



Australian Government

Department of the Environment

Assessment of the
Queensland Blue Swimmer Crab Fishery

OCTOBER 2015

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Disclaimer

This document is an assessment carried out by the Department of the Environment of a commercial fishery against the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition*. It forms part of the advice provided to the Minister for the Environment on the fishery in relation to decisions under Parts 13 and 13A of the *Environment Protection and Biodiversity Conservation Act 1999*. The views expressed do not necessarily reflect those of the Minister for the Environment or the Australian Government.

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This section contains the Department's assessment of the fishery's performance against the Australian Government's *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition* and outlines the reasons the Department recommends that the fishery be declared an approved wildlife trade operation.

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Table 4 contains a description of the issues identified by the Department with the current management regime for the fishery and outlines the proposed recommendations that would form part of the delegate's decision to declare the fishery an approved wildlife trade operation.

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TABLE 1: SUMMARY OF THE QUEENSLAND BLUE SWIMMER CRAB FISHERY

Key documents relevant to the fishery	<ul style="list-style-type: none"> ▪ QLD <i>Fisheries Act 1994</i> ▪ QLD <i>Marine Parks Act 2004</i> ▪ <i>Great Barrier Reef Marine Park Act 1975</i> ▪ QLD Fisheries Regulation 2008 ▪ Progress Report – Blue Swimmer Crab Fishery as of November 2014 ▪ Annual Status Report – Blue Swimmer Crab Fishery 2011 ▪ Annual Status Report – Blue Swimmer Crab Fishery 2012 ▪ Annual Status Report – Blue Swimmer Crab Fishery 2013 ▪ Draft Statement of the Management Arrangements for the Crab Fishery 2014.
Area	<p>The Blue Swimmer Crab Fishery (BSCF) operates in Queensland's tidal waters in both inshore and offshore areas, with the majority of commercial fishing concentrated between the Sunshine Coast, Fraser region and Moreton Bay. In 2013, these three regions contributed 98.5% of the total catch of blue swimmer crab.</p> <p>Part of the BSCF operates in Commonwealth waters. However, the entire fishery is managed by Queensland under an Offshore Constitutional Settlement between the Australian Government and the QLD Government.</p>
Target Species	<p>The fishery targets blue swimmer crabs (<i>Portunas pelagicus</i>) which are a highly fecund species (produce large numbers of young) that are fast growing and early maturing. Blue swimmer crabs inhabit a range of habitat types throughout their life. Juvenile blue swimmer crabs inhabit shallow seagrass meadows, sand and mud banks in and around estuaries. Adults inhabit deeper waters and shallow sandbank areas within bays and estuaries, though they are also commonly found in offshore waters.</p>
Fishery status	<p>According to the Status of Key Australian Fish Stocks 2014 (SKAFS), the north-eastern Australian biological stock is listed as 'sustainable'. In addition to the prohibition on taking female and undersize crabs and a minimum legal size limit, the sustainable stock status is largely attributed to the targeted species' high fecundity and the dense population sheltered in surrounding spatial closures within the Moreton Bay, Great Sandy Strait and Great Barrier Reef marine parks, which purportedly provides sufficient recruitment to nearby fishing areas.</p> <p>While these factors support the fishery's sustainable stock status, the catch and catch rates of blue swimmer crab caught in pots by the fishery has steadily declined since 2004, with the lowest total commercial catch (in tonnes) and nominal catch per unit effort (kg/day) recorded in 2013 (SKAFS, 2014; Fishery status report, 2013). The SKAFS 2014, states that the declining catch rate trend, driven primarily by the fishery's offshore component, indicates that the biomass is likely to be declining.</p>

	<p>The fishery's 2011 stock status report attributed the decline of the fishery's standardised pot catch rate to environmental factors such as water temperature, salinity and rainfall affecting juvenile survival and adult distributions (Stock status of Queensland's fisheries resources 2012). While crabs are known to be influenced by environmental factors, there is no conclusive evidence to substantiate a correlation between the ongoing decline in total catch and effort for the whole fishery and the offshore region with environmental factors. Therefore, the Department has placed a condition on the wildlife trade operation to further investigate this anomaly (See Condition 5, Table 4)</p> <p>A formal stock assessment has been completed to better determine current biomass levels for the whole biological stock. However, the stock assessment has not been publically released at this point.</p>												
Byproduct Species	Fishers are allowed to retain other species of crab excluding spanner crabs (<i>Ranina ranina</i>).												
Gear	<p>Crab pots and collapsible dillies are used by both commercial and recreational fishers. The total commercial catch of blue swimmer crabs is predominantly caught in pots. However, blue swimmer crabs are also taken by prawn and scallop trawling.</p> <p>Commercial fishers are permitted to use a maximum of 50 baited dillies (with the exception of inverted dillies) and crab pots (with rigid or collapsible frames) per C1 symbol (maximum of two C1 symbols per licence). Dimensions of the pots vary but most are cylindrical and have at least two side entrance funnels. Crabs are enticed into the pot or trap by bait attached to the inside of the apparatus.</p> <p>Recreational fishers are permitted to use a maximum of four traps, pots or dillies per person.</p>												
Season	The fishing season is open year round however, for management purposes the season commences on 1 January and concludes on 31 December of each year.												
Commercial harvest	<p>According to the BSCF 2013 status report, logbook records estimate that the Commercial sector harvested 343 tonnes using pots in 2013 - 2014.</p> <p>Table 1: Catch of blue swimmer crab (tonnes) from Queensland waters.</p> <table><tr><th>Year</th><th>Catch by pots (tonnes)</th><th>Catch by trawl (tonnes)</th></tr><tr><td>2013 – 2014</td><td>343</td><td>42</td></tr><tr><td>2012 – 2013</td><td>391</td><td>48</td></tr><tr><td>2011 – 2012</td><td>322</td><td>32</td></tr></table>	Year	Catch by pots (tonnes)	Catch by trawl (tonnes)	2013 – 2014	343	42	2012 – 2013	391	48	2011 – 2012	322	32
Year	Catch by pots (tonnes)	Catch by trawl (tonnes)											
2013 – 2014	343	42											
2012 – 2013	391	48											
2011 – 2012	322	32											
Value of commercial harvest	Take by pots was valued at approximately \$3.1 million in 2013. No estimate of the commercial value of crab harvested by trawl nets was provided.												

