LEATHERBACK TURTLE

Dermochelys coriacea

Description

The leatherback turtle is a massive turtle, up to 500 kg in weight and with a carapace length of 1.6 m. The shell is leathery, black with light spots and has five longitudinal ridges. Eggs are large (mean diameter = 5.3 cm). Hatchlings are black with white markings on the carapace ridges.

Distribution

The species is distributed globally, nesting mostly in tropical areas and feeding in temperate areas. There are very few records of nesting in Australia. In the Northern Territory (NT) the only locations where breeding has been reported from are the Sir Edward Pellew Islands, near Maningrida, Danger Point on Cobourg Peninsula and Palm Bay on Croker Island. Nesting occurs in most years at Danger Point but only occasionally at other sites. No tracks of leatherbacks were found during extensive surveys of beaches across the NT coastline during the breeding season (R. Chatto unpubl. data).

Conservation reserves where reported: Barranyi National Park and Garig Gunak Barlu National Park.

Ecology

The leatherback turtle feeds within the water column and is regarded as an oceanic species. Their diet consists of macroplankton (jellyfish and salps). In Australia, they feed in subtropical and temperate waters of Queensland, Western Australia, New South Wales, Victoria and Tasmania. However, they have also been recorded feeding off the NT coast (Cogger et al. 1993). Major breeding sites occur in New Guinea and Malaysia. Some animals from these areas migrate to Australian temperate waters to feed.
Conservation assessment

The population using NT waters is estimated to be less than 50 mature individuals. The only current nesting location in Australia occurs at Cobourg Peninsula, and is used sporadically (including, most recently, in the summer of 2012/13) by very small numbers of females. (The only other Australian nesting sites in Queensland have not been used in the last 12 years.) Some eggs are lost at Cobourg through predation on nests by feral pigs and possibly dogs. Nesting at Cobourg is unlikely to support the whole Territory or Australian population, so population numbers here must be influenced by factors operating on the broader Western Pacific (Indonesia, New Guinea) subpopulation (Hamann et al. 2006). This subpopulation has undergone significant population declines in the last 20+ years (Environment Australia 2003). Data from shark control operations in Queensland indicate a declining population there (genetic units are undefined; Hamann et al. 2006; Limpus 2009).

The species’ generation time is in the order of 22 years (from IUCN red list assessment), so three generations is about 66 years. With both poor recruitment and adult mortality, a decline of >50 per cent over 66 years is likely.

The leatherback turtle is classified in the NT as Critically Endangered (criteria C2a(i,ii)+D) based on:

- number of mature individuals <50; and
- a continuing decline

Threatening processes

Threatening processes in NT waters are by-capture from commercial fishing activity and possibly predation of eggs by dogs and goannas. In 1998, 18 leatherback turtles were captured by the northern prawn fishery in the northern Arnhem and western Gulf regions (Australian Fisheries Management Authority, unpublished data). This mortality has been reduced to zero by the legislated introduction of turtle exclusion devices on trawl nets after 2000 (Environment Australia 2003).

Beyond Territory waters but affecting the broader subpopulation, Leatherbacks suffer significant mortality by long-line fishing in the Pacific (60 per cent of total turtle take may be leatherback turtles - see Limpus in Hamann et al. 2006; Limpus 2009), and there is continued mortality in crab pots in southern states (Hamann et al. 2006; Limpus 2009). In neighbouring countries there is direct harvest of turtles in Indonesia (Hamann et al. 2006), and egg predation by pigs and dogs in West Papua (Indonesia) and Papua New Guinea (Hamann et al. 2006).

Conservation objectives and management

A national recovery plan for this species, and other marine turtles, was approved in 2003 (Environment Australia 2003). This plan includes actions that:

i. aim to reduce mortality of turtles (principally through ameliorative actions within commercial fisheries, and maintenance of sustainable harvest by Indigenous communities);

ii. develop and integrate monitoring programs;

iii. manage factors that affect reproductive success (in this case, largely outside the NT);

iv. identify and protect critical habitat (including sea grass beds);

v. enhance communication of information; and

vi. enhance international actions and cooperation.
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References


