

# Preliminary Census Study of Red-shanked Douc Langur and Other Primates in Hin Namno, Khammouane, Lao PDR

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### Abstract

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Red-shanked Douc Langur Pygathrix nemaeus nemaeus, found only in Lao and Vietnam, is endangered by human activities but receives little attention from researchers. Hin Namno National Protected Area is located at the border of Vietnam and right Lab and Vietnam, is endangered by numan activities but receives little attention from researchers. Hin Namno National Protected Area is located at the border of Vietnam and right Lab and Vietnam, which was the second of the diverse areas and wasked totally of 123.5 km of 25 line transects from January to October 2007. All primate species found during the walks were recorded including observations from nearby and villager interviews. Thirdeen primate species were recorded, of which 6 species were surely confirmed from the transect walk, while other 5 species were reported by villagers including two nocturnal species of prosimilans. The six primate species and their group density estimate per km walk were Red-sharked douc langurs Pygathrix nemaneus nemaneus (0.340); Francois' langurs Trachypethicus franciosi (0.421); Assamese macaque Macaca assamensis (0.243); White-checked gibbons Hylobates leucogenys (0.040), Stump-tailed macaque Macaca arctoides (0.024) and Francois' langur Trachypethicus lacturnhatinhenis (0.008). In addition, local hunters recently described some other primate species with a need for more investigation. Therefore linestone habitats in Hin Namon NPA are important receive areas for species as of experience professions for the property in the pr Therefore, limestone habitats in Hin Namno NPA are important rescue areas for species and genetic material conservation of primates in Lao PDR.

### Introduction

In Lao PDR, limestone karst and limestone habitats are widely dominant in only Khammouane province, particularly Hin Namno National Protected Areas. There are 18 primate species known in Laos (Duckworth et al, 1999), of which nine were previously reported in Hin Namno (Timmins and Khounboline, 1996 and Walston and Vinton, 1999). Very little is known since no study on these species has been undertaken so far (Timmins and Duckworth, 1999).

### Study Site and Method

# Study Site

Hin Namno NPA is located in Bualapha district. Khammouane province (Figure 1), joining the international borders with Phong Nha Ke Bang Natural World Heritage site in Vietnam, at latitude 17°15'-17°40' N, longitude 105°43' - 106°09' E, and altitude 200 - 1,000 m above sea level (Timmins and Khounboline, 1996).

Majority of the area is limestone karst (Figure 2) with a range of vegetation

cover from bare rock to shrubby forest, flat lowlands broken by sporadic karst outcrops. Amongst the limestone mountains especially the central and some northern parts of the area are covered with tall closed canopy evergreen forest, semi-evergreen and mixed deciduous forests.





Figure 1. Map of the study area

Ten study camps have been selected across the study area, containing 25 line transects, totally of 48 km (Table 1). All transects had a mark on a tree every 50 m interval. Transect walks were conducted only in the morning from 7.30 AM to 11.30 AM in good weather with average walking speed of 1 km/hour. Binoculars, rangefinder, compass and GPS were used to record all primates found and key information including time of animal encounters, species, number of the species, location, habitat types, and distance to the animals. Whenever, taking a record of animals at each point to be completed within 10 minutes. Thus far, 123.5 km were walked from January to November 2007. Also, villager interviews were conducted twice to find a status of primates in the area, using pictures of primates.

Table 1. Description of sample site census study camps

	Time to the nearest village (h)		GPS Coo	rdinates	No. Line			Average
No		Name	Longitude	Latitude		(km)	Main habitat type	Elevation (m)
1	5.5	Kuane Nong	105 50 60	17 35 69	2	4.5	EG/HE.	525
2	3.5	Nong Boun	105 53 07	17 30 45	3	6.5	EG/HE	523
3	1.5	Thalee	105 51 05	17 35 23	2	4.3	HE/EG	334
4	9.0	Nam Khoum	105 53 62	17 26 18	3	5.9	EG	362
5	4.0	Nam Pasai	105 50 58	17 24 99	3	5.9	EG/MD	299
6	1.0	Kuane Thoun	105 48 24	17 30 29	2	3.5	EG/HE	364
7	3.5	Kuane King	105 53 18	17 29 48	3	5.2	EG	506
8	2.5	Nong Luang	105 46 67	17 30 12	3	5.0	EG/HG	319
9	2.0	Nong Ban Na	105 49 05	17 24 57	2	3.2	HE/EG	247
10	2.0	Phou Chuang	105 46 91	17 36 80	2	4.0	EG/M	727

