

East Coast Otter Trawl Fishery

2011 and 2012 fishing years interim report



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East Coast Otter Trawl Fishery 2011-12 fishing years interim report

This interim report provides an update on fishing statistics for 2011 and 2012. Work is progressing on unfinished sections of the report and these will be included in a full published version later in 2013.

The East Coast Otter Trawl Fishery (ECOTF) is the largest fishery in Queensland, both in terms of the volume of product caught and economic value of the product. The ECOTF operates along the Queensland east coast within the area bounded by the Offshore Constitutional Settlement (Figure 1).



Figure 1: Fishing area of the ECOTF.

Main features of the East Coast Otter Trawl Fishery in 2011-12

Feature	Details for 2011-12
Species: Commercial	<i>Principal target:</i> Eastern king prawn, red spot king prawn, brown tiger prawn, grooved tiger prawn, blue endeavour prawn, red endeavour prawn, banana prawn, greasyback prawn, school prawn, coral prawn, Moreton Bay bug, saucer scallop and pencil squid. <i>Permitted byproduct:</i> Balmain bug, slipper lobster, red champagne lobster, blue swimmer crab, three-spotted crab, mantis shrimp, mud scallop, octopus, cuttlefish, threadfin bream and pipefish (pipehorses).
Recreational	Banana prawn, pencil squid, blue swimmer crab
Fishery symbols	T1, T2, M1, M2
Current management regime	<i>Fisheries Act 1994</i> , Queensland Fisheries (East Coast Trawl) Management Plan (Qld) (the Trawl Plan) 2010, Fisheries Regulation 2008.
Gear: Commercial Recreational	<ul style="list-style-type: none"> • Triple or quad configurations of demersal otter trawl nets. Variations to length and mesh size of an otter trawl net are allowed under the Trawl Plan. • Cast nets, seine bait nets
Main management methods	<ul style="list-style-type: none"> • Tradeable effort units capped at 2001 levels outside the GBRMP¹ and at reducing levels within the GBRMP • Permanent and seasonal closures • Mandatory turtle excluder and bycatch reduction devices
Quota	2,948,830 effort units (ECOTF), 2,278,447 effort units (GBRMP) in 2011 2,948,830 effort units (ECOTF), 2,255,663 effort units (GBRMP) in 2012 ²

¹ Great Barrier Reef Marine Park

² Fisheries (East Coast Trawl) Management Plan 2010, Chapter 2 Regulated waters declarations, Part 6 Reef World Heritage Area Regulated Waters, Sections 23 a and b.

Peak Fishing season	Eastern King Prawn – January to July Tiger Prawn and Endeavour Prawn – March to November Banana Prawn – March to June Red Spot king Prawn – March to September Saucer Scallop – November to February Moreton Bay Bug – all year round
Commercial fishery licences	Number of licences: 448 in 2011 and 2012 Number operators: 331 in 2011, 307 in 2012 Number of symbols 2011: T1 (397), T2 (26); M1 (47); M2 (25) at 1 January 2011 Number of symbols 2012: T1 (397), T2 (26); M1 (47); M2 (25) at 1 January 2012
Management changes 2011-12	Nil, however the statutory review of the Trawl Plan which began in 2010 is continuing.
Accreditation under the EPBC Act (Part 13 and 13A)	Part 13: accredited 17 December 2010 Part 13A: current accreditation (Wildlife Trade Operation) expires 27 November 2013
Total annual harvest by sectors (reported in logbook)	Commercial: 6457 tonnes in 2011, 6336 tonnes in 2012 Charter: < 1 tonne in 2011, < 1 tonne in 2012 Recreational: 86 tonnes (banana prawns) in 2010
Quota usage ³	ECOTF (T1): 1,722,943 effort units in 2011 (62% of quota) 1,553,170 effort units in 2012 (56% of quota) GBRMP (T1): 1,003,387 T1 effort units in 2011 (58.2% of quota) 901,721 effort units in 2012 (58.0% of quota) Concessional (T2): 35,718 effort units in 2011 (37% of quota) 32,697 effort units in 2012 (34% of quota)
Indicative product price and GVP	Eastern King Prawn \$15.00/kg ⁴ Tiger Prawn \$15.30/kg Banana Prawn \$8.20/kg Saucer Scallop \$14.05/kg Moreton Bay Bugs \$20.60/kg GVP : Approximately \$80.7 million in 2011 and \$86.2 million in 2012
Stock status	Sustainably fished: 6 in 2011, 9 in 2012 Not fully utilised: 1 (endeavour prawn) in 2011, 0 in 2012 Uncertain: 1 (Pencil squid) in 2011, 0 in 2012 Undefined: 9 in 2011(Balmain bug, northern king prawn, cuttlefish, red champagne lobster, octopus, coral prawn, greasyback prawn, school prawn, mud scallop), 8 in 2012 (same species as in 2011 except Balmain bug, northern king prawn and pencil squid)

³ M1 effort units included in T1 effort quota; M2 has no effort unit quota.

