



**Australian Government**

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

# **Assessment of the Queensland Sea Cucumber Fishery (East Coast)**

*(formerly the Queensland East Coast Bêche-de-mer Fishery)*

**September 2020**

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#### **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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## ASSESSMENT SUMMARY

The Queensland Sea Cucumber Fishery (East Coast) is a commercial fishery that uses hand collection, with underwater breathing apparatus to collect various sea cucumber species. The fishery operates in both state and Commonwealth waters, including the Great Barrier Reef Marine Park (GBRMP).

On 28 March 2018 the management arrangements for the fishery were deemed to be sustainable and the fishery was granted an exemption from requiring export approvals under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) until 28 August 2025. The list of exempt native specimens was amended to allow export of product from the fishery, excluding any species protected under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) or EPBC Act.

At the 18th CITES Conference of the Parties meeting (17-28 August 2019), a proposal to include three species of sea cucumber, including Black Teatfish (*Holothuria whitmaei*) and White Teatfish (*H. fuscogilva*), in CITES Appendix II was adopted. This listing came into effect on 28 August 2020.

As a party to the Convention, Australia must apply all CITES provisions of the EPBC Act to CITES imports and exports. Specimens being exported from Australia for commercial purposes must come from an approved commercial source, such as a Wildlife Trade Operation approved under the EPBC Act.

In July 2020, the Queensland Department of Agriculture and Fisheries (QDAF) submitted an application to the Department of Agriculture, Water and the Environment (the Department) for the fishery to be approved as a Wildlife Trade Operation. Public comments were sought on QDAF's application, from 22 July until 21 August 2020. Six public submissions were received and QDAF provided advice in response to the issues raised in the public submissions.

The key concerns raised in the public comments included:

- Global declines of teatfish species and associated IUCN listings which informed the CITES listing of the species.
- Biology and life-history traits of these species not being able to sustain commercial harvest.
- Concerns regarding the survey design used to inform the reopening of fishing for Black Teatfish.
- The lack of information collected on numbers of individual animals harvested.
- A lack of consultation undertaken with regard to re-opening of fishing for Black Teatfish.
- Unclear spatial management and the references to 'zones' in management arrangements.
- Logbook design and potential for fishers to report Black Teatfish as 'other species'.
- Public availability of fishery information.
- Recognition of Curryfish as a main target species and understanding of what species are caught and where.
- The IUCN status of Prickly Redfish and need for specific management attention.
- The need for resource surveys for Burrowing Blackfish in the Burrowing Blackfish Zones.
- The need for a harvest strategy for the fishery.
- The need for current stock assessments for the fishery.
- Prospecting arrangements for Burrowing Blackfish and Curryfish.

- The important role Sea Cucumbers play in ecosystem health and the impacts that overfishing would have on reef health.
- Whether there has been an assessment under Section 303FO of the EPBC Act 1999 for White Teatfish and Black Teatfish.
- Whether rising average sea temperatures and associated effects on spawning are considered in managing the fishery.
- Whether commercial fishers harvest White Teatfish in the third year of the Burrowing Blackfish harvest cycle.
- The scientific basis for the minimum size for burrowing blackfish and apparent lack of regulated size limit for this species.

The Department assessed the application under the EPBC Act and against the Australian Government 'Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition'. Both the public submissions and QDAF's response were considered in the Department's assessment.

The Department's assessment forms the basis for approvals granted under Parts 13 and 13A of the EPBC Act, and also forms the basis for the Australian CITES Scientific Authority's Non-Detriment Finding for Black Teatfish and White Teatfish in this fishery.

### **The fishery**

The fishery is managed in accordance with the Queensland *Fisheries Act 1994*, Fisheries (General) Regulation 2019, Fisheries (Commercial Fisheries) Regulation 2019 and the Fisheries Declaration 2019.

The fishery operates in Queensland and Commonwealth waters, including parts of the Great Barrier Reef Marine Protected Area. The fishery extends from Cape York to the southern limit of Tin Can Bay and harvest is managed with a range of input and output controls, including catch limits and spatial management measures. A rotational harvest strategy is also used in the fishery.

The main target species are Burrowing Blackfish, Black Teatfish, White Teatfish, Pricky Redfish, Sandfish and Blackfish. The hand collection method is highly selective, resulting in minimal risk to non-target species, including any protected species.

While an ecological risk assessment has not been conducted for the fishery, there are no concerns for byproduct, bycatch, protected species and the ecosystem due to the nature of the fishing methods used. The potential impacts of fishing on target species are managed through various input and output controls, including rotational harvest strategies, size and catch limits.

### **Conclusion**

The Department recommends that the fishery be granted export approval for 12 months, until 30 September 2021, by declaring the fishery an approved Wildlife Trade Operation under the EPBC Act. The fishery's inclusion on the List of Exempt Native Specimens will be amended to remain valid while a valid Wildlife Trade Operation is in place and allow the export of CITES listed Black Teatfish and White Teatfish.

The relatively short duration of the proposed approval is to ensure proposed population surveys to determine biomass and density, and stock assessments to determine appropriate level of fishing can be designed (for both species) and completed (for Black Teatfish). The short-term approval will ensure more information on stocks and the ongoing sustainability of management arrangements can be considered before a longer-term approval is considered. These conditions are targeted at

obtaining outcomes for CITES-listed Black and White Teatfish species in the 12-month approval period but could be extended to remaining species in the fishery in future.

The Department is satisfied that the management arrangements in this fishery require fishers to take all reasonable steps to minimise interactions with protected species, and that the fishery will not risk the survival of these protected species in the wild. The Department recommends reaccrediting the fishery's management regime under Part 13 of the EPBC Act.

## SECTION 1: ASSESSMENT SUMMARY

Guidelines	Meets	Partly meets	Does not meet	Comments
Management regime	5 of 9	4 of 9	0 of 9	<p>Management arrangements are documented, with most information being publicly available, transparent and developed in consultation with a wide range of stakeholders. There have been no stock assessments, the management regime is guided by a Performance Measurement System (PMS).</p> <p>The PMS includes measures to monitor and respond to ecological risks, but there has been no formal ecological risk assessment to guide these actions in the fishery.</p> <p>Some of the management arrangements are implemented through a memorandum of understanding between QDAF and the Queensland Sea Cucumber Industry Association. The MoU was made available to the Department for assessment, but it is not publicly available.</p> <p>In 2014 QDAF used a management strategy evaluation (MSE) approach to evaluate the benefits of a rotational harvest strategy (the Rotational Zoning Strategy) utilised in this Fishery. The MSE found that, in general, the current management arrangements result in a low risk to most fishery species and reduce the risk of localised depletion. However, there are still risks to some highly targeted species, and there are important information gaps that could reduce uncertainty.</p> <p>The Department has proposed conditions 4-7 on the Part 13A approval to address the identified issues. All proposed conditions are detailed in Section 2 of this report.</p>
Principle 1 Target stocks * Three of the 11 assessment criteria are not applicable.	2 of 11*	3 of 11*	3 of 11*	<p>Data is collected by fishery-dependent, and fishery-independent means (for some species), but information on stocks is limited as there have been no stock assessments, and not all species are reported to species-level.</p> <p>The Department has proposed conditions 4-7 on the Part 13A approval to ensure there is better information to inform management of the stocks.</p>
Principle 2 Bycatch, protected species and	1 of 12*	3 of 12*	0 of 12*	<p>Although there has been no formal ecological risk assessment for the fishery, risks to non-target species are likely to be very low and the fishery's Performance Measurement System contains some measures to monitor and manage impacts.</p>

ecological communities * Eight of the 12 assessment criteria are not applicable.				The fishery is highly targeted with no bycatch or discarding and there are no threatened ecological communities in the area of the fishery.  Given the important role that sea cucumbers play in ecosystem health, avoiding overfishing and localised depletion are particularly important. The Department has proposed conditions 4-7 on the Part 13A approval to ensure there is better information on stocks to manage these risks.
Principle 2 Ecosystem impacts	1 of 5	3 of 5	1 of 5	Although there has been no formal ecological risk assessment for the fishery the fishery's Performance Measurement System contains some measures to monitor and manage impacts.  Given the important role that sea cucumbers play in ecosystem health, avoiding overfishing and localised depletion are particularly important. The Department has proposed conditions 4-7 on the Part 13A approval to ensure there is better information on stocks to manage these risks.
<b>EPBC requirements</b>				
Part 12 – Bioregional plans				Meets requirements.
Part 13 – Protected species and communities				Meets requirements.
Part 13A – International trade of wildlife				Meets requirements subject to conditions 4-7 on the Part 13A approval.
Part 16 – Precautionary principle				Meets requirements subject to conditions 4-7 on the Part 13A approval.

## ASSESSMENT HISTORY

Information on previous assessments for the Queensland Sea Cucumber Fishery (East Coast) (formerly the Queensland East Coast Bêche-de-mer Fishery) is available on the Department's website at <http://www.environment.gov.au/marine/fisheries/qld/sea-cucumber>.

**1st assessment:** Wildlife Trade Operation (WTO) approval granted for 6 December 2004 - 21 December 2007, subject to three conditions.

**2nd assessment:** Wildlife Trade Operation (WTO) approval granted for 19 December 2007 – 21 December 2010, subject to three conditions. The WTO approval was amended on 10 April 2008 to account for a change in legislation. Conditions and WTO duration were unamended. The approval was subsequently extended twice via the List of Exempt Native Specimens until 10 June 2011.

**3rd assessment:** Wildlife Trade Operation (WTO) approval granted for 18 July 2011 – 17 July 2014, subject to four conditions.

**4th assessment:** Wildlife Trade Operation (WTO) approval granted for 16 July 2014 – 13 July 2017, subject to three conditions. Approval was subsequently extended twice via the List of Exempt Native Specimens until 30 March 2018.

**5th assessment:** The fishery was granted export approval via the List of Exempt Native Specimens for 23 March 2018 – 28 August 2025.



