

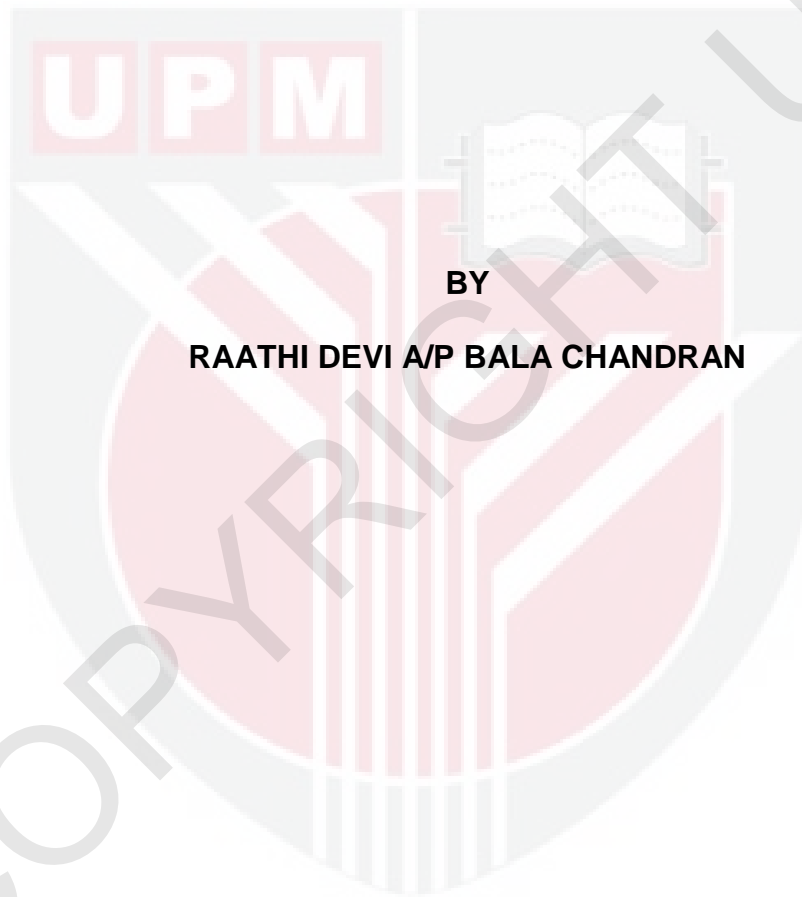


***HUMAN-CROCODILE CONFLICT IN SUKAU VILLAGE,  
LOWER KINABATANGAN, SABAH***

**RAATHI DEVI A/P BALA CHANDRAN**

**FH 2019 44**

**HUMAN-CROCODILE CONFLICT IN SUKAU VILLAGE,  
LOWER KINABATANGAN, SABAH**



**BY**

**RAATHI DEVI A/P BALA CHANDRAN**

**A Project Report Submitted in Partial Fulfilment of the Requirements for  
the Degree of Bachelor of Forestry Science in the  
Faculty of Forestry  
Universiti Putra Malaysia**

**2019**

## DEDICATION

**For my beloved family:**

BALA CHANDRAN A/L ANAMALAI

THEIVANAI A/P AYAVOO

HAMISAH ELAHAN

Also my siblings.

To all my friends,

Sukau villagers I had done my interview.

Thank you for your encouragements supports

And the sacrifices that you have given.

Thank you for everything.

## ABSTRACT

Human-crocodile conflicts are increasing due to increase in human population along the Kinabatangan River, Sabah. The conflicts have significant impacts on both human and crocodile populations. This study focussed on addressing the human-crocodile conflicts in Sukau village, Sabah, Malaysia. Objectives of this study were to estimate scale of crocodile conflicts in Sukau village, identify factors that lead to human-crocodile conflicts in Sukau village and determine problems caused by crocodile to the Sukau communities. A total of 90 respondents were obtained in this study. Data were collected by interviews and direct observations. Simple descriptive statistics and Chi-square test were conducted to analyse the data. The main causes of human-crocodile conflicts are deforestation, availability of food sources and existence of oil palm plantation. The main problems caused by crocodiles are damages to the fishing net and treats to people life. During the period from 2006 to 2018, a total of seven individuals were involved in human-crocodile conflict directly. This study suggested that the residents of Sukau village should avoid using the river especially in wet season or night time in order to reduce human-crocodile conflicts.