Take by other sectors	<p>The Queensland East Coast Otter Trawl Fishery (ECOTF) retains blue swimmer crabs as byproduct. In 2009 the total number of trawl licences was 442, of which 220 reported blue swimmer crab catch. Recent data from the ECOTF indicates that the take was 42 tonnes in 2013 (SKAFS, 2014).</p> <p>The BSCF is predominately a commercial fishery, with commercial pot fishers harvesting 69%, trawl fishers 7% and recreational fishers 23% of the total catch by weight in 2010 (https://www.daf.qld.gov.au/_data/assets/pdf_file/0018/63810/performance-meas-sys-blue-swim-crab-fishery.pdf).</p>
Commercial licences issued	<p>There are 430 commercial crabbing licence holders (can take blue swimmer crab and mud crab), of which 126 licences recorded blue swimmer crab catch using pots in 2013.</p> <p>The authority to harvest blue swimmer crab and mud crab in Queensland commercial fisheries is given in the form of a C1 'fishery symbol' that is written onto a Commercial Fishing Boat Licence. As Queensland's commercial fisheries are limited entry, no new fishery C1 symbols can be issued. However, an existing symbol can be purchased or moved between two Commercial Fishing Boat Licensees or a Commercial Fishing Boat Licence with a C1 symbol can be temporary transferred between two parties.</p>
Management arrangements	<p>The fishery is managed by the Queensland Department of Agriculture and Fisheries (QDAF) under the Queensland <i>Fisheries Act 1994</i> and Queensland Fisheries Regulation 2008.</p> <p>Management arrangements in place in the fishery include:</p> <p><u>Commercial and recreational</u></p> <ul style="list-style-type: none"> • A prohibition on taking female crabs • A minimum legal size limit for males (11.5 cm carapace width) • Spatial closures <p><u>Commercial only</u></p> <ul style="list-style-type: none"> • Apparatus restrictions (50 pots per C1 symbol) • Limited entry (C1 or trawl endorsement required) • Limit on the number of blue swimmer crabs that can be retained by trawl operators • Restrictions on the number and size of commercial vessels <p><u>Recreational only</u></p> <ul style="list-style-type: none"> • Gear restrictions and requirements- including a restriction on the number of pots and float requirements
Export	<p>The Department has been advised that there is limited export and that blue swimmer crab is mainly sold locally and interstate.</p>
Bycatch	<p>Bycatch may include undersized three-spot crabs, female and undersized blue swimmer crabs, female and undersized mud crabs and some fish species.</p>

	<p>There is some concern that the allowance of 100 pots for fishers with two C1 symbols may increase bycatch. This issue is being addressed in conditions for the fishery (see Condition 4, Table 4).</p>
Interaction with Protected Species¹	<p>Current licence conditions require commercial fishers to record any interaction with EPBC Act listed protected species in the species of conservation interest (SOCI) logbook. According to the QDAF Annual Fishing Report for 2011 and 2012, the BSCF reported no interactions with EPBC Act listed protected species and recorded only one turtle and one sea snake interaction in 2013, which were both reported as being released alive.</p> <p>The StrandNet database, which records information on marine wildlife strandings and deaths in Queensland, is summarised in reports produced by the Queensland Department of Environment and Heritage Protection. The latest of these reports states that of the interactions related to fishery activities, crab pots and float lines associated with crab pots continue to be a major source of anthropogenic mortality for marine turtles in Queensland (Meager & Limpus 2012). Of the cases where strandings or mortalities were identifiable, 37 turtles were recorded as entangled or caught in crab pots or associated gear: 13 of these turtles were released alive while 24 of these cases were mortalities (Meager & Limpus 2012). StrandNet database records as recent as 2014 continue to identify crab pot entanglement as a source of interaction with, and mortality of, EPBC Act listed protected species (including dugongs) (See Part 13: Condition 1, Table 4).</p> <p>While it is difficult to determine in which crab fishing sector these interactions occurred (as interactions are reported by gear type), Queensland's crab fisheries do employ gear identified as a concern. An Ecological Risk Assessment (ERA) conducted in 2009 by QDAF for all Queensland Crab Fisheries underpins these concerns, specifying fishing and gear loss on target and protected species as the main ecological risks in the fishery.</p> <p>Since the fishery's last assessment by the Department in 2010, QDAF have implemented some mitigation measures to help reduce potential interaction with EPBC Act listed protected species, such as promoting voluntary improvements to gear, prohibiting the use of inverted dillies and introducing trotlines in the northern waters of Moreton Bay. While acknowledging these measures, the Department remains concerned that fishery interactions with EPBC Act listed protected species is still occurring and is inadequately reported (see Part 13: Condition's 1 and 2, Table 4).</p>
Ecosystem Impacts	<p>The impact of the fishery on the broader ecosystem is considered</p>

¹ 'Protected species' means all species listed under Part 13 of the EPBC Act, including whales and other cetaceans and listed threatened, listed marine and listed migratory species.

	<p>minimal given the benign harvesting method used and the habitat (muddy/sandy bottom) in which the fishery operates. However, lost or abandoned pots have the potential to impact the broader marine ecosystem by 'ghost fishing' (see Part 13: Condition's 1 and 2, Table 4).</p>
<p>Impacts on World Heritage property/RAMSAR site</p>	<p>While the BSCF operates mainly in inter tidal areas outside the Great Barrier Reef Marine Park (GBRMP), the assessment considered the possible impacts on the World Heritage values of the GBRMP World Heritage Area (WHA).</p> <p>The Department notes that some areas of the fishery are subject to fishing closures through marine park zoning established under the Commonwealth <i>Great Barrier Reef Marine Park Act 1975</i> and the <i>Marine Parks Act 2004</i>, and serve to protect areas of the WHA from the impacts of this fishery.</p> <p>On this basis the Department considers that an action taken by an individual fisher, acting in accordance with the fishery management regime, would not be expected to have a significant impact on the World Heritage matter protected under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act).</p>

Table 2: Progress in implementation of recommendations made in previous assessment of the Blue Swimmer Crab Fishery

Recommendation	Progress	Recommended Action
<p>1. Operation of the BSCF will be carried out in accordance with the Queensland <i>Fisheries Act 1994</i>, <i>Fisheries Regulation 2008</i>, and <i>Marine Parks Act 2004</i></p>	<p>All operations in the Blue Swimmer Crab Fishery (BSCF) during 2011 through to November 2014 were carried out under the appropriate legislation.</p>	<p>The Department of the Environment (the Department) considers that this recommendation has been met.</p> <p>The Department recommends that this recommendation continue to apply (as a condition) under the new export approval for this fishery (see Condition 1, Table 4).</p>
<p>2. Fisheries Queensland to inform the Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) of any intended amendments to the management arrangements that may affect the criteria on which EPBC Act decisions are based.</p>	<p>No changes to management arrangements in the BSCF were made during 2011 through to 2013. In May 2014, changes to the legislation allowed multiple C1 licences to be written on a Commercial Fishing Boat Licence allowing up to a maximum of 100 pots, traps or dillies (previously only 50 were allowed). Fisheries Queensland discussed this impending change with the Department of the Environment. Changes to the C1 licence condition were legislated in May 2014. The Queensland Department of Agriculture and Fisheries (QDAF) informed the Department of these changes on 28 May 2014. Taking into account that legislative changes typically undergo an interrelated process involving approval, drafting, coordination and advice, the Department considers it was not adequately informed of the intent to change the C1 licence condition, which may affect the criteria on which the EPBC Act decisions are based.</p>	<p>The Department considers the issues covered by this recommendation to be partially met.</p> <p>The Department recommends that this recommendation continue to apply (as a condition) under the new export approval for this fishery (see Condition 2, Table 4).</p>