## SECTION 2: SUMMARY OF ISSUES AND CONDITIONS

Part 13A – Issue	Proposed Part 13A Conditions
<p><b><u>General Management</u></b></p> <p>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 by-product, bycatch, EPBC Act protected species or the ecosystem.</p>	<p><b>Condition 1</b></p> <p>The Queensland Department of Agriculture and Fisheries must ensure the operation of the Queensland Sea Cucumber Fishery (East Coast) is carried out in accordance with the management arrangements specified in the Queensland <i>Fisheries Act 1994</i>, Fisheries (General) Regulation 2019, Fisheries (Commercial Fisheries) Regulation 2019 and the Fisheries Declaration 2019.</p> <p><b>Condition 2</b></p> <p>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 Sea Cucumber Fishery (East Coast) management arrangements, so the Department of Agriculture, Water and the Environment can determine if these changes affect the assessment against which <i>Environment Protection and Biodiversity Conservation Act 1999</i> decisions are made.</p>
<p><b><u>Annual Reporting</u></b></p> <p>It is important that the Queensland Department of Agriculture and Fisheries produce and present reports to the Department annually. Annual reports enable the performance of the fishery and progress in implementing the conditions and other managerial commitments to be monitored and assessed throughout the life of the export approval. Annual reports should be in accordance with Appendix B to the 'Guidelines for the Ecologically Sustainable Management of Fisheries – 2<sup>nd</sup> 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</p>	<p><b>Condition 3</b></p> <p>The Queensland Department of Agriculture and Fisheries must provide annual reports on the Queensland Sea Cucumber Fishery (East Coast) to the Department of Agriculture, Water and the Environment every 12 months, from the date of the approval of the wildlife trade operation. These reports must be consistent with Appendix B of the <i>Guidelines for the Ecologically Sustainable Management of Fisheries – 2<sup>nd</sup> Edition</i>.</p>

<p>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 <a href="http://www.environment.gov.au/resource/guidelines-ecologically-sustainable-management-fisheries">http://www.environment.gov.au/resource/guidelines-ecologically-sustainable-management-fisheries</a>.</p>	
<p><b><u>Stock assessments and population surveys</u></b></p> <p>It is important that all stocks are managed in a precautionary way. Stock assessments can help understand the extent to which stocks can sustain impacts from activities such as commercial fishing.</p> <p>Assessments should be completed regularly and consider the full extent of the impacts on stocks, including impacts from other fisheries, to ensure the stocks remain sustainable. Assessments should account for changes to fishing capacity (technological, spatial and temporal) that may affect their findings.</p> <p>The Department notes that QDAF established a <a href="#">Sustainable Fisheries Expert Panel</a> in 2017 which includes members with expertise in stock assessment, fish biology and fisheries management. The panel provides independent expert advice to QDAF on best practice fisheries management, sustainable limits and reference points for individual fisheries and species, the adequacy of proposed fishery harvest strategies, and data, research and monitoring needs.</p> <p>The Department also notes that QDAF plans to determine minimum data standards for all commercial fisheries under the Sustainable Fisheries Strategy. This includes developing guidelines for how sustainable catch limits should be set as part of a harvest strategy, determining how to divide fisheries into smaller units to apply management arrangements at the appropriate scale, setting catch limits and defining the minimum data requirements to set catch limits, using improved data to undertake regular stock assessments (at least every two years according to the Queensland Government's Sustainable Fisheries Strategy).</p> <p>The Department's role as Australia's CITES Scientific Authority is to provide advice on whether export will or will not be detrimental to the survival of the species (following a determination known as a 'non-detriment finding'). The Scientific Authority advises the</p>	<p><b>Condition 4</b></p> <p>The Queensland Department of Agriculture must design a survey to estimate population biomass and density of Black Teatfish (<i>Holothuria whitmaei</i>) in waters within the area of Queensland Sea Cucumber Fishery (East Coast) south of 19 degrees south. The proposed transect locations will be detailed in the survey design.</p> <p>This fishery-independent design approach must be peer-reviewed by <b>31 January 2021</b>. The Zone 2 survey must be completed and results published by <b>31 July 2021</b>.</p> <p><b>Condition 5</b></p> <p>By <b>30 April 2021</b>, the Queensland Department of Agriculture and Fisheries must conduct a feasibility study for divers and/or remotely operated vehicles to conduct a fishery-independent survey of the White Teatfish (<i>Holothuria fuscogilva</i>) population in the area of Queensland Sea Cucumber Fishery (East Coast) that will:</p> <ul style="list-style-type: none"> <li>• Be suitable to estimate population biomass and density for the species;</li> <li>• Be peer reviewed;</li> <li>• Provide information to evaluate the use of survey data in a stock assessment; and</li> </ul>

Management Authority of measures to be taken to limit exports in order to maintain the species throughout their range at a level consistent with their role in the ecosystems

CITES Parties have adopted that the best available scientific information be the basis for non-detriment findings and that when CITES Parties establish national export quotas, they are asked to do so based on a non-detriment finding made by their Scientific Authority. Black Teatfish (*Holothuria whitmaei*) and White Teatfish (*H. fuscogilva*) have been listed under CITES Appendix II, with implementation taking effect on 28 August 2020.

#### White Teatfish

Koopman and Knuckey (unpublished, 2020 - enclosed) reported that there is little information on the stock structure of White Teatfish in northern Australia and indications of potential for presence of several cryptic species in a White Teatfish complex. The Status of Australian Fish Stocks Report for White Teatfish ([Roelofs et al. 2018](#)) lists this species at four management unit levels:

1. Torres Strait Bêche-de-mer Fishery (Commonwealth);
2. Coral Sea Fishery (Commonwealth);
3. Trepan Fishery (Northern Territory); and
4. East Coast Sea Cucumber Fishery (Queensland).

The Queensland Sea Cucumber Fishery (East Coast) started as a Sandfish fishery, moving on to Black Teatfish as the stocks of Sandfish declined. Declining catch rates of Black Teatfish and concerns over the status of the population led to the closure of that species in October 1999. Effort in the fishery then switched to White Teatfish and a TAC of 127 tonnes (increased to 158 tonnes for one season) was introduced in 1999. This quota has been reduced over the years in response to concerns about the sustainability of the stock and as parts of the fishery have been protected from fishing through Great Barrier Reef Marine Park zoning ([Skewes et al., 2014](#)). The TAC for White Teatfish is now 53 tonnes, split between northern and southern parts of the fishery.

- If feasible, include a proposed date for completion and publication of survey results.

The results of the White Teatfish survey feasibility study must be made publicly available by **31 July 2021**.

#### **Condition 6**

By **30 September 2021**, the Queensland Department of Agriculture and Fisheries must complete and publish stock assessment(s) for the Black Teatfish (*Holothuria whitmaei*) and White Teatfish (*H. fuscogilva*) in the Queensland Sea Cucumber Fishery (East Coast). The stock assessment for Black Teatfish must be based on the results of the survey undertaken as part of Condition 4.

#### **Condition 7**

By **30 September 2021**, the Queensland Department of Agriculture and Fisheries are to:

- a. maintain the Total Allowable Catch for White Teatfish (*Holothuria fuscogilva*) in the Queensland Sea Cucumber Fishery (East Coast) at no more than 53 tonnes;
- b. maintain the Total Allowable Catch for Black Teatfish (*Holothuria whitmaei*) in the Queensland Sea Cucumber Fishery (East Coast) at no more than 30 tonnes; and,
- c. provide a report to the CITES Scientific Authority of Australia, as part of the annual reporting referred to in Condition 3, on the amount of Black Teatfish and White Teatfish harvested in the Queensland Sea

In 2014 QDAF used a management strategy evaluation (MSE) approach to evaluate the benefits of the rotational harvest strategy (the Rotational Zoning Strategy - RZS) utilised to manage effort in this fishery through a Memorandum of Understanding with the industry. The primary aim of the MSE was to test the RZS for mitigating localised depletion, reducing risks to overall sustainability and maximising efficiency and profits of the fishery.

While empirical validation of the results of the modelling study was complicated for this fishery because of a number of factors, including changes in fisheries legislation and target species, the MSE found that populations were generally stable across all simulations in the closed areas, except in the case of the Black Teatfish and White Teatfish which were subject to heavy historic fishing. The MSE concluded that the risk of depletion for most reef associated species under most scenarios tested in the MSE was low. However, the study recommended that highly targeted species such as Black Teatfish and White Teatfish be managed with caution and more data gathered. In particular, the MSE recommended addressing important information gaps for higher risk species such as Burrowing Blackfish and White Teatfish (Black Teatfish was closed at the time of the study); including the density of White Teatfish throughout the fishery.

#### Black Teatfish

As reported in Koopman and Knuckey (unpublished, 2020 - enclosed), current literature suggests that Black Teatfish populations on the Great Barrier Reef (GBR) are highly connected along the entire length of the GBR and that there is high to medium confidence that there is a strong connectivity between Black Teatfish populations between the GBR, the Coral Sea and Torres Strait through passive dispersal.

Knuckey and Koopman (unpublished, 2016) conducted a survey in 'Zone 1' of the Queensland Sea Cucumber Fishery (East Coast) during 2015 to estimate relative (available) biomass and density of Black Teatfish. The survey was commissioned by industry and designed in collaboration with QDAF and the Great Barrier Reef Marine Park Authority with independent peer review by CSIRO experts.

Cucumber Fishery (East Coast). by weight, the number of individuals and locations of harvest.

The results of this survey showed that populations on fished reefs were not significantly different from the population on closed reefs and this allowed the reopening of the fishery in accordance with QDAF's PMS management system for the fishery. The opening of the fishery resulted in little commercial fishing taking place in 'Zone 1' after the survey. A fishery-independent design approach now needs to be developed for a 'Zone 2' (area of the fishery south of 19 degrees south) survey (and peer-reviewed) with a population survey undertaken in the short-term as fishing effort is concentrating in this Zone. QDAF will then need to undertake a stock assessment and it will be important to design a fishery-independent program to monitor population trend for both Zones of the fishery.

While monitoring fishing through catch data is generally accepted as adequate, particularly in instances where there are no concerns with the species vulnerability or stock status, this is insufficient for assessing the stocks of the two Teatfish species listed under CITES and to monitor, longer term, whether fishing will not be detrimental to the survival of a taxon to which the operation relates; or the conservation status of a taxon to which the operation relates as required by the EPBC Act.

