



Australian Government

Department of the Environment and Energy

Assessment of the
Gulf of Carpentaria Inshore Fin Fish Fishery

March 2019

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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 and Energy 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 and Energy or the Australian Government.

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EXECUTIVE SUMMARY

In March 2017, the Queensland Department of Agriculture and Fisheries (QDAF) applied for reassessment and approval of the Gulf of Carpentaria Inshore Fin Fish Fishery (GoCIFFF) under protected species and export provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The Department of the Environment and Energy (the Department) assessed the fishery against the Australian Government 'Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition' and considered comments received during public consultation, which was open from 6 April to 26 May 2017.

The fishery

The fishery operates in all tidal waterways out to 25 nautical miles, from Slade Point near the tip of Cape York Peninsula, westward to the Queensland–Northern Territory border. It includes Commonwealth waters, and waters used by recreational and Indigenous fishers, as well as other stakeholders. The fishery targets fin fish and shark species, many of which are also significant for non-commercial sectors. It uses various net methods, including gillnets which are known to interact with threatened and protected species. Concerns have been raised about potential misreporting of these interactions and the impact that this may have on understanding and managing impacts on these species.

It is managed using a mixture of input (limited entry, seasonal closures, vessel and gear restrictions) and output controls (minimum and maximum size, trip and annual catch limits). There is no strategic framework for assessing, monitoring or managing fishery performance and ecological impacts, but QDAF has committed to develop and implement a harvest strategy which will address this issue.

Some risk mitigation measures for protected species are included in the management regime, but there is no explicit link between the regime and existing threat abatement plans, bycatch management policies or plans. Given the fishery operates in Commonwealth waters, the Department expects that all necessary threat abatement plans, bycatch management policies or plans will be considered in developing and implementing the harvest strategy.

Target stocks

QDAF undertake regular stock status assessments for many species in the fishery. These assessments have classified two of the three target stocks, which together comprise approximately 90 per cent of the retained catch in the fishery, as depleting. The third has an undefined stock status, but information suggests this stock may also have been, or may still be subject to overfishing.

QDAF has concerns regarding the sustainability of another undefined target stock, Black Jewfish. This species has been subject to significant increases in catch and black-marketing and is overfished in adjacent Northern Territory fisheries. QDAF has proposed management controls for this species but do not have a definitive date for implementation ([QDAF, 2019](#)). Until better information on the remaining stock and the extent of illegal take is available, it is unclear whether these proposed arrangements will be sufficient.

Non-target species (including protected species) and ecosystems

Although some information is collected via fishery logbooks to allow risks to certain target species to be assessed, there is no program to collect or assess information on broader ecological impacts associated with the fishery, including impacts on the majority of bycatch species. This is important if the extent of fishery-related impacts are to be properly considered and managed.

Mangrove Jack is currently overfished, but recovering in the area of the fishery. It has historically only been a byproduct species in the GoCIFFF and has not been recorded in commercial catches for the fishery in recent years. The overfished stock status is believed to be due to significant overfishing between 2003 and 2011 in the Gulf of Carpentaria Developmental Fin Fish Trawl Fishery ([FRDC, 2019](#)). There has been negligible fishing effort in the Gulf of Carpentaria Developmental Fin Fish Trawl Fishery since that time. The current management arrangements for Mangrove Jack are likely to be sufficient while the fishery is not catching this species, however improved data collection, monitoring and management via the proposed harvest strategy and other Sustainable Fisheries Strategy reforms will increase confidence for this species.

Fishers are required to report all interactions with protected species using logbooks but there is very limited reporting required for other bycatch species. The fishery has recorded interactions with various species of sawfish, spartooth sharks, Saltwater Crocodiles, sea snakes and file snakes, Green, Flatback and Leatherback Turtles, seahorses and pipefish, Manta Rays, Dugongs, Bottlenose, Indo-Pacific Humpback, Irrawaddy and Australian Snubfin Dolphins. QDAF has also reported that the fishery

may also interact with whales and seabirds though there is little information on any interactions with these species.

There is information to suggest that the requirements to report protected species interactions are not well understood or complied with. There is also no means to confidently detect or respond to emerging risks or issues for any of the species reported, or not reported via logbooks.

Conclusion

Although there are many positive aspects to the management of the fishery, the Department identified a number of risks and issues that require attention. The Department recognises that major reforms are underway as part of the Queensland Government's Sustainable Fisheries Strategy 2017–2027. The Department also recognises that these reforms should significantly improve the management of the fishery and address many of the issues identified in the Department's assessment.

Until the issues and risks are addressed however, the Department considers it necessary to apply conditions to help manage the ecological risks associated with the fishery. Improving data collection, validation and monitoring for the fishery is a crucial first step in allowing ecological risks to be better assessed, monitored and managed by QDAF.

The proposed conditions are designed to assist QDAF to:

- a. improve data collection, validation and monitoring of species caught in the fishery
- b. improve the management of sharks, including implementing the Threatened Species Scientific Committee's recommendations for the recovery of the Conservation Dependent listed Scalloped Hammerhead Shark
- c. continue to improve the understanding of the status of all commercially and recreationally important species in the fishery
- d. finalise and implement ecological risk assessments and harvest strategies to assess the fishery's impact on target and non-target species, including protected species, and implement those measures to mitigate the ecological risks in the fishery.

Based on the Department's assessment, the Department recommends that the fishery be granted export approval for three years, until 18 March 2022, by declaring the fishery an approved wildlife trade operation under the EPBC Act. The fishery's inclusion on the List of Exempt Native Specimens will remain valid while a valid wildlife trade operation is in place. Unless a time frame is specified, each condition must be addressed within the period of the approved wildlife trade operation declaration for the fishery.

The Department also considers that the existing accreditation of the management regime for the fishery, granted under Part 13 of the EPBC Act remains valid, but should be re-made, subject to conditions that require QDAF to:

- e. work with relevant stakeholders to determine an improved data collection and validation approach that can validate the number of interactions with all bycatch, which will include protected species
- f. implement appropriate mitigation measures to ensure interactions with protected species are kept to a minimum.

SECTION 1: ASSESSMENT SUMMARY OF THE GULF OF CARPENTARIA INSHORE FIN FISH FISHERY AGAINST THE GUIDELINES FOR THE ECOLOGICALLY SUSTAINABLE MANAGEMENT OF FISHERIES (2ND EDITION), CONSISTENT WITH THE EPBC ACT.

	Meets	Partially meets	Does not meet	Details
Guidelines				
Management regime	1/9	6/9	2/9	There is no strategic framework for assessing, monitoring or managing fishery performance and ecological impacts. Although some risk mitigation measures for protected species are included in the management regime, there is no explicit link between the regime and existing threat abatement plans, bycatch management policies or plans.
Principle 1 (target stocks)	2/11	8/11	1/11	Two of the three target stocks, which together comprise approximately 90 per cent of the retained catch in the fishery, have been classified as depleting. The third has an undefined stock status, but information suggests this stock may also have been, or may still be subject to overfishing.
Principle 2 (bycatch and TEPS)	0/12 (2 N/A)	5/12	5/12	There is very limited reporting of bycatch in the fishery. This is likely to impede QDAF's capacity to detect or respond to emerging risks or issues to bycatch species. Fishers are required to report all interactions with protected species using logbooks but there is very limited reporting required for other bycatch species. The fishery has historically recorded interactions with various species of sawfish, spartooth sharks, Saltwater Crocodiles, sea snakes and file snakes, Green, Flatback and Leatherback Turtles, seahorses and pipefish, Manta Rays, Dugongs, Bottlenose, Indo-Pacific Humpback, Irrawaddy and Australian Snubfin Dolphins. QDAF has also reported that the fishery may also interact with whales and seabirds though there is little information on any interactions with these species. Current information suggests that requirements to report protected species interactions are not well understood or complied with.
Principle 2 (ecosystem impacts)	0/5	4/5	1/5	Although some information is collected via fishery logbooks to enable risks to certain target species to be assessed, there is no program to collect or assess information on broader ecological impacts associated with the fishery.
EPBC requirements				
Part 12	Meets requirements subject to conditions specified at Section 4 of this report.			
Part 13	Meets requirements subject to conditions specified at Section 4 of this report.			
Part 13A	Meets requirements subject to conditions specified at Section 4 of this report.			
Part 16	Meets requirements subject to conditions specified at Section 4 of this report. Many of the arrangements are precautionary but further progress is required to address uncertainty around status of some stocks, impacts of fishing on protected species, and accuracy of reported data.			

Assessment history:

- 1st assessment finalised 2004 – 3 conditions and 13 recommendations
- 2nd assessment finalised 2007 – 3 conditions and 6 recommendations
- 3rd assessment finalised 2014 – 4 conditions and 7 recommendations
- 4th assessment – a preliminary assessment was undertaken in September 2017. The approval was extended four times during 2018 and expires on 29 March 2019. There are currently 8 conditions (including 6 sub conditions) and no recommendations on this approval.

Information on assessments, approvals and QDAF's application for assessment is at: <http://www.environment.gov.au/marine/fisheries/qld/inshore-fin-fish>

Fishery research and reporting:

- Annual report – 2018 annual report provided to the Department on 4 March 2019 (unpublished). No other reports found.
- Protected species interactions – unpublished but reported quarterly to the Department. These reports provide information according to gear used but do not define the fishery or regions where the interactions occurred.
- Queensland Government Department of Agriculture and Fisheries, Queensland Fisheries Summary October 2018: <https://www.daf.qld.gov.au/business-priorities/fisheries/monitoring-compliance/data/sustainability-reporting/queensland-fisheries-summary-report>
- Stock Status Assessments: <https://www.daf.qld.gov.au/business-priorities/fisheries/monitoring-compliance/data/sustainability-reporting/stock-status-assessment>
- Ecological Risk Assessment of Queensland Managed Fisheries in the Gulf of Carpentaria, May 2006: https://www.daf.qld.gov.au/_data/assets/pdf_file/0003/61671/EcolRiskAssess-GOC-ERA.pdf
- A report on data collected by fisheries observers in the Queensland Offshore Commercial Mesh Net Fishery (N9) in the Gulf of Carpentaria, 2000–06. Stapley, J. and Rose, C., 2009 (unpublished).
- Species of Conservation Interest interactions in the N3 sector of the Queensland Gulf of Carpentaria Inshore Fin Fish Fishery. A summary of fishery observer records from 2008-09. Queensland Department of Agriculture and Fisheries, 2015 (<https://www.environment.gov.au/system/files/pages/92927307-13e0-40d7-9534-aec2b566f7b6/files/inshore-fin-fish-recommendation-5-report.pdf>).

