
CROATIAN MARINE MAMMAL STRANDING NETWORK

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Systematic research on cetacean mortality in the Croatian waters of the Adriatic Sea was initiated through the Department of Anatomy, Histology and Embryology, Faculty of Veterinary Medicine, University of Zagreb in 1990, five years prior to the legislative protection of cetacean species in this region. The first attempt was to retrieve marine mammal carcasses for research in comparative anatomy and histology. Today, our project includes research in a wide range of cetacean biology: cetacean species abundance, spatio-temporal distribution, population dynamics, morphology, morphometry, genetics, pathoanatomy, infectious diseases, parasitology, toxicology and diet. The Croatian Marine Mammal Stranding Network is the result of a long-term attempt to inform and educate coastal inhabitants about the importance of cetacean mortality monitoring. It functions today as a well organized communication chain between the finder of a cetacean carcass (fishermen, tourists, and local inhabitants), legislative bodies (Croatian Ministry of Culture, State Institute for Nature Protection, police, coastal guard) and scientific institutions (Faculty of Veterinary Medicine, Faculty of Science). An attempt was made to investigate every stranding report received from October 1990 till May 2009. Post-mortem examinations were performed on 165 cetacean carcasses consisting of 133 bottlenose dolphins (*Tursiops truncatus*), 18 striped dolphins (*Stenella coeruleoalba*), seven Risso's dolphins (*Grampus griseus*), four Cuvier's beaked whales (*Ziphius cavirostris*), two fin whales (*Balaenoptera physalus*) and one seal, probably monk seal (*Monachus monachus*). The post-mortem examination included determination of species, sex, body mass, external measurements and a patho-anatomical dissection according to a standard protocol. Tissue samples of each necropsied cetacean were stored frozen or preserved in 10% formalin and 90% ethyl alcohol solution in the cetacean tissue bank at the Department of Anatomy, Histology and Embryology Faculty of Veterinary Medicine

University of Zagreb for further morphological, genetic and toxicological analyses. The age of necropsied bottlenose dolphins and striped dolphins was estimated by counting growth layer groups in dentine, while in other species radiological analysis of epiphiseal fusion of pectoral fin bones was used for age class estimation. Skeletons of the examined cetaceans were stored at the above mentioned Department. A total of 195 cetacean strandings were recorded in the study period, but 30 carcasses were not examined because of, e.g. the difficult field and weather conditions. The most often recovered cetacean species was the bottlenose dolphin which is also considered the only resident marine mammal in the Adriatic Sea. The striped dolphin was the most often encountered non-residential species. From the geographical point of view the bottlenose dolphin carcasses were evenly distributed along the Croatian coast, whereas the non-residential species were more often recovered in the Southern Adriatic. August is the most fatal month for the bottlenose dolphin. On the other hand, none of the non-residential specimens was recovered during late summer/early autumn months when the human activities in the Adriatic Sea are the most intense. The mortality among the bottlenose dolphin sexes is equally distributed, while in striped dolphins and Risso's dolphins male carcasses were recovered predominantly. The highest mortality in bottlenose dolphins is in the newborn age. The newborns are found dead only from April till August. Our findings indicate that these months represent the calving season of the bottlenose dolphin in the Adriatic Sea. Long-term and systematic investigations of the cetacean mortality provide the important data on their distribution, abundance and health status, as well as threats to their health and survival. The obtained results should prove valuable for the conservation and management of these endangered and protected animal species.

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