Australian Government

Department of Agriculture, Water and the Environment

ASSESSMENT OF THE QUEENSLAND CORAL FISHERY

June 2021

This report should be attributed as '*Assessment of the Queensland Coral Fishery June 2021*, Commonwealth of Australia 2021'.

Disclaimer

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

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EXECUTIVE SUMMARY OF THE ASSESSMENT OF THE QUEENSLAND CORAL FISHERY

On 8 April 2021, the Queensland Department of Agriculture and Fisheries submitted an application for the Queensland Coral Fishery to the Department of Agriculture, Water and the Environment for assessment under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) as an approved wildlife trade operation (WTO), against the Australian Government '*Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition*'. A public comment period was open from 12 April to 13 May 2021.

Fishery management arrangements

The Queensland Coral Fishery extends from the tip of Cape York to the southern border of the Great Barrier Reef. The fishery operates in Queensland and Commonwealth waters, including parts of the Great Barrier Reef Marine Park. Harvest is by hand collection only and the fishery is managed using limited entry with a quota of 200 tonne total allowable catch, split between specialty coral (30 per cent) and other coral (70 per cent). The fishery is largely managed through risk assessment. The fishery operates under the principle that impacts of harvesting are likely to be low due to the highely targetted and selective harvesting methods employed, the amount harvested across a broad geographic range and the degree of protection of the resource from harvesting offered by the Great Barrier Reef Marine Park Zoning Plan. An Ecological Risk Assessment (ERA) was completed for the fishery in 2013. A draft Coral Harvest Strategy 2021-2026 has been prepared but was not in effect at the time of this assesment. This fishery has historically been a leader in the development and implementation of a risk assessment and management framework intended to adaptively manage coral harvest so that it is maintained within sustainable limits.

Target stocks

Species permitted to be taken in the Queensland Coral Fishery include those of the class Hydrozoa or Anthozoa. Most corals targeted by the fishery belong to the class Anthozoa and represent approximately 80 of over 400 coral species present on the Great Barrier Reef. Species for the aquarium trade include a diverse range of hard and soft corals as well as sea anemones.

Harvest of CITES listed species

The harvest of hard coral species, all of which are listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), is the predominant focus of the fishery and has increased significantly each year since 2006. Harvest is managed by way of risk assessments implemented through the Performance Measurement System which is soon to be replaced by the Queensland Coral Fishery Harvest Strategy (2021-2026), and the Queensland Coral Policy. Further, there are industry action plans and other initiatives implemented voluntarily through partnership with the industry. These are intended to guide the management of the fishery, promote ecological sustainability and respond to catastrophic events linked to global climate change to minimise impacts on stressed coral reefs.

Obligations under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) are given effect domestically by the Commonwealth EPBC Act. The EPBC Act requires that, inter alia, an export permit for a CITES listed species may only be issued by the Minister if satisfied that the export will not be detrimental to, or contribute to trade which is detrimental to, the survival or recovery of the species, or a relevant ecosystem. This is known as a non-detriment finding (NDF).

To assist in undertaking this assessment, which includes a forensic look into harvest trends and management arrangements, the department engaged the advice of a renowned coral scientist who is heavily engaged with the management of this fishery.

The fishery has grown significantly over the last decade, with expert analysis showing:

- Overall harvest levels of (including all components of the 200,000 kg annual quota) exceeded 100,000 kg for the first time in 2018-2019.
- Harvest levels of “specialty coral” (more susceptible to over harvest) have increased disproportionately to “other corals”, representing >40% of the reported catch in 2019-20.
- Sustained rates of increase in reported harvest levels for individual species that get reported are mostly in the order of 20-60% per year, though retained catch of some has increased ~200% year on year since 2006-2007
- Annual reported harvest levels of corals (by weight) had been relatively stable since 2006 but did increase quite substantially in 2018-19. Annual reported harvest levels, or retained number of pieces has increased by a very much more considerable extent over the period from 2006-2007 through to 2019-2020. This large increases in the reported number of pieces is difficult to reconcile against moderate increases in the reported weight of coral harvested, unless there have been marked declines in size (weight) of individual coral pieces over time but there is no way of ascertaining this with the data currently collected.

While considered an early leader in adaptive management, the Department sees the management framework has not kept pace with this growth. Informed by expert advice, and considering CITES requirements with regard to determining whether the fishery is having a detrimental impact on the species it harvests, several significant shortfalls in the management framework have been identified, including:

- Minimal species-specific reporting of harvest, making it difficult to determine the level or trends in harvest for many species and subsequently determine sustainability of the harvest;
- That harvest is not recorded by weight, just number of pieces, preventing meaningful analysis of harvest pressure.
- The absence of limits placed on the harvest of individaul species, other than at the level of “specialty Coral”, for which the total allowable catch is 60 tonnes, or “Other Coral” for which 140 tonnes may be taken.
- That the Ecological Risk Assessment for this fishery was last reviewed in 2013 when harvest levels were significantly lower and before a series of back to back environmental disturbances (cyclones and coral bleaching events) and there is no evidence of management considering these events’ possible repercussion for the sustainability of the harvest.

Impacts on Ecosystems and Protected species

The highly selective fishing methods employed by the fishery limit the risk of incidental interactions with protected species. Queensland Department of Agriculture and Fisheries has undertaken two Ecological Risk Assessments (ERA) for this fishery (2008 and 2013), which have identified some species to which harvest may pose elevated (albeit low to moderate) risk. Risk assessments should be living documents and reviewed or updated periodically, particularly if there have been significant changes to the risks or threats, in the case of fisheries management, external environmental changes or changes in harvest levels. The last ERA for this fishery was undertaken eight years ago, before a series of major environmental disturbances. Since the last ERA, there has also been significant and continued increases in harvest, particularly since 2018.

Research and monitoring

In a recent study conducted by Pratchett et all (2020) which looked at all three of Australia's major coral export fisheries, it was found that "the standing biomass of select coral species in areas with highly concentrated and sustained fisheries pressure, and also in the aftermath of very significant extrinsic pressures (most notably widespread coral bleaching and cyclones) is substantial, especially compared to current limits and reported harvest levels." Of the three fisheries the standing biomass was found to be the greatest by far in the Queensland Coral Fishery.

This finding provides a degree of comfort that current harvest levels are likely to be sustainable at least on a larger scale considering the overall reef biomass. However, the authors note that simply comparing the total biomass of harvested species versus standing biomass in major fishing areas would not accurately represent potential fisheries impacts, nor the harvestable biomass of aquarium corals. They explain that harvesting of most species is extremely selective, either taking only certain colours, size or shapes of corals, and while this selectivity may lower the risk of over-exploitation or localised depletion, the consequences of selective targeting on the population structure is unknown.

Public submissions

Two public submissions were received. Comments centred around the lack of perceived progress against meeting conditions of previous approvals, the lack of species-specific management for the harvest of vulnerable species, the lack of quality and timely reporting of harvest, and lack of progress in management arrangements to adequately manage changes in the fishery (both in size and species harvested). Queensland Department of Agriculture and Fisheries (QDAF) provided a response to public submissions received.

These matters were considered throughout the assessment of the fishery and have either been addressed by QDAF or are being addressed via conditions on the wildlife trade approvals granted in association with this amendment of the List of Exempt Native Specimens.

Conclusion

While the fishery is adequately managed in the short term, and notwithstanding the progress made by the Queensland Department of Agriculture and Fisheries to develop a draft Harvest Strategy for this fishery, the deficiencies identified through the department's assessment, informed by expert review, require comprehensive revisions to the management framework

which are complex in their implementation. While these issues have been assessed as requiring attention to promote the long-term sustainability of the fishery, the Queensland Department of Agriculture and Fisheries will require time to develop measures and plan for the implementation of such changes.