Recommendation	Progress	Recommended Action
<p>3. Fisheries Queensland to produce and present reports to SEWPaC annually as per Appendix B to the <i>Guidelines for the Ecologically Sustainable Management of Fisheries 2nd Edition</i>.</p>	<p>QDAF continues to produce fishery reports on an annual basis. The BSCF Annual Status Reports for the 2011, 2012 and 2013 fishing year have been produced and are available on QDAF's website: https://www.daf.qld.gov.au/fisheries/monitoring-our-fisheries/data-reports/sustainability-reporting/fishery-updates/blue-swimmer-crab-fishery</p>	<p>The Department considers that this recommendation has been met.</p> <p>The Department recommends that this recommendation continue to apply (as a condition) under the new export approval for this fishery (see Condition 3, Table 4).</p>
<p>4. Fisheries Queensland to:</p> <p>a) review management arrangements to further reduce ghost fishing within the BSCF; and</p> <p>b) continue to develop and encourage the use of protected species friendly gear in the BSCF; and</p> <p>c) report to SEWPaC, as part of the annual report, on the level of uptake of biodegradable materials and protected species friendly gear by fishers. If uptake is low then consideration to be given to introducing appropriate management actions.</p>	<p>a) QDAF has advised that no review of the management arrangements to reduce ghost fishing in this fishery has been conducted.</p> <p>The Department notes that QDAF developed and distributed a brochure to promote awareness of the issues and recommend methods to mitigate ghost fishing. The 'Responsible Crabbing' brochure has now been in circulation for four years. QDAF anticipates the percentage of modified pots will increase over time as more C1 operators adopt the fisheries code of best practice and witness the use of the modified apparatus by fellow operators.</p> <p>b) QDAF advises that since the last assessment, no new gear has been developed to reduce protected species interactions. QDAF considers that unintended interactions with protected species is minimised by the adoption of specific gear, such as trot lines where only two droppers are used to deploy a number of pots and the commercial grade construction techniques used for pot construction.</p> <p>c) QDAF advises that due to significant budgetary constraints, a representative survey of the BSCF operators to determine an approximate uptake of protected species</p>	<p>The Department considers the issues covered by this recommendation to be partially met.</p> <p>The Department recommends that this recommendation continue (as conditions) to apply under the new export approval for this fishery (see Part 13 Conditions 1 and 2, Table 4).</p>

Recommendation	Progress	Recommended Action
	<p>friendly or biodegradable gear has not been conducted.</p> <p>While QDAF have implemented some strategies to improve the fishery's sustainable practices, no review of the management arrangements have occurred and no data were gathered to monitor uptake of biodegradable materials and protected species friendly gear by fishers.</p>	
<p>5. Fisheries Queensland to continue to review mechanisms to validate commercial logbook data for blue swimmer crabs focusing on the logbook returns of the pot sector.</p>	<p>QDAF advises that no official review of mechanisms to validate commercial logbook data has been conducted.</p> <p>QDAF further advises that under current management arrangements, data accuracy is verified with fishers at both the point of data entry and via a Range Check Specifications Report. When potential issues are flagged, they are checked and actioned.</p>	<p>The Department considers that this recommendation has not been met.</p> <p>The Department recommends that this recommendation continue to apply (as a condition) under the new export approval for this fishery (see Condition 5 and Part 13 Condition 2, Table 4)</p>
<p>6. Fisheries Queensland to:</p> <p>a) By September 2012 complete a survey of recreational fishers regarding blue swimmer crabs and incorporate the results into the management regime of the fishery.</p> <p>b) By September 2013 undertake a risk analysis of Indigenous fishing to blue swimmer crab stocks. Should the analyses</p>	<p>a) During 2010–11, QDAF completed a 12 month state wide recreational fishing survey. The survey estimates for blue swimmer crab catch and harvest were not considered reliable due to large standard errors. This was driven by variance in the catches and only a small number of survey participants targeting or reporting catches of blue swimmer crabs.</p> <p>In 2013-14, QDAF conducted a new state wide survey to collect information on the recreational fishing activity of targeting and catching blue swimmer crabs. The results were considered satisfactory and have been accounted for in the management arrangements for the</p>	<p>The Department considers the issues covered by this recommendation to be partially met.</p> <p>The Department recommends that a similar recommendation apply under the new export approval for this fishery (see Recommendation 1, Table 4).</p>

Recommendation	Progress	Recommended Action
<p>identify a risk, undertake a new survey of Indigenous fishing for blue swimmer crabs to quantify the level of take</p>	<p>fishery</p> <p>b) QDAF reported that the 2013–14 state wide recreational fishing survey would collect recreational fishing information from Indigenous people. However, the 2013–14 survey has not sufficiently accounted for Indigenous fishing take or risks to the relevant blue swimmer crab stocks.</p>	

Table 3: The Department of the Environment’s assessment of the Queensland Blue Swimmer Crab Fishery against the requirements of the EPBC Act related to decisions made under Part 13 and Part 13A.

Please Note – the table below is not a complete or exact representation of the EPBC Act. It is intended as a summary of relevant sections and components of the EPBC Act to provide advice on the fishery in relation to decisions under Part 13 and Part 13A. A complete version of the EPBC Act can be found at <http://www.comlaw.gov.au/>.

