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BRIEF COMMUNICATION

The first record of gravid spiny butterfly ray (*Gymnura altavela*) in the northern Mediterranean Sea, with description of near-term foetuses

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Abstract

This paper describes the first record of the critically endangered gravid female spiny butterfly ray, *Gymnura altavela* (Linnaeus, 1758), in the northern Mediterranean and simultaneously the only record of the species in this century for the Adriatic Sea. The female (173 cm disc width and 43.25 kg total weight) was captured at *c*. 200 m, off Vlorë in the southern Adriatic Sea off Albania on 12 May 2022. Upon necropsy, seven near-term foetuses (mean 328 ± 6.47 mm disc width and mean 355 ± 20.06 g in total weight) were transported for further *in-vitro* incubation. These results represent the deepest capture for the species, as well as the largest litter size and largest size at birth in the Mediterranean Sea, which indicates the need for further research.

KEYWORDS

Adriatic, embryos, Mediterranean, reproduction, stingray

1 | BRIEF COMMUNICATION

Spiny butterfly ray, Gymnura altavela (Linnaeus, 1758), is an enigmatic demersal batoid species distributed across the temperate and tropical waters of both sides of Atlantic Ocean (Menni & Lucifora, 2007). It is easily distinguished from other stingrays with a disc approximately twice as broad as long (Barone et al., 2022) and a slender tentacle processes present at the inner margins of spiracles (Ebert & Dando, 2020). Maximum reported size in the Mediterranean Sea is 165 cm disc width (DW) and 36 kg total weight (TW) (Özbek et al., 2016), whereas generally individuals are less than 110 cm DW and 10 kg TW (Alkusairy, 2013, Alkusairy et al., 2014; Özbek et al., 2016). This species typically inhabits sandy and muddy coastal waters up to c. 100 m deep (Özbek et al., 2016; Yaglioglu et al., 2015), with the majority of records shallower than 50 m (Alkusairy et al., 2014; Yeldan, 2018). Reproduction in G. altavela has been previously described (Alkusairy et al., 2014; Tomita et al., 2020) with a gestation period between 6 and 12 months and a litter size range of one to eight pups (Alkusairy et al., 2014; Capapé et al., 1992; Taylan et al., 2019).

Costal fisheries, habitat loss, pollution and urbanization (McEachran & Carvalho, 2002; Walls *et al.*, 2016) have reduced populations of *G. altavela* to critically endangered levels in the Mediterranean Sea (Walls *et al.*, 2016), where sightings have now become extremely rare (Serena *et al.*, 2020). Moreover, this species is recently considered absent from some of its northern Mediterranean habitats (Psomadakis *et al.*, 2008; Dulvy *et al.*, 2021), while the last known record from the Adriatic Sea dates back in the previous century (Dulčić *et al.*, 2003). Given the population status of this elasmobranch species and potentially increasing threats, information on the life history of *G. altavela* is both timely and imperative. Information herein provides the first account of the reproductive biology of this species in the Adriatic Sea, a fundamental aspect essential for the proper management of this species (Sulikowski, 2003).

A gravid spiny butterfly ray was opportunistically captured by bottom trawl at c. 200 m, about 4.5 NM off the southwestern coast of Sazan Island, towards the Karaburun Peninsula (Vlorë, Albania) on 12 May 2022. The individual was dead upon landing, and an initial palpatory examination indicated the female was in the late stages of pregnancy. Body and internal organs of the gravid female were grossly examined on the fishing vessel, and pieces of liver, spleen, uterus with

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