As such, the Department considers a short-term wildlife trade operation declaration of four months appropriate to minimise the risk of overharvest and ensure the fishery will not be detrimental to the survival or conservation status of taxa to which it relates in the short term [303FN(3.b.i.) and 303FN(3.b.ii.)], whilst also allowing the Queensland Department of Agriculture and Fisheries to initiate steps to address outstanding risks associated with this fishery (refer to Table 1). An important component of this short-term approval is ongoing monitoring of harvest. The risks and uncertainties identified by the department, that must be addressed through conditions, as listed at Section 4, include:

- The lack of species-specific reporting;
- The lack of harvest limits for CITES-listed species;
- The lack of adequate mechanisms to enforce harvest limits;
- The dated Ecological Risk Assessment for the fishery, which no-longer represents the current scale, breadth and risks posed by the fishery;
- The need for a documented plan to respond to the impacts of acute environmental disturbances, such as coral bleaching events and cyclones, on the area of the fishery; and
- The need for development of a traceability framework for the fishery that supports distinguishing wild harvested corals from captive bred corals.

On this basis and subject to conditions, the Department considers that, an approved wildlife trade operation for four months, until 31 October 2021 is appropriate.

Notes:

Assessment history:

Information on previous assessments for the Queensland Coral Fishery is available on the Department's website at http://environment.gov.au/marine/fisheries/qld/coral.

1st assessment finalised June 2006 (amended in 2008) – The fishery was declared an approved Wildlife Trade Operation for 3 years. Export approval was subject to 3 conditions and 9 recommendations.

2nd assessment finalised June 2009 – The fishery was declared an approved Wildlife Trade Operation for 3 years. Export approval was subject to 4 conditions and 2 recommendations.

3rd assessment finalised June 2012 – The fishery was declared an approved Wildlife Trade Operation for 3 years. Export approval was subject to 8 conditions and 3 recommendations.

4th assessment finalised June 2015 – The fishery was declared an approved Wildlife Trade Operation for 3 years. Export approval was subject to 6 conditions and 1 recommendation.

6th assessment finalised June 2018 – The fishery was declared an approved Wildlife Trade Operation for 3 years. Export approval was subject to 5 conditions.

Fishery reporting:

Queensland Department of Agriculture and Fisheries 2019-2020, 'Queensland Fisheries Summary Report' - https://www.daf.qld.gov.au/__data/assets/pdf_file/0004/1423831/queensland-fisheries-summary-report.pdf, Accessed May 27 2021

Key links:

Queensland Government, Business Queensland, Commercial Fisheries Profiles 'Coral Fishery' https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/fisheries-profiles/commercial-harvest-fisheries/coral, Accessed: 27 May 2021

Performance Measurement System, Queensland Coral Fishery https://www.daf.qld.gov.au/__data/assets/pdf_file/0007/77074/Fishery-PMS-Coral-Fishery.pdf, Accessed: 26 May 2021

Department of Agriculture and Fisheries 2016 'Policy for the management of the Coral Fishery 2016 https://www.publications.qld.gov.au/dataset/queensland-coral-fishery-policy-2016, Accessed: 26 May 2021.

Department of Primary Industries and Fisheries 2009 'A Guide to the Queensland Marine Aquarium Fish Fishery and the Queensland Coral Fishery' – https://www.daf.qld.gov.au/__data/assets/pdf_file/0005/59837/marine-aquarium-_coral-fishery-Guide-QLD.pdf, Accessed: 26 May 2021.

Pro-vision Reef 2009 'Stewardship Action Plan' https://www.gbrmpa.gov.au/__data/assets/pdf_file/0015/4236/gbrmpa_StewardshipActionPlan2009.pdf Accessed: 11 June 2021

Queensland Department of Employment, Economic Development and Innovation 2009. Coral 'Stress Response Plant for the Coral and Marine Aquarium Fish Fisheries' https://elibrary.gbrmpa.gov.au/jspui/bitstream/11017/3028/1/2009_Coral_Stress_Response_Plan_for_fish_fisheries.pdf Accessed: 11 June 2021

Enforcing legislation:

The fishery is managed in accordance with provisions in the following Queensland legislation and regulations available at https://www.legislation.qld.gov.au/ and Commonwealth legislation available at https://www.legislation.gov.au/Details/C2017C00279 Accessed: 11 June 2021:

Queensland *Fisheries Act 1994*.

Queensland *Fisheries (General) Regulation 2019*

Queensland *Fisheries (Commercial Fisheries) Regulation 2019*

Queensland *Fisheries Declaration 2019*

Queensland *Quota Declaration 2019*

Queensland Marine Parks Act 1982.

Commonwealth *Great Barrier Reef Marine Park Act 1975*.

Harvest strategy:

Proposed but not yet implemented:

Draft Coral Harvest Strategy 2021-2026, https://daf.engagementhub.com.au/draft-harvest-strategies-for-coral-and-marine-aquarium-fish Accessed: 11 June 2021

Ecological Risk Assessment:

Roelofs A 2008 'Ecological risk assessment of the Queensland Coral Fishery, Department of Primary Industries and Fisheries, Brisbane QLD, https://www.daf.qld.gov.au/__data/assets/pdf_file/0005/76577/EcolRiskAssess-Coral-Fishery.pdf Accessed: 26 May 2021

Roelofs, A. (2018) Ecological Risk Assessment of the Queensland Coral Fishery 2013. Queensland Department of Agriculture and Fisheries, Brisbane, Australia. https://era.daf.qld.gov.au/id/eprint/7011/ Accessed: 26 May 2021

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

Guidelines assessment	Meets	Partially meets	Does not meet	Details
Management regime *1 of 9 criteria is not applicable	1 of 9	4 of 9	3 of 9	The management arrangements are well documented, publicly available and transparent. Consultative processes involve a range of stakeholders but data shared with these groups is not sufficient for meaningful engagement. While the fishery has management measures in place to control harvest these do not appear to have effectively responded to significant increases in harvest of certain species. Neither is it clear how this could occur without enforceable input controls or catch limits. The fishery is making risk-based management decisions from an Ecological Risk Assessment that is 8 years old while the fishery has grown considerably in this time and the reef health has declined. Conditions around planning for the implementation of enforceable harvest limits are included in section 2 of this report.
Principle 1 (target stocks) *2 of 11 criteria are not applicable		2 of 11	7 of 11	Data collection in logbooks does not record sufficient information on target species to make informed assessment of long-term harvest trends. This makes monitoring and managing risks to species level difficult. No stock assessments have been conducted for this fishery and it is unclear how risk based management can work effectively without species-specific data collection and more responsive ecological risk assessments. Conditions around an implementation plan for improved data collection and reporting as well as an updated Ecological Risk Assessment are included in section 2 of this report.
Principle 2 (bycatch and TEPS) *8 of 12 criteria are not applicable	4 of 12			Given the highly selective hand-collection methods used by this fishery, there are negligible risks to bycatch and very low risk to protected species.
Principle 2 (ecosystem impacts)			5 of 5	Management response are in place for target species only. There is not evidence of data being collected on the potential impact of the fishery on the ecosystem and environment in general that would allow management to detect or respond to impacts of the fishery on the environment. Conditions around an implementation plan for a revised Ecological Risk Assessment are included in section 2 of this report.

EPBC requirements	Meets	Partially meets	Does not meet	Details
Part 12	**Meets**			This assessment considered the fishery's impact on marine bioregional areas and founds the risk to be low and acceptable
Part 13	**Meets**			This assessment considered the fishery's impact on protected species and ecological communities and founds the risk to be low and acceptable
Part 13A		**Partially meets**		The management of the fishery has been assessed and found to have serious shortcoming with regard to managing and monitoring the impact of the fishery on the CITES listed species and the ecosystem in which they occur. In the context of a short term (four month) WTO, with the conditions that have been set, management measures are likely to be adequate.
Part 16		**Partially meets**		Management arrangements were found to be moderately precautionary. In the context of a short term (four month) WTO, with the conditions that have been set, management measures are likely to be adequate.

