

First record of the blacktip reef shark *Carcharhinus melanopterus* (Carcharhiniformes: Carcharhinidae) from the Tropical Eastern Pacific

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Abstract: The blacktip reef shark *Carcharhinus melanopterus*, is one of the most common Indo-Pacific reef sharks. On April 29, 2012, a juvenile male blacktip reef shark measuring 89 cm total length (TL), was incidentally caught during a research expedition in Chatham Bay, Isla del Coco National Park, Costa Rica, located in the Tropical Eastern Pacific. This is the first record of the species from Isla del Coco National Park, Costa Rica, and from the Tropical Eastern Pacific. **Citation:** López-Garro, A., I. Zanella, G. Golfín-Duarte & M. Pérez-Montero. 2012. First record of the blacktip reef shark *Carcharhinus melanopterus* (Carcharhiniformes: Carcharhinidae) from the Eastern Tropical Pacific. *Rev. Biol. Trop.* 60 (Suppl. 3): 275-278. Epub 2012 Dec 01.

Key words: Isla del Coco National Park, Cocos Island, *Carcharhinus melanopterus*, blacktip reef shark, Tropical Eastern Pacific.

The blacktip reef shark, *Carcharhinus melanopterus* (Quoy & Gaimard, 1824), is one of the most common Indo-Pacific reef sharks. The species is also present in the Red Sea, Western and Central Pacific, and Eastern Mediterranean (through the Suez Canal). The closest records to the Eastern Pacific are from Hawaii, Line Islands, Marquesas Islands and French Polynesia. Blacktip reef sharks inhabit shallow water coral reefs and reef flats on continental and insular shelves. They are commonly found in inshore waters but are also reported from off-shore locations (Compagno 1984, 1988, Bauchot 1987, Bonfil & Abdallah 2004, Compagno *et al.* 2005). *C. melanopterus* is viviparous and has a gestation period of 7 to 10 months. Size at birth is estimated at 33 to 50cm (Compagno 1998). Sexual maturity is reached at 95cm TL for males and 97 cm TL for females (Lyle 1987, Porcher 2005).

Blacktip reef sharks show strong site fidelity on coral reef, lagoon and sand flat habitats.

Acoustic and conventional tagging data from Palmyra Atoll, in the Western Pacific Ocean, show the species has short movements and small home ranges over a timescale of days to weeks ($0.55 \pm 0.24\text{km}^2$) (Papastamatiou *et al.* 2009). Stevens (1984) also reported restricted movements for the species ($1\text{-}3\text{km}^2$) in the Indian Ocean.

On April 29, 2012 at 20:00 hrs, a blacktip reef shark *Carcharhinus melanopterus*, was caught with hand line and a modified size 5 circular hook. Sea surface temperature at time of capture was 29.5°C and depth 13.4 m. The individual was caught during a tagging expedition studying population dynamics of the whitetip reef shark *Triaenodon obesus*, in Chatham Bay, Isla del Coco National Park. Chatham Bay is located on the north side of Isla del Coco (Fig. 1) between coordinates 5°33'25.28"N, 87°02'53.11"W and 5°33'04.71"N, 87°02'13.76"W. The bay is 1350m by 610m and dominated by sandy

bottoms with scattered rocks and reefs (Sibaja-Cordero *et al.* 2012), specimen was photographed, and released alive after hook removal.

Positive identification of the species was attained by analysis of the following distinctive characters (Compagno 1984, 1998, Compagno *et al.* 1995, 2005): (i) short rounded snout with large anterior nasal flaps (Fig. 2A), (ii) black tips on all fins, including the edge of the caudal fin's upper lobe (Figs. 2 B, C), (iii) light band that borders the black mark on the first dorsal fin (Fig. 2D), and (iv) distinctive body color: yellow-brown dorsal surface and white underside, with conspicuous dark bands on the flanks that extend back towards the pelvic fins (Fig. 2D). The shark's size (89cm TL) together with the low calcification of its claspers, suggests the individual was a juvenile. This is the first record of a blacktip reef shark from Isla del Coco National Park and from the Tropical Eastern Pacific (Allen & Robertson 1998, Bus-sing & López 2005, Garrison 2005, Robertson *et al.* 2004, Robertson & Allen 2008).

Garrison (2005) identified over 270 fish species (including 7 sharks and 4 rays) at Isla

del Coco: 30 species have a circumtropical or circumglobal distribution and over 40 species are reported from scattered Indo-Pacific locations or throughout the Indo-Pacific Ocean (most of these are bony fish, e.g. the genus *Thalassoma*, that probably traveled 5000km with floating debris to arrive in the Eastern Pacific Ocean). Several Indo-Pacific elasmobranchs are present at Isla del Coco, including the silvertip (*Carcharhinus albimarginatus*) and the white-tip shark (*Triaenodon obesus*). Their distribution extends into the continental waters of Central America. Other example is the marble ray (*Taeniura meyeni*); is only present at Isla del Coco and Galapagos Islands in the Tropical Eastern Pacific, and absent from the central american mainland (Grove & Lavenberg 1997, Garrison 2005).

The presence of a juvenile blacktip reef shark at Isla del Coco suggests that a pregnant female traveled at least 5000km and arrived at Isla del Coco to give birth at Chatham Bay. *C. melanopterus* possibly represents a new arrival for Isla del Coco National Park.

