ESTIMATION OF CORAL REEF FISH BIOMASS FROM FISH VIDEO ANALYSIS

MUHAMMAD YUSRI BIN CHE SAAD

SCHOOL OF MARINE SCIENCE AND ENVIRONMENT
UNIVERSITI MALAYSIA TERENGGANU

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by Muhammad Yusri Che Saad.

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ESTIMATION OF CORAL REEF FISH BIOMASS FROM FISH VIDEO ANALYSIS

By

Muhammad Yusri Bin Che Saad

Research Report submitted in partial fulfillment of

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UNIVERSITI MALAYSIA TERENGGANU

DECLARATION AND VERIFICATION REPORT

FINAL YEAR RESEARCH PROJECT

It is hereby declared and verified that this research report entitled Estimation of Coral Reef Fish Biomass from Fish Video Analysis by Muhammad Yusri Bin Che Saad, Matric No. UK25324 have been examined and all errors identified have been corrected. This report is submitted to the School of Marine Science and Environment as partial fulfillment towards obtaining the Degree of Bachelor of Science (Marine Biology), School of Marine Science and Environment, Universiti Malaysia Terengganu.

Verified by:

....

First Supervisor

Name:

Official stamp:

PROF. MADYA DR. ZAINUDIN BIN BACHOK
Timbalan Dekan
(Bakat dan Penyelidikan)
Pusat Pengajian Sains Marin dan Sekitaran
Universiti Malaysia Terengganu
21030 Kuala Terengganu

Date: ....15. 6. 2014.....

....

Second Supervisor

Name:

Official stamp:

DR. RUMEAIDA MAT PIAH
Pensyarah
Pusat Pengajian Sains Perikanan dan Akuakultur
Universiti Malaysia Terengganu
21030 Kuala Terengganu.

Date: ...15/6/2014...........

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LIST OF ABBREVIATIONS

cm	-	centimeter
g	-	gram
g/m^2	-	gram per meter square
m	-	meter
sp.	-	species
LWR	-	length weight relationship
PET3M	-	Pulau Ekor Tebu 3 m
PETI0M	-	Pulau Ekor Tebu 10 m
PL3M	-	Pulau Ekor Lima 3 m
PL10M	-	Pulau Lima 10 m
PPB3M	-	Pulau Paku Besar 3 m
PPBI0M	-	Pulau Paku Besar 10 m
PB3M	-	Pulau Bidong 3 m
PBI0M	-	Pulau Bidong 3 m
PK3M	-	Pulau Karah 3 m
PK10M	-	Pulau Karah 10 m
PBG3M	-	Bidong Gallery 3 m
PBG10M	-	Bidong Gallery 10 m

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ESTIMATION OF CORAL REEF FISH BIOMASS FROM FISH VIDEO ANALYSIS

ABSTRACT

The fish abundance, biomass and species diversity of coral reef fishes was surveyed in the Redang and Bidong Island and the aspect of biomass and species diversity was highlighted more in this study. Recent data was focused more on the fish abundance and there is lack data on the fish biomass in the coral reef area. This study carried out to determine the fish biomass in the area and to obtain the CHI score on the fish biomass. Underwater video survey method was used to determine the length of fish so that it can be used into the formula of length weight relationship to obtain the fish biomass thus integrate it to get the CHI score. Later on the CHI score was used to determine the health of the coral reef ecosystem. The result shows Redang Island has the higher number of fish abundance, fish biomass and fish species diversity when compared to the Bidong Island. Fishing pressure and benthic cover is proven to be the important criteria that influence the fish abundance, fish biomass and fish diversity, highlighting the role of Marine Park Areas is vital to conserve and preserve the both corals and fishes in the ecosystem.

ANGGARAN BIOJISIM IKAN BATU KARANG DARIPADA ANALISIS VIDEO IKAN

ABSTRAK

Jumlah keseluruhan ikan, biojisim dan kepelbagaian spesies ikan terumbu karang telah dikaji di Pulau Redang dan Pulau Bidong dan aspek biojisim ikan dan kepelbagaian diversiti ikan lebih difokuskan untuk kajian ini. Data terkini hanya fokus kepada jumlah keseluruhan ikan tetapi tiada data untuk biojisim ikan di kawasan batu karang. Kajian ini dijalankan untuk menentukan biojisim ikan di kawasan kajian dan mandapatkan jumlah CHI untuk biojisim ikan. Kaedah tinjauan video dalam air telah digunakan untuk menentukan panjang ikan supaya ia boleh digunakan ke dalam formula panjang berat badan untuk mendapatkan biojisim ikan itu dengan mengintegrasikan untuk mendapat skor CHI. Kemudian skor CHI itu digunakan untuk menentukan kesihatan ekosistem terumbu karang. Keputusan menunjukkan Pulau Redang mempunyai jumlah ikan yang banyak, biojisim ikan yang tinggi dan jumlah diversiti yang tinggi berbanding Pulau Bidong. Tekanan daripada aktiviti perikanan dan kawasan litupan batu karang terbukti menjadi kriteria penting yang mempengaruhi jumlah ikan, biojisim ikan dan kepelbagaian ikan, menunjukkan peranan kawasan taman laut adalah penting untuk memelihara dan mengekalkan batu karang dan ikan dalam ekosistem.