

FINAL REPORT

Title of Application:

Study on Male Sulawesi Crested Black Macaque (*Macaca nigra*) Dominance Style at Tangkoko-Batuangus Nature Reserve, North Sulawesi, Indonesia

Name of Applicant:

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Objectives:

The goal of this research is to observe the male social system that includes: group size, sex and age composition, and interaction between males of two groups. The groups are Rambo I and Rambo II that are resulted from the fragmentation of a large Rambo group. The specific aims of this research are:

1. to determine the dominance style of the male.
2. to determine the interactions between the males including: social agonistic, social affiliation, and socio-sexual.

Progress in Attaining the Objectives:

This activity was conducted at Tangkoko-Batuangus Nature Reserve and Batuputih Eco-tourism Area, North Sulawesi, Indonesia from January to December 2004. The participants were 11 persons, 5 students of Sam Ratulangi University, 3 Rangers, and 3 Eco-tourism Guides (table).

Table. Participant Names

Name	Occupation
1. Herry Timpal	Student
2. Adrien Unitly	Student
3. Thresya Sumarandak	Student
4. Veralyn Maabuat	Student
5. Dadang Nurzaman	Student
6. Farenheid Pontomudis	Ranger
7. Reol Welua	Ranger
8. Rahmat Biki	Ranger
9. Christian Pontomudis	Guide

10.Yulisman Ganta	Guide
11.Diswal Takasaheng	Guide

The activities were grouped into three kinds, namely research, education, and conservation.

1. Research

Research was conducted for one year collaboration with students, rangers and guides. The main research topic was as stated above. Students who took other topics for their final task before being graduated from the university, are Herry Timpal with the topic of **Daily activity of Sulawesi Crested Black Macaque (*Macaca nigra*) Adult male at Tangkoko-Batuangus Nature** and Adrien Unitly with the topic of **Natural Sexual Behaviour of Sulawesi Crested Black Macaque (*Macaca nigra*)**. Other students, rangers and guides learned how to investigate the group size and composition and to collect behavioral data. A brief result is presented as an abstract is also sent and I agree that it can be published in The RSG web. A full text will be submitted after being presented at Bogor Agricultural University, West Java, Indonesia.

2. Education

Education program was addressed to students of Biology Study Program of Sam Ratulangi University, University Adventurer Student Associations, Youth Adventurer Groups, Ecotourism Guides, Elementary School Students, some Non-Government Organizations, and Visitors of Eco-tourism Area. Course was given on Saturday, Monday, and national holidays at Research Station of Batuputih Eco-tourism Area. Course material included Sulawesi Biodiversity, Threatens of Biodiversity, Its Conservation, Biology of Tangkoko-Batuangus Nature reserve and Batuputih Eco-tourism Area Wildlife. The aim of this activity was to improve the awareness of local human population for the biodiversity of the Reserve and Eco-tourism Area and how to keep the biodiversity. Beside that, this activity was hoped to change the population culture so that they will no longer attack monkey and do other wild animal hunting, and consumption. If the population continues their bad activities, the wildlife of The Reserve and Ecotourism Area is threatened to extinction. An article about the threat of disease transmission from human to monkey and from monkey to human has been arranged and

distributed to visitors, students, population, guides, and some NGO-s. Especially for Eco-tourism Guides Club, education addressed particularly about how to be a good eco-tourism guide with biodiversity and conservation basic knowledge of The Reserve and Eco-tourism Area.

3. Conservation Action

The main threats of monkey population in North Sulawesi are for consumption and habitat destruction. Wild animal consumption has become a culture especially in certain traditional parties. Habitat destructions that recorded during this research were forest clearing into agriculture, forest product harvesting like woka palm leaves for house roof, rattan and tree cutting for making boats and fish traps, and forest burnings. Some efforts done were:

- Establishment of Eco-tourism Guides Club who plays role as an example people and an agent of conservation message spreader. Guiding regulation with conservation basic have been made with the Guides Club, rangers, and Village Government.
- A recommendation about management and regulation for visitors have been made and proposed to the Nature Resort.
- Elucidation to human population to exploit unused land outside The Conservation Area for agriculture.
- Cleaning beach, Eco-tourism Area and Reserve from plastic rubbish collaborated with students, Adventure Groups, local guides, and some NGO-s, vandalism clearing, fire controlling, and prevented Rambo II and Group Rambo I Groups from hunting.

