

TURTLES AND DUGONGS

Dr Bob Prince, a Senior Research Scientist with CALM, spoke to Kimberley Society at the meeting of 1 October 1997. He has done extensive research on kangaroos, dugongs and turtles, especially in the Kimberley and on how they relate to the north of Australia, and he showed slides of the animals and a video film of dugongs and the traditional methods the Aboriginal people use in hunting them. The film was shot at One Arm Point and Shark Bay in 1979 by the Queensland Marine Parks Authority.

The dugong is one of four surviving species of sirenians or sea cows, the animals most like the mermaids of European legend. Zoologically, dugongs are closely related to elephants and, in common with their close relatives the manatees, they belong to a group of essentially terrestrial animals that returned early on in evolution to an aquatic way of life. There are three manatees, one from the West Indies, one African and an Amazonian. Our dugong stocks are good compared with the rest of the world where numbers are in a sorry state. They are strictly marine dwellers, feeding mainly on seagrasses, and are found from Shark Bay in the west, around the north coast and down to Moreton Bay in the east. The young are dependent on their mothers for two years. They are 1.2 metres long at birth, weighing 20–35 kg. They reach sexual maturity in the late teens and pregnancy lasts 13 months. A pregnant female of 2.6 metres weighed 345 kg, so they are a very large marine mammal. Their life span is about 70 years, and their age can be determined by the incisor teeth of the male. In the female these are non-functional and rarely erupt. A longitudinal section of the tusk, as shown in a slide, shows dense dentine alternating with less dense dentine, giving growth waves which can be counted like the growth rings in a tree trunk. The oldest one reported from Roebuck Bay was aged 72 years.

Twenty to thirty years ago, people thought dugongs were becoming extinct, but 80–100,000 are estimated to live in coastal regions of Western Australia; about 2000 of them between Ningaloo and Exmouth Gulf. They inhabit warm subtropical seas, move slowly and communicate by squeaks. They provide an important source of food for Aboriginal people, especially those residing near the coast. Non-Aboriginal Australians are not permitted to eat them. A high level of local exploitation may be unsustainable and careful management is needed. Nor is the impact of humans confined to direct predation. Commercial fisheries can be exploiting the same habitat and dugongs can get tangled in fishing gear, collide with boats, suffer from oil spills and other marine pollution and fall prey to sharks and killer whales.

There are two families. The sole representative of the first family, the Dermochelyidae, the leatherback turtle, has no hard bony shell and is known in WA

as a non-breeding migrant only. They roam the open oceans and feed on jellyfish and colonial tunicates. They can submerge for ¼ hour and can dive to depths of 1 kilometre below the pelagic zone, withstanding great compression. They breed in the Indonesian Archipelago. The second family, the Cheloniidae, have the body enclosed within a hard bony shell or carapace covered with horny plates. Five of the world's six species in this family are found in Western Australian waters. They are the green, hawksbill, loggerhead, flatback and the rare and poorly known olive ridley turtle. The green turtle is the most abundant and is a herbivore that eats seagrasses and algae. The flatback turtle is usually found in tropical Western Australian waters from Exmouth Gulf area northwards, but is not particularly abundant. The hawksbill turtle is the one producing the typical tortoise-shell from its keratinous scales, which thicken up and may be heat laminated to produce jewellery. They are relatively scarce in WA waters, found mainly at Dampier Archipelago, and they feed on sponges. The loggerhead turtle has a huge head and is a bottom-feeding carnivore, eating crabs, etc. They are also relatively scarce in WA waters, concentrated mostly at Dirk Hartog Island, and seem to be more tolerant of cooler waters.

Adult marine turtles are relatively large animals, with fore limbs modified to form paddle-like flippers and hind limbs, although modified, retaining the functional ability needed by females for nesting on land. All species lay parchment-shelled eggs which are covered and then abandoned for incubation after laying. All turtles are tied to terrestrial areas—beaches—for breeding. The biggest breeding site for green turtles is the Lacepede Islands where 1500 were counted on the beach in one night. At Northwest Cape, 2000–3000 animals were seen in one season.

Dr Prince had many interesting handouts to distribute and, after he answered many questions from the 40 people present, the President thanked him for his absorbing talk.

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