



## Observation of the white suckerfish species *Remora albescens* (Perciformes, Echeneidae) on a pelagic host *Makaira nigricans*

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**Abstract:** A blue marlin (*Makaira nigricans*) was captured during the sport fishing off the coast of Ilhabela, in São Paulo state, with a white suckerfish *Remora albescens* attached close to the gills. This is the first photo record of this association between both species in Southern Brazil.

**Key words:** host, marlin, sportfish, Echeneidae, Remora-associations.

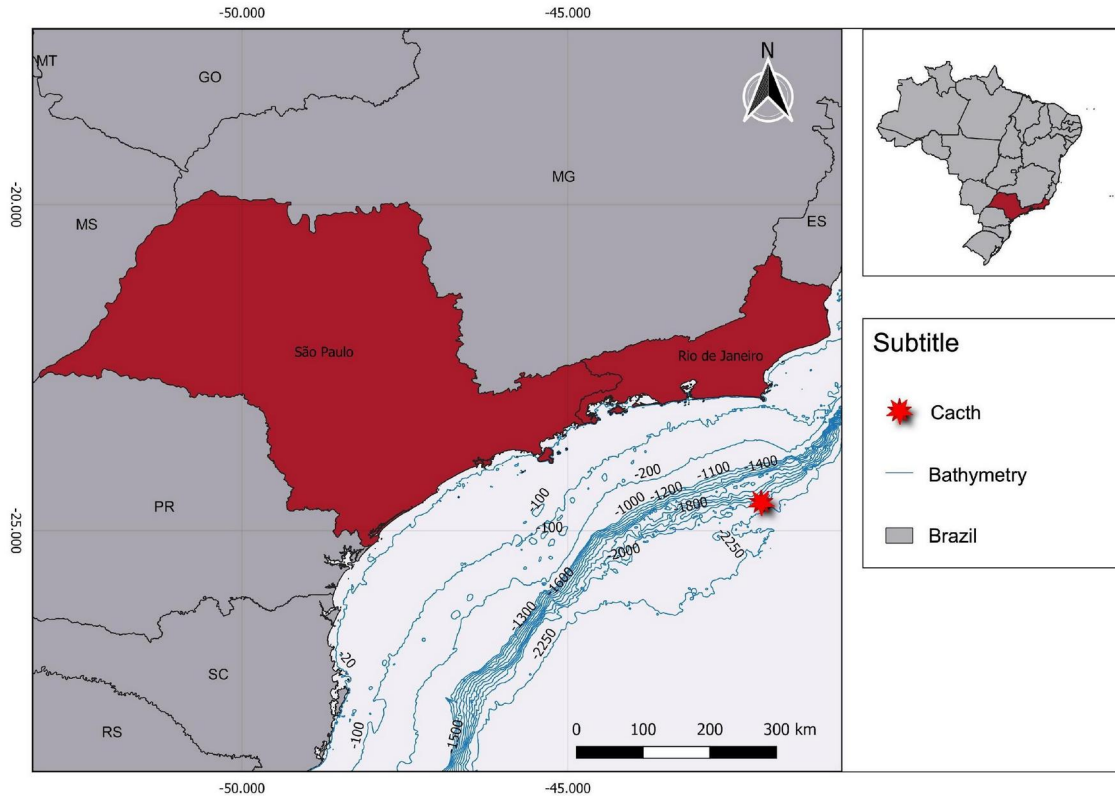
**Observação da remora *Remora albescens* (Perciformes, Echeneidae) no hospedeiro pelágico, agulhão-negro *Makaira nigricans*. Resumo:** Um agulhão-negro (*Makaira nigricans*) foi capturado durante a pesca esportiva na costa de Ilhabela, no estado de São Paulo, com uma remora *Remora albescens* preso próximo às brânquias. Este é o primeiro registro fotográfico de associação entre as duas espécies no sudeste do Brasil.