Caution should be exercised when using catch-per-unit-effort as a measure of stock health for sea cucumber species as the targeting of sedentary stocks in a multi-species-fisheries can result in catch-per-unit-effort being affected by factors other than abundance ([Purcell, 2010](#)). Further, while the RZS can provide the benefits outlined above, it also decreases the usefulness of catch data as an indicator of stock health as it may mask signs of serial depletion because fishing moves to new grounds within fishing zones.

Therefore, the Department recommends that conditions be applied to the short-term Part 13A approval to ensure these important undertakings are completed as soon as possible, that there are regular and robust assessment of stocks in the fishery, based on fishery-independent data and that all species are managed in a precautionary way.

### SECTION 3: DETAILED ANALYSIS AGAINST THE GUIDELINES

Guidelines criteria	Comment
<b>THE MANAGEMENT REGIME</b>	
The management regime may include a statutory or non-statutory management arrangements, policies and programs. The regime should:	
Be documented, publicly available and transparent.	<p><b>Partly meets – Arrangements are documented and most are publicly available and transparent</b></p> <p>The management arrangements for the Queensland Sea Cucumber Fishery (East Coast) are outlined on the QDAF website at <a href="https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/fisheries-profiles/commercial-harvest-fisheries/sea-cucumber">https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/fisheries-profiles/commercial-harvest-fisheries/sea-cucumber</a>.</p> <p>Further detail is also contained in publicly available legislation: the Queensland <i>Fisheries Act 1994</i>, Fisheries (General) Regulation 2019, Fisheries (Commercial Fisheries) Regulation 2019 and the Fisheries Declaration 2019. Permits issued by QDAF, and the Great Barrier Reef Marine Park Authority afford access to fish in the fishery.</p> <p>Some of the management arrangements are implemented through a memorandum of understanding between QDAF and the Queensland Sea Cucumber Industry Association. The MoU was made available to the Department for assessment, but it is not publicly available.</p>

Be developed through a consultative process providing opportunity to all interested and affected parties, including the general public.

**Meets – Consultative processes involve a wide range of stakeholders and the general public**

The management arrangements for the fishery have been developed in consultation with industry and other stakeholders, and where substantive management changes are proposed, Regulatory Impact Statements are released for public comment. These statements set out proposed changes, their justification and alternative options.

A stakeholder advisory body, the *Sea Cucumber Working Group* includes members representing the commercial fishing industry, scientific community and management agencies, including a member from the Great Barrier Reef Marine Park Authority. The terms of reference and communiques from working group meetings are available at <https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/fishery-working-groups/sea-cucumber-working-group>.

The working group provides operational advice to QDAF. This includes assisting with the development and implementation of harvest strategies, considering information and providing advice on fishery performance and management actions. The working group also provides advice on reforms needed to achieve the established management objectives for the fishery and assists with identifying ways to best manage broader ecosystem impacts of fishing. The working group provides advice on emerging issues (e.g. compliance, data, legislation, research), and assists with disseminating factual information back to other stakeholders in the fishery.

Ensure that a range of expertise and community interests are involved in individual fishery management committees and during the stock assessment process.

**Partly meets – A range of expertise and interests are involved but very few stock assessments have been undertaken**

Stock assessments use mathematical modelling of time series data to estimate the remaining biomass of the stock relative to unfished biomass. They predict suitable target and trigger reference points to support harvest strategies. Stock assessments can also quantify the level of uncertainty in estimates and predictions.

The Sea Cucumber Fishery Working Group has discussed the requirements and time frames for sea cucumber stock assessments, but stock assessments have not yet been completed for any species in this fishery. This working group includes members representing the commercial fishing industry, scientific community and management agencies, including a member from the Great Barrier Reef Marine Park Authority. The working group also assists with disseminating factual information back to other stakeholders in the fishery.

A [Sustainable Fisheries Expert Panel](#) was established in July 2017. The panel includes an independent chair and members selected based on their expertise in stock assessment, fish biology, fisheries management and or resource allocation, threatened species, economics and social and or cultural matters. The panel provides independent expert advice to QDAF on best practice fisheries management and implementation of the Sustainable Fisheries Strategy for all Queensland fisheries, including the Sea Cucumber Fishery (East Coast). The panel provides input into the methods used for stock assessments and advises on sustainable limits and reference points for individual fisheries and species, the adequacy of proposed fishery harvest strategies, and data, research and monitoring needs. **However, these functions have not yet been provided for the Sea Cucumber Fishery (East Coast).**



Be strategic, containing objectives and performance criteria by which the effectiveness of the management arrangements are measured.

**Meets – contains a strategic management framework including objectives and performance criteria for measuring management effectiveness**

QDAF's [Performance Measurement System](#) (PMS) includes objectives, performance indicators, performance measures and management responses designed to:

- Maintain stocks at sustainable levels, minimise risks of unsustainable harvest and recover stocks that are considered to have been fished to below sustainable levels;
- Protect endangered and threatened species;
- Minimise fishery impacts on the ecosystem; and
- Ensure adequate compliance.

Be capable of controlling the level of harvest in the fishery using input and/or output controls.

**Partly meets – The level of harvest is controlled by various input and output controls but some arrangements are voluntary**

Harvest is controlled by limits on the number of licences available to fish in the fishery (18), limits on the number of fishers (10) and boats (5) able to fish under each licence, as well as limits on where and when the licences can be used, size limits (except for Black Teatfish) and catch limits for different species. Some of these arrangements are specified in the Queensland [Fisheries \(Commercial Fisheries\) Regulation 2019](#), while other arrangements are in permit conditions, a [Performance Measurement System](#) (PMS) and a memorandum of understanding (MOU) between fishers and QDAF.

QDAF's PMS is designed to ensure catches are no more than 10 per cent of the estimated biomass and, when regular stock surveys are undertaken (which they have not been), for biomass to not fall by more than 15 per cent between surveys.

The PMS specifies 'review reference points' or 'catch triggers' which outlines the permissible amount of catch for each species before further investigation is required. These catch triggers are reflected in the conditions of each fishing permit and effectively limit catch to these specified amounts. Management responses outlined in the PMS would be applied by QDAF on a case-by-case basis if a review reference point (RRP) was triggered. The management responses include:

- Increasing the RRP (the RRP serves as a catch limit via permit conditions);
- Committing to intervention/further action if RRP is reached in a subsequent year;
- Allow fishing above RRP to continue for next quota year and require that it remain below RRP after that until a resource assessment is delivered by industry and spatially defined catch limit(s) endorsed by the Fishery Working Group (FWG);
- Fishing to return to levels below RRP until a resource assessment (with methodology endorsed by the FWG) is delivered by industry and spatially defined catch limit(s) endorsed by the FWG;
- Fishing for species to cease in certain area(s) (key targeted area(s)) and fishing in all other areas to continue below RRP while a resource assessment (with methodology endorsed by the FWG) is delivered by industry for the targeted area;
- Fishing for species to cease until a resource assessment (with methodology endorsed by the FWG) is delivered by industry and spatially defined catch limit(s) endorsed by the FWG.

Management responses are also outlined in the PMS which provides certainty if any aspect of the MOU between fishers and QDAF is not adhered to. For example, if allowed effort in each rotation zone exceeds the allowed 15 days per zone, which can be monitored through vessel tracking.

The PMS was subject to [Management Strategy Evaluation](#) testing by the FRDC and CSIRO, and the management regime was found to be working effectively in mitigating sustainability risks from fishing ([Skewes et al. 2014](#)).

QDAF is progressing further fisheries reform to make management of this fishery more efficient and streamlined. These changes require legislative reform and are being considered by government as part of a broader Queensland fisheries reform process.

The proposed reforms for the Sea Cucumber Fishery include:

- making the minimum size limits part of an industry standard operating procedure
- making total allowable catch limits as declared quotas in legislation instead of licence conditions; and
- creating a harvest strategy which covers:
  - the Rotational Zoning Strategy aspect of the MOU
  - sectoral catch shares
  - catch triggers for 'tier 2 species' (to be defined in the harvest strategy) and the management responses outlined in the PMS.

Commercial fishers are required to report landed catch and effort to QDAF through logbooks and other quota reporting systems.

Species that are subject to catch limits must be reported using QDAF's Automated Integrated Voice Response (AIVR) system. The AIVR system requires fishers to report their catch prior to landing, and this helps to facilitate compliance inspections and enforcement of catch limits. Mandatory use of Vessel Monitoring Systems (VMS) also provide information to QDAF about vessel locations and activities.

Catch can also be verified using the Beche-de-mer Buyers Reporting Logbook ([BB02](#)), which provide more accurate logs of weighed processed product than fisher's logbooks or AIVR reported weights.

This data allows catch limits to be monitored and managed.

Contain the means of enforcing critical aspects of the management arrangements.

**Meets – Effective compliance and enforcement measures are in place**

QDAF use a Compliance Risk Assessment framework to develop state and regional operation plans and deliver their compliance program. An overview of this program is available on the [QDAF website](#).

Vessel Monitoring Systems (VMS) are used on all Queensland commercial fishing vessels to track their location, validate reported fishing activity, and enhance QDAF's capacity to undertake vessel inspections. All vessels including tenders are required to operate VMS in the Queensland Sea Cucumber Fishery (East Coast). Fishers are also required to report all retained catch of species that are subject to catch limits using QDAF's AIVR system. This helps facilitate compliance inspections where necessary.

All catch must be landed to authorised fish receivers ('Beche-de-mer Buyers'), who verify landed catch weights and report their data independently to QDAF.

Provide for the periodic review of the performance of the fishery management arrangements and the management strategies, objectives and criteria.

#### **Meets – Performance review framework contained in Performance Measurement System**

QDAF's [Performance Measurement System](#) (PMS) is designed to ensure catches are no more than 10 per cent of the estimated biomass and when regular stock surveys are undertaken (which they are presently not), for biomass to not fall by more than 15 per cent between surveys.

