Karkinit and Dzharylhach Gulfs IMMA

Description

The Karkinit and Dzharylhach (Carılğaç) Gulfs separate the northwestern Crimean Peninsula from the northern Ukraine mainland and include the coastal waters between Lazurne and the Tarkhankut Cape. The maximum depth within the IMMA is roughly 35 m, but the majority of the area is between 0 and 20 m deep. The IMMA has low salinity, which is typical for this area and the sea temperature in the winter seasons is 3-6 ºC. Part of the IMMA, especially the Dzharylhach Gulf, is often ice-covered during cold winters. However, during warm seasons, this is a highly productive habitat that is rich in prey, making it attractive for all three Black Sea cetacean species (Bel’kovich, 1978; 1987; Birkun, 2006b; Gol’din et al., 2017).

Criterion A: Species or Population Vulnerability

The Dzharylhach (Carılğaç) and Karkinit Gulfs in the northwestern Black Sea are important seasonal habitat (with the exception of winter) for the three threatened Black Sea cetacean subspecies; the Endangered harbour porpoise and bottlenose dolphin, and the Vulnerable common dolphin (Fig. 2) (Birkun, 2002; Mikhalev, 2005; 2008; Birkun et al., 2014; Gol’din et al., in press; Öztürk et al., in press). However, the deeper south-western part of the IMMA is inhabited by all three species (Agafonov et al., 1982). The harbour porpoise is particularly vulnerable in this area due to extensive bycatch in fishing gears in the Karkinit Gulf during its reproductive season (Fig. 1) (spring and summer) (Pavel Gol’din, pers. comm.), and therefore warrants special protection in its breeding areas (Birkun, 2006a).
Criterion B: Distribution and Abundance

Sub-criterion B2: Aggregations

Black Sea cetaceans occur in the northern part of the IMMA during the warm season and in the southern part of the area year-round (Bel’kovich, 1978, 1987; Birkun, 2006b; Gol’din et al., 2017). Groups of Black Sea bottlenose dolphins and Black Sea common dolphins have been recorded in the IMMA, and there have been numerous photo-identification recaptures of known individuals over at least 5 years. (Gladilina et al., 2022). The abundance of the local coastal population of bottlenose dolphins near the Dzharylhach Island is about 50 individuals; the group includes a few stable pairs and alliances of individuals. At least 12 individuals were resighted in 2016-2019 (Gladilina et al., 2017a). A few individuals show distinctive hunting, beaching, and play behaviour (Gol’din et al., 2017). The abundance of common dolphins in the Dzharylhach Gulf is about 200 individuals, and at least 7 individuals were resighted between 2016 and 2019 years (Gladilina et al., 2017a; 2017b; Gol’din et al. 2017; Gladilina et al., 2020; Gladilina et al., 2022). The density of the harbour porpoises in the Dzharylhach Gulf in summer reaches 15 specimens per km² which is the highest density throughout the northern Black Sea and among the highest in the entire Black Sea (Gladilina et al., 2017a).

Criterion C: Key Life Cycle Activities

Sub-criterion C1: Reproductive Areas

The IMMA is an important reproductive area for bottlenose and common dolphins during the warm season. Bottlenose and common dolphins were observed in the IMMA with calves of all age categories: newborns, calves, and juveniles. During the 2016 and 2017 summer seasons, 27% of the groups of bottlenose dolphins and 30% of the groups of common dolphins were observed with calves and juveniles (Gladilina et al., 2017a; Gol’din et al., 2017; Gladilina, 2018). Mating behaviour was recorded for bottlenose dolphins in shallow waters near the Dzharylhach Island (Gladilina and Gol’din, pers. comm.).

Sub-criterion C2: Feeding Areas

This area has a high concentration of migratory fish (e.g. horse mackerel and sand smelt) that are important prey species for common dolphins and harbour porpoises, plus mullets, and garfish, an important prey of bottlenose dolphins. The main behaviour observed for all cetaceans in the area was foraging (Bel’kovich, 1978, 1987; Gol’din et al., 2017; Gladilina, 2018). Sand smelts (*Atherina sp*), horse mackerel (*Trachurus mediterraneus*) and garfish (*Belone belone*) were directly identified as prey of common dolphins during boat surveys in the Dzharylhach Gulf in summer 2016 and 2017 (Gol’din et al., 2017). Different mullets (Mugilidae) are very important prey for bottlenose dolphins, according to vessel surveys and coastal observations from different years (Bel’kovich, 1978, 1987; Birkun, 2006b; Gol’din et al., 2017).
Supporting Information


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