Particular Challenges and Solution:

Main problems that faced during research were:

1. Hunting

Wild animal consumption has become culture to human population near the reserve especially on certain traditional party. Therefore, in every observation, monkeys were

threatened by their hunting activity. Beside monkeys, they also hunted wild pigs, jungle fowls, rats, bats, snakes, cuscus, and monitor lizard.

Some solutions to overcome this hunting activity were:

- Keeping the monkeys especially research target groups by following the group traveling to protect the monkey from hunting.
- Involving some rangers and local people in every activity in forest.
- Elucidation to human population to stop hunting and consumption of monkey through spreading leaflets, and collaborated with Tangkoko Resort and local village government to increase their awareness.

2. Forest Destruction

Some forest destruction at Tangkoko-Batuangus Nature Reserve were forest clearing for agriculture, forest product harvesting and forest burning. Some solution ways were:

- Collaborated with Tangkoko Resort, Local Village Government, Local Guides, Police Corps, Some NGO-s to do patrol and inspection in the forest and elucidate population to stop forest destruction, make fire partitions, and control fire.
- Proposed a recommendation to Management Authority for providing utilization block at Batuputih Eco-tourism Area where people is allowed to take firewood and woka palm leaves.

3. Challenge from animal and field circumstance:

Habituation and individual identification of Sulawesi Crested Black Macaques (*Macaca nigra*) were difficult enough so that was needed patience and long time to conduct the research. Mosquitoes, viper snakes, tiny ticks, plant with stinging hair could be hampered during observation. To prevent it, we used insect repellent and boot shoes.

Changes to the Project:

Changes during the project:

1. Expansion from the main topic, those were Home Range and Day Range, Daily Activity, Inter-group Encounters, and Female Dominance Style.

Two students also collected data of their final task before being graduated from Biology Study Program, Faculty of Mathematics and Natural Science, Sam Ratulangi University, Manado, North Sulawesi. They were:

- Herry Timpal with topic: **Daily activity of Sulawesi Crested Black Macaque (*Macaca nigra*) Adult male at Tangkoko-Batuangus Nature.**
 - Adrien Unitly with topic: **Natural Sexual Behaviour of Sulawesi Crested Black Macaque (*Macaca nigra*).**
2. The problems faced by the Conservation Areas were so many so that education program was also given to elementary school students, some NGO-s, Adventure Groups, and visitors of Batuputih Ecotourism Area. Some NGO-s and Adventure Groups wanted me to show how to observe and collect data for my research so that they followed me entering the forest for some days.
 3. Eco-tourism activity is only allowed at Batuputih Eco-tourism Area, but the in reality it also reaches the reserve. Some negative impacts of eco-tourism activity to the reserve can occur. Therefore, education program is also given for rangers and guides about conservation in guiding.

Expenditure V Budget:

1. Transportation	£575
- Bogor – Manado: 2 x £100 = £200	
- Manado – Batuputih: 30 x £12.5 = £375	
2. Accommodation	£3,080
- Consumption: 12 persons x 12 months x £20 = £2,880	
- Research station maintenance: £200	
3. Salary	£1,200
- Porter: 10 months x £100 = £1,000	
- Guide: £200	
4. Administration	£50
5. Material	£295
- Material for research and education (photocopy material, paper, pens,	

- etc. : £150
- Documentation: £90
- First Kit: £35
- Insect repellent: £50

T O T A L:	£5,200
Amount requested from Rufford Small Grant	£ 4000
Support from Indonesian Education Ministry	£ 500
North Sulawesi Local Government	£ 500
Indonesian Foundation (Yayasan Supersemar)	£ 200

Future Planning:

Information that important for Sulawesi crested black Macaque (*Macaca nigra*) is group monitoring to determine some main factors that affect on group growth and dynamics. The social structure of this species is multimale-multifemale group. The internal factors of group growth are natality, mortality, and male migration. One group that uses part of eco-tourism area is Rambo II. From 1998 until present, the group size is about 50 individuals, but how the group maintains the group size is not understood yet. There are no enough recordings made at Tangkoko-Batuangus-Duasudara Resort by other organizations.