Introduction

Typical bottlenose dolphin skull is elongated antorbitally and compressed postorbitally. Many skull bones show variation in size and shape between individuals, they are therefore used for differentiation of subspecies and populations. In this study term the skull refers to the entire head skeleton.

The aim of this study was to investigate the bottlenose dolphin population from Croatian part of the Adriatic Sea by craniometric data.

Materials and Methods

In order to account for potential ontogenetic variation, juvenile and adult individuals were separated based on degree of fusion of maxillary and premaxillary bones. Fifty-nine cranial measurements (Figure 1) were taken from 96 adult specimens of bottlenose dolphin collected in Croatia from October 1990 to May 2011. Measurements were conducted with 0.5 – 0.01 cm precision using a caliper. Croatian results were compared with the same cranial measurements of bottlenose dolphin from other seas. (Figure 2.)

Results

Only one morphotype was recognized in Croatian waters; however males and females significantly differed in 19 measurements, male skulls were more robust (Table 1).

Skulls from the eastern Mediterranean Sea (Israeli coast) and from the Black Sea were significantly smaller. The western Mediterranean data did not differ from the Croatian. On a broader scale, populations from the eastern Atlantic Ocean, the North Sea, the north-western African coast, the south-eastern African coast and the Australian coast had significantly larger skulls compared to the Adriatic bottlenose dolphins. Populations from the Chinese waters and the eastern Florida coast had significantly smaller skulls than the Adriatic dolphins. (Table 2.)

References


Table 1. Results of two-performed skull measurements (% of T. truncatus in the Croatian coast and other world seas. * - Significantly different (p<0.05). Mean = Measurement, Diff = Difference, M Combined Male Female

Table 2. Comparison of skull measurements of European populations with T. truncatus population. Blue - larger, Red - equal size to Croatian population, Yellow - smaller