MACALISTER ELLIOTT & PARTNERS LTD

Studies for Carrying Out the Common Fisheries Policy

Lot No. 2: Adverse Fisheries Impacts on Cetacean Populations in the Black Sea

FINAL REPORT

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2. Review of existing information on Black Sea cetacean populations

2.1 Review of information on the density, abundance and distribution of cetacean populations in the Black Sea[103]

2.1.1. Introduction

A retrospective analysis was carried out of available information on the density, abundance and distribution of the three cetacean subspecies in the Black, Azov and Marmara seas and straits connecting the seas. National teams in Bulgaria, Romania, Turkey and Ukraine were asked to produce national overviews of published and unpublished population data according to terms of reference and a template prepared by MEP. The results were collated and analysed and a review was produced based upon the information received. (See Annex 3).

The cetacean fauna in the Black Sea includes three species/subspecies – the Black Sea harbour porpoise, the Black Sea common dolphin and the Black Sea bottlenose dolphin. All three species are covered by Annex IV of the European Habitats Directive and therefore require strict protection by EU member states. The present state of Black Sea cetacean populations is not certain in spite of research and conservation measures during last twenty years. The insufficiency of scientific information concerns the population abundance, distribution, migrations, critical habitats, anthropogenic and natural threats as well as some basic aspects of life history and pathology.

The review (Annex 3) presents the updated and critically analyzed information on the distribution, abundance and habitats of each Black Sea cetacean subspecies.

2.1.2 Black Sea harbour porpoise (*Phocoena phocoena relicta*)

The Black Sea harbour porpoise is recognized as endemic subspecies (*P. p. relicta*) with morphological and genetic differences from *P. phocoena* populations elsewhere in the world.

2.1.2.1 Geographic range

The subspecies' range includes the Black Sea proper, Azov Sea, Kerch Strait The Black Sea population is completely isolated from the nearest *P. phocoena* population in the northeastern Atlantic by a broad range discontinuity in the Mediterranean Sea, from the northern Aegean to the Strait of Gibraltar. It is clear that harbour porpoises came to the Black Sea via the Mediterranean which, therefore, must have had its own population in the past.

[103] *Compiled by Alexei Birkun, Jr. with contribution of the national data by Konstantin Mihaylov, Radoslava Bekova (Bulgaria), Simion Nicolaev, Gheorghe Radu (Romania), Ayaka A. Öztürk, Arda M. Tonay, Bayram Öztürk (Turkey), and Sergey Krivokhizhin (Ukraine).*

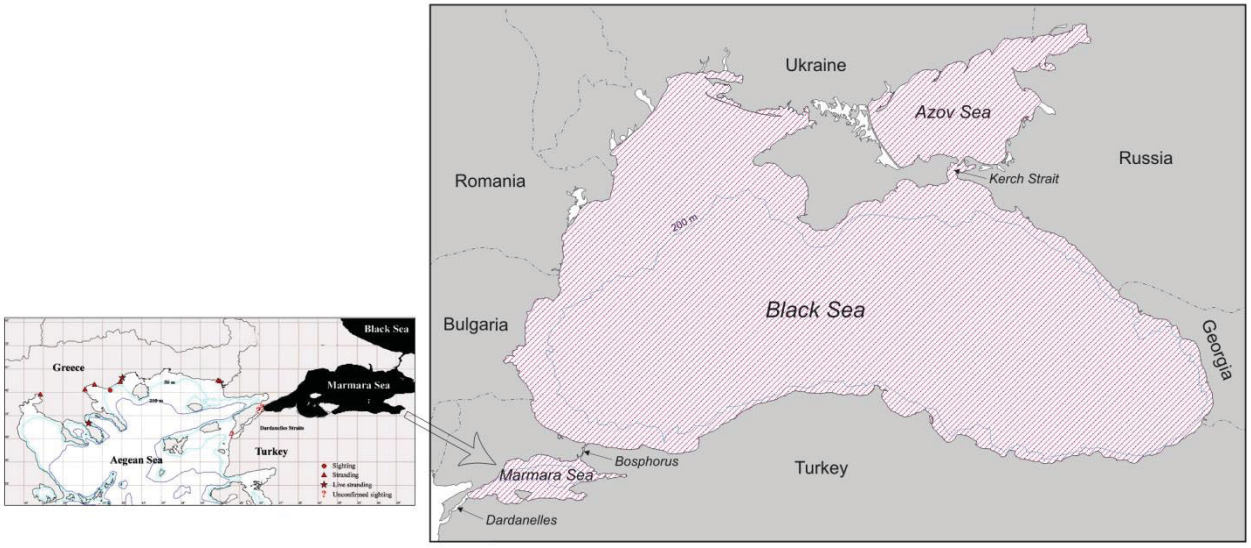

Figure 2.1 Range of the Black Sea harbour porpoise (inset the North Aegean Sea) (Birkun and Frantzis, 2008)

