Matematika dan Pengetahuan Alam
Vol. 5, No. 1, Th. 1996 ISSN: 0853-0033

THE MAMMALS IN SALIBUTAN VILLAGE AND THEIR INTERRELATIONSHIP TO LOCAL PEOPLE LIFE

Amsir Bakar
Jurusan Biologi, FMIPA Universitas Andalas

ABSTRAK

Penjajakan jenis hewan mamalia di desa Salibutan Sumatera Barat dan hubungannya dengan kehidupan manusia telah dilakukan. Dengan mengadakan observasi melewati jalan setapak yang ada di hutan, pengenalan secara jejak kaki, feces, bagian tubuh yang terlepas, sisa makanan yang tertinggal dan informasi masyarakat setempat didapatkan 27 jenis hewan mamalia, terutama jenis primata.

Hubungan hewan mamalia tersebut dengan kehidupan penduduk setempat telah dikemukakan secara singkat. Kecendrungan pengrusakan hutan bertambah akibat perubahan kondisi desa yang tidak terisolir lagi.

Kerusakan hutan menyebabkan berkurangnya kerapatan populasi mamalia. Diantara hewan mamalia diatas hanya babi hutan yang merupakan hewan pengganggu utama terhadap perkebunan dan sawah penduduk.

ABSTRACT

The inventory of mammals in Salibutan village and their interrelationship to human life have been carried out by the observation through the available trail in the forest, vocalisation recognization, foot print, feces, fraction, food remain determination and local people information have been found 26 of mammals species, especially primate. The interrelationship of mammals and the local people life have been discussed briefly. The trend of forest disturbance is increase due to the change condition to be unisolate village. This disturbance of forest may effect to the decrease of mammals populationdensity. Among them only wild-pig is the important pest for the people garden/ricefield.

Key words: Salibutan village, existence of mammals, forest dis-turbance, conservation, human-mammal relationship

---

* Have been presented at the Second Year's Seminar of Unand-FBRT Team on Field Biology, 23-24 March 1996 in Andalas University

INTRODUCTION

Anyhow, the existence of fauna have closed related to the human activities. According to Norman Myers (1987), tropical forest, notably rain forest but also some less wet forest are undergoing depletion, both quantitative and qualitative. C.W. Mars *et al.* (1987) appointed that most kinds of disturbance to forest can be placed in one of six categories as follows: 1) removal of selected plant product by traditional means. 2) Clearance or damage of the forest understorey. 3) Changes in water regime, 4) Shifting cultivation. 5) Commercial selective logging and 6) large-scale clearance usually for agriculture or ranching.

This above phenomenon is also occuring in small village "Salibutan". Formerly Salibutan was isolated, but since 1988, the transportation facilities such road condition, permanent bridges and public-car are available.

Then such isolation condition is changed gradually while the activities of local peoples are increase. All of these make influences to the surrounding habitat and to the existence of mammals.

Based on the general view where can be easy to observe every day, we would like to inventory what kind of mammals around the village of Salibutan and what the interrelationship to the local people life.

STUDY AREA

"Salibutan" is a small village in West Sumatera with area approximately 2500 ha. Population density by the sensus in 1994 is 1002 persons. The boundary of this village are: northern by Pasir Lawas village, Southern by Hilly Forest, Western by Koto Buruk Village, Eastern by Hilly Forest, and the distance to Lubuk Alung (Center of sub-district) is about 11 km (westernpart). This area is hilly, surrounded by the good forest and altitude range between 60-480 m above sea level. In the forest there are several streams and drainage to Salibutan River and then combined to Anai River in the westernside of village.

Some area of the forest have cutted by the people for ladang and sawah but some part is still good condition. According to the information from the local people, there are several kinds of economic trees found such as (local name): Garicing, Meranti, Banio and Damar. In our observation the trend for cutting these trees is gradually increase.

So, inside of the forest we find also a number of open areas as a gap where are covered by a kind of fern plant (paku rasam). Then the remain of ladang with dominated by bush, several other economic plants are found such as: durian, kuini, manggis, duku, cempedak etc. (local name).