The PMS specifies 'review reference points' or 'catch triggers' which outline the permissible amount of catch for each species before further investigation is required. These catch triggers are reflected in the conditions of each fishing permit and effectively limit catch to these specified amounts.

The PMS has undergone an independent [Management Strategy Evaluation](#) by the FRDC and CSIRO and has been determined to be effective ([Skewes et al. 2014](#)). Its implementation is also supported by the Fishery Working Group, which includes members with scientific and fishery expertise. The management regime was found to be working effectively in mitigating sustainability risks from fishing.

QDAF is progressing further fisheries reform to make management of this fishery more efficient and streamlined. These changes require legislative reform and are being considered by the Queensland Government as part of a broader Queensland fisheries reform process.

The proposed reforms for the Sea Cucumber Fishery include:

- making the minimum size limits part of an industry standard operating procedure
- making total allowable catch limits as declared quotas in legislation instead of licence conditions; and
- creating a harvest strategy which covers:
  - the Rotational Zoning Strategy aspect of the Memorandum of Understanding between QDAF and the Queensland Sea Cucumber Association
  - sectoral catch shares
  - catch triggers for 'tier 2 species' (to be defined in the harvest strategy) and the management responses outlined in the PMS.

<p>Be capable of assessing, monitoring and avoiding, remedying or mitigating any adverse impacts on the wider marine ecosystem in which the target species lives and the fishery operates.</p>	<p><b>Partly meets – monitoring and mitigation measures outlined in a Performance Measurement System, but no ecological risk assessment has been completed</b></p> <p>Although an ecological risk assessment has not yet been completed for the fishery, the risks are likely to be relatively low, provided stocks are not overfished and ecological processes are not compromised. The Performance Measurement System is likely to provide enough management rigor until the ecological risk assessment is completed.</p> <p>QDAF has undertaken to complete ecological risk assessments for all commercial fisheries as part of its Sustainable Fisheries Strategy 2017-2027.</p>
<p>Requires compliance with relevant threat abatement plans, recovery plans, the National Policy on Fisheries Bycatch, and bycatch action strategies developed under the policy.</p>	<p><b>Meets – Compliant with all relevant plans</b></p> <p>Given the fishery operates in both state and Commonwealth areas, the management arrangements for the fishery are required to comply with all relevant Commonwealth threat abatement plans, recovery plans and bycatch policies or strategies. This includes the <a href="#">Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans</a> and the <a href="#">Recovery Plan for Marine Turtles in Australia</a>.</p> <p>Although the fishery's management arrangements are not <i>inconsistent</i> with these plans, they do not specifically require fishers to comply with plans, policies or strategies.</p> <p>Management arrangements for the fishery prohibit the retention of species listed under the EPBC Act, and all interactions with these species are required to be reported using QDAF approved logbooks. The Department recommends that all relevant threat abatement plans, recovery plans, bycatch policies and action strategies continue to be considered in developing management arrangements and assessing and mitigating ecological risks.</p>

**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.

**Partly meets – data is collected by fishery dependent and fishery-independent means but information on stocks is very limited and some species are not reported to species-level**

Catch and effort in the fishery is monitored from multiple fishery-dependent and independent sources. Vessel Monitoring Systems are used on all commercial fishing vessels, including tenders to track their location and validate reported fishing effort. Vessel Monitoring Systems also enhance QDAF's capacity to undertake inspections and in doing so, validate landed catch data. Vessel Monitoring Systems do not provide any insight into protected species interactions.

Any protected species interactions are required to be reported using QDAF's [SOCl logbooks](#).

All licence-holders in the fishery are required to use QDAF approved [BD04](#) logbooks to report the landed catch weights for each species, fishing times, locations of catch and effort and fishing equipment used (i.e. divers and diving hours). These logbooks provide for eight species or species groups to be listed, while other species can be listed with the appropriate species code in another column. Not all species are required to be reported to species-level. Black Teatfish is not one of the eight species listed on the main page of the logbook and so it is possible that fishers could report this species and others not listed on the main page, as an undifferentiated and unidentified 'other species'. QDAF's QFish database does not contain data on sea cucumber catches to determine whether this may have been an issue. However, licence holders in the fishery are experienced and have demonstrated strong custodianship for Black Teatfish in the past.

Logbook data is commonly used for further data analysis on catch per unit effort to monitor fishery performance.

Fishers are also required to use QDAF's Automated Interactive Voice Recordings (AIVR) system to report their catch as they come into port. This ensures that accurate real time quota usage is known and provides further opportunity for QDAF to undertake compliance inspections.

Catches can also be verified using the Beche-de-mer Buyers Reporting Logbook ([BB02](#)), which functions in the same way as a Catch Disposal Record (CDR). These logbooks are accurate logs of weighed processed product and provide a more accurate data source than logbook weight data or AIVR reported weights, which are both on-board estimates.

There are currently no stock assessments for any species in the fishery and very little information on the biology, density or biomass of the stocks. The Department recommends condition 4-7 be attached



	<p>to the proposed Part 13A approval that require stock assessments to be undertaken to improve understanding of the stocks and to ensure management arrangements remain effective. These conditions are targeted at CITES-listed Black and White Teatfish species, but may, in future, be extended to remaining species in the fishery.</p>
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## ***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 – No stock assessments have been undertaken**

A stock status assessment has been completed for White Teatfish (*Holothuria fuscogilva*) but this is not the same as a modelled stock assessment. Stock status assessments assign the stock to a status category using agreed criteria and available data describing fishing pressure and biomass.

Stock assessments use mathematical modelling of time series data to estimate the remaining biomass of the stock relative to unfished biomass and predict suitable target and trigger reference points to support harvest strategies. Stock assessments can also quantify the level of uncertainty in estimates and predictions. There are ongoing discussions in the Sea Cucumber Fishery Working Group to clarify the requirements and time frames for sea cucumber stock assessments.

The total allowable commercial catch limit (TACC) for Black Teatfish was reduced to 0 tonnes in 1999 following concerns raised by industry members in 1998 about declining stocks. In 2015 the Queensland Sea Cucumber Industry Association (QSCIA) commissioned a survey to assess the extent of any recovery of Black Teatfish stocks. The survey design was endorsed by QDAF's Scientific Advisory Group and was conducted in late 2015. The survey found that Black Teatfish stocks in the northern part of the fishery had recovered to levels above 70% of unfished biomass. The southern part of the fishery was not surveyed due to cost and time constraints (Knuckey and Koopman 2019). Following an industry liaison meeting in June 2016, the QSCIA requested that the TACC for Black Teatfish be increased from 0 tonnes to 28.6 tonnes (representing <10% of unfished biomass) in accordance with the survey results, and for the harvest to be taken within the constraints of the rotational harvest strategy specified in its memorandum of understanding with QDAF.

The Great Barrier Reef Marine Park Authority did not support the re-opening of the fishery, citing concern over coral bleaching events and their possible impacts on sea cucumber stocks. The proposal to re-open the fishery was subsequently not supported by QDAF and industry were advised of this decision in February 2017. The proposal to re-open fishing for Black Teatfish was subsequently discussed by the Sea Cucumber Fishery Working Group and referred to QDAF's Sustainable Fisheries Expert Panel (FEP) for advice in July 2018. The FEP supported re-opening fishing for Black Teatfish based on the survey outcomes and the [Management Strategy Evaluation](#) (MSE) undertaken by FRDC and CSIRO on the fishery's rotational harvest strategy ([Skewes et al. 2014](#)). The FEP recommended the fishery be managed in a harvest strategy framework and in accordance with recommendations in the MSE for more research and demonstrably conservative catch limits. The fishery working group has since worked with QDAF to develop a draft harvest strategy for the fishery and identified a need for

stock assessments to support the strategy. No date has been set for developing stock assessment programs and discussions are expected to be guided by implementation of the harvest strategy.

There were spatially limited resource assessments for Burrowing Blackfish in the mid to late 2000's but these were not true stock assessments and were not published. The findings were however used to develop spatially explicit catch triggers for 'Burrowing Blackfish zones'. These triggers were reviewed by QDAF's then Scientific Advisory Committee and are now specified in the memorandum of understanding between the Queensland Sea Cucumber Industry Association and QDAF. These arrangements are not specified in permit conditions, legislation or any other instrument and are therefore not enforceable.

There are currently no stock assessments for any other species in the fishery and very little information on the biology, density or biomass of the stocks. The Department recommends conditions 4-7 be attached to the proposed Part 13A approval. These conditions require stock assessments to undertaken to improve understanding of the stocks and to ensure management arrangements remain effective. These conditions are targeted at CITES-listed Black and White Teatfish species but could be extended to remaining species in the fishery in future.

**1.1.3** The distribution and spatial structure of the stock(s) has been established and factored into management responses.

**Does not meet – There is very little information on distribution, abundance and stock structure of the target species and no stock assessments have been completed for any species**

QDAF's [Performance Measurement System](#) (PMS) provides for catch limits to be set at finer spatial scales than are currently used. This requires target species to be surveyed at 3-yearly intervals. Stock are instead managed at a whole-of-fishery scale using Review Reference Points, which are effectively catch limits prescribed in permit conditions. Regular or recent surveys of target species have not been completed for any species in the fishery.

A stock survey undertaken in late 2015 found Black Teatfish in the northern part of the fishery had recovered to levels above 70% of unfished biomass. The southern part of the fishery was not surveyed due to cost and time constraints (Knuckey and Koopman 2019).

The status of White Teatfish is assessed every two years as part of the national Status of Australian Fish Stocks (SAFS) reporting process, undertaken by the Fisheries Research and Development Council (FRDC). The last SAFS assessment, in 2018, considered available information on the species' distribution and preferred habitats. White Teatfish is broadly distributed throughout the tropical Indo-Pacific, with populations likely in all Northern-Australian states and territories. However, very little information is available on the distribution, abundance and stock structure of White Teatfish in northern Australia. This stock status assessment found White Teatfish stocks in the fishery were sustainable ([Roelofs et al. 2018](#)).

