

Biodiversity Record: Motoro stingrays stranded at Sungei Buloh Wetland Reserve

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Subjects: Motoro stingray, *Potamotrygon motoro* (Chondrichthyes: Myliobatiformes: Potamotrygonidae).

Subjects identified by: Tan L. Y. Claudia, Chua L. E. Jacqueline and Joleen Chan.

Location, date and time: Singapore Island, Sungei Buloh Wetland Reserve, Eagle Point boardwalk, at the Coastal Trail along the Johor Strait; 10 November 2020 at 1053 hrs and 15 December 2020 at 1708 hrs.

Habitat: Estuarine mangrove shore. On the mudflat within the wooden stake barricade, at low tide.

Observers: Tan L. Y. Claudia, Chua L. E. Jacqueline and Joleen Chan.

Observations: The first individual, with an approximate disc width of 15–20 cm, was stranded on the mud within two metres of the mangrove treeline, on 10 November 2020 (Fig. 1). The second example, 35–40 cm disc width, was found exposed on the mud just before the wooden stakes between the mangrove and the sea on 15 December 2020 (Fig. 2). Both individuals were alive but largely inactive, occasionally and briefly flapping about, which caused slight changes in orientation but hardly any shifts in position.

Remarks: Despite being a new record for the Sungei Buloh Wetland Reserve, the presence of motoro stingrays in a saltwater environment is highly unusual. Originating from tropical South America, the motoro ray is a popular aquarium fish in Singapore. It has been introduced and become established in several freshwater bodies, including Upper Seletar Reservoir (Ng et al., 2009; Ho et al., 2016), Lower Peirce Reservoir (Lai, 2015; Ho et al., 2016), Lower Seletar Reservoir (Ho et al., 2016), a stream connecting Upper and Lower Seletar reservoirs (Tan & Zeng, 2015), and a pond at Bishan Ang-Mo Kio Park (personal observations; Kennie MusicLovers, 2017).

Motoro stingrays live their entire lives in freshwater and can tolerate only intermediate levels of salinity (Thorson, 1970; Tam et al., 2003; Ip et al., 2009). Unless they have access to freshwater, the two featured individuals are unlikely to have survived. Even if they did not suffocate from exposure to the air, they would have shortly succumbed from dehydration from prolonged immersion in high-salinity water.

The most plausible explanation of their unnatural presence in the mudflat is the release of individuals by the flushing of excess water from Kranji Reservoir through Kranji Dam, which lies about one kilometre along the shoreline to the east of the site where the stingrays were found. Although this species has not been recorded from Kranji Reservoir (Tan et al., 2020), it does not mean that an undetected established feral population does not exist there.

Motoro stingrays are known to have been liberated or abandoned by people at some places in Singapore (Kennie MusicLovers, 2017; Siau, 2017; Choo, 2018), and the two stingrays observed at Eagle Point could have been deliberately placed there. Such a scenario is less likely. Firstly, due to the higher retail prices in the aquarium trade as compared to other commonly released pets (e.g., red-eared sliders), a greater proportion of former owners would pay greater attention in rearing them and thus, are more likely to know of their inability to live in saltwater. Secondly, the relative inaccessibility of Eagle Point boardwalk (due to its distance from the main road, the Visitor Centre car park and the nearest bus stop) would deter people from releasing live aquatic organisms such as the motoro stingrays there, as compared to the more publicly accessible Kranji Reservoir or other freshwater bodies in the vicinity.



Fig. 1. In situ dorsal view of motoro stingray stranded at low tide on 10 November 2020. (Photograph by: Claudia Tan).



Fig. 2. In-situ fronto-dorsal view of motoro stingray stranded on 15 December 2020. (Photograph by: Claudia Tan).

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