⁴ Courtney and Prosser, A. 2009, Research update on the eastern king prawn fishery. Research Report, The Queensland Fisherman, October 2009, pp. 20-23.

	<p>Overfished: 0 in 2011 and 2012</p> <p>Species status shifts between 2011 and 2012 were: Undefined – Sustainably fished (Balmain bug and northern king prawn), Not fully utilised - Sustainably fished (endeavour prawn), Uncertain - Not fully utilised (pencil squid)</p>
Ecological risk assessments undertaken	<p>The Ecological Risk Assessment for the ECOTF in the Great Barrier Reef Technical Report (Workshops in 2010) was published in 2012 (Pears et al. 2012).</p> <p>The Ecological Risk Assessment for the River and Inshore (Beam) Trawl Fishery and southern ECOTF (Workshop in 2011) Technical Report is currently in preliminary draft.</p>
Monitoring	Commercial logbooks (CFISH) and fishery-independent surveys of juvenile Eastern King Prawns. ⁵
Catch and effort data validation	<p>Routine – Invalid catch and effort parameter range checks are performed upon receipt of logbook data sheets, and followed up with fishers and corrected.</p> <p>Targeted activities – Reassignment of 2011-2012 unspecific Scallop and Bug catches recorded in the logbook, to either 'Saucer Scallop' or 'Mud Scallop' and either 'Moreton Bay Bug' or 'Balmain Bug'.</p>
Compliance and enforcement	<p>Units inspected by Queensland Boating and Fisheries Patrol in 2011-12: 545 in the ECOTF and 78 in the Moreton Bay Otter Trawl Fishery⁶. (Commercial vessels: ECOTF 496, MBOTF 69, the remainder were processing facilities).</p> <p>Offences detected in 2011-12: ECOTF 190, MBOTF 8. This equates to compliance rates of 87.5% in both the ECOTF and the MBOTF.</p> <p>Compliance risk reviewed periodically; the following activities attracting the majority of offences: contravention of regulated waters declarations and authorised gear, failure to give information as required or to keep it in an approved form, taking or possessing regulated fish and unclear boat markings.</p>
Complementary management	Under Section 21, Schedule 4 of the Trawl Plan a commercial fishing boat licence with a 'T2' fishing symbol may operate in NSW waters and in Queensland east coast waters south of the GBRMP.
Stakeholder engagement	During compliance inspections, regional port visits (e.g. 11 conducted in 2011), and through multi-media technology, Fisheries Queensland is promoting industry awareness to: report Species of Conservation Interest (SOCI) interactions, use efficient bycatch reduction devices in reducing turtle, sea snake and other forms of trawl bycatch, and employ best practice post-capture handling practices that minimise injury and enhance survival of these species. ⁷
Other initiatives	Studies completed: Reference points for a sustainable harvest in the Queensland scallop fishery in 2012 (Campbell et al. 2012); Bioeconomic modelling of the Australian eastern king prawn fisheries (Courtney et al. 2013).

⁵ Eastern King Prawn update. <http://www.daff.qld.gov.au/fisheries/monitoring-our-fisheries/commercial-fisheries/species-specific-programs/monitoring-reporting/eastern-king-prawn-update>. Accessed 15 August 2013.

⁶ MBOTF = that part of the ECOTF located in Moreton Bay

⁷ <http://www.youtube.com/fisheriesqld>

ECOTF summary 2011-12

Catch and effort statistics

Commercial

Annual catch, gross value of production (GVP) of the catch, catch of the most valuable target species, total effort (days), and the number of boat licences active in the ECOTF for 2009–12 are reported in Table 1. In recent years these indicators have been consistent with longer term trends of declining catch, effort, and number of boat licences working the fishery (Figure 2).

Table 1: Commercial fishery catch, effort and economics in the ECOTF 2009–2012 (Source: Fisheries Queensland CFISH Database, 15 May 2013).

