

Not yet extinct: *Rhynchobatus cooki* is found after being unseen for over 20 years

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Fig. 1. Female clown wedgefish, *Rhynchobatus cooki*, found at Jurong Fishery Port in Singapore on 26 May 2019 alongside several other species of wedgefish believed to be *Rhynchobatus springeri* and *Rhynchobatus australiae*. Photograph: Naomi Clark-Shen/Kathy Xu.

On 26 May 2019 a female specimen of clown wedgefish, *Rhynchobatus cooki* (Order: Rhinopristiformes; Family: Rhinidae), was found at Jurong Fishery Port in Singapore (Fig. 1). This is the first recorded sighting of this species since

1996. This species has been assessed as Critically Endangered according to the IUCN Red List of Threatened Species categories and criteria and therefore has a very high likelihood of extinction (Kyne *et al.* 2019).

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The merchant that was selling the *Rhynchobatus cooki* specimen verbally informed us that it had been imported from Indonesia. He did not know the exact location of catch, nor the aggregator port in Indonesia from which it was exported. The specimen had both dorsal fins and caudal fin removed. The specimen was being sold for SG\$3–4 (~US\$2–3) per kg, which is typical for wedgefishes at Jurong Fishery Port.

The specimen was not retained but data were collected on site. Because the tail had been removed, the total length (TL) could not be obtained, but precaudal length (PCL) was 810 mm. A tissue sample was collected from the pectoral fin, stored in alcohol and 'barcoded' for a 707-bp fragment of the cytochrome oxidase I gene using Sanger sequencing. The COI sequence for this species has not been obtained before. The sequence obtained for our specimen (GenBank accession no. MN328032) was searched against The Barcode of Life Data System database (www.barcodinglife.org) and found to show 95% match to *Rhynchobatus springeri* and a 93% match to *Rhynchobatus australiae* COI sequences. The distinctive colour pattern, morphological features (as described in Jabado 2019), and lack of a perfect (100%) match to representatives of other *Rhynchobatus* species strongly suggest that the specimen was *Rhynchobatus cooki*.

Prior to this discovery, only 12 *Rhynchobatus cooki* specimens have been collected (in 1934, 1937, 1975, and the 1990s) and a further four, possibly five, photographed (in 1993) at fishing ports in Singapore and Jakarta (Last *et al.* 2016). This specimen identified in Singapore in 2019 is the largest specimen recorded, at 810 mm PCL. On the basis of morphometric calculations from Last *et al.* (2016), the TL of this specimen is estimated to be ~972 mm. The previous maximum

length recorded was 810 mm TL for a mature adult male (Last *et al.* 2016).

Because people working at fishing ports are unable to identify the location of catch, the exact range of *Rhynchobatus cooki* remains unknown. Considering this species is rarely seen despite intensive fishing and landing surveys, it is likely extremely rare (Last *et al.* 2016). However, the discovery of this specimen in 2019 gives hope that *Rhynchobatus cooki* is not yet extinct, and prompts discussion about options for potential species conservation and population recovery. This finding also suggests that further efforts may be warranted to identify potential refuges and remnant populations in Indonesia.

Conflicts of interest

None declared.

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