



Australian Government

**Department of Agriculture,
Water and the Environment**

Assessment of the

QUEENSLAND MUD CRAB FISHERY

For the Purposes of Part 13 of the Environment Protection and Biodiversity Conservation Act

February 2021

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Disclaimer

This document is an assessment carried out by the Department of the Environment and Energy 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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EXECUTIVE SUMMARY OF THE ASSESSMENT OF THE QUEENSLAND MUD CRAB FISHERY

The Queensland Mud Crab Fishery (the fishery) operates throughout the state's coastal waters, and extends into Commonwealth waters. The fishery is managed by the Queensland Department of Agriculture and Fisheries (QDAF) in accordance with the *Fisheries Act 1994* (Qld).

On 22 January 2021, QDAF advised the Department that the regulations for all Queensland fisheries, including the Queensland Mud Crab Fishery have been revised. The fishery is now regulated by the *Fisheries (General) Regulation 2019*, *Fisheries (Commercial Fisheries) Regulation 2019*, and *Fisheries Declaration 2019*. The making of new fishing regulations requires that the fishery be reassessed for the purposes of Part 13 of the EPBC Act.

This document contains the reassessment of the fishery's management arrangements for the purposes of Part 13 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). There is no requirement for public consultation for the purposes of this assessment. The fishery was last assessed for the purposes of Part 13 of the EPBC Act in May 2019. The Part 13 accreditation was granted subject to seven conditions.

The fishery targets Giant Mud Crabs (*Scylla olivacea*) and Orange Mud Crabs (*S. serrata*) using C1 class fishing licences. Harvesting is managed by input control measures, including limited entry, size limits, spatial closures, protections for female crabs, and restrictions on taking non-target species. There are no output controls in place for the fishery. Fishing gear is limited to baited wire-mesh or trawl-mesh crab pots, hoop nets and dillies (except inverted dillies). Pots can be fixed to single line or attached in sequence.

Commercial fisheries that operate in Commonwealth waters are required to have an accreditation under Part 13 of the EPBC Act approved by the minister administering the EPBC Act following an assessment by the Department of Agriculture, Water and the Environment (the Department).

Under Part 13 of the EPBC Act it is an offence to harm protected species, other than conservation dependent species, in Commonwealth waters unless fishers have a permit or the management arrangements for the fishery are accredited under Part 13 of the EPBC Act. Management arrangements can be accredited if the minister is satisfied that:

- a) those management arrangements require individual fishers to take all reasonable steps to ensure protected species are not killed or injured as a result of the fishing; and
- b) the fishery does not, or is not likely to, adversely affect the conservation status of protected species or affect the survival and recovery of listed threatened species.

The protected species provisions of Part 13 make it an offence to kill, injure, take, trade, keep or move a member of a listed threatened species (Division 1), a member of a listed migratory species (Division 2), a whale or other cetaceans (Division 3), or a member of a listed marine species (Division 4) in Commonwealth waters.

Protected species and ecosystems

All interactions with species listed under the EPBC Act must be reported to the Department, unless a valid Part 13 accreditation is in place for the fishery. For fisheries with a valid Part 13 accreditation, all interactions with EPBC Act-listed species must be reported to QDAF as part of regulatory reporting arrangements.

Queensland crab fisheries have been identified as a source of interaction with, and mortality of, EPBC Act-listed protected species, including Dugong, marine turtles and inshore dolphins. Commercial fishers are required to report all interactions with protected species in their logbooks. While reported interactions have increased in recent years, there are concerns that not all interactions are being reported.

There are no threatened ecological communities in the area of the fishery, and the impact of fishing on the broader marine ecosystem is considered minimal due to the areas fished.

Ecological risk

[Walton & Jacobsen \(2019\)](#) conducted a Level 1 ecological risk assessment (ERA) using qualitative methods to produce a broad risk profile for the fishery. Level 1 ERA consider a range of ecological components, including bycatch, protected species, current catch and effort as well as trends over time, and limitations in the management arrangements.

Most ecological components, including protected species, are likely to be at negligible to low risk from crab fishing. The exceptions were target and byproduct (intermediate/high risk), bycatch (intermediate risk), marine turtles (high risk), sawfishes (intermediate), sharks (low/intermediate risk), and marine habitats (intermediate/high risk). Bycatch consisted mainly of small finfish, sharks and ray species, and were assessed to be at intermediate risk from the fishery.

