



Record of whale shark (*Rhincodon typus*) sighting in the Arvoredo Biological Marine Reserve vicinity, Santa Catarina State, Brazil

ALEJANDRO DONNANGELO¹, DAVIDE FRANCO¹, BRUNNA LUIZA SILVA SIMONETTI¹,
VICTOR EDUARDO CURY SILVA¹ & ALEXANDRE ASCHENBRENNER^{2*}

¹ Laboratório de Hidráulica Marítima do Departamento de Engenharia Sanitária e Ambiental da Universidade Federal de Santa Catarina. Centro Tecnológico da UFSC Campus Universitário Reitor João David Ferreira Lima Rua Delfino Conti, s/n, Trindade Florianópolis - SC, Brasil CEP: 88040-370.

² Universidade Federal de Pernambuco – Departamento de Oceanografia - Av. da Arquitetura, s/n - Cidade Universitária, Recife - PE, CEP 50740-540.

Corresponding author: brenner.ale@gmail.com

Abstract. In December 2015, a sighting of *Rhincodon typus* was registered on shallow continental waters (18 m) in the vicinity of Arvoredo Biological Marine Reserve. This is the first record of live individual for this area, pictures and oceanographic data from the day of sighting are provided.

Key words: Elasmobranch; visual record; shallow continental waters; Arvoredo Biological Reserve.

Resumo: Registro de tubarão-baleia (*Rhincodon typus*) nas proximidades da Reserva Biológica Marinha da Ilha do Arvoredo, SC, Brasil. Em dezembro de 2015 um avistamento de *Rhincodon typus* foi registrado em águas rasas costeiras (18 m) nas proximidades da Reserva Biológica Marinha da Ilha do Arvoredo. Esse é o primeiro registro de um indivíduo vivo para esta área, fotos e dados oceanográficos deste dia são fornecidos.

Palavras-chave: Elasmobrânquios; registro visual, águas continentais rasas; Reserva Biológica do Arvoredo.

Whale sharks *Rhincodon typus* (Smith, 1828) are the world's largest fish, commonly reaching lengths of over 12 meters (Hazin *et al.* 2008). Despite their size, they are known to feed mainly of planktonic organisms such as euphausiids and copepods, eventually on fish eggs/larvae by filtering large amounts of water (Motta *et al.* 2010). This species inhabit tropical and temperate oceans worldwide, in the Atlantic occurs mainly between 20°N and 20°S (Coleman 1997, Compagno 2001). Generally, occurrences of the whale shark in the southwestern Atlantic are rare, when compared to other regions such as Eastern Atlantic, Pacific, Indian oceans or Caribbean Sea (Sequeira *et al.* 2012). In Brazilian waters, sightings of *R. typus* usually occur in oceanic waters, mainly at Saint Peter and Saint Paul archipelago, which is located 1000 km off the Brazilian coast (Hazin *et al.* 2008).

In coastal waters, most sightings have been reported for the States of Rio de Janeiro in Macaé, Angra dos Reis and Arraial do Cabo localities, while in São Paulo at Ilha Queimada Grande and Bacia de Santos. Further visual reports are provided for Paraíba, Alagoas and Rio Grande do Sul States (Soto & Nisa-Castro-Neto 2000, Barbosa-Filho *et al.* 2016). Another report associated with gas platform in the central coast of Brazil is provided by Andradas *et al.* (2012). Nonetheless, for coastal waters, most reports are of dead *R. typus* due to incidental captures by fisheries in the coast of Bahia, Ceará, Rio de Janeiro, Paraná and Santa Catarina States. (Mazzoleni & Schwingel 1999, Soto & Nisa-Castro-Neto 2000, Faria *et al.* 2008, Bornatowski *et al.* 2009). A concerning fact, taking in consideration that *R. typus* is listed as endangered in the IUCN Red List of Threatened Species (Pierce & Norman 2016) and its

