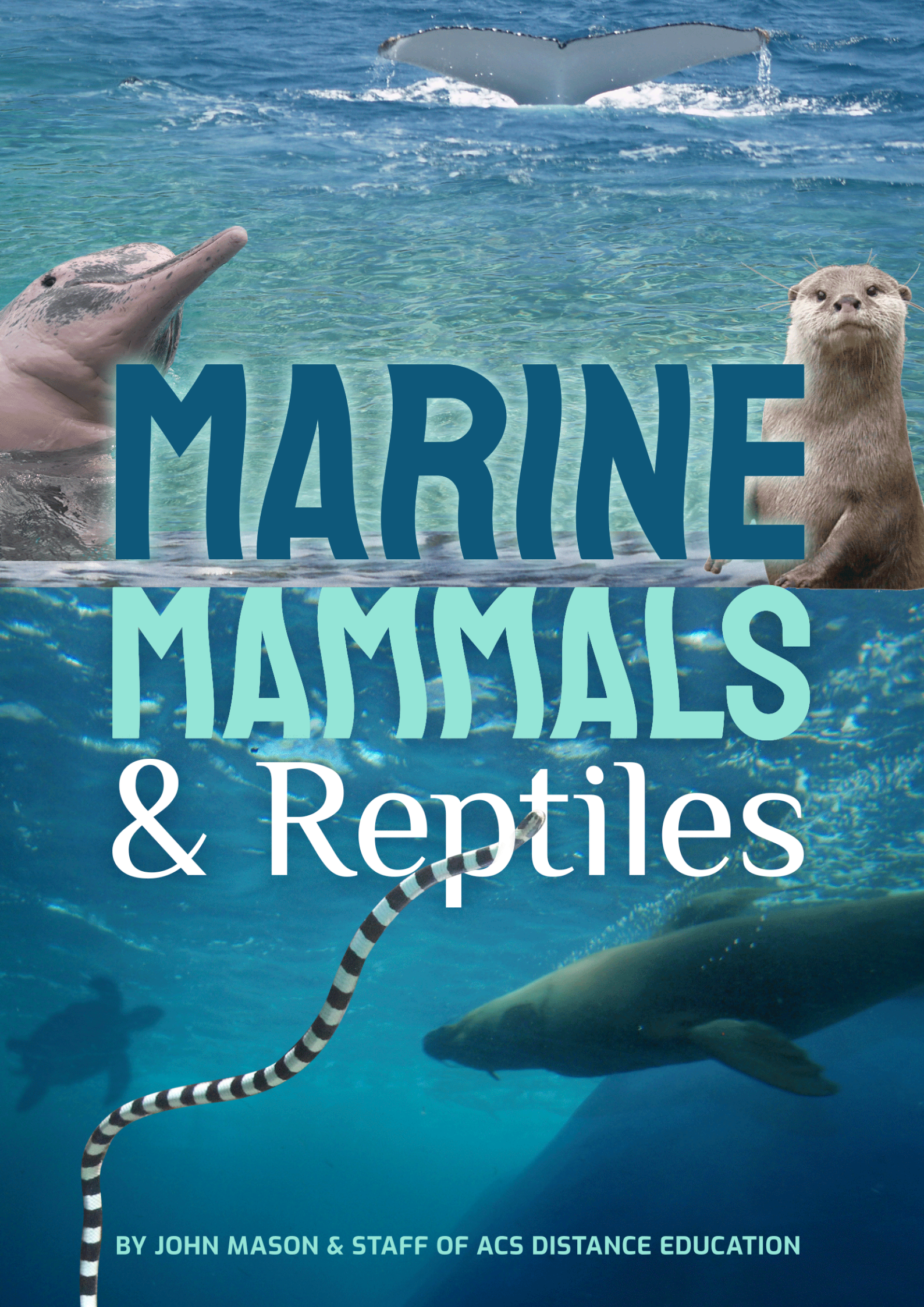

MARINE MAMMALS & Reptiles

BY JOHN MASON & STAFF OF ACS DISTANCE EDUCATION

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CHAPTER 1 INTRODUCTION

We are more familiar with land animals, quite naturally, because that is where humans live. Marine environments may not be as familiar to most people, but they do contain as great a diversity of animals as are found on land. Marine animals can vary from tiny single celled organisms through to the largest animals on earth. Fish and crustaceans are obvious to us. There are more complex animals than fish and crustaceans though which also inhabit marine environments; including birds (e.g. seagulls and penguins), mammals and reptiles.