The Level 2 ERA ([Walton & Jacobsen 2020](#)) focused on the risks to target and byproduct species, marine turtles, and Speartooth shark (*Glyphis glyphis*). Six marine turtles were of initial concern (Green, *Chelonia mydas*; Loggerhead, *Caretta caretta*; Hawksbill, *Eretmochelys imbricata*; Flatback, *Natator depressus*; Olive ridley, *Lepidochelys olivacea*; and Leatherback, *Dermochelys coriacea*). The Level 2 ERA found a high risk to Green and Loggerhead turtles, medium risk to Hawksbill, precautionary medium risk to Flatback and Leatherback, and a low risk to Olive Ridley turtles. Speartooth sharks is assessed as high risk to crab fishing because it has a low population size and the potential for capture in crab pots ([Walton & Jacobsen 2020](#)). QDAF will progress further investigations for bycatch, sawfishes and marine habitat ecological components through the *Monitoring and Research Plan* ([Walton & Jacobsen 2019](#)).

There is an ongoing risk to the broader marine environment caused by lost or abandoned pots (ghost fishing).

Conclusion

The Queensland Government's *Sustainable Fisheries Strategy 2017–2027* includes reforms that are expected to significantly improve the management of the fishery and address many of the known concerns. Reform measures includes providing a more strategic management framework, improvements in the collection and validation of fishery data, greater enforcement capacity, and better assessment and management of fishery performance to ensure ecological risks are managed effectively.

While QDAF has made progress against the conditions described in the previous assessment, some conditions have not been achievable within the specified timeframes. Condition 1(c) required QDAF to develop risk mitigation strategies for marine turtles and implement them in parallel with the harvest strategy by the end of 2020. QDAF advised that this condition was not met in the specified timeframe because the public consultation process was postponed when the Queensland Government entered a Caretaker period prior to the state election.

This assessment considered the management arrangements for the fishery, including the draft harvest strategy, risk assessments, and stock assessments. We recommend that the fishery's management regime be reaccredited under Part 13 of the EPBC Act, subject to revised conditions detailed in Section 3 of this report. These conditions include:

- Develop and implement risk mitigation strategies for marine turtles by January 2022 in parallel with the development of a harvest strategy for the fishery.
- Implement relevant plans under Queensland's Sustainable Fisheries Strategy 2017–2027 to improve monitoring and reporting of protected species interactions; and
- Implement a system to independently validate commercial fishery interactions with protected species.

SECTION 1: ASSESSMENT SUMMARY OF THE QUEENSLAND MUD CRAB FISHERY AGAINST THE GUIDELINES FOR THE ECOLOGICALLY SUSTAINABLE MANAGEMENT OF FISHERIES (2ND EDITION), CONSISTENT WITH THE EPBC ACT

EPBC requirements	
Part 12	Meets requirements. The fishery overlaps with the North Marine Region and the Temperate East Marine Region. The Marine Bioregional Plans for these marine regions are therefore applicable to the area of the Queensland Mud Crab Fishery.
Part 13	Meets requirements subject to conditions specified at Section 2 of this report. A Level 2 ecological risk assessment completed in 2020 found Green Turtles, Loggerhead Turtles and Speartooth Sharks were all at high risk from crab fishing activities and recommended a range of further investigatory measures, but no immediate risk mitigation measures.
Part 13A	Not applicable to this assessment.
Part 16	Meets requirements. Further progress is required to address uncertainty around the status of offshore stocks and some ecological risks associated with fishing. Reforms, underway as part of the Queensland Government's Sustainable Fishery Strategy 2017–2027, are expected to significantly improve capacity to identify and manage risks.

Key links:

Enforcing legislation

Fisheries Act 1994 (Qld). Available at

<https://www.legislation.qld.gov.au/view/html/inforce/current/act-1994-037>

Fisheries (General) Regulation 2019 (Qld). Available at

<https://www.legislation.qld.gov.au/view/html/inforce/current/sl-2019-0179>.

Fisheries (Commercial Fisheries) Regulation 2019 (Qld). Available at

<https://www.legislation.qld.gov.au/view/html/inforce/current/sl-2019-0178>.

Fisheries Declaration 2019 (Qld). Available at

<https://www.legislation.qld.gov.au/view/whole/html/inforce/current/sl-2019-0076>.