QDAF has entered into a memorandum of understanding with the Queensland Sea Cucumber Industry Association, to ensure sustainable and planned distribution of fishing effort and to avoid localised depletion. The MOU outlines a Rotational Zoning Strategy which divides the fishery up into 156 zones with 52 zones open to fishing every year. Each zone may only be fished for a maximum of 15 days every three years. Each licence holder's percentage of quota held in the fishery determines the number of rotational zones available to them – e.g. 10 percent of quota affords access to 10 percent of available zones.

Additional zones are available primarily for harvesting Burrowing Blackfish. These are called Blackfish Zones (BFZs) and the following rules and limits apply to these:

- No time limit applies in these zones when catching Burrowing Blackfish;
- 15 days per operator are available in each zone to take species other than Burrowing Blackfish in the first year of a rotation cycle;

- Only Burrowing Blackfish may be taken from BFZs in the second and third years of the cycle (i.e. no other species).
- The operator who identifies the BFZ has exclusive use of it for the first year.
- Three BFZs were available from July 2004, with their TACC based on scientifically peer reviewed resource surveys conducted during that time. The Lizard Island TACC was set at 75 tonnes, Bunker Reef at 60 tonnes and Gould Reef at 45 tonnes.
- During a single fishing trip, a boat may fish in either the northern zone (north of 19° south) or the southern zone (south of 19° south, including Marion Reef) of the fishery area, but not in both.

The BFZs are specific locations that are set aside that have high abundances of Burrowing Blackfish. There are specific allowable catch limits for each of these zones. The allowable catch limits for Burrowing Blackfish is 225 tonnes across these regions, which is included as part of the other species sea cucumber basket quota of 308 tonnes.

There were spatially limited resource assessments for Burrowing Blackfish in the mid to late 2000's but these were not true stock assessments and were not published. The findings were however used to develop spatially explicit catch triggers for 'Burrowing Blackfish zones'. These triggers were reviewed by QDAF's then Scientific Advisory Committee and are now specified in the memorandum of understanding between the Queensland Sea Cucumber Industry Association and QDAF. These arrangements are not specified in permit conditions, legislation or any other instrument and are therefore not enforceable.

There are currently no stock assessments for any species in the fishery and very little information on the biology, density or biomass of the stocks. The Department recommends conditions 4-7 be attached to the proposed Part 13A approval that require stock assessments to be undertaken to improve understanding of the stocks and to ensure management arrangements remain effective. These conditions are targeted at CITES-listed Black and White Teatfish species but could be extended to remaining species in the fishery in future.

<p><b>1.1.4</b> There are reliable estimates of all removals, including commercial (landings and discards), recreational and indigenous, from the fished stock. These estimates have been factored into stock assessments and target species catch levels.</p>	<p><b>Partially meets – reliable catch data is available, but no stock assessments have been undertaken</b></p> <p>Catches are reported via logbooks and through reports prior to landing. These landed catches are then verified by authorised fish receivers and reported to QDAF using separate logbooks.</p> <p>Vessel Monitoring Systems are used to monitor fishing activity, validate reported fishing and facilitate compliance inspections.</p> <p>Recreational harvest estimates are collected through routine state-wide surveys, but information on Indigenous harvest is unknown. Both recreational and Indigenous harvest is thought to be negligible.</p> <p>All available information on catches by all commercial and non-commercial sectors is considered in assessing the stocks and setting harvest limits. However, very few stocks have undergone stock assessment.</p>
<p><b>1.1.5</b> There is a sound estimate of the potential productivity of the fished stock/s and the proportion that could be harvested.</p>	<p><b>Does not meet – productivity estimates are not available and have not been used to inform harvest controls</b></p> <p>There have been no stock assessments and there is very limited information available on the potential productivity of the fished stocks or the proportion of these stocks that could be harvested.</p> <p>There are currently no stock assessments for any species in the fishery and very little information on the biology, density or biomass of the stocks. The Department recommends conditions 4-7 be attached to the proposed Part 13A approval to improve understanding of the stocks and to ensure management arrangements remain effective. These conditions are targeted at CITES-listed Black and White Teatfish species but could be extended to remaining species in the fishery in future.</p>

***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.

**Meets – various target and limit reference points in place that trigger management actions**

QDAF's [Performance Measurement System](#) (PMS) includes objectives, performance indicators, performance measures and management responses designed to:

- Maintain stocks at sustainable levels, minimise risks of unsustainable harvest and recover stocks that are considered to have been fished to below sustainable levels;
- Protect endangered and threatened species;
- Minimise fishery impacts on the ecosystem; and
- Ensure adequate compliance.

The PMS specifies 'review reference points' (RRPs or 'catch triggers') which outline the permissible amount of catch for each species before further investigation is required. These catch triggers are reflected in the conditions of each fishing permit and effectively limit catch to these specified amounts.

There are a variety of management responses outlined in the PMS, which would be applied by QDAF on a case-by-case basis if a review reference point was triggered. The management responses are listed below from least to most severe.

- Increase the review reference point;
- Commit to intervention/further action if a RRP is reached in a subsequent year;
- Allow fishing above RRP to continue for next quota year and require that it remain below RRP after that until a resource assessment is delivered by industry and spatially defined catch limit(s) endorsed by the Fishery Working Group (FWG);
- Fishing to return to levels below RRP until a resource assessment (with methodology endorsed by the FWG) is delivered by industry and spatially defined catch limit(s) endorsed by the FWG;
- Fishing for species to cease in certain area(s) (key targeted area(s)) and fishing in all other areas to continue below RRP while a resource assessment (with methodology endorsed by the FWG) is delivered by industry for the targeted area;
- Fishing for species to cease until a resource assessment (with methodology endorsed by the FWG) is delivered by industry and spatially defined catch limit(s) endorsed by the FWG.

	Management responses are also outlined in the PMS if any aspect of the memorandum of understanding between fishers and QDAF is not adhered to. An example of this would be allowed effort in each rotation zone exceeding the allowed 15 days per zone, which can be monitored through vessel tracking.
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**1.1.7** There are management strategies in place capable of controlling the level of take.

**Partly meets – Harvest controls are likely to be effective**

Harvest is controlled by limits on the number of licences available to fish in the fishery (18), limits on the number of fishers (10) and boats (5) able to fish under each licence, as well as limits on where and when the licences can be used, size limits (except for Black Teatfish) and catch limits for different species. Some of these arrangements are specified in the Queensland [Fisheries \(Commercial Fisheries\) Regulation 2019](#), while other arrangements are in permit conditions or outlined in the [Performance Measurement System](#) (PMS) and the memorandum of understanding (MOU) between fishers and QDAF.

QDAF's [Performance Measurement System](#) (PMS) is designed to ensure catches are no more than 10 per cent of the estimated biomass and for biomass to not fall by more than 15 per cent between surveys. This relies on there being regular stock surveys, which there are not at present.

The PMS specifies 'review reference points' or 'catch triggers' which outlines the permissible amount of catch for each species before further investigation is required. These catch triggers are reflected in the conditions of each fishing permit and effectively limit catch to these specified amounts.

There are a variety of management responses outlined in the PMS, which would be applied by QDAF on a case-by-case basis if a review reference point was triggered. The management responses are listed below from least to most severe.

- Increase the review reference point;
- Commit to intervention/further action if a review reference point (RRP) is reached in a subsequent year;
- Allow fishing above RRP to continue for next quota year and require that it remain below RRP after that until a resource assessment is delivered by industry and spatially defined catch limit(s) endorsed by the Fishery Working Group (FWG);
- Fishing to return to levels below RRP until a resource assessment (with methodology endorsed by the FWG) is delivered by industry and spatially defined catch limit(s) endorsed by the FWG;
- Fishing for species to cease in certain area(s) (key targeted area(s)) and fishing in all other areas to continue below RRP while a resource assessment (with methodology endorsed by the FWG) is delivered by industry for the targeted area;
- Fishing for species to cease until a resource assessment (with methodology endorsed by the FWG) is delivered by industry and spatially defined catch limit(s) endorsed by the FWG.

Management responses are also outlined in the PMS if any aspect of the memorandum of understanding between fishers and QDAF is not adhered to. An example of this would be allowed effort in each rotation zone exceeding the allowed 15 days per zone, which can be monitored through vessel tracking.

The PMS was subject to [Management Strategy Evaluation](#) undertaken by the FRDC and CSIRO, and the management regime was found to be working effectively in mitigating sustainability risks from fishing ([Skewes et al. 2014](#)).

QDAF is progressing further fisheries reform to make management of this fishery more efficient and streamlined. These changes require legislative reform and are being considered by government as part of a broader Queensland fisheries reform process.

The proposed reforms for the Sea Cucumber Fishery include:

- making the minimum size limits part of an industry standard operating procedure
- making total allowable catch limits as declared quotas in legislation instead of licence conditions; and
- creating a harvest strategy which covers:
  - the Rotational Zoning Strategy aspect of the MOU
  - sectoral catch shares
  - catch triggers for tier 2 species and the management responses currently outlined in the PMS.

Commercial fishers are required to report landed catch and effort to QDAF through logbooks and other quota reporting systems.

Species that are subject to catch limits must be reported using QDAF's Automated Integrated Voice Response (AIVR) system. The AIVR system requires fishers to report their catch prior to landing, and this helps to facilitate compliance inspections and enforcement of catch limits. Mandatory use of Vessel Monitoring Systems (VMS) also provide information to QDAF about vessel locations and activities.

Catch can also be verified using the Beche-de-mer Buyers Reporting Logbook ([BB02](#)). These logbooks provide more accurate logs of weighed processed product than fishers logbooks or AIVR reported weights, and are important for monitoring catches against catch limits.