	2009	2010	2011	2012
Total catch (t)	8139	7176	6457	6336
Total effort (days)	38923	37966	36051	33271
Licences (active)	347	333	331	307
GVP (\$A million)	108.0	96.2	80.7	86.2
Eastern King Prawn (t)	2989	2675	2002	2576
Tiger Prawn (t)	1314	1284	1231	809
Saucer Scallop (t)	752	426	274	691
Moreton Bay Bug (t)	428	465	305	459
Endeavour Prawn (t)	640	581	519	446
Red Spot King Prawn (t)	352	344	114	257

With the exception of Tiger Prawn and Endeavour Prawn catch declines (Table 1), due to reduced trawling for these species, most target species catches are stable, despite catches falling in 2011 when eastern Queensland received adverse weather linked to a strong La Niña episode (BoM, 2012).

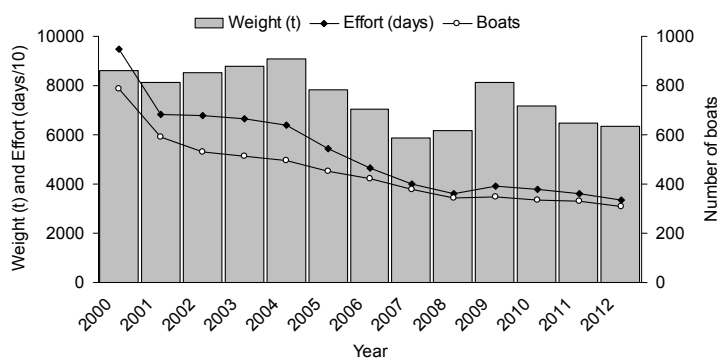


Figure 2: Total ECOTF catch weight (tonnes), fishing effort (days/10) and number of active licences (Source: Fisheries Queensland CFISH Database, 15 May 2013).

Catch rates for target (principal) species vary according to inter-annual changes in abundance, due mainly to climatic and seasonal targeting factors. In general from 2000-12, Eastern King Prawn and Tiger Prawn catch rates have increased, while Red Spot King Prawn catch rates have remained stable, Banana Prawn catch rates have been variable and Endeavour Prawn catch rates have declined (Figure 3).

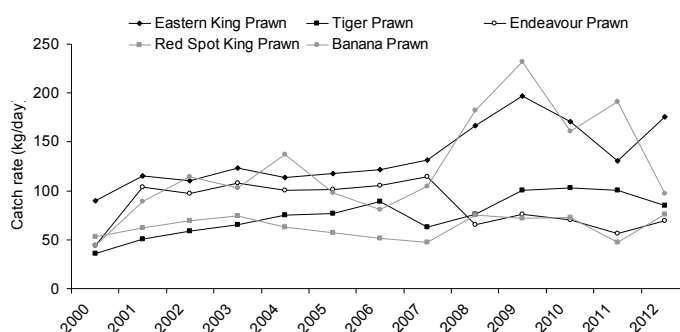


Figure 3: Nominal catch per unit effort (kg/day) of principal species – prawns in the ECOTF 2000–12 (Source: Fisheries Queensland CFISH Database, 11 April 2013).

Among other principal species, Moreton Bay Bug catch rates have increased steadily, scallop catch rates are variable, and squid and Balmain Bug⁸ catch rates are low but stable (Figure 4).

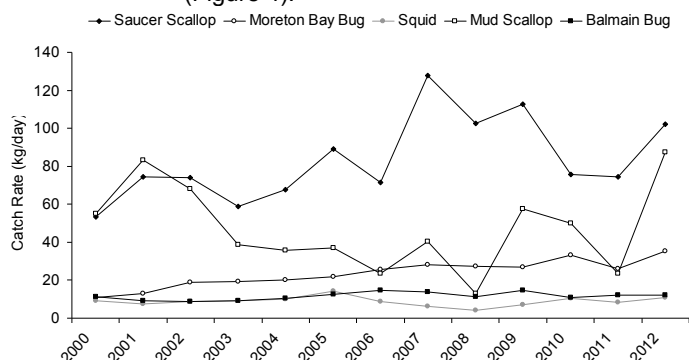


Figure 4: Nominal catch per unit effort (kg/day) of principal species – other species in the ECOTF 2000–12 (Source: Fisheries Queensland CFISH Database, 11 April 2013).

Charter

The catch of ECOTF species is negligible (combined catch <1 t per year in 2011-12).

Recreational

Table 2: Recreational catch of ECOTF species in 2000 and 2011 (Source: Taylor et al. 2012).

Estimates of numbers harvested are affected by variability in the size of catch samples:
 # catches moderately variable, use with caution,
 ## catches highly variable, may be unreliable.