METHODS

Study have been carried out during 27 days from October 1995 to January 1996. Several methods have been done as follows:

1. To inventory mammals: by direct observation through the possible trails in the forest with using binocular, recognize of the species vocalisation, identify of foot print, feces, fraction or food remain and the information from the local people.
2. Estimation of population density of main mammals (in this case: primates) (Warren Y. Brockelman *et al.*). A census estimate primates densities have been carried out by available trail (600 m), and the construct line (900 m). This trail-line transect is mostly straigh (east-west direction) and laid in the hilly forest area (Mt. Runcing), eastern part of Salibutan village with altitude ranging from 100 m to 380 m above sea level. At every 25 m along the trail-line transect were marked and numbered with using wood stick (1.20 m). During the census, observer moved very slowly (500 m per hour). At every 25 or 50 m, observer stop 1-2 minutes for listening and watching surrounding area. When primates on sight or heared observer stop for 10-15 minutes to identify and counting the member of the group. Then the group density was calculated by the number of group encounter divided by census area. 3. Interrelationship of the mammals to the local people life: through interview to some local people who knows exactly about the mammals and their effect to the people life.

RESULTS

1. The varieties of mammals

Through observation along the trails surrounding village and the forest are found the varieties of mammals. They are seen in Table 1.

2. Estimation of population density of selective mammals

Among the mammals have been found in Salibutan village, the primate is more easy to be observed and to estimate their population density. While others are difficult because of several reasons, such as very low of population density, mode of activities and very short period of observation, etc.

By the calculation of this methode, it has been found that the density for agile gibbon (*H. agilis*) is 6 groups per-square km, for crab eating macaque (*M. fascicularis*) is 3 group per square km and banded langur (*P. melalophos*) is 1,7 groups per-square km. The density for crab-eating macaque and banded langur are lower than agile gibbon, because the census area located almost near primary forest while crab-eating macaque and banded-langur are prefer to habitat near garden or mixing forest. The other species such as *Hylobates syndactylus* (siamang) only knew by their vocalisation and far from logging activity. In the case of *Macaca nemestrina* (pig-tailed macaque) was not encountered in this transect line area.

Table 1. The varieties of mammals in Salibutan village

No.	Local name	Scientific name	Remarks
01	kera	*Macaca fascicularis*	E
02	beruk	*M. nemestrina*	Fr, I
03	simpai	*Presbytis melalophos*	E, V
04	ungko	*Hylobates agilis*	E, V
05	siamang	*H. syndactylus*	V
06	kukang	*Nictycebus coucang*	I
07	kubung	*Cynocephalus variegatus*	E
08	babi	*Sus scrofa*	E, Fp
09	kijang	*Muntiacus muntjak*	I
10	rusa	*Cervus sp.*	Fp, I
11	kambing hutan	*Capricornis sp.*	I
12	kancil	*Tragulus sp.*	Fp
13	tapir/cipan	*Tapirus indicus*	I
14	mencit	*Rattus sp.*	E, T
15	tupai jenjang	*Ratufa bicolor*	E
16	tupai kelapa	*Callociurus sp 1.*	E
17	tupai akar	*Callociurus sp 2.*	E
18	landak	*Hystrix branchiura*	F
19	berang-berang	*Lutra sp.*	Fp, Fe
20	musang	*Viverra sp.*	E, Fe
21	binturong	*Arctictis binturong*	I
22	harimau dahan	*Neofelis nebulosa*	I
23	harimau loreng	*Panthera tigris*	I
24	harimau buluah	*Felis bengalensis*	I
25	trenggiling	*Manis javanica*	I
26	kalong besar	*Pteropus vampyrus*	E
27	kelelawar	Sp. 1	E, Fe

Remarks: E = encounter Fp= foot print
V = vocalization Fr= foot remain
F = fraction I = information
Fe= feces T = trape

3. Interrelationship among mammals and the local people life

a. Forest disturbance

The vegetation of the forest is gradually changed from the primary to secondary and mixed forest. In several sites in the forest we can find the trees were cutted with chain-saw machine. This activity is gradually increasing and easily to observe everyday. The people pulled the logging to the main road using buffaloes or through the stream.