Queensland Marine Parks Act 2004 (Qld). Available at

<https://www.legislation.qld.gov.au/view/html/inforce/current/act-2004-031>

Great Barrier Reef Marine Park Act 1975 (Cth). Available at

<https://www.legislation.gov.au/Details/C2018C00453>

Harvest strategy

Queensland fisheries harvest strategy information. Available at

<https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/harvest-strategy>.

Queensland fisheries harvest strategy policy. Available at

<https://www.publications.qld.gov.au/dataset/queensland-fisheries-harvest-strategy/resource/1a6d9dc6-73ac-4d32-9422-065649c34bba>.

Queensland fisheries harvest strategy guidelines. Available at

<https://www.publications.qld.gov.au/dataset/queensland-fisheries-harvest-strategy/resource/bb2468d1-5b62-4a61-b17e-2c1497fa933b>.

Draft Mud Crab Fishery Harvest Strategy 2021-2026. Available at

<https://daf.engagementhub.com.au/draft-crab-harvest-strategies>.

Ecological Risk Assessment

Mud and Blue Swimmer Crab (C1) Fishery Scoping Study. Available at <http://era.daf.qld.gov.au/id/eprint/6964/>

Level 1 Ecological Risk Assessment – Mud and Blue Swimmer Crab (C1) Fishery. Available at <http://era.daf.qld.gov.au/id/eprint/6965/>

Crab Fishery Level 2 Ecological Risk Assessment – Productivity and Susceptibility Analysis. Available at <http://era.daf.qld.gov.au/id/eprint/7381/>

Stock assessments

Status of Queensland fish stocks. Available at <https://www.daf.qld.gov.au/business-priorities/fisheries/monitoring-research/data/status-queensland-fish-stocks>.

Blue swimmer crab (*Portunus armatus*). Available at <https://fish.gov.au/report/179-Blue-Swimmer-Crab-2018>.

Stock assessment of Queensland east coast blue swimmer crab (*Portunus armatus*). Available at <http://era.daf.qld.gov.au/id/eprint/7427/>.

SECTION 2: QUEENSLAND MUD CRAB FISHERY – SUMMARY OF ISSUES REQUIRING CONDITIONS FOR THE PURPOSES OF PART 13 OF THE EPBC ACT, JANUARY 2021

Part 13 Conditions

Issue	Condition
<p><u>Improve monitoring and mitigation measures for protected species</u></p> <p>Entanglements of species such as Dugong, marine turtles and inshore dolphins occur with crabbing gear and have the potential to increase in frequency. Current licence conditions require commercial fishers to record interactions with protected species in logbooks (SOCl logbooks). However, mortalities in non-commercial Crab Fishery sectors are possibly under-reported.</p> <p>Previous ecological risk assessments for the fishery (2009) allocated a ‘moderate’ risk rating to fishing activity and gear loss as the primary risk to protected species. Recent measures which include zoning restrictions on C1 crab fishing licences may reduce this risk.</p> <p>In the Level 1 ERA, Walton & Jacobsen (2019) allocated a ‘low’, ‘intermediate’ or ‘low/intermediate’ risk rating to most categories of protected species; marine turtles were the only category of threatened species to be deemed ‘high’ risk. Walton & Jacobsen (2020) conducted a Level 2 ERA: Productivity and Sustainability Analysis (PSA) based on the results of the Level 1 ERA. Results from the Level 2 ERA indicates a high risk to Green and Loggerhead turtles and Speartooth sharks. Crab fishing is likely to have a medium risk to Hawksbill, and precautionary medium risk to Flatback and Leatherback turtles. Risks and uncertainties to bycatch, sawfishes, and marine habitats will be further investigated through future monitoring and research proposals.</p> <p>We acknowledge the significant progress QDAF has made through the <i>Queensland Sustainable Fisheries Strategy 2017–2027</i> to improve monitoring and mitigation measures for the fishery. These measures include:</p> <ul style="list-style-type: none"> • Commencing the ecological risk assessment process for the Crab Fishery to investigate its impact on target and non-target species. Level 2 assessments are due for completion in 2020. • A published monitoring and research plan. • A published data validation plan. • Introduction of vessel tracking (VMS) for all Crab Fishery vessels from 1 January 2019. • Proof of concept trials to assess feasibility for electronic monitoring across all gear types in crab fisheries (this has been started for the Spanner Crab fishery). 	<p>Condition 1</p> <p>1. The Queensland Department of Agriculture and Fisheries to:</p> <ol style="list-style-type: none"> a. Develop risk mitigation strategies for marine turtles by January 2022. Mitigation strategies to be implemented in parallel with the development of a harvest strategy for the fishery. <p>Condition 2</p> <p>2. Queensland Department of Agriculture and Fisheries to continue to work with crab fishery stakeholders to:</p> <ol style="list-style-type: none"> a. Implement the relevant plans under Queensland’s Sustainable Fisheries Strategy 2017–2027 to 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 protected species.

