

# WILDLIFE DIARY



Great Finds

March 2007

Did You Know?

Two Marine Turtles (species unconfirmed) seen feeding near Wynnum Jetty.

Hundreds of migratory wader birds staging around Moreton Bay preparing to head north to Siberia and Alaska for the breeding season.

## POPULATION MATTERS



We must alert and organise the world's people to pressure world leaders to take specific steps to solve the two root causes of our environmental crises - exploding population growth and wasteful consumption of irreplaceable resources. Over consumption and overpopulation underlie every environmental problem we face today.

Jacques-Yves Cousteau

### Moreton Bay Marine Park

Declared in 1993 and extended in 1997 Moreton Bay Marine Park covers most of Moreton Bay's tidal lands and tidal waters seawards to the limit of Queensland waters (3 nautical miles) and along the mainland and around the islands, the boundary being the line of the highest astronomical tide. Freehold land is not included unless the owner has agreed.

### Green Turtles

Green Sea Turtle is found in Moreton Bay, in fact, six of the seven species of marine turtles found in the world are found in Moreton Bay. Unfortunately their population is on the decline, due to factors such as pollution, illegal fishing and becoming tangled in fishing nets. Green Sea turtles consume seagrass and other sea plants. The male sea turtles spend all of their lives at sea; the females only come to land to lay eggs. They do this on a sandy beach, crawling to the top of the sand to dig a hole. They lay about 100 eggs and then cover them with sand. Amazingly the female Green Sea Turtle lays its eggs in the same place as it was born.

### Sea squirt fragment regenerates entire body

Once thought a talent displayed by only simple beasts such as jellyfish and sponges now sea squirts (*Botrylloides leachi*), the closest invertebrate relative to vertebrates, have been found to do it too. Scientists took fragments of blood vessels from the animals and watched under a microscope 80 out of 95 fragments under go whole body regeneration. Cells first grouped into hollow spheres, then cell layers in-folded and organs developed until after two weeks an adult sea squirt had grown, capable of sexual reproduction. It is suggested the discovery may help illuminate regeneration abilities that have been lost or suppressed in vertebrates. Source: Journal reference: R. Hooper. PLoS Biology (DOI: 10.1371 / 1.pbio.0050071)

Did you know that less than 0.5% of Moreton Bay Marine Park has full protection and even within some of these protected areas commercial fishing is still occurring (Peel Island).

Empirical testing of marine reserves still remains one of the most critical aspects in improving the design and management of future marine reserves. The results of recent studies on marine reserves in Moreton Bay, focusing on Mud Crabs, added to the growing body of empirical evidence that small marine reserves (<6 km<sup>2</sup>) can provide conservation and fisheries benefits for exploited species, particularly for less mobile invertebrate species.

Over two or three weeks in late summer the shorebirds put on weight, storing a layer of fat under their skin and developing larger flight muscles. The fat will be used as fuel during the journey. Birds gain about one third or more of their usual body weight, in fact some almost double their weight. Some organs in the birds' bodies, not essential for flight, may shrink, reducing unnecessary weight.

## Great Walks



All endeavor calls for the ability to tramp the last mile, shape the last plan, endure the last hour's toil. The fight to the finish spirit is the one characteristic we must possess if we are to face the

future as finishers. **Henry David Thoreau** .

Get a sense of the value of Moreton Bay, on an early morning visit to Sleath Street, Ormiston, or the foreshore at Empire Point beyond the artificial roost site (on a low tide) or likewise King Island.

# WWW

**Super Quarries**

<http://www.superquarry.com.au/>

**Marine Protected Areas**

[www.mpanews.org](http://www.mpanews.org)

**Wader birds**

<http://www.environment.gov.au/biodiversity/migratory/waterbirds/shorebirds/pubs/shorebirds.pdf>

**SEQ Regional Outdoor Recreational Strategy**

[http://www.oum.qld.gov.au/docs/pdf/SEQRORS\\_Discussion\\_Paper.pdf](http://www.oum.qld.gov.au/docs/pdf/SEQRORS_Discussion_Paper.pdf)

**Population issues**

<http://population.org.au/>



# Grey Nurse Shark

The **Grey Nurse Shark**, (sand tiger shark or spotted ragged-tooth shark), *Carcharias Taurus*, is one of four species belonging to the family Odontaspidae. It has a conical snout, long awl-like teeth in both jaws, large, rather stout body and is coloured grey to grey-brown dorsally, with a paler off white under belly. Reddish or brownish spots may occur on the caudal fin and posterior half of the body, particularly in juveniles. The grey nurse shark is a slow but strong swimmer and is generally more active at night. It is often observed just above the sea bed in or near deep sandy-bottomed gutters or rocky caves, in the vicinity of inshore rocky reefs and islands. They spend the daylight hours swimming in gutters around the rocks at their aggregation sites. They prey on pilchards, jewfish, tailor, bonito, morays, blue groper, sea mullet, flatheads, yellowtail kingfish, small sharks, squid and crustaceans.