Species minimum size limits are prescribed in the memorandum of understanding between the Queensland Sea Cucumber Industry Association and QDAF, and most of these (except Black Teatfish) are also detailed in permit conditions. However, size limits are difficult to enforce for sea cucumbers

	due to their body form. Dimensions including total length vary considerably depending on water content, recent feeding and how they are being held. The fishery is however highly selective, and fishers generally avoid collecting specimens close to the minimum size (QDAF pers comm 1 September 2020).
<b>1.1.8</b> Fishing is conducted in a manner that does not threaten stocks of by-product species.	<b>Not applicable – the fishery is a hand-collection fishery and is therefore extremely targeted (without bycatch or byproduct)</b>
<b>1.1.9</b> The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	<b>Meets – subject to conditions</b> The management arrangements are sufficiently robust for the period of the proposed approval. However, there are currently no stock assessments for any species in the fishery and very little information on the biology, density or biomass of the stocks. The Department recommends conditions 4-7 be attached to the proposed Part 13A approval to improve understanding of the stocks and to ensure management arrangements remain effective. These conditions are targeted at CITES-listed Black and White Teatfish species but could be extended to remaining species in the fishery in future.
<b>Objective 2</b> - 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.	
<b>Management responses</b>	
<b>1.2.1</b> 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.	<b>Not applicable</b> No stocks in the Queensland Sea Cucumber Fishery (East Coast) have been identified as overfished.

<p><b>1.2.2</b> If the stock is estimated as being at or below the biological and / or effort bottom line, management responses such as a zero targeted catch, temporary fishery closure or a 'whole of fishery' effort or quota reduction are implemented.</p>	
<p><b>PRINCIPLE 2</b> - Fishing operations should be managed to minimise their impact on the structure, productivity, function and biological diversity of the ecosystem.</p>	
<p><b>Objective 1</b> - The fishery is conducted in a manner that does not threaten bycatch species.</p>	
<p><b>Information requirements</b></p>	
<p><b>2.1.1</b> Reliable information, appropriate to the scale of the fishery, is collected on the composition and abundance of bycatch.</p>	<p><b>Not applicable – the fishery is a hand-collection fishery and is therefore extremely targeted (without bycatch or byproduct)</b></p>
<p><b>Assessment</b></p>	
<p><b>2.1.2</b> There is a risk analysis of the bycatch with respect to its vulnerability to fishing.</p>	
<p><b>Management responses</b></p>	
<p><b>2.1.3</b> Measures are in place to avoid capture and mortality of bycatch species unless it is determined that the level of catch is sustainable (except in relation to endangered, threatened or protected species). Steps must be taken to develop suitable technology if none is available.</p>	
<p><b>2.1.4</b> An indicator group of bycatch species is monitored.</p>	

<p><b>2.1.5</b> There are decision rules that trigger additional management measures when there are significant perturbations in the indicator species numbers.</p>	<p><b>Not applicable – the fishery is a hand-collection fishery and is therefore extremely targeted (without bycatch or byproduct)</b></p>
<p><b>2.1.6</b> The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.</p>	
<p><b>Objective 2</b> – 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.</p>	
<p><b>Information requirements</b></p>	
<p><b>2.2.1</b> Reliable information is collected on the interaction with endangered, threatened or protected species and threatened ecological communities.</p>	<p><b>Meets – logbooks used for reporting and risks to protected species are likely very low</b></p> <p>Fishers are required to report all interactions with protected species using QDAF approved SOCI logbooks.</p>
<p><b>Assessments</b></p>	
<p><b>2.2.2</b> There is an assessment of the impact of the fishery on endangered, threatened or protected species.</p>	<p><b>Partly meets – although there is no formal ecological risk assessment, risks are likely negligible</b></p> <p>Although there is no independent data collection to validate the reports, and no ecological risk assessment for the fishery, the risks to protected species are likely to be extremely low and limited to boat strikes and possible disturbance from anchoring and transit. There are also no threatened ecological communities identified in the area of the fishery.</p>
<p><b>2.2.3</b> There is an assessment of the impact of the fishery on threatened ecological communities.</p>	<p><b>Not applicable – no threatened ecological communities identified in the area of the fishery</b></p> <p>There have been no threatened ecological communities identified in the area of the fishery.</p> <p>Marine habitats more broadly were identified as being at intermediate risk from the fishery and are being considered through QDAF’s <a href="#">Fisheries Queensland Monitoring and Research Plan</a>. However, the latest published <a href="#">Monitoring and Research Plan</a> does not extend beyond 2017-2018 and so does not include any measures derived from the 2019 ecological risk assessment (<a href="#">Jacobsen et al. 2019b</a>).</p>

<b>Management responses</b>	
<b>2.2.4</b> There are measures in place to avoid capture and/or mortality of endangered, threatened or protected species.	<p><b>Partly meets – although there is no ecological risk assessment to determine risks and direct risk mitigation, risks to protected species are likely to be extremely low</b></p> <p>Although an ecological risk assessment has not yet been completed for the fishery, the risks to protected species are likely to be extremely low and limited to boat strikes and possible disturbance from anchoring and transit.</p>
<b>2.2.5</b> There are measures in place to avoid impact on threatened ecological communities.	<p><b>Not applicable – no threatened ecological communities identified in the area of the fishery</b></p> <p>There have been no threatened ecological communities identified in the area of the fishery.</p> <p>Marine habitats more broadly were identified as being at intermediate risk from the fishery and are being considered through QDAF's <a href="#">Fisheries Queensland Monitoring and Research Plan</a>. However, the latest published <a href="#">Monitoring and Research Plan</a> does not extend beyond 2017-2018 and so does not include any measures derived from the 2019 ecological risk assessment (<a href="#">Jacobsen et al. 2019b</a>).</p>
<b>2.2.6</b> The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	<p><b>Partly meets – likely risks are appropriately managed but formal risk assessments have not been completed.</b></p> <p>Although an ecological risk assessment has not yet been completed for the fishery, the risks to protected species are likely to be extremely low and limited to boat strikes and possible disturbance from anchoring and transit.</p>



**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 – no data collection in place for ecosystem and environmental impacts**

There is no ongoing information collected on the fishery's impact on the ecosystem or environment generally. The feeding, bioturbation and carbonate processing undertaken by sea cucumbers plays an important ecological role in the health of sediment habitats and ecosystem health more broadly. Therefore overfishing, including localised depletion may have significant impacts on ecosystem health. Risk mitigation should (and does) include measures to avoid overfishing and localised depletion.

The Department recommends conditions 4-7 be attached to the proposed Part 13A approval to improve understanding of the stocks and to ensure management arrangements remain effective. These conditions are targeted at CITES-listed Black and White Teatfish species but could be extended to remaining species in the fishery in future.

**Assessment**

<p><b>2.3.2</b> Information is collected and a risk analysis, appropriate to the scale of the fishery and its potential impacts, is conducted into the susceptibility of each of the following ecosystem components to the fishery.</p> <ol style="list-style-type: none"> <li>1. Impacts on ecological communities <ul style="list-style-type: none"> <li>• Benthic communities</li> <li>• Ecologically related, associated or dependent species</li> <li>• Water column communities</li> </ul> </li> <li>2. Impacts on food chains <ul style="list-style-type: none"> <li>• Structure</li> <li>• Productivity/flows</li> </ul> </li> <li>3. Impacts on the physical environment <ul style="list-style-type: none"> <li>• Physical habitat</li> <li>• Water quality</li> </ul> </li> </ol>	<p><b>Partly meets - No ecosystem data is collected but advice is obtained for the Great Barrier Reef, from the Great Barrier Reef Marine Park Authority</b></p> <p>There is no ongoing information collected on the fishery's impact on the ecosystem or environment and there has been no ecological risk assessment for the fishery. However, risks are likely to be very low provided stocks are not overfished and the ecological functions performed by these species are not jeopardised.</p> <p>The Great Barrier Reef Marine Park Authority (GBRMPA) are represented in the Sea Cucumber Fishery Working Group and provide advice on management of the marine park. This input includes the latest advice on the impacts of climate change and natural disasters on the Great Barrier Reef. QDAF also attends the annual GBRMPA pre-summer workshop to consider latest risk assessments for predictions of coral bleaching, rainfall events, cyclones and Crown of Thorns Starfish outbreaks. Responses to climatic events are incorporated into GBRMPA's Reef Incident Response Plan. The draft harvest strategy for the fishery acknowledges that climate change impacts need to be considered in management arrangements for the fishery. Climate effects on management of the Great Barrier Reef and its species are also incorporated into broad planning documents such as Great Barrier Reef Outlook, Reef 2050 and the development of the Reef 2050 Integrated Monitoring and Reporting Program. QDAF participates in all these processes.</p>
<p><b>Management responses</b></p>	

**2.3.3** Management actions are in place to ensure significant damage to ecosystems does not arise from the impacts described in 2.3.1.

**Partly meets – a management framework is in place but there has been no ecological risk assessment**

QDAF's [Performance Measurement System](#) (PMS) includes objectives, performance indicators, performance measures and management responses designed to:

- Maintain stocks at sustainable levels, minimise risks of unsustainable harvest and recover stocks that are considered to have been fished to below sustainable levels;
- Protect endangered and threatened species;
- Minimise fishery impacts on the ecosystem; and
- Ensure adequate compliance.

The impacts on marine habitats are being further investigated through QDAF's [Fisheries Queensland Monitoring and Research Plan](#). However, the latest published [Monitoring and Research Plan](#) does not extend beyond 2017-2018 and so does not include any measures derived from the 2019 ecological risk assessment ([Jacobsen et al. 2019b](#)).

The Department recommends conditions 4-7 be attached to the proposed Part 13A approval to improve understanding of the stocks and to ensure management arrangements remain effective. These conditions are targeted at CITES-listed Black and White Teatfish species but could be extended to remaining species in the fishery in future.

**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.

**Meets – Decision rules, management triggers and monitoring are in place**

Although there has been no ecological risk assessment, the greatest risk to the ecology is likely to arise from stocks being overfished and their ecological functions being compromised.

QDAF's [Performance Measurement System](#) (PMS) is designed to ensure catches are no more than 10 per cent of the estimated biomass and for biomass to not fall by more than 15 per cent between regular stock surveys. These regular stock surveys have not been undertaken.

The PMS specifies 'review reference points' or 'catch triggers' which outlines the permissible amount of catch for each species before further investigation is required. These catch triggers are reflected in the conditions of each fishing permit and effectively limit catch to these specified amounts.

There are a variety of management responses outlined in the PMS, which would be applied by QDAF on a case-by-case basis if a review reference point was triggered. The management responses are listed below from least to most severe.