## ABSTRAK

Konflik antara manusia dan buaya semakin meningkat berikutan peningkatan populasi manusia sepanjang Sungai Kinabatangan, Sabah. Konflik mempunyai kesan yang signifikan terhadap populasi manusia dan buaya. Kajian ini menumpukan kepada menangani konflik manusia-buaya di kampung Sukau, Sabah, Malaysia. Objektif kajian ini bertujuan untuk menganggarkan skala konflik konflik buaya di kampung Sukau, mengenal pasti faktor yang membawa kepada konflik manusia-buaya di kampung Sukau dan menentukan masalah yang disebabkan oleh buaya kepada komuniti Sukau. Seramai 90 responden diperlukan dalam kajian ini. Data dikumpulkan melalui temu bual dan pemerhatian langsung. Statistik decriptive dan ujian Chi-square dijalankan untuk menganalisis data. Punca utama konflik manusia-buaya adalah penebangan hutan, kelayakan sumber makanan dan kewujudan ladang kelapa sawit. Masalah yang disebabkan oleh buaya antaranya ialah menghancurkan penangkapan ikan dan ancaman kepada kehidupan manusia. Seramai tujuh individu terlibat secara langsung dengan konflik manusia-buaya dalam tempoh tahun 2006 hingga 2018.

## ACKNOWLEDGEMENTS

I would like to begin by expressing my appreciation for his advice to Professor Dr. Mohamed Zakaria Hussin during my final year bachelor project. He has constantly taught me as my supervisor to stay focused on achieving my goals. Not forgotten, my appreciation for lecturing on this topic, Dr. Mohamad Roslan bin Mohamad Kasim and Dr. Diana Emang for their support and knowledge.

I want to thank both directors of Kinabatangan Orang utan Conservation Programme (KOCP) - HUTAN, Dr. Isabelle Lackman and Dr. Marc Ancrenaz who helped me to start my study in Sukau village, Sabah with a smile. I also want to a millions thank you for letting my defence be an enjoyable moment, and for your brilliant comments and logistics assistances in Sukau.

In particular I wish to thank Hamisah @Mislin Elahan for all various kinds of help in carrying out this research with self-restraint. I am truly grateful for the useful support they offer during the collection of data on the ground for Bahrani Elahan and Abdul Rjak bin Haji Saharon. Or even less, I would like to sincerely thank Benoit Goosens (Director of Danau Girang Field Centre), Dr. Luke J. Evans and Sai Kerisha for sharing their time and expertise on crocodiles behaviour and research,

Here I would like to admit my outstanding appreciation to my parents, last but not least, Mr and Mrs Bala Chandran for their earnest prayers, moral support, and patience. Above all else, I would like to thank Lord Ganesha for blessing and strengthening me.

## APPROVAL SHEET

I certify that this research project report entitled “Human-crocodile conflicts in Sukau village, Lower Kinabatangan, Sabah” by Raathi Devi a/p Bala Chandran has been examined and approved as a partial fulfilment of the requirements for the Degree of Bachelor of Forestry Science in the Faculty of Forestry, Univeristi Putra Malaysia.

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Date:

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## LIST OF ABBREVIATIONS

%	Percentage
CITES	The Convention on International Trade in Endangered Species of Wild Fauna and Flora
df	Degree of freedom
FAO	Food and Agriculture Organization
HUTAN-KOCP	Kinabatangan Orang utan Conservation Programme
HWC	Human-wildlife conflict
km	Kilometre
KWS	Kinabatangan Wildlife Sanctuary
m	Metre
p	Probability value
SWD	Sabah Wildlife Department
WLT	World Land Trust
WWF	World Wide Fund
$X^2$	Chi square test

# CHAPTER 1

## INTRODUCTION

### 1.1 General Background

Conflict between human and wildlife is a worldwide issue in numerous nations that cover with natural life necessities. The seriousness and recurrence of contentions increment with untamed life and people contending increasingly more for negligible spaces and assets (Madden 2004). The destiny of numerous wildlife populaces is reliant on conjunction with individuals.

To prevent and mitigate HWC is basic a comprehension of the components that shape the human reaction (Manfredo & Dayer 2004). In any case, the adjustment in human conduct can be an increasingly sensible choice for long-term protection plans (Baruch-Mordo et al. 2009). The evaluation of neighbourhood individuals' resistance limits and frames of mind towards wildlife can have huge condition suggestions (Romanach et al. 2007). Except if the major HWC issues are tended to, endeavors to monitor are losing security and neighborhood networks support (Wallace et al, 2011). Communal participation in the accomplishment of the board plans was shown to be an administration factor (Wallace et al, 2011). However, all parties must adhere to such management plans in order to succeed (Wallace et al, 2011).

Crocodiles are one of the animals linked to HWC. In years 1950's and 1960's, crocodile was heavily persecuted and harvested (Wallace et al, 2011). Expanded

wild crocodile population have been effectively safeguarded, which thus has been joined by an expansion in crocodile 'issue' (Letnic & Connors 2006). Issues including the contention between human crocodiles are restless, especially in African nation where the crocodile is the reason for noteworthy quantities of human and domesticated animal's fatalities (Aust et al. 2009).

Crocodylians were a totemic species that large, strong, steady predators and remain constant for more than 65 million years from their ancient species (Taplin and Grigg 1989). Crocodiles play important roles both for human and environment. For the human, crocodile bring great fortune and increase economy as the high prize and demand for the crocodile leather (Caldwell, 2017). Lucrative crocodile based leather product such as cloths, handbags, shoes and others cause many people hunting this animals and even illegally poaching them (Mohd. Izwan, 2014).

