

First report of mangrove whipray *Himantura granulata* (Macleay, 1883) from the Persian Gulf, Iran

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Introduction

Dasyatidae is primarily a marine subfamily, which is most common in shallow tropical waters. The species of this family are distributed worldwide; from tropical to warm temperate; Atlantic (Including the Mediterranean Sea), the Indian, and Pacific Ocean (Nelson, 2006). Six genera, *Dasyatis* (synonyms *Trygon* and *Urolophoides*), *Himantura*, *Pastinachus* (synonym *Hypolophus*), *Pteroplatytrygon*, *Taeniura*, and *Urogymnus*, with about 68 species are included in this family (Compagno, 2005). In the Persian Gulf, some members of family Dasyatidae are important species in terms of number and biomass. This family is represented by three genera (*Dasyatis*,

Himantura and *Pastinachus*) and seven species, although they have been frequently confused by forms and colors (Vosoughi, 1997; Behzadi, 2006; Last *et al.*, 2012; Moore, 2012a).

Mangrove whipray *Himantura granulata* (Macleay, 1883) is possibly widespread in the Indo-West Pacific from the Maldives to the Caroline and Santa Cruz Islands, and Australian waters (Last and Compagno, 1999). Although specific localities of capture of this species are unknown, it tends to be found in shallow inshore waters, including near mangroves, estuaries, sand flats and sandy substrate, and occurs to a depth of 85 m (Last and Compagno, 1999). Information about biology and life-history characteristics

of this species is scarce. In this study, first report of *H. granulata* from the northern Persian Gulf with some morphometric measurements is given.

A single female specimen of *H. granulata* was obtained nocturnal using bottom trawl R/V 'Ferdows-1' at a depth of 49 m in the south of Qeshm Island, northern Persian Gulf (56°14.5' E 26°41.1'N) on 25 December 2014 (Fig. 1).

Mesh size of cod end and headline of trawl net were 80 mm and 72 m, respectively. Sex (based on the absence of claspers in female) and weight (nearest 10 g) were recorded. Morphometric characters were taken with an accuracy of 0.1cm. The specimen was 124.1 cm in total length and 55.6 kg in total weight. Some morphometric measurements are shown in Table 1.

H. granulata (Macleay, 1883)

Description: Disk oval in shape, disk length slightly greater than DW, pectoral fin apex evenly rounded and thick; color uniformly brownish, paler near margin, usually covered with fine white spots and flecks; ventral surface white; tail short and without sting; snout very broad, tip feebly pointed; eyes moderately large, widely spaced eyes are immediately followed by the spiracles, inter orbital space broad (Fig. 2); Mouth moderately large, with 2 papillae on central floor enlarged, teeth with 43 on upper jaw and 40 on lower jaw, margin with very fine fringe (Fig.3); nostrils long, narrow; lower jaw

concave at symphysis; Pelvic fins small; Disc surface granular, small thorns covered on dorsal, surrounded by smaller denticles on head, over abdomen and along midline of tail.

The present specimen was identified as *H. granulata* due to its oval disk, dark brownish color with white spots, disc surface granular and covers thorns on dorsal (Last and Compagno, 1999). This study reported the first report and morphometric data for *H. granulata* in the Persian Gulf and compared it with findings of Ishihara *et al.* (1993) from Maldives Islands. Except the total length and length of tail, the morphometric characteristics of the present female specimen were similar in most of the characters with the specimen representatives described from Maldives Islands (Ishihara *et al.*, 1993). It seems that the tail of this species was chopped during the capture process. Ishihara *et al.* (1993) used disk width (DW) instead of total length for proportional measurements for six specimens of *H. granulata*, because the tail cut off easily.

A specimen was a female due to the absence of claspers and the stomach containing digested prey, continued to a long intestine 9.5 cm in length at the anal region. The present specimen measured 96.4 cm in DW. Also Behzadi *et al.* (2012) reported the same species (98 cm of DW) from the Persian Gulf but it was wrongly identified as *Urogymnus africanus* (Bloch and Schneider, 1801).

