

Gotham City mapped for the grey nurse

In the fictional realm, Gotham City is synonymous with towering architecture, shadowy figures and colourful villains. But in the underwater realm, it is the name given to one of six habitats identified by the Queensland Government as critical to the survival of the grey nurse shark (*Carcharias taurus*).

These previously unstudied habitats, situated in Queensland's Moreton Bay Marine Park and the proposed Great Sandy Bay Marine Park, have been mapped and biologically surveyed by volunteer divers from the University of Queensland's Underwater Dive Club. The resulting report, *Surveying Habitats Critical to the Survival of Grey Nurse Sharks in South-East Queensland*, will provide vital baseline data to quantify any ecological changes to grey nurse shark habitats, and serve as a reference for species recovery plans and habitat management strategies.

Unidive volunteers and study coordinators Chris Roelfsema from the University of Queensland, and Carley Bansemmer from the Queensland Parks and Wildlife Service (QPWS), say five areas within the Moreton Bay Marine Park, and one within the proposed Great Sandy Bay Marine Park, were identified by the Queensland Government as habitats critical for the survival of grey nurse sharks.

With funds from the Threatened Species Network, volunteers were trained in mapping and biological survey techniques by members of the QPWS and the University of Queensland's Centre for Marine Studies and Biophysical Remote Sensing Group.

Habitat maps detailing bathymetry (water depth) and underwater features were then developed for each area over



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Due to overfishing, the grey nurse shark, once numerous in Australian waters, is now endangered. Note the trailing fishing gear in this shark's mouth.

nine weekend trips between March and November 2003. Species lists (including fish, invertebrates, algae and coral) were also prepared, to help understand potential relationships between grey nurse sharks and other species.

'This information will provide a strong foundation to monitor future changes in the ecological health of the sites'

The team found that most sites where grey nurse sharks aggregated were characterised by rocky substrate, gullies and steep walls, and a total of 272 fish species, 186 invertebrates and 49 plants were identified.

'This information will provide a strong foundation to monitor future changes in the ecological health of the sites, and may result in modifications to the protection status of the sites,' Roelfsema says.

The report recommended continued monitoring of grey nurse habitats to quantify the results of future management changes, such as partial or permanent closures to fishing or diving within specified zones. It also suggested that application of the methodology used in the study, to other sites not visited by grey nurse sharks, would enable the links between the sharks and their current habitats to be defined.

A handout has been prepared to provide divers with a description and map of the six sites. It explains how divers should behave in the areas when grey nurse sharks are present, and how they can help the QPWS monitor the sharks. The report, handout, maps, videos and posters can be accessed online at <http://clubs.uqsport.uq.edu.au/unidive/GreyNurse/index.html>

● Wendy Pypser

More information:
Grey nurse sharks: http://www.epa.qld.gov.au/nature_conservation/wildlife/endangered_animals/grey_nurse_shark/

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Tough job, but someone had to do it. Unidive Club volunteers worked with QPWS staff on the survey project.