

## ***STOMACH CONTENTS OF Galeocerdo cuvieri AND Carcharhinus plumbeus (ELASMOBRANCHII : CARCHARHINIDAE) CAUGHT OFF PARAÍBA STATE, BRAZIL***

Conteúdo estomacal de *Galeocerdo cuvieri* e *Carcharhinus plumbeus* (Elasmobranchii:Carcharhinidae) capturados na costa da Paraíba, Brasil

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### **RESUMO**

Conteúdos estomacais de tubarões das espécies *Galeocerdo cuvieri* e *Carcharhinus plumbeus*, provenientes do município de Cabedelo, Paraíba, Brasil, foram analisados. No total, nove itens alimentares foram encontrados, pertencentes a seis grupos de presas, incluindo cefalópodos elasmobrânquios e teleósteos, considerados comuns e abundantes na costa do Nordeste. No conteúdo estomacal de *G. cuvieri* foram encontrados uma raia do gênero *Dasyatis*, um crânio de *Ariidae*, três dentições de *Diodon sp.*, e um espécime de *Balistes vetula*, além de três parasitas nematodos e fragmentos de plantas aquáticas. Nos conteúdos estomacais de *C. plumbeus* foram encontrados dois pares de bicos de *Octopus vulgaris*, e dentição e escamas de *Saparisoma sp.* Os resultados obtidos nesse trabalho poderão contribuir para o conhecimento da biologia destas espécies na costa brasileira.

**Palavras-chaves:** *Carcharhinidae*, dieta alimentar, diversidade de presa.

### **ABSTRACT**

Stomach contents of the sharks *Galeocerdo cuvieri* and *Carcharhinus plumbeus*, from Cabedelo county, Paraíba State, Brazil, were analyzed. A total of nine food items were found. The items belonged to six prey groups, including cephalopods, elasmobranchs, and teleosts, all considered common in Northeast Brazil. The stomach contents of *G. cuvieri* had a stingray of the genus *Dasyatis*, a skull of *Ariidae*, three dentitionsof *Diodon sp.*, a specimen of *Balistes vetula*, three nematode parasites and aquatic plant fragments. In the stomach contents of *C. plumbeus* were found two pairs of beaks of *Octopus vulgaris*, and dentition and scales of *Saparisoma sp.* The results obtained in this paper may contribute to the knowledge of the biology of these species on the Brazilian coast.

**Key words:** *Carcharhinidae*, feeding diet, prey diversity.

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## INTRODUCTION

Studies on the feeding biology of Elasmobranchs have been carried out in order to understand their natural history and role in marine ecosystems, especially that of shark species considered potentially dangerous due to situations held accountable for the increase in the number of accidents involving human beings (Lowe *et al.*, 1996; Wetherbee & Cortés, 2004).

The diet and feeding habits of sharks that occur in Brazil have been analyzed by Vaske-Júnior & Rincón-Filho (1998) for the species *Prionace glauca* and *Isurus oxyrinchus* (in southern Brazil) and by Lessa & Almeida (1997 and 1998) for *Carcharhinus porosus* and *Sphyrna tiburo* (in northeastern Brazil).

The aim of this study is to describe the stomach contents of individuals of *Galeocerdo cuvieri* and *Carcharhinus plumbeus*, captured off Cabedelo county, Paraíba State, Brazil.

## MATERIAL AND METHODS

The data used were obtained in 1994 through the project "Prospection and biology of pelagic sharks through long-line fishing on the coast of Paraíba", financed by the Fundação de Apoio à Pesquisa da Paraíba (FAPESQ/PB) (Projeto Tubarão, Rosa & Gadig,

1995). The specimens were sexed and their total length was measured (TL). The stomach contents were removed, fixed in 10% buffered formalin, and preserved in 70% ethanol solution. The items were analyzed, separated, and identified up to the lowest taxonomic level possible with the aid of literature; for Teleosts, items were also compared with specimens deposited in the Fish Collection of the Federal University of Paraíba (UFPB). Identification of the other items found was done with the aid of taxonomy specialists of the respective groups.

The stomachs analyzed were from a subadult female of *G. cuvieri* (TL: 226 cm; 6°54'S 34°39'W) and two adult females of *C. plumbeus* (TL: 187 cm and 209 cm) collected, respectively, at 6°47'S - 34°38'W and 6°48'S - 34°37'W (Figure 1).

## RESULTS AND DISCUSSION

A variety of prey items were found in *G. cuvieri*. Despite the items' high degree of digestion, some of them were identified down to the species level. A stingray of the genus *Dasyatis*, a skull of Ariidae, three Diodontidae dentitions (identified as *Diodon* sp.), and one specimen of *Balistes vetula* were found. In addition, three nematode parasites and unidentified plant fragments were found with the prey items. The