Part 13

Division 1 Listed threatened species Section 208A Minister may accredit plans or regimes	The Department’s assessment of the Queensland Blue Swimmer Crab Fishery
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(c) a plan of management, or a policy, regime or any other arrangement, for a fishery that is:</p> <p>i. made by a State or self-governing Territory; and</p> <p>ii. in force under a law of the State or self-governing Territory;</p> <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that members of listed threatened species (other than conservation dependent species) are not killed or injured as a result of the fishing; and</p>	<p>The Queensland Blue Swimmer Crab Fishery (BSCF) will be managed under the Queensland <i>Fisheries Act 1994</i> and the Queensland Fisheries Regulation 2008.</p> <p>The management regime for the BSCF was most recently accredited under section 208A (Part 13) of the EPBC Act in 2010. While there have been changes to the management regime since that time, those changes do not materially change the requirement for fishers to take all reasonable steps to ensure that members of listed threatened species are not killed or injured as a result of the fishing.</p> <p>The Queensland Fisheries Regulation 2008 prescribes the restrictions on fishing gear used in the fishery. A number of these restrictions operate to reduce the risk of mortality of listed threatened species potentially encountered in the fishery such as turtles and dugongs.</p>

<p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the survival or recovery in nature of the species.</p>	<p>Restrictions include:</p> <ul style="list-style-type: none"> • no inverted dillies • the introduction of trotlines in Moreton Bay will allows up to 10 pots to be attached to one trot-line • developed and distributed a brochure to promote best-practice • all lines attached to pots must be kept above the water line <p>Given the measures described above, and in Table 1, the Department considers that the current management regime for the BSCF requires persons engaged in fishing under that regime to take all reasonable steps to ensure that members of listed threatened species are not killed or injured as a result of the fishing.</p> <p>Currently, evidence suggests that the BSCF has some interactions with listed threatened species, such as turtles and dugongs. The Department has identified gear type and reporting validation as the primary concern. Given the measures described above, and in Table 1, the Department considers that the current operation of the BSCF does not, or is not likely to, adversely affect the survival or recovery in nature of any listed threatened species. Due to the recent reported catches of turtles and dugongs through StrandNet, the Department considers that accreditation of the management regime for the BSCF under this section should be subject to a condition requiring QDAF to adjust fishery operations to reduce the risk of listed threatened species entanglement, and improve monitoring and implement a system to independently validate commercial fishery interactions with listed threatened species (see Part 13 Condition 1 and 2, Table 4).</p>
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Part 13 (*cont.*)

<p>Division 2 Migratory species</p> <p>Section 222A Minister may accredit plans or regimes</p>	<p>The Department's assessment of the Blue Swimmer Crab Fishery</p>
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(c) a plan of management, or a policy, regime or any other arrangement, for a fishery that is:</p> <p>i. made by a State or self-governing Territory; and</p> <p>ii. in force under a law of the State or self-governing Territory;</p> <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that members of listed migratory species are not killed or injured as a result of the fishing; and</p>	<p>The BSCF will be managed under the Queensland <i>Fisheries Act 1994</i> and the Queensland Fisheries Regulation 2008.</p> <p>The management regime for the BSCF was most recently accredited under section 222A (Part 13) of the EPBC Act in 2010. While there have been changes to the management regime since that time, those changes do not materially change the requirement for fishers to take all reasonable steps to ensure that members of listed migratory species are not killed or injured as a result of the fishing.</p> <p>The Queensland Fisheries Regulation 2008 prescribes the restrictions on fishing gear used in the fishery. A number of these restrictions operate to reduce the risk of mortality of listed migratory species potentially encountered in the fishery such as turtles and dugongs.</p> <p>Restrictions include:</p> <ul style="list-style-type: none"> • no inverted dillies • the introduction of trotlines in Moreton Bay will allows up to 10 pots to be attached to one trot-line • developed and distributed a brochure to promote best-practice

<p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the conservation status of a listed migratory species or a population of that species.</p>	<ul style="list-style-type: none"> all lines attached to pots must be kept above the water line <p>Given the measures described above, and in Table 1, the Department considers that the current management regime for the BSCF requires persons engaged in fishing under that regime to take all reasonable steps to ensure that members of listed migratory species are not killed or injured as a result of the fishing.</p> <p>Currently, evidence suggests that the BSCF has some interactions with listed migratory species, such as turtles and dugongs. The Department has identified gear type and reporting validation as the primary concern. Given the measures described above, and in Table 1, the Department considers that the current operation of the BSCF does not, or is not likely to, adversely affect the survival or recovery in nature of any listed migratory species. Due to the recent reported catches of turtles and dugongs through StrandNet, the Department considers that accreditation of the management regime for the BSCF under this section should be subject to a condition requiring QDAF to adjust fishery operations to reduce the risk of listed migratory species entanglement, and improve monitoring and implement a system to independently validate commercial fishery interactions with listed migratory species (see Part 13 Condition 1 and 2, Table 4).</p>
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Part 13 (cont.)

<p>Division 3 Whales and other cetaceans</p> <p>Section 245 Minister may accredit plans or regimes</p>	<p>The Department's assessment of the Blue Swimmer Crab Fishery</p>
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(c) a plan of management, or a policy, regime or any other arrangement, for a fishery that is:</p> <p>i. made by a State or self-governing Territory; and</p>	<p>The BSCF will be managed under the Queensland <i>Fisheries Act 1994</i> and the Queensland Fisheries Regulation 2008.</p>

<p>ii. in force under a law of the State or self-governing Territory;</p> <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that cetaceans are not killed or injured as a result of the fishing; and</p> <p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the conservation status of a species of cetacean or a population of that species.</p>	<p>The management regime for the BSCF was most recently accredited under section 245 (Part 13) of the EPBC Act in 2010. While there have been changes to the management regime since that time, those changes do not materially change the requirement for fishers to take all reasonable steps to ensure that whales and cetaceans are not killed or injured as a result of the fishing.</p> <p>The Queensland Fisheries Regulation 2008 prescribes the restrictions on fishing gear used in the fishery.</p> <p>Currently, evidence suggests that the BSCF only has minimal interactions with whales and other cetaceans. Therefore, the Department considers the current operation of the BSCF is not likely to adversely affect the conservation status of a species of cetacean or a population of that species.</p>
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Part 13 (cont.)

