

STOMACH CONTENTS OF BYCAUGHT HARBOUR PORPOISES (*PHOCOENA PHOCOENA*) FROM THE MARMARA SEA

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Abstract

The study was based on stomach content of four harbour porpoises bycaught in the coastal fishery in 2004 and 2006, on the Marmara Sea coast. Three fish species, horse mackerel (*Trachurus trachurus*), sprat (*Sprattus sprattus*) and gobies (*Gobiidae* sp.) were identified. Horse mackerel and sprat were the most important fish species in their diet.

Keywords : *Cetacea, Diet, Marmara Sea.*

Introduction

The Turkish Straits System (TSS), namely the Istanbul Strait (Bosphorus), the Marmara Sea and the Canakkale Strait (Dardanelles), constitute a biological corridor for dolphins as well as for pelagic fish between the Black Sea and Mediterranean Sea [1]. In the Marmara Sea, three cetacean species; bottlenose dolphin (*Tursiops truncatus*), short-beaked common dolphin (*Delphinus delphis*) and harbour porpoise (*Phocoena phocoena*), are known to occur. Harbour porpoise strandings have been reported from the TSS [2]. The aim of the study is to identify food components of harbour porpoises, as the first information on their feeding preference in the Marmara Sea.

Materials and Methods

Three porpoises were bycaught in the bottom gillnets for whiting and the trammel net for soles, one nautical mile off Yalova in 2004 and 2006 (Fig. 1). The fourth porpoise was found floating at sea by the fishermen and had clear net marks on it. All stomach compartments of individuals were examined. The contents were removed, washed and sieved in a 200 μ mesh size sieve and stored in 70% ethanol. Prey remains consisted principally of otoliths and bones of fish which were identified using reference materials and published guidebook [3].

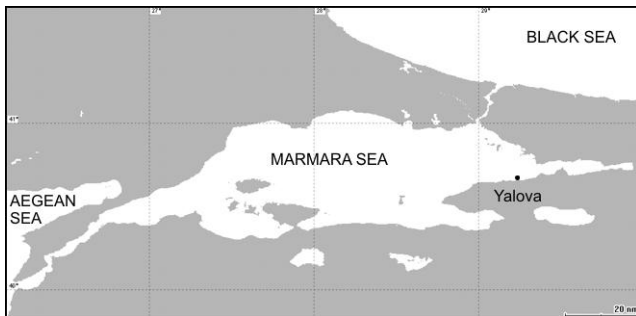


Fig. 1. Location of Yalova where the bycatch of harbour porpoises occurred

Results

The stomach contents of three porpoises included 153 otoliths, of which 148 (>1mm) were identified. These were from three fish species, which were horse mackerel (*Trachurus trachurus*), sprat (*Sprattus sprattus*) and gobies (*Gobiidae* sp.) (Table 1). In the stomach of porpoise no.1, half-decomposed horse mackerels (15 individuals) were found, but in the stomach of porpoise no.4, only a fish vertebra and crustacean body parts were found.

Tab. 1. Bycatch date, sex, length(cm) of porpoises, and fish otoliths in the stomach contents. (N: no, L.: length(cm), Hm.: Horse mackerel, S.: Sprat, Gob.: Gobies, Clu.: Clupeidae spp., m: male, f: female)

N	Date	L.	Sex	Hm.	S.	Gob.	Clu.	Total
1	26.03.04	116	m	76	-	4	-	80
2	07.04.04	110	m	14	17	-	-	31
3	22.10.04	117	f	-	35	-	2	37
4	29.09.06	106	m	-	-	-	-	-

Discussion

Benthic fish, such as whiting, European hake and gobies, and pelagic schooling fish, such as sprat and anchovy, composed basic diet of harbour porpoises in the Black Sea [4], [5]. In this study, a very few species were found to be prey species which may be due to the small number of samples. However, it was documented for the first time that the porpoises do feed on horse mackerels in the Marmara Sea. Horse mackerels had not been found as prey species for the porpoises in this basin, although they are widely distributed in the Black Sea as well. Harbour porpoises in the Marmara Sea may conflict with coastal fisheries because they compete for the same resources, such as horse mackerels.

The occurrence of the harbour porpoise was first described as "sometimes" in the Marmara Sea and "very rare" in the Mediterranean by [6]. In the TSS three cetacean species were observed at most in April and October [7]. However, due to the heavy marine traffic and other ecological stress in the Istanbul Strait, their migration does not occur regularly [1]. In the two surveys of cetaceans in the TSS in 1997 and 1998 using line transect methods, no porpoise was observed [8]. A few harbour porpoises have been recorded in the northern Aegean Sea; their genetic signatures and small size suggest that these individuals originated from the Black Sea [9]. Resident populations of harbour porpoises have not yet been determined in the Marmara Sea. In this respect, these bycatch cases off Yalova in spring and autumn, can be considered as the result of the porpoise movements although it rarely occurs at present between the TSS and Black Sea. More specimens and detailed studies are needed for better understanding of the occurrence of the harbour porpoises in the Marmara Sea.

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