HUMAN-WILDLIFE CONFLICT IN TABIN WILDLIFE RESERVE, LAHAD DATU, SABAH

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UNIVERSITI MALAYSIA SABAH
2006

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The materials in this thesis are original except for quotations, excerpts, summaries and references, which have been duly acknowledged.

KERTIJAH ABDUL KADIR
PS99-001-103
8 MARCH 2006

ACKNOWLEDGEMENT

My most sincere and greatest THANKYOUs to my Supervisor, Prof. Datin Dr. Maryati Mohamed and my co-Supervisor, Mr. Mohamad Tahir Mapa; lecturers and tutors of ITBC who have helped me in their own special ways; Dr. Homathevi Rahman, Dr. Henry Bernard, Dr. Monica Suleiman, Mohd. Fairus Jalil, Bakhtiar Effendi Yahya; friends and collegues in ITBC; Roslinda Sanan, Noraini Nasaruddin, Daniel Pamin, Sikula Magupin, Julia George, David Magintan, Januarius Gobilik, Zanariah Mustafa, Azimah Jaafar, Pak Nordin and Kak Zainah, and Kak Gom, thankyou for your supports and patience smile for me. Also a special gratitute to Miss Julia Majail, who have 'introduced' me to the locals in Kg. Dagat and Tidong and motivates me in this study.

Last but not least, to my family in Sandakan, I appreciate your patience and supports.

ABSTRAK

HUMAN-WILDLIFE CONFLICT IN TABIN WILDLIFE RESERVE, LAHAD DATU

Hampir keseluruhan sempadan Rizab Hidupan Liar Tabin (TWR) dikelilingi oleh pembangunan pesat ladang kelapa sawit. Akibatnya, kebebasan dan ruang untuk mencari makan bagi kebanyakan binatang liar dari rizab itu dipersoalkan. Kehadiran sumber makanan yang banyak dan mudah daripada kawasan kelapa sawit menyebabkan binatang-binatang liar ini tertarik untuk mencari makanan di kawasan ladang. Kajian ini dibuat untuk mengetahui kewujudan konflik antara manusia dengan binatang liar di sekitar Rizab Tabin. Kajian ini melibatkan penduduk kampung dan pekerja ladang yang tinggal bersebelahan dengan sempadan Rizab. Pekerja ladang diminta mengisi borang soal selidik, sementara penduduk kampung ditemuramah secara bersemuka. Konflik manusia dan hidupan liar di TWR dikenalpasti berdasarkan adanya serangan ke atas tanaman. Keadaan ini disokong dengan peningkatan kadar kerugian, peningkatan bilangan serangan dan persepsi responden sendiri terhadap serangan binatang yang menjadi ancaman. Faktor sosio-demografi pekerja ladang, iaitu jenis jawatan dan tanggungjawab tugas merupakan faktor yang mempengaruhi jawapan responden mengenai masalah mereka dengan hidupan liar. Hasil menunjukkan bahawa daripada 42 orang pekerja ladang, 30 daripadanya bersetuju dengan kehadiran konflik antara manusia dan hidupan liar di TWR. Bagi 26 orang penduduk kampung, kebimbangan terhadap lanun dan binatang liar adalah ancaman utama mereka. Empat perosak utama tanaman yang dikenalpasti adalah gajah, babi hutan, tikus, kera dan beruk. Purata kerugian akibat serangan gajah ke atas tanaman di ladang dijangka sekitar RM3403 sebulan, dan penduduk kampung menganggarkan kira-kira RM100 sebulan kadar kerugian akibat serangan babi hutan dan binatang perosak yang lebih kecil. Beberapa resolusi konflik telah dicadangkan dalam kajian ini. Ini termasuk menjalankan projek-projeck pemuliharaan bersama penduduk tempatan, penyenggaraan kawalan-kawalan fizikal yang ada dan mengamalkan aktiviti-aktiviti yang bersifat perkongsian faedah.

