

# CITES listing of sea cucumber species provides opportunities to improve management of the beche-de-mer trade

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## Introduction

*While dried and processed sea cucumbers (commonly known as beche-de-mer) have been traded on international markets for a millennia (Conand and Byrne 1993), over the last 40 years trade has increased exponentially due to buoyant prices driven by the growing demand from Asia (Anderson et al. 2011). Easy access to sea cucumber habitats combined with their biological characteristics of slow growth, late age-at-maturity, and broadcast spawning reproductive strategy has made sea cucumbers especially vulnerable to overexploitation by fishers. These animals play a key role in maintaining ecosystem services through bioturbation and nutrient cycling, hence recent documented declines in populations have led to increasing concerns of the potential flow-on effects on ecosystem health (Purcell et al. 2013, 2016). If overexploitation continues, there is the possibility of densities decreasing to a level at which successful reproduction and replenishment of the population cannot be sustained; this is known as the 'Allee' effect (Allee 1938; Friedman et al. 2011; Kinch et al. 2008a; Purcell et al. 2013). Such an outcome benefits neither fishers nor sea cucumbers; therefore, international, regional and local management frameworks must be structured to significantly reduce the probability of this occurring.*

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international legal mechanism for regulating trade in overexploited species so that they can continue to perform their roles within the ecosystems they inhabit. Recognising that sea cucumbers were being heavily exploited, the United States of America submitted a discussion paper in 2002, at the 12<sup>th</sup> meeting of the Conference of the Parties (CoP) (Bruckner 2006; Bruckner et al. 2003). In 2015, prior to CoP17, the Fish and Wildlife Service of the United States was considering whether to submit a proposal to list sea cucumbers on Appendix II of CITES. However after completing consultations with relevant range countries and discussions nationally, concerns were raised about insufficient information on trade, taxonomy, biology, and population status globally and a formal proposal was not submitted. In 2018, France, as part of the European Union, and a number of other proponents (Kenya, Senegal, Seychelles and the United States of America) proposed listing black teatfish (*Holothuria whitmaei* – Pacific Ocean species, and *H. nobilis* – Indian Ocean species), and white teatfish (*H. fuscogilva*). At the 18<sup>th</sup> CITES CoP held in Geneva, the proposal to list the three teatfish species was accepted, with a 12-month deferral, by countries Party to CITES on 25 August 2019 by a majority vote of 108 of the 145.

## Teatfish population status and CITES

As part of a memorandum of agreement between CITES and the Food and Agriculture Organization of the United Nations (FAO), FAO is responsible for assessing all marine

and aquatic organisms that have been proposed for listing. As a result, FAO was tasked with determining the status of sea cucumber fisheries and trade in beche-de-mer products globally. The 6<sup>th</sup> FAO Expert Panel Meeting was convened at FAO headquarters in Rome from 21–25 January 2019. The panel concluded that given the low reproductive rates, slow growth, and essential density thresholds for successful reproduction of *H. whitmaei*, the estimated decline in population size to 30% of baseline met the CITES criteria for



White teatfish. (Image: Viliami Fatongiatau, Tonga Ministry of Fisheries)

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White teatfish live (image: PROCFish) and processed (image: Eric Aubry)



Black teatfish live (image: Pauline Bosserelle, SPC) and processed (image: Eric Aubry)

listing in Appendix II<sup>3</sup> (FAO 2019). It was also reported that *H. fuscogilva* did not meet the criteria, while there were not enough data to make an assessment on *H. nobilis*. However, because of the high likelihood of confusion in identification between dried *H. fuscogilva*, *H. nobilis* and *H. whitmaei* in trade, a ‘look-alike’ provision was included<sup>3</sup> and, under the convention, all three species then met the criteria.

## Exporting under CITES (Appendix II)

Within the Pacific Islands region, Papua New Guinea, Solomon Islands, Vanuatu, Fiji, New Caledonia, Tonga, Samoa, Palau, New Zealand and Australia are members of CITES. The requirements for exporting a species listed in CITES Appendix II applies to CITES Party countries regardless of the destination. Importing countries that are also signatory to CITES also need to be part of the chain-of-custody, which allows tracking of exported species. The four major beche-de-mer exporting countries in the Pacific Islands region are Papua New Guinea, Solomon Islands, Vanuatu and Fiji. While most other countries in the region have exported beche-de-mer product, it has been less frequently and in much lower quantities.

With the listing of teatfish species on CITES Appendix II, there is now a requirement for Party countries to build on their existing fishery management strategies in order to be consistent with the provisions of CITES Articles IV and X<sup>4</sup> for an Appendix II-listed species. These strategies include determining population status via stock assessment, setting and policing of catch quotas, and use of spatial and temporal closures. For those species listed, a ‘non-detriment-finding’ (NDF) is required, which clearly establishes what level of export quotas are sustainable, allowing the species to persist and continue their roles within the ecosystems they inhabit (Rosser and Heywood 2002). An NDF is a determination by the scientific authority of the exporting country on whether international trade is likely to be detrimental to the survival of the species in that country<sup>5</sup> (Rosser and Heywood 2002). The information needed to make the determination is not trivial, and in some cases may be greater than the capacity of individual country management authorities (i.e. national conservation agencies) and scientific authorities (national fisheries agencies). Difficulties in implementing successful and sustainable management are already prevalent in the Pacific Islands region (Kinch et al. 2008a, b), due principally to economic and technical constraints. Nevertheless, Pacific Island countries and territories (PICTs) can build on existing fisheries

<sup>3</sup> Annex 5 of Resolution Conf. 9.24 (Rev. CoP17). <https://www.cites.org/eng/res/09/09-24R16.php>

<sup>4</sup> <https://www.cites.org/eng/disc/text.php#IV> and <https://www.cites.org/eng/disc/text.php#X>

<sup>5</sup> [https://www.cites.org/eng/prog/ndf/Guidance\\_NDF](https://www.cites.org/eng/prog/ndf/Guidance_NDF)

management structures and use rigorous stock assessments to set quotas to facilitate exports under CITES. The increase in oversight of an Appendix II listing will provide a better understanding of the trade in teatfish sea cucumber populations within each PICT and this should enable much better control of export pathways. Furthermore, it is important to use the CITES NDF determination as a positive mechanism for conservation agencies to collaborate with national fisheries agencies and develop achievable sustainable-use thresholds and quotas for these species.

## How to proceed?

PICTs that are intending to sustain or develop an export trade in beche-de-mer will have to ensure that their ability to collect appropriate data to demonstrate their compliance with CITES requirements is maximised. Artisanal fishers who are the primary collectors of sea cucumbers are central to all PICT communities, hence this is a regional issue. Communities and countries need to mobilise resources and share successes and failures to ensure there is a collective improvement in the management of sea cucumber stocks across the region. This includes multilateral engagement with organisations such as the Pacific Community, the Secretariat of the Pacific Regional Environment Programme, FAO and numerous non-governmental organisations that can provide technical expertise and advice where needed and will work with the CITES secretariat to address capacity shortfalls across PICTs. A CITES listing can be a catalyst for improving the management of sea cucumber fisheries, which will ensure that the livelihoods and revenue that is generated for communities and governments can be sustained into the future (Purcell et al. 2017).

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