SECTION 2: QUEENSLAND CORAL FISHERY – SUMMARY OF ISSUES REQUIRING CONDITIONS, JUNE 2021

Issue	Condition
General Management Export decisions relate to the management arrangements in force at the time of any decision(s) made under the EPBC Act. To ensure that the decision(s) remain valid and export approval continues uninterrupted, the Department of Agriculture, Water and the Environment (the department) 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(s). This includes operational and legislated amendments that may affect the sustainability of the target species or negatively impact on byproduct, bycatch, EPBC Act protected species or the ecosystem.	**Condition 1:** The Queensland Department of Agriculture and Fisheries must ensure that operation of the Coral Sea Fishery is carried out in accordance with management regime specified in Queensland Department of Agriculture and Fisheries, and Great Barrier Reef Marine Park Authority issued permits, as well as in the following: • Fisheries Act 1994 (Qld) • Fisheries (General) Regulation 2019 (Qld) • Fisheries (Commercial Fisheries) Regulation 2019 (Qld) • Fisheries Declaration 2019 (Qld) • Fisheries Quota Declaration 2019 (Qld) • Marine Parks Act 2004 (Qld) • Marine Parks Regulations 2019 (Qld) • Great Barrier Reef Marine Park Act 1975 (Cth) • Great Barrier Reef Marine Park Regulations 2019 (Cth). **Condition 2**: The Queensland Department of Agriculture and Fisheries must inform the Department of Agriculture, Water and the Environment of any intended material changes to the Queensland Coral Fishery's management arrangements that may affect the assessment against which *Environment Protection and Biodiversity Conservation Act 1999* decisions are made. **Condition 3:** The Queensland Department of Agriculture and Fisheries must inform the Department of Agriculture, Water and the Environment of any intended changes to fisheries legislation that may affect the legislative instruments relevant to this approval.
Annual Reporting It is important that the Queensland Department of Agriculture and Fisheries produce and present reports to the department in order for the performance of the fishery and progress in implementing the conditions described in this report	**Condition 4:** The Queensland Department of Agriculture and Fisheries must provide a new application for accreditation of the fishery, 90 days prior to the expiry of this

Issue	Condition
and other managerial commitments to be monitored and assessed throughout the life of the export approval. An application for re-accreditation 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 described in the previous assessment for the fishery. Electronic copies of the guidelines are available from the Department's website at http://www.environment.gov.au/resource/guidelines-ecologically-sustainable-management-fisheries.	Wildlife Trade Operation approval as per Appendix B of the *Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition.*
Harvest Reporting Access to reliable data is crucial for assessing, monitoring and managing the impacts of fishing on target and non-target species as well as the health of ecosystems. Recent rapid and sustained increase in harvest in the Queensland Coral Fishery (QCF) highlights the need to clearly understand the nature of the harvest. While total harvest of live corals is relatively small in relation to the total area of the reef available to the fishery, fishing pressure is not necessarily apportioned relative to the abundance of each species in the fishery area or in line with their spatial distribution. The Australian Scientific Authority for the Convention on International Trade in Endangered Species (the CITES Scientific Authority) requires species specific harvest data (that include number of pieces, weight of pieces and spatial information) to meet CITES species Non-Detriment Finding information needs, in accordance with Resolution Conf. 16.7 (Rev. CoP17). Harvest data (including species-specific pieces and weights and spatial distribution of harvest) needs to be collected and maintained in a way that can be provided to the CITES Scientific Authority in a timely manner to allow monitoring of information relevant to the NDF. Recording this information should happen whilst at sea, to record collection of pieces by species and location at the time of harvest to ensure accuracy as a level of processing occurs post landing that may alter the information. For certain corals (such as *Acropora spp*.) identification difficulties are recognised and CITES accepts genus-level reporting of exports. These same difficulties are recognised with regard to operators' ability to identify certain	**Condition 5:** By 30 September 2021, Queensland Department of Agriculture and Fisheries to implement ongoing species-specific reporting requirements for all species listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) that are harvested in the fishery. Reporting must mandate recording of species-specific harvest (or genus-specific for those species listed in schedule A) providing for: a) location of harvest by longitude and latitude; and b) number of pieces per species (or genus for those species listed in schedule A) and their combined weight The raw data are to be provided to the CITES Scientific Authority by 30 October 2021, providing a data agreement sufficient to protect commercial confidentiality is in place with the Queensland Department of Agriculture and Fisheries. **Condition 6:** By 30 September 2021, Queensland Department of Agriculture and Fisheries to provide to the Department of Agriculture, Water and the Environment comprehensive raw catch data for the fishery for the calendar year 2021. This will allow analysis of trends in harvest since the last review was undertaken by Australia's Scientific Authority for CITES. The provision of this data is contingent on a data agreement sufficient to protect commercial confidentiality is in place with the Queensland Department of Agriculture and Fisheries.

Issue	Condition
individual species at the point of harvest. However, given harvest levels within the genus are not apportioned relative to abundance nor biological ability to withstand harvest, a lack of species-specific information makes determination of NDFs difficult and requires high levels of precaution to be built into the management of the fishery. A scientific observer program to undertake periodic inventories and characterise species composition of catch within these genera (and more broadly) would reduce the uncertainty and allow more robust determination of acceptable harvest levels in the management of the fishery. Restrictions on data availability due to commercial-in-confidence considerations have caused delays and difficulties to the meaningful assessment of this fishery as an approved WTO, and attempts should be made to balance the needs for accurate assessment with those of commercial confidentiality. Where data are not able to be made available to inform NDFs, greater precaution must be applied in determining non-detrimental harvest limits. In the absence of weight data, when reviewing coral trade information, CITES and UNEP-WCMC use their own conversion rates based on Green and Shirley (1999) to calculate assumed coral weight where it is not otherwise specified. It is understood there is a divergence of fishing industry opinion as to whether this misrepresents actual weights harvested and as such it is in the interests of the fishery to report weight as well as pieces off the boat.	Any substantive change in harvest trends must be documented as this may be influential in informing future harvest restrictions considered necessary by Australia's Scientific Authority for CITES for ongoing non-detriment findings to be made.
<u>Ongoing Management Arrangements</u> In the absence of clear stock assessment underpinning a harvest plan, the CITES Scientific Authority must consider whether the management of the fishery can adequately identify and respond to changes in harvest that may indicate changes in abundance of target species as a result of harvest pressure or ecological disturbance. The harvest data from the QCF shows large and continued increases in harvest, particularly since 2018. Queensland Department of Agriculture and Fisheries has undertaken two Ecological Risk Assessments (ERA) for this fishery (2008 and 2013), which have identified some species to which harvest may pose elevated (albeit low to moderate) risk. Risk assessments should be reviewed or updated periodically, particularly if there have been significant changes to the risks or threats, including external environmental changes or changes in harvest levels. The last ERA for this fishery was undertaken eight years ago, before a series of	**Condition 7:** By 30 September 2021, Queensland Department of Agriculture and Fisheries must provide the Department of Agriculture, Water and the Environment with an implementation plan for improved management arrangements for the Queensland Coral Fishery. The plan must include details on the planned rollout of: a) species-specific quotas for all species listed under CITES that are harvested in the fishery, (or genus specific quotas for those species listed in Schedule A); b) identify mechanisms to enforce the harvest limits to be applied to species and/or genera and a timeframe for implementation; c) a program to independently characterise the species composition of catch reported at the genus level (those species listed in Schedule A); d) a schedule for revision of the Ecological Risk Assessment and Ecological Risk Management for this fishery, that is transparent,

Issue	Condition
major environmental disturbances. Since the last ERA, there has also been significant increases in harvest levels. Acknowledging that the QCF Harvest Strategy (2021-2026) is still in draft form and yet to be implemented, the CITES Scientific Authority is concerned that current levels of harvest for many species are already in excess of proposed limits (as calculated from harvest during the refence period). Due to a lack of clear information on how the proposed Harvest Strategy will determine acceptable levels of harvest for individual species or species groups, the CITES Scientific Authority considers it appropriately precautionary to approve only a four month Wildlife Trade Operation, whist the Queensland Department of Agriculture and Fisheries plans for implementation of harvest limits for all CITES listed species harvested within the fishery. Further, more information is required with regard to the scientific basis for determining the acceptable harvest levels under the proposed Harvest Strategy and the mechanisms for review of such levels, as well as the specific management mechanisms that will be implemented to monitor and constrain harvest to proposed limits. The ability of management to respond in a timely manner in accordance with a pre-determined, documented plan for the Harvest Strategy is critical, especially given recurrent prior instances of species' harvests exceeding reference points applied under the Performance Measurement System with no apparent management response. Beyond the risk posed directly from harvest, coral assemblages on the GBR have been affected by a range of disturbances, including freshwater flood plumes, destructive waves associated with cyclones and extreme thermal stress in recent years, as reported in the Great Barrier Reef Outlook report 2019. In 2016 and 2017, the GBR experienced its first back-to-back coral bleaching events, which caused mass mortality of corals in shallow reef habitats, particularly in the northern GBR. Severe tropical cyclones and ongoing outbreaks of Crown-of-thorns Starfish have caused further loss of coral cover in the central and southern areas of the Reef. As a result of these cumulative impacts, average hard coral cover on the GBR has undergone a steep decline and the overall trend for coral reef habitats within the Region is one of long-term decline. Global warming has deprived the Reef of sufficient time for many coral communities to recover between acute events. The direct impacts of further climate change combined with chronic stressors will further reduce reef resilience and deplete coral-associated species.	repeatable and incorporates management, scientific and industry advice and considers comprehensive harvest data; e) a plan for promptly considering and responding to the impacts of acute environmental disturbances, such as coral bleaching events and cyclones, on the area of the fishery; and f) development, in collaboration with industry, of a traceability framework for the fishery that supports distinguishing wild harvested corals from captive bred corals.