Legislation, Plans and Guidelines:

- Australian Government Department of the Environment and Energy, 2012. Marine bioregional plan for the North Marine Region. <https://www.environment.gov.au/topics/marine/marine-bioregional-plans/north>
- Australian Government Department of the Environment and Energy, 2007. Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition. <http://www.environment.gov.au/marine/publications/guidelines-ecologically-sustainable-management-fisheries>
- *Queensland Fisheries Act 1994*: <https://www.legislation.qld.gov.au/view/html/inforce/current/act-1994-037>
- Queensland Fisheries Regulation 2008: <https://www.legislation.qld.gov.au/view/html/inforce/current/sl-2008-0083>
- Queensland Government Department of Agriculture and Fisheries. Sustainable Fisheries Strategy 2017–2027. <https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable-fisheries-strategy>.
- *Queensland Marine Parks Act 1982*: <https://www.legislation.qld.gov.au/view/pdf/repealed/current/act-1982-007/lh>
- *Queensland Nature Conservation Act 1992*: <https://www.legislation.qld.gov.au/view/html/inforce/current/act-1992-020>
- Sawfish and River Sharks Multispecies Recovery Plan, Commonwealth of Australia 2015. <http://environment.gov.au/biodiversity/threatened/publications/recovery/sawfish-river-sharks-multispecies-recovery-plan>

Fishery performance against the Guidelines for the Ecologically Sustainable Management of Fisheries (2nd edition)

THE MANAGEMENT REGIME	
The management regime does not have to be a formal statutory fishery management plan as such, and may include non-statutory management arrangements or management policies and programs. The regime should:	
Be documented, publicly available and transparent	<p>Meets</p> <p>The Queensland Fisheries Joint Authority (QFJA) is responsible for managing mackerels, shark and demersal fin fish stocks in the Gulf of Carpentaria under the <i>Queensland Fisheries Act 1994</i>. The QFJA comprises the Commonwealth Minister for Agriculture, Fisheries and Forestry and the Queensland Minister for Agriculture, Fisheries and Forestry. The activities of the QFJA are tabled in annual reports to Commonwealth parliament. Queensland Department of Agriculture and Fisheries (QDAF) provides licensing for the QFJA and manages the Queensland Gulf of Carpentaria Inshore Fin Fish Fishery (GoCIFFF) in accordance with the <i>Queensland Fisheries Act 1994</i> and Fisheries Regulation 2008, which can be found at www.legislation.qld.gov.au.</p> <p>QDAF staff are usually invited to attend annual meetings of the Gulf of Carpentaria Commercial Fishermen's Association where they can provide explanations for management activity, and QDAF publish an overview of the fishery's management arrangements in annual reports on the QDAF website.</p>
Be developed through a consultative process providing opportunity to all interested and affected parties, including the general public	<p>Partially meets</p> <p>The GoCIFFF management arrangements were originally developed in consultation with industry and other stakeholders. Where substantive management change is proposed a Regulatory Impact Statement is required to be released for public comment, setting out proposed changes, their justification and alternative options.</p> <p>Unlike some other Queensland-managed fisheries, there is no established fisheries working group for the GoCIFFF. Greater stakeholder engagement is one of the priorities for implementation under the Queensland Government's Sustainable Fisheries Strategy 2017–2027, and a working group for the GoCIFFF is expected to be formed by the end of 2019.</p>
Ensure that a range of expertise and community interests are involved in individual fishery management committees and during the stock assessment process	<p>Partially meets</p> <p>QDAF has not yet established a fisheries working group for the GoCIFFF. These groups typically include a range of expertise and stakeholders from commercial, recreational and charter fishing, conservation, research, seafood marketing and other government sectors. They provide advice on operational aspects of the fishery and assists with the development of management options. Greater stakeholder engagement is one of the priorities for implementation under the Queensland Government's Sustainable Fisheries Strategy 2017–2027, and a working group for the GoCIFFF is expected to be formed by the end of 2019. QDAF typically undertakes targeted consultation in the absence of more formal consultative mechanisms.</p>
Be strategic, containing objectives and performance criteria by which the effectiveness of the management arrangements are measured	<p>Does not meet</p> <p>An 'interim performance measurement system' was published for the GoCIFFF in 2008, but is no longer in effect (last report 2012). While catch and other information is periodically assessed by QDAF, there is no formal process for monitoring or managing fishery performance.</p> <p>QDAF has advised that a harvest strategy containing strategic objectives and performance criteria, by which the effectiveness of the management arrangements can be measured, will be implemented in 2020–2021 (subject to legislative needs and government approvals).</p>

<p>Be capable of controlling the level of harvest in the fishery using input and/or output controls</p>	<p>Partially meets</p> <p>Input (limited entry, seasonal closures, vessel and gear restrictions) and output controls (minimum and maximum size, trip and annual catch limits) are used to various extents to control the harvest of some species in the fishery.</p> <p>An assessment of the fishery in 2017 (MRAG 2018) noted that a large proportion of the catch is not reported to species-level. This is particularly significant given reports that catches of certain species and species groups are likely to have exceeded sustainable limits and in some cases stocks have been assessed as either overfished (Mangrove Jack) or depleting (Barramundi, King Threadfin). Another nine key species or species groups have an undefined stock status (including but not limited to Black Jewfish, blacktip and hammerhead sharks, for which concerns have been raised about potential overfishing in the area of the fishery (MRAG 2018, QDAF, 2019, and FRDC Status of Australian Fish Stocks Reports). The Department considers that reliable, representative and timely data is fundamental to monitoring and managing the harvest of these species.</p> <p>A harvest strategy with clearly defined harvest control rules is expected to be developed for the fishery as part of the Queensland Government's Sustainable Fisheries Strategy 2017–2027. If supported by improved fishery data collection, monitoring and data validation, this is expected to significantly improve capacity to control the level of harvest in the fishery.</p>
<p>Contain the means of enforcing critical aspects of the management arrangements</p>	<p>Partially meets</p> <p>QDAF use a Compliance Risk Assessment framework to develop state and regional operation plans and deliver their compliance program. An overview of this program is available on the QDAF website.</p> <p>For the majority of species, there is no requirement to record commercial catches prior to unloading. This may increase the risk of misreporting catches and hamper enforcement of catch limits and other controls. This is particularly significant for species like Black Jewfish, which are at risk of overfishing due to the high value of their swimbladders driving illegal catch and sale of the species.</p> <p>QDAF allows commercial fishers that are authorised to target sharks to land sharks in a processed form, provided the fins are landed with the body of the shark, and the sharks are in a form that allows an inspector to reasonably easily count the number of fish. Grey Reef and Whitetip Reef sharks must not have any of their fins removed. Hammerhead sharks can be processed, but once 75 per cent of the total allowable catch limit is reached, must be landed with their fins naturally attached (Schedule 2, Queensland Fisheries Regulation 2008). The Department does not believe these requirements meet Australia's Threatened Species Scientific Committee (TSSC) requirements for hammerhead and winghead sharks, and could impede the capacity to accurately identify species, including those subject to stricter harvest controls. The Department considers that all retained sharks should be landed in a form that allows the species to be readily and reliably identified.</p> <p>QDAF has reported strong opposition from fishers to landing sharks with fins attached, and it is therefore conceivable that misreporting of catches could avoid catch limits or other controls being enforced, undermining the effectiveness of the management arrangements. Other Australian fisheries require sharks to be landed with fins attached to help manage this risk and this requirement has also been recommended by the TSSC in its listing advice for these species.</p> <p>There have been allegations that protected species interactions are not being reported in logbooks. This is based on significantly higher rates of interactions being reported when independent observers were on board (observer program ceased in 2009) compared to levels reported by fishers in logbooks. It is important that there is confidence in the accuracy and reliability of fishery data used to manage ecological sustainability.</p> <p>The introduction of VMS on all commercial fishing boats in the GoCIIFF, and potential introduction of electronic monitoring are likely to improve QDAF's enforcement capability. However it is unclear what type of electronic monitoring will be implemented and when.</p>

<p>Provide for the periodic review of the performance of the fishery management arrangements and the management strategies, objectives and criteria</p>	<p>Does not meet</p> <p>An 'interim performance measurement system' was published for the GoCIFFF in 2008, but is no longer in effect (last report 2012). While catch and other information is periodically assessed by QDAF, there is no formal process for monitoring or managing fishery performance.</p> <p>A harvest strategy is being developed for the fishery and expected to be implemented in 2020–2021. It is expected to contain strategic objectives and performance criteria by which the effectiveness of the management arrangements can be measured.</p>
<p>Be capable of assessing, monitoring and avoiding, remedying or mitigating any adverse impacts on the wider marine ecosystem in which the target species lives and the fishery operates</p>	<p>Partially meets</p> <p>An ecological risk assessment (ERA) was last undertaken in 2006 (Zeller and Snape 2006). The assessment found there was a relatively high risk to the sustainability of two target species (Guitarfish and Grey Mackerel) and moderate risk to another ten target species (Spanish Mackerel, red snappers, Barramundi, threadfins, sharks) in the GoCIFFF. No bycatch species were found to be at high risk, but Bottlenose Dolphins, Speartooth Sharks and sawfishes were considered at moderate risk. No high risk factors were identified for the marine ecosystem supporting Gulf fisheries, but some fisher camps in the N3 sector posed a moderate risk to the local terrestrial ecosystem.</p> <p>Reforms to the fishery were implemented in 2009–2010 to address the risk to Grey Mackerel. These reforms resulted in a two-thirds reduction to the overall length of nets able to be used in the offshore fishery.</p> <p>The majority of recommended risk mitigation actions do not appear to have been undertaken. These recommendations include more indepth assessment, review and development of performance indicators and reference points, and collection and review of additional data via the observer program (which ceased in 2009). 'Release guidelines' which were available to help fishers mitigate their impacts on bycatch and protected species, are also no longer available.</p> <p>QDAF has drafted a new level 1 ERA for the fishery, but this has not been finalised or released. The revised level 1 ERA will be used to inform more quantitative level 2 ERAs in 2019–2021, and risks identified in the ERAs are expected to be addressed through a harvest strategy for the GoCIFFF (2020–2021), or via QDAF's monitoring and research plan (depending on the risk level).</p> <p>Concerns have been raised about the capacity of N3 licence holders to effectively monitor their gear and intervene to stop protected species drowning when caught. This is due to the difficulty detecting interactions when fishers are only required to be within five (river and creek operations) or six nautical miles (nearshore operations) of their gear. This is particularly difficult where line-of-sight is affected by the meandering nature of rivers, creeks and other coastal features. QDAF advised that this issue will be considered when a Gulf of Carpentaria fisheries working group is established (anticipated in the latter half of 2019).</p> <p>QDAF was due to review the 2006 ERA by June 2017 (application, response to condition 4), and evaluate the effectiveness of current risk mitigation for speartooth sharks against performance criteria in Rivershark and Sawfish Recovery Plan. Although a Risk Assessment and Management Strategy Evaluation Report for Speartooth Shark was prepared, and a preliminary ERA review report was drafted in 2010, QDAF decided not to release these reports and they were unavailable for assessment. The Department considers it important that ecological risks be assessed and appropriately mitigated as a priority.</p>

<p>Requires compliance with relevant threat abatement plans, recovery plans, the National Policy on Fisheries Bycatch, and bycatch action strategies developed under the policy</p>	<p>Partially meets</p> <p>Management arrangements for the GoCFFFF do not include requirements for fishers to comply with Commonwealth threat abatement plans, recovery plans, or bycatch policies or strategies.</p> <p>QDAF has advised that management arrangements are in place for Great White Sharks, sawfish and Speartooth Sharks which are all listed as 'no take species'. Mandatory 'species of conservation interest' reporting is also required for these species. Relevant threat abatement and recovery plans may include the:</p> <ul style="list-style-type: none"> • Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans • Recovery Plan for Marine Turtles in Australia • Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) • Sawfish and River Sharks Multispecies Recovery Plan <p>Given the fishery operates in Commonwealth waters, the Department considers it important that all relevant threat abatement plans, recovery plans, bycatch policies and action strategies be considered in developing the harvest strategies and assessing and mitigating ecological risks.</p>
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PRINCIPLE 1 - A fishery must be conducted in a manner that does not lead to over-fishing, or for those stocks that are over-fished, the fishery must be conducted such that there is a high degree of probability the stock(s) will recover.