The effect of this activity, make in several sites the open area and new type of habitat. How large of this disturbance forest is still not recorded yet. Anyhow, this trend will increase in the near future. This phenomenon did not only occur in the village forest (Hutan nagari) but also will expand into the primary forest. Besides the effect of cutting trees, in some area there were found the remain ladang with plenty of economic trees such as seen in Table 2 below:

Table 2. The economic trees in Salibutan village/forest

No.	Local name	Scientific name	Remark
01	Durian	*Durio zybatinus*	
02	Kulit manis	*Cinnamomum sp.*	
03	Manggis	*Garcinia sp.*	
04	Kuini	*Mangivera sp.*	
05	Cengkeh	*Eugenia aromatica*	
06	Duku	*Lansium sp.*	
07	Petai	*Parkia sp.*	
08	Rambutan	*Nephelium sp.*	
09	Cempedak	*Artocarpus sp.*	
10	Gariciang	-	cutted
12	Meranti	*Dipterocarpus*	cutted
13	Damar	-	cutted
14	Banio	*Shorea sp.*	cutted

b. Hunting activity

During the research activity, there is event of traditional hunting have been observed. Information from the local people, almost every week regular hunting have been done by the local peoples (about 20 persons), but every six month they call it "great hunting or berburu raya" is occured. The hunters (more than 100 persons) come from many places organized by their organisation called it "PBB" or "Pig Hunter Association". Based on their organisation name, their main object to hunt is wild pig.

The hunter together with their dogs and their guns (local made called it "senapan balansa" enter to the forest from several directions.

c. Mammals as a pest

It have been recorded that several mammals in Salibutan village may caused as a pest for the economic plants of the peoples. They are seen in the Table 3 below:

Table 3. The list of mammals in Salibutan as a pest and their mainly damage to economic plants

No.	Local name	Scientific name	mainly damage
1	Babi	*Sus scrofa*	rice field
2	Tikus	*Rattus sp.*	rice field
3	Tupai	*Callociurus sp.*	coconut trees and fruits
4	Kera	*Macaca fascicularis*	fruit trees
5	Beruk	*M. nemestrina*	fruit trees
6	Simpai	*Presbytis melalophos*	fruit trees
7	Kalong	*Pteropus sp.*	fruit trees
8	Kelelawar	*Sp. 1*	fruit trees

Among the mammals above more serious effect to damage the economic plants of the people are: the wild pig and mouse. Based on the local people information, these animal come to disturbed rice field or ladang (garden) are not regularly. According to the local experience they come to the village to damage the economic plant, if the number of fruits in the forest are decrease. They are not depend on the season, dry or rainy. If the fruits in the forest are so abundant they will not make disturbance. But when they come to the village, they come in the big number more than 40 individuals and make damage in big scale. They will be lead by the adult male and occured very fast or suddenly. In the season of their disturbance, the people have to guard their harvest (rice field or ladang) along the day and night. It really make the heavy work of the people life. Compared with the damage made by the wild pig, the damage made by mouse are not so serious and not so big scale. The local people told that the damage made by the mouse is more serious in the district (Kecamatan) of 2x11 Enam Lingkung. Why does it so, it does not known yet.

DISCUSSION

Among the mammals which can be observed easyly in Salibutan are primates. This is due to the mode of life of primates are arboreal. While the others are mostly terrestrial. The other important factors are also might be their population density are lower than primates. So, it made very rare to encounter them. But anyhow the information from the local people for their existence can be accepted as far as possible.

Nowadays, generally the population of mammals are trend to decrease due to the increasing of cutting trees. In some locations we can observe several open areas and the trails for transport the logs. Cutting the trees with Chain-saw

machine are very noisy and it make the mammals move away. In primates species, *Hylobates syndactylus* is more sensitive for this condition and so we just hear their sound very far.

Russel A. Mittermeier (1987) also explained that habitat destruction is without doubt the mayor threat to wild populationof nonhuman primates around the world. C.W. Marsh *et al.* (1987) appointed that there are three effects of logging to primates: change in behavior, changes in diet and relative abundance. This change condition is also generally might gave the paralel effect to the mammals as a whole. However the effect to all species may have the different range. For instance in primates, where simpai (*Presbytis melalophos* and kera (*Macaca fascicularis*) are easy to adapt in secondary forest. While siamang *(H. syndactylus)* always choiced to primary forest far from human activities (Bakar A. *et al.*, 1993).