ABSTRACT

HUMAN-WILDLIFE CONFLICT IN TABIN WILDLIFE RESERVE, LAHAD DATU

Tabin Wildlife Reserve is almost all surrounded by the rapid development of oil palm plantation. Inevitably, the freedom and space for survival of many wild animals in the reserve are being questioned. The availability of food from oil palm plantation attracted wild animals to visit the estate area to forage there. The study was done mainly to identify the possible existence of conflict between people around Tabin Wildlife Reserve and the wildlife. The study involved villagers living adjacent to the Reserve boundary. By a similar aim of using questionnaire, estate workers were asked to fill in questionnaires while the villagers were interviewed directly. The human-wildlife conflict in TWR was identified based on the existence of crop raiding. Increased monetary losses and number of recorded intrusion as well as respondent's perception on wildlife raiding supported the existence of the conflict. Whereas, socio-demographic factor, viz: job grouping and work responsibility are the factors that influence respondent to say that they have problem with animals. The result showed that of 42 estate workers, 30 of them responded to the existence of conflict between people with wildlife in TWR. To the estate worker, crop raiding are the main problem for them. As for the 26 villagers interviewed, a safety concern from pirates and wild animals are their main threats. Four main pest crops identified were elephant, wildboar, rats and macaques (long-tailed and pig-tailed macaque). The average crop damage, mainly from elephant was about RM3403 per month for elephant in the estate, while the villagers estimated around RM100 per month mainly caused by wildboar and other smaller pests. Several conflict resolutions were suggested through this study. These include doing conservation-based project with local communities, maintaining physical approaches and practicing benefit-sharing activities.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Agriculture has gained recognition as a dominant sector in Malaysian economy. Major contributing cash crops such as oil palms, cocoa, paddy and rubber had generated benefits to the local's and state's economy. Oil palm had been recognized as a significant player in providing the international and national oils and fats complex. There has been a growing production of oil palm in Malaysia for the last 30 years (Lim, 1997). In 1995, a total of 7.8 million tones were produced followed by 8.4 million tones in 1996. In 1999, a total of 10.6 million tonnes was recorded (MPOPC, 2001). This number covered about 51.54% of total world's production. According to Malaysian Palm Oil Board (MPOB), the total export revenue of palm oil has reached RM7,513 million in year 2000. This revenue is considered lower than few previous years due to the impact of the stock market. Nevertheless, statistically, Malaysia has been able to supply the world with its growing oils and fats needs.

In 1997, it was estimated that about 844,000 hectare of land in Sabah (11.5% of Sabah) have been planted with oil palms. In 1999, the number has increased to 941,322 hectare. This was about 1.3% increase in two years. Compared to other states in Malaysia, Sabah contributes around 28.4% of the total planted area in Malaysia, the largest area. The Minister of Primary Industries Malaysia in 1997 was quoted to say that there was a potential to add another 300,000 – 500,000 hectare of land for oil palm in the future. As a result, the expansion of oil palm area will be very rapid in Sabah, thus making it the largest oil palm growing state in the country.

However, expanding more area for oil palm (or other crops) plantations means that more land will be exploited. Thus logically, forested areas that are not

gazetted as protected areas are the targeted areas. These areas are going to be opened up since they provide vast space suitable for large-scale plantation(s). When this happens, such areas are then exposed to raids by animals. Though it may be considered having a small effect to production, compared to other affective problems, serious attention need to be given as it relates to the protection of wildlife in Malaysia. Having this pro-contra problem has made the arising issue of human-wildlife conflict.

In Malaysia generally, raiding problem from the wildlife had been reported to be tremendously severe in several places especially agriculture; lands and human settlements adjacent to forested areas. For example, the Department of Wildlife and National Parks (PERHILITAN) in Peninsular Malaysia, in their 1994 Annual Report revealed a total of 2,974 cases of complaints related to wildlife disturbance. They estimated about 6000 cases were reported yearly (DWNP 1996).

In Sabah, the State faces similar threats. Large scale planting of cash crops such as oil palm, has eventually affected the wildlife's population. As agricultural development increases, forested areas are getting smaller. This causes wild animal to venture into human settlements and agriculture properties in order to survive, especially for animals that are trapped in pocketed forests. However, there are not many studies done to look into the conflicting issue between local communities (villagers or oil palm planters) and wildlife in protected areas in Sabah. One report from Sale *et al.* (1997) on the elephant problem in Ulu Tingkayu area in Kunak described the nature of elephant damage in the affected oil palm plantations. His team described the damages into three groups based on subjective and quantitative information categorized between low, high and nil. This description was mainly referring to level of damages of crop areas and was not related to local community's perception on the raid itself.