	Year	No. harvested ('000s)	Indicative weight (t)
Prawn	2000	6534	200
	2010	2901	90
Squid	2000	#69	10
	2010	#13	2
Swimmer Crab	2000	395	40
	2010	##	-

⁸ Balmain Bug is the most valuable byproduct species in the ECOTF

Performance against fishery objectives

The Performance Measurement System (PMS) functions as a reporting framework that is a transparent, defensible set of criteria for evaluating the performance of the fishery against management objectives. The full PMS for the ECOTF including the links between the objective, indicators and performance measures can be found on the internet.⁹

Assessment of fishery indicators against the PMS for the 2011 and 2012 fishing years is under way. When completed, the results from this assessment will be included in the full published version of this report.

Species of conservation interest (SOCI) interactions

A total of 93 interactions with protected species were reported through the SOCI logbook in 2011-12 (Table 4). All individuals of those species interacted with were released alive.

Table 4. SOCI interactions and fate in 2011-12

Common name	Caught	No. released alive	No. released dead
Flatback turtle	3	3	0
Loggerhead turtle	1	1	0
Sea snake	87	87	0
Sawfish–narrow	1	1	0
Seahorse–unspecified	1	1	0
Total	93	93	0

⁹ <http://www.daff.qld.gov.au>

Compliance statistics

Compliance and enforcement in Queensland East Coast Otter Trawl Fishery are the responsibility of the Queensland Boating and Fisheries Patrol (QBFP). A breakdown of the compliance statistics for 2011-12 is reported in Table 5.

Table 5. Compliance offences in 2011-12

Offences	Caution	FIN	Prosecution
Commercial fisher takes or possesses regulated or non-permitted fish	6	2	8
Contravene a condition of an authority - fishing apparatus	13	16	5
Contravenes a regulated waters declaration	17	20	4
Fail to give information in stated way or by stated time	3	28	1
Undertake commercial fishing while authority suspended	-	2	1
Fail to produce a document required for immediate inspection	5	12	1
Contravene a condition of an authority - boat marks	9	8	-
Contravene a condition of an authority - quota requirements	2	2	-
Contravene a condition of an authority - other	4	-	3
Fail to keep required information in the approved form	11	8	-
Other	2	1	-

Research

A number of research projects related to this fishery were under way or completed in 2011-12.

1. *Reference points for the Queensland scallop fishery (FRDC 2009/089)* was completed and a final report published in March 2012 (Campbell et al. 2012).¹⁰

Outcomes: An updated 500-800 tonnes maximum sustainable yield (MSY) estimate for the Queensland Saucer Scallop stock; and recommended changes to duration of rotational open/closed seasons and minimum legal size in winter may increase catch rate.

2. *Biological and economic management strategy evaluations of the eastern king prawn fishery (FRDC 2008/019)* has been completed and a draft report was produced in May 2013 (Courtney et al. 2012, In review).

Outcomes: Simulation of EKP fishery dynamics and management procedures identified spawning egg production (S) and exploitable biomass (B) ratios were above reference limits of 50% virgin S₁₉₅₈ and 40% virgin B₁₉₅₈. MSY was estimated to range between 2800 t and 3200 t. Fishing effort E_{MSY} was more uncertain ranging from 44,000 to 27,000 boat-days dependent on model selection, within-year regional fishing patterns and assumed fishing power.

Assuming continued static management and strong change in fishing power, E_{MSY} should be considered to fall in the range 27,000 to 32,000 boat-days per year. Uncertainty surrounding the value of E_{MSY} was not unusual for a fishery stock assessment. The result confirmed that target fishing effort for Eastern King Prawn should not approach these limits to reduce risks of overfishing and lower catch rate profitability.

3. *Providing social science objectives and indicators to compare management options in the Queensland trawl planning process (FRDC 2009/100)* was completed and a final report published in October 2012 (Dichmont et al. 2012).¹¹

¹⁰ <http://frdc.com.au/research/final-reports/Pages/2009-089-DLD.aspx>

¹¹ Final Report at: <http://frdc.com.au/research/final-reports/Pages/2009-100-DLD.aspx>

Outcomes: The project contributed to a stakeholder process allowing open and transparent discussions about future management options for developing a new management plan for the ECOTF. The project defined, through broad stakeholder consultation, a hierarchy of objectives (including those for climate change adaptation) and indicators for optimal management of this fishery and their relative weight across social, economic, sustainability and governance structure components.

Through expertise based stakeholder engagement, the project developed future management strategies and evaluated their impact relative to all indicators for each objective. The project results are being used to develop the management options paper for stakeholder consultation in the Trawl Plan Review currently under way.