In analysis of primates population density, where the crab eating macaque (*M. fascicularis*), and banded langur (*P. melalophos*) have population density lower than agile gibbon (*H. agilis*), because the census area (transect-line) located in near primary forest where *M. fascicularis* and *P. melalophos* like the habitat of the secondary forest near ladang.

In the case of unencuontered pig tailed macaque (*M. nemestrina*)may be owing to the hunting pressure and more terrestrial than others (Oi, 1990). Hunting activities of the people in Salibutan is rather regular, almost in every week. But the main object of hunting is only wild pig. However this hunting activities my influence the life of other mammals, included the primates. Especially in in every 6 month, there is event the great hunting with participant more than 100 persons with about 200 dogs and number of local guns/balansa gun.

As have been explained above, all human activities more influence the excistence of mammals in Salibutan village after this village unisolated again especially road condition, transport facilities, irrigation and bridge are becoming available. The daily activities of the people more increase especially connected to the cutting trees for logging. Most of the people are the farmer and their education are still low at average primary schools (SD). So their daily economic are not enough yet (after monograph Desa Salibutan). This condition make them to be stimulated as the member of tree cutter. By the way, this event is accelerated too by the other peoples who come to Salibutan to support this activities.

In another direction, the significant influence of the mammals to the local people life in this village are wild pig and mouse, see Table 3. But both mammals above made negatif effect. According to the information from the local people the disturbance of wild pig to ricefield or garden is not regular. It does not depend on the season, dry or rainy. It more depend on the abundance of the fruits food reservation in the forest. If food reservation is abundant in the forest, this animals will not disturb the harvest of the people in the village. It is very interesting phenomenon, in the one-side the wild pig will not disturb the harvest if in the forest still enough food but why in another side the people still regularly doing hunting. The data on this phenomenon is still not recorded yet. So the continue study on this matter will be necessary.

REFERENCES

Aimi, M., A. Bakar. 1992. Taxonomy and Distribution of *Presbytis melalophos* Group in Sumatera. *Indonesia Primates*, 33: 191-206

Bakar, A., N.M. Suin. 1993. The potential of primates in Taman Nasional Kerinci Seblat (TNKS). Report of World Bank Project 1993

Chasen, F.N. 1940. A Handlist of Malaysian Mammals. Bulletin of the Raffles Museum, Singapore. No. 15, April 1940

Happel, R.E., J.F. Noss and C.W. Marsh. 1987. Distribution, Abundance and Endangerment of Primates. *Monograph in Primatology*, Vol. 9. Alan R. LISS INC. New York

Lekagul, B., J.A. McNeely. 1977. Mammals of Thailand. The Association for The Conservation of Wildlife. Bangkok

Marsh, C.W., A.D. Johns and J.M. Ayres. 1987. Effect of habitat disturbance on Rain Forest Primates. *Monograph in Primatology*, Vol. 9. Alan R. LISS INC. New York

Mittermeier, R.A. 1987. Effect of hunting on Rain Forest Primates. *Monograph in Primatology*, Vol. 9. Alan R. LISS INC. New York

Nowak, R.M., J.L. Paradiso. 1983. Mammals of the World. Vol. 1. The John Hopkins University Press, Baltimore and London

Oi, T. 1990. Socio-ecological Study of Pig-tailed Macaque (*Macaca nemestrina*) in Sumatera. Unpublish Final Report to LIPI

Warren Y. Brockelman and Rauf Ali,. 1987. Methods of Surveying and Sampling Forest Primates Populations. *Monograph in Primatology*, Vol. 9. Alan R. LISS INC. New York

ACKNOWLEDGMENTS

I would to extend my gratitude thanks to Directorate General of Higher Education, Japan International CooperationAgency (JICA), and Andalas University for sponsor our field work. My thanks to the leader of FBRT project, Japan and Andalas University sides to let me participate on this cooperation work. I am indebted thanks to Mr. Duwi Yulipan and Mr. Rizaldi for their helped on observation in the field. This study is supported financially by FBRT-Unand fund, Fiscal Year 1995.