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The Director  
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Department of Agriculture, Water and the Environment  
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**AMSA submission on the Queensland Department of Agriculture and Fisheries (DAF) application for Wildlife Trade Operation (WTO) for the Queensland Sea Cucumber Fishery (East Coast) (QSCF).**

Dear Director,

The Australian Marine Sciences Association (AMSA) welcomes the opportunity to provide a submission on the Queensland Department of Agriculture and Fisheries (DAF) application for Wildlife Trade Operation (WTO) accreditation for the Queensland Sea Cucumber Fishery (East Coast) (QSCF) subject to the conditions of approval under the *Environment Protection and Biodiversity Conservation Act 1999*. We focus on Part 13A conditions in respect to the CITES II listed species (Black Teatfish – BTF, *Holothuria whitmaei*; and White Teatfish - WTF *Holothuria fuscogilva*), as outlined by the Department in the Assessment of this fishery in September 2020.

AMSA is Australia's largest professional association of marine scientists with more than 700 members. For over 50 years, AMSA has promoted all aspects of marine science in Australia, including a long history of providing expert scientific advice to government, industry and other key marine environmental stakeholders on a wide range of marine scientific and environmental issues and activities. All of our Submissions are publicly available here: <https://www.amsa.asn.au/submissions>.

Please feel free to contact me at the details below for further information.

Kind Regards

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## Executive Summary

AMSA welcomes the careful assessment of the Queensland Sea Cucumber Fishery (East Coast) (QSCF) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) because this fishery harvests CITES II listed teatfish species (*Holothuria whitmaei* and *H. fuscogilva*) without a non-detriment finding (NDF). These species have been of high conservation concern for decades, and the CITES listing formally establishes this in a Conference of the Parties (CoP) binding agreement. Australia has to certify that the fishery of *H. whitmaei* (Black Teatfish, BTF) and *H. fuscogilva* (White Teatfish, WTF) are non-detrimental to their survival to continue their export as a Wildlife Trade Operation (WTO). In the Assessment of the QSCF the Department pointed out that despite the guidance of the Performance Measurement System designed to manage the fishery, stock assessments have not been completed for any species harvested in the QSCF and not all species are reported to species-level<sup>1</sup>. In addition, ecological risk assessments have not been undertaken to guide the QSCF<sup>1</sup>. This is of particular concern for the CITES II listed teatfish species. Although the Queensland Department of Agriculture and Fisheries (DAF) has made good progress over the last year with the Harvest Strategy for the fishery and in regard to the 13A conditions under the EPBC act, including conducting a biomass survey for the BTF in Zone 2 of the Great Barrier Reef (Condition 4) and identify options to survey the WTF (Condition 5)<sup>2,3,4,5</sup>, more information and modelled stock analyses are needed before management will be able to ensure that the teatfish can be harvested sustainably.

AMSA makes the following recommendations:

1. **AMSA recommends** that the fishery of *Holothuria whitmaei* and *H. fuscogilva* not be accredited as a Wildlife Trade Operation because these species are prone to fishery-driven local extinction and poor to no recovery decades after harvest, as seen for BTF in the QSC<sup>1</sup>.

Should the Minister accredit the WTF and BTF fishery for Wildlife Trade Operation:

