

Many MPAs in the region have nesting or feeding marine turtle populations, which are often a particular focus for management. This sheet provides guidance to the extensive literature and sources of information on these species.

Five of the seven species of marine turtle found in the world occur in the WIO. All are on the IUCN Red List: the Hawksbill (*Eretmochelys imbricata*) and the Leatherback (*Dermochelys coriacea*) are both categorised as Critically Endangered; the Green (*Chelonia mydas*), Olive Ridley (*Lepidochelys olivacea*), and Loggerhead (*Caretta caretta*) are listed as Endangered. They are also on Appendix I of CITES which means that international trade in live specimens or their products, such as carapaces and oil, is prohibited.



J. Rubens

Green turtle released from fishing nets on Zanzibar.

The life cycle of marine turtles involves a variety of habitats. Eggs are laid and incubated in sandy beaches. The hatchlings and young juveniles are pelagic and inhabit the surface waters of convergence zones and major gyre systems (circular currents) throughout tropical and temperate oceans. The feeding grounds of most adults include seagrass beds, coral reefs, sand and mud flats, and mangrove ecosystems, although the pelagic leatherback feeds in deep waters.

The major threats to marine turtles in the WIO are:

- Loss and degradation of nesting beaches and foraging habitat (seagrass beds) as a result of poorly planned coastal development (tourism, commercial, urban, residential and housing developments, seasonal fisher camps);
- Exploitation for meat, eggs, shell, oil, and other products (traditional medicines, cooking fat);
- Disturbance of nesting turtles by beach lighting, boats and water-sports offshore, dogs, other predators and people on the beach;
- Incidental capture and drowning in shrimp trawls, gill-nets and other fishing gears.

KEY POINTS FOR THE MPA

- Identify turtle species, nesting beaches, feeding areas, and seasons involved, within the MPA.
- Use zoning schemes to distinguish 'critical' nesting habitat (where all building construction, offshore water sports, and presence of vehicles, humans, and dogs on the beach would be prohibited) from 'sensitive' nesting habitats (where such activities would be reduced, or eliminated just during the nesting season).
- Monitor populations, using standardised methods, including patrolling nesting beaches, counting nests and eggs, and recording tags, sightings and mortalities, and activities in the water (e.g. foraging and mating). Involve MPA rangers, guides, volunteers, community representatives, and government officers and provide training as needed.
- Initiate a tagging programme, but do not start without consulting an expert (there are plans to standardise tag numbering in the WIO region). If a tag is recovered, return it to the address on the back.
- Collaborate with Fisheries and Wildlife Departments, national turtle working groups and local conservation groups involved in turtle protection.
- Promote the use of Turtle Excluder Devices (TEDs); discourage the use of gill-nets where these result in accidental capture of turtles.
- Raise awareness about turtles in MPA publicity and educational materials and, if appropriate, set up an ecotourism programme for tourists to view turtle nesting, ensuring that there is a code of conduct.
- If planning a hatchery or nest translocation programme, seek expert advice, as interfering in the way hatchlings reach the sea can have negative effects and reduce their chance of returning to the same beach once adult.
- Fence in nests at risk from predators, but be sure to check them daily during the hatching period.
- If planning a compensation scheme (e.g. for turtles released from nets, or reporting of nests), seek expert advice as this can be expensive and unsustainable, and may promote intense reporting or even capture.
- Never harass, catch, feed or ride turtles; when encountering turtles underwater, keep your distance and avoid disturbing them.

The techniques needed to implement most of these activities are described in a comprehensive manual produced by the IUCN/SSC Marine Turtle Specialist Group (MTSG).

Two regional agreements require parties to carry out conservation and management actions for turtles:

Nairobi Convention 1985 - All five species are listed as 'protected migratory species' in the Protocol on Protected Areas and Wild Flora and Fauna in the Eastern Africa Region. Olive Ridley, Loggerhead and Leatherback are classified as species of wild fauna requiring special protection. The Green and Hawksbill are classified as harvestable species of wild fauna requiring protection and states are required to produce management plans for their exploitation, although none have yet done so.

Convention on the Conservation of Migratory Species of Wild Animals (CMS) - This includes a regional agreement (Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and S E Asia (IOSEA)) which has been signed by Comores, Kenya, Madagascar, Mauritius, Seychelles, and Tanzania.

Most countries in the WIO now have national legislation protecting turtles. MPAs play a vitally important role as they include many of the key nesting beaches and feeding areas, although not all.

Sources of further information

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IUCN/SSC Marine Turtle Specialist Group: <http://www.iucn-mtsg.org>
WIO Regional Contact points are Jeanne Mortimer jmort@nersp.nerdc.ufl.edu; and George Hughes ghughes@kzncs.org.za

www.seaturtle.org - includes online access to Marine Turtle Newsletter which is also available by e-mail: mtn@seaturtle.org

www.seaturtle.org/tagging/ - information on tagging.

To subscribe to the Sea Turtle (CTURTLE) electronic mailing list, email: listserv@lists.ufl.edu.

Turtle watching guidelines fact sheet produced by the Coral Reef Alliance (CORAL): <http://www.coral.org>

Wider Caribbean Sea Turtle Conservation Network (WIDECAST): <http://www.widecast.org>

Indian Ocean – South-East Asian Marine Turtle Memorandum of Understanding (IOSEA MoU): <http://www.ioseaturtles.org/>

Mozambique Marine Turtle Working Group: marineturtlezm@hotmail.com

Watamu Turtle Watch, PO Box 125, Watamu, Kenya: wtwkenya@swiftmalindi.com,

KESCOM (Kenya Sea Turtle Conservation Committee): kescoms@yahoo.com

CASE STUDY

Mafia Island Marine Turtle Conservation Programme, Tanzania

A community-based turtle conservation programme was initiated on Mafia Island, Tanzania in collaboration with Mafia Island Marine Park, Mafia District Council and local communities in January 2001. Threats to turtles on Mafia included poaching of eggs and nesting females, capture in gill-nets and fence traps, disturbance from seasonal fisher camps, predation by monitor lizards and beach erosion.

The main nesting sites and foraging grounds were identified through interviews and site visits. Locally chosen turtle monitors were recruited and trained to patrol the main nesting beaches, relocate nests when necessary and assist with data collection and tagging. In order to encourage greater community participation in the programme a nest protection incentive scheme was initiated in January 2002, whereby individuals who report a nest receive US\$3.0. They help to protect the nest during the two month incubation period and are then awarded US\$0.40 per live hatchling and US\$ 0.20 per rotten egg. Over the past three years, the number of nests that have hatched successfully has increased from 25% to 85% and the number of nests poached has declined from 49% to 1%. This has been due in part to the incentive scheme but also to awareness raising activities which have included village and fisher meetings, establishment of Environment Clubs and schools' projects.