

# COMMUNICATIONS

## Observation of mass spawning of the sea cucumber *Holothuria coluber* at Lizard Island, Great Barrier Reef, Australia

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### Location

Northwest reef of the Blue Lagoon at Lizard Island, northern Great Barrier Reef

### Date and time of observation

18 December 2018 between 15:30 and 16:00

We report an *in situ* observation of a mass spawning event of sea cucumbers at Lizard Island in the northern Great Barrier Reef. On 18 December 2018, a minimum of 20 sea cucumbers spawning within an estimated area of 200 m<sup>2</sup> were observed on the shallow fringing reef in the northwest margin of the Blue Lagoon at Lizard Island. The sea cucumbers were identified as *Holothuria coluber* by their slender bodies, dark colouration, yellow tentacles, and the presence of numerous white papillae throughout their bodies (Fig. 1A). All individuals were observed on the reef flat at a depth of 2 m (Fig. 1B). This observation coincided with a waxing gibbous moon and a rising tide (high tide of 2.34 m occurred at 18:04).

All individuals elevated the anterior end of their body above the reef substrate, high in the water column. However, in doing so, they became exposed to the current, and appeared to actively adjust their orientation to remain erect. This behaviour is consistent with previous observations of spawning holothurians (Mortensen 1937; Hendler and Meyer 1982; Balogh et al. 2018). Our record adds to previous opportunistic observations of *H. coluber* spawning in the area (Babcock et al. 1992).

The reproductive cycles of many reef invertebrates that have predictable synchronised spawning events are well-known (Harrison et al. 1984; Babcock et al. 1992; Wolstenholme et al. 2018). The factors that trigger spawning events of *H. coluber*, however, are unknown, but are likely to be cued by daylength and lunar cycle as in other sea cucumbers (Balogh et al. 2018). Further research is needed

to identify the environmental cues that underpin sexual reproduction of *H. coluber*. Until this information becomes available, anecdotal observations, like this one, provide a glimpse into the reproductive biology of these animals.

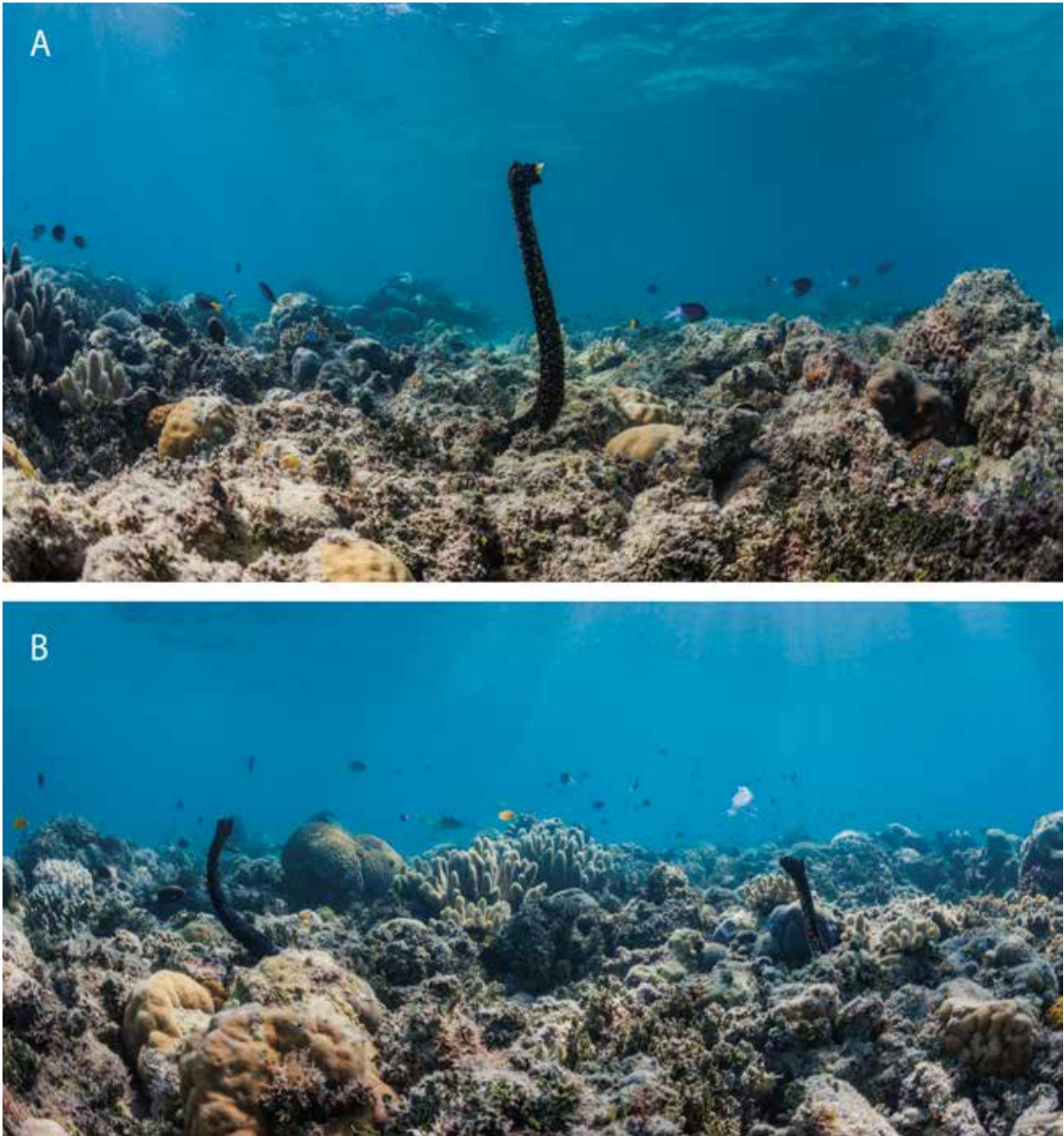
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**Figure 1.** *Holothuria coluber* spawning on the reef flat at Lizard Island. A: A reproductively active *H. coluber* rises its anterior end above the reef substrate during the spawning event; B: Two erect *H. coluber* in close proximity. Note the cloud of gametes released by the sea cucumber to the right. (images: Victor Huertas, James Cook University)