Issue	Condition
<ul style="list-style-type: none"> • Published a Level 2 risk assessment for crab fisheries. • Developed a draft harvest strategy and initiated public consultation process. Public comments are open until January 2021. <p>QDAF has given an undertaking to continue to work with the Crab Fisheries Working Group to identify options for mitigating the risk of interactions with protected species.</p> <p>We consider it important that QDAF identify any underreporting of interactions with, and mortality of, EPBC Act-listed protected species through the data validation and independent monitoring process, and incorporate any findings into the crab fisheries management arrangements.</p>	

SECTION 3: ASSESSMENT OF THE QUEENSLAND CRAB FISHERY AGAINST THE REQUIREMENTS OF THE EPBC ACT

The table below is not a complete or exact representation of the EPBC Act. It is intended to show that the relevant sections and components of the EPBC Act have been taken into account in the formulation of advice on the fishery in relation to decisions under Part 13 and Part 13A.

Part 12 – Identifying and monitoring biodiversity and making bioregional plans

Section 176 Bioregional Plans	Comment
<p>(5) Minister must have regard to relevant bioregional plans</p>	<p>The Marine Bioregional Plan for the North Marine Region 2012 identifies the following key ecological features in the area of the Queensland Crab Fishery: the Gulf of Carpentaria Basin, plateaus, submerged coral reefs and the coastal zone. The Plan lists the Gulf of Carpentaria Basin and coastal zone as regional priorities. 'Extraction of living resources' and 'physical habitat modification' are identified as pressures of potential concern to these key ecological features. Physical habitat modification is considered to be 'of concern' in relation to protected species such as Australian Snubfin, Indo-Pacific Bottlenose and Indo-Pacific Humpback Dolphins. Bycatch from commercial fisheries is also 'of potential concern' in relation to these dolphin species as well as to Dugongs, Flatback, Loggerhead and Olive Ridley Turtles.</p> <p>The Marine Bioregional Plan for the Temperate East Marine Region 2012 identifies three key ecological features in the southern part of the fishery: the upwelling off Fraser Island, the canyons on the eastern continental slope and the Tasmanid seamount chain. Extraction of living resources by commercial fishing was identified as a pressure of potential concern operating on these three key ecological features. However, the marine bioregional plan notes that the assessment was conservative in the context of active fisheries management. Bycatch by commercial fishing was also identified as a pressure of potential concern operating on the three key ecological features, with bycatch of marine turtles and Dugong also listed as a regional concern.</p> <p>Improving data collection and data validation in the fishery is considered important for managing potential risks to the North and Temperate East marine bioregions. The conditions proposed in Section 4 of this report seek to address these issues by requiring QDAF to improve data collection, risk assessment, monitoring and management of target and non-target species, including protected species.</p>