2. **AMSA recommends** that fishing cycle for these species under the Rotational Zone Strategy (RZS) be increased from 3-years to at least 6 years as recommended by the Management Strategy Evaluation (MSE) that was undertaken to assess the RZS<sup>6,7</sup>. In consideration of the very slow demographics of these species, a 10-year cycle would be more appropriate.
3. **AMSA recommends** that minimum catch size limit (live) of the WTF be increased by 1 cm to reduce risk to reproduction because the current size limits have a highly uncertain biological basis. The current size limit for the BTF is confidential and we stress that the Minister make this key information needed to assess this fishery publicly available as soon as possible.
4. **AMSA recommends** that the teatfish harvest is managed on a specific zone or habitat basis. The MSE models an even spread of harvest effort across the RZS, but WTF are largely fished in a small number of zones in the northern GBR<sup>4</sup> while the BTF is being harvested from a few zones in the southern GBR. This indicates high risk of local depletion.
5. **AMSA recommends** that DAF limit the number days allowed to fish in zones to 15 day<sup>1</sup> as in place since 2004, thereby reversing the increase to 18 days in the 2021 report<sup>2</sup>.
6. **AMSA recommends** that DAF urgently commission fishery independent post-harvest surveys of BTF biomass in the Zone 2 areas where fishing of virgin stock occurred following reopening of the fishery in 2019. Depletion may have already occurred.
7. **AMSA recommends** that the QSCF be approved as WTO for 1 year with requirements for robust and fishery independent stock assessments of *Holothuria whitmaei* and *H. fuscogilva* in fished and protected areas of the Great Barrier Reef in a fully transparent and publicly available manner.

For other species in the QSCF.

8. **AMSA recommends** that attention be focussed on the Burrowing Blackfish (*Actinopyga spinea*), the most harvested species (millions removed). Signs of depletion are evident with concerns for the species and the environment.
9. **AMSA recommends** that there are regular, robust and fishery independent modelled stock assessments of the QSCF on a species basis to ensure they are managed in a precautionary way, with particular attention paid to species listed by the International Union for the Conservation of Nature.

## Introduction

This submission covers the Department of Agriculture and Fisheries (2021) Queensland Sea Cucumber Fishery (East Coast) (QSCF) “Status report for reassessment and approval under protected species and export provisions of the Environment Protection and Biodiversity Conservation Act 1999” (EPBC) and relevant accompanying documents. We focus on the approval under the EPBC Act, Part 13A conditions with respect to the CITES II listed species (Black Teatfish – BTF, *Holothuria whitmaei*; and White Teatfish - WTF *Holothuria fuscogilva*), as outlined in the assessment by the Department of Agriculture, Water and the Environment<sup>1</sup>.

The QSCF is guided by a Performance Measurement System (PMS)<sup>8</sup> designed to ensure that catches are no more than 10% of the estimated biomass and that when regular stock surveys are undertaken, for biomass to not fall by more than 15% between surveys. However, stock assessments have not been completed for any species harvested in the QSCF and not all species are reported to species-level. In the absence of modelled stock assessments, the QSCF has been operating, with a high risk of unsustainable harvest.

That the QSCF have not followed the 2008 PMS guidelines is of great concern considering that the fishery operates in the World Heritage Listed Great Barrier Reef. This is also counter to the Sustainable Fisheries Strategy listed as an action in the Reef 2050 Long Term Sustainability Plan<sup>9</sup>, as part of commitments made to the UNESCO World Heritage Committee. In consideration of the GBR being under pressure from climate change, the Great Barrier Reef Marine Park Authority stressed the vulnerability of the already at-risk *H. whitmaei*<sup>10</sup>.

## History of the fishery

The QSCF fishery harvests ten species that are listed by the International Union for the Conservation of Nature and two species listed under CITES II. We focus on the listed species *H. whitmaei* and *H. fuscogilva* but also point out concerns for other species in the fishery. The QSCF fishery has been operating since the mid 1990s and has a history of sequential replacement of priority target species as stock availability changes. This fishery initially focussed on sandfish (*Holothuria scabra*) and moved to BTF as sandfish stocks declined and fishery for sandfish was closed in 2000. Virtually all the BTF harvest was in the Northern GBR (Zone 1). Declines in *H. whitmaei* prompted a fishery closure for this species in 1999 due to overfishing. Fishing effort then switched to *H. fuscogilva* in deeper water (20–30m), with the total allowable catch (TAC) reduced over time due to concerns about stock sustainability. After nearly 20 years of closure, the BTF fishery was reopened in 2019. This followed a survey of the BTF in the northern GBR that indicated stocks had recovered. However, new fishing effort has focussed on virgin stock in the southern GBR, in the absence of a baseline stock assessment and despite the knowledge that this is CITES listed species and worrying in the absence of a size limit control<sup>2</sup>.