Objective 1 - The fishery shall be conducted at catch levels that maintain ecologically viable stock levels at an agreed point or range, with acceptable levels of probability.

Information requirements

1.1.1 There is a reliable information collection system in place appropriate to the scale of the fishery. The level of data collection should be based upon an appropriate mix of fishery independent and dependent research and monitoring.

Partially meets

Although there are information collection systems in place, there are concerns about the nature, extent and reliability of the data that is collected.

Commercial fishers are required to report their retained catch, discarded catch (certain shark species only), and their fishing effort using approved logbooks. Catch must be reported to species level in most cases, but QDAF has advised that fishers have difficulty distinguishing some species, which leads to misreported catch or catch reported at higher taxonomic levels.

There is no requirement to complete logbook data prior to landing or unloading any species other than sharks. This increases the potential for misreporting unless a compliance officer is present for inspection. QDAF is reviewing its reporting and data validation processes as part of the Sustainable Fisheries Strategy, with a view to improving the reliability of their data collection program.

Concerns have been raised by some stakeholders over potential misreporting of protected species interactions. This is based on significantly higher rates of interactions being reported when independent observers were on-board than when they were not (this observer program ceased in 2009). There has been no independent data collection or validation undertaken in the fishery since that time. Some biological monitoring occurs for king threadfin, grey mackerel and barramundi, as well as some monitoring of recreational catch but this does not provide any means to validate the accuracy of commercial fishing data.

QDAF is investigating the use of electronic monitoring as part of its Sustainable Fisheries Strategy. Electronic monitoring has been shown to significantly improve the quality and reliability of fisher-dependent data in other Australian fisheries and elsewhere in the world.

Assessment

1.1.2 There is a robust assessment of the dynamics and status of the species/fishery and periodic review of the process and the data collected. Assessment should include a process to identify any reduction in biological diversity and /or reproductive capacity. Review should take place at regular intervals but at least every three years.

Partially meets

QDAF annually assesses the status of key fish stocks to support its management of those species. The assessments consider available information and determine stock status based on the weight of evidence. If insufficient information is available to confidently classify a stock, the stock is reported as 'undefined'. Where species do not have a stock assessment or have an undefined status, QDAF use other methods, such as analysing catch trend data, to detect and respond to concerns. QDAF also participates in the national SAFS Advisory Group convened by the FRDC. This group has commenced projects designed to reduce the number of undefined stocks. Status assessments are published on the [QDAF](#) and Fisheries Research and Development Corporation (FRDC) [Status of Australian Fish Stocks](#) websites.

One species, Mangrove Jack, is classified as overfished in the area of the fishery, but has traditionally been a byproduct species, has not been reported in catches in recent years. The overfished status of this stock is attributed to another developmental trawl fishery which is not currently active.

Two key GoCIFFF species have been classified as having a depleting stock status (Barramundi - southern stock, and King Threadfin). Another nine key species or species groups have an undefined stock status. These species include, but are not limited to, Black Jewfish, blacktip and hammerhead sharks ([MRAG 2018](#), [QDAF, 2019](#), and FRDC [Status of Australian Fish Stocks Reports](#)). Catch in GoCIFFF is dominated by Grey Mackerel, Barramundi, threadfins, and blacktip sharks. These species groups comprise around 90 per cent of the total harvest from the fishery. Of these, Grey Mackerel, and Blue Threadfin stocks are classified as 'sustainable', Barramundi (southern stock) and King Threadfin are classified as having a 'depleting' stock status, and blacktip sharks have an 'undefined' stock status.

The last ERA ([Zeller and Snape 2006](#)) highlighted a need for ecological risks associated with the catch of sharks, grey mackerel and sawfish to be reassessed, due to newly available data. Outcomes of this assessment were not available and so there is some uncertainty about the actual risk associated with the catch of these species.

A separate stock assessment for whaler and hammerhead sharks was undertaken in 2015 ([Leigh 2015](#)) but was constrained by problems with logbook data quality and the availability of information on discards. Catch limits were therefore modelled on limited on-board scientific observer data collected between 2006 and 2012, prior to cessation of the observer program (GoCIFFF observer program ceased in 2009). The assessment suggested future stock assessments would benefit from improved catch composition data and afford greater confidence in sustainable harvest limits ([Leigh 2015](#)).

QDAF commenced a three-year research project in July 2017, to validate catch composition of shark species in net fisheries along the east coast as well as the Gulf of Carpentaria. The project aims to determine species catch composition by sampling at ports, processors or on-board/on-water. It also aims to develop a profile of discards, by including data gathered from random on-board observations.

The TSSC's assessment of Scalloped Hammerhead Sharks for listing as a threatened species, noted that the Queensland Government is scheduled to review hammerhead stock status in 2019 ([TSSC, 2018](#)).

When implemented, the Queensland Government's Sustainable Fisheries Strategy 2017–2027 will require stock assessments (annually or at least every two years) to evaluate status of key stocks against target and limit reference points contained in the harvest strategy for the fishery. QDAF anticipate the harvest strategy will be implemented in 2020–2021.

While significant effort is invested in assessing and managing target species, management of non-target species (byproduct and bycatch) likely requires further development. The Department recognises that in some cases it may not be possible to determine stock status, but in all cases stocks must be managed to ensure they remain sustainable, not overfished or subject to overfishing.

<p>1.1.3 The distribution and spatial structure of the stock(s) has been established and factored into management responses.</p>	<p>Partially meets</p> <p>Where the necessary information is available, distribution and spatial structure of stocks is assessed as part of the SAFS process; however not all stocks are assessed (refer 1.1.2) and there are no commercial catch limits or other controls on species other than hammerhead sharks (trip limits and competitive annual catch limit), at any spatial scale within the fishery or more broadly. This is expected to change when a harvest strategy is developed for the fishery in 2020–2021.</p>
<p>1.1.4 There are reliable estimates of all removals, including commercial (landings and discards), recreational and indigenous, from the fished stock. These estimates have been factored into stock assessments and target species catch levels.</p>	<p>Partially meets</p> <p>The GoCIFFF comprises significant commercial, recreational and charter sectors, as well as an Indigenous fishing sector. Information on the commercial catch is collected through logbooks but is focussed on retained catch. With the exception of a limited number of shark and ray species, discarded catch is not reported and therefore cannot be assessed. Information on the recreational sector is collected through periodic surveys and used to inform stock status assessments. There are no recent or reliable estimates of Indigenous catch of GoCIFFF species. It is important that all sources of mortality are accounted for in setting total allowable catch for all sectors and subsequently managing the allowable catch for the commercial fishery.</p>
<p>1.1.5 There is a sound estimate of the potential productivity of the fished stock/s and the proportion that could be harvested.</p>	<p>Partially meets</p> <p>Where information is available, the potential productivity of stocks is considered in the stock status assessments that are undertaken; however not all stocks are assessed (refer 1.1.2) and there are very few commercial catch limits or other controls on catch of species within the fishery or more broadly (various catch limits apply for hammerhead sharks and are anticipated to be introduced for Black Jewfish by mid-2019).</p>
<p>Management responses</p>	
<p>1.1.6 There are reference points (target and/or limit), that trigger management actions including a biological bottom line and/or a catch or effort upper limit beyond which the stock should not be taken.</p>	<p>Does not meet</p> <p>With the exception of a total annual commercial catch limit (TACC) for hammerhead sharks, and a proposed TACC for Black Jewfish (QDAF, 2019) there are no reference points or other harvest limits for species in the GoCIFFF. A harvest strategy for the GoCIFFF is expected to be developed as part of the Queensland Government's Sustainable Fisheries Strategy 2017–2027. The harvest strategy is expected to include target and limit reference points that trigger management actions, but it is unclear when the harvest strategy will be developed or implemented.</p>

<p>1.1.7 There are management strategies in place capable of controlling the level of take.</p>	<p>Partially meets</p> <p>Various input and output controls are used to control the level of take in the GoCIFFF. Different stocks are subject to different controls, and changes are planned to improve the effectiveness of some measures. Controls include: limits on numbers of licences; spatial and temporal closures; gear restrictions (types of gear and restrictions on where certain gear types can be used); regulated no-take waters and net free zones; boat length restrictions for inshore and offshore net vessels; requirements to attend nets during fishing; and trip limits for hammerhead sharks (for fishers not authorised to target sharks). An annual competitive total allowable commercial catch limit is also used to manage the catch of hammerhead sharks (and Black Jewfish – in development. QDAF, 2019).</p> <p>Commercial fishers are required to submit logbook records of their catches and this provides QDAF with the means to monitor and respond to control fishing activity in the commercial sector. For species subject to total allowable catch limits (all sharks, and proposed for Black Jewfish), fishers also use an 'Automated Integrated Voice Response' system to check whether catch is available under competitive catch limits, and to submit prior to landing, and catch unload reports. These reports facilitate compliance inspections and more timely catch monitoring than can be achieved with paper-based logbooks alone.</p> <p>Periodic surveys of recreational and charter fishery sectors are undertaken and considered in determining stock status, however QDAF has advised there is no monitoring of these catches or adjustment of commercial catch limits based on these survey results.</p> <p>The Queensland government's Sustainable Fisheries Strategy 2017–2027 includes measures designed to improve data collection and aid enforcement of management requirements. These measures include a requirement for all commercial fishing boats to operate Vessel Monitoring Systems by 2020 and consideration of electronic monitoring on fishing boats to help validate logbook data records.</p>
<p>1.1.8 Fishing is conducted in a manner that does not threaten stocks of byproduct species.</p>	<p>Partially meets</p> <p>The last ERA (Zeller and Snape 2006) identified sawfish, Spanish Mackerel, guitarfish, queenfish, Pomfret, Jewfish, grunter, Black Jewfish, sharks and rays and Mud Crabs as byproduct species. Since this time, fishers have been required to release all sawfish, and there have been significant increases in targeting of Black Jewfish. It is unclear what other changes in targeting may have occurred.</p> <p>Stocks of Spanish Mackerel and Mud Crab have been assessed as sustainable in the area of the GoCIFFF, however other byproduct species have either not been assessed or have an undefined stock status (FRDC, 2018 and QDAF, 2018).</p> <p>The 2006 ERA also highlighted a need for ecological risks associated with the catch of sharks to be reassessed, due to newly available data. Outcomes of this assessment were not available and so there is some uncertainty about the actual risk associated with the catch of these species.</p> <p>QDAF is revising its 2006 ecological risk assessment (ERA) to guide risk management in the fishery and expects to release this by December 2019. More quantitative ERAs will then be undertaken during 2020–2021. Any resulting risk mitigation measures are expected to be incorporated into the harvest strategy for the fishery when this is developed (2020–2021) or included in QDAF's monitoring and research plan (depending on risk level). When implemented, these measures are expected to clarify and manage risks to all species, including byproduct species.</p>
<p>1.1.9 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.</p>	<p>Partially meets</p> <p>Current management arrangements (including the proposed management arrangements for Black Jewfish) are likely to maintain ecologically viable stock levels in the short-term. Refoms scheduled as part of the Queensland Government's Sustainable Fisheries Strategy: 2017–2027 will further improve confidence in the sustainability of the fishery.</p>
<p>Objective 2 - Where the fished stock(s) are below a defined reference point, the fishery will be managed to promote recovery to ecologically viable stock levels within nominated timeframes.</p>	
<p>Management responses</p>	