The present study is an attempt to determine if people living and working around Tabin Wildlife Reserve (TWR) are having conflicts with wild animals. The

approaches are by distributing questionnaires to be filled by estate workers regarding animal raiding, which they have experienced. Villagers were interviewed regarding the same matters. The study was initiated in July 1999 and the fieldwork was conducted for a total of six months starting form February to September 2000. Questionnaires were distributed during visits to each selected estate. While, interviews to villagers were carried out during a month stay in both villages. Results from the study were analyzed and interpreted to ascertain the human-wildlife conflict aspect.

1.2 Objectives of the study

The aim of the study is to determine whether there is a human-wildlife conflict in TWR. Prior to the needs to determine conflict at its early stage, the objectives of this study are listed below:

1. To identify the conflicts between human and wildlife in TWR in a systematic manner; within the limitation of the local communities, records from the wildlife authority and general economic implication.
2. To measure the degree of intensity of conflict by using questionnaires and interview as a tool.
3. To suggest the management approaches in minimizing impacts of the conflict to both the villagers and oil palm producers.

Identifying and understanding the conflicts between people around TWR and its wildlife will help to device reasonable solutions to improve the current situation; relationships between wildlife in protected area and resident living adjacent to it (Nyhus *et al.*, 2000). A basic systematic information on the conflicts between human settlements (villagers and oil palm workers) around TWR can help government planners, forest managers and wildlife officers to decide the most appropriate action

related to legislation and management of TWR effectively. The decision should concern the effects to neighbouring areas in TWR and its wildlife. This study is intended to provide reference to those interested in knowing the real status of wildlife and humans which live together sharing the resources in one area. As the human rights and possibility of awareness among surrounding people should be considered as well, this study may be helpful in knowing the needs and hopes of people living next to a protected area.

1.3 Definition of terms

Two terms frequently used by the author while presenting the methodology, results and discussion in this study are defined in this section. This is to restrict the terms in statement made by the author based only on the study conducted.

Wildlife in this thesis is referring to the wild animals that are found in and around TWR. Most of the common wildlife is stated in the questionnaire. Meanwhile, the word 'pest' refers to any type of wildlife that was perceived and/or selected by respondents (estate workers and villagers) in this study, as disturbing and damaging to their crops and belongings. Pests here does not necessarily mean only to widely known damaging animals such as rats, macaques or wild boars, but also to other type of wild animals such as elephants, orangutan, tembadau and muntjac.

CHAPTER 2

LITERATURE REVIEW

2.1 Background of Protected Area in Sabah

The concept of protected area have 'evolved' since the first modern national park was established at Yellowstone, USA in 1972. Since then, over 25 years ago so many ideas of protected area have been challenged (Holdgate & Phillips, 1999) to meet certain management approach. Why was the concept created? Generally it was to define an area which are specifically reserved for a forest to be kept along with all the diversity of flora and fauna in it; legally. The basic rule is that no human activities should interfere inside these protected areas or else legal action will be taken against the offenders.

IUCN defines protected area as "... *an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means".* This definition have been globally used and basic guideline to forest classification were also clarified for management purposes. There are six classes of forest reserve defined by IUCN, which are:

i) Class 1a Strict Nature Reserve

ii) Class 1b Wilderness Area

iii) Class III Natural Monument

iv) Class IV Habitat/Species Management Area

v) Class V Protected Landscape/Seascape and

vi) Class VI Managed Resource Protected Area

The defined categories above have specified the general characteristics of each protected area. However, the perception of local communities and government

may not be standardized globally. These differences are obvious between developed, developing and undeveloped countries. As examples are sites like Great Smokey Mountain in United States, Taman Negara in Pahang, Malaysia and Karoo National Park in South Africa. All these areas are considered as Class II National Park, but the management and implementation of legislation differs. Numbers of visitors coming to Great Smokey are restricted by allowing visitors to come only between mid March and mid November and reservation should be done a year in advance. Whereas, the management in Karoo National Park welcomes as many tourists throughout the year to boost up the economic strength. Profits produced from the tourism industry will then be their local's income. Whilst in Malaysia, even though we welcome visitors to Taman Negara, the main function is to preserve our water catchment sources as well as our green heritage. With these categories being implemented for almost six years, there are now 30,000 protected areas, which cover a total of over 13,250,000 km^2 of the world's land surface (WCPA, 2000).