Part 13 – Species and communities

Accreditable plan, regime or policy (Division 1, Division 2, Division 3, Division 4)	
<p>s. 208A(1)(a-e), s.222A(1)(a-e), s.245(1)(a-e), s.265(1)(a-e)</p> <p>Does the fishery have an accreditable plan of management, regime or policy?</p>	<p>Yes. The Queensland Crab Fishery is managed by the Queensland Department of Agriculture and Fisheries (QDAF) in accordance with the <i>Fisheries Act 1994</i> (Qld), <i>Fisheries (General) Regulation 2019</i> (Qld), and <i>Fisheries (Commercial Fisheries) Regulation 2019</i> (Qld). This legislation can be found at www.legislation.qld.gov.au.</p> <p>Other management arrangements include Queensland Sustainable fisheries strategy, and draft crab harvest strategies.</p>
Division 1 Listed threatened species, Section 208A Minister may accredit plans or regimes	
<p>(f) Will the plan, regime or policy require fishers 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?</p>	<p>Yes. Commercial fishers are required to report all interactions with listed threatened species to QDAF within a month of completing each fishing trip. This allows QDAF to monitor and respond to any emerging issues.</p> <p>Fishing operators are provided with Species of Conservation Interest (SOCI) logbooks with opportunities to record the date of interaction, location, fishing method used, species, and release condition. SOCI reports identify interactions by fishing gear and/or methods, and are not fishery-specific. QDAF has produced a number of fish identification guides and a series of videos on the safe handling of SOCI, including sharks, rays, marine turtles. Further information about logbooks, species guides and videos is available at https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/reporting-requirements/logbooks.</p> <p>Listed threatened species known to interact with pot and trap fishing gears include:</p> <ul style="list-style-type: none"> • Marine turtles (Hawksbill, Green, Olive Ridley, and Loggerhead), • Freshwater turtle species including White-throated Snapping Turtle and Krefft's River Turtle, • Unspecified sea snake species, • Humpback Whale, and • Sawfish species including Freshwater (Largetooth) and Green. <p>Since the last assessment for this fishery in May 2019, there was 1 interaction reported with a Loggerhead turtle.</p>

	<p>As a whole of fishery assessment, the Level 1 ERA aims to provide a broad risk profile for the fishery using a method developed by Astles et al. (2006). This model considers a range of factors including the current management arrangements, limitations, trends, and target species biology.</p> <p>For the Queensland crab fisheries, the Level 1 ERA assessed fishing related risks in 16 ecological components including target and byproduct species, bycatch, and protected species such as marine turtles, sea snakes, crocodiles, dugongs, cetaceans, protected teleosts, batoids (exc. sawfish), sawfish, sharks, syngnathids, seabirds, terrestrial mammals, marine habitats and ecosystem processes.</p> <p>The assessment found that overall the risk to listed threatened species was low (Walton & Jacobsen 2019a). Ecological components considered for further analyses in the Level 2 ERA, include target and byproduct species (intermediate/high risk), marine turtles (high risk), and Speartooth shark (low/intermediate risk) (Walton & Jacobsen 2020).</p> <p>Three ecological components will be further investigated through the Fisheries Queensland Monitoring and Research Plan. These components are bycatch (intermediate risk), sawfishes (intermediate risk), and marine habitats (intermediate/high risk). The Level 1 ERA identified key knowledge gaps for these ecological components (Walton & Jacobsen 2019a).</p> <p>Given the available information, the new management arrangements continue to require that all reasonable steps are taken to prevent the killing or injury of listed threatened species. However, it is important that QDAF continue to mitigate the identified risks and work towards improving the knowledge gaps for bycatch species with consideration for precautionary measures. Ongoing assessment, monitoring and management of risk will depend on the development and implementation of having quality information.</p> <p>Therefore, the Part 13 accreditation will include conditions requiring QDAF to improve data collection, risk assessment, monitoring and management for species, including listed threatened species. These conditions are expected to help quantify whether reported threatened species interactions are accurate, and whether steps taken to mitigate death and injury to these species are sufficient.</p>
<p>(g) And, is the fishery likely to adversely affect the survival or recovery in nature of the species?</p>	<p>No. The risk to listed threatened species is considered low except to marine turtles and batoids (sawfish), which will be subject to further QDAF assessment and management. Given the available information, the fishery is unlikely to adversely affect the survival or recovery in nature of any listed threatened species.</p> <p>Existing management measures, coupled with the conditions proposed in Section 4 of this assessment report are expected to manage risks to listed threatened species during the course of the proposed approval.</p>

Division 2 Migratory species, Section 222A Minister may accredit plans or regimes

(f) Will the plan, regime or policy require 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?

Yes. Commercial fishers are required to report all interactions with listed migratory species to QDAF within a month of completing each fishing trip. This allows QDAF to monitor and respond to any emerging issues.

Fishing operators are provided with Species of Conservation Interest ([SOCI](#)) logbooks with opportunities to record the date of interaction, location, fishing method used, species, and release condition. SOCI reports identify interactions by fishing gear and/or methods, and are not fishery-specific. QDAF has produced a number of fish identification guides and a series of videos on the safe handling of SOCI, including sharks, rays, marine turtles. Further information about logbooks, species guides and videos is available at <https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/reporting-requirements/logbooks>.