<p>1.2.1 A precautionary recovery strategy is in place specifying management actions, or staged management responses, which are linked to reference points. The recovery strategy should apply until the stock recovers, and should aim for recovery within a specific time period appropriate to the biology of the stock.</p>	<p>Meets</p> <p>Mangrove Jack is currently classified as overfished, but recovering in the area of the fishery. It has historically only been a byproduct species in the GoCIFFF and has not been recorded in commercial catches for the GoCIFFF in recent years. The overfished stock status is believed to be due to significant overfishing between 2003 and 2011 in the Gulf of Carpentaria Developmental Fin Fish Trawl Fishery (FRDC, 2019). There has been negligible fishing effort in the Gulf of Carpentaria Developmental Fin Fish Trawl Fishery since that time.</p> <p>A harvest strategy with clearly defined harvest control rules was due to be implemented in the GoCIFFF in 2018 as part of the Queensland Government's Sustainable Fisheries Strategy 2017–2027, but has been delayed and is now expected to be developed in 2020–2021 (QDAF pers. comm. 2019). If supported by improved fishery data collection, monitoring and data validation, the proposed harvest strategy is expected to significantly improve QDAF's capacity to monitor and control the level of impact on all species, and in doing so, support the recovery of any overfished stocks. No specific strategy, reference points, triggers or timeframe for managing or assessing recovery exist at this time however.</p>
<p>1.2.2 If the stock is estimated as being at or below the biological and / or effort bottom line, management responses such as a zero targeted catch, temporary fishery closure or a 'whole of fishery' effort or quota reduction are implemented.</p>	<p>Meets</p> <p>The current management arrangements for Mangrove Jack are likely to be sufficient while the fishery is not catching this species, however improved data collection, monitoring and management via the proposed harvest strategy and other Sustainable Fisheries Strategy reforms will increase confidence for this species.</p>

PRINCIPLE 2 - Fishing operations should be managed to minimise their impact on the structure, productivity, function and biological diversity of the ecosystem.	
Objective 1 - The fishery is conducted in a manner that does not threaten bycatch species.	
Information requirements	
2.1.1 Reliable information, appropriate to the scale of the fishery, is collected on the composition and abundance of bycatch.	<p>Does not meet</p> <p>With the exception of a small number of shark and ray species (and species protected under Part 13 of the EPBC Act), there are no requirements to record discarded bycatch species in logbooks. Independent data collection via the observer program ceased in 2009 and has not yet been replaced.</p> <p>A lack of accurate information may impede QDAF's capacity to monitor and manage the fishery's impact on non-target species and the broader ecosystem. The development of an ERA and harvest strategy for the fishery should however, help clarify the data needs and guide any necessary changes to the existing data collection program.</p>
Assessments	
2.1.2 There is a risk analysis of the bycatch with respect to its vulnerability to fishing.	<p>Partially meets</p> <p>An ecological risk assessment undertaken in 2006 (ERA, Zeller and Snape 2006) found no bycatch species were at high risk to their sustainability, but Bottlenose Dolphins, Speartooth Sharks and sawfishes were at moderate risk. The ERA also highlighted a need for ecological risks associated with the catch of sharks to be reassessed, due to newly available data. Outcomes of this assessment were not available and so there is some uncertainty about the actual risk associated with the catch of these species.</p> <p>The ERA recommended that risk mitigation initiatives be undertaken, or further assessment be undertaken. This included review and development of fishery performance indicators and reference points for high to moderate risk species during 2006, making extensive use of available stock assessment and monitoring data and the outcomes and information contained in the ERA Report, additional data collection by the observer program to allow better consideration of risks to marine turtles from the offshore (then N9) sector, and regular review of sawfish observer data to monitor and manage risks to those species. The observer program ceased in 2009 and there has been very little information collected on bycatch since that time. There has also been no ongoing monitoring or assessment to determine whether risks remain acceptable.</p> <p>QDAF drafted an updated ERA in 2010 but following the announcement of the Queensland Sustainable Fisheries Strategy 2017–2027 decided not to release the report. The report has since been used to develop another revised level 1 ERA under the Strategy, and this revised Level 1 assessment is now expected to be released by the end of 2019. More quantitative Level 2 ERAs are then expected to be released over the next two years (2020–2021).</p> <p>QDAF also prepared a Risk Assessment and Management Strategy Evaluation Report for speartooth sharks. This report assessed risks against criteria described in the rivershark and sawfish recovery plan. This report was also not released and neither this, or the previous iterations of the ERA (since 2006) were available for the Department to assess.</p> <p>QDAF has advised that risks identified in the GoCIIFF ERAs may be incorporated into the harvest strategy for the GoCIIFF when this is developed (2020–2021) or included in QDAF's monitoring and research plan (depending on the risk level).</p>

Management responses	
<p>2.1.3 Measures are in place to avoid capture and mortality of bycatch species unless it is determined that the level of catch is sustainable (except in relation to endangered, threatened or protected species). Steps must be taken to develop suitable technology if none is available.</p>	<p>Partially meets</p> <p>Measures in place to avoid capture and mortality of bycatch species include restrictions on mesh-size, net length and net drop and bottom setting (for offshore operations), however given the extremely limited reporting of bycatch species in logbooks, lack of independent data collection and lack of recent ecological risk assessment, the performance of these measures cannot reliably be assessed.</p> <p>A code of conduct developed by the Gulf of Carpentaria Commercial Fishermen's Association also requires fishers to minimise interactions with protected species. QDAF 'release guidelines', previously available to assist fishers to safely release and minimise impacts on bycatch and protected species are no longer available to help fishers mitigate their impacts.</p> <p>In January 2018, new management measures for hammerhead sharks came into force including a total allowable commercial catch of 50 tonnes in Queensland-managed Gulf of Carpentaria fisheries and more stringent reporting arrangements.</p> <p>With the exception of a small number of shark, ray and species protected under Part 13 of the EPBC Act, there is no requirement for fishers to record bycatch species. Commercial fishers are required to report all protected species interactions via their logbooks, but in many cases this requirement is not well understood or complied with (QDAF pers comm. 2018). This lack of reporting is likely to impede capacity to monitor and manage the fishery's impact on non-target species and the broader ecosystem. The development of an ecological risk assessment and harvest strategy for the fishery should however, help clarify the data needs and guide any necessary changes to the existing data collection program. Measures proposed under Queensland Government's Sustainable Fisheries Strategy: 2017–2027 are also likely to improve the management of risk to bycatch species.</p>
<p>2.1.4 An indicator group of bycatch species is monitored.</p>	<p>Does not meet</p> <p>An indicator group of bycatch species has not been identified for monitoring and there is very limited data collected on bycatch with which to monitor and detect any emerging issues.</p> <p>The ecological risk assessments are expected to highlight risk levels for bycatch species, make recommendations about potential indicator species, and highlight high priority research needs for bycatch in the fishery. The harvest strategy, when developed (2020–2021), will then include monitoring of bycatch species (QDAF pers. comm. 2019).</p>
<p>2.1.5 There are decision rules that trigger additional management measures when there are significant perturbations in the indicator species numbers.</p>	<p>Does not meet</p> <p>An indicator group of bycatch species has not been identified for monitoring and there is very limited data collected on bycatch with which to monitor and detect any emerging issues.</p> <p>It is possible that the ecological risk assessments and harvest strategy which are being developed will identify species for monitoring and technologies such as electronic monitoring may improve the information available on bycatch in the fishery.</p>
<p>2.1.6 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.</p>	<p>Partially meets</p> <p>Although there are some measures in place to manage impacts on non-target species, the lack of information, monitoring or recent assessment, coupled with concerns regarding accuracy of reported logbook data undermine confidence in the effectiveness of the arrangements to manage the impact on bycatch species. Improvements scheduled as part of the Queensland government's Sustainable Fisheries Strategy are expected to improve capacity and confidence in these measures.</p>

Objective 2 - The fishery is conducted in a manner that avoids mortality of, or injuries to, endangered, threatened or protected species and avoids or minimises impacts on threatened ecological communities.

Information requirements

2.2.1 Reliable information is collected on the interaction with endangered, threatened or protected species and threatened ecological communities.

Partially meets

Commercial fishers are required to report all protected species interactions via their logbooks. There is however information to suggest that not all interactions are being reported. This includes much higher rates of interactions on trips where fishery observers have been on-board, and reports of marine mammals found dead in areas corresponding to relatively high fishing effort. Information also suggests that reporting requirements are not well understood or complied with (QDAF pers comm. 2018).

QDAF is investigating the use of electronic monitoring solutions as part of its Sustainable Fisheries Strategy 2017–2027. If implemented, electronic monitoring could help validate logbook records and ensure an accurate record of all interactions. QDAF also has a compliance program capable of investigating and responding to any alleged misreporting. The Department considers it crucial that there is confidence in the accuracy and reliability of fishery data used to manage ecological sustainability.

Assessments

2.2.2 There is an assessment of the impact of the fishery on endangered, threatened or protected species.

Partially meets

An ecological risk assessment undertaken in 2006 (ERA, [Zeller and Snape 2006](#)) found Bottlenose Dolphins, Speartooth Sharks and sawfishes were at moderate risk from the GoCIFFF. It recommended measures including more indepth assessment, review and development of performance indicators and reference points, and collection and review of additional data via the observer program (which then ceased in 2009) to mitigate these risks. The majority of these actions do not appear to have been undertaken and other measures such as 'release guidelines', which were available to help fishers mitigate their impacts on protected species, are no longer available.

QDAF has drafted a new level 1 ERA for the fishery, but this has not been finalised but is expected to be released in 2019. The revised level 1 ERA will inform more quantitative level 2 ERAs in 2019–2021 and risks identified in the ERAs will be addressed through a harvest strategy (2020–2021), or via QDAF's monitoring and research plan (depending on level of risk).

Concerns have been raised about the capacity of N3 licence holders to effectively monitor their gear and intervene to stop protected species drowning when caught. This is due to difficulty detecting interactions when fishers are only required to be within five (river and creek operations) or six nautical miles (nearshore operations) of their gear. This is especially difficult where line-of-sight may be affected by the meandering nature of rivers, creeks and other coastal features. QDAF advised that this issue will be considered in the latter half of 2019 when a Gulf of Carpentaria fisheries working group is established.

QDAF drafted an updated ERA in 2010 but following the announcement of the Queensland Sustainable Fisheries Strategy 2017–2027 decided not to release the report. The report has since been used to develop another revised level 1 ERA under the Strategy, and this revised Level 1 assessment is now expected to be released by the end of 2019. More quantitative Level 2 ERAs are then expected to be released over the next two years (2020–2021).