Division 4 Listed marine species Section 265 Minister may accredit plans or regimes	The Department's assessment of the Blue Swimmer Crab Fishery
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(c) a plan of management, or a policy, regime or any other arrangement, for a fishery that is:</p> <p>i. made by a State or self-governing Territory; and</p> <p>ii. in force under a law of the State or self-governing Territory;</p> <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that members of listed marine species are not killed or injured as a result of the fishing; and</p>	<p>The BSCF will be managed under the Queensland <i>Fisheries Act 1994</i> and the Queensland Fisheries Regulation 2008.</p> <p>The management regime for the BSCF was most recently accredited under section 265 (Part 13) of the EPBC Act in 2010. While there have been changes to the management regime since that time, those changes do not materially change the requirement for fishers to take all reasonable steps to ensure that members of listed marine species are not killed or injured as a result of the fishing.</p> <p>The Queensland Fisheries Regulation 2008 prescribes the restrictions on fishing gear used in the fishery. A number of these restrictions operate to reduce the risk of mortality of listed marine species potentially encountered in the fishery such as turtles and dugongs.</p> <p>Restrictions include:</p> <ul style="list-style-type: none">• no inverted dillies• the introduction of trotlines in Moreton Bay will allow up to 10 pots to be attached to one trot-line• developed and distributed a brochure to promote best-practice• all lines attached to pots must be kept above the water line

<p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the conservation status of a listed marine species or a population of that species.</p>	<p>Given the measures described above, and in Table 1, the Department considers that the current management regime for the BSCF requires persons engaged in fishing under that regime to take all reasonable steps to ensure that members of listed marine species are not killed or injured as a result of the fishing.</p> <p>Currently, evidence suggests that the BSCF has some interactions with listed marine species, such as turtles and dugongs. The Department has identified gear type and reporting validation as the primary concern. Given the measures described above, and in Table 1, the Department considers that the current operation of the BSCF does not, or is not likely to, adversely affect the survival or recovery in nature of any listed marine species. Due to the recent reported catches of turtles and dugongs through StrandNet, the Department considers that accreditation of the management regime for the BSCF under this section should be subject to a condition requiring QDAF to adjust fishery operations to reduce the risk of listed marine species entanglement, and improve monitoring and implement a system to independently validate commercial fishery interactions with listed marine species (see Part 13 Condition 1 and 2, Table 4).</p>
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Part 13 (cont.)

Section 303AA Conditions relating to accreditation of plans, regimes and policies	The Department's assessment of the Blue Swimmer Crab Fishery
(1) This section applies to an accreditation of a plan, regime or policy under section 208A, 222A, 245 or 265.	The Department recommends that the management regime for the BSCF be accredited under sections 208A, 222A, 245 and 265.
(2) The Minister may accredit a plan, regime or policy under that section even though he or she considers that the plan, regime or policy should be accredited only: (a) during a particular period; or (b) while certain circumstances exist; or (c) while a certain condition is complied with. In such a case, the instrument of accreditation is to specify the period, circumstances or condition.	The Department considers that two conditions are required for the accreditation of the management regime for the BSCF under Part 13 (See Part 13 Conditions 1 and 2, Table 4).
(7) The Minister must, in writing, revoke an accreditation if he or she is satisfied that a condition of the accreditation has been contravened.	

Part 13A

Section 303BA Objects of Part 13A

(1) The objects of this Part are as follows:

- (a) to ensure that Australia complies with its obligations under CITES² and the Biodiversity Convention;
- (b) to protect wildlife that may be adversely affected by trade;
- (c) to promote the conservation of biodiversity in Australia and other countries;
- (d) to ensure that any commercial utilisation of Australian native wildlife for the purposes of export is managed in an ecologically sustainable way;
- (e) to promote the humane treatment of wildlife;
- (f) to ensure ethical conduct during any research associated with the utilisation of wildlife; and
- (h) to ensure the precautionary principle is taken into account in making decisions relating to the utilisation of wildlife.

² Convention on International Trade in Endangered Species of Wild Fauna and Flora

Part 13A

Section 303DC Minister may amend list	The Department's assessment of the Blue Swimmer Crab Fishery
<p>(1) Minister may, by instrument published in the Gazette, amend the list referred to in section 303DB (list of exempt native specimens) by:</p> <ul style="list-style-type: none"> (a) including items in the list; (b) deleting items from the list; or (c) imposing a condition or restriction to which the inclusion of a specimen in the list is subject; or (d) varying or revoking a condition or restriction to which the inclusion of a specimen in the list is subject; or (e) correcting an inaccuracy or updating the name of a species. 	<p>The Department recommends that product derived from the BSCF be included in the list of exempt native specimens until 12 October 2018.</p>
<p>(1A) In deciding whether to amend the list referred to in section 303DB (list of exempt native specimens) to include a specimen derived from a commercial fishery, the Minister must rely primarily on the outcomes of any assessment in relation to the fishery carried out for the purposes of Division 1 or 2 of Part 10.</p>	<p>No assessment of the BSCF has been carried out under Part 10 of the EPBC Act.</p>
<p>(1C) The above does not limit the matters that may be taken into account in deciding whether to amend the list referred to in section 303DB (list of exempt native specimens) to include a specimen derived from a commercial fishery.</p>	<p>It is not possible to list exhaustively the factors that you may take into account in amending the list of exempt native specimens. The objects of Part 13A, which are set out above this table, provide general guidance in determining factors that might be taken into account. A matter that is relevant to determining whether an amendment to the list is consistent with those objects is likely to be a relevant factor.</p> <p>The Department considers that the amendment of the list of exempt native specimens to include product taken in the BSCF until 12 October 2018 would be consistent with the provisions of Part 13A (listed above) as:</p> <ul style="list-style-type: none"> ▪ the fishery will not harvest any Convention on International Trade in

	<p>Endangered Species of Wild Fauna and Flora (CITES) listed species</p> <ul style="list-style-type: none"> there are management arrangements in place to ensure that the resource is being managed in an ecologically sustainable way (see Table 1) the operation of the BSCF is unlikely to be unsustainable and threaten biodiversity within the next three years, and the Environment Protection and Biodiversity Conservation Regulations 2000 do not specify fish as a class of animal in relation to the welfare of live specimens.
<p>(3) Before amending the list referred to in section 303DB (list of exempt native specimens), the Minister:</p> <p>(a) must consult such other Minister or Ministers as the Minister considers appropriate; and</p> <p>(b) must consult such other Minister or Ministers of each State and self-governing Territory as the Minister considers appropriate; and</p> <p>(c) may consult such other persons and organisations as the Minister considers appropriate.</p>	<p>The Department considers that the consultation requirements have been met.</p> <p>The application from Fisheries Queensland was released for public comment from 19 January 2015 to 16 February 2015. The public comment period sought comment on:</p> <ul style="list-style-type: none"> the proposal to amend the list of exempt native specimens to include product derived from the BSCF, and Fisheries Queensland application for the BSCF. <p>No comments were received. However, a comment was received prior to the public comment period and has been considered as part of the Department's assessment (<u>Attachment M</u>).</p>
<p>(5) A copy of an instrument made under section 303DC is to be made available for inspection on the Internet.</p>	<p>The instrument for the BSCF made under section 303DC will be gazetted and made available through the Department's website.</p>

