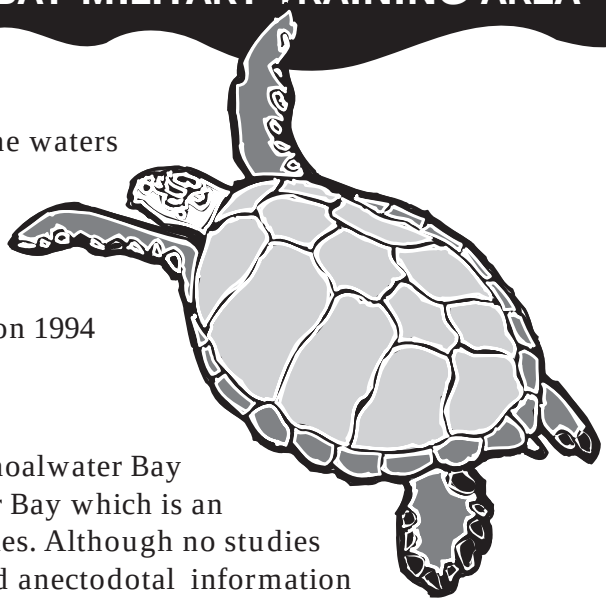
MARINE TURTLES IN THE SHOALWATER BAY MILITARY TRAINING AREA



Introduction

Four species of marine turtles have been recorded from the waters of the Shoalwater Bay Military Training Area: green (*Chelonia mydas*), flatback (*Natator depressus*), hawksbill (*Eretmochelys imbricata*) and loggerhead (*Caretta caretta*). All four species have been listed in the schedules of the Nature Conservation (Wildlife) Regulation 1994 (Qld) as either 'vulnerable' (green, flatback, hawksbill) or 'endangered' (loggerhead).

Nearly all of the research done on marine turtles in the Shoalwater Bay Military Training Area has been carried out in Shoalwater Bay which is an important feeding ground for a very high number of turtles. Although no studies have been done in nearby Port Clinton, aerial surveys and anectodotal information suggests that there are relatively high numbers of turtles in this bay as well. This suggests that Port Clinton is also an important turtle feeding ground.

While the following information is derived from research and monitoring undertaken in Shoalwater Bay it is highly likely that the turtles in Port Clinton occur in similar relative densities and behave in the same way due to the proximity and similarity of the two estuaries. Casual observations support this.

Green turtles

Most green turtles living in Shoalwater Bay originate from the southern Great Barrier Reef breeding stock which nests mainly on the islands of the Capricorn and Bunker Groups.

A small portion of the population includes turtles from the northern Great Barrier Reef breeding stock and some from the New Caledonia breeding stock. When in breeding condition each turtle will migrate to breed within its ancestral nesting area and will return to its local feeding area in Shoalwater Bay at the completion of breeding.

Green turtles are the most abundant species in Shoalwater Bay. Tens of thousands of individuals feed on the seagrass pastures and fringing reefs of the area. Shoalwater Bay supports the largest known feeding concentration of the southern Great Barrier Reef genetic stock of green turtles.

Principal food items include seagrass, especially *Halophila* and *Halodule*, algae and mangrove fruit, especially that of *Avicennia*. Green turtles feed across the intertidal flats and up into the mangroves with the rising tide and fall back off the flats as the tide drops. They also feed regularly on the deeper subtidal seagrass beds. The large concentrations of green turtles are most obvious over the intertidal flats where there are concentrations of seagrass. Tiger sharks are recorded predators of green turtles here.

The resident feeding population consists of all size classes from small (carapace about 40 cm long) juveniles, newly recruited from the open ocean, to large adults. The population is strongly biased to females in all size classes (about 75% of immatures and 60% of adults).

There is a relatively low incidence of green turtle fibropapilloma disease (less than four percent) in this population probably due to the 'unpolluted habitat' of Shoalwater Bay.

In above average density nesting seasons, sporadic green turtle nesting can be expected on some beaches. This nesting is trivial for the Queensland green turtle populations.

Loggerhead turtles

Loggerheads mainly inhabit the deeper subtidal areas of Shoalwater Bay. While they have not been recorded feeding in intertidal habitats by day they have been recorded feeding there at night.

The loggerhead turtle population consists of males and females, from immature turtles (carapace length 70 cm), newly recruited from open ocean habitats, up to large adults. The majority originate from the south Queensland genetic stock.

Hawksbill turtles

Hawksbills mainly inhabit the coral and rocky reef habitats of Shoalwater Bay. While they have not been recorded feeding in intertidal habitats by day they have been recorded there at night.

The hawksbill turtle population consists of males and females, from immature turtles (carapace length 35 cm), newly recruited from open ocean habitats, up to large adults. The stocks from which these hawksbill turtles originate has not been determined.

Flatback turtles

Flatbacks inhabit the deeper subtidal areas of Shoalwater Bay. Specimens from small 'pelagic' post-hatchlings (carapace length about 15 cm) up to large adults have been recorded. White-bellied sea-eagles have been recorded feeding on the post-hatchlings. These flatback turtles originate from the eastern Australian genetic stock.

Wild Duck Island to the north of Shoalwater Bay is one of the two major flatback rookeries in eastern Australia, with several hundred females nesting annually. Low density or sporadic nesting occurs on many other beaches and islands in the surrounding area.

Sources

This report is derived from the summary review *Marine Turtles in the Shoalwater Bay area* written by Dr C. Limpus, Manager Research and Monitoring (Maritime), Queensland Department of Environment, and the draft report 'Port Clinton / Byfield Marine Park: background to declaration and zoning' prepared by Queensland Department of Environment planning staff in 1996.

This report has been prepared as background material for the declaration and zoning of the Gumoo Woojabuddee Section of the Great Barrier Marine Park and adjacent areas including the waters of Port Clinton, Freshwater Bay and the Byfield coast. There are no management proposals contained in this report. If you have any other questions about the process contact:

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