QDAF also prepared a Risk Assessment and Management Strategy Evaluation Report for speartooth sharks. This report assessed risks against criteria described in the rivershark and sawfish recovery plan. This report was also not released and neither this, or any of the ERA iterations since 2006 were available for the Department to assess.

The 2006 ERA recommended additional data be collected by observers to allow better consideration of risks to marine turtles from the offshore (then N9) sector, and that sawfish observer data be regularly reviewed. The observer program ceased in 2009 and no additional data collection or monitoring has occurred since that time. Although commercial fishers are required to report all protected species interactions via logbooks, in many cases this requirement is not well understood or complied with (QDAF pers comm. 2018). This is further suggested by significant differences in rates of preprotected species interactions between trips when independent fishery observers were on-board, and those when they were not. There has been no independent data collection or validation since the observer program ceased in 2009. If accurate reporting is not occurring, this is likely to significantly impede QDAF's capacity to accurately assess, monitor and manage the fishery's impact on protected species and the broader ecosystem. The development of an ERA and harvest strategy for the fishery should however, help clarify the data needs and guide any necessary changes to the existing data collection program.

QDAF publishes information on protected species interactions online (data.qld.gov.au). The available records detail species, fishing methods and whether the animal was released alive, dead or injured, but do not distinguish where interactions occurred which makes it impossible to analyse interactions at a fishery level or finer spatial scale. For confidentiality reasons, the published records also do not include records derived from fewer than six boats. The fishery has historically recorded interactions with various sawfish species, speartooth sharks, Saltwater Crocodiles, sea snakes and file snakes, Green, Flatback and Leatherback Turtles, seahorses and pipefish, Manta Rays, Dugongs, Bottlenose, Indo-Pacific Humpback, Irrawaddy and Australian Snubfin Dolphins ([Zeller and Snape 2006](#); Stapley and Rose, 2009; [QDAF 2015](#)). QDAF has also reported that the fishery may also interact with whales and seabirds though there is little information on any interactions with these species. The fishery also harvests Scalloped Hammerhead Sharks which are listed in the Conservation Dependent Threatened Species category of the EPBC Act.

The Department considers it crucial that risks be reliably determined and managed in a precautionary way as soon as possible. Ongoing assessment, monitoring and management of risk will depend on having quality information. Given concerns about misreporting of protected species interactions, a system to ensure robust information is available is also required. QDAF is investigating the use of

	electronic monitoring as part of its Sustainable Fisheries Strategy. If implemented electronic monitoring could help validate fisher's logbook records and improve the data available to determine risks.
2.2.3 There is an assessment of the impact of the fishery on threatened ecological communities.	N/A There are no threatened ecological communities within the area of the fishery.
Management responses	
2.2.4 There are measures in place to avoid capture and/or mortality of endangered, threatened or protected species.	Does not meet The majority of risk mitigation actions recommended in the 2006 ERA (Zeller and Scape 2006) have not been undertaken and there is significant concern among stakeholders regarding the accuracy of protected species interactions, and concerns that current levels of interactions may be unsustainable for some species. The ERA and other research has recommended better data collection to improve risk assessments for some species (e.g. marine turtles). Concerns have also been raised as to the capacity of N3 licence holders to effectively monitor their gear, in order to intervene and avoid drowning of protected species in fishing gear. This is due to N3 licence holders only being required to be within five (river and creek) or six (nearshore) nautical miles of their gear, the difficulty to detect interactions at this distance, especially where line of sight may be affected by the meandering nature of rivers, creeks and other coastal features. QDAF has advised that this issue will be considered by the Gulf of Carpentaria fisheries working group when it is established (anticipated in the latter half of 2019). There are currently no other mitigation strategies in place to avoid capture of EPBC Act protected species.
2.2.5 There are measures in place to avoid impact on threatened ecological communities.	N/A There are no threatened ecological communities within the area of the fishery.
2.2.6 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	Does not meet Given the concerns regarding the accuracy of protected species interactions and potential impacts that may be occurring if the data is inaccurate, coupled with concerns about the efficacy of current risk mitigation measures, the current risk mitigation measures do not appear sufficient to ensure species and ecological communities are not subject to significant impact. The Department considers that improvements to QDAF's current data collection and validation program are required to effectively assess, monitor and manage the impacts of the fishery. These should be addressed through the conditions proposed in Section 4 of the report.
Objective 3 - The fishery is conducted, in a manner that minimises the impact of fishing operations on the ecosystem generally.	
Information requirements	
2.3.1 Information appropriate for the analysis in 2.3.2 is collated and/or collected covering the fisheries impact on the ecosystem and environment generally.	Does not meet There is no ongoing information collected on the fishery's impact on the ecosystem or environment generally.
Assessment	

<p>2.3.2 Information is collected and a risk analysis, appropriate to the scale of the fishery and its potential impacts, is conducted into the susceptibility of each of the following ecosystem components to the fishery.</p> <ol style="list-style-type: none"> Impacts on ecological communities <ul style="list-style-type: none"> Benthic communities Ecologically related, associated or dependent species Water column communities Impacts on food chains <ul style="list-style-type: none"> Structure Productivity/flows Impacts on the physical environment <ul style="list-style-type: none"> Physical habitat Water quality 	<p>Partially meets</p> <p>Although there is no ongoing information collected on the fishery's impact on the ecosystem or environment generally, ecological risks have been assessed using information collected by observers up until the program ceased in 2009, and knowledge of the way the fishing gear operates.</p> <p>Unless lost or discarded, monofilament gillnets pose a relatively low risk to marine environments and benthic habitats. The fishing gear used in the GoCIFFF is considered to have negligible impact on habitats in the area of the fishery (Zeller and Snape 2006). Gillnets can also be selective depending on the size of the net mesh used and the tension of the nets.</p> <p>The removal of high order predators (such as sharks, Barramundi and Mackerel) can impact food webs and species assemblages, but these impacts have not been determined for the fishery and management of the fishery aims to ensure that sustainable populations of these species are maintained.</p> <p>The Marine Bioregional Plan for the North Marine Region 2012 identified a number of regional priorities relevant to the fishery for which the extraction of living resources is considered to be a pressure 'of potential concern'. The plan also identified physical habitat modification as a pressure 'of concern', bycatch from commercial fisheries as a pressure 'of potential concern' with relation to EPBC Act protected species (including marine turtles, inshore dolphins, sawfishes, river sharks and Dugongs), and marine debris and illegal, unreported and unregulated fishing as other pressures that exist in the area of the fishery.</p> <p>A revised Level 1 ecological risk assessment considering risks to habitats and communities is expected to be released by the end of 2019.</p>
<p>Management responses</p>	
<p>2.3.3 Management actions are in place to ensure significant damage to ecosystems does not arise from the impacts described in 2.3.1.</p>	<p>Partially meets</p> <p>Unless lost or discarded, monofilament gillnets pose a relatively low risk to marine environments and benthic habitats. Habitat interactions by the GoCIFF gear are considered negligible (Zeller and Snape 2006). Gillnets can also be relatively selective depending on the size of the net mesh used and the tension of the nets.</p> <p>The 2006 ERA identified a need for ecological risks associated with catch of sharks, grey mackerel and sawfish to be reassessed, due to newly available data. Outcomes of this assessment were not available and so there is some uncertainty about the actual risk associated with the catch of these species.</p> <p>A revised Level 1 ecological risk assessment (ERA) considering risks to habitats and communities is expected to be released by the end of 2019. Noting that the majority of recommended risk mitigation actions in the 2006 ERA were not undertaken, the Department considers it important that QDAF address risks identified in their new ERAs as a priority.</p>
<p>2.3.4 There are decision rules that trigger further management responses when monitoring detects impacts on selected ecosystem indicators beyond a predetermined level, or where action is indicated by application of the precautionary approach.</p>	<p>Partially meets</p> <p>There are currently no decision rules in place that trigger further management responses and only limited data collected. The collection of data may assist QDAF to identify and implement any appropriate management responses required.</p>
<p>2.3.5 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.</p>	<p>Partially meets – subject to conditions (see Section 4)</p> <p>Noting the current risk assessment results (Zeller and Snape 2006) and the work already underway to revise the assessment, the Department does not consider additional risk measures are necessary until the results of the Level 1 ecological risk assessment (ERA) is released (due by the end of 2019). Given the majority of recommended risk mitigation actions in the 2006 ERA were not undertaken, the Department considers it important that QDAF address risks identified in their new ERAs as a priority.</p>

SECTION 3: ASSESSMENT OF THE QUEENSLAND GULF OF CARPENTARIA INSHORE FIN FISH FISHERY AGAINST THE REQUIREMENTS OF THE EPBC ACT RELATED TO DECISIONS MADE UNDER PARTS 12, 13 (13A) AND 16.

Please Note – the table below is not a complete or exact representation of the EPBC Act. It is intended as a checklist 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.

Part 12

Section 176 - Bioregional Plans	
	Comment
(5) Minister must have regard to relevant bioregional plans	<p>Partially meets</p> <p>The Marine Bioregional Plan for the North Marine Region 2012 (the Plan) identifies the following key ecological features in the area of the GOCIFFF: the Gulf of Carpentaria Basin, plateaux's, submerged coral reefs and the coastal zone. The Gulf of Carpentaria Basin and the Gulf of Carpentaria coastal zone are regional priorities in the Plan.</p> <p>'Extraction of living resources' and 'physical habitat modification' have been identified as pressures of potential concern to these key ecological features. Physical habitat modification is listed as a priority for conservation effort within the Region as is considered to be 'of concern' with relation to protected species such as the Australian Snubfin Dolphin, the Indo-Pacific Bottlenose Dolphin and the Indo-Pacific Humpback Dolphin. Bycatch from commercial fisheries is also considered to be 'of potential concern' in relation to the same dolphin species as well as for Dugongs, Flatback, Loggerhead and Olive Ridley Turtles.</p> <p>Improving data collection and data validation continues to be an important area requiring improvement, in order to better assess, monitor and manage these risks.</p>

Part 13

Divisions 1, 2, 3 and 4 - Sections 208A(1)(a-e), 222A(1)(a-e), 245(1)(a-e), 265(1)(a-e) - Accreditable plan, regime or policy	
	Comment
Does the fishery have an accreditable plan of management, regime or policy?	<p>Yes - meets</p> <p>The Gulf of Carpentaria Inshore Fin Fish Fishery is managed in accordance with the Queensland <i>Fisheries Act 1994</i>, Queensland Fisheries Regulation 2008, and arrangements established under this legislation.</p>
Division 1 Listed threatened species - Section 208A - Minister may accredit plans or regimes	
	Comment
(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>Yes - partially meets</p> <p>The 2006 ecological risk assessment (ERA, Zeller and Snape 2006) found Speartooth Sharks and sawfishes were at moderate risk from the fishery. It recommended risk mitigation measures but these do not appear to have been progressed since the report was published. Other measures such as 'release guidelines' are no longer in effect and concerns have been raised regarding the efficacy of some remaining risk mitigation measures (net attendance rules).</p> <p>The 2006 ERA also highlighted a need for ecological risks associated with the catch of sawfish and sharks to be reassessed, due to newly available data. Outcomes of this assessment were not available and so there is some uncertainty about the actual risk associated with the catch of these species.</p> <p>Commercial fishers are required to report all protected species interactions to QDAF within a month of ceasing a fishing trip, but information suggests these requirements are not well understood or complied with (QDAF pers comm. 2018). The observer program, which previously provided independent data on protected species interactions ceased in 2009. Given concerns regarding the accuracy of reported data and the capacity of existing measures, it is unclear whether the current mitigation measures are sufficiently effective and constitute all reasonable steps to avoid interactions with protected species.</p>