Issue	Condition
Because of the increase in the frequency and intensity of disturbances, ecosystem resilience may already be on an irreversible path of decline. The Outlook Report was published before the 2020 bleaching event, which was more widespread, and affected mainly the Southern GBR. The ecological impacts of this latest (2020) bleaching event will not be known for some time, partly due to constraints imposed on field-based sampling due to Covid-19 in 2020. Notwithstanding, the extent of these three latest bleaching episodes (2016, 2017, and 2020) is known to be significant. The extent to which these events and disturbances affect the species harvested by this fishery is still unknown. Recent research (Pratchett et al 2020) has found that many species that occur in deeper and turbid water habitats, and previously thought to be more resilient to heat stress, are in fact highly susceptible to elevated temperature and bleaching. Determining the extent to which these events have impacted ecosystem health and stock status of species targeted by the fishery is critical to determining the ongoing sustainability of harvest. Queensland Department of Agriculture and Fisheries must develop a mechanism to ensure that such disturbances are formally considered as they happen (for example, by conveying expert discussions following major environmental disturbances such as cyclones and heat waves). Without clear, transparent and demonstrable evidence of management responses to events that affect the abundance of target species the CITES Scientific Authority must take a highly precautionary approach to determine a positive NDF. It is for this reason only a four month Wildlife Trade operation approval is considered acceptable, by which time a plan for promptly considering and responding to the impacts of acute environmental disturbances is expected to be developed. It is worth acknowledging the important role that the coral harvest industry has played to date in not only supporting research and providing information crucial to managing the reef but also in being stewards of the reef and developing action plans and codes of practice to help manage their industry's harvest from the reef. It is also important to acknowledge that this industry has significant expertise in breeding and rearing corals, which may become an important aspect of improving coral reef resilience into the future as well as a future for continued trade in coral species.	

SECTION 3: DETAILED ANALYSIS OF THE QUEENSLAND CORAL FISHERY AGAINST THE GUIDELINES FOR THE ECOLOGICALLY SUSTAINABLE MANAGEMENT OF FISHERIES (2ND EDITION)

Guidelines criteria	Comment
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.	**Meets – The management arrangements are documented and publicly available.** The Queensland Coral Fishery (QCF) is managed by the Queensland Department of Agriculture and Fisheries (QDAF) in conjunction with the Great Barrier Reef Marine Park Authority (GBRMPA). The management arrangements for the QCF are outlined on the QDAF website at https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/fisheries-profiles/commercial-harvest-fisheries/coral. Management arrangements are specified in QDAF and GBRMPA-issued permits, as well as in publicly available legislation: the Queensland Fisheries Act 1994, Fisheries (General) Regulation 2019, Fisheries (Commercial Fisheries) Regulation 2019, Fisheries Declaration 2019, Fisheries Quota Declaration 2019, and the Queensland Marine Parks Act 2004 and Marine Parks Regulations 2019. The Commonwealth Great Barrier Reef Marine Park Act 1975 and Great Barrier Reef Marine Park Regulations 2019 also apply to operations in the Great Barrier Reef Marine Park. Further, the QCF harvest strategy 2021-2026 was released for public consultation in September 2020 https://daf.engagementhub.com.au/draft-harvest-strategies-for-coral-and-marine-aquarium-fish Public consultation closed on 31 January 2021 and the strategy will be implemented by June 2021 as required by a variation to Condition 4 of the current WTO approval.

Be developed through a consultative process providing opportunity to all interested and affected parties, including the general public.	**Partially meets - Management arrangements developed through consultative process, however level of detail provided to stakeholders not sufficient.** There is a statutory process in place for public consultation and for the involvement of advisory committees in managing the fishery. A Regulatory Impact Statement (RIS) process is used as the main mechanism for ongoing consultation. The Queensland RIS guidelines can be found on the Queensland Department of Treasury website. The Queensland Sustainable Fisheries Strategy 2017-2027 (see weblink above) sets out priorities for future engagement with stakeholders through working groups which includes membership from commercial, recreational, conservation and Indigenous representatives. The harvest strategy has been prepared in cooperation with a stakeholder working group, the Marine Aquarium and Coral Fisheries Working Group. Stakeholder feedback was that the level of detail provided in working group was not sufficient and information regarding the scale of harvest and spatial distribution was not presented in a manner that was sufficiently clear and transparent to allow meaningful comment. Details of the fishery working group and communiques from working group meetings are available at https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/fishery-working-groups/marine-aquarium-fish-and-coral-fisheries-working-group The QCF harvest strategy 2021-2026 was released for public consultation in September 2020 https://daf.engagementhub.com.au/draft-harvest-strategies-for-coral-and-marine-aquarium-fish Public consultation closed on 31 January 2021.

Ensure that a range of expertise and community interests are involved in individual fishery management committees and during the stock assessment process.	**Partially meets – Limited expertise and public interest involved** There is ongoing scientific research and management expertise involved in the management of the fishery, and QDAF, GBRMPA and industry have collaborated to establish: • the Stewardship Action Plan (weblink above) to promote that fisheries that supply to the aquarium industry in Queensland adhere to operational standards and have contingency plans in place to respond to catastrophic events linked to global climate change; • the Coral Stress Response Plan (weblink above) which outlines the strategy being adopted by this fishery to minimise impacts on coral reef systems showing signs of stress; and • The ecological risk assessment (ERA), which though now dated, incorporated external expertise which included representatives from QDAF, the fishery, GBRMPA and an independent scientist. There is some stakeholder feedback that more comprehensive catch data should have been made available to inform this process. A stock assessment has not been conducted for the fishery. The harvest strategy is scheduled to be implemented in June 2021 and has been prepared in cooperation with a stakeholder working group. Stakeholder feedback was that the level of detail provided in working group was not sufficient and information regarding the scale of harvest and spatial distribution was not presented in a manner that was sufficiently clear and transparent to allow meaningful comment. Details of the fishery working group and communiques from working group meetings are available at https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/fishery-working-groups/marine-aquarium-fish-and-coral-fisheries-working-group The QCF harvest strategy 2021-2026 was released for public consultation in September 2020 https://daf.engagementhub.com.au/draft-harvest-strategies-for-coral-and-marine-aquarium-fish Public consultation closed on 31 January 2021.