Section 303FN Approved wildlife trade operation	The Department's assessment of the Blue Swimmer Crab Fishery
<p>(2) The Minister may, by instrument published in the <i>Gazette</i>, declare that a specified wildlife trade operation is an approved wildlife trade operation for the purposes of this section.</p>	
<p>(3) The Minister must not declare an operation as an approved wildlife trade operation unless the Minister is satisfied that:</p>	

<p>(c) if the operation relates to the taking of live specimens that belong to a taxon specified in the regulations – the conditions that, under the regulations, are applicable to the welfare of the specimens are likely to be complied with; and</p> <p>(d) such other conditions (if any) as are specified in the regulations have been, or are likely to be, satisfied.</p>	<ul style="list-style-type: none"> • a prohibition on taking female crabs • a blue swimmer crab must not be possessed with the carapace removed • spatial closures • apparatus restrictions (50 pots per C1 symbol) • limited entry to the commercial fishery (C1 endorsement required). <p>The Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations) do not specify fish as a class of animal in relation to the welfare of live specimens.</p> <p>No other conditions are specified in relation to commercial fisheries in the EPBC Regulations.</p>
<p>(4) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have regard to:</p> <p>(a) the significance of the impact of the operation on an ecosystem (for example, an impact on habitat or biodiversity); and</p>	<p>The Department considers that the operation of the BSCF will not have a significant impact on any relevant ecosystem within the next 3 years, given the management measures currently in place, which include:</p> <ul style="list-style-type: none"> • a minimum legal size limit of 150 mm carapace width, at the widest part • a prohibition on taking female crabs • a blue swimmer crab must not be possessed with the carapace removed • spatial closures • apparatus restrictions (50 pots per C1 symbol) • limited entry to the commercial fishery (C1 endorsement required).

<p>(b) the effectiveness of the management arrangements for the operation (including monitoring procedures).</p>	<p>The Department considers that the management arrangements that will be employed for the BSCF, as outlined in Table 1, are likely to be effective. The management regime for the BSCF sets out performance indicators and trigger points against which the performance of the fishery is evaluated regularly. In addition, gear restrictions will be employed as well as area restrictions.</p>
<p>(5) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have regard to:</p> <p>(a) whether legislation relating to the protection, conservation or management of the specimens to which the operation relates is in force in the State or Territory concerned; and</p> <p>(b) whether the legislation applies throughout the State or Territory concerned; and</p> <p>(c) whether, in the opinion of the Minister, the legislation is effective.</p>	<p>The BSCF will be managed under the Queensland <i>Fisheries Act 1994</i> and the Queensland Fisheries Regulation 2008.</p> <p>The Queensland <i>Fisheries Act 1994</i> applies throughout Queensland waters.</p> <p>The Department considers that the legislation is likely to be effective.</p>
<p>(10) For the purposes of section 303FN, an operation is a wildlife trade operation if, and only if, the operation is an operation for the taking of specimens and:</p> <p>(d) the operation is a commercial fishery.</p>	<p>The BSCF is a commercial fishery.</p>

Section 303FR Public consultation	The Department's assessment of the Blue Swimmer Crab Fishery
<p>(1) Before making a declaration under section 303FN, the Minister must cause to be published on the Internet a notice:</p> <ul style="list-style-type: none"> (a) setting out the proposal to make the declaration; and (b) setting out sufficient information to enable persons and organisations to consider adequately the merits of the proposal; and (c) inviting persons and organisations to give the Minister, within the period specified in the notice, written comments about the proposal. 	<p>The Department considers that consultation requirements of the EPBC Act for declaring a fishery an approved wildlife trade operation have been met. A public notice, which set out the proposal to declare the BSCF an approved wildlife trade operation and included the submission for the BSCF, was released for public comment which closed on 16 February 2015.</p> <p>No comments were received. However, a comment was received prior to the public comment period and has been considered as part of the Department's assessment (<u>Attachment M</u>).</p>
<p>(2) A period specified in the notice must not be shorter than 20 business days after the date on which the notice was published on the Internet.</p>	<p>A public notice, which set out the proposal to declare the BSCF a wildlife trade operation and included the submission was released for public comment on 19 January 2015 and closed on 16 February 2015, a total of 22 business days.</p>
<p>(3) In making a decision about whether to make a declaration under section 303FN, the Minister must consider any comments about the proposal to make the declaration that were given in response to the invitation in the notice.</p>	<p>The public comment received on the submission is included at <u>Attachment M</u> of the brief. The Department's assessment has considered the public comment received on the submission.</p>

Section 303FT Additional provisions relating to declarations	The Department's assessment of the Blue Swimmer Crab Fishery
(1) This section applies to a declaration made under section 303FN, 303FO or 303FP.	A declaration for the BSCF will be made under section 303FN.
(4) The Minister may make a declaration about a plan or operation even though he or she considers that the plan or operation should be the subject of the declaration only: (a) during a particular period; or (b) while certain circumstances exist; or (c) while a certain condition is complied with. In such a case, the instrument of declaration is to specify the period, circumstances or condition.	The standard conditions applied to commercial fishery wildlife trade operation include: <ul style="list-style-type: none"> • operation in accordance with the management regime • notifying the Department of changes to the management regime, and • annual reporting in accordance with the requirements of the Australian Government <i>Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition</i>. The wildlife trade operation instrument for the BSCF specifies the standard and any additional conditions applied.
(8) A condition may relate to reporting or monitoring.	One of the standard conditions relates to reporting.
(9) The Minister must, by instrument published in the <i>Gazette</i> , revoke a declaration if he or she is satisfied that a condition of the declaration has been contravened.	
(11) A copy of an instrument under section 303FN, or this section is to be made available for inspection on the Internet.	The instrument for the BSCF made under sections 303FN and the conditions under section 303FT will be gazetted and made available through the Department's website.

Part 16

Section 391 Minister must consider precautionary principle in making decisions	The Department's assessment of the Blue Swimmer Crab Fishery
(1) The Minister must take account of the precautionary principle in making a decision under section 303DC and/or section 303FN, to the extent he or she can do so consistently with the other provisions of this Act.	The Department has accounted for the precautionary principle in the preparation of its advice. QDAF has implemented precautionary management measures which reduce the risks of adverse impacts, for example, limited entry, gear restrictions and a prohibition on taking female crabs. Furthermore, the management regime for the BSCF sets out performance indicators and trigger points against which the performance of the fishery is evaluated regularly.
(2) The precautionary principle is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.	

