It is becoming apparent that noise and elevated noise can impact the hearing and behavior of marine mammals. The effects of noise in marine mammal behavior and cognitive response are not fully understood, but noise can potentially affect immune function and impact health as it has been shown in other mammals. To this end, we have begun studies to investigate the effects of noise on marine mammals. In particular, we are focusing on the effects of underwater sounds such as low frequency sounds produced by seismic surveys, airlifts, and other human activities. Our preliminary results indicate that exposure to these sounds can disrupt the normal behavior of marine mammals, including vocalization, echolocation, and social interactions. Additionally, exposure to high levels of noise can lead to hearing loss and other health problems. It is important to continue these studies to better understand the effects of noise on marine mammals and to develop strategies to mitigate these impacts.

Past and Present Utilization of Marine Mammals in Grenada, W.I.
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Marine mammals have been exploited in Grenada, W.I., since pre-Columbian times in the form of maritime hunting. In the eighteenth century, foreign whalers visited Grenadian waters and in the 1820s a short-lived attempt for the development of a local whaling industry took place. Since then there seems that no interactions have taken place between Grenadians and marine mammals until the 1980s when two whaling operations were established. Recent developments in Grenada and neighboring islands raise concerns about the resurgence of some sort of whaling in those waters. Non-intrusive whalewatching operations, including land-based alternatives, are proposed.

The Marine Mammals of Grenada, W.I.: Biogeographical Implications for the Eastern Caribbean
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To document the Grenadian marine mammal fauna and its distribution in the eastern Caribbean, we conducted field studies in that country that included, but were not limited to, research cruises and interviews with fishermen. Also, all historical records of sightings and cetaceans for Grenada were collected and analyzed. We confirmed the presence of 11 species of marine mammals for that part of the world. Humpback whales (Megaptera novaeangliae) was the most commonly reported species of mysticete while a variety of odontocetes seem to be equally frequent in these waters. A resident population of sperm whales (Physeter macrocephalus) was reported. The manatee (Trichechus manatus manatus) has been extirpated from these waters for at least the past century. We investigated the association between the marine mammal fauna of adjacent regions (Venezuela, Trinidad and Tobago, and St. Vincent and the Grenadines), lead us to believe that at least seven additional species of cetaceans may be present in the Grenadian waters. Our results from those waters and adjacent areas indicate a high level of homogeneity in the marine mammal fauna for the South Eastern Caribbean.

Regional Heterotheon in Seals, Dolphins, and Manatees
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In healthy terrestrial mammals, color probes usually show relatively uniform core temperatures. In contrast to this terrestrial mammal homeothermic paradigm, some marine mammals display regional heterothermia in cetacean species. These marine mammals exhibit core temperature differences and are adapted to cold environments. Some terrestrial species have been found to exhibit elevated temperature at their reproductive organs. We have shown that seals, dolphins, and manatees possess vascular structures which permit shunting of cooled superficial blood to positions deep within their bodies in order to reproduce. See (1) for more details.

Collagen Aging in the Bowhead Whale (Balena mysticetus)
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Age in marine mammals may be determined by various methods, ranging from simple photo re-identification to such methods as ear plug growth layer measurement, tooth growth layer quantification, and carbon dating. The presence of multiple aging methods in the bowhead whale (Balena mysticetus), teeth are not present, ear plugs do not appear to form and bone aging is reliable only up to eleven years of age. Additionally, teeth do not form until the baleen plates are present and are composed of the potential of age only these isolated analyses of a small amount of bone (from a biopsy dart sample or collection at necropsy). Manifestations of aging at raco co-sorced in the extracellular matrix, the primary component of which is collagen. Skin undergoes dramatic age-related changes in its mechanical properties, including changes in tissue hydration and tensile strength. Collagen cross-links (enzymatic and advanced glycation end products, such as pentosidine and carboxy-methyl lysine (CML), accumulate in long-lived tissue proteins. Methods employed as indicators of aging include measuring the level of pentosidines and other collagen-related chemicals in the skin. Pentosidine, a marker of glycoxidative stress in skin collagen, forms at a site inversely related to maximum life span across several mammalian species. Pentosidine is one of the advanced products of the Maillard reaction and is an indicator of the extent of