Be strategic, containing objectives and performance criteria by which the effectiveness of the management arrangements are measured.	**Partially meets – Has general objectives and performance criteria but these are not regularly or meaningfully used to assess effectiveness** The QCF harvest strategy 2021-2026 was released for public consultation in September 2020 https://daf.engagementhub.com.au/draft-harvest-strategies-for-coral-and-marine-aquarium-fish Public consultation closed on 31 January 2021 and the strategy is proposed to be implemented by the end of June 2021 to address Condition 4 of the 2018 Wildlife Trade Operation (WTO) approval. The 2018 assessment of this fishery identified that under the existing management (Policy for the management of the Coral Fishery 2016) performance criteria and management objectives were "not regularly measured" and Condition 4 was put in place to improve management arrangements. At the time of this assessment the implementation of this condition has not yet occurred. There have been substantial and sustained increases in harvest levels in the fishery. Harvest levels of some species appear to be increasing at a near exponential rate. There is currently no stock assessment to determine the sustainability of this harvest level and management measures fail to meaningfully analyse, explain or restrict increases in harvest. The implementation plan outlined in Condition 7 of this WTO assessment will outline how these issues can begin to be addressed.
Be capable of controlling the level of harvest in the fishery using input and/or output controls.	**Does not meet - Existing controls are not effective in limiting harvest of key target species** The fishery is limited by high level quota categories with a TACC of 200t split between specialty coral (60t) and other coral (140t). While these quotas are enforceable, harvest limits of individual species identified to be at risk from overharvesting identified in ERAs or the Harvest Strategy 2021-2026 (once implemented) are not enforceable under the existing fisheries management framework. The fishery is operating without stock assessments for target species and relies on mechanisms that identify harvest trend and other risks that may lead to unsustainable harvest. Species that have been identified by these mechanisms as being at moderate and high risk of unsustainable harvest have continued to be harvested at substantial and increasing levels since the last assessment of this fishery. It is unclear how the Performance Measurement System (PMS) defines risk and sets trigger reference points. Data provided for this assessment appears to show several instances where increases in harvest have been in excess of trigger reference points in the PMS and no evidence could be found to indicate management reviews nor steps to constrain harvest have been conducted in the specified timeframes. While the draft Harvest Strategy 2021-2026 contains a series of decision rules designed to reduce the risk of overharvesting through an assessment and management of intensive fishing practices, the application of these decision rules require further consideration on the part of QDAF with regards to how they can be applied and enforced. Condition 5 and 6 will provide more clarity on the level of harvest of key target species and Condition 7 will outline an implementation plan for how harvest levels can controlled in this fishery.

Contain the means of enforcing critical aspects of the management arrangements.	**Does not meet- Level of harvest of key target species cannot be effectively limited nor enforced under the existing and planned management framework** The Queensland Fisheries Act 1994 contains provisions for the enforcement of the management arrangements for the fishery. Compliance and enforcement activities are carried out by the Queensland Boating and Fisheries Patrol. The fishery is limited only by the high-level quota categories 'specialty coral' (30%) and 'other coral' (70%). There is no stock assessment for this fishery and there are significant concerns about the potential for unsustainable harvest of key target species. While there is a risk management process in place in the PMS and proposed in the Harvest Strategy 2021-2026, neither of these decision making frameworks ultimately provide for implementation of enforceable harvest limits on key target species. Condition 5 and 6 will provide more clarity on the level of harvest of key target species and Condition 7 will outline an implementation plan for how harvest levels can enforced in this fishery.
Provide for the periodic review of the performance of the fishery management arrangements and the management strategies, objectives and criteria.	**Does not meet – Performance review are outdated and not relevant to the current status of the fishery** The 2018 assessment of the fishery noted that while the performance of the fishery management arrangements were reviewed under the PMS the most recent PMS review of this fishery was in 2008. Conditions from assessments in 2015 and 2018 were put in place for QDAF to review and update the PMS. The review and updates were negotiated to be included in the Harvest Strategy 2021-2026 which is yet to be implemented. This Harvest Strategy 2021-2026 will use ERAs and decision rules to promote sustainable management of the fishery. The most recent ERA for the coral fishery was completed in 2013, and given the fishery has changed and grown since that assessment was conducted this limits appropriate application of the Harvest Strategy 2021-2026. The proposed Harvest Strategy 2021-2026 does not specifically state how frequently ERAs will be conducted or what events would trigger and update to an ERA. The scale of the fishery has increased significantly since the ERA in 2013 and there has been a worsening of reef health due to multiple bleaching evens and other environmental disturbances. Management of the fishery has not kept pace with the growth of the fishery. Condition 7 will offer a timeline for an updated ERA and an implementation strategy of management changes to address these issues.
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.	**Partially meets – Limited capability to manage impacts on wider marine ecosystem** The fishery practices highly selective harvesting that are unlikely to cause harm to the wider marine environment. Impacts to GBR and wider marine environment are most likely to come from the direct effect of removing reef building coral. The most recent ERA was conducted in 2013 and may not adequately reflect changes in the management of the fishery or external disturbances to the reef and how these factors may interact to adversely impact the wider marine environment. Condition 7 will offer a timeline for an updated ERA which will begin to address this issue.

Requires compliance with relevant threat abatement plans, recovery plans, the National Policy on Fisheries Bycatch, and bycatch action strategies developed under the policy.	**Not applicable for this assessment**
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.	**Does not meet – Logbooks are required however, the fishery has grown and data collection is no longer adequate for the size of the fishery.** There are shortcomings in the level data reporting in the fishery. Harvest is not consistently reported to species level within the specialty coral quota category. There are also inconsistencies through time on how pieces and weight are recorded and reported. Because the fishery is operating without a stock assessment, harvest trends are the main mechanism for identifying potential depletion of the resources. While spatial harvest data is collected in the fishery, concerns about data confidentiality limit effective use in managing the fishery, especially for fisheries independent expert reviews. A balance should be found between protecting commercial confidentiality concerns and providing for sufficiently robust management of the fishery. Condition 5 and 6 require QDAF to improve the quality of data collected for key target species and Condition 7 will outline an implementation for broader management changes required to address these issues.
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.	**Does not meet – There is no stock assessment and the risk based management is not appropriate to the scale of the fishery** Individual stock assessment for species targeted by this fishery have not been conducted. The fishery is managed by risk identification and management undertaken through ERAs and decision-making frameworks (PMS and Harvest Strategy 2021-2026). No ERA has been conducted since 2013 despite rapid and substantial increases in harvest. Over this timeframe there have been three largescale bleaching events. There is no assessment of possible reductions in the biological diversity and or changes to reproductive capacity of the resource. Condition 7 will offer a timeline for an updated ERA and an implementation plan for broader management changes required to address these issues.

1.1.3 The distribution and spatial structure of the stock(s) has been established and factored into management responses.	**Does not meet – There are no assessments of the spatial structure of the targeted stocks and limited capacity for risk based management** There are knowledge gaps regarding the distribution of many coral species, and significant concerns regarding the potential distribution of one heavily targeted species. Once implemented, the Harvest Strategy 2021-2026 contains management measures to monitor spatial distribution of harvest and restrict harvest effort if deemed appropriate. However, management responses and harvest limits appear to have been determined without a scientific assessment of the appropriateness with regard to target species stocks and vulnerability. Further, within high the level quota categories of 'specialty' and 'other coral' there are no enforceable harvest limit for key target species if unsustainable spatial harvest trends are identified. Condition 7 will offer a timeline for an updated ERA and an implementation plan for broader management changes required to address these issues.
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.	**Does not meet – Harvest data recording is not adequate for risk based management and no stock assessment for this fishery** Commercial fishers are required to complete a logbook at the end of each fishing trip and submit them to QDAF, however there is a limited level of species specificity and reporting has fluctuated between weight and pieces over the recent history of the fishery. Without accurate and consistent harvest data it is unclear how risk-based management can be applied to a fishery without a stock assessment. There are also concern regarding coral that is processed and retained after harvest. For some species larger colonies can be broken down to smaller fragments that are retained and grown in onshore facilities by some operators. There is no record of how much of the harvested coral is used in this practice or of the potential increase in weight or pieces as the coral is processed and grows, and as a result this activity will continue to present issues for validating coral harvested verses coral exported from this fishery. DAWE acknowledges this practice has the potential to reduce the reliance of the fishery on wild harvest, however further consideration must be applied to ensure traceability and transparency of harvest and onshore production. There are no estimates available on recreational and Indigenous take, however they are not expected to be significant. Condition 5 and 6 will require improvements to the quality of data collected for key target species and Condition 7 will outline an implementation for broader management changes required to address these issues.