The grey nurse shark has a relatively low growth rate and takes 4 - 6 years to mature with both males and females maturing at about 220cm in length. The precise timing of mating and pupping in Australian waters is not known. Many sharks have been observed at Brooms Head NSW during the months of March and April with mating scars i.e. bite marks around the pectoral fins and head area. Once impregnated the female stores the sperm while the ovaries produce eggs that move on to the oviduct and are fertilised. Not all migrating females are sexually active and mature females generally reproduce only once every two years. The reproductive norm for the grey nurse shark includes oophagy and intra-uterine cannibalism, which results in only two young per litter (one in each uterus). After eating other ova inside their egg cases surviving embryos hatch into the uterus at about 55 mm long. At about 10 cm they develop teeth and consume other embryos in the uterus. The single remaining embryo in each uterus then feeds on unfertilised eggs that the female continues to ovulate. Gestation takes 9-12 months.

Grey nurse shark is independent at birth and measures about 1 m in length. Little knowledge exists about the reproductive ecology of Australian grey nurse shark populations, but it appears that these sharks give birth to their young at selected pupping grounds. What is known and is a concern is the missing young amongst the Grey Nurse sharks current population. The average life span of grey nurse shark is also unknown, one held in captivity at a Sydney aquarium lived for 13 years, and it's thought larger specimens in the wild may be much older than 13 or 16 years.

Tragically, between October and December 1937 58 Grey Nurse Sharks were caught during the early stages of beach meshing program. Between 1950 and 1990 about 500 Grey Nurse Sharks were caught in the NSW beach meshing program. While in the last 20 years, between October 1972 and December 1990, only 65 Grey Nurse Sharks were caught. Grey Nurse Sharks are rarely caught and this only highlights the demise of this species. Grey Nurse Sharks were once one of Sydney's most common sharks and found along most of Sydney's coastline. Many of these areas no longer support Grey Nurse Sharks. While relatively little is known about the migratory habits of Australian grey nurse shark there is evidence that suggests migrational movement, probably in response to water temperatures, occurs up and down the coast. Interestingly, Grey nurse sharks aggregate according to sex at certain times of the year, with males predominant in southern Queensland during July to October.

The Grey Nurse Shark is listed as two separate populations under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act 1999). The east coast population is listed as critically endangered and the west coast population is listed as vulnerable. This species became the first protected shark in the world when the NSW Government declared it a protected species in 1984. Grey nurse sharks are now protected under fisheries legislation in NSW, Tasmania and Queensland and Western Australia.



CSIRO and the Queensland Parks and Wildlife Service research found the Queensland grey nurse sharks move some distance at night from their aggregation sites. At Flat Rock in the Moreton Bay Marine Park, two tagged grey nurse sharks were recorded travelling up to 1200m away to feed at night. Thankfully four Grey Nurse Shark Protection Areas were created in Queensland. This includes 1.2 kilometre radius around.

- Wolf Rock (off Double Island Point in the proposed Great Sandy Marine Park, Northern Section);
- Flat Rock (off North Stradbroke Island, Moreton Bay Marine Park);
- Cherub's Cave (Moreton Bay Marine Park); and
- Henderson Rock (Moreton Bay Marine Park).

Wolf Rock is the most important grey nurse shark area in Queensland. It is a mating site and has a high number of female and pregnant sharks. Unfortunately, there are those who wish to see the removal of these important protected sites and removing any chance of these fabulous creatures having a future. If you are interested in protecting the shark and in the protection of Moreton Bay wildlife please participate in the review of the Moreton Bay Park. Write or email Lindy Nelson- Carr, the QLD Environmental Minister, and insist Moreton Bay Marine Park gets more protection. Postal Address: PO Box 15155, City East, QLD 4002/ [EandM@ministerial.qld.gov.au](mailto:EandM@ministerial.qld.gov.au)

See: [http://www.epa.qld.gov.au/parks\\_and\\_forests/marine\\_parks/moreton\\_bay\\_marine\\_park\\_zoning\\_plan\\_review/](http://www.epa.qld.gov.au/parks_and_forests/marine_parks/moreton_bay_marine_park_zoning_plan_review/)

*Never doubt that a small, group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.* Margaret Mead.

