



Moreton Bay Marine Park is one of the few places in the world where large populations of turtles are found so close to a capital city.



Moreton Bay Marine Park Zoning Plan review

Species information: Turtles

Often called ancient mariners of the sea, turtles were plentiful during the reign of the dinosaurs more than 150 million years ago. Today their numbers are drastically reduced. All of the world's seven species are considered either rare or threatened. The loggerhead turtle in particular has suffered a decline of between 50 to 80 percent over the past 20 years.

The seven turtle species found around the world are:

- Leatherback turtle (*Dermochelys coriacea*)
- Loggerhead turtle (*Caretta caretta*)
- Flatback turtle (*Natator depressus*)
- Pacific ridley turtle (*Lepidochelys olivacea*)
- Green turtle (*Chelonia mydas*)
- Hawksbill turtle (*Eretmochelys imbricata*)
- Kemp's ridley turtle (*Lepidochelys kempii*)

Turtles have extraordinary powers of navigation. They often nest at the same beaches where they hatched. Most sea turtles will migrate several hundred of kilometres from their feeding grounds to mating grounds. A few turtles even travel up to two thousands kilometres on this journey.

The race for survival

Turtles have very low birth rates. A sea turtle can be aged between 30 to 50 years before it breeds, and then its breeding season might be once in only two to eight years.

The temperature of the sand in which the eggs are incubated determines a hatchling's sex; warmer temperatures produce females and

cooler temperatures produce males. Turtles hatching on islands within Moreton Bay Marine Park will mostly be males because of cooler sand temperatures than islands further north. During the eight week incubation period many eggs will be lost to predators, inundation by water and erosion.

After incubating, the hatchlings break out of their shells slowly and dig their way to the surface.

Hatchlings then instinctively race down the beach and into the open ocean. They begin a long and dangerous journey using wave direction, current and magnetic fields to orientate themselves to deeper water. Turtle hatchlings have a low chance of survival – only about one in 1000 hatchlings will survive to return as an adult to breed and nest on the same beach.

For the next 5-10 years these young turtles are rarely seen. When a turtle's shell reaches 35-40 centimetres in length it will reappear in shallow coastal waters. For some turtles, the feeding grounds of Moreton Bay Marine Park will be their home for many years to come.

Turtles in Moreton Bay Marine Park

Moreton Bay Marine Park is one of the few places in the world where large populations of turtles are found so close to a capital city. Of the world's seven turtle species, all but the Kemp's ridley have been found here. The marine park has at least five "year round" resident turtle species; green, loggerhead, Pacific ridley, flatback and hawksbill

turtles. In fact, Moreton Bay Marine Park has one of the most important feeding areas for loggerhead turtles along the east coast of Australia. Loggerhead turtles are listed as endangered under the *Nature Conservation Act 1992*.

Moreton Bay Marine Park's seagrass meadows provide turtles with the ultimate dining experience. Green turtles graze on seagrass while loggerheads eat the shellfish, crabs, sea urchins and jellyfish that live in these meadows. While the marine park is an important feeding ground, it is not a major breeding or nesting area. Only a handful of loggerhead turtles nest on the local sand islands of Bribie, Moreton, and North and South Stradbroke.

Exploitation of turtles

Turtles were once abundant in Moreton Bay Marine Park, however European settlement had a significant impact on the species. At the turn of the 19th century, turtles in Moreton Bay were plentiful. However commercial harvesting of turtles, particularly green turtles in Moreton Bay, commenced in 1896. Between 1924 and 1929 the expanding turtle soup industry significantly reduced the numbers of adult female green turtles in all feeding areas, including Moreton Bay. Moreton Bay's green turtles were taken from their nesting beaches in southern Great Barrier Reef rookeries to supply soup factories on North West and Heron islands. In 1927 the turtle processing operation moved to Brisbane¹. It wasn't until 1950 that green turtles became completely protected in Queensland waters². Today, legislation protects turtles from exploitation. Their numbers have since recovered, but are still far from being secure.

Under the *Native Title Act 1993*, traditional hunting of turtle is allowed for non-commercial purposes. In Moreton Bay Marine Park, relatively small numbers of turtles are hunted for cultural purposes.

Threats to turtles

As south-east Queensland's population increases, so does the number of visitors to Moreton Bay Marine Park. Each year more turtles are becoming victims of disease, entanglement, boat strike and pollution. As well as having the highest known deaths from disease, Moreton Bay Marine Park accounts for



approximately 50 percent of boat strikes reported in Queensland. Up to 50 turtles every year die from boat strike alone in the marine park. They are also seriously threatened by discarded fishing equipment and litter, which can cause injuries or even death from infection, amputation, choking and drowning. Turtle entanglements in crab pots are also an increasing problem in Queensland, with abandoned pots and their loose float lines accounting for around 20 reported deaths each year.

Besides ingesting marine pollution, diseases can also be fatal for turtles. Diseases caused by bacteria, viruses and parasitic worms may cause a gaseous build up in their intestines and prevent them from diving. A number of turtles in Moreton Bay are infected with a disease called "Green turtle fibropapilloma disease" which causes tumours to grow on and inside the turtle and may even result in death. While the cause of this disease is not currently known, evidence suggests pollutants and toxicants in the water may trigger these tumours.

More information

For more information on the Moreton Bay Marine Park and the zoning plan review process, visit the EPA's website at www.epa.qld.gov.au/moretonbay.

A number of information sheets are available on this website. You can also email us at moreton.bay@epa.qld.gov.au or freecall 1800 105 789.

¹ Golding, W. & Jones, O. in Limpus, C.J. et al, op cit.

² Limpus, C. (1980) in Limpus, C.J., Couper, P.J., Read, M.A. (1994) "The green turtle, *Chelonia mydas*, in Queensland: population structure in a warm temperate area", *Me moirs of the Queensland Museum* 35:139-154