CONSERVATION OF ORANG-UTAN IN THE LOWER KINABATANGAN FLOODPLAIN, SABAH, MALAYSIA

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RASHID SABURI
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ABSTRAK

CONSERVATION OF ORANG-UTAN IN THE LOWER KINABATANGAN FLOODPLAIN, SABAH, MALAYSIA

Kajian dan pemuliharaan Orang Utan di hutan sekunder kawasan banjir Hilir Kinabatangan telah dijalankan untuk program Sarjana sains bermula pada tahun 1999-2001. Tujuan utama kajian ini adalah untuk mendokumentasikan ekologi orang-utan dalam usaha mengurus dan memelihara populasi orang-utan yang terdapat di kawasan ini dan membuat cadangan–cadangan bagi mengurangkan konflik antara orang-utan dan manusia disamping mewujudkan kesedaran di kalangan orang awam tentang kepentingan memelihara populasi orang-utan secara holistik. Beberapa tahun lalu, kebanyakan kajian ekologi orang-utan telah dijalankan di tanah pamah hutan *dipterocarp*. Selama ini tidak ada kajian lapangan secara terperinci terhadap perhubungan antara Orang Utan dan kawasan hutan yang telah diganggu. Dengan itu, terdapat kekurangan pengetahuan dan maklumat bagi menyediakan strategi pemeliharaan dan pelan pengurusan orang-utan di kawasan hutan yang tidak dilindungi. Pada tahun 1997, sebuah pertubuhan bukan kerajaan dari Perancis, " Hutan " berminat dalam pemeliharaan hidupan liar dan habitatnya yang mana mereka telah mewujudkan Projek Pemuliharaan Orang-utan (KOCP)" di Sukau daerah Hilir Kinabatangan. Bersama mereka, saya telah melibatkan diri dalam menjalankan aktiviti-aktiviti projek pemuliharran orang-utan termasuk kajian etho-ekologikal hidupan liar di kawasan kajian KOCP, aktiviti kesedaran,menyelesaikan konflik dan sebagainya. Selama tiga tahun kajian, terdapat 23 individu orang-utans yang dikenalpasti yang mana lapan daripadanya adalah betina dewasa, lima jantan yang belum matang, lima jantan matang dan lima terdiri daripada anak orang-utan. Hasil kajian memujudkan 56% masa aktif orang-utan gemar berehat, 25% makan, 12% bergerak dan selebihnya adalah membuat sarang dan aktiviti lain. Terdapat 62.3% makanan orang-utan terdiri daripada buah-buahan hutan, daun-daun 22.9%. bunga 1.72% dan serangga 0.7%. Kini, terdapat lebih daripada 310 spesis tumbuhan yang dikenalpasti sebagai makanan orang-utan. Daraipada kajian lapangan, dianggarkan populasi orang-utan di hilir Kinabatangan ialah sebanyak 1,022 individu, 562 terdapat dalam suaka hidupan liar dan 460 berada dalam di luar dan di sepanjang sempadan hutan suaka. Hasil kajian awalan menunjukkan kepadatan orang-utan di hutan sekunder Hilir Kinabatangan adalah lebih tinggi dan pemakanan mereka melebihi daripada pelbagai jenis daripada beberapa kawasan hutan primer di mana kajian pernah dijalankan.