Listed migratory species known to interact with pot and trap fishing gears include:

- Dugong (*Dugong dugong*)
- Saltwater crocodile (*Crocodylus porosus*)
- Marine turtles (Hawksbill, Green, Olive Ridley, and Loggerhead),
- Humpback Whale, and
- Sawfish species including Freshwater (Largetooth) and Green.

Since the last assessment for this fishery in May 2019, there was 1 interaction reported with a Loggerhead turtle.

The Level 2 ERA considered impacts to marine turtles ([Walton & Jacobsen 2020](#)).

Given the available information, the new management arrangements continue to require that all reasonable steps are taken to prevent the killing or injury of listed threatened species. However, it is important that QDAF continue to mitigate the identified risks and work towards improving the knowledge gaps for bycatch species with consideration for precautionary measures. Ongoing assessment, monitoring and management of risk will depend on the development and implementation of having quality information.

Therefore, the Part 13 accreditation will include conditions requiring QDAF to improve data collection, risk assessment, monitoring and management for listed migratory species. These conditions are expected to help quantify whether reported interactions are accurate, and whether steps taken to mitigate death and injury to these species are sufficient.

(g) And, is the fishery likely to adversely affect the conservation status of a listed migratory species or a population of that species?

No. The risk to listed migratory species is considered low with the exception of marine turtles and sawfishes.

Further investigations of the risks and potential mitigation measures for migratory species are proposed in the Fisheries Queensland Monitoring and Research Plan.

The proposed conditions on the Part 13 accreditation are expected to strengthen existing arrangements to manage the risks to listed migratory species in the short term.

Given the available information, the fishery is unlikely to adversely affect the survival or recovery in nature of any listed migratory species.

Division 3 Whales and other cetaceans, Section 245 Minister may accredit plans or regimes

(f) Will the plan, regime or policy require fishers to take all reasonable steps to ensure that cetaceans are not killed or injured as a result of the fishing?

Yes. Commercial fishers are required to report all interactions with whales or other cetaceans to QDAF within a month of completing each fishing trip. This allows QDAF to monitor and respond to any emerging issues.

Fishing operators are required to record any interaction with whales and other cetaceans in the Species of Conservation Interest ([SOCl](#)) logbooks, including location, fishing method used, species, and release condition. SOCl reports identify interactions by fishing gear and/or methods, and are not fishery-specific. Further information about logbooks, species guides and videos is available at <https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/reporting-requirements/logbooks>.

The fishery is known to interact with Humpback and Short-finned Pilot Whales and Common Dolphin. Although there have been no reported interactions with cetaceans since the last assessment for this fishery in May 2019.

The Level 1 ERA determined that the fishery poses a low risk to cetaceans ([Walton & Jacobsen 2019](#)). As a result, [Walton & Jacobsen \(2020\)](#) did not consider the impact of crab fishing on whales and other cetaceans during the Level 2 ERA.

The Part 13 conditions require that QDAF develop and implement plans that improve data collection, risk assessment, monitoring and management for species, including whales or other cetaceans. While the risk to whales and other cetaceans is considered low, it is important to ensure that any mitigation measure that is implemented for any species or species group does not increase the risk to other species. These conditions are expected to help clarify whether reported interactions with whales or other cetaceans are accurate and whether steps taken to mitigate death and injury to these species are sufficient.

	<p>Given the available information, we consider that all reasonable steps are being taken to prevent the killing or injury of whales and other cetaceans in this fishery.</p>
<p>(g) And, is the fishery likely to adversely affect the conservation status of a species of cetacean or a population of that species?</p>	<p>No. The fishery is unlikely to adversely affect the survival or recovery in nature of any species of whale or other cetacean.</p> <p>The conditions attached to the Part 13 accreditation for this fishery are expected to strengthen existing arrangements to manage risks to whales or other cetaceans in the short term.</p>
<p>Division 4 Listed marine species, Section 265 Minister may accredit plans or regimes</p>	
<p>(f) Will the plan, regime or policy require 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>Yes. Commercial fishers are required to report all interactions with listed marine species to QDAF within a month of completing each fishing trip. This allows QDAF to monitor and respond to any emerging issues.</p> <p>Fishing operators are provided with Species of Conservation Interest (SOCI) logbooks with opportunities to record the date of interaction, location, fishing method used, species, and release condition. SOCI reports identify interactions by fishing gear and/or methods, and are not fishery-specific. QDAF has produced a number of fish identification guides and a series of videos on the safe handling of SOCI, including sharks, rays, marine turtles. Further information about logbooks, species guides and videos is available at https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/reporting-requirements/logbooks.</p> <p>Listed migratory species known to interact with pot and trap fishing gears include:</p> <ul style="list-style-type: none"> • Dugong • Unspecified pelican and cormorant species, • Saltwater and other unspecified crocodile species, • Marine turtles (Hawksbill, Green, and Loggerhead), • Unspecified freshwater turtle species, and • Unspecified sea snake species. <p>Since the last assessment for this fishery in May 2019, there was 1 interaction reported with one Loggerhead turtle.</p> <p>The Level 2 ERA focused on the target and byproduct species and marine turtles, and did not consider risks to specific listed marine species (Walton & Jacobsen 2020).</p>

