UPPSALA
UNIVERSITET

Teknisk- naturvetenskaplig fakultet
UTH-enheten

Besöksadress:
Ångströmlaboratoriet
Lägerhyddsvägen 1
Hus 4, Plan 0

Postadress:
Box 536
751 21 Uppsala

Telefon:
018 – 471 30 03

Telefax:
018 – 471 30 00

Hemsida:
http://www.teknat.uu.se/student

Abstract

Efficiency of Measures Introduced at Chumbe Island Coral Park (CHICOP), with Regard to Fish Communities, Zanzibar, Tanzania

Frida Lanshammar

There are constantly increasing demands on the marine environment to provide goods and services to a growing population in the tropics. Around the island of Zanzibar the pressure from the tourist industry is adding a lot of pressure to the already threatened coral reefs, but also making them more valuable to save for future generations. In this study, three reefs were surveyed, with respect to occurrence and diversity of fish within four reef fish families. Another student simultaneously collected data on bottom substrate. One of the three reefs, Chumbe Island, is a Marine Protected Area since 1991-92. The other two reefs, Changuu and Bawe, are both subject to high levels of fishing and other destructive activities. All reefs are situated in the vicinity of Zanzibar Town on the west side of Unguja, Zanzibar.

The data were collected during two months in the winter of 2003-2004, using the Reef Fish Visual Census method for the fish and the Line Intercept Transect method for the benthic substrates. The results of this study suggest that the marine reserve has been very effective in increasing both total abundance, number of species and the fish wet weight for the two commercially fished families, Serranidae and Balistidae. When considering the two non-commercial families, the results are not quite as clear, but for the family Chaetodontidae the total densities are higher within the reserve than on the other reefs. Significant correlations between fish abundance and some of the benthic variables could be established for Chaetodontidae with live coral coverage and Acropora coral coverage. The family Apogonidae was significantly linked with the coverage of branching coral, and had the highest abundance on Bawe. All results from this study point towards the fact that the Chumbe Island Coral Park is very effective in its management and it would be necessary to establish more protected areas around the island of Zanzibar to assure the future for a rich and healthy coral reef ecosystem.

Keywords: Coral reef fish, Marine Protected Areas (MPA's), Zanzibar, marine resources, reef survey, Minor Field Study

Handledare: Bo Tallmark
Ämnesgranskare: Mats Björklund
Examinator: Conny Larsson
ISSN: 1401-5765I, UPTEC W04 019
Sponsor: Sida, genom SLU

Tryckt av: Geotryckeriet, Uppsala