



Scientific Note

New records of *Urobatis tumbesensis* (Chirichigno & McEachran, 1979) in the Tropical Eastern Pacific

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Abstract. This report confirms the presence of Tumbes round stingray *Urobatis tumbesensis* in the Colombian Pacific coast, increases the species richness of the *Urobatis* genus in the study zone, and considerably extends the known geographic distribution range of this species in the Tropical Eastern Pacific.

Key words: Batoid fishes, American rounded-rays, distribution, Colombia.

Resumen. Nuevos registros de *Urobatis tumbesensis* (Chirichigno & McEachran, 1979) en el Pacífico Oriental Tropical. Este reporte confirma la presencia de rayas redondas americanas de Tumbes *Urobatis tumbesensis* en la Costa Pacífica colombiana, incrementa la riqueza de especies del género *Urobatis* en la zona de estudio y extiende considerablemente el rango de distribución geográfica conocido de esta especie en el Pacífico Oriental Tropical.

Palabras clave: peces batoideos, rayas redondas americanas, distribución, Colombia.

The Family Urotrygonidae McEachran, Dunn & Miyake 1996, that includes the American rounded-rays, is represented in the Tropical Eastern Pacific by two genera (*Urobatis* and *Urotrygon*) and by 12 species (4 and 8, respectively) (Compagno 2005). A recent study about the elasmobranch richness in Colombia (Mejía-Falla *et al.* 2007) confirmed the presence of the two genera and five species: *Urobatis halleri* (Cooper 1863), *Urotrygon aspidura* (Jordan & Gilbert 1882), *Urotrygon chilensis* (Günther 1871), *Urotrygon munda* Gill 1863 and *Urotrygon rogersi* (Jordan & Starks 1895), on the coast of the Colombian Pacific Ocean. Such study also classified the record of *Urobatis tumbesensis* (Chirichigno & McEachran 1979) as “*in doubt*”, since collected specimens or visual records had not been registered and the only records of this species were based on two bibliographic references (Estupiñán *et al.* 1990, Arboleda 2002).

The current record is based on two specimens (one male and one female) of the family Urotrygonidae captured in artisanal shrimp trawl

fishery in El Tigre, Malaga Bay, Colombian Pacific coast (Fig. 1).

The male was captured on November 23rd 2006 (3° 53'42''N, 77° 19'25''W) and the female on June 21st 2007 (3° 52'20''N, 77°20'10''W). These specimens were preserved, analyzed and later donated to the Reference Ichthyological Collection of the University of Valle (CIRUV, abbreviation in Spanish), Cali, Colombia (CIRUV 006-0063 and CIRUV 007-0094, respectively). The measurements of specimens were taken following the criteria of Chirichigno & McEachran (1979) and the specific identity of specimens was validated by comparing with the description and with the proportional measurements of the holotype (Chirichigno & McEachran 1979). Both specimens presented characteristics consistent with those of the genus *Urobatis* and to the specific identification of *Urobatis tumbesensis* (Fig. 2).

These individuals have nearly rounded discs, slightly wider than long; pelvic fins with abruptly rounded tips; tail stout, bearing a serrated stinging

spine, and with a rounded caudal fin; tail length near to 85% of disc length (female 85.94% and male 85.76%); tail and top of caudal fin uniformly covered with star-shaped dermal denticle bases, enlarging towards the midline of the disc; a row of thorns with star-shaped bases along midline of disc and tail; underside smooth. Dorsal surface and caudal fin covered with a bright pattern of coarse light brown and dark wiggly lines and eye-sized spots, becoming more distinct towards the margin of the disc and on the pelvic fins; creamy ventral surface with a reticulated pattern of pale spots on a dark background around the sides and rear of the disc and pelvic fins. Moreover, the proportional measurements matched those described for the holotype (Table 1). The male total weight was 273 grams and its calcified clasper was 2.9 cm long, indicating a mature state at this size (30 cm total length). The female total weight was 872 grams and its size corresponds to the maximum ever reported in the literature (at least 41 cm total length) (Robertson & Allen 2002, 2008).