(g) And, is the fishery likely to adversely affect the survival or recovery in nature of the species?	<p>No – partially meets</p> <p>Based on available information, it is unclear whether the existing management measures are sufficient to manage risks and ensure the fishery is unlikely to adversely affect the survival or recovery in nature of listed threatened species. The Department considers improvements to data collection, risk assessment, monitoring and management are required to meet this objective and determine whether steps taken to mitigate death and injury to these species are sufficient.</p>
Division 2 Migratory species - Section 222A - Minister may accredit plans or regimes	
	Comment
(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?	<p>Yes - partially meets</p> <p>The 2006 ecological risk assessment (Zeller and Snape 2006) found sawfishes were at moderate risk from the fishery. It recommended risk mitigation measures but these do not appear to have been progressed since the report was published. Other measures such as 'release guidelines' are no longer in effect and concerns have been raised regarding the efficacy of some remaining risk mitigation measures (net attendance rules).</p> <p>Commercial fishers are required to report all protected species interactions to QDAF within a month of ceasing a fishing trip, but information suggests these requirements are not well understood or complied with (QDAF pers comm. 2018). The observer program, which previously provided independent data on protected species interactions ceased in 2009. Given concerns regarding the accuracy of reported data and the capacity of existing measures, it is unclear whether the current mitigation measures are sufficiently effective and constitute all reasonable steps to avoid interactions with protected species.</p>
(g) And, is the fishery likely to adversely affect the conservation status of a listed migratory species or a population of that species?	<p>No - partially meets</p> <p>Based on available information, it is unclear whether the existing management measures are sufficient to manage risks and ensure the fishery is unlikely to adversely affect the survival or recovery in nature of listed migratory species. The Department considers improvements to data collection, risk assessment, monitoring and management are required to meet this objective and determine whether steps taken to mitigate death and injury to these species are sufficient.</p>
Division 3 Whales and other cetaceans - Section 245 - Minister may accredit plans or regimes	
	Comment
(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?	<p>Yes - partially meets</p> <p>The fishery has historically recorded interactions with Bottlenose, Indo-Pacific Humpback, Irrawaddy and Australian Snubfin Dolphins (Zeller and Snape, 2006; Stapley and Rose, 2009; QDAF, 2015). QDAF has also reported that the fishery may also interact with whales, though there is little information on any interactions with these species.</p> <p>The 2006 ecological risk assessment (Zeller and Snape 2006) found Bottlenose Dolphins were at moderate risk from the fishery. It recommended risk mitigation measures but these do not appear to have been progressed since the report was published. Other measures such as 'release guidelines' are no longer in effect and concerns have been raised regarding the efficacy of some remaining risk mitigation measures (net attendance rules).</p> <p>Commercial fishers are required to report all protected species interactions to QDAF within a month of ceasing a fishing trip, but information suggests these requirements are not well understood or complied with (QDAF pers comm. 2018). The observer program, which previously provided independent data on protected species interactions ceased in 2009. Given concerns regarding the accuracy of reported data and the capacity of existing measures, it is unclear whether the current mitigation measures are sufficiently effective and constitute all reasonable steps to avoid interactions with protected species.</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>No - partially meets</p> <p>Based on available information, it is unclear whether the existing management measures are sufficient to manage risks and ensure the fishery is unlikely to adversely affect the survival or recovery in nature of whales and other cetaceans. The Department considers improvements to data collection, risk assessment, monitoring and management are required to meet this objective and determine whether steps taken to mitigate death and injury to these species are sufficient.</p>
Division 4 Listed marine species - Section 265 - Minister may accredit plans or regimes	
	Comment
(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>Yes - partially meets</p> <p>The 2006 ecological risk assessment (Zeller and Snape 2006) did not find any listed marine species to be at risk from the fishery. However, there is information to suggest that fishers' understanding and compliance with their protected species reporting requirements could be significantly improved (QDAF pers comm. 2018).</p> <p>The observer program, which previously provided independent data on protected species interactions ceased in 2009. Given concerns regarding the accuracy of reported data and the capacity of existing measures, it is unclear whether the current mitigation measures are sufficiently effective and constitute all reasonable steps to avoid interactions with listed marine species.</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>No - partially meets</p> <p>Based on available information, it is unclear whether the existing management measures are sufficient to manage risks and ensure the fishery is unlikely to adversely affect the survival or recovery in nature of listed marine species. The Department considers improvements to data collection, risk assessment, monitoring and management are required to meet this objective and determine whether steps taken to mitigate death and injury to these species are sufficient.</p>
Section 303AA - Conditions relating to accreditation of plans, regimes and policies	
	Comment
<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>The Department considers that the accreditation of the GoCIIFF management regime remains valid under sections 208A, 222A, 245 and 265, but should be re-made, subject to the following conditions:</p> <p>Queensland Department of Agriculture and Fisheries to:</p> <ul style="list-style-type: none"> a) work with relevant stakeholders to determine an improved data collection and validation approach that can validate the number of interactions with all bycatch, which will include protected species b) implement appropriate mitigation measures to ensure interactions with protected species are kept to a minimum.

(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 Conditions have not been contravened.
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Part 13A

Section 303BA Objects of Part 13A	
<p>(1) The objects of this Part are as follows:</p> <ul style="list-style-type: none"> (a) to ensure that Australia complies with its obligations under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) 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. 	
Section 303CG - Minister may issue permits (CITES species)	
	Comment
<p>(3) The Minister must not issue a permit unless the Minister is satisfied that:</p> <ul style="list-style-type: none"> (a) the action or actions specified in the permit will not be detrimental to, or contribute to trade which is detrimental to: <ul style="list-style-type: none"> (i) the survival of any taxon to which the specimen belongs; or 	<p>Approval recommended</p> <p>The Department's assessment has considered the fishery's impact on Great Hammerhead (<i>Sphyrna mokarran</i>) and Scalloped Hammerhead (<i>S. lewini</i>) sharks, which are listed under CITES Appendix II, and which are incidentally caught in the GoCIIFF. Scalloped Hammerhead shark is also listed in the conservation dependent threatened species category of the EPBC Act and is subject to strict management measures.</p> <p>In 2014, Australia's CITES Scientific Authority determined that Australia's national take of hammerhead sharks would not be detrimental to the survival of the species if catch was restricted to historical levels.</p> <p>Given the management arrangements in place to monitor and control the level of harvest of CITES species in the GoCIIFF, and the conditions proposed in section 4 of this assessment report, the Department considers that the fishery will not be detrimental to the survival of any taxon to which the CITES specimen belongs.</p>
<ul style="list-style-type: none"> (ii) the recovery in nature of any taxon to which the specimen belongs; or 	<p>The CITES specimens harvested from the fishery are not considered to be over fished in Queensland and management arrangements including catch limits are designed to ensure their ecologically sustainable harvest. A harvest strategy is being developed which is expected to include measures to recover stocks if they fall below defined reference points.</p>
<ul style="list-style-type: none"> (iii) any relevant ecosystem (for example, detriment to habitat or biodiversity); and 	<p>The potential for the fishery to impact unacceptably and unsustainably on any relevant ecosystem during the period of the proposed approval is considered low.</p>

Section 303DC - Minister may amend list (non CITES species)	
	Comment
<p>(1) The Minister may, by legislative instrument, amend the list referred to in section 303DB [list of exempt native specimens] by:</p> <p>(a) doing any of the following:</p> <ul style="list-style-type: none"> (i) including items in the list; (ii) deleting items from the list; (iii) imposing a condition or restriction to which the inclusion of a specimen in the list is subject; (iv) varying or revoking a condition or restriction to which the inclusion of a specimen in the list is subject; <p>or</p> <p>(b) correcting an inaccuracy or updating the name of a species.</p>	<p>The Department recommends that specimens that are or are derived from fish or invertebrates harvested in the GoCIFFF, as defined in the management regime in force under the Queensland <i>Fisheries Act 1994</i> and Queensland Fisheries Regulation 2008, but not including:</p> <ul style="list-style-type: none"> ▪ specimens that belong to eligible listed threatened species, as defined under section 303BC of the EPBC Act, or ▪ specimens that belong to taxa listed under section 303CA of the EPBC Act (Australia's CITES list) <p>remain on the list of exempt native specimens while the fishery is subject to an approved wildlife trade operation.</p>
<p>(1A) In deciding to amend the LENS, the Minister must rely primarily on outcomes an assessment under Part 10, Divisions 1 or 2</p>	<p>Not applicable The fishery is not managed by the Commonwealth.</p>
<p>(1C) The above does not limit matters that may be considered when deciding to amend LENS.</p>	<p>Meets The Department considers that it has taken into account all matters relevant to making an informed decision to amend the list of exempt native specimens to include product taken in this fishery.</p>
<p>(3) Before amending the LENS, the Minister must consult:</p> <ul style="list-style-type: none"> (a) other Minister or Ministers as appropriate; and (b) other Minister or Ministers of each State and self-governing Territory as appropriate; and (c) other persons and organisations as appropriate. 	<p>Meets The Department recommends the fishery remain on the list of exempt native specimens while the fishery is subject to an approved wildlife trade operation. The submission from QDAF was made available on the Department of the Environment and Energy website from 6 April 2017 until 26 May 2017. Two comments were received and have been considered in drafting this report.</p>

Section 303FN - Approved wildlife trade operation	
	Comment
(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.	The instrument to declare the fishery as an approved wildlife trade operation under section 303FN will be registered on the Federal Register of Legislation (FRL) and a link to the instrument made available through the Department's website. Under subsection 56(1) of the <i>Legislation Act 2003</i> (CTH), registration on the FRL meets the requirements for gazettal.
(3) The Minister must not declare an operation as an approved wildlife trade operation unless the Minister is satisfied that: (a) the operation is consistent with the objects of Part 13A of the Act; and	The fishery is consistent with Objects of 13A – based on the assessment against the Guidelines.
(b) the operation will not be detrimental to: (i) the survival of a taxon to which the operation relates; or (ii) the conservation status of a taxon to which the operation relates; and (ba) the operation will not be likely to threaten any relevant ecosystem including (but not limited to) any habitat or biodiversity; and	Subject to the conditions proposed in Section 4 of this report, the fishery will not be detrimental to the survival or conservation status of a taxon to which it relates, nor will it threaten any relevant ecosystem given the management measures in place.
(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	Not applicable The Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations) do not specify fish or crustacea as a class of animal in relation to the welfare of live specimens.
(d) such other conditions (if any) as are specified in the regulations have been, or are likely to be, satisfied.	Not applicable No other conditions are specified in relation to commercial fisheries in the EPBC Regulations.

