

A LETTER ON PROPOSED CHURCHES READING 12
SEPT 1967 1967, READING, ENGLAND

CONFIDENTIAL - BY GENE

CONFIDENTIAL - BY GENE
UNIVERSITY SAINS DALI TECHNICAL
UNIVERSITY SAINS DALI TECHNICAL COLLEGE

2000

901, 4817

1100046129

Perpustakaan
Universiti Malaysia Terengganu (UMT)

LP 55 FST 5 2006



1100046129

A study on crocodiles (chordata reptilia) in Setiu Wetland, Terengganu / Sarjakhan Ghani.



PERPUSTAKAAN

KOLEJ UNIVERSITI SAINS & TEKNOLOGI MALAYSIA
21030 KUALA TERENGGANU

1100046129

Lihat sebelah



A STUDY ON CROCODILES (CHORDATA: REPTILIA) IN SETIU WETLAND,
TERENGGANU

By:

Sarjakhan Bin Ghani

Research Report submitted in partial fulfillment of
the requirements for the degree of
Bachelor of Applied Science (Biodiversity Conservation and Management)

Department of Biological Sciences
Faculty of Science and Technology
KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA
2006

This project should be cited as:

Sarjakhan, G. 2006. A Study On Crocodiles (Chordata: Reptilia) In Setiu Wetland. Undergraduate thesis, Bachelor of Applied Science in Biodiversity Conservation and Management, Faculty of Science and Technology, Kolej Universiti Sains dan Teknologi Malaysia, Terengganu. 71p

No part of this project report may be produced by any mechanical, photographic, or electronic process, or in the form of phonographic recording, nor may it be stored in a retrieval system, transmitted, or otherwise copied for public or private use, without written permission from the author and the supervisors of the project.



JABATAN SAINS BIOLOGI
FAKULTI SAINS DAN TEKNOLOGI
KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA

PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

A STUDY ON CROCODILES (CHORDATA: REPTILES) IN SETIU WETLAND, TERENGGANU oleh Sarjakhan Bin Ghani no. matrik: UK 8622 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains Pemuliharaan dan Pengurusan Biodiversiti Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

Disahkan oleh:

Penyelia Utama

Nama: En. Amirrudin Bin Ahmad

Cop Rasmi: *Jabatan Sains Biologi
Fakulti Sains dan Teknologi
Kolej Universiti Sains dan Teknologi Malaysia
21030 Kuala Terengganu.*

Tarikh: 20/5/06

Penyelia Kedua (jika ada)

Nama: Prof. Madya Sulong Bin Ibrahim.

Cop Rasmi: *PROF. MADYA SULONG BIN IBRAHIM
Fellow
Institut Oseanografi
Kolej Universiti Sains dan Teknologi Malaysia
Mengabang Telipot
21030 Kuala Terengganu.*

Tarikh: 21/5/06

Ketua Jabatan Sains Biologi

Nama: Prof. Madya Dr. Nakisah Mat Amin

Cop Rasmi: *PROF. MADYA DR. NAKISAH BT. MAT AMIN
Ketua
Jabatan Sains Biologi
Fakulti Sains dan Teknologi
Kolej Universiti Sains dan Teknologi Malaysia
(KUSTEM)
21030 Kuala Terengganu.*

Tarikh: 22/5/06

ACKNOWLEDGEMENTS

Assalamualaikum w.b.t.

First and foremost, I would like to thank Allah for His blessing that this project has been completed successfully on time and giving me a great attitude to complete my Final Year Project successfully. I would like to take this chance to thank;

- Mr. Amirrudin Ahmad and Assoc. Prof. Sulong Bin Ibrahim, my dedicated supervisor for his guidance, advice and supportive from every aspect. Thank you Sir for your helpful advice from start to finish.
- A thousand of thanks to Tuan Temerang for helping me a lot during my sampling, Mr. Habir, Mr. Razali Salam and Mr. Kasawani for helping me to complete this project.
- My fellow housemates Ceklok, Wan, Marlvin, Alan and Kemal for your help and patience. I really love you guys!
- Last but not least, lovely a million thanks to my family for their understanding and advice. All of them are always in my heart and my mind forever.

TABLE OF CONTENTS

Page	
ACKNOWLEDGEMENTS	i
LIST OF TABLE	v
LIST OF FIGURE	vi
LIST OF APPENDICES	vii
ABSTRACT	viii
ABSTRAK	ix
CHAPTER 1 INTRODUCTION	
1.1 Introduction	1
1.2 Objectives	4
CHAPTER 2 LITERATURE REVIEW	
2.1 Crocodile species in Malaysia	5
2.2 Biology and ecology of <i>Tomistoma schlegelii</i>	
2.2.1 Taxonomy and Systematic	6
2.2.2 Biology and Reproduction	7
2.2.3 Feeding Biology	8
2.2.4 Ecology and Distribution	9

2.3	Biology and ecology <i>Crocodylus porosus</i>	
2.3.1	Taxonomy and Systematic	10
2.3.2	Biology and Reproduction	11
2.3.3	Feeding Biology	12
2.3.4	Ecology and Distribution	13