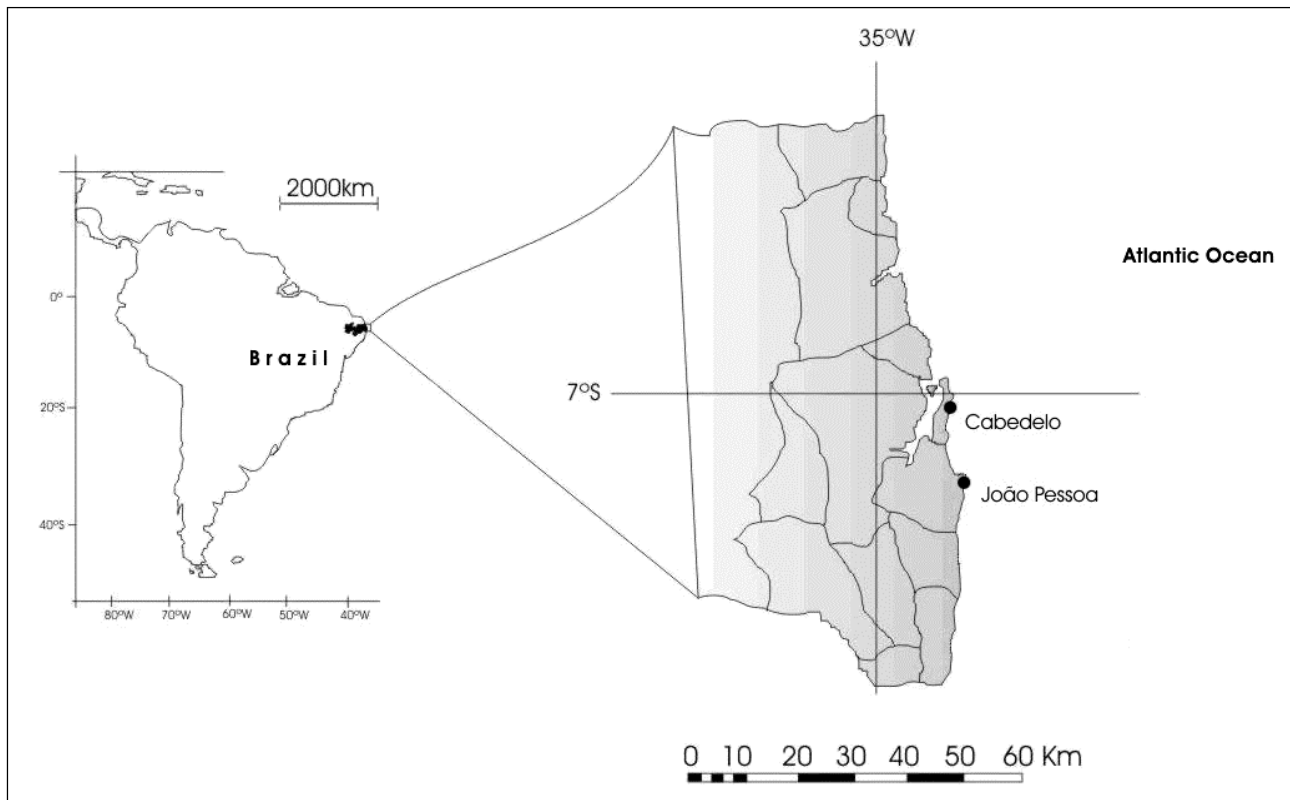


Figure 1 - Map of the sampling area in Cabedelo county, Paraíba State, Brazil.

presence of plant fragments may have been the result of accidental ingestion while the animal preyed on some of the items. The prey showed two degrees of digestion; *Diodon* sp. and Ariidae were identified by the dentition and skeleton, and *Dasyatis* sp. and *B. vetula* still had epidermis and muscle. It is possible that the items with similar degrees of digestion were ingested with little time difference.

The prey items found in *C. plumbeus* were at a high degree of digestion. One individual had two pairs of cephalopod beaks, identified as *Octopus vulgaris*; in another, Scaridae dentition and scales were found, identified as *Sparisoma* sp. The absence of muscle on both pairs of cephalopod beaks indicates that one item was ingested immediately after the other.

In this study, most prey items found in *G. cuvieri* are of relatively low motility, facilitating their capture; this is probably due to the physical limitations and lack of hunting ability of a subadult individual. In addition, the items found agree with data from the literature on this species' diet in Australia and Hawaii (Lowe *et al.*, 1996; Simpfendorfer *et al.*, 2001).

*G. cuvieri* is considered dangerous and its feeding behavior has been relatively well studied (Dodrill & Gilmore, 1978; Simpfendorfer, 1992; Lowe *et al.*, 1996; Heithaus, 2001; and Simpfendorfer *et al.*, 2001). Previous studies confirm that it has a varied diet and an opportunistic feeding habit, and there is a significant change in the composition of prey groups between different size classes. Medved *et al.* (1985) and Stillwell & Kohler (1993) showed that *C. plumbeus* feeds basically on teleosts and crustaceans, but with a small (not very significant) participation of other groups.

The prey items found in both shark species are considered common on the northeastern Brazilian coast, indicating that these species feed on the most abundant prey of the area from which they were collected. This was also observed by Simpfendorfer *et al.* (2001) while analyzing the diet of *G. cuvieri* in different regions of Australia.

Until the present time, no in-depth studies have been undertaken on the feeding habit of *G. cuvieri* and *C. plumbeus* on the coast of Paraíba State. Besides the lack of information on the occurrence of these species' populations, most of the boats operating in the coastal fisheries off northeastern Brazil are not deemed appropriate to fish for large- and medium-sized sharks, which are only occasionally captured by the artisanal fishery.

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