1.1.5 There is a sound estimate of the potential productivity of the fished stock/s and the proportion that could be harvested.	**Does not meet – There is no estimate of the productivity of the fishery and risk-based management has not kept pace with changes in the fishery** The fishery does not have individual stock assessment for the target species, instead it uses risk assessment through ERAs and decision-making frameworks (PMS and Harvest Strategy 2021-2026) to manage risk of overharvesting the resource. The last ERA was conducted in 2013 and does not adequately capture the substantial increase in harvest since or recent acute environmental disturbances. Condition 7 will offer a timeline for an updated ERA and an implementation plan for broader management changes required to address these issues.
Management responses	
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.	**Does not meet – Trigger responses are not prescribed and are there is no enforceable upper limit of harvest for key target species.** The PMS and the proposed Harvest Strategy 2021-2026 identify harvest trigger reference points and decision rules for some species and species groups. The 2018 assessment of this fishery noted that these limits and management responses required updating in the form of the Harvest Strategy 2021-2026 which is set to be implemented by the end of June 2021. Expert review of the fishery concluded that in light of major increases in harvest and several acute environmental disturbances experienced by the fishery, harvest limits proposed in the Harvest Strategy 2021-2026 are not adequately precautionary to address significant knowledge gaps surrounding stock status of several species. Within the high-level quota categories of ‘specialty’ and ‘other coral’ there are no enforceable limit on harvest for key target species. Condition 7 requires an implementation plan of when precautionary harvest limits will be implemented and made enforceable.
1.1.7 There are management strategies in place capable of controlling the level of take.	**Does not meet – Limited entry but harvest limits are not enforceable.** The fishery quota in place that limits catch to 200 tonnes split between specialty coral (30 per cent) and other coral (70 per cent). This quota is not broken-down any further into target species, and as such there are no enforceable harvest limits for key target species. While harvest reference points have been set within the specialty coral category under the PMS and the Harvest Strategy 2021-2026, there is limited evidence of these keeping pace with major changed in the fishery and they do not provide for enforcement of harvest limits, should that be warranted Condition 7 requires an implementation plan of when precautionary harvest limits will be implemented and made enforceable.

1.1.8 Fishing is conducted in a manner that does not threaten stocks of byproduct species.	**Partially Meets – The take of by-product species is believed to be low, although limited information is available.** Due to the gear used and the highly selective nature of the fishery, virtually all harvest is to some extent 'targeted', however some species may be collected when encountered in the course of searching for true target species. Information on byproduct species is limited due to ERAs and other management reviews not keeping pace with the growth of the fishery. Condition 7 will offer a timeline for an updated ERA for this fishery.
(Guidelines 1.1.1 to 1.1.7 should be applied to byproduct species to an appropriate level)	
1.1.9 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	**Partially Meets – Information on byproduct species has not been updated to determine the adequacy of management actions** Due to the gear used and the highly selective nature of the fishery, virtually all harvest is to some extent 'targeted', however some species may be collected when encountered in the course of searching for true target species. Information on byproduct species is limited due to ERAs and other management reviews not keeping pace with the growth of the fishery. Condition 7 will offer a timeline for an updated ERA for this fishery.
If overfished, go to Objective 2: **If not overfished, go to PRINCIPLE 2:**	
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.	
Management responses	
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.	**Not applicable** Concerns exist surrounding harvest trends regarding uncertainty of the upper limits for harvest to be considered sustainable, no stocks have been identified as requiring a recovery strategy.

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.	**Not applicable** While concerns exist surrounding possible unsustainable harvest trends no stocks have been identified that require a recovery strategy.
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.	**Not applicable– This fishery is highly selective and harvests specific corals, there is no bycatch.** Due to the gear used and the highly selective nature of the fishery it is unlikely that bycatch species will be impacted. Data collection in this regard is considered to be adequate given the nature of the fishery.
Assessment	
2.1.2 There is a risk analysis of the bycatch with respect to its vulnerability to fishing.	**Not applicable– This fishery is highly selective and harvests specific corals, there is no bycatch.** Due to the gear used and the highly selective nature of the fishery it is unlikely that bycatch species will be impacted. The lack of a risk analysis of bycatch species is considered to be adequate. Condition 7 requiring a timeframe for and updated ERA is likely to help address this issue.
Management responses	
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.	**Not applicable– This fishery is highly selective and harvests specific corals, there is no bycatch.** Due to the gear used and the highly selective nature of the fishery it is unlikely that bycatch species will be impacted. Management responses are considered to be adequate.
2.1.4 An indicator group of bycatch species is monitored.	**Not applicable– This fishery is highly selective and harvests specific corals, there is no bycatch.** Due to the gear used and the highly selective nature of the fishery it is unlikely that bycatch species will be impacted.

2.1.5 There are decision rules that trigger additional management measures when there are significant perturbations in the indicator species numbers.	**Not applicable– This fishery is highly selective and harvests specific corals, there is no bycatch.** Due to the gear used and the highly selective nature of the fishery it is unlikely that bycatch species will be impacted.
2.1.6 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	**Not applicable– This fishery is highly selective and harvests specific corals, there is no bycatch.** Due to the gear used and the highly selective nature of the fishery it is unlikely that bycatch species will be impacted.
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.	**Meets – Up-to-date logbooks and reliable records of interactions with endangered, threatened or protected species and threatened ecological communities.** All operators are required to report any interactions with threatened, endangered or protected species and there are no threatened ecological communities in the area of the fishery. Species of Conservation Interest logbooks are considered reliable.
Assessments	
2.2.2 There is an assessment of the impact of the fishery on endangered, threatened or protected species.	**Meets – An ERA has been conducted and risks identified as low.** Due to the gear used and the highly selective nature of the fishery it is unlikely that there will be interactions with endangered, threatened or protected species. An updated ERA as outlined in Condition 7 should update the assessment of potential impacts of this fishery on endangered species, threatened and protected species.
2.2.3 There is an assessment of the impact of the fishery on threatened ecological communities.	**Not applicable** There are no threatened ecological communities in 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.	**Meets – Mitigation strategy in place to avoid interactions with protected species.** Due to the gear used and the highly selective nature of the fishery it is unlikely that there will be interactions with endangered, threatened or protected species. Management measures are considered to be adequate.
2.2.5 There are measures in place to avoid impact on threatened ecological communities.	**Not applicable** There are no threatened ecological communities in 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.	**Meets – High chance** Due to the gear used and the highly selective nature of the fishery it is unlikely that there will be interactions with endangered, threatened or protected species. Management measures are considered to be adequate. Condition 7 leading to an updated ERA will help manage the risk of impacts to threatened species.
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 fishery's impact on the ecosystem and environment generally.	**Does not meet – Methods of data collection in place but this has not resulting in the adequate collection of data.** While the QCF is a highly selective fishery, there is no program collecting information on the ecosystems that support the fishery. Industry and researchers have been involved in working groups which have contributed to ERAs and the draft Harvest Strategy 2021-2026 assisting in the identification potential impacts on the environment. Concerns have been raised by working group participants that the management responses to risks identified during the 2008 and 2013 ERAs do not lead to research or the generation of data to allow better understanding of the impact of the fishery on the larger reef ecosystem. An updated ERA for this fishery as provided for under Condition 7 should consider what data collection would be necessary to better understand the impact of the fishery on the ecosystem and environment generally.
Assessment	

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. 1. Impacts on ecological communities • Benthic communities • Ecologically related, associated or dependent species • Water column communities 2. Impacts on food chains • Structure • Productivity/flows 3. Impacts on the physical environment • Physical habitat • Water quality	**Does not meet – Risk analysis does not consider growth or changes to the nature of the fishery.** An ERA of the fishery was completed in 2013 but this assessment focussed on target species and not did not consider the impacts of this fishery on the ecosystem. Working groups containing members of the industry and researchers have been involved in developing the ERAs for this fishery as well as the draft Harvest Strategy 2021-2026 however these have not led to new research into the impacts of the ecological impact of the fishery. An ERA as not been conducted for the fishery since 2013 despite very large increases in the harvest of the fishery and several large-scale bleaching events and other environmental disturbances leading to a general decline in the health of the ecosystem. Condition 7 will offer a timeline for an updated ERA for this fishery which may lead to an improved risk assessment.
Management responses	
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.	**Does not meet – no management action in place to monitor damage to the ecosystem from the fishery** Risk based management actions are aimed at target species and do not adequately consider how to detect or respond to the fishery impacting the ecosystem and environment through the targeted removal of selected species. The quality of data on harvest operations and the lack of an up-to-date ERA for the fishery means that managers may not have sufficient means to assess whether damage to the ecosystem is occurring as a result of the fishery. Condition 7 requires an implementation plan that would likely address the risk of significant ecosystem damage.
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.	**Does not meet – No performance measures implemented for ecosystem indicators.** Decisions rules and management responses outlined in the PMS and Harvest Strategy 2021-2026 apply to target species only. The scale of the fishery has increased significantly and the state of the ecosystem health has degraded after multiple bleaching events. An update to the ERA should occur imminently as outlined in Condition 7 and management should consider ways to measure, monitor and respond to impacts of the fishery on the environment.