- Increase the review reference point;
- Commit to intervention/further action if a review reference point (RRP) is reached in a subsequent year;
- Allow fishing above RRP to continue for next quota year and require that it remain below RRP after that until a resource assessment is delivered by industry and spatially defined catch limit(s) endorsed by the Fishery Working Group (FWG);
- Fishing to return to levels below RRP until a resource assessment (with methodology endorsed by the FWG) is delivered by industry and spatially defined catch limit(s) endorsed by the FWG;
- Fishing for species to cease in certain area(s) (key targeted area(s)) and fishing in all other areas to continue below RRP while a resource assessment (with methodology endorsed by the FWG) is delivered by industry for the targeted area;
- Fishing for species to cease until a resource assessment (with methodology endorsed by the FWG) is delivered by industry and spatially defined catch limit(s) endorsed by the FWG.

Management responses are also outlined in the PMS if any aspect of the memorandum of understanding between fishers and QDAF is not adhered to. An example of this would be allowed effort in each rotation zone exceeding the allowed 15 days per zone, which can be monitored through vessel tracking.

	<p>The impacts on marine habitats are being further investigated through QDAF's <a href="#">Fisheries Queensland Monitoring and Research Plan</a>. However, the latest published <a href="#">Monitoring and Research Plan</a> does not extend beyond 2017-2018 and so does not include any measures derived from the 2019 ecological risk assessment (<a href="#">Jacobsen et al. 2019b</a>).</p>
<p><b>2.3.5</b> The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.</p>	<p><b>Partly meets – Fishery is conducted in a manner that minimises its' impact on the ecosystem but information collection could be improved</b></p> <p>The Department is satisfied, based on available information, that the fishery is conducted, in a manner that minimises the impact of fishing operations on the ecosystem generally.</p>

## SECTION 4: ASSESSMENT AGAINST 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 considered 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	<p><b>Meets – relevant bioregional plans have been considered in this assessment</b></p> <p>The <a href="#">Marine bioregional plan for the Temperate East Marine Region 2012</a> has been considered in preparing advice in relation to decisions under section 303DC and section 303FN. The bioregional plan identified four key ecological features present in the area of the fishery. These are shelf rocky reefs, the canyons on the eastern continental slope, the Tasmanid seamount chain and the upwelling off Fraser Island.</p> <p>Extraction of living resources by commercial fishing was identified as a pressure of potential concern operating on these key ecological features. However, the marine bioregional plan notes that its' assessment was conservative in the context of active fisheries management.</p> <p>Bycatch by commercial fishing was also identified as a pressure of potential concern operating on the key ecological features, with bycatch of marine turtles and dugong also listed as a regional concern. Bycatch is not applicable in this highly selective hand-collection fishery.</p> <p>In addition to the four key ecological features, the marine bioregional plan also identified biologically important areas for White Sharks (<i>Carcharodon carcharias</i>) and areas of distribution and known aggregation sites for Grey Nurse Sharks (<i>Carcharias taurus</i>) within the area of the fishery. These species are not expected to be impacted in any way by the fishery.</p> <p>Available information indicates that 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. There is also unlikely to be any significant impact on the Coral Sea Marine Park.</p> <p>The management of the fishery, supported by the conditions on the proposed Part 13A approval, are also consistent with the principles outlined in the Australian Government's <a href="#">Reef 2050 Plan</a>. Management seeks to maintain and enhance the values of the reef in its actions, bases decisions on the best available science, delivers a net benefit to the ecosystem and adopts a partnership approach to management.</p>

## Part 13 – Species and communities

Accreditable plan, regime or policy (Divisions 1, 2, 3 and 4)	Comment
<p>Sections 208A(1)(a-e), 222A(1)(a-e), 245(1)(a-e) and 265(1)(a-e)</p> <p>Does the fishery have an accreditable plan of management, regime or policy?</p>	<p><b>Meets – accreditable management regime is in place</b></p> <p>There is an accreditable management regime for the fishery outlined in the Queensland <i>Fisheries Act 1994</i>, Fisheries (General) Regulation 2019, Fisheries (Commercial Fisheries) Regulation 2019 and the Fisheries Declaration 2019.</p> <p>Management arrangements are also contained in the <a href="#">Performance Measurement System</a> and in a memorandum of understanding between the Queensland Sea Cucumber Association and QDAF. QDAF and the Great Barrier Reef Marine Park Authority also issue permits that include management actions in the conditions.</p>
<p>Sections 208A (f) and (g), 222A (f) and (g), 245 (f) and (g) and 265 (f) and (g)</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that cetaceans are not killed or injured as a result of the fishing; and</p> <p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the survival or recovery in nature of a threatened species, or conservation status of any other protected species or a population of that species.</p>	<p><b>Meets</b></p> <p>Although there is no ecological risk assessment to quantify the risks to protected species, the risks are likely to be very low and limited to boat strikes and disturbance by moving or anchoring boats. Fishers are required to report all interactions with protected species, and QDAF's <a href="#">Performance Measurement System</a> is designed to (amongst other things) protect endangered and threatened species, minimise fishery impacts on the ecosystem and ensure adequate compliance.</p>
Conditions regarding accreditation of plans, regimes and policies Section 303AA	Comment
<p>(1) This section applies to an accreditation of a plan, regime or</p>	<p>The Department recommends that the management regime for the fishery be accredited under sections 208A, 222A, 245 and 265 of the EPBC Act.</p>

policy under section 208A, 222A, 245 or 265.	
<p>(2) The Minister may accredit a plan, regime or policy under that section even though he or she considers that the plan, regime or policy should be accredited only:</p> <ul style="list-style-type: none"> <li>(a) during a particular period; or</li> <li>(b) while certain circumstances exist; or</li> <li>(c) while a certain condition is complied with.</li> </ul> <p>In such a case, the instrument of accreditation is to specify the period, circumstances or condition.</p>	<p>Conditions are not considered necessary to satisfy the requirements of sections 208A, 222A, 245, and 265 of the EPBC Act.</p>



## Part 13A – International movement of wildlife specimens

Section 303BA Objects of Part 13A	Comment
<p>(1) The objects of this Part are as follows:</p> <ul style="list-style-type: none"> <li>(a) to ensure that Australia complies with its obligations under CITES and the Biodiversity Convention;</li> <li>(b) to protect wildlife that may be adversely affected by trade;</li> <li>(c) to promote the conservation of biodiversity in Australia and other countries;</li> <li>(d) to ensure that any commercial utilisation of Australian native wildlife for the purposes of export is managed in an ecologically sustainable way;</li> <li>(e) to promote the humane treatment of wildlife;</li> <li>(f) to ensure ethical conduct during any research associated with the utilisation of wildlife; and</li> <li>(h) to ensure the precautionary principle is taken into account in making decisions relating to the utilisation of wildlife.</li> </ul>	<p>The management arrangements for the fishery have been assessed and found to be consistent with the general guidance provided in the objects of Part 13A.</p> <p>The fishery's harvest of species listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) has been assessed and is considered sustainable and unlikely to have a detrimental impact on the species' survival in the wild for the duration of the declaration.</p> <p>There are management arrangements in place to ensure that the resource is being managed in an ecologically sustainable way.</p> <p>The operation of the fishery is unlikely to be unsustainable and threaten biodiversity within the next 12 months.</p> <p>The Environment Protection and Biodiversity Conservation Regulations 2000 do not specify fish as a class of animal in relation to the welfare of live specimens.</p>

Section 303 CG Minister may issue permits (CITES species)	Comment
<p>(3) The Minister must not issue a permit unless the Minister is satisfied that:</p> <p>(a) the action or actions specified in the permit will not be detrimental to, or contribute to trade which is detrimental to:</p> <p>(i) the survival of any taxon to which the specimen belongs; or</p> <p>(ii) the recovery in nature of any taxon to which the specimen belongs; or</p> <p>(iii) any relevant ecosystem (for example, detriment to habitat or biodiversity); and</p>	<p><b>Meets</b></p> <p>The fishery harvests Black Teatfish (<i>Holothuria whitmaei</i>) and White Teatfish (<i>H. fuscogilva</i>) which are both listed in CITES Appendix II.</p> <p>The Department's assessment under the EPBC Act has found that the fishery is likely to be sustainable and not threatened the survival of the species in nature, for the period of the proposed approvals.</p>
Section 303DC Minister may amend list (non CITES species)	Comment
<p>(1) The Minister may, by legislative instrument, amend the list referred to in section 303DB [list of exempt native specimens] by:</p> <p>(a) doing any of the following:</p> <p>(i) including items in the list;</p> <p>(ii) deleting items from the list;</p> <p>(iii) imposing a condition or restriction to which the inclusion of a specimen in the list is subject;</p>	<p>The Department recommends that specimens that are, or are derived from, fish or invertebrates harvested in the Queensland Sea Cucumber Fishery (East Coast), as defined in the management regime in force under the Queensland Fisheries Act 1994, Fisheries (General) Regulation 2019, Fisheries (Commercial Fisheries) Regulation 2019 and the Fisheries Declaration 2019, but not including:</p> <ul style="list-style-type: none"> <li>specimens that belong to taxa listed under section 209 of the EPBC Act (Australia's list of migratory species), or</li> <li>specimens that belong to taxa listed under section 248 of the EPBC Act (Australia's list of marine species), or</li> <li>specimens that belong to eligible listed threatened species, as defined under section 303BC of the EPBC Act, or</li> <li>specimens that belong to taxa listed under section 303CA of the EPBC Act (Australia's CITES List)</li> </ul>