	<p>Given the available information, we consider that all reasonable steps are being taken to prevent the killing or injuring of listed marine species. However, any risks and uncertainties should be identified and managed in a precautionary manner. Consideration should also be given to any knowledge gaps and improved data collection for future assessment, monitoring and management of risks will also depend on having quality information.</p> <p>The Part 13 accreditation is subject to conditions requiring QDAF to improve data collection, risk assessment, monitoring and management for species, including listed marine species. These conditions are expected to help clarify whether reported listed marine species interactions are accurate and whether adequate steps are being taken to mitigate death and injury to these species.</p>
<p>(g) And, is the fishery likely to adversely affect the conservation status of a listed marine species or a population of that species?</p>	<p>No. The fishery is unlikely to adversely affect the survival or recovery in nature of any listed marine species.</p> <p>Existing management measures, coupled with the conditions attached to the Part 13 accreditation are expected to help manage risks to listed marine species in the short term.</p>
<p>Section 303AA Conditions relating to accreditation of plans, regimes and policies</p>	
<p>(1) This section applies to an accreditation of a plan, regime or policy under section 208A, 222A, 245 or 265.</p>	
<p>(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:</p> <ul style="list-style-type: none"> (a) during a particular period; or (b) while certain circumstances exist; or (c) while a certain condition is complied with. <p>In such a case, the instrument of accreditation is to specify the period, circumstances or condition.</p>	<p>Given the management arrangements for the Queensland Mud Crab Fishery have been reviewed, and new fishery regulations implemented, the Part 13 accreditation for the fishery under sections 208A, 222A, 245 and 265 must be re-made. Also, noting the progress by QDAF since the last assessment for the fishery, the new Part 13 accreditation will be subject to the following revised conditions:</p> <p>Condition 1</p> <p>The Queensland Department of Agriculture and Fisheries to:</p> <ul style="list-style-type: none"> a. Develop risk mitigation strategies for marine turtles (identified as 'high', 'precautionary medium', and 'medium' in the Level 2 risk assessment) by January 2022. Mitigation strategies to be implemented in parallel with the development of a harvest strategy for the fishery. <p>Condition 2</p> <p>Queensland Department of Agriculture and Fisheries to continue to work with crab fishery stakeholders to:</p>

	<p>a. Implement the relevant plans under Queensland’s Sustainable Fisheries Strategy 2017–2027 to improve monitoring and reporting of protected species interactions by fishers in the commercial sector; and</p> <p>b. Implement a system to independently validate commercial fishery interactions with protected species.</p>
(7) The Minister must, in writing, revoke an accreditation if he or she is satisfied that a condition of the accreditation has been contravened.	Not applicable.

Part 16 – Precautionary principle and other considerations in making decisions

Section 391 Minister must consider precautionary principle in making decisions	
<p>(1) Minister must take account of the precautionary principle in making a decision, to the extent that the decision is consistent with other provisions under this Act.</p> <p>(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.</p>	<p>Meets requirements. The precautionary principle was applied in this assessment for the Queensland crab fishery. Many of the existing arrangements in the fishery are precautionary, however the risk analyses have identified issues that require ongoing attention.</p> <p>The Queensland Government’s Sustainable Fishery Strategy 2017–2027 is expected to significantly improve capacity to identify and manage risks. Level 1 and Level 2 ERAs have been published for the Queensland Crab Fisheries (Walton & Jacobsen 2019; Walton & Jacobsen 2020).</p> <p>Conditions attached to the accreditation is also expected to mitigate specific impacts to marine turtles.</p>

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