Crocodile is an essential environmental species, a commodity (MacGregor 2006); exploited in many ways (Luxmoore 1992); listed as a protected species and subjected to 2002 Crocodile conservation plan (Sabah Wildlife Department, 2002); regarded as a 'problem and flagship species (Aust et al. 2009; Ashton, 2010). There are two type (species) of crocodiles stated in Sabah named saltwater crocodiles *Crocodylus porosus* as Protected species 1982 (Schedule 2, Sabah Wildlife Conservation Enactment 1997) and Malayan gharials, *Tomistoma*

*schlegellii* in Totally protected species (Schedule 1, Sabah Wildlife Conservation Enactment 1997). However, there is no evidence for the false gharial, *Tomistoma schlegellii* in the state, according to the Whitetaker (1984), other than individuals' sightings near Kampung Kota Klias where Malayan gharials is found in Sabah. Sabah Wildlife Department (2002) stated that the saltwater crocodiles possess rivers, freshwater swamps and mangrove habitats in few protected areas, for example the Kinabatangan Wildlife Sanctuary and the Kulamba Wildlife Sanctuary. According to the Sabah Wildlife department, estuarine crocodiles likely exist in the tidal segments of the most part of Sabah's rivers.

The establishment of conservation areas like the Kinabatangan Sanctuary, the Kulamba Wildlife Sanctuary and the Kabili - Sepilok Forest Reserve has been a benefit to Crocodilians, yet their obscure nature has enabled them to stay outside of these settlements (Wallace, 2012). *Crocodylus porosus* are the highest average predator of aquatic and floodplain ecosystems, often in conflict with the communities (SWD, 2002). This is simply part of a complex cluster of elements that are included with the management of crocodilians (SWD, 2002). In contrast, hunting during the late 1950's through the early 1970's, significantly the population of the crocodile, *C. porosus* are depleted throughout the Sabah (SWD, 2002). Due to the successful crocodile conservation management plan in the Sabah, the population of the crocodile increase since 1984 (SWD, 2002). Consequently, the conflict among the communities and crocodiles, especially in Kinabatangan River is recognised as a serious problem since 2016. The individual

of the Sukau village, are vigorously dependent on the Kinabatangan River for various daily routine activities. The fate of numerous population of wildlife is dependent on co-existence with human beings. The suite of potential impacts to humans comprises three broad categories: economic, health and safety, and psychological (Decker et al. 2002).

## 1.2 Problem Statement

Human-wildlife conflict is a developing worldwide issues. It is a major concern of most of the people living close protected areas. It is not confined to a particular geographical region or climatic condition, yet is regular to all areas where wildlife and human populations exist together share limited assets (Distefano, 2004). The problem is more common around protected areas like national parks or wildlife sanctuary where wild animals accused to cause crop damage, animal death, property obliteration damage, habitat destruction, and injuries and fatal (Magige, 2012). Despite the rise in the conflict between human and crocodile, the international community has pointed to the recovery of crocodilian populations as a success story of conservation (Aust, 2009). Human-crocodile conflict in Sabah being serious issues.

The range density of *Crocodylus porosus* are 2.27 crocodiles per kilometre at Kinabatangan River in 2002 (SWD, 2002). One-year survey conducted in 2017 yielded a crocodile density of 2.29 crocodiles per kilometre of river (Sai Kerisha



Kntayya, personal communication, July 7, 2018). In 2015, nine individuals of *Crocodylus porosus* were released nearby Sukau village. The introduced *C.porosus* in Kinabatangan River would affects towards the river ecosystem and people. A total of 16 cases regarding to the *Crocodylus porosus* conflict in Kinabatangan were reported (police case Sarjan Major Tukiman Bin Harjosotomu, personal communication, August 7, 2018).

Lack of information on trends in human-crocodile conflict in protected areas like Kinabatangan River where crocodiles are considered become a problem to communities. This study would determine whether human-crocodile conflicts do happen in Sukau Village.

### **1.3 Significance of Study**

Human-crocodile conflict is a serious case in Sabah specifically in Kinabatangan River. The study on human-crocodile conflict has high potential as being fundamental in addressing conflict and information that may help some agencies to control the conflicts.

#### **1.4 Aim and Objectives**

The aim of this investigation was to address the conflicts between human and crocodile in the village of Sukau, Sabah. Three specific objectives were designed to meet this aim which are:

- I. To estimate scale of of crocodile conflicts in Sukau village.
- II. To identify factors that lead to human-crocodile conflicts in Sukau village.
- III. To determine the problems caused by crocodiles to the Sukau communities.

#### **1.5 Research Question**

- I. What is the estimation scale of the crocodile conflict in Sukau village?
- II. What factors lead to human-crocodile conflicts in Sukau village?
- III. What are the problems caused by crocodiles that affect the local communities in Sukau village?

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