The Department of the Environment's final conditions and recommendation to the Queensland Department of Agriculture and Fisheries for the Queensland Blue Swimmer Crab Fishery

The material submitted by the Queensland Department of Agriculture and Fisheries (QDAF) indicates that the Blue Swimmer Crab Fishery operates in accordance with the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries 2nd edition*. Management arrangements, including limited entry, gear specifications and the prohibition on harvesting female or undersized crabs, suggest that the fishery is being managed in an ecologically sustainable way. As such, the Department considers that overall the management regime aims to ensure that fishing is conducted in a manner that does not lead to over-fishing and for fishing operations to be managed to minimise their impact on the structure, productivity, function and biological diversity of the ecosystem.

Stock Status and Recovery

While the fishery is relatively well managed, the Department has identified a number of key challenges that must be addressed to ensure the fishery's sustainability, including:

- monitoring and managing the transfer and distribution of C1 symbols
- assessing and managing ecological risks associated with the allowance of two C1 symbols per licence
- developing appropriate responses to triggered performance indicators
- developing mechanisms to ensure the precision, validity and accountability of data from the commercial and recreational sector of the fishery

Ecosystem Impacts

The Department considers that, until it can be demonstrated that these issues have been adequately addressed, declaration of the harvest operations of the Blue Swimmer Crab Fishery should be declared a Wildlife Trade Operation for three years, until 12 October 2018, is appropriate. The Department considers that the declaration should be subject to the conditions listed in Table 4. To contain and minimise the risks in the longer term the recommendations outlined in Table 4 have been made.

Unless a specific time frame is provided, each condition and recommendation must be addressed within the period of the approved wildlife trade operation declaration for the fishery.

Table 4: Blue Swimmer Crab Fishery Assessment – Summary of Issues, Conditions and Recommendations October, 2015

Issue	Condition
<p><u>General Management</u></p> <p>Export decisions relate to the arrangements in force at the time of the decision. To ensure that these decisions remain valid and export approval continues uninterrupted, the Department of the Environment needs to be advised of any changes that are made to the management regime and make an assessment that the new arrangements are equivalent or better, in terms of ecological sustainability, than those in place at the time of the original decision. This includes operational and legislated amendments that may affect sustainability of the target species or negatively impact on byproduct, bycatch, EPBC Act protected species or the ecosystem.</p>	<p>Condition 1:</p> <p>Operation of the Queensland Blue Swimmer Crab Fishery (BSCF) will be carried out in accordance with the management regime in force under the Queensland <i>Fisheries Act 1994</i> and the Queensland Fisheries Regulation 2008.</p> <p>Condition 2:</p> <p>The Queensland's Department of Agriculture and Fisheries (QDAF) to inform the Department of the Environment of any intended material changes to the BSCF management arrangements that may affect the assessment against which <i>Environment Protection and Biodiversity Conservation Act 1999</i> decisions are made.</p>
<p><u>Annual Reporting</u></p> <p>It is important that reports be produced and presented to the Department annually in order for the performance of the fishery and progress in implementing the conditions and recommendations in this report and other managerial commitments to be monitored and assessed throughout the life of the declaration. Annual reports should follow Appendix B to the 'Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition' and include a description of the fishery, management arrangements in place, research and monitoring outcomes, recent catch data for all sectors of the fishery, status of target stock, interactions with EPBC Act protected species, impacts of the fishery on the ecosystem in which it operates and progress in implementing the Department's conditions and recommendations. Electronic copies of the guidelines are available from the Department's website at http://www.environment.gov.au/resource/guidelines-</p>	<p>Condition 3:</p> <p>The Queensland Department of Agriculture and Fisheries (QDAF), to produce and present reports to the Department of the Environment annually as per Appendix B of the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i>.</p>

Issue	Condition
ecologically-sustainable-management-fisheries	
<p><u>C1 Licence Condition</u></p> <p>As of May 2014, changes to the C1 licence condition were legislated to allow a single licence holder up to two C1 symbols to use up to 100 pots, traps or dillies (50 per symbol). The ability for a fisher to service such an increased maximum number of pots remains uncertain and there are concerns that this could potentially increase the ecological risk of the fishery with respect to target, threatened, endangered and protected (TEP) species. No ecological risk assessment of the management change has been conducted.</p> <p>Under the management arrangements, a C1 symbol can be purchased or temporarily transferred between parties that hold Commercial Fishing Boat Licences. Since the same C1 symbol applies to all crab fisheries (with the exception of spanner crab), licence holders operating in different fisheries can transfer a C1 symbol to operate in each of these fisheries at any time, including in the Blue Swimmer Crab Fishery (BSCF). A C1 symbol being used in the BSCF can in turn be used to operate in the Gulf of Carpentaria or Queensland East Coast Mud Crab Fisheries at any time. The ability, under current management arrangements, for market and environmental circumstances to drive shifts in the use of C1 symbols across different crab fisheries, and to concentrate effort on alternate target species and to centralise fishing pressures, is a concerning management risk, especially for potential interactions with EPBC Act listed TEP species.</p> <p>An important fishery management control in the BSCF is the numbers of pots able to be used. There is widespread recognition amongst crab fishery stakeholders and managers that the ability to enforce input controls (numbers of pots used per commercial C1 symbol or recreational fisher) is extremely difficult. Investigation and trials of the use of official identification tags on commercial crab pots are a suggested measure to promote the effective management of input controls in the MCF to ensure compliance with use of designated numbers of pots per C1 symbol.</p>	<p>Condition 4:</p> <p>QDAF, in collaboration with crab fishery stakeholders, to investigate and implement management measures to monitor and manage the distribution of C1 symbols between the respective crab fisheries (Gulf of Carpentaria and Queensland East Coast MCF, and the BSCF) to ensure there is minimal risk to the target stock, bycatch, TEP species or the broader ecosystem from unsustainable fishing pressure.</p>