CHAPTER 3 METHODOLOGY

3.1	Study Area	15
3.2	Method	
3.2.1	Observation at the study area	16
3.2.2	Survey on the crocodile nesting	17

CHAPTER 4 RESULTS

4.1	Total sighting recorded during sampling	19
4.2	Species observed	21
4.3	Crocodile nesting sites	22
4.4	False gavial captured sites	25
4.5	Ambient physical water parameter	26

CHAPTER 5 DISCUSSION

5.1	Distribution of Crocodile	34
5.1.1	Species Occurrence	34
5.1.2	Habitat	35

5.1.3	Nesting	36
5.1.4	Habitat Loss	37
5.2	Ambient physical water parameter	39

CHAPTER 6 CONCLUSION AND RECOMMENDATION

6.1	Conclusion	40
6.2	Recommendation	41

REFERENCES	42
-------------------	----

APPENDICES	45
-------------------	----

CURRICULUM VITAE	51
-------------------------	----

LIST OF TABLE

Table	Page
1: The sighting of saltwater crocodile at Setiu Wetland.	20
2: Water parameter reading in four different rivers.	27
2: Mean water parameter in four different rivers.	28

LIST OF FIGURE

Figure	Page
1: The map showing the distribution of false gavial.	10
2: The map showing the distribution of saltwater crocodile.	14
3: The map of Peninsular Malaysia showing the study site in the northern part of Terengganu (Insert). The main rivers at Setiu Wetland system is shown on a large map.	16
4: The juvenile of <i>Crocodylus porosus</i>	21
5: The juvenile of <i>Tomistoma schlegelii</i>	21
6: Saltwater crocodile nest at Bukit Putera	22
7: Saltwater crocodile nest at Tasik Petanda.	23
8: Locations of crocodile nest at Bari River.	24
9: Pieces of saltwater crocodile eggshell found at Bukit Putera	24
10: A compared size of the saltwater crocodile eggshell with battery size AA	25
11: The location where juvenile false gavial was caught.	25
12: The adult false gavial was caught.	26
13: Salinity reading in four different rivers.	30
14: Dissolve oxygen reading in four different rivers.	31
15: pH reading in four different rivers.	32
16: Temperature (°C) reading in four different rivers.	33
17: Forest clearing at Gong Pok Abu River.	38
18: Pollution at Gong Pok Abu River	38

LIST OF APPENDICES

Appendix	Page
1: Saltwater crocodile nesting area at Bukit Putera.	45
2: Saltwater crocodile nesting area at Tasik Petanda.	45
3: Small pond at Bukit Putera	45
4: Small pond at Tasik Petanda.	45
5: Juvenile false gavial	45
6: Juvenile saltwater crocodile	45
7: Pollution	46
8: Logging	46
9: Adult false gavial captured.	46
10: Newly hatch.	46
11: Juvenile crocodile weight, length and place captured.	47
12: Ambient physical water parameter at four different rivers.	50

ABSTRACT

A study of crocodiles (Chordata: Reptilia) in Setiu Wetland was carried out at Setiu Wetland, Setiu, Terengganu to determined existence of crocodile species and to identified the microhabitat utilized by the crocodile at Setiu Wetland. Four sampling was carried out at four different rivers namely Setiu, Calok, Bari and Merang River in Setiu, Terengganu. There are two species of crocodile found have namely *Crocodylus porosus* and *Tomistoma schlegelii*. The saltwater crocodile nest was found during the fourth sampling at Tasik Petanda and Bukit Putera but no false gavials nest was recorded. A total of 55 juvenile saltwater crocodile were found at Calok River during second sampling. The peak time to see the crocodile is after their breeding season in November until February. The false gavial juvenile was found during third sampling at Gong Pok Abu River off Merang River in Setiu. Conservation and management need to be establish in order to protect these species and their habitat from future destruction.

KAJIAN MENGENAI BUAYA (CHORDATA: REPTILIA) DI SETIU WETLAND.

ABSTRAK

Kajian mengenai Buaya (Chordata: Reptilia) di Setiu Wetland telah dijalankan di kawasan Setiu Wetland, Setiu, Terengganu. Objektif kajian ini adalah untuk menentukan spesies yang terdapat dan juga mengenalpasti mikrohabitat yang digunakan oleh buaya di Setiu Wetland. Empat sampling telah dijalankan diempat sungai yang berlainan iaitu Sungai Setiu, Sungai Calok, Sungai Bari dan termasuk Sungai Merang. Setiap buaya yang dijumpai akan direkodkan dan dua spesies telah dijumpai iaitu *Crocodylus porosus* dan *Tomistoma schlegeli*. Sarang buaya tembaga dijumpai di Sungai Bari di Tasik Petanda dan Bukit Putera manakala sarang bagi buaya jenjulung tidak dijumpai. Sebanyak 55 anak buaya tembaga dijumpai di Sungai Calok semasa aktiviti penyampelan kedua dilakukan. Anak buaya jenjulung di jumpai di Sungai Gong Pok Abu semasa aktiviti penyampelan ketiga. Pengurusan dan pemuliharaan perlu dijalankan segera untuk mengelakkan habitat buaya terus musnah disebabkan oleh angkara manusia.