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Sharks and Seals



An Introduction

At first glance it might seem strange that this issue of F&J has sharks and seals as its theme. These fish and marine mammal species are both common sights along the New England Coast, forming a predator and prey relationship.

Atlantic Sharks

Sharks belong to the class *Chondrichthyes* (cartilaginous fishes) that also includes rays, skates, and deepwater chimaeras (ratfishes). From an evolutionary perspective, sharks are an old group of fishes characterized by skeletons lacking true bones. The earliest known sharks have been identified from fossils from the Devonian period, over 400 million years ago. These primitive sharks were small creatures, about 60 to 100 cm long, that were preyed upon by larger armored fishes that dominated the seas. Sharks have survived competition for eons, evolving into the large and aggressive predators that dominate the seas today. The life span of sharks in the wild is not known, but it is believed that many species may live 30 to 40 years or longer. More than 350 species of sharks inhabit the seas with 73 known to inhabit the waters of the US Atlantic coast, Gulf of Mexico and the US Virgin Islands, ranging in size from tiny pygmy sharks only 20 cm (about 8 inches) in length up to the Giant Whale Sharks over 12 meters (nearly 40 feet) long. The most commonly known sharks are large apex predators including the white, mako, tiger, bull and great hammerhead.

The reproductive potential of sharks is very low when compared to other marine fish. Research has shown that several species (sandbar, lemon, and bull) do not reach maturity until 12-18 years of age. Some shark species reproduce by laying eggs, others nourish their embryos through a placenta. Despite their diversity in size, feeding habits, behavior and reproduction, many of these adaptations have contributed greatly to the evolutionary success of sharks. Adults usually congregate in specific areas to mate and females travel to specific nursery areas to pup. These nurseries are discrete geographic areas, usually in waters shallower than those inhabited by the adults. Frequently, the nursery areas are in highly productive coastal or estuarine waters where abundant small fishes and crustaceans provide food for the growing pups. These areas also may have fewer large

(Intro - cont on page 10)

Inside This Issue

Intro to Sharks and Seals	Page 1
MME Calendar	Page 2
President's Message	Page 3
From the Editor's Desk	Page 4
How Sharks Teach Us	Page 5
Saving Sharks	Page 6
Shark Surprise Activity	Page 9
Shark Attack / Fish Prints Activities	Page 11
29th Annual HSMSS	Page 13
WHOI Conference	Page 16
Mystery Shrouds Seals Deaths	Page 17
Seals Don't Multitask	Page 18
Threatened, Endangered and Depleted	Page 19
Marine Science in the News	Page 20
Seal Ecology	Page 21
Harbor Seal	Page 22
Art Contest	Page 28

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