ABSTRACT

CONSERVATION OF ORANG-UTAN IN THE LOWER KINABATANGAN FLOODPLAIN, SABAH, MALAYSIA

The study and conservation on Orang-Utans (Pongo pygmaeus) in the secondary forests of the lower Kinabatangan floodplain was carried out from 1999 to 2001. The main objectives of this work were to document Orang-Utan ecology in disturbed habitat, to manage and conserve the ape populations living in this floodplain and to recommend practical solutions to reduce the current human and Orang-Utan conflicts as well as to develop public awareness for Orang-Utan preservation needs. In the past, most of the long-term eco-ethological studies of Orang-Utans were conducted in the lowland dipterocarp primary forests. There has been no detailed field study on the relationship between Orang-Utans and forest disturbance, and therefore a real lack of appropriate knowledge to design long-term conservation strategies and management plans for or Orang-utans in unprotected areas. In 1997, ' Hutan ', a French NGO dedicated to wildlife and habitat preservation, decided to create the "Kinabatangan Orang-utan Conservation Project" (KOCP) in Sukau, Lower Kinabatangan district. As the head of the SWD office for the Kinabatangan District, I was involved with most of the KOCP activities, including eco-ethological study of wild individuals at the KOCP intensive study site, awareness activities, mitigation conflicts and other related activities etc. During my three years study, 23 individuals Orang–Utans were observed and identified consisting of 8 adult females, 5 unflanged adult males, 5 flanged adult males and 5 adolescents. The main daily activity of these focal individuals was resting, representing 56 % of their total time budget, while feeding was representing, 25%, moving 12%, the remaining percentages representing nesting and other activities. About 62.3 % of food consumed by Orang – Utan at the KOCP study site was fruits, followed by leaves (22.9 %), flowers (1.72 %) and insects (0.7 %). To date, more than 310 plants species have been identified as being part of the Orang-Utan diet at the KOCP study site. From ground surveys, we estimated the overall population of Orang – Utan living in the Lower Kinabatangan region to approximate 1022 individuals Orang – Utans, 562 within the Lower Kinabatangan Wildlife Sanctuary (LKWS) and 460 outside and in the neighboring forest LKWS. My preliminary results also show that Orang-Utan densities in the disturbed forests of the lower Kinabatangan are higher and that their diet is more diverse than in most places where the species has been studied in primary forest.

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GLOSSARY

SWD	-	Sabah Wildlife Department
LK	-	Lower Kinabatangan
LKSW	-	Lower Kinabatangan Wildlife Sanctuary
N	-	North
E	-	East
KOCP	-	Kinabatangan Orang-utan Conservation Project
CITES	-	Convention On International Trade In Endangered of Wild Flora and Fauna
IUCN	-	International Union For The Conservation Of Nature and Natural Resources
SP	-	Species
FRC	-	Forest Research Centre (Sabah)
SAFODA	-	Sabah Forest Development Authority
SLDB	-	Sabah Land Development Board
ASL	-	Above Sea Level
WWFM	-	World Wildlife Fund For Malaysia
UMS	-	University Malaysia Sabah
NGOs	-	Non-Governmental Organizations
RF	-	Riverine Forest
DLDF	-	Dry Lowland Dipterocarp Forest
SF	-	Swamp Forest
SILDF	-	Semi Inundated Lowland Dipterocarp Forest
SSF	-	Semi Swamp Forest
DANIDA	-	Danish International Development Agency

SYMBOLS

%	-	Percentage
ha	-	Hectare
km^2	-	Square Kilometer
+/-	-	Plus / Minus
$Miles^2$	-	Square Miles
^oC	-	Degree Celcius
RM	-	Ringgit Malaysia
US Dollar	-	United States Dollar
SD	-	Standard Division
Ft	-	feet
M	-	Metre
Km	-	Kilometre
Kg	-	Kilogram
</>	-	Less / More than
bw	-	body weight
dbh	-	diameter at breast height

CHAPTER 1

INTRODUCTION

1.1. Introduction

The word orang-utan was derived from the Malay words "Orang Hutan" or "man of the forest" in English. Orang – utan (*Pongo pygmaeus,* Lesson, 1872) is the only Asian Great Ape and the largest living Asian arboreal animal. During the Pleistocene era (between 10,000 and 1,000,000 years ago), the orang-utan's range covered much or all of South East Asia, extending as far north as tropical China and south to Java Island (Koenigswald, 1982). A rapid contraction of the species distribution has occurred within the last few thousand years, and available evidence suggests that this has largely been the result of human activities. Today, the two remaining species are restricted to scattered parts of the island of Borneo (*Pongo pygmaeus*) and to the northern part of the island of Sumatra (*Pongo abelii*).