Issue	Condition
<p>To date, no assessment has been undertaken to determine the potential ecological impacts or substantiate that management arrangements can sufficiently respond to these potential problems if they occur. Taking into account the existing commercial and recreational fishing pressures on crab stocks along Queensland's east coast, the Department is concerned that existing management arrangements, including the recent change allowing the use of two C1 symbols per licence, may lead to increased and unsustainable fishing pressure at local and stock levels as well as increasing possible interactions with TEP species. The Department considers it important that QDAF monitor and control the distribution of active and latent C1 symbols across the three respective crab fisheries (i.e. Gulf of Carpentaria and Queensland East Coast Mud Crab Fisheries, and the BSCF) to support an ecologically sustainable harvest of target species without having negative effects on TEP species.</p>	
<p><u>Performance measures</u></p> <p>Performance measures relating to compliance, total annual catch and catch rate were triggered for certain areas in the fishery's Performance Measurement System (PMS) in 2011. According to the fishery's PMS (2012), QDAF will finalise a clear timetable for implementation of appropriate management responses in consultation with fishery stakeholders within three months of becoming aware that a performance measure has been triggered. QDAF have noted several triggered performance indicators in the 2011 to 2013 fishing year reports and have since undertaken a stock assessment. However, no management response has been prescribed.</p> <p>While some variation is expected in the PMS, these triggers in catch rate may provide an indication of trends in abundance over time and should be given careful consideration. Considering that catch and catch rates of blue swimmer crab caught in pots by the fishery have steadily declined since 2004, with the lowest total commercial catch (in tonnes) and nominal catch per unit effort (kg/day) recorded in 2013, it is particularly important that the PMS is appropriately precautionary and that triggered performance indicators are appropriately responded to in accordance with best practice (SKAFS, 2014; Fishery status report, 2013). Therefore, the Department requires that QDAF review the fishery's PMS and management arrangements to ensure that</p>	<p>Condition 5:</p> <p>QDAF to review the BSCF management regime and operations to ensure that indicators for target stocks, bycatch and TEP species are relevant, informative and achieve precautionary management outcomes. The review must consider:</p> <ul style="list-style-type: none"> a) the relevance, precision and validity of the information collected from the commercial and recreational sectors; b) measures to effectively monitor and respond to triggered performance indicators; c) methods to improve accountability to discourage false data; and d) developing limit reference points.

Issue	Condition
measures remain relevant to the risks and allows opportunity for a precautionary management response within a sufficient timeframe.	
<p><u>Improve fishing gear for bycatch and protected species</u></p> <p>In the Annual Fishing Report for 2011 and 2012, the MCF and BSCF reported no interactions with EPBC Act listed TEP species. In 2013, one turtle interaction was recorded, which was released alive. In contrast, the StrandNet database, which is operated by the Queensland Department of Environment and Resource Management, identified 37 turtles as entangled or caught in crab pots or associated gear (Meager & Limpus 2012), and continues to identify crab pot entanglement as a source of interaction with, and mortality of, TEP species in recent unreleased reports.</p> <p>In 2009, an Ecological Risk Assessment for the Crab Fisheries identified both fishing activity and gear loss as the primary risk to protected species, allocating them both a 'moderate' risk classification. The report cited widespread and daily fishing activity in tidal waters throughout Queensland as the reason for the heightened risk classification. The Department is concerned that increasing the pot allowance for commercial crab fishers with two C1 symbols may exasperate the risks to bycatch species (including TEP species and undersize female crabs), particularly in intertidal areas. Without appropriately investigating and mitigating the possible risks associated with servicing an increased number of crab pots on the east coast, the allowance for two C1 symbols may have heightened the ecological risks identified in the previous ERA for the Crab Fisheries (2009).</p> <p>In the latest progress report, QDAF state that ghost fishing is more of an issue associated with the recreational fishing sector than the commercial sector. While recreational fishers may pose a risk to TEP species, a study on the use of crab pots in the Queensland crab fishery identified the commercial fishery as the probable source of most ghost fishing, noting that recreational effort was primarily concentrated in embayment areas. The study also notes that recreational pots are less likely to be left in the water overnight and are therefore less likely to be lost</p>	<p>Part 13 Condition 1:</p> <p>QDAF, in consultation with crab fishery stakeholders and other government agencies to:</p> <ul style="list-style-type: none"> a) complete a robust evaluation of operational management measures to examine the risk of TEP species entanglements with crab pots; and b) taking into account the evaluation of management arrangements, implement a suite of management measures to minimise the risk of TEP species entanglement with crab pots. Measures could include spatial and seasonal closures and/or potential gear modifications. <p>Part 13 Condition 2:</p> <p>QDAF to work with crab fishery stakeholders, to:</p> <ul style="list-style-type: none"> a) investigate and improve monitoring and reporting of protected species interactions by fishers in the commercial sector; and b) implement a system to independently validate commercial fishery interactions with TEP species.

Issue	Condition
<p>(Campbell and Sumpton, 2009).</p> <p>Since the last assessment in 2007, QDAF has implemented some management arrangements to mitigate possible interactions with TEP species, such as prohibiting the use of inverted dillies, introducing trotlines in the northern waters of Moreton Bay and distributing brochures to inform and promote improved fishing gear amongst the recreational fishing sector. The Department also commends QDAF for recently conducting a cleanup of abandoned crab pots in Hinchinbrook Channel, which had successfully seized 144 unattended and abandoned crab pots over the three day initiative.</p> <p>Given that interactions with TEP species is occurring and that current reporting methods only rely on self reporting by commercial fishers, the Department considers that it is essential that QDAF undertake a robust evaluation of the operational management measures to identify if there is any underreporting of interactions with, and mortality of, EPBC Act listed TEP species or lost pots by the commercial and recreational sectors.</p> <p>To ensure that the data accurately reflects the fishery and recreational practices, the Department also considers it important that QDAF work with industry to develop and implement an independent data validation framework to ensure reliable reporting by commercial fishers and incorporate any findings into the crab fisheries management arrangements.</p>	

Table 4: Queensland Blue Swimmer Crab Assessment – Summary of Issues, Conditions and Recommendations October, 2015

Issue	Recommendation
<p><u>Improve fishing gear for bycatch</u></p> <p>The QDAF report on the progress against the Department of the Environment recommendations 2014 for the Blue Swimmer Crab Fishery advises that a small number of Queensland crab fishers have been trialling escape vents in their pots. The report advises that the trial of rectangular shaped escape vents, which are designed to allow undersized crabs that have entered the pots to escape, have received very positive feedback. According to the report, fishers have noticed “almost no cannibalism of crabs and very few undersize crabs present in lifted pots – compared to pots without escape vents”.</p> <p>Rectangular escape vents have proven to be very effective at allowing escape of undersize crabs and retaining legal sized mud crabs in the commercial fishery. It is possible that the use of such rectangular escape vents would have the same benefits to the recreational component of the fishery.</p>	<p>Recommendation 1:</p> <p>QDAF to work with relevant agencies and crab fishery stakeholders to further assess and actively promote the use of escape vents in the commercial and recreational crab fishing sectors.</p>

REFERENCES

Department of the Environment (2012) *Marine bioregional plan for the Temperate East Marine Region*

Annual status report 2011: Mud Crab Fishery

<http://www.environment.gov.au/system/files/pages/00cf53db-c13d-483d-bce7-e987a0c97235/files/mud-crab-status-report-2011.pdf>

Campbell, M.J. and Sumpton, W.D. (2009) *Ghost fishing in the pot fishery for blue swimmer crabs *Portunus pelagicus* in Queensland, Australia*. Fisheries Research, 95 (2-3). pp. 246-253.