

The second confirmed record and a significant range extension for the White Ribbon Eel (*Pseudechidna brummeri*) in Australia

Alastair Freeman^A and John J. Pogonoski^B

^AAquatic Species Program, Wildlife and Threatened Species Operations, QPWS & Partnerships, Department of Environment and Science, Atherton Qld 4883, Australia. Email: Alastair.Freeman@des.qld.gov.au

^BAustralian National Fish Collection, National Research Collections Australia, Commonwealth Scientific and Industrial Research Organisation, GPO Box 1538, Hobart Tas 7001, Australia

Abstract

This note details only the second confirmed record of the White Ribbon Eel in Australian waters nearly 100 years after and 780 km south of the first sighting. The sighting was confirmed from images and video, on the reef flat at Green Island north east of Cairns.

Copyright all content: © 2022, Freeman & Pogonoski. This is an open access article distributed under the terms of the *Creative Commons Attribution License*, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Handling editor: Peter Valentine

Citation: Freeman A, Pogonoski JJ. 2022. The second confirmed record and a significant range extension for the White Ribbon Eel (*Pseudechidna brummeri*) in Australia. *North Queensland Naturalist* 52: 47-48.

The White Ribbon Eel, *Pseudechidna brummeri* (Bleeker 1858) is a long, slender moray (family Muraenidae), inhabiting sheltered coastal reefs and seagrass beds of the tropical Indo-West Central Pacific region. Like many morays, it is widely distributed from the Western Indian Ocean, eastwards to the Society Islands, and northwards to southern Japan (Smith *et al.* 2019). In Australia it was first recorded from two specimens collected at Murray Island (a.k.a. Mer Island, c. 9.9167°S, 144.05°E) in the Torres Strait, which are deposited in the Australian Museum, Sydney (Whitley 1929). However, despite this published record, nearly 100 years later the species has not made its way into Australian fish checklists. This note describes the sighting of an adult-sized White Ribbon Eel off Green Island, 28 km north-east of the city of Cairns in Far North Queensland.

On 28 December 2020, while on snorkel the first author (ABF) observed what appeared to be a White Ribbon Eel (Figs. 1 & 2) on the reef flat in around 1 m of water, approximately 150 m east of Green Island (-16.7596°S; 145.9696°E). At this locality the reef flat is covered with thick seagrass interspersed with areas of algae-covered coral rubble and sand. The size of the eel was estimated



Figure 1. Image of White Ribbon Eel, Green Island. Identification was confirmed using this image and a video clip. Photo: Alastair Freeman.

at 1 m in length which would make it an adult and it appeared at least superficially to be in good condition. When first sighted its behaviour indicated that it was foraging. The identification of



Figure 2. Frame from video clip showing the head region of the eel. Photo: Alastair Freeman.

this eel was subsequently confirmed by the second author (JJP) from an image and video footage that were taken at the time.

Despite having an extensive distribution through tropical latitudes, this is only the second confirmed record for this species in Australia, and around 780 km south of the first record from the Torres Strait. We cannot be certain if this is a one-off observation of a vagrant individual or indicative of a southern range extension for this species. Far from being an isolated, remote location, Green Island is a popular and busy tourist hub for locals and tourists out of Cairns. While the first author (ABF) has snorkelled frequently around the island over the last 25 years, this is the first time he has ever observed this species, which is solitary and often seen in the open (Allen & Erdmann 2012). This would perhaps indicate that it is a recent arrival on the island's reef rather than a long-term resident that has evaded identification. However, as moray eels are known to have a long pelagic larval duration (Reece *et al.* 2011), sporadic occurrences of rarely recorded species in Australian waters are not uncommon (Allen *et al.*

2018) and this could be just another occurrence of a species outside its normal distribution.

References

- Allen GR, Erdmann MV. 2012. *Reef Fishes of the East Indies. Volumes I-III.* Tropical Reef Research: Perth, Australia.
- Allen GR, McCosker JE, *et al.* 2018. *Muraenidae. Australian Faunal Directory.* Australian Biological Resources Study: Canberra. <https://biodiversity.org.au/afd/taxa/MURAENIDAE>, accessed 10 June 2022.
- Reece JS, Bowen BW, Smith DG, Larson A. 2011. Comparative phylogeography of four Indo-Pacific moray eel species (Muraenidae) reveals comparable ocean-wide genetic connectivity despite five-fold differences in available adult habitat. *Marine Ecology Progress Series* 437: 269-277.
- Smith DG, Tighe K, McCosker J. 2019. *Pseudoechidna brummeri.* The IUCN Red List of Threatened Species 2019: e.T195814A2421767. <http://dx.doi.org/10.2305/IUCN.UK.2019-1.RLTS.T195814A2421767.en>, accessed 20 January 2022.
- Whitley GP. 1929. Studies in ichthyology. No. 3. *Records of the Australian Museum* 17(3): 101-143. <https://journals.australian.museum/whitley-1929-rec-aust-mus-173-101143/>