Orang-utan habitat in Indonesia and Malaysia is estimated to have declined by 80% over the last 20 years whilst the orang-utan population is estimated to have fallen by between 30% and 50% in the ten years prior to 1993, mainly because of deforestation and hunting (Sugardjito, 1993). Today, the natural habitat of the orang-utan, the tropical forest of Borneo and Sumatra, is still under severe threat from increasing human activity and land conversion to agriculture. A recent study by a Dutch scientist in Kalimantan (Indonesia, Borneo) indicated that only 8% of the orang-utans in Southern Borneo now lived within the existing forest reserve system (Rijksen and Meijaard, 1999). Today the species is classified as endangered, and the majority of the remaining wild orang-utan populations occur in unprotected areas, in forests that are prone to exploitation (Sugardjito, 1993). Previous long-term studies of orang-utan dealt

only with its socio-ecology at a few primary forest reserve sites (Galdikas, 1988; MacKinnon, 1974; Rijksen, 1978; Rodman, 1993; for review: see Rijksen and Meijaard, 1999). To date, there have been no detailed field studies on the relationship between orang-utans and disturbed habitat, and therefore a real lack of appropriate knowledge to design sound conservation strategies and management plans for this species in unprotected areas.

In Sabah, the orang-utan has been legally protected since 1958 (Fauna Conservation Ordinance, 1963). It is now considered as a flagship species for wildlife conservation and tourism, notably through the establishment and efforts of the "Sepilok Orang-Utan Rehabilitation Centre", located at Mile 14 in Sandakan District. In the eastern parts of Sabah, surveys reported high concentrations of orang-utans in the Kinabatangan floodplain (Payne, 1988 ; Haile,1963). This flood plain is a patchwork of different habitat types; riverine forest, seasonally flooded forest, swamp forest, lowland dipterocarp forest, estuarine nipah and mangrove, which appear to form prime habitat for orang-utans (Payne, 1989). Since the mid 1950s, the whole Lower Kinabatangan region has been subjected to large-scale commercial timber exploitation and agriculture. During the past decade, large acreage of forests has been converted to oil palm plantations. As a result of this recent land conversion, the remaining forests of the region are highly fragmented and degraded.

However, the whole of Lower Kinabatangan region still harbours remarkably high density and diversity of wildlife species. It is home to 10 primate species, including one of the largest orang-utan and proboscis monkey (*Nasalis larvatus*) populations in Malaysia, Asian elephants (*Elephas maximus*), estuarine crocodiles (*Crocodylus porosus*) and many other endemic and rare mammals and bird species. Surprisingly, recent surveys carried out from a helicopter and from the ground by the Kinabatangan Orang-utan Conservation Project (KOCP), operated by HUTAN (a French non-governmental organization) and the

Sabah Wildlife Department (SWD) showed that most of these over-logged forests harboured relatively high numbers of orang utan (KOCP, Internal Reports, 1999, 2000, 2001, & 2002). This fact is highly surprising since it is widely thought that orang-utan cannot adapt to disturbed habitat, and needs primary forest for its long-term survival (MacKinnon, 1974; Rao and van Schaick, 1997; Rijksen and Meijaard, 1999).

Because of their unique richness and biodiversity, the remaining forests of the region were proposed to become a protected area (Payne, 1989). In 2001, 27.000 ha were classified as "Gift to the Earth", and the State Government gazetted the area as a Bird Sanctuary in January 2002. Today, these forests are in the process of being gazetted as a Wildlife Sanctuary.

