

HELMINTHS OF MARINE MAMMALS: REVIEW OF THEIR DIVERSITY, ZOOBOTIC POTENTIAL AND FUTURE PERSPECTIVES

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Marine mammals comprise a diverse group of species, including cetaceans, pinnipeds, sea otters, sirenians and polar bears. Marine animals play crucial roles in aquatic environments, but anthropogenic activities drastically reduced their populations, with numerous species becoming vulnerable or critically endangered. These iconic animals are hosts for diverse groups of helminths (trematodes, cestodes, nematodes and acanthocephalans) which usually exhibit a wide geographical distribution. Some of these parasites are important pathogens and can regulate the populations of marine mammals, representing a potential threat to endangered species. Moreover, they may be implicated in mass stranding events of some whales and dolphins. Complex life cycles are common in these helminths and in almost all species, different life stages occur in invertebrates (first intermediate hosts), fish or cephalopods (second intermediate or paratenic hosts), and marine mammals (definitive hosts). Some larval stages of these parasites are recognised as causative agents of fish-borne zoonoses in humans and also represent a costly cosmetic problem for fish processors. At present, studies on helminths of marine mammals have serious obstacles due to the non-accessibility of hosts to be sampled. Collection of parasitological material is challenging, particularly because marine mammals are protected, inhabit remote locations or are very labour-intensive to sample. Moreover, species identifications of their helminths have been problematic due to their general morphological uniformity or high degree of intraspecific variability. Future research combining non-invasive sampling methods, integrative taxonomy and metagenomic approaches will be a potential tool to fill gap in our knowledge on the diversity, biology and ecology of helminths of these aquatic animals.