



Molecular identification of ray species traded along the Brazilian Amazon coast



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ARTICLE INFO

Handled by J. Viñas

Keywords:

Elasmobranchii

Batoidea

Conservation

DNA barcoding

Amazon fisheries

ABSTRACT

Overfishing can lead to stock collapses of both target and bycatch species. In some cases, unregulated fishing activities can even drive species towards extinction. Batoids comprise a significant portion of the bycatch of fisheries targeting teleost fishes. In Brazil, the Amazon coast is the second largest landing area in the country for these organisms. The present study aimed to identify batoid species captured and traded along the Brazilian Amazon coast, as well as to analyze the batoids species most commercialized in the region by using the cytochrome oxidase c subunit 1 (COI) mitochondrial gene. In total, 118 samples were collected and nine species identified. Dasyatidae was the most abundant family (two genera, three species, and 52 individuals), followed by Aetobatidae (one genus and one species), Rhinopteridae (one genus, two species), and Narcinidae (one genus, one species), each with 14 individuals. Finally, Gymnuridae and Pristidae were represented by one genus, one species and 12 individuals each. Threatened species, such as *Pristis pristis* and *Rhinoptera brasiliensis*, were found to be commonly traded in the fish markets. Results also pointed the presence of a third and undescribed *Narcine* species. Finally, genetic differences between populations of the same species were found for *Hypanus guttatus*, *Aetobatus narinari*, and *Rhinoptera bonasus* - indicating possible geographic and/or reproductive separations. Therefore, we reinforce the need of forensics research to incorporate DNA-based evidence. This information could support improvements on management and law enforcement of batoid fisheries and trade in Brazil.

1. Introduction

Elasmobranch fishing and its by-products trade have always been

common activities for human populations (Nunes et al., 2005; Séret, 2006; Almeida et al., 2011; Cerutti-Pereyra et al., 2012). However, these resources are often exploited at rates not compatible with

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<https://doi.org/10.1016/j.fishres.2019.105407>

Received 3 July 2019; Received in revised form 30 September 2019; Accepted 3 October 2019

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