Protected area in Malaysia comprises of both maritime and terrestrial sites. Basically, we categorized the protected area based on the IUCN categories. A few adjustments have been made to meet our forest management objectives. In Peninsular Malaysia, the Forestry Department classified their protected area as:

i) Wildlife Reserve

ii) National Parks

iii) Virgin Jungle Reserve and

iv) Marine Parks

A total of 5.7% of the total land of Peninsular Malaysia was declared as Wildlife Reserve, parks and other management categories; whereas 35 islands off Peninsular Malaysia are included in Marine Parks. The declared terrestrial protected areas have an extent of 751,413 ha (DWNP, 1996).

2.2 Protected Areas in Sabah

Malaysia is lucky to still have a quite considerably 'large area of greenery' when compared to other developed countries. However, putting aside all the agricultural areas, ornamental and estate plantation trees, there are only scattered patches of virgin (or old secondary) forests. Over the past 17 years, average revenue from the forest product was around RM717 million per year. From 1972 to 1994, excessive cutting and indiscriminate logging practices had caused 90% decrease to total virgin forest area in Sabah (Sabah State Government, 1998). Even though Sabah Forest Enactment 1968 was enacted to identify and establish protected areas it seemed that during that time, issue of establishing protected area was not a big concern to most people.

It was not until 1994; various efforts were carried out to get back what logging had still left behind. The Sustainable Forest Management Plan (SFMP), which was introduced in Sabah by Sabah Forestry Department, had then been practiced to conserve forest. The programme is about managing forest in accordance with sustainable yield principles for the maximization of social, economic and environmental benefits (Sabah State Government, 1998). The approaches were categorized into three management level viz forest sector, forest management unit and compartment (Chia, 1998). From this programme, other approaches such as Reduced Impact Logging (RIL), replanting of timber trees and multi-culture plantation for sustainable logging were introduced by the government as well.

According to Sabah Forestry Department, the practice of the government is to put the state's permanent forest estate at more than 48.8% hectares of Sabah's total land area (Sabah State Government, 1998). However, this includes protection forests, commercial forest, domestic forests and others. In total there are 3,348,641 hectare (45.5%) of protected forest in Sabah compared to the total land area of 7,361,900 ha (WWF, 1992). Sabah Forestry Department classified the state land into seven classes, which are:

i) Class I; Protection Forest Reserve which is for maintaining climate stability, water catchment and various environment factors. No logging activities are allowed.

ii) Class II; Commercial Forest Reserve; forest areas where logging activities operated for log supply.

iii) Class III; Domestic Forest Reserve, forest areas for logging and other local production.

iv) Class IV; Amenity Forest Reserve; areas managed to provide attractive and recreational use.

v) Class V; Mangrove Forest Reserve; where areas managed to supply mangrove logs and other products. Areas are also for commercial purposes, which are managed under Sabah Fisheries Department.

vi) Class VI; Virgin Jungle Reserve; strictly no logging activities. Areas are conserved for research purposes.

vii) Class VII; Wildlife Reserve; managed for wildlife protection.

A land use status map locating all these forest classes is shown in Figure 2.1. Table 2.1 below listed the total area of forest reserves in Sabah as classified above. They are administered according to their classes' function. It was noted though that commercial and wildlife forest reserves were opened for exploitation (Anon, 1989). TWR, which was gazetted as a Wildlife Reserve in 1984 was also opened for timber exploitation in 1970's.

