

Devils in our ocean backyard: Preliminary data from the western coast of Florida and call for contributions to elucidate the distribution and seasonality of *Mobula hypostoma* in the Gulf of Mexico and the Caribbean Sea

Diablos en nuestro vecindario : Datos preliminares de la costa Oeste de Florida y llamamiento a contribuciones par elucidar la repartición y la estacionalidad de *Mobula hypostoma* en el Golfo de México y el Mar Caribe

Des diables pour voisins : Données préliminaires de la côte Est de la Floride et appel à contributions pour élucider la répartition et la saisonnalité de *Mobula hypostoma* dans le Golfe du Mexique et la Mer des Caraïbes

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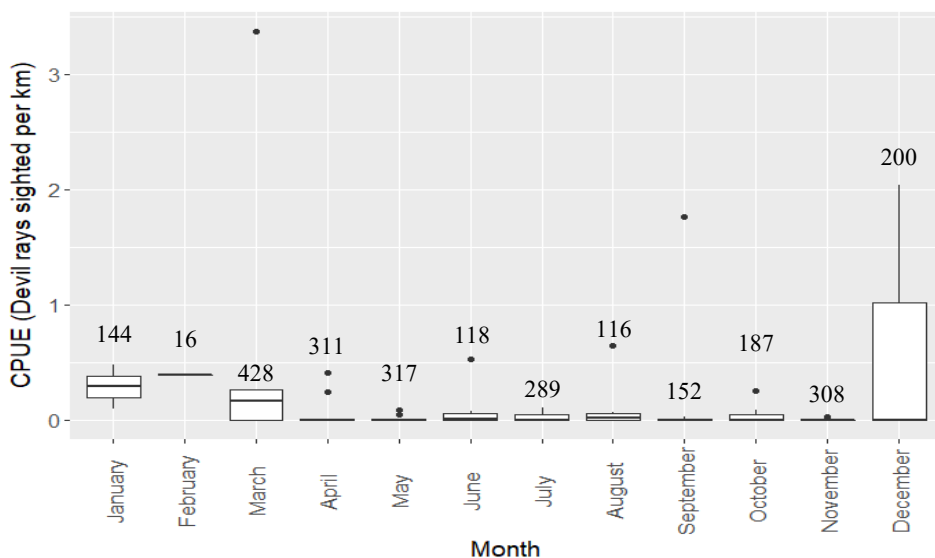
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EXTENDED ABSTRACT

The Western Atlantic pygmy devil ray, *Mobula hypostoma*, is the smallest of the six mobulid species present in the Gulf of Mexico and the Caribbean Sea region. Although this ray is currently listed as Endangered on the IUCN Red List based on reduced observations throughout its range (Marshall et al., 2019), increasing sightings have been reported on the southeast coast of the US over the last 20 years, both from coastal stakeholders and research trawl surveys (Bizzarro et al., 2009). Most of the species’ biology and ecology remains unknown, including exact distribution and seasonal presence in the confirmed areas of its range.

Since 2012, Mote Sharks and Rays Conservation Research Program (SRCRP) has been collecting opportunistic morphometric and genetic data on *M. hypostoma* off Sarasota, FL. 1482 devil rays were observed across 77 of the 276 surveys conducted between 2012 and 2022. Sightings were overall sporadic and highly variable between years (Fig 1). Observed rays were single individuals (28%), pairs (16%), small groups of 3-15 rays (46%) or bigger groups of 15-70 (10%). Between 2013 and 2022, 106 individuals (55 F, 51 M) were captured, measured and weighed, ranging 64-119 cm DW and 3-18 kg (Fig 2). Most individuals were immature based on size and/or clasper rigidity. Seventy fin clips were contributed to a global phylogenomic study on mobulid rays (Hosegood et al., 2020).



Seven devil rays were

Figure 1. Sightings per km surveyed off Sarasota grouped by month (2012-2022). Total km surveyed for each month are indicated

internally tagged by Mote SRCRP with Innovasea-Vemco acoustic transmitters between 2019 and 2022. Preliminary acoustic detection data provided through the collaborative iTAG network indicates three rays traveled to the northern Gulf of Mexico in the winter months, with the furthest detected at the Mississippi River mouth (691 km from tagging location). One ray traveled 467 km in 21 days, a rate of 22 km/day.

Future research efforts include additional, collaborative tagging of *M. hypostoma* in the eastern and northern Gulf of Mexico and genetic population analyses. Other aspects such as feeding ecology and reproductive biology will be investigated. A dedicated reporting form, <https://mote.org/raysightings>, has been created to collect sightings information throughout the Gulf and the Caribbean region.

KEYWORDS: : devil ray, morphometrics, movements, distribution, seasonality

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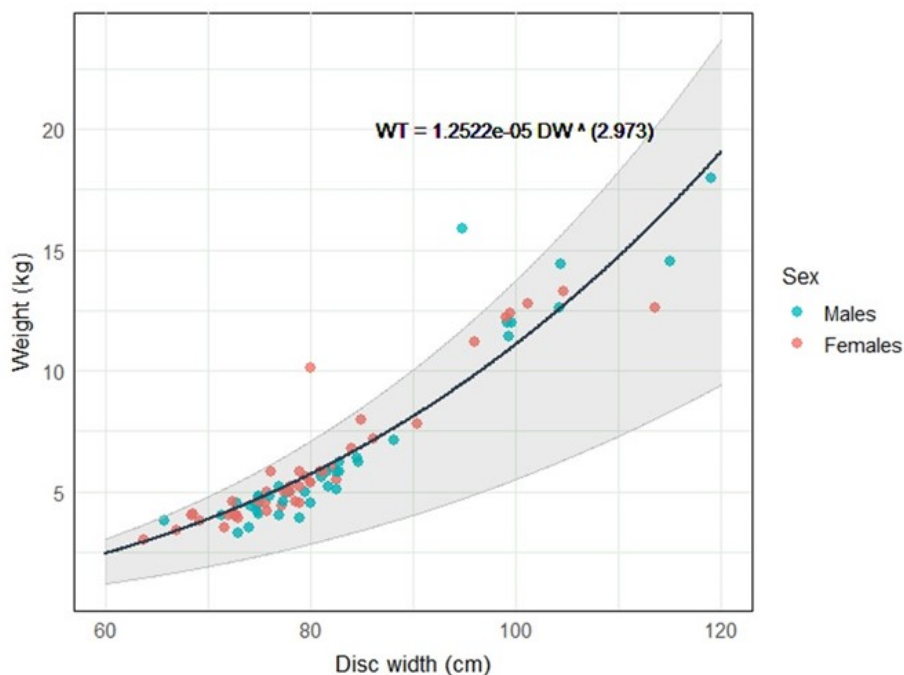


Figure 1. Size – weight relationship in captured individuals