

STOMACH CONTENT OF HARBOUR PORPOISES (*PHOCOENA PHOCOENA*) FROM THE TURKISH WESTERN BLACK SEA IN SPRING AND EARLY SUMMER

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Abstract

The study was based on stomach content from 42 harbour porpoises bycaught or stranded between April to June in 2002 and 2003, on the Turkish western Black Sea coast. Seven fish species were identified. Sprat and whiting were the most important fish species in the diet by frequency of occurrence (64.1% and 23.6%, respectively). Besides fishes, crustaceans, pieces of algae, molluscs, bivalves, sand and plastic debris were also recorded.

Keywords : *Cetacea, Diet, Black Sea, Plastics.*

Introduction

There are three cetacean species living in the Black Sea, namely, bottlenose dolphin (*Tursiops truncatus*), short-beaked common dolphin (*Delphinus delphis*) and harbour porpoise (*Phocoena phocoena*). One of the important threats to these cetaceans, especially harbour porpoises, is bycatch in turbot fisheries in the Black Sea. The Turkish western Black Sea traditionally includes fishing grounds for turbot, *Psetta maxima*, *P.m. maeotica* and *Scoptalmus maeoticus*, which have high economic value. Many harbour porpoises and bottlenose dolphins die as the result of incidental catch in turbot and sole fishing nets in April, May and June ([1], [2], [3], [4]). Understanding feeding habits is one of the key factors in considering the protection measures for cetaceans. There have been some studies on the stomach contents of Black Sea cetaceans completed by [5]; but few on the Turkish coast [3]. The aim of the study is to identify food components of the spring diets of the Black Sea harbour porpoises on the Turkish coast as basic information to elaborate proper protection measures for the Black Sea cetaceans.

Materials and Methods

A total of 42 stomachs of harbour porpoise (33 female, nine male) were analyzed. Forty individuals were bycaught in turbot nets and two individuals were found stranded, in April - June in 2002 and 2003, in the western coast of Turkey [4], [6]. All stomach compartments were examined and stored in a freezer at -20°C. Samples were thawed later; the contents removed, washed and sieved in a 200µ mesh size sieve and stored in 70% ethanol. Prey remains consisted principally of otoliths and bones of fish and rostrum and other body parts of crustaceans, which were identified using reference materials and published guides [7], [8].

Results and Discussion

Food remains were found in 90.4% of the stomachs but only one individual contained decomposed fish remains. The stomach contents of the 42 porpoises included 3304 otoliths, of which 1935 (>1mm) were identified. These were from seven fish species, which were sprat (*S. sprattus*), whiting (*M. merlangus euxinus*), sole (*Solea* (spp.)), gobies (*Gobiidae* (spp.)), European hake (*M. merluccius*), anchovy (*E. encrasicolus*) and red mullet (*M. barbatus*) (Fig.1). Remains of 26 crustacean individuals (nine Crangonidae (spp.), seven Decapoda (spp.), seven Crustacea (spp.), three Caridae (spp.)) were also found in six stomachs, while the fish remains were found in 88.1%. Meanwhile, in another five stomachs, plastic debris was found. Pieces of algae, molluscs, bivalves and sand were also recorded. The debris in one of the bycaught individual (female, 130cm) stomach consisted of plastic bags and sheeting with dry weight of 40.9g. Ingestion of plastic or other marine debris has been documented for 26 species of odontocetes and this is the fourth reported case of plastic ingestion by a harbour porpoise according to [9]. Benthic fish including whiting, and gobies; and pelagic schooling fishes such as sprat and anchovy, composed the basic diet of harbour porpoises in the Black Sea [5], [3]. Protection measures for harbour porpoises in the Black Sea, therefore, should be elaborated taking such information into consideration.

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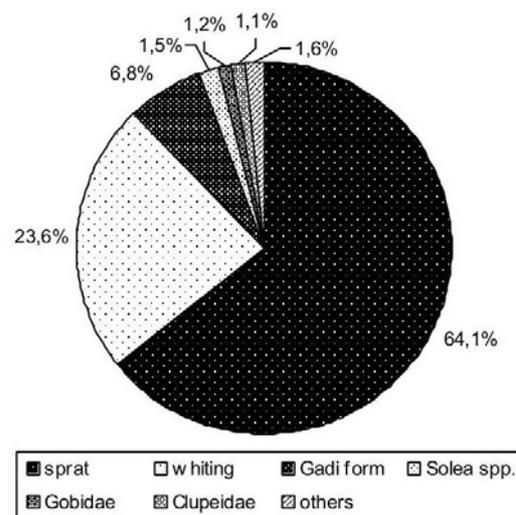


Fig. 1. Fish composition stomachs of the harbour porpoises. (Others: European hake, anchovy, Pleuronectiformes and red mullet).

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