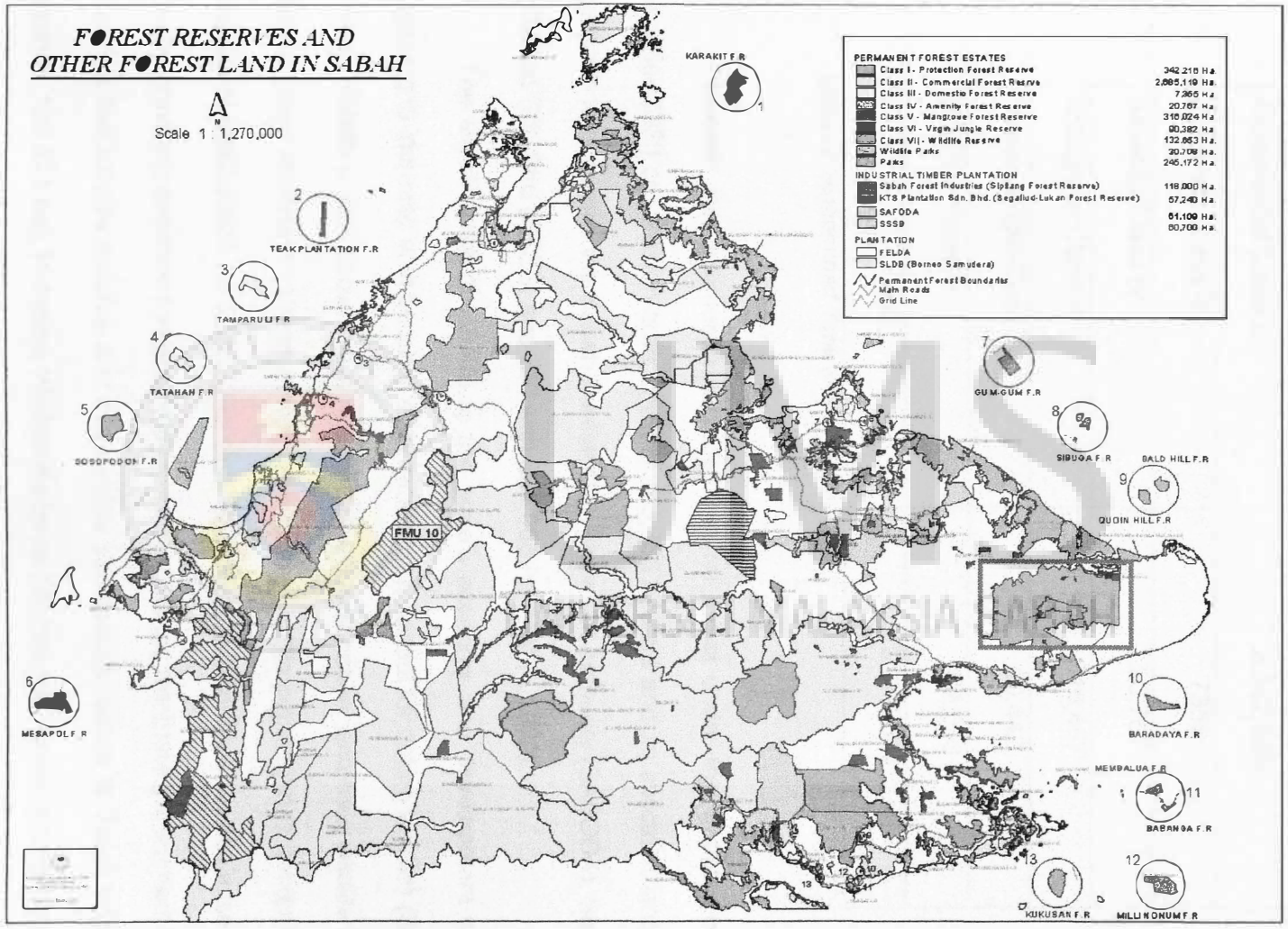

Figure 2.1: Distribution of forest reserves and protected areas in Sabah. Tabin Wildlife Reserve marked in red rectangle (Source: Sabah Forestry Department, 1999)

Table 2.1: Classification of Protected Forests in Sabah

Forest type	Hectare (ha)
Protection Class I	338,068
Commercial Class II	2,442,899
Domestic Class III	7355
Amenity Class IV	20,767
Mangrove Class V	316,457
Virgin Jungle Class VI	90,442
Wildlife Reserve	132,653
Total	3,348,641

(*Source: Mohammad Tahir Mapa, 1996*)

However, this estimation excludes natural forest under the Sabah Forest Industries (SFI) concession area which is 208,638 hectare and an allocated land for plantation forest under the Sabah Forestry Development Authority (SAFODA), Sabah Softwood Sdn Bhd (SSSB) and SFI with 261,088 ha (WWF, 1992).

The significance of wildlife to the state's economy and development were beginning to increase as it become a considerable potential for nature tourism (Sale, 1994a). Sabah is well known as a nature tourism destination, and thus wildlife has become more important. Unfortunately, at present wildlife population is decreasing because of competition for space. For that, Sabah government tries to minimise the risks by providing gazetted forest land as reserves. So far, the State government has classified two wildlife reserve and five wildlife sanctuaries, which is Tabin Wildlife Reserve (120,521 ha), Kulamba Wildlife Reserve (20,682 ha), Lower Kinabatangan Wildlife Sanctuary (27,800 ha), Kota Belud Bird Sanctuary (1,100 ha), Sipadan Island Bird Sanctuary (3.11 ha), Mantanani Island Bird Sanctuary (20 ha) and Kota Kinabalu