

A high-angle photograph of a pod of dolphins swimming in clear, turquoise ocean water. The dolphins are dark grey or black, and their dorsal fins are visible above the water's surface. They are moving in a loose group, with some individuals slightly ahead of others. The water has a textured, wavy appearance with small whitecaps. The overall scene is bright and clear, suggesting a sunny day.

GARDEN ROUTE

DOLPHIN RESEARCH &
ACOUSTIC MONITORING



THE GARDEN ROUTE is located along part of the southern coast of South Africa. Its coastal zone is characterised by highly diverse marine fauna, including a variety of marine mammals, seabirds, fishes and invertebrates. To conserve the precious coastal ecosystems found in this region, three Marine Protected Areas (MPA) have been proclaimed: Goukamma (14km, Est. 1990), Robberg (9.5km, Est. 2000) and Tsitsikamma (57km, Est. 1964 and South Africa's oldest MPA).

MPAs serve as vital refuges for both fish and marine top predators (e.g. whales and dolphins), but their coverage may be inadequate to meet the conservation needs of some of these species.



//STUDY AREA

The project is taking place from the eastern boundary of the Tsitsikamma MPA through to the western boundary of the Goukamma MPA; including the Robberg Peninsula MPA. All three MPAs are adjacent to a terrestrial Nature Reserve or National Park. The total research area covers approximately 170km of coastline (See Map).

//WHY THIS PROJECT?

The Garden Route Dolphin Research Project aims to better understand how these marine top predators use their habitat along South Africa's coast. It looks at the role of existing MPAs in terms of whether particular cetaceans are of conservation concern and require some form of management intervention.

The International Union for Conservation of Nature (IUCN) Red List of Threatened Species currently lists the Indo-Pacific humpback dolphin (*Sousa chinensis*) as a near-threatened species and the Indo-Pacific bottlenose dolphin (*Tursiops aduncus*) as a "data deficient" species, meaning that too little is currently known about the status of this marine mammal.

The study of dolphins and whales along the Garden Route is therefore necessary for:

- Assessing the role and effectiveness of MPAs for cetacean conservation
- Improving knowledge and understanding of the ecology and conservation status of various marine mammal species
- Providing scientific information of practical relevance to regional conservation management



//OBJECTIVES

- Improving understanding of the population abundance; movement; habitat use and the genetic structure of the Indo-Pacific bottlenose dolphin (*T. aduncus*) and the Indo-Pacific humpback dolphin (*S. chinensis*) in the area
- Assessing the connectivity between MPAs in terms of cetacean movements in the study area and identifying cetacean feeding hotspots and associated areas of high ecosystem productivity
- Studying the vocalizations of different cetaceans present in the area throughout the year

This study uses several methods for achieving its objectives:



Bi-monthly boat surveys for two years to locate dolphins and conduct detailed observations. Animals are photographed and GPS coordinates, environmental variables, group size / composition and behaviour from each encounter is recorded.



Every second month aerial surveys are conducted (inshore and up to 3 nautical miles offshore) to search for the presence of animals.



An identification catalogue of bottlenose and humpback dolphins is being created based on both archived and new photos. Dorsal fin photo-identification allows individual dolphins to be identified by unique patterns and markings (e.g. fin deformities, unusual fin shapes, nicks, scratches, etc.)



DNA laboratory analysis of skin and blubber samples will improve understanding of the different groups of bottlenose dolphins present in the area throughout the year.

//MARINE MAMMAL ACOUSTIC MONITORING

The Department of Environmental Affairs (Branch Oceans & Coasts) has deployed three hydrophone elements in the area. Hydrophones are similar to microphones in air, but instead detect underwater sound. These instruments are constantly recording sounds from whales and dolphins that visit the area throughout the year.

This is part of a long term Passive Acoustic Monitoring Program (PAM) in the area. PAM is a cost-effective and non-intrusive method for obtaining important information about cetaceans.



You can listen to the sounds made by whales and dolphins as collected by the hydrophone at www.conserbio.org



We are looking for future sponsors to lend further support to this project. Please contact us for further information.

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