2.3.5 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	**Does not meet – Low chance** While the scale of the fisher has historically been considered small and low risk, significant annual growth and declining ecosystem health requires the fishery manage to respond with large changes. Condition 7 requires development of an implementation plan that will help detect and respond to impacts of the fishery on the environment.

SECTION 4: ASSESSMENT OF THE QUEENSLAND CORAL FISHERY AGAINST THE REQUIREMENTS OF THE EPBC ACT

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

Part 12 – Identifying and monitoring biodiversity and making bioregional plans

Section 176 Bioregional Plans	Comment
(5) Minister must have regard to relevant bioregional plans	**Meets.** The fishery operates in the Coral Sea and a small area of the Temperate East Marine regions. There is no bioregional plan currently in place for the Coral Sea Marine Region. The Marine bioregional plan for the Temperate East Marine Region 2012 has been considered in preparing advice in relation to decisions under section 303DC and section 303FN. There is a very small area of the fishery that overlaps with this bioregions and fishing practices are highly targeted and selective in nature. An action taken by an individual fisher, acting in accordance with the management regime for the fishery, is unlikely to have a significant impact on the key ecological features, biologically important areas or other matters identified in the Temperate East Marine Bioregional Plan. While there is no evidence to suggest any systematic change to species diversity or richness has been directly caused by the fishery, there are concerns that large increases in harvest levels combined with shortcoming in management reviews and responses may exacerbate the declining health of the reef ecosystem as a result of climate change. Confidence in the performance of the fishery to manage potential impacts to bioregions within the fishery area could be improved with strengthened monitoring and enforcement measures outlined in the conditions of this assessment

Part 13 – Species and communities

Accreditable plan, regime or policy (Division 1, Division 2, Division 3, Division 4)	Comment
s. 208A (1) (a-e) , s.222A (1) (a-e), s.245 (1) (a-e), s.265 (1) (a-e)	**Meets- There is an accreditable management regime in place**

Does the fishery have an accreditable plan of management, regime or policy?	The management arrangements for the fishery are specified in QDAF and GBRMPA-issued permits, as well as in publicly available legislation: the Queensland Fisheries Act 1994, Fisheries (General) Regulation 2019, Fisheries (Commercial Fisheries) Regulation 2019, Fisheries Declaration 2019, Fisheries Quota Declaration 2019, and the Queensland Marine Parks Act 2004 and Marine Parks Regulations 2019. The Commonwealth Great Barrier Reef Marine Park Act 1975 and Great Barrier Reef Marine Park Regulations 2019 also apply to operations in the area of the Great Barrier Reef Marine Park.
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?	**Meets** An Ecological risk assessment was conducted for this fishery in 2013. While there was no detailed assessment of risk to listed threatened species, the risk was considered and determined to be low. No interactions with listed threatened species have been reported by fishers operating in this fishery. The fishing method, harvesting select corals by hand, means that the risk to listed threatened species is low.
(g) And, is the fishery likely to adversely affect the survival or recovery in nature of the species?	**Meets - Low risk due to fishing method** No. No interactions have been historically reported and the risk to threatened species is considered low due to the fishing method employed (hand collection).
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?	**Meets** Yes, the management regime requires that all reasonable steps are taken to avoid interactions through gear limitations (hand collection) and any interactions are reported to the Department.
(g) And, is the fishery likely to adversely affect the conservation status of a listed migratory species or a population of that species?	**Meets** No. No interactions with listed threatened species have been reported by fishers operating in this fishery. The fishing method, harvesting select corals by hand, means that the risk to listed migratory species is low.
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?	**Meets** Yes, the management regime requires that all reasonable steps are taken to avoid interactions through gear limitations (hand collection) and any interactions are reported to the Department.
(g) And, is the fishery likely to adversely affect the conservation status of a species of cetacean or a population of that species?	**Meets** No. No interactions with listed threatened species have been reported by fishers operating in this fishery. The fishing method, harvesting select corals by hand, means that the risk cetaceans is low.
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?	**Meets** Yes, the management regime requires that all reasonable steps are taken to avoid interactions through gear limitations (hand collection) and any interactions are reported to the Department.
(g) And, is the fishery likely to adversely affect the conservation status of a listed marine species or a population of that species?	**Meets** No. No interactions with listed threatened species have been reported by fishers operating in this fishery. The fishing method, harvesting select corals by hand, means that the risk to listed marine species is low.
Section 303AA Conditions relating to accreditation of plans, regimes and policies	**Comment**
(1) This section applies to an accreditation of a plan, regime or policy under section 208A, 222A, 245 or 265.	The department recommends that the management regime for the QCF be accredited under sections 208A, 222A, 245 and 265. The Department considers that no conditions are required for the accreditation of the management regime for the QCF under Part 13.
(2) The Minister may accredit a plan, regime or policy under that section even though he or she considers that the plan, regime or policy should be accredited only: (a) during a particular period; or (b) while certain circumstances exist; or (c) while a certain condition is complied with. In such a case, the instrument of accreditation is to specify the period, circumstances or condition.	

Part 13A – International movement of wildlife specimens

Section 303BA Objects of Part 13A	
(1) The objects of this Part are as follows: (a) to ensure that Australia complies with its obligations under 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.	The management arrangements for the QCF have been assessed as generally consistent with the general guidance provided in the objects of Part 13A as: • the fishery has been assessed as meeting the Non-Detriment Finding requirements for species listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) for the four-month term of accreditation, subject to conditions. • there are management arrangements in place to ensure that the resource is being managed in an ecologically sustainable way • the operation of the QCF is unlikely to be unsustainable and threaten biodiversity within the next four months, and • the Environment Protection and Biodiversity Conservation Regulations 2000 do not specify fish as a class of animal in relation to the welfare of live specimens.
Section 303 CG Minister may issue permits (CITES species)	**Comment**
(3) The Minister must not issue a permit unless the Minister is satisfied that: (a) the action or actions specified in the permit will not be detrimental to, or contribute to trade which is detrimental to: (i) the survival of any taxon to which the specimen belongs; or	This fishery targets CITES listed coral species for harvest and export. Concerns regarding the potential detrimental impact of this fishery on CITES listed species have prompted conditions on this fishery to be put in place. Only in the context of the four-month export accreditation and with the implementation of these conditions does the Department consider the risk to CITES listed coral species sufficiently low to consider the fishery not to be detrimental to the survival of these species. Regular updates on progress toward these conditions and catch is vital to monitor the status of CITES listed specimens harvested by the fishery
(ii) the recovery in nature of any taxon to which the specimen belongs; or	Recent bleaching events have affected large areas of the reef and while the harvesting operations may impact the recovery of CITES listed corals, conditions have been set including the requirement to plan to undertake an updated Ecological Risk Assessment as well as to plan for the develop management responses to future environmental disturbances. This condition, in concert with a condition requiring species/genus-specific reporting of harvest is likely to mitigate the risk of harvesting operations being unduly detrimental to the recovery of CITES listed coral species in the wild.