Addressing the issue of how orang-utans might adapt to significant changes in their natural habitat is a necessary step to find efficient ways of enhancing their prospects of long-term survival outside protected areas. With this objective, the Kinabatangan Orang- utan Conservation Project (KOCP) was set up in 1998 by HUTAN, a French-based NGO, in order to conduct a long-term research and conservation programme in the Kinabatangan flood plain. The KOCP studies the impact of habitat alteration on orang-utan socio-ecology, and aims at finding ways to enhance long-term survival of the orang-utan in exploited forests, especially within and around the Lower Kinabatangan Wildlife Sanctuary. The Lower Kinabatangan region, harbouring both abundant wildlife and rapidly developing human activities, constitutes an excellent model to study the relationships between orang- utan and disturbed habitat.

Results of interviews conducted by KOCP and SWD in 6 villages (over 100 households) showed that orang-utan crop-raiding activities were frequent and widespread throughout the Kinabatangan floodplain. Orang-utans can raid the orchards of local communities, and occasionally devastate the annual villages' fruit production especially during the period of low-fruit productivity in the forest. In those oil-palm

plantations located close to patches of forest inhabited by orang-utans or/and that still contain small patches of isolated forests, orang - utans are known to damage the young palms between 1 and 3 years old by eating the shoots (KOCP, 2000). In practice, the SWD is requesting all villagers and oil palm estates managers to lodge a report to the nearest office of SWD if any orang-utan starts raiding their crops. Unfortunately, some of the villagers and oil palm planters cannot tolerate orang-utan crop-raiding activities. As a result, they sometimes take their own actions by killing the pest orang-utans, claiming that this is the only measure to protect their crops from total destruction. However, the interviews conducted by KOCP clearly showed that the proportion of orang-utans killed by villagers is relatively small as compared to the number of animals killed in oil palm plantations. Some of these oil palm plantations even offer cash reward to their workers for killing orang- utans raiding their crops (pers. observation).

Orang-utans being the slowest breeder in the entire primate world (Leighton *et al.*, 1995), facing such level of destruction from the different human stakeholders present in the Kinabatangan flood plain greatly jeopardizes the long-term survival of the species in the area. In order to secure the future of the orangutan population living within and around LKWS, it becomes urgent to assess and mitigate orang-utan conflicts with local communities and oil palm industries as well as to implement innovative solutions to restore more harmonious relationship between human populations and orang-utans. This includes the establishment of strong collaborations with the various stakeholders in the region, particularly the local communities and agriculture industries, as well as relevant government agencies. Indeed, it is believed that orang-utan conservation efforts are meaningless without the support of the local communities and oil palm industries especially within and around the lower Kinabatangan Wildlife Sanctuary.

1.2. Objectives of this study

The main objectives of the current study are:

1) To document orang-utan etho-ecological behaviour in disturbed habitat.
2) To manage and conserve the orang-utan population in the lower Kinabatangan region and recommend solutions to reduce the current human orang-utan conflicts in lower Kinabatangan including raising public awareness for orangutan preservation needs.

CHAPTER 2

LITERATURE REVIEW

2.1. The study animal

2.1.1. Background information

Orang-utans are members of the Pongidae family, and are the only Great Apes found in Asia. Recent taxonomic assessments of the geographical variants recognize two different species (Zhang *et al.*, 2001; Warren *et al.*, 2001): *Pongo pygmaeus* in Borneo, and *Pongo abelii* in Sumatra. Both forms can be distinguished by their general appearance, the shape of the facial mask of adult males, the distribution of body hairs, and by different morphological characteristics of the hair, the Sumatran orang-utans being more reddish in colour than the Bornean individuals (MacKinnon, 1974; Rijksen, 1978). The Bornean species is divided into three sub-species: *P. p. pygmaeus*, *P. p. wurmbii* and *P. p. morio* (Groves, 1999; see Figure 2.2.).

Today, orang-utans are confined to the small sectors of forests still occurring in the islands of Borneo and Sumatra. When man in his early forms as *Pithecantropus* in Java and *Giganthopithecus* in China first began to thrive in the far Asia, orang-utans were abundant and widespread through all parts of this world (Koenigswald, 1981). Orang-utan distribution was wider than today, and encompassed Java and southern parts of China in pre-historical times (see Figure 2.1).