4. *Moreton Bay Trawl Harvest Strategy Evaluation Project (Australian Seafood CRC Project 2009/774)* was completed in March 2012. Project objectives for the Moreton Bay trawl fishery included: identify and prioritise management objectives, as identified by trawl fishers; undertake a fishery-wide economic analysis; quantify long-term changes to fishing power; and assess priority harvest strategies. The final project report (Courtney et al. 2011) can be accessed on the Moreton Bay Seafood Industry Association internet site.¹²

Fishery news

Stock status of Queensland's fisheries resources

Stock status of Queensland's fisheries resources reports are produced annually and contain the results of sustainability assessments on trawl stocks. A summary of the status of trawl stocks for the 2011 and 2012 fishing years is provided in this report. Full stock status reports are available on the internet.¹³

¹² <http://www.mbsia.org.au/index.php>

¹³ <http://www.daff.qld.gov.au/fisheries>

GBRMP Ecological Risk Assessment

The ECOTF operates along the whole east Queensland coast, including the Great Barrier Reef Marine Park (GBRMP). New management arrangements for the fishery are being developed with stakeholders. This process is information intensive, requiring reliable contemporary information upon which to base decisions about which tools to use to ensure that management of the ECOTF continues to deliver sustainable outcomes within the GBRMP. A series of expert workshops convened by the Great Barrier Reef Marine Park Authority (GBRMPA) was held in 2010-11 to assess the risk to ecosystem components interacting with the ECOTF in the GBRMP. With input from a broad range of stakeholder body representatives including commercial trawl fishers, the World Wildlife Fund - Australia, CSIRO, NSW Department of Primary Industries, GBRMPA, Queensland Department of Agriculture, Fisheries & Forestry, Queensland Department of Environment and Heritage Protection, Charles Darwin University and the Australian Institute for Marine Science, findings of the ecological risk assessment (ERA) were synthesized and published in 2012 as a summary report and a more comprehensive technical report. These are being consulted in the current statutory review of the Trawl Plan and can be accessed on the GBRMPA website.¹⁴

East Coast Ecological Risk Assessment

A second ERA subsequent to the GBRMP ERA is focusing on all ECOTF waters outside of the GBRMP. In February 2011, an expert workshop with a similar makeup of participants and using the same risk assessment method, was held and preliminary findings recorded.

Fisheries Queensland is preparing a report for publication on the East Coast ERA findings and intends to take the results into consideration in amendment proposals for the Trawl Plan once the current statutory review is completed.

¹⁴ <http://elibrary.gbrmpa.gov.au/jspui/index.jsp>

Trawl fishers discuss structural adjustment

Port meetings with industry have been an important highlight of the consultation strategy for the current statutory review of the Trawl Plan. The most recent was a series of port meetings held from 15-19 September 2013 to discuss the need for structural adjustment in the ECOTF.

Meetings were held in Scarborough, Mooloolaba, Hervey Bay, Townsville and Cairns and were well attended with over 100 attendees across the five meetings. Constructive discussions were held at all of the meetings with points of view shared and comments provided to Fisheries Queensland.

The next stage of consultation will involve seeking feedback from all ECOTF licence holders. All licence holders are being encouraged to respond with their individual thoughts on the need for structural adjustment in the fishery by 22 October 2013.¹⁵

Significant management changes

There were no changes to the ECOTF management regime during the 2011 and 2012 fishing years.

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¹⁵ *Fisheries Queensland Catch the latest commercial fishing and aquaculture news.*
<http://www.vision6.com.au/em/message/email/view.php?id=959483&u=13082> [Accessed on 4 October 2013].

Appendix 1: Species composition of the commercial catch (t) in the ECOTF fishery. *Indicates a species monitored in the Performance Measurement System for the fishery (Source: Fisheries Queensland CFISH database, 15 May 2013).

Common Name	2007	2008	2009	2010	2011	2012
Eastern King Prawn*	2125	2408	2989	2675	2002	2576
Tiger Prawn*	825	974	1314	1284	1231	808
Saucer Scallop*	909	591	752	426	274	691
Moreton Bay Bug*	428	375	422	459	300	468
Endeavour Prawn*	422	600	640	581	519	446
Northern king Prawn*	442	407	507	500	190	402
Greasyback/Bay Prawn*	320	291	317	347	537	424
Banana Prawn*	403	621	914	891	1373	331
Squid	59	28	64	82	71	98
Balmain Bug*	97	80	120	80	96	94
Blue Swimmer Crab*	62	41	65	51	33	47
Cuttlefish*	26	19	29	28	25	38
Mud Scallop	20	5	37	26	9	36
Octopus*	10	6	12	9	7	12
Coral Prawn	17	13	11	9	8	11
Threadfin Bream*	5	8	10	7	7	8
Red Champagne Lobster*	18	17	12	10	9	6
Three-spotted Crab*	18	8	15	17	11	5
Pipefish	0.29	0.22	0.35	0.27	0.14	0.30