<p>(iv) varying or revoking a condition or restriction to which the inclusion of a specimen in the list is subject; or</p> <p>(b) correcting an inaccuracy or updating the name of a species.</p>	<p>be included in the list of exempt native specimens while the fishery is subject to a declaration as an approved wildlife trade operation.</p> <p>CITES-listed species that are approved to be exported are done so under the associated Wildlife Trade Operation approval.</p>
<p>(1A) In deciding to amend the LENS, the Minister must rely primarily on outcomes of any assessment under Part 10, Divisions 1 or 2.</p>	<p><b>Not applicable</b></p> <p>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.</p>
<p>(1C) The above does not limit matters that may be considered when deciding to amend the LENS.</p>	<p><b>Meets</b></p> <p>Although there is no strategic assessment under Part 10 of the EPBC Act, the Department's 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.</p>
<p>(3) Before amending the LENS, the Minister must consult:</p> <p>(a) other Minister or Ministers as appropriate; and</p> <p>(b) other Minister or Ministers of each State and self-governing Territory as appropriate; and</p> <p>(c) other persons and organisations as appropriate.</p>	<p><b>Meets</b></p> <p>The submission from QDAF was made available on the Department's website from 22 July to 21 August 2020.</p> <p>Six public submissions were received which raised concerns regarding:</p> <ul style="list-style-type: none"> <li>• Global declines of teatfish species and associated IUCN listings which informed the CITES listing of the species.</li> <li>• Biology and life-history traits of these species not being able to sustain commercial harvest.</li> <li>• Concerns regarding the survey design used to inform the reopening of fishing for Black Teatfish.</li> <li>• The lack of information collected on numbers of individual animals harvested.</li> <li>• A lack of consultation undertaken with regard to re-opening of fishing for Black Teatfish.</li> <li>• Unclear spatial management and the references to 'zones' in management arrangements.</li> <li>• Logbook design and potential for fishers to report Black Teatfish as 'other species'.</li> <li>• Public availability of fishery information.</li> </ul>

	<ul style="list-style-type: none"> <li>• Recognition of Curryfish as a main target species and understanding of what species are caught and where.</li> <li>• The IUCN status of Prickly Redfish and need for specific management attention.</li> <li>• The need for resource surveys for Burrowing Blackfish in the Burrowing Blackfish Zones.</li> <li>• The need for a harvest strategy for the fishery.</li> <li>• The need for current stock assessments for the fishery.</li> <li>• Prospecting arrangements for Burrowing Blackfish and Curryfish.</li> <li>• The important role Sea Cucumbers play in ecosystem health and the impacts that overfishing would have on reef health.</li> <li>• Whether there has been an assessment under Section 303FO of the EPBC Act 1999 for White Teatfish and Black Teatfish.</li> <li>• Whether rising average sea temperatures and associated effects on spawning are considered in managing the fishery.</li> <li>• Whether commercial fishers harvest White Teatfish in the third year of the Burrowing Blackfish harvest cycle.</li> <li>• The scientific basis for the minimum size for burrowing blackfish and apparent lack of regulated size limit for this species.</li> </ul> <p>Copies of the public submissions and QDAFs response to the issues raised in these submissions will be provided to the decision maker with this assessment report.</p>
<b>Section 303FN Approved wildlife trade operation</b>	<b>Comment</b>

<p>(3) The Minister must not declare an operation as an approved wildlife trade operation unless the Minister is <b>satisfied</b> that:</p> <ul style="list-style-type: none"> <li>(a) the operation is consistent with the objects of Part 13A of the Act; and</li> <li>(b) the operation will not be detrimental to: <ul style="list-style-type: none"> <li>(i) the survival of a taxon to which the operation relates; or</li> <li>(ii) the conservation status of a taxon to which the operation relates; and</li> </ul> </li> <li>(ba) the operation will not be likely to threaten any relevant ecosystem including (but not limited to) any habitat or biodiversity; and</li> </ul>	<p><b>Meets</b></p> <p>The fishery is consistent with Objects of Part 13A of the Act – see above assessment against the Guidelines.</p> <p>Based on the outcomes of the Department’s assessment, as outlined in this report, and the conditions recommended in Section 2, the fishery will not be detrimental to the survival or conservation status of a taxa or relevant ecosystem to which it relates within the next 12 months.</p>
<p>(c) if the operation relates to the taking of live specimens that belong to a taxon specified in the regulations – the conditions that, under the regulations, are applicable to the welfare of the specimens are likely to be complied with; and</p>	<p><b>Not applicable</b></p> <p>The Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations) do not specify Echinoderms as a class of animal in relation to the welfare of live specimens.</p>
<p>(d) such other conditions (if any) as are specified in the regulations have been, or are likely to be, satisfied.</p>	<p><b>Not applicable</b></p> <p>No other conditions are specified in relation to commercial fisheries in the EPBC Regulations.</p>
<p>(4) In deciding whether to declare an operation as an approved wildlife</p>	<p><b>Meets</b></p>

<p>trade operation the Minister must have <b>regard</b> to:</p> <p>(a) the significance of the impact of the operation on an ecosystem (for example, an impact on habitat or biodiversity); and</p>	<p>The fishery will not have a significant impact on any relevant ecosystem within the next 12 months, given the management measures currently in place and the conditions recommended in Section 2 of this assessment.</p>
<p>(b) the effectiveness of the management arrangements for the operation (including monitoring procedures).</p>	<p><b>Meets</b></p> <p>The management arrangements that will be employed for the fishery as outlined in the assessment against the Guidelines (above), are likely to be effective.</p>
<p>(5) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have <b>regard</b> to:</p> <p>(a) whether legislation relating to the protection, conservation or management of the specimens to which the operation relates is in force in the State or Territory concerned; and</p> <p>(b) whether the legislation applies throughout the State or Territory concerned; and</p> <p>(c) whether, in the opinion of the Minister, the legislation is effective.</p>	<p><b>Meets</b></p> <p>Management arrangements for the fishery are defined in the Queensland <i>Fisheries Act 1994</i>, Fisheries (General) Regulation 2019, Fisheries (Commercial Fisheries) Regulation 2019 and the Fisheries Declaration 2019. This legislation applies to all Queensland-managed waters.</p> <p>Available information indicates that the management arrangements are likely to be effective.</p>
<p>(10) For the purposes of section 303FN, an operation is a wildlife trade operation if, and only if, the operation is an operation for the taking of specimens and:</p>	<p><b>Meets</b></p> <p>The Queensland Sea Cucumber Fishery (East Coast) is a commercial fishery.</p>

(a) the operation is a commercial fishery.	
<p>(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.</p> <p>(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.</p>	<p><b>Not applicable</b></p> <p>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.</p>

Section 303FR Public consultation	Comment
<p>(1) Before making a declaration under section 303FN, the Minister must cause to be published on the Internet a notice:</p> <p>(a) setting out the proposal to make the declaration; and</p> <p>(b) setting out sufficient information to enable persons and organisations to consider adequately the merits of the proposal; and</p> <p>(c) inviting persons and organisations to give the Minister, within the period specified in the notice, written comments about the proposal.</p> <p>(2) A period specified in the notice must not be shorter than 20 business days after the date on which the notice was published on the Internet.</p> <p>(3) In making a decision about whether to make a declaration under section 303FN, the Minister must consider any comments about the proposal to make the declaration that were given in response to the invitation in the notice.</p>	<p><b>Meets</b></p> <p>A public notice which included QDAF's application and set out the proposal to declare the fishery to be an approved wildlife trade operation was released for public comment from 22 July to 21 August 2020, a total of 20 business days (excluding all state, territory and national public holidays).</p> <p>Six public submissions were received which raised concerns regarding:</p> <ul style="list-style-type: none"> <li>• Global declines of teatfish species and associated IUCN listings which informed the CITES listing of the species.</li> <li>• Biology and life-history traits of these species not being able to sustain commercial harvest.</li> <li>• Concerns regarding the survey design used to inform the reopening of fishing for Black Teatfish.</li> <li>• The lack of information collected on numbers of individual animals harvested.</li> <li>• A lack of consultation undertaken with regard to re-opening of fishing for Black Teatfish.</li> <li>• Unclear spatial management and the references to 'zones' in management arrangements.</li> <li>• Logbook design and potential for fishers to report Black Teatfish as 'other species'.</li> <li>• Public availability of fishery information.</li> <li>• Recognition of Curryfish as a main target species and understanding of what species are caught and where.</li> <li>• The IUCN status of Prickly Redfish and need for specific management attention.</li> <li>• The need for resource surveys for Burrowing Blackfish in the Burrowing Blackfish Zones.</li> <li>• The need for a harvest strategy for the fishery.</li> <li>• The need for current stock assessments for the fishery.</li> <li>• Prospecting arrangements for Burrowing Blackfish and Curryfish.</li> <li>• The important role Sea Cucumbers play in ecosystem health and the impacts that overfishing would have on reef health.</li> </ul>



	<ul style="list-style-type: none"> <li>• Whether there has been an assessment under Section 303FO of the EPBC Act 1999 for White Teatfish and Black Teatfish.</li> <li>• Whether rising average sea temperatures and associated effects on spawning are considered in managing the fishery.</li> <li>• Whether commercial fishers harvest White Teatfish in the third year of the Burrowing Blackfish harvest cycle.</li> <li>• The scientific basis for the minimum size for burrowing blackfish and apparent lack of regulated size limit for this species.</li> </ul> <p>Copies of the public submissions and QDAFs response to the issues raised in these submissions will be provided to the decision maker with this assessment report. The public comments and QDAF's response were considered in this assessment.</p>
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## Part 16 – Precautionary principle and other considerations in making decisions

Section 391 Minister must consider precautionary principle in making decisions	Comment
<p>(1) Minister must take account of the precautionary principle in making a decision, to the extent that the decision is consistent with other provisions under this Act.</p> <p>(2) The precautionary principle is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.</p>	<p><b>Meets</b></p> <p>A <a href="#">Management Strategy Evaluation</a> has been undertaken by the FRDC and CSIRO on the rotational harvest arrangements for the fishery (contained in the memorandum of understanding between the Queensland Sea Cucumber Fishery Association and QDAF). This evaluation found the arrangements were likely to be sufficient, but that better information was required to more effectively manage risks to target species (<a href="#">Skewes et al. 2014</a>).</p> <p>The Department's assessment has also identified certain issues that require attention by QDAF, including the need for stock surveys and stock assessments. The conditions proposed for inclusion on the proposed Part 13A approval are designed to address these issues and represent a precautionary approach to the management of environmental uncertainty and risk. The management regime, when supported by these conditions is likely to prevent serious or irreversible environmental damage being caused by this fishery.</p>

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