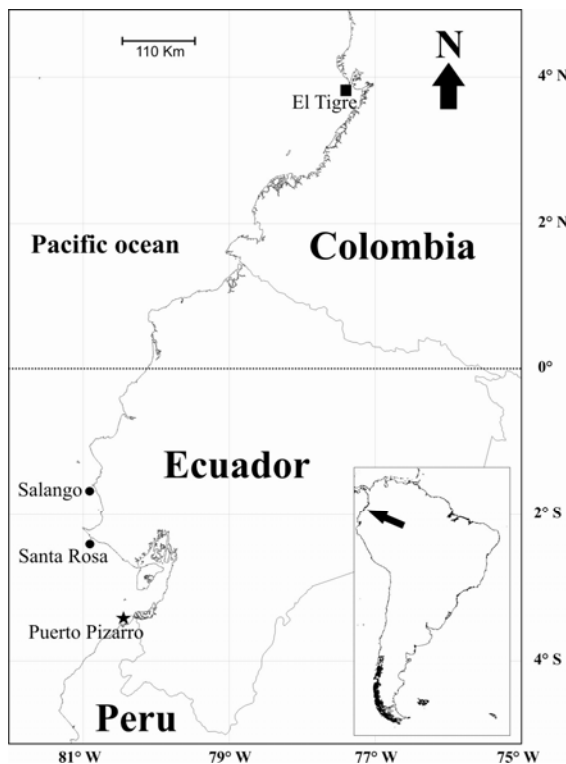


Figure 1. Distribution of *Urobatis tumbesensis* in the Tropical Pacific Ocean. (★) Holotype, (●) capture sites in Ecuador, (■) new capture site in the Colombian Pacific coast.

Urobatis tumbesensis is a little known species of round ray whose description is based on three specimens, two male specimens (40.4 and 15.7 cm total length) collected from estuarine waters at

depths of 1-2 meters, and a third specimen collected in 2006 near mangroves (Chirichigno & McEachran 1979, Kyne & Valenti 2007).

The capture depth of these individuals is within the registered range for the species (< 20 m) (Jiménez & Bearez 1994, Robertson & Allen 2002, 2008), and the capture zones are coincident with their habitats, specifically muddy bottoms (Robertson & Allen 2002, 2008).

This species was originally registered in Puerto Pizarro, Tumbes, Northern Perú (Chirichigno & McEachran 1979) and later in Salango and Santa Rosa, Ecuador (Jiménez & Bearez 1994) (Fig. 1). Robertson & Allen (2002, 2008) proposed that the distribution of this species is restricted to an area between Northern Peru and Central zone of Ecuador. However, some books of marine fishes of Ecuador have not registered such species (Massay & Massay 1999, MICIP 2006). In this way, this record of *U. tumbesensis* as well as confirming the presence of this species in Colombia, it also increases its distribution in approximately 600 km from the record in Ecuador (Salango) and suggests a known distribution range in the Tropical Eastern Pacific of approximately 750 km (Fig. 1).

Since Kyne & Valenti (2007) suggested only one known locality for this species (Tumbes, Perú), *U. tumbesensis* was included in the Deficient Data category of the IUCN Red List. Thus, this paper contributes with useful information for future evaluations of threat level of this species, based on geographic distribution, which allows to calculate the extent of occurrence (B1 Criterion, IUCN 2001) and/or the area of occupancy (B2 Criterion, IUCN 2001) of the species. According to the cartographic method of areas (Cartan 1978) and based on the four localities registered for the species by this study and literature, an approximate area of occupancy of 220 km² was estimated (using quadrants of 0.5°).