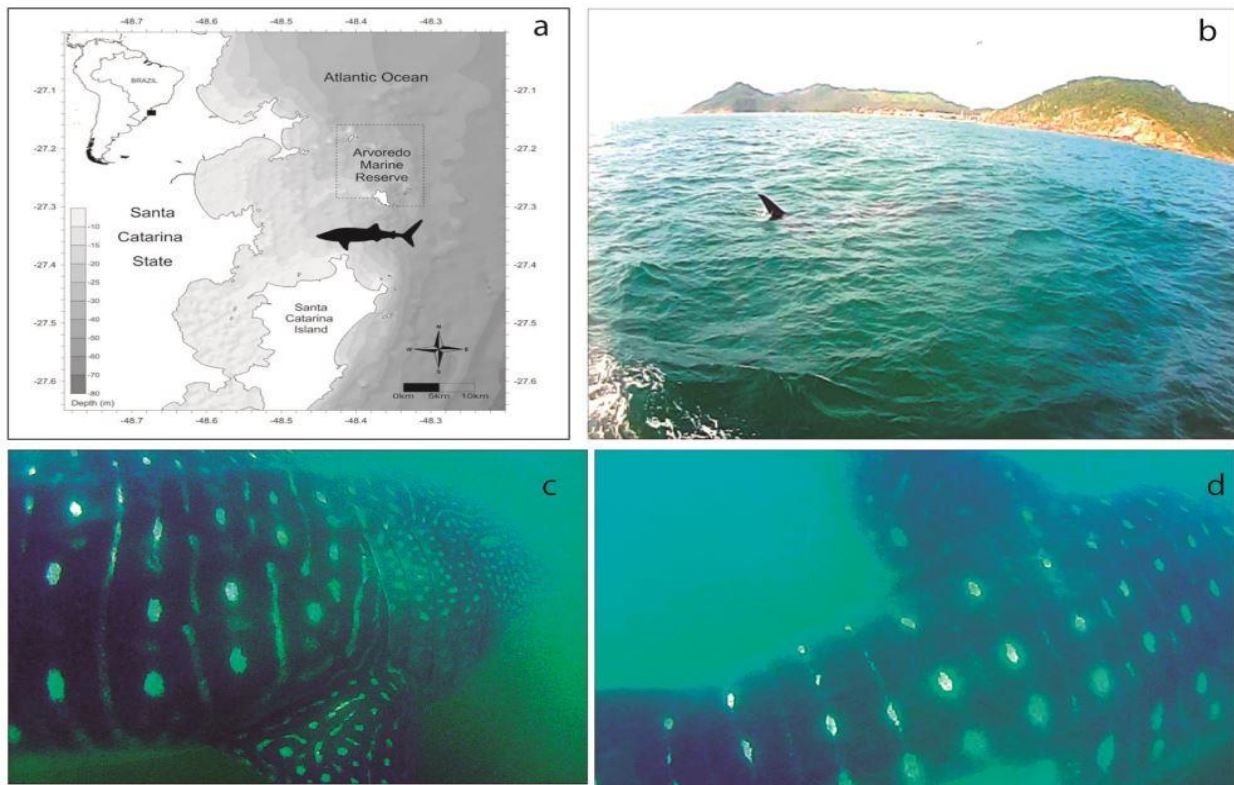


Figure 1. Location where *R. typus* was sighted, heading west towards North Bay in shallow continental waters at the vicinity of Arvoredo Biological Marine Reserve, Santa Catarina coastal region (a). Individual of *R. typus* occurrence recorded on water surface (b) and underwater (c, d).

capture, transportation and storing are prohibited in Brazil (MMA 2004). Here, we report an uncommon occurrence of a live *R. typus* individual in shallow continental waters at the vicinity of Arvoredo Biological Marine Reserve (Fig. 1a). On December 14th, 2015 at 9:00 AM a whale shark was sighted and positively identified during an oceanographic survey part of the MAArE Project (Environmental Monitoring of Arvoredo Marine Biological Reserve and Vicinity) at c. 800 m off the coast of Santa Catarina Island (27°37'55"S, 48°41'74"W). The whale shark was estimated to be about 8 m in total length (TL), suggesting that individual was in a juvenile stage. Period of watching last about 40 minutes, the animal was moving west from high seas towards North Bay (Fig. 1a, b). Surface water visibility was 6.25 m, as measured with a Secchi disc. Additional oceanographic data from water column at the day of sighting were also recorded using a Conductivity, Temperature and Depth profiler (SBE 19V2 CTD) with fluorescence sensors calibrated according to XXX (Table I). Although picture records were provided, focus on the pelvic fins to confirm the absence or presence of claspers was not possible, therefore sex confirmation was not

Table I. Oceanographic data from water column at the day of sighting recorded using a Conductivity, Temperature and Depth (CTD) device.

Depth (m)	Chl-a (mg/m ³)	Oxygen (ml/l)	Salinity	Temperature (°C)
1	0.8	3.6	34.27	21.8
9	3.1	2.8	35.64	18.8
18	2.1	2.5	35.84	18.4

allowed (Fig. 1 c, d).

Occurrence of *R. typus* in Santa Catarina coast has only been reported dead as incidental capture by fisheries (Mazzoleni and Schwingel, 1999). This is the first record of a live *R. typus* observed in Santa Catarina coastal shelf. Considering the lack of information regarding specific sites for its occurrence and distribution, especially for Brazilian shallow coastal waters, this single report along with oceanographic information might contribute with knowledge of whale shark distribution in Brazilian coastal areas.

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