**AMSA recommends** that the fishery of *Holothuria whitmaei* and *H. fuscogilva* not be accredited as WTO because these species are prone to fishery-driven local extinction and poor recovery decades after harvest.

### The fishery of *Holothuria whitmaei* and *H. fuscogilva*

The three year *Rotational Zone Strategy (RZS)* was implemented from 2004 as a spatial management tool for the QSCF to reduce the risk of local stock depletions and was assessed in a Management Strategy Evaluation (MSE)<sup>6,7</sup>. While the MSE found that the RZS had benefits for fishery species, uncertainties were evident, especially for the slow growing teatfish species. This study recommended an increase in the rotational periodicity in the fishery of up to six years to improve biological and economic performance of the fishery<sup>6,7</sup>. A study that sampled individuals over time indicated very slow growth of the BTF and potentially late maturity with the age of most individuals estimated to be at least 10 years<sup>11,12</sup>. The teatfish have low mortality, intermittent to poor recruitment and are likely to have a long-life span. Importantly, the lack of juveniles in many populations on the GBR points to limited recruitment and a slow demography, as also indicated by the very slow recovery (decades) of BTF populations on the GBR following fishing.

**AMSA recommends** that the fishing cycle for the teatfish be increased to at least 6 years and, in consideration of their very slow demographics, that a 10 year cycle would be more appropriate.

**AMSA recommends** that minimum catch size limit (live) of the WTF increased by 1 centimetre to reduce risk to reproduction because the current size limit have a highly uncertain biological basis and to make information on the size limit for the BTF (currently confidential) publicly available.

The MSE modelled an even spread of harvest effort across zones. However, 80% of the WTF harvest comes from just 35 of the 158 zones with most of these in Zone 1 of the GBR<sup>4</sup>. The 2019-2020 renewed BTF harvest is concentrated in a subset of zones in the southern GBR<sup>1</sup>.

**AMSA recommends** that the teatfish harvest is managed on a specific zone or habitat basis because harvest effort is concentrated in a small number of zones and so there is a high risk of local depletion.

**AMSA recommends** that DAF limit the number days allowed to fish in zones to 15 days<sup>1</sup> as in place since 2004, thereby reversing the increase to 18 days in the 2021 report<sup>2</sup>.

**AMSA recommends** that DAF urgently commission fishery-independent post-harvest surveys of BTF biomass in the Zone 2 areas where fishing of virgin stock occurred following reopening of the BTF fishery in 2019 and is ongoing. Depletion may have already occurred.

**AMSA recommends** that the fishery for both teatfish species should only be permitted after consideration of a detailed stock assessment in the fished zones.

The fishery of other species including IUCN listed species

In addition to the teatfish, the QSCF harvest species that are listed by the IUCN as endangered and vulnerable to extinction. In particular attention needs to be paid to the curryfish group *Stichopus herrmanni*, *S. ocellatus* and *S. vastus* especially as the latter two species are comparatively rare on the GBR. *Stichopus herrmanni* is listed as Vulnerable on the IUCN Red List of Threatened Species. The prickly red fish, *Thelenota ananas*, also an IUCN threatened species and habitat specialist, is also of concern.

The burrowing blackfish, *Actinopyga spinea*, comprised the bulk (50-60% landed weight) of the fishery with millions of individuals removed each year from soft sediment habitats in deep water. This species is harvested in blackfish zones on a continual basis and in some areas have been fished for 20 years. There is a real risk of depletion of this species with likely high ecological impact of removal of so many individuals. Removal of sea cucumbers is likely to be detrimental to the ecosystem of the GBR<sup>14</sup>.

**AMSA recommends** that attention be focussed on *Actinopyga spinea*, the most harvested species (millions removed). Signs of depletion are evident with concerns for the species and the environment.

**AMSA recommends** that there are regular, robust and fishery independent modelled stock assessments of the QSCF on a species basis to ensure they are managed in a precautionary way, with particular attention paid to the species listed by the International Union for the Conservation of Nature

## **References**

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