Additionally, it is possible that in Colombia (pers. obs.), Ecuador and Peru (P. Bearez, pers. comm.) this species presents a low abundance and fragmented distribution through the described range. In this case, there are other useful indicators for a new evaluation of the conservation status of *U. tumbesensis*. However, it is necessary to evaluate whether the low number of recorded individual is due to sampling problems and/or to wrong identification of the species in the area of occurrence. Moreover, *U. tumbesensis* is a very low proportion in the artisanal trawl fisheries' by-catch in Colombia (Gómez & Mejía-Falla 2008).

Finally, two out of four species of *Urobatis* of the Tropical Eastern Pacific (*Urobatis concentricus* and *U. maculatus*) are restricted to the

northern zone, especially Mexico (southern Baja California, Gulf of California and southern Mexico). *Urobatis halleri* is the species with the widest

distribution, while *U. tumbesensis* presents the narrowest one, and both species are reported in the Colombian Pacific coast.

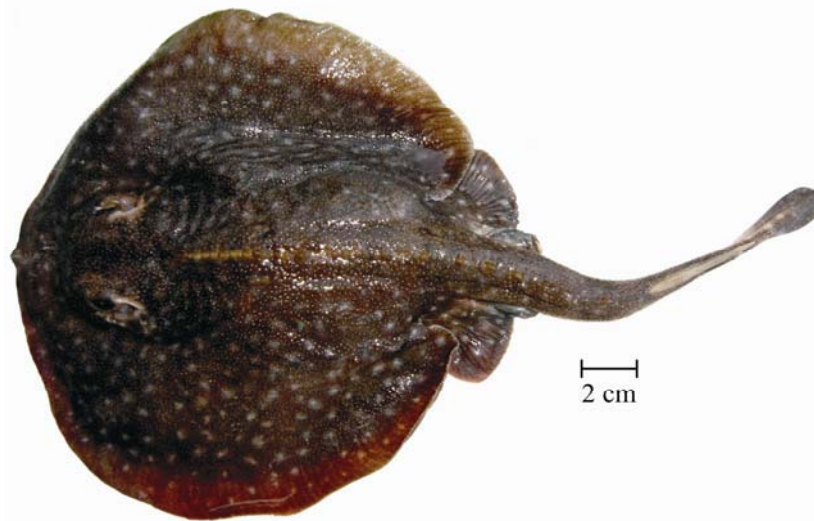


Figure 2. *Urobatis tumbesensis* male of 300 mm total length, captured in the Colombian Pacific coast.

Table I. Proportional morphometrics of holotype (Chirichigno & McEachran, 1979) and two specimens of *Urobatis tumbesensis* collected in the Colombian Pacific coast. The measurements are given as percentage of total length, except TL, which is in cm.

Morphometrics parameters	Holotype (Male)	Specimen 1 (Female)	Specimen 2 (Male)
Total length (cm)	40.4	42.0	30.0
Disc width	59.4	60.7	62.3
Preoral length	10.2	10.3	11.3
Preorbital length	12.2	13.2	14.1
Disc length	58.4	54.8	58.3
Prenasal length	9.0	8.8	8.6
Snout to maximum disc width length	27.7	28.6	30.0
Orbit diameter	4.1	3.0	2.4
Inter-orbital width	5.3	8.4	8.3
Interspiracular length	9.5	9.5	9.8
spiracle length	4.2	3.3	2.6
Mouth width	5.3	7.8	6.7
Internasal width	4.7	4.7	5,1
1 st gill width	2.5	2.1	2.0
3 th gill width	2.4	1.9	1.7
5 th gill width	1.6	1.4	1,3
Distance between 1 st gill slits	14.8	15.7	16,6
Distance between 5 th gill slits	10.9	11.8	11.6
Anterior margin of pelvic fin	11.1	14.9	11,9
Snout- cloaca length	51.2	53.6	48.3
Cloaca - sting length	27.5	31.0	25.7
Cloaca - caudal origin length	40.6	40.0	41.7
Cloaca - caudal fin	49.5	47.1	50.0

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