www.trjfas.org
ISSN 1303-2712
*Turkish Journal of Fisheries and Aquatic Sciences 18: 833-835 (2018)* DOI: 10.4194/1303-2712-v18_6_10

SHORT PAPER

# Northernmost Record of *Triaenodon obesus* (Rüppell, 1837) in the Eastern Tropical Pacific

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Received 08 May 2017
Accepted 28 September 2017

**Abstract**

This is the northernmost record of a whitetip reef shark, *Triaenodon obesus*, in the Eastern Tropical Pacific. The shark was observed in Magdalena Bay, Mexico, at a depth of 4 m and had a total length of 1.2–1.5 m. The habitat where the record was made is consistent with the conditions for the distribution of species. The presence of *T. obesus* in the area could be related to the protection of near natural areas and the seasonal bans on shark and ray fishing implemented in Mexico since 2012.

*Keywords*: Elasmobranchs, Carcharhinidae, Mexico, Eastern Pacific, new record.

## Introduction

The whitetip reef shark, *Triaenodon obesus* (Rüppell, 1837), is a small shark species with an extremely short and rounded snout, oval eyes, and bright white tips on the first dorsal fin and upper caudal fin lobe (Fischer, Krupp, Schneider, Sommer, Carpenter, & Niem, 1995). This mostly nocturnal predator feeds on benthic organisms like fishes, octopuses, lobsters, and crabs in coral and rocky reefs, and usually inhabits a depth range of 8–40 m (Randall, 1977). *T. obesus* is a placental viviparous, giving birth to litters of 1–5 pups (Compagno, Dando, & Fowler, 2005). It is categorized as "Near Threatened" by the IUCN due to its biological characteristics, restricted habitat type, and distribution in coastal zones and islands, which makes it vulnerable to overexploitation (Smale, 2005).

In the Eastern Tropical Pacific, the whitetip reef shark is distributed along the coast of Panama, Costa Rica, Colombia, and Ecuador (Fischer *et al*., 1995). In Mexico, the records of this species are limited to tropical areas like the Revillagigedo Archipelago (Ochoa-López, Villavicencio-Garayzar, & Ruiz-Gaytan, 1997), the coast of Jalisco (Corgos & Rosende-Pereiro, 2016), Nayarit (Pérez-Jiménez *et al*., 2005; Erisman *et al*., 2011), and the mouth of the Gulf of California (GBIF, 2017; OBIS, 2017; Robertson & Allen, 2017), with no consistent records of its presence far north, or in temperate waters of this country.

## Materials and Methods

The record was made in July 2015 while monitoring marine phanerogams on a rocky reef off the town of El Barrote (24°40'17.9050"N, 112°09'32.6640"W), within the Magdalena Bay–Almejas lagoon complex in the western coast of the Baja California Peninsula (Figure 1). This bay is subjected to upwelling effects that lead to high primary productivity (Zaytsev, Cervantes-Duarte, Montante, & Gallegos-Garcia, 2003). The input of nutrients by mangroves and sea grasses translates into a high availability of food within the bay, which is recognized as an area of high ecological importance (Acosta-Velázquez & Ruíz-Luna, 2007). During the monitoring, the sea surface temperature and salinity were measured with a YSI CastAway™ CTD, while the photographic record was performed with a Canon Powershot G15 camera. The taxonomic identity for the shark was determined by the description of Fischer *et al*. (1995).

## Results and Discussion

This study constitutes the northernmost record of *T. obesus* in the Eastern Tropical Pacific. The sea surface temperature and salinity showed respective values of 23 °C and 34 psu. The presence of the shark was recorded at approximately 50 m off the coast at a depth of 4 m. Its total length was estimated to be 1.2–

1.5 m and it was identified as *T. obesus* by noting the presence of two white tips on the first dorsal fin and caudal fin, oval eyes, as well as the elongated and slender shape typical of this species (Figure 2). The sex of the specimen, however, could not be determined.

The average annual sea surface temperature in Magdalena Bay-Almejas Bay ranged from 18-24°C (Lluch-Belda, Hernández-Rivas, Saldierna-Martínez, & Guerrero-Caballero, 2000), so the presence of rocky reefs, the availability of prey as well as the environmental conditions observed when recording the shark are consistent with the habitat previously described for *T. obesus* (Randall, 1977; Fischer *et al*., 1995). Although El Niño-Southern Oscillation could have an indirect effect on the presence of the organism in the bay, related to an increase of water temperature during July 2015 (Cervantes-Duarte & García-Romero, 2016), the record itself and the related conclusions to El Niño effect are beyond the scope of this study.

Sightings of some species like the bull shark *Carcharhinus leucas*, lemon shark *Negaprion brevirostris*, tiger shark *Galeocerdo cuvier*, and whitetip reef shark, have increased at some diving sites of the southern Baja California Peninsula coast over the last years (Reyes-Bonilla *et al*., 2016; OBIS, 2017). These sightings may be related to protected areas like Cabo Pulmo National Park and Cabo San Lucas Flora and Fauna Protection Area, as well as the

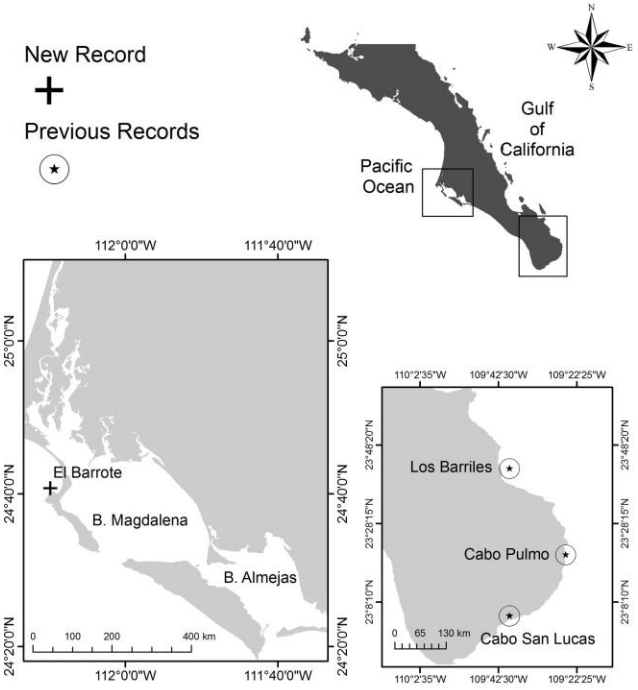


**Figure 1.** Previous sightings and new record of Triaenodon obesus in Baja California Sur, Mexico.

**Figure 2.** Whitetip reef shark in a rocky reef at El Barrote, BCS, Mexico.

seasonal bans on shark and ray fishing implemented in the Mexican Pacific since 2012 (Martínez-Cruz & Oviedo-Pérez, 2014; Reyes-Bonilla *et al*., 2016).

## Acknowledgments

This work is dedicated to the memory of Dr. Rafael Riosmena-Rodríguez. Our thanks also to the people who assisted in sampling, especially Karla Pedraza and Atzcalli Ehecatl Hernández-Cisneros. We thank Pelagios Kakunjá, A.C. and Consejo Nacional de Ciencia y Tecnología (CONACyT) for the scholarships provided and the Instituto Politécnico Nacional for funding through grants from Comisión de Operación y Fomento de Actividades Académicas and the Estímulo al Desempeño de los Investigadores (EDI).

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