<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>Meets Subject to the conditions proposed in Section 4 of this report, the fishery will not have a significant impact on any relevant ecosystem given the management measures in place.</p>
<p>(b) the effectiveness of the management arrangements for the operation (including monitoring procedures).</p>	<p>Meets Subject to the conditions proposed in Section 4 of this report, the management arrangements that will be employed for the fishery as outlined in the assessment against the Guidelines, are likely to be effective.</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>Meets Species within the fishery will be protected, conserved and managed in accordance with the Queensland <i>Fisheries Act 1994</i> and Queensland Fisheries Regulation 2008. This legislation applies throughout Queensland-managed waters. The Department considers that, subject to the conditions proposed in Section 4 of this report, 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>(a) the operation is a commercial fishery.</p>	<p>Meets The fishery to which the wildlife trade operation relates is a commercial fishery.</p>

Section 303FR - Public consultation	
	Comment
<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>(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>Meets</p> <p>A public notice, which set out the proposal to declare the GoCIFFF an approved wildlife trade operation and included the application from QDAF, was released for public comment on 6 April 2017 until 26 May 2017, a total of 33 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 Department's assessment considered two public comments received on QDAF's submission, as well as QDAF's responses to these comments. The public comments expressed concerns about impacts on sawfish and sharks, alleged overfishing of some target species, and sustainability of the N3 sector.</p>
Section 303FT - Additional provisions relating to declarations	
	Comment
<p>(1) This section applies to a declaration made under section 303FN, 303FO or 303FP.</p>	<p>Any declaration for the fishery will be made under section 303FN.</p>

<p>(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:</p> <p>(a) during a particular period; or</p> <p>(b) while certain circumstances exist; or</p> <p>(c) while a certain condition is complied with.</p> <p>In such a case, the instrument of declaration is to specify the period, circumstances or condition.</p>	<p>The wildlife trade operation instrument for the fishery specifies the standard and any additional conditions applied.</p> <p>The standard conditions applied to commercial fishery wildlife trade operations include:</p> <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 Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition.
<p>(8) A condition may relate to reporting or monitoring.</p>	<p>Conditions proposed in Section 4 of this report relate to reporting.</p>
<p>(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.</p>	
<p>(11) A copy of an instrument under section 303FN, or this section is to be made available for inspection on the internet.</p>	<p>Any instrument for the fishery made under sections 303FN and the conditions under section 303FT will be registered as a notifiable instrument and made available through the Department's website.</p>

Part 16

Section 391 - Minister must consider precautionary principle in making decisions	
	Comment
<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 – subject to proposed conditions.</p> <p>The precautionary principle is incorporated into the Queensland <i>Fisheries Act 1994</i> and are reflected in the ecological risk assessment processes for the the fishery.</p> <p>Further work is required to address uncertainty around status of some stocks and accuracy of reported data, particularly for protected species interactions.</p> <p>Reforms are underway as part of the Queensland Government's Sustainable Fishery Strategy 2017–2027 which should significantly improve capacity to identify and manage risks. Conditions recommended in section 4 of this assessment reflect the need to progress these reforms.</p>

SECTION 4: QUEENSLAND GULF OF CARPENTARIA INSHORE FIN FISH FISHERY – SUMMARY OF ISSUES REQUIRING CONDITIONS, MARCH 2019

PART 13A - Issue	Proposed Part 13A Conditions
<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 and Energy 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 Gulf of Carpentaria Inshore Fin Fish Fishery will be carried out in accordance with the management regime for the Gulf of Carpentaria Inshore Fin Fish Fishery in force under the Queensland <i>Fisheries Act 1994</i> and Queensland Fisheries Regulation 2008.</p> <p>Condition 2:</p> <p>The Queensland Department of Agriculture and Fisheries to inform the Department of the Environment and Energy of any intended material changes to the Gulf of Carpentaria Inshore Fin Fish Fishery 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 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. Electronic copies of the guidelines are available from the Department's website at http://www.environment.gov.au/resource/guidelines-ecologically-sustainable-management-fisheries.</p>	<p>Condition 3:</p> <p>The Queensland Department of Agriculture and Fisheries to produce and present reports to the Department of the Environment and Energy annually as per Appendix B of the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i>.</p>

Reliable fisheries data collection, validation and monitoring

Accurate identification and reporting of retained and discarded catch is crucial to ensure the impacts of fishing can be assessed, monitored and managed sustainably. Concerns have been raised regarding the quality of data reported in logbooks, including the level of species-level reporting, limited reporting of discarded catch, and potential misreporting of protected species interactions.

The Department acknowledges QDAF's efforts to help fishers accurately identify and report catch, but also that fishers have difficulty distinguishing some species, which leads to misreported catch or catch reported at higher taxonomic levels. The Department also notes that there has been no independent data collection for this fishery since Queensland Department of Agriculture and Fisheries' (QDAF's) observer program ceased in 2009.

Work has commenced under the Queensland Government's Sustainable Fisheries Strategy 2017–2027 to help ensure sufficient information is collected, to monitor and assess the fishery's impact on target and non-target species (including protected species), with a high degree of confidence. Actions under the strategy include:

- Develop a fisheries monitoring and research plan to outline standards for improved data collection and guide the identification of data needs, resources and priorities to support the implementation of this strategy (Action 1.1).
- Undertake additional monitoring of key biological stocks to better understand fishery performance and support management actions in a more timely way (Action 1.2).
- Develop partnerships to trial the use of novel technologies for fisheries monitoring, such as apps, robotic vision, spatial interfaces and mapping, social media and citizen science (Action 1.3).
- Develop and implement a data validation plan to provide:
 - mechanisms to independently validate data on catch and interactions with protected species
 - education programs to improve submission of accurate catch data (include promoting a move to electronic logbooks)
 - robust systems for checking and forensically analysing incoming data (Action 1.4).

QDAF anticipates that a GoCIFFF working group will be established by the end of 2019, after which fishery reforms will commence.

A level 1 ecological risk assessment for the GoCIFFF is also expected to be released by the end of 2019.

A harvest strategy for the GoCIFFF is expected to be implemented in 2020–2021.

Although ecological risks and priority species are likely to have been identified by the end of 2019, QDAF does not anticipate that practical measures to reduce risk will commence until the working group considers reforms in 2020.

The timeline and mechanism for introducing electronic or other monitoring programs remains unclear and will be informed by Queensland's ongoing trials.

The Department considers that accurate identification, data collection and reporting is important to ensure there is appropriate data to assess, monitor and manage fishery impacts on all retained and discarded species, as well as interactions with protected species.

Condition 4:

By **January 2020** the Queensland Department of Agriculture and Fisheries to implement foundational reforms (actions 1.1-1.4) identified in the Queensland Government's Sustainable Fisheries Strategy 2017–2027 for the collection of accurate and reliable data, sufficient to monitor and assess the GoCIFFF's impact on target and non-target species, including protected species, with a high degree of confidence.

Condition 5:

The Queensland Department of Agriculture and Fisheries progress the development and implementation of an independent data collection and validation program including:

- a. Assess feasibility and complete proof of concept trials for electronic monitoring by **December 2019**.
- b. Implement an independent data collection and validation program in GoCIFFF from **January 2020** (this may include electronic monitoring or alternative interim solutions).

Management of sharks including hammerhead and winghead sharks

The Department considers that all shark catch should be landed in a form that facilitates accurate identification, where possible to species level. While some measures have been taken to facilitate this, the Department remains concerned that allowing the removal of fins from sharks affects capacity to identify species or verify the accuracy of catch records.

Following concerns about global depletion, Scalloped, Great and Smooth Hammerhead sharks were listed under CITES Appendix II in September 2014. Scalloped Hammerhead sharks were subsequently assessed by Australia's Threatened Species Scientific Committee (TSSC), and found eligible for listing as an Endangered species under the EPBC Act. The TSSC recommended the species be listed as Conservation Dependent, subject to a number of conditions (<http://www.environment.gov.au/biodiversity/threatened/species/pubs/85267-listing-advice-15032018.pdf>). The Commonwealth Environment Minister's decision to list the species as Conservation Dependent came into effect in March 2018. Relevant TSSC recommendations include:

- The Department continue to monitor the development of catch validation approaches in both the Northern Territory and Queensland and in the context of the catch data. In particular, the Committee regards the revision of all fisheries management regimes relevant to this assessment to provide for the landing of hammerhead sharks with fins naturally attached (consistent with many shark fisheries in Australia), as essential if this species is to remain listed in the Conservation Dependent category.
- The Department update the TSSC on the results of the Queensland Government's scheduled June 2019 review of hammerhead stock status and management arrangements.
- In reviewing the catch data for Scalloped Hammerhead (*Sphyrna lewini*) and Great Hammerhead (*S. mokarran*), provide the available catch data for Winghead Shark (*Eusphyra blochii*) to the TSSC for consideration. The TSSC advised that particular attention will be given to catch levels of Winghead Shark relative to Scalloped and Great Hammerhead sharks, and the level of confidence in data attained from the various mechanisms proposed to strengthen data validation.
- The Department report annually to the TSSC on the performance of the suite of management arrangements outlined in the listing advice which are to be implemented for Scalloped Hammerhead Shark as a 'plan of management' for the purposes of satisfying the requirements of subparagraph 179(6)(b)(ii) of the EPBC Act.

QDAF allows commercial fishers that are authorised to target sharks to land sharks in a processed form, provided the fins are landed with the body of the shark, and the sharks are in a form that allows an inspector to reasonably easily count the number of fish. Grey Reef and Whitetip Reef sharks must not have any of their fins removed. Hammerhead sharks can be processed, but once 75 per cent of the total allowable catch limit is reached, must be landed with their fins naturally attached (Schedule 2, [Queensland Fisheries Regulation 2008](#)). The Department does not believe these requirements meet the TSSC's requirements for hammerhead and winghead sharks, and that all retained sharks should be landed in a form that allows the species to be readily and reliably identified. For the Department to report on the recovery of Scalloped Hammerhead sharks to the TSSC, QDAF must report progress and performance of actions taken in response to TSSC recommendations.

Condition 6:

The Queensland Department of Agriculture and Fisheries (QDAF) to:

- a. Continue to support fishers to accurately identify and record sharks at the species level. This should include assessment and monitoring of reporting performance to identify and target any ongoing improvements
- b. Ensure all commercial catch of shark species of conservation concern can be readily and reliably determined, at a taxonomic level sufficient to monitor and manage risks at the species level. This may require a prohibition on removal of fins, fillets or other morphological features that assist in identifying species prior to landing.
- c. By **February 2020**, report results of the Queensland Government review of hammerhead stock status to the Department, in a form suitable for Australia's Threatened Species Scientific Committee (TSSC) review of Conservation Dependent species.
- d. Review and provide catch data for Scalloped Hammerhead (*Sphyrna lewini*), Great Hammerhead (*S. mokarran*) and Winghead Sharks (*Eusphyra blochii*) to the Department for TSSC consideration. The data should be in a form that facilitates a comparison of catch levels between the three species, and provide advice on the level of confidence in the various data collected by QDAF.
- e. Report to the Department as per **Condition 3**, on the performance of management arrangements, including actions undertaken as part of these conditions, and which comprise the 'plan of management' for the purposes of subparagraph 179(6)(b)(ii) of the EPBC Act for Scalloped Hammerhead Sharks.