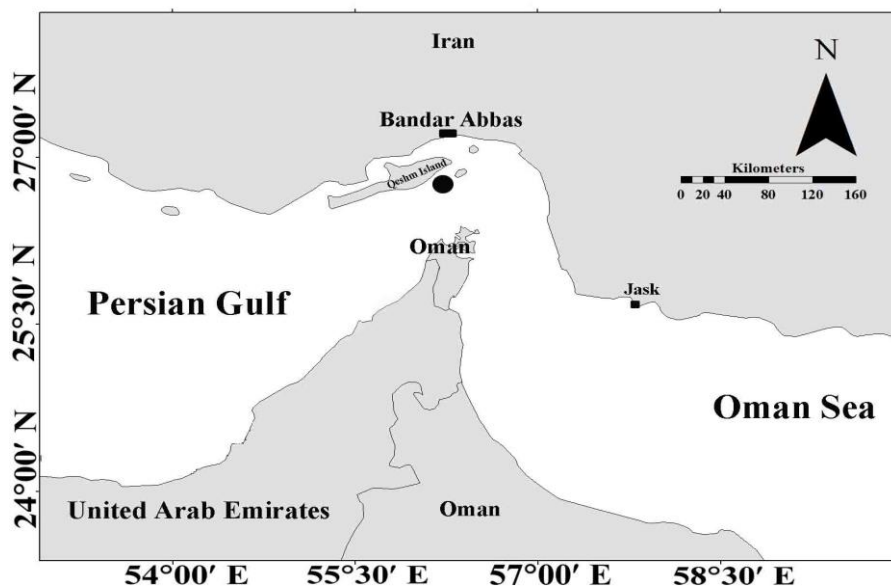


Figure 1: Solid circle represents sampling location of *Himantura granulata* in the Persian Gulf, Iran.

Table 1: Morphometric data for *Himantura granulata* captured from northern Persian Gulf and compared by findings of Ishihara *et al.* (1993) from Maldive waters.

Characters (mm)	Ishihara <i>et al.</i> , 1993	Present study
Disk width	524-970	964
Disk length	992-1062	995
Total length	2005-2055	1241
Mouth width	94-116	94
Interspace first gill slits	230-245	284
Interspace fifth gill slits	152-172	211
Cloaca (anterior) to end of the tail	1051-1103	373
Cloaca (posterior) to end of the tail		275
Interspiracular distance	192-217	197
Interorbital distance	116-146	205
Prenarial length	147-184	156
Mouth to cloaca (anterior)		704
The width of fold of skin between the nose		115
Mouth to first gill slits		141
Mouth to fifth gill slits		291
Preorbital length	202-225	220
Snout tip to anus	818-881	860

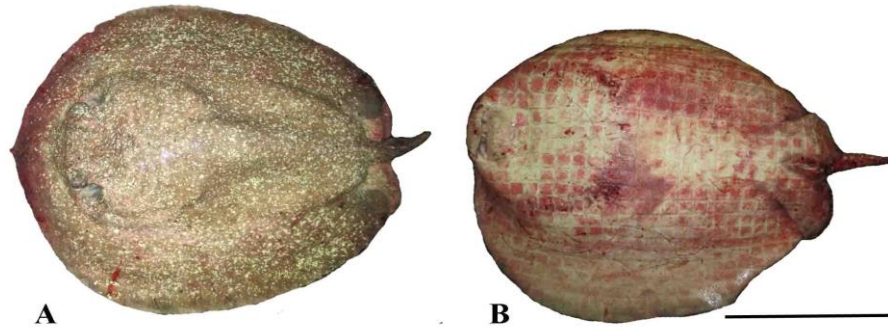


Figure 2: Female specimen of *Himantura granulata* captured from northern Persian Gulf. A: Dorsal view; B: Ventral view (Scale 20 cm).



Figure 3: Teeth and two papillae on central floor of mouth in *Himantura granulata* from the Persian Gulf.

This species reaches a maximum reported size of 141 cm DW (without special point), size at birth and mature males are reported at 14-28 cm and 55-65 cm DW, respectively (Manjaji *et al.*, 2009).

Also measurement of DW reported for six specimens by Ishihara *et al.* (1993) varied from 52.4 to 97 cm in the Maldives Islands.

According to the International Union for the Conservation of Nature (IUCN), this species was classified as nearly threatened (Manjaji *et al.*, 2009). Our findings report distribution patterns of

this fish from the northwestern region of the Indian Ocean, which is a region with high levels of fishing intensity (Valinassab *et al.*, 2006). On the other hand, this species has been previously reported in low numbers from the east of the Indian Ocean (Papua New Guinea, Caroline, and Santa Cruz Islands) to northwestern Australia (Last and Stevens, 1994) and from Maldives Islands (Ishihara *et al.*, 1993). Also Moore (2012b) reported this species from Gulf of Aden and Gulf of Aqaba. It seems that the distribution range of this species is occasional, and the

current study extended its distribution range to the Persian Gulf in the northwestern of Indian Ocean.

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