While the birds are never exclusively confined to the water; there are reptiles and mammals which spend almost all, or even all of their time in the water.

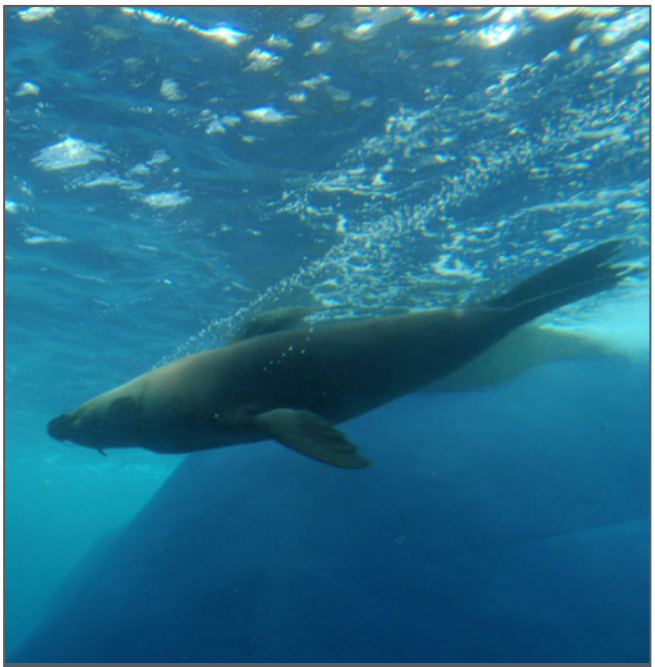
MAMMALS

Marine mammals are mammals that have adapted to the marine environment. This means that they share the same characteristics as all other mammals:

- birthing live young
- suckling young from mammary glands or adapted mammary patches
- endothermic
- four-chambered hearts
- air-breathing
- hair and/or fur at some stage in the lifecycle

Marine mammals are found throughout the world. Research suggests that around 40% of marine mammals live around 40 degrees north and south of the equator.

The most familiar marine mammals include seals, sea lions, dolphins, and whales. Each of these mammals, however, is specially adapted to live in an aquatic environment. For example, both dolphins and whales are born with a smattering of hair; many lose these quickly during the first few days of life. Some, like adult humpback whales, have hair follicles along the skin.



Australian fur seal

Indo Pacific humpback Dolphin

Many marine mammals have lost the ability to move about efficiently on land. Pinnipeds, such as seals, live parts of their lives on land, but hunting and food gathering behaviours are generally performed in a marine environment. All marine mammals, even those which live entirely in the sea, must breathe air. This means that animals such as dolphins and whales must surface regularly. Generally, they do not need to bring the entire body – or even the entire head – above water.

Other marine mammals, like whales, dolphins, and porpoises, have lost their fur-covering and developed streamlined bodies. This reduces drag when swimming, allowing them to slice quickly through the water. Lungs are also specialised, and lungs and muscles can store oxygen, allowing them to stay underwater. Many marine mammals also have layers of thick blubber or fat to help maintain body heat in cold environments. Colder environments can also affect blood flow, which means many marine mammals have enlarged veins to help transfer blood to vital organs. Limbs are also adapted, with flippers, flukes, and fins assisting in movement through a more viscous environment.

Other species such as polar bears have thick layers of fat and fur to help them maintain their body heat in cold climates, a large body to help keep them warm and disperse their body heat, thick curved claws for gripping the ice and predators, sharp teeth and strong jaws for tearing apart prey and powerful muscles for fighting and attacking. Although polar bears do not live their whole lives in the water, they are considered marine mammals due to their dependence on the water for food and living environment. Polar bears are the only bears considered marine, and to live in such extreme environs.

A whale skeleton showing its ungulate characteristics