**Palavras-chave:** hospedeiro, marlin, pesca-esportiva, Echeneidae, Associações-Remora.

Remoras or catchers (Echeneidae) are characterized by the presence of a disc promoted with blades on the top of the head, facilitating the attachment of the posterior parts of the blades, which adhere to the skin of their hosts by suction (Figueiredo & Menezes 1980). It is known to attaches to a variety of hosts with a higher frequency in cetaceans (Santos & Sazima 2008), teleost fish, elasmobranchs, and marine turtles (Sazima & Grossman 2006, Brunnschweiler & Sazima 2008), as well as unusual interaction with scuba divers (Andrade 2007). The white suckerfish, *Remora albescens* (Temminck & Schlegel, 1850) is representative of the tropical Pacific, straying to America having its record in the South Atlantic Ocean on Ascension Island (Jordan & Evermann 1898, López *et al.* 2009, Wirtz *et al.* 2017). The species also were register at Saint Pedro and Saint Pablo archipelago in the equatorial Atlantic

northeast of Brazil (Lubbock & Edwards 1981). These remoras have a pelagic habitat with great host specificity fins compared to other species of sharksucker (Cressey & Lachner 1970, O'Toole 2002).

During the practice of sport fishing, a blue marlin, *Makaira nigricans* Lapacépède, 1802 (Istiophoridae) of approximately 260 kg and 1.8 meters in length was captured off shore of São Paulo, Brazil between the continental shelf and the slope (24°34'S-42°02'W) on November 18th, 2014 (Fig. 1). The species was captured with an artificial bait and type J hook. The blue marlin was released into the sea after being tagged with a conventional marker which included a number and data on weight and estimated lengths of the fish, georeferenced location, capture time, type of bait used, among other information (Amorim *et al.* 2012).



**Figure 1.** Capture site of the blue marlin *Makaira nigricans* in front of the coast of São Paulo and close to the coast of Rio de Janeiro (red asterisk).

Based on visual and photographic observation (Fig. 2) the fish was identified as remora (*Remora albescens*) measuring approximately 35 cm long was attached on its host, a blue marlin. This marlin species is present in the southwest Atlantic and is frequently captured on the Brazilian coast throughout the year by recreational fishermen, who know that the area is used for spawning between the months of October – February (Amorim *et al.* 1998). Although it is difficult to determine a species of the genus *Remora* by a photo, a specimen of *E. albescens* was identified based on the details of the fish's pigmented area characterized by whitish color and the posterior edge of disc above or slightly ahead of pectoral fin tips indicated in red arrow in the Figure 2 (Schneider 1995).

The association between sharksuckers and their hosts is complex, and not the simplistic symbiotic relationship described in many textbooks (Brunnschweiler *et al.* 2020). The *Remora albescens* is commonly associated with rays than the observation data suggest, discovered within the mouths of rays examined more closely (Notarbartolo-di-Sciara 1988, Gross 2021). It also

attaches to black marlin (*Makaira indica*) in the Indo Pacific region (Robins *et al.* 1986). Some of the benefits of a remora's association with their hosts include transportation, protection from predators, increased courtship/reproduction potential, enhanced respiration, and expanded feeding opportunities (Fertl & Landry Jr. 2009). The feed opportunity was recorded as sharksucker of the genus *Echeneis* feeding on particles stirred up during the foraging of their hosts (Sazima & Sazima 1984, Sazima & Grossman 2006).

However, the difficulty in using remote observations or photographs for species identification may limit the documentation of other remora-teleostean associations. *Remora albescens* observed in Brazilian waters is characterized by pelagic obligates (O'Toole 2002), since they are found in a pelagic environment and are restricted to a small group of hosts including teleostean fish as reported in the present study. Even though there is already an occurrence of this species in the southeastern Atlantic (Luiz Jr *et al.* 2008), this is the first photographic record of a white suckerfish in its blue marlin host in Brazil.



**Figure 2.** Photograph taken on the day of the capture of the blue marlin (*Makaira nigricans*) with its passenger identified as a white suckerfish (*Remora albescens*).

#### **Ethical statement:**

The present student did not involve the use of regulated animals and did not require approval by an ethical Committee.

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Received: January 2022

Accepted: July 2022

Published: September 2023