011	5981	1433	50	14

Table 3 – The number of crabs encountered each year during LTMP surveys in Queensland; * MLCL (minimum legal carapace length).

Year	Male crabs (nos)	Female crabs (nos)	Male crabs - % above MLCL*	Female crabs - % above MLCL*
2005	209	217	90	38
2006	164	135	93	47
2007	305	372	71	6
2008	247	337	68	7
2009	267	344	81	36
2010	468	860	81	32
2011	455	305	89	47

Table 4 – The number of crabs encountered each year during LTMP surveys in New South Wales; * MLCL (minimum legal carapace length).

Fishery-independent survey data covering the 12 year period from 2000 to 2011 are available from the LTMP for use in the assessment and TAC-setting process. The effort-adjusted survey catch data (Figure 7) indicate some changes in apparent stock density since 2010, with minor decreases in Regions 3, 4, and 7, slight increases in Regions 5 and 6, and significant increases in Region 2. In 2011, the downturn in catch rate cannot be attributed to toadfish as it had been two years earlier (see SAG Report 2010/01 for details) as no toadfish activity was reported during the 2011 LTMP survey. The large increase in Region 2 was due to an unusual abundance of undersize crabs, far more than in any of the other regions. In the northern part of the fishery (north of Hervey Bay) the ratio of undersize to legal crabs was greater than unity, while south of Fraser Island the ratio was considerably less than one.

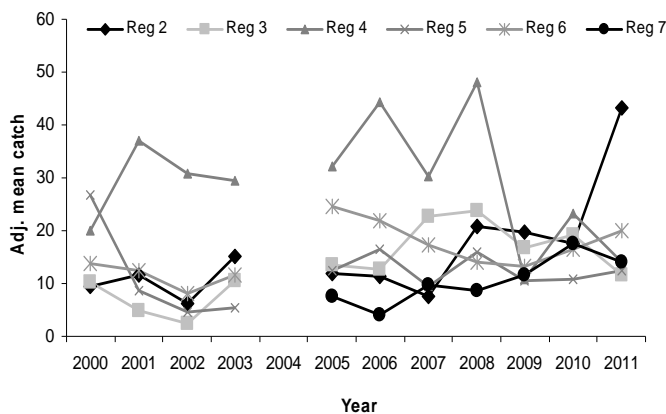


Figure 7: Modelled mean catch rate (crabs per string) of spanner crabs by management area and year from LTMP fishery independent surveys.

For further reading, go to the *Queensland Spanner Crab Annual Status Report 2012/01 and TAC setting for TAC period June 2012-May 2014* available at:

http://www.daff.qld.gov.au/28_11062.htm.

Performance against fishery objectives

A number of review events are incorporated into the interim policy for the review of management arrangements for the Spanner Crab Fishery. The review events are a series of measures by which Fisheries Queensland monitor the performance of the Spanner Crab Fishery. The following table outlines the review events and the evaluation of the fishery against these for the 2011 calendar year (Table 3). The Spanner Crab Fishery review events are due to undergo a review to align with Fisheries Queensland's Performance Measurement System (PMS) Framework².

Table 3: Performance measures and outcomes for the Spanner Crab Fishery in 2011

Review Event	Performance
<i>Target Species</i>	
<p>1(a) The annual quota for managed area A significantly declines; or</p> <p>1(b) The chief executive accepts a scientific study that shows a significant decline in the abundance of—</p> <p>(i) Spawning spanner crabs; or</p> <p>(ii) Egg-bearing spanner crabs; or</p> <p>(iii) Juvenile spanner crabs.</p>	<p>1(a) <i>Not triggered</i></p> <p>In 2009, the Spanner Crab Fishery underwent an 'in-cycle' assessment as part of the biennial review. The annual quota for June 2010–May 2012 will remain unchanged at 1923 t.</p> <p>1(b) <i>Not triggered</i></p> <p>A comprehensive search of the scientific literature found no scientific studies that indicated a significant decline in the abundance of spanner crabs.</p>
<p>2(a) The chief executive accepts a survey of recreational, Aboriginal or Torres Strait Islander fishing for spanner crabs that shows a significant decline in spanner crab catches; or</p> <p>2(b) The chief executive's receipt of commercial fishing catch and effort data for spanner crabs that shows a significant decline in the commercial catch of spanner crabs.</p>	<p>2(a) <i>Not measured</i></p> <p>There are no current Recreational or Indigenous survey results which indicate a significant decline in spanner crab catches.</p> <p>2(b) <i>Not triggered</i></p> <p>The annual reported commercial spanner crab catch in Queensland increased from 1,130 t in 2010 to 1,275 t in 2011; this accounts for a 13% increase in total harvest.</p>

² The Fisheries Queensland PMS Framework is available at http://www.daff.qld.gov.au/28_11060.htm

<p>3(a) The annual commercial catch of spanner crabs in managed area A significantly declines; or</p> <p>3(b) The chief executive accepts a survey of recreational, Aboriginal or Torres Strait Islander fishing for spanner crabs that shows a significant change in catches of spanner crabs.</p>	<p>3(a) <i>Not triggered</i></p> <p>The annual reported commercial spanner crab catch in Queensland increased from 1148 t in 2010 to 1297 t in 2011; this accounts for a 13% increase in total harvest.</p> <p>3(b) <i>Not measured</i></p> <p>There are no current Recreational or Indigenous survey results which indicate a significant decline in spanner crab catches.</p>
<p>There is a significant and progressive decline in—</p> <p>4(a) The accuracy of information given by commercial fishers in logbooks required by the chief executive; or</p> <p>4(b) Compliance with logbook returns required by the chief executive.</p>	<p>4(a) <i>Not triggered</i></p> <p>There is no significant (>10%) and progressive decline when comparing logbook data to quota monitoring data.</p> <p>4(b) <i>Not triggered</i></p> <p>Routine logbook compliance checks show insignificant decrease in compliance (90% in 2010 to 89% in 2011).</p>

Species of conservation interest (SOCI) interactions

No interactions with protected species were reported through the SOCI logbook in 2011 or by observers as part of the Fishery Observer Program.

Compliance statistics

Compliance and enforcement in the Queensland Spanner Crab Fishery are the responsibility of the Queensland Boating and Fisheries Patrol (QBFP). A breakdown of the compliance statistics for 2011 is reported in Table 3.

Table 3. Spanner Crab Fishery offences in 2011

Offences	Caution	FIN
Contravene a condition of an authority involving boat marks	1	
Contravene a condition of an authority involving quota requirements	1	1
Contravene a condition of an authority involving use of fishing apparatus	1	
Contravene a regulated fishing apparatus declaration (recreational fisher)	3	
Fail to give required information to the Chief Executive in the stated way or by the stated time	8	4
Fail to obtain or keep required information in the approved form	2	
Recreational fisher take or possess regulated fish	3	2
Take more product than an authorities quota allows	4	1
Total	23	8

References

Brown, IW 2012 *Queensland Spanner Crab Annual Status Report 2012/01 and TAC setting for TAC period June 2012-May 2014*. Department of Agriculture, Fisheries and Forestry, Fisheries Queensland.

Brown, I 1986, *Population biology of the spanner crab in south-east Queensland*, Southern Fisheries Centre, Queensland Department of Primary Industries. FIRTA Project 81/71. Final Report. 106 pp.

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Front cover image

Spanner Crab (*Ranina ranina*)