The range of the Black Sea subspecies includes territorial waters and exclusive economic zones of Bulgaria, Georgia, Romania, Russia, Turkey and Ukraine in the Black Sea; internal waters of Ukraine in the Black Sea; internal waters of Russia and Ukraine in the Azov Sea and Kerch Strait; internal waters of Turkey; Greek and Turkish waters in the northern Aegean Sea and, probably in its southern part[104]. Occasionally, harbour porpoises have been sighted in the Danube, Dnieper, South Boug, Don and Kuban rivers, their estuaries, deltas and tributaries, and coastal freshwater, brackish and saline lakes and lagoons Most of these sites (except Varna lake and Ropotamo estuary, Bulgaria) are situated in Ukraine and Russia, on the northern and northwestern coasts of the Black Sea and round the Azov Sea.

The population of *P. p. relicta* may consist of three or more subpopulations including those that spend much of the year in geographically and ecologically different areas. The Bosporus Straits, the Sea of Marmara and the Dardanelles Straits serve as conduits between the Black and Aegean Seas. Water flow at the surface is into the Aegean, from the Black Sea. If porpoises were to leave the Black Sea, the conditions in the northern Aegean Sea would remain similar to those of the Black Sea. The period of greatest similarity would be February and March.

2.1.2.2 Principal, secondary and occasional habitats

Black Sea harbour porpoises live in the marine environment but on rare occasions they may occur in estuarine and fluvial environments. They do not avoid waters with low salinity and high turbidity and they may occur in brackish bays and lagoons visiting rivers and estuaries at warm times of the year.

Principal habitat: Circumlittoral area over the continental shelf (usually more than 6 m but less than 200 m deep).

Secondary habitats: Open sea (more than 200 m deep) and shallow sea (less than 6 m deep; includes sea bays and straits).

[104] *On 10 January 2013, one adult female harbour porpoise was found dead on the coast of Torba village near Bodrum (Tonay and Dede, 2013).*

Occasional habitats: Isolated instances are known of Black Sea harbour porpoises visiting estuaries of big rivers including their deltas, big rivers proper and their confluents, coastal brackish and saline lagoons, and freshwater lakes connected with the sea by rivers.

2.1.2.3. Critical habitats

Harbour porpoises undertake annual migrations, leaving the Azov Sea and northwestern Black Sea before winter and returning in spring. Such movements also may occur between the Black Sea and Marmara Sea. In Bulgaria cetaceans, including harbour porpoises, appear regularly first, in February-April, in the southern area and their migration path is to the north; in autumn they take on return migration to the south within the same close to the shore zone.

The primary wintering areas are in the south-eastern Black Sea including southern Georgian territorial waters and possibly eastern Turkish territorial waters. These are also the well-known wintering grounds of Black/Azov Sea populations of the anchovy, a principal prey species for harbour porpoises during the cold season.

During their seasonal migration animals may remain for a few days at different sites forming dense aggregations of some hundreds of individuals. Sometimes, early and rapid ice formation, can prevent animals leaving the Azov Sea and cause mass mortality due to ice entrapment. The last recorded die-off of this kind occurred in November 1993.

The critical habitats of the harbour porpoise overlap with fishing grounds of intense bottom-set gillnet fisheries in all Black Sea countries. Specifically:

Bulgaria: areas between Kavarna and Cape Cherni; near Krapets (by the Romanian border); to the south of Burgas; from Shabla to Balchik; and from Bjala to Cape Emine; EEZ of Bulgaria;

Georgia: area between the mouth of Chorokhi river and the Turkish border;

Romania: EEZ of Romania;

Russia: area from Anapa to Sochi; the Kerch Strait;

Turkey: waters off the western (European) coast; and Prebosphoric area;

Ukraine: area adjoining the Danube Delta; Dniester Bank; waters off the Crimea round Tarkhankut peninsula (including Karkinitsky Bay), between Cape Khersones and Cape Sarych (near Sevastopol), between Cape Kiik-Atlama and Cape Chauda (Gulf of Feodosia), and in the Kerch Strait; EEZ of Ukraine in the northwestern Black Sea.

2.1.2.4. Population

The total population size of the Black Sea harbour porpoise is unknown. Past Black Sea region-wide estimates based on strip transect surveys carried out in the USSR and Turkey have been shown to be fundamentally flawed for a number of methodological and analytical reasons. Nevertheless, it was generally assumed that during most of the 20th century, the abundance of harbour porpoises in the Black Sea was higher than that of bottlenose dolphins, and lower than that of common dolphins. Results of surveys suggest that present total population size is at least several thousands and possibly in the low tens of thousands. A summary of density estimates is provided in Table 2.1 below.