Determining status of fish stocks

QDAF undertakes annual assessments of stock status to support its management of key species in the fishery. The assessments consider all available information and determine status based on a weight of evidence. If insufficient data is available to confidently classify a stock, the stock is reported as “undefined”.

In the GoCIFFF, a number of key species have been classified as either overfished (Mangrove Jack) or depleting (Barramundi, King Threadfin). Another nine key species or species groups have an undefined stock status (including but not limited to Black Jewfish, blacktip and hammerhead sharks, for which concerns have been raised about potential overfishing in the area of the fishery ([MRAG 2018](#), [QDAF, 2019](#), and FRDC [Status of Australian Fish Stocks Reports](#)). Grey Mackerel, Barramundi, threadfin, and blacktip sharks comprise around 90 per cent of the total harvest from the fishery.

The Department acknowledges that work has commenced under the Queensland Government’s Sustainable Fisheries Strategy 2017–2027 to undertake regular stock assessments (annually or at least every two years) for key stocks to assess the stock status against the target and limit reference points which will be identified in the harvest strategy for the fishery. QDAF also participates in the FRDC’s national Status of Australian Fish Stocks Advisory Group, which has commissioned projects to reduce the number of undefined stocks. Where a species does not have a stock assessment or has an undefined status, QDAF uses methods, such as analysing catch trend data, to detect and respond to concerns.

The Department understands that in some cases it may not be possible to determine stock status, but in all cases stocks must be managed in a precautionary way to ensure they remain sustainable, not overfished or subject to overfishing.

Condition 7:

The Queensland Department of Agriculture and Fisheries to:

- a. Continue to improve understanding of stock status of all commercially and recreationally important species which are currently classified as ‘undefined’ in the area of the Gulf of Carpentaria Inshore Fin Fish Fishery.
- b. Ensure catch composition is sufficiently monitored and understood to ensure that all stocks impacted by the fishery are sustainably managed, not overfished or subject to overfishing.

Ecological Risk Assessment and Management

Many fisheries have developed evidence-based, precautionary management frameworks to help manage risk and uncertainty, and achieve long-term sustainability and profitability by drawing on available information. Ecological risk assessments (ERAs) are commonly used to identify and prioritise management of risks in fisheries.

An ERA undertaken in 2006 ([Zeller and Snape 2006](#)) found there was a relatively high risk to the sustainability of two target species (Guitarfish and Grey Mackerel) and moderate risk to another ten target species (Spanish Mackerel, red snappers, Barramundi, threadfins and sharks. No bycatch species were found to be at high risk, but Bottlenose Dolphins, Speartooth Sharks and sawfishes were considered at moderate risk. No high risk factors were identified for the marine ecosystem supporting Gulf fisheries, but some fisher camps in the N3 sector posed a moderate risk to the local terrestrial ecosystem.

The 2006 ERA also highlighted a need for ecological risks associated with the catch of sawfish, sharks and grey mackerel to be reassessed, due to newly available data. Outcomes of this assessment were not available and so there is some uncertainty about the actual risk associated with the catch of these species.

The majority of recommended risk mitigation actions do not appear to have been undertaken; these include more indepth assessment, review and development of performance indicators and reference points, and collection and review of additional data via the observer program (which ceased in 2009). Other measures such as 'release guidelines' which were available to help fishers mitigate their impacts on bycatch and protected species, are also no longer available.

QDAF has committed to undertake and publish ERAs for all fisheries according the following Queensland government's ERA guidelines (<https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/sustainable-fisheries-strategy/ecological-risk-assessment-guidelines>).

- Level 1 ERA (all ecological components including marine habitats and ecosystem processes): by December 2019
- Level 2 ERA (species of conservation concern including protected species and identified shark species): by December 2019
- Level 2 ERA (target and byproduct species): during 2019–2020
- Level 2 ERA (bycatch species): during 2020–2021.

This seeks to refine risk ratings through progressive assessments, differentiate between 'real' and 'potential' risks, and address risks through harvest strategies and fisheries working groups.

QDAF has drafted a new level 1 ERA for the GoCIIFFF, but this has not yet been finalised. QDAF anticipate releasing the level 1 ERA by the end of 2019, and the result s of this level 1 ERA will then be used to inform more quantitative level 2 ERAs. Risks identified in the ERAs are expected to be addressed through a harvest strategy for the fishery (expected 2020–2021), or via QDAF's monitoring and research plan (depending on the level of risk).

The Department considers it crucial that all 'real' and 'potential' risks be managed in a precautionary way throughout the process, based on best available information. These precautionary risk management strategies should be developed and implemented in consultation with relevant experts and stakeholders, and performance monitored and reported annually to the Department.

Condition 8:

The Queensland Department of Agriculture and Fisheries to:

- a. Publish a level 1 ecological risk assessment (ERA) for the Gulf of Carpentaria Inshore Fin Fish Fishery by **December 2019**.
- b. Develop risk mitigation strategies for high risk species identified in the Level 1 ERA by **January 2021**. Mitigation strategies to be implemented in parallel with the development of a harvest strategy for the fishery.
- c. Develop and publish level 2 ERAs according to the Queensland Government ERA guidelines, and implement appropriate risk mitigations strategies.

All precautionary risk management strategies should be developed and implemented in consultation with relevant experts and stakeholders, and performance should be monitored and reported annually in accordance with **Condition 3**.

Harvest Strategies

The Queensland *Fisheries Act 1994* and *Fisheries Regulation 2008* (the Regulation) set out the overarching objectives and guidance for managing fisheries, including authorities to take fish and various input and output controls for fisheries.

Harvest strategies provide a transparent, evidence-based framework to avoid overfishing, recover overfished stocks and ensure fisheries remain sustainable. In doing so, harvest strategies provide the Australian community with confidence that commercial fisheries are being managed for long-term biological sustainability and economic profitability, and provide the fishing industry with a more certain operating environment.

The Queensland Government's Harvest Strategy Policy and associated Guidelines require harvest strategies for Queensland fisheries to account for all sources of mortality on species, and address the fishing activities of all sectors; commercial, recreational and traditional (<https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/sustainable-fisheries-strategy/harvest-strategy>). This includes management of fishing related risks to target, byproduct and bycatch species, threatened, endangered and protected species, and habitats, identified through ecological risk assessments. Risk management actions may include fishing catch or effort quotas, spatial closures or gear restrictions. QDAF anticipate developing and implementing a harvest strategy for the GoCIIFF by 2020–2021 and anticipates that the harvest strategy will include individual transferable quotas for key target species and total allowable commercial catch limits for key byproduct, and other species where necessary.

The Department considers it important that the harvest strategy includes decision rules and reference points that trigger management actions to mitigate risks to target and non-target species and in particular protected species that have been identified as high risk in the ecological risk assessment process.

The Department also considers it important that the harvest strategy, or suitable interim measures be implemented as soon as possible, to ensure that species are not subject to overfishing, and that any stocks that have been assessed as overfished are recovered to ecologically sustainable levels as soon as practicable. Where possible, reference points, triggers and timeframes for recovery should be specified and triggers for harvest controls should consider all sources of mortality on a stock.

Black Jewfish stocks are currently classified as undefined in the area of the GoCIIFF, but are overfished in adjacent Northern Territory fisheries. Black jewfish are vulnerable to overfishing and stock collapses have been documented previously in Australia and overseas. QDAF has raised concern about the sustainability of Black Jewfish given significant increases in catch and evidence of black-marketing.

QDAF is in the process of introducing management controls for Black Jewfish which are anticipated to be in place by mid-2019. These controls include annual total allowable catch limits, prior reporting of catch, prohibition of take by recreational and commercial sectors once total allowable catch limits are reached, reduced possession limits for recreational fishers, and requirements to land the whole fish (not just swim bladders) for all fishers (QDAF pers comm. 2019). Given the significant recent increases in catches in adjacent Northern Territory and Queensland fisheries, reports of extensive black marketing, and the species' susceptibility to overfishing, the Department considers these proposed management controls are important and should not be delayed.

Condition 9:

The Queensland Department of Agriculture and Fisheries to implement a harvest strategy that monitors and manages impacts associated with the Gulf of Carpentaria Inshore Fin Fish Fishery on target, byproduct and bycatch (including protected species), by **January 2021**.

The harvest strategy must include decision rules and reference points that trigger management actions to ensure the fishery remains ecologically sustainable.

Performance against this strategy must be included in annual reports specified at **Condition 3**.

Condition 10:

By December 2019, the Queensland Department of Agriculture and Fisheries to ensure there are appropriate management arrangements in place to ensure Black Jewfish is not subject to overfishing.

PART 13 - Issue	Proposed Part 13 Conditions
<p><u>Management of risk to protected species</u></p> <p>The 2006 ecological risk assessment (ERA, Zeller and Snape 2006) found Speartooth Sharks and sawfishes were at moderate risk from the fishery. It recommended risk mitigation measures but these do not appear to have been progressed since the report was published. Other measures such as 'release guidelines' are no longer in effect and concerns have been raised regarding the efficacy of some remaining risk mitigation measures (net attendance rules).</p> <p>The 2006 ERA also highlighted a need for ecological risks associated with the catch of sawfish and sharks to be reassessed, due to newly available data. Outcomes of this assessment were not available and so there is some uncertainty about the actual risk associated with the catch of these species.</p> <p>Commercial fishers are required to report all protected species interactions to QDAF within a month of ceasing a fishing trip, but information suggests these requirements are not well understood or complied with (QDAF pers. comm. 2018). This includes much higher rates of interactions on trips where fishery observers have been on-board, and reports of marine mammals found dead in areas corresponding to relatively high fishing effort.</p> <p>The observer program, which previously provided independent data on protected species interactions ceased in 2009. Given concerns regarding the accuracy of reported data and the capacity of existing measures, it is unclear whether the current mitigation measures are sufficiently effective and constitute all reasonable steps to avoid interactions with protected species.</p> <p>QDAF is investigating the use of electronic monitoring solutions as part of its Sustainable Fisheries Strategy 2017–2027. If implemented, electronic monitoring could help validate logbook records and ensure an accurate record of all interactions. QDAF also has a compliance program capable of investigating and responding to any alleged misreporting. The Department considers it important that there is confidence in the accuracy and reliability of fishery data used to manage ecological sustainability.</p> <p>Given the concerns regarding the accuracy of protected species interactions and potential impacts that may be occurring if the data is inaccurate, coupled with concerns about the efficacy of current risk mitigation measures, the current risk mitigation measures do not appear sufficient to ensure species and ecological communities are not subject to significant impact. The Department considers that improvements to QDAF's current data collection and validation program are required to effectively assess, monitor and manage the impacts of the fishery.</p>	<p>Condition 1:</p> <p>The Queensland Department of Agriculture and Fisheries to work with relevant stakeholders to determine an improved data collection and validation approach that can validate the number of interactions with all bycatch, which will include protected species.</p> <p>Condition 2:</p> <p>Queensland Department of Agriculture and Fisheries to implement appropriate mitigation measures to ensure interactions with protected species are kept to a minimum.</p>

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