(iii) any relevant ecosystem (for example, detriment to habitat or biodiversity); and	Recognising the nature of harvest and gear used in the fishery (hand collection), the potential for the fishery to impact unacceptably and unsustainably on relevant ecosystems is considered relatively low. The species targeted by this fishery, reef building stony coral play a vital role in the ecosystem. The management and monitoring of the potential impact of harvesting these species on the ecosystem was assessed as being inadequate Only in the context of the four-month export accreditation and with the implementation of conditions outlined in Section 2 of this assessment, does the Department consider the risk to CITES listed coral species sufficiently low to consider the fishery not to be detrimental to the ecosystem on which these species rely on.
Section 303DC Minister may amend list (non CITES species)	**Comment**
(1) The Minister may, by legislative instrument, amend the list referred to in section 303DB [list of exempt native specimens] by: (a) doing any of the following: (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; or (b) correcting an inaccuracy or updating the name of a species.	The Department recommends that specimens that are or are derived from fish or invertebrates harvested in the QCF, as defined in the management plan/regime in force under the Fisheries Act 1994 (Queensland) and Fisheries Regulations 2019 (Queensland), but not including a) specimens that belong to taxa listed under section 209 of the EPBC Act (Australia's List of Migratory Species), or b) specimens that belong to taxa listed under section 248 of the EPBC Act (Australia's List of Marine Species), or c) specimens that belong to eligible listed threatened species, as defined under section 303BC of the EPBC Act, or d) specimens that belong to taxa listed under section 303CA of the EPBC Act (Australia's CITES List). be included in the list of exempt native specimens until 31 October 2021, while the QCF is subject to a declaration as an approved wildlife trade operation.
(1A) In deciding to amend the LENS, the Minister must rely primarily on outcomes an assessment under Part 10, Divisions 1 or 2	**Not applicable** There has been no request or agreement to assess the fishery under Part 10 Division 1, and the fishery is not managed by the Commonwealth, so Part 10, Division 2 does not apply.
(1C) The above does not limit matters that may be considered when deciding to amend LENS.	**Not applicable**

	Although there is no strategic assessment under Part 10 of the EPBC Act, the Department considers its assessment 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.
(3) Before amending the LENS, the Minister must consult: (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.	**Meets** The submission from the Queensland Department of Agriculture and Fisheries was made available on the Department's website from 12 April 2021 – 13 May 2021. Two comments were received.
(5) A copy of an instrument made under section 303DC is to be made available for inspection on the internet.	Yes, the instrument made under section 303DC(1)(a) for the fishery will be registered on the Federal Register of Legislation, and a link to the instrument made available through the Department's website. Under subsection 56(1) of the *Legislation Act 2003* (CTH), registration on the FRL meets the requirements for gazettal.
Section 303FN Approved wildlife trade operation	**Comment**
(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 (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	**Meets** The fishery is consistent with Objects of 13A – see above assessment against the Guidelines. The fishery is consistent with Objects of 13A and unlikely to be detrimental to the survival or conservation status of a taxon to which it relates, nor will it threaten any relevant ecosystem, within the next **four months**, given the management measures in place. There are however no effective harvest limits and catch reporting could also be improved to more effectively monitor and manage risks to species. The ERA for this fishery has not been updated in eight years and it does not effectively consider the impacts of fishing on the environment or ecosystem.
(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 corals 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.
(4) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have **regard** to: (a) the significance of the impact of the operation on an ecosystem (for example, an impact on habitat or biodiversity); and	**Partially meets – Short term WTO subject to conditions** The management of the fishery has been assessed to have serious shortcomings with regard to managing and monitoring the impact of the fishery on the ecosystem. In the context of a short term (four month) WTO, the fishery is unlikely to have a significant impact on the ecosystem, given the management measures proposed in the conditions and those currently in place, which include the arrangements described above at s303FN 3(b).
(b) the effectiveness of the management arrangements for the operation (including monitoring procedures).	**Partially meets** This assessment as raised concerns regarding the management arrangements for this fishery. In the context of a short term (four month) WTO and the conditions under which it is approved the management is likely acceptable.
(5) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have **regard** to: (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 (b) whether the legislation applies throughout the State or Territory concerned; and (c) whether, in the opinion of the Minister, the legislation is effective.	**Meets.** The fishery will be managed under the Queensland Fisheries Act 1994, Fisheries (General) Regulation 2019, Fisheries (Commercial Fisheries) Regulation 2019, Fisheries Declaration 2019, Fisheries Quota Declaration 2019, and the Queensland Marine Parks Act 2004 and Marine Parks Regulations 2019. The Commonwealth Great Barrier Reef Marine Park Act 1975 and Great Barrier Reef Marine Park Regulations 2019 also apply to operations in the Great Barrier Reef Marine Park. The Queensland Fisheries Act 1994 applies throughout all Queensland waters. The Department considers that the legislation is likely to be effective.
(10) For the purposes of section 303FN, an operation is a wildlife trade operation if, an only if, the operation is an operation for the taking of specimens and: (a) the operation is a commercial fishery.	**Meets.** The QCF is a commercial fishery.

(10A) In deciding whether to declare that a commercial fishery is an approved wildlife trade operation for the purposes of this section, the Minister must rely primarily on the outcomes of any assessment in relation to the fishery carried out for the purposes of Division 1 or 2 of Part 10. (10B) Subsection (10A) does not limit the matters that may be taken into account in deciding whether to declare that a fishery is an approved wildlife trade operation for the purposes of this section.	Although there is no strategic assessment under Part 10 of the EPBC Act, the Department considers its assessment 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. **Not applicable.** There has been no request or agreement to assess the fishery under Part 10 Division 1, and the fishery is not managed by the Commonwealth, so Part 10 Division 2 does not apply.
Section 303FR Public consultation	**Comment**
(1) Before making a declaration under section 303FN, the Minister must cause to be published on the Internet a notice: (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. (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.	**Meets** A public notice, which set out the proposal to declare the QCF an approved wildlife trade operation and included the application from the Queensland Department of Agriculture and Fisheries, was released for public comment on 12 April 2021 to 13 May 2021. Two comments were received.
(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.	Two public comments were received on the submission, included at Attachment C of the brief. The public comments expressed concern about the perceived lack of progress against meeting conditions of previous approvals, the lack of species-specific management for the harvest of vulnerable species, the lack of quality and timely reporting of harvest, and lack of progress in management arrangements to adequately manage changes in the fishery (both in size and species harvested). QDAF provided a response to public submissions received. These matters were considered throughout the assessment of the fishery and have either been addressed by QDAF or are being addressed via conditions 5, 6 and 7 on the wildlife trade approvals granted in association with this amendment of the List of Exempt Native Specimens (Section 4).
Section 303FT Additional provisions relating to declarations	**Comments**

(1) This section applies to a declaration made under section 303FN, 303FO or 303FP.	A declaration as an approved WTO for the QCF will be made under section 303FN.
(4) The Minister may make a declaration about a plan or operation even though he or she considers that the plan or operation should be the subject of the declaration only: (a) during a particular period; or (b) while certain circumstances exist; or (c) while a certain condition is complied with. In such a case, the instrument of declaration is to specify the period, circumstances or condition.	The standard conditions applied to commercial fishery WTO include: • 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. The wildlife trade operation instrument for the QCF specifies the standard and any additional conditions applied, over the specified period of four months to 31 October 2021. Further conditions specific to this short-term WTO are outlined in Section 2 of this assessment and require reporting prior to the standard submission of annual reports.
(8) A condition may relate to reporting or monitoring.	In addition to Condition 4 of the standard conditions relates to reporting. Condition 5 requires that by 30 September 2021 QDAF implement species specific reporting including pieces, weight and location of harvest Condition 6 requires that 30 September 2021 QDAF to provide the department raw catch data for the fishery Condition 7 requires that by 30 September 2021 QDAF provide an implementation plan for improved management, which included a) a program to independently characterise the species composition of catch reported at the genus level (those species listed in Schedule A); b) a schedule for revision of the Ecological Risk Assessment and Ecological Risk Management for this fishery, that is transparent, repeatable and incorporates management, scientific and industry advice and considers comprehensive harvest data; c) a plan for promptly considering and responding to the impacts of acute environmental disturbances, such as coral bleaching events and cyclones, on the area of the fishery; and
(9) The Minister must, by instrument published in the *Gazette*, revoke a declaration if he or she is satisfied that a condition of the declaration has been contravened.	

Part 16 – Precautionary principle and other considerations in making decisions

Section 391 Minister must consider precautionary principle in making decisions	Comment
(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. (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.	**Partially meets.** Given the short-term nature of this WTO and the conditions under which it is approved, requiring QDAF to develop an implementation plan for harvest limits and schedule for an updated ERA, precautionary measures are considered to be in place to prevent serious or irreversible environmental damage being caused by this fishery.

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