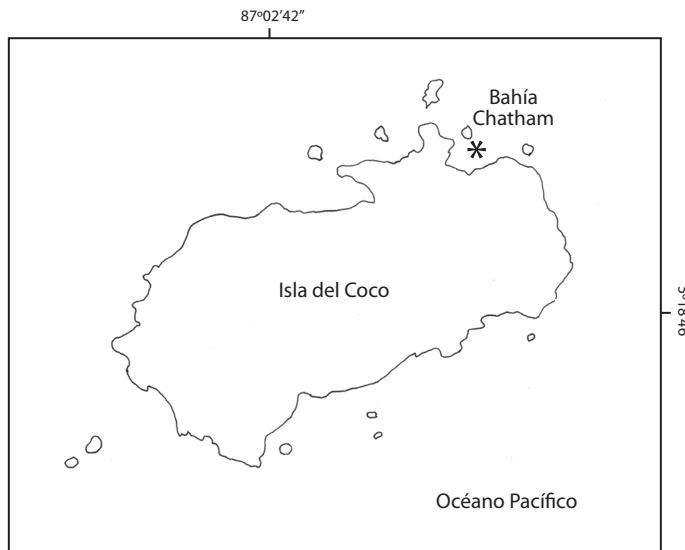


Fig. 1. Location of the first record (*) of a blacktip reef shark, *Carcharhinus melanopterus*, from Chatham Bay, Isla del Coco National Park, Costa Rica.

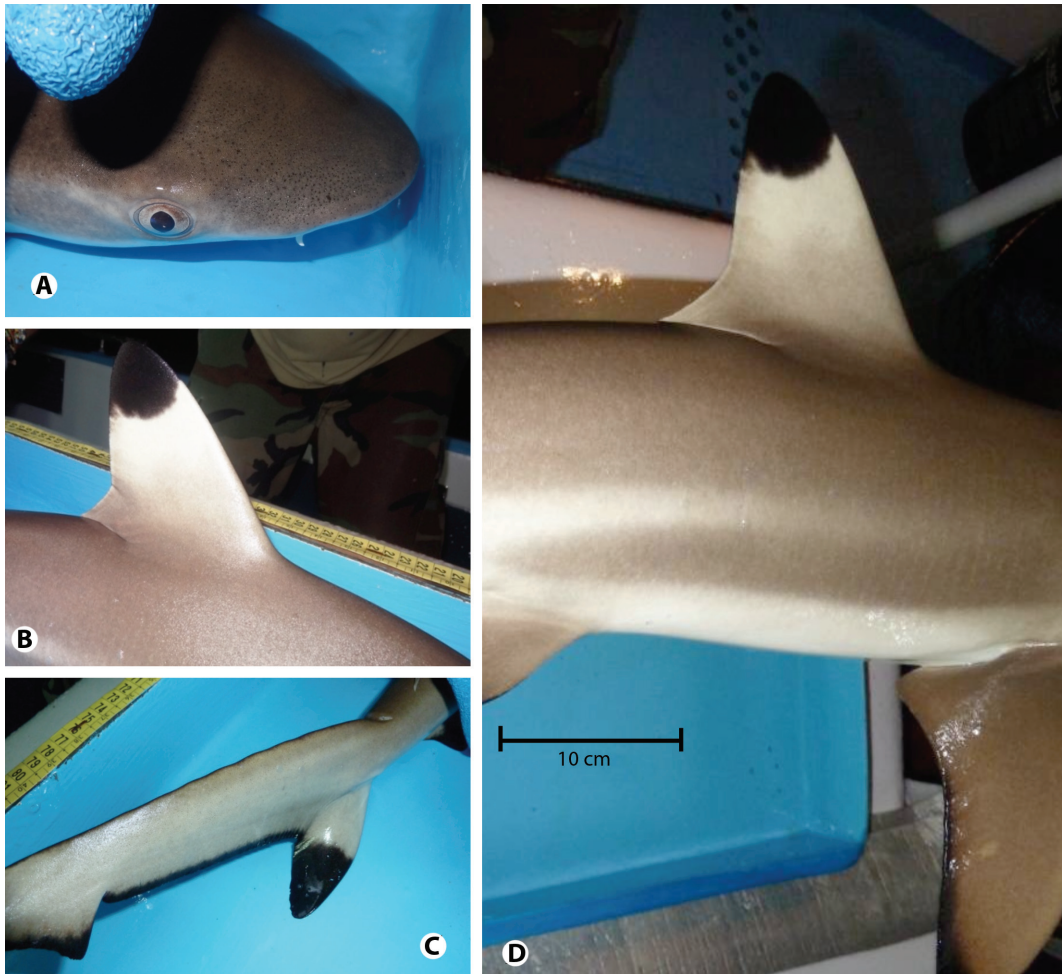


Fig. 2. *Carcharhinus melanopterus* captured at Chatham Bay, Isla del Coco National Park. A) Detailed is the short and rounded snout with large anterior nasal flaps. B) Image shows prominent first dorsal fin with black tip and a light band below it. C) Image shows the black edge of the upper lobe of the caudal fin. D) Body coloration of the blacktip reef shark from Chatham Bay, Isla del Coco National Park: yellow-brown on the dorsal surface and white on the ventral region, with a dark band on its flanks. Photos A-C: Carlos Hiller.

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RESUMEN

El tiburón punta negra de arrecife, *Carcharhinus melanopterus*, es uno de los tiburones de arrecife más comunes del Indo-Pacífico. Durante una expedición científica al Parque Nacional Isla del Coco, Costa Rica, Pacífico Tropical Oriental, un tiburón punta negra de arrecife fue capturado en Bahía Chatham, Parque Nacional Isla del

Coco, el 29 de abril 2012. El espécimen capturado era un macho juvenil de 89 cm. Este es el primer informe de esta especie para el Parque Nacional Isla del Coco, Costa Rica y para el Pacífico Tropical Oriental.

Palabras claves: Parque Nacional Isla del Coco, *Carcharhinus melanopterus*, tiburón punta negra de arrecife, Pacífico Tropical Oriental

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