

Marine Communities of the South West Capes Region



Biodiversity

Marine Management

Creating Sanctuary Zones

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The Capes Region of Western Australia lies some 250 kilometres south of Perth, and stretches from Cape Naturaliste in the north, to Cape Leeuwin and Flinders Bay in the south – encompassing over 100 kilometres of coastline. The region has long been popular with locals and visitors, but it has been only relatively recently that the rich marine ecological values have been recognised



Sea Squirt – *Clavelina molluccensis*

In 2005 the Marine Parks Authority, the Western Australian Government and the people of WA, began to discuss plans for establishing a marine park in the Capes Region



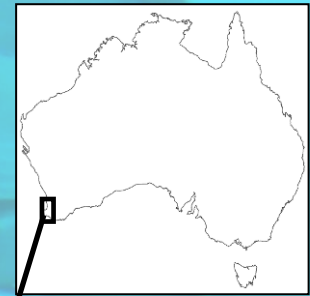
A stony Coral – Order Scleractinia

Sanctuary zones are proposed for the marine park to conserve biodiversity and provide less disturbed areas with which to measure changes in the marine environment. This is necessary as rapid population growth and tourism continue.

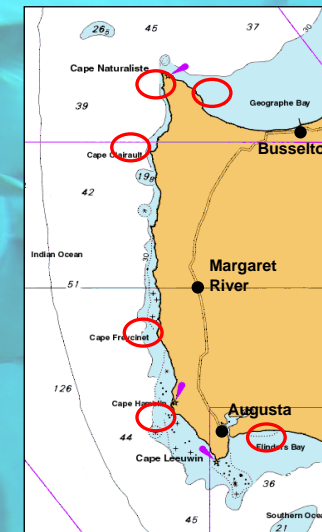
Human pressures may affect marine communities of the Capes through increasing demand on resources, as well as other impacts, such as climate change and introduced marine species. To understand such effects or impacts the South West Catchments Council commissioned a benchmark assessment of reef communities in the Capes region. This project aims to: establish benchmarks by quantifying fish, algal and invertebrate assemblages on reefs; assess the effects of marine sanctuary zones on biodiversity; and aid in the management of marine parks.



22 sites from different regions within the Capes were selected using aerial photography, nautical charts and habitat maps. Sites were chosen to set broadscale benchmarks for the Capes Region and for comparing sanctuary and general use zones.



Maps showing location of the Capes Region and study sites (circled) that encompass proposed sanctuary zones.



During 2006, 2007 and 2008, data were collected on abundances and sizes of fish, algae and mobile invertebrates from the Capes Region. This information was collected using diver operated video, baited remote underwater video, digital imagery and the harvesting of algae, to measure the biodiversity of the marine environment.



Fish

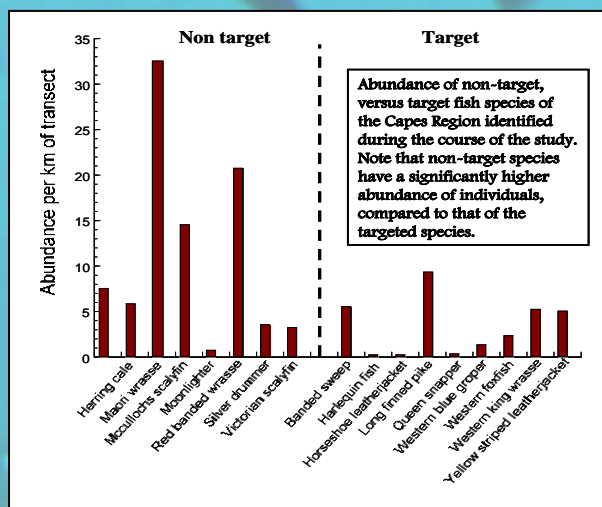
Over the first two years 92 species from 42 families were recorded from the diver operated video and baited underwater video. The most abundant species were: Maori wrasse *Ophthalmolepis lineolatus*, red banded wrasse *Pseudolabrus biserialis*, scalyfin *Parma mccullochi* and the western king wrasse *Coris auricularis*. The highest diversities were recorded at the Naturaliste region and the Geographe Bay Ridge.



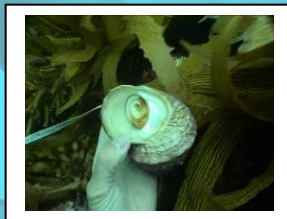
Schools of Buffalo Bream - *Kyphosus cornelii*



Data suggest that numerically dominant species are similar in abundance to other parts of the WA coast, such as the Recherche Archipelago. However, targeted species were generally lower in abundance, compared with the Recherche Archipelago.



Invertebrates



Turban shell - *Turbo torquatus*



Seastar - *Nectria* sp.

In total, 34 species of mobile invertebrates (animals without backbones) have been recorded in the region, representing 22 families and a large diversity of forms. The most dominant groups recorded were sea stars, urchins and marine snails. Lobsters were also recorded throughout the region.



Western rock lobster - *Panulirus cygnus*

The two regions with the highest abundance and diversity of invertebrate fauna were Flinders Bay and the Hamelin region. Green lip abalone (*Haliotis laevigata*), an important commercial species, were also recorded.



The influence of the Leeuwin current from the north, also allows corals to grow throughout the Capes. Whilst coral reefs do not form this far south, 14 species of hard coral have been recorded in previous studies, including two endemic species (found only in this region).

Algae and Benthic Composition

A total of 251 species of algae, from 52 families have so far been recorded from sampling among the sites. Both the Flinders and Geographe Bay regions have shown the greatest diversity. The brown macroalgal (large algae) assemblages of *Ecklonia radiata*, *Scytothalia doryocarpa* and *Platythalia* spp. dominated the west coast. In the Geographe and Flinders Bay regions seagrass was also common among the reef areas.



Ecklonia radiata (left) is a common kelp found throughout temperate Australian waters, and often dominates the canopy of algal forests in the South West and Capes regions.

Anecdotal accounts from an oral history of the Capes region indicated that the abundance of some fishes may have declined over the past few decades. However,

most interviewees pointed to an increased appreciation amongst fishers of the need for fisheries conservation.

In summary, the project results show an incredibly diverse marine environment due to the range of habitats and the influence of the Leeuwin and Capes currents. Future marine sampling will provide information on any potential impacts and how the Capes Marine Park serves to protect marine biodiversity.

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