EG = Evergreen, HE = Hill Evergreen, MD = Mixed Deciduous, M = Montan

# Results and Discussion

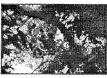
From the census study not only Red-shanked douc langur *Pygathrix* nemaneus nemaneus was encountered but also five other primates such as Francois' langurs Trachypethicus franciosi, Assamese macaque Macaca assamensis, White-checked gibbons Hylobates leucogenys, Stump-tailed macaque Macaca arctoides and Francois' langur Trachypethicus laoturnhatinhenis (Figure 3 and Table 2).

Table 2. Primate group encountered from census study

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Camp	1	2	3	4	5	6	7	8	9	10	Total
Red-shanked douc langur	3	3	2	11	9	3	7	2	1	1	42
Francols langur	8	3	6	11	6	4	4	7	2	1	52
Assamese macaque	3	1	5	3	5	3	6	3	1		30
White-cheeked gibbon	2					2	1				5
Stump-tailed macaque	1			1	1		1				3
François Ignaux (umA					$\overline{}$		1				1

Table 3. Primate population from census study

	Group	Individual	Group/km	Individual/km	Average group size
Red-shanked Douc langur	42	406	0.340	3.287	9.7
Francols langur	52	315	0.421	2.551	6.0
Assamese macaque	30	281	0.243	2.275	9.4
White-cheeked gibbon	5	15	0.040	0.121	3.0
Stump-tailed macaque	3	80	0.024	0.648	26.7
François langur (wpf)	1	7	800.0	0.057	7.0





Red-shanked Douc Langur









Red-shanked douc langur is widely distributed in Hin Namno NPA. However, the population density is different based on quality of habitat and level of human impacts. Sample sites closed to human settlement supported lower group encounters and population Sample sites closed to human settlement supported lower group encounters and population whereas the farthest sample sites supported more groups of douc langur. The nearest sample sites including C6 Khuanethoun (1 hour walk), C3 Thalee (1.5 hour walk), and C10 Phou Chuang (2 hours walk) had 3, 2 and 1 groups encoutered respectively (Table 2). Meanwhile, group encounters found in farthest sample sites were 9 and 12 for C4 Nam Khoum and C5 Nam Pasai respectively. The largest group size found in Nam Khoum were more than 50 individuals but the average group size was 9.7 individuals (Table 3).

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Francois' langur lives in similar habitat as douc langur, only once Francois's langur was found in bamboo forest. Loud calls were heard frequently in the early morning started from 5.30 AM from their sleeping caves. The distribution of this species is wide but on average of number per group is 6.0 individuals. The white form is extremely rare, only one group of 7 individuals was found from the census in C7 Kuane King in August 2007. This species was well reported in Ban Nongping and Pathoung.

Assamese macaque is also wide distributed with average group size of 9.4 individuals. Sample site C7 Kuane King, C5 Nam Pasai and C4 Nam Khoum had a good reported of this reported.

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Stump-tailed macaque was found only three groups in three sites. The group size was the largest compared to other primates (means 26.7) and ranged up to 60 individuals. 
It is estimated that the species would have three to four groups in each sample site. 
White-cheeked gibbon was widely distributed. Though few groups found from the census study, the call of this species was likely common. However, number of population was very low. We sometimes found only one female, one male or just two or group individuals per encounters outside the census. There were only twice we saw two groups of each 5 individuals in C1 Kuane Nong in January 2007 and C6 Kuane Thoun in June 2007 from the transact walk from the transect walk.

Seven other primates including two nocturnal prosimians, Slow Loris Nycticebus coucang and Pigmy Loris Nycticebus pygmaeus, were also reported. These two prosimians were present in the area due to widely reported in over 10 adjacent villages and they were well distinguished by the villagers. Five more species reported in some villages and from previous surveys but had not been seen in our study were Black gibbon Hylobates concolor, Rhesus Macaque Macaca mulatta, Long-tailed Macaque Macaca fascicularis, Pig-tailed Macaque Macaca nemestrina and Phayre Langur Trachipeticus phayrei.

The preliminary census study on Red-shanked douc langur carried out in Hin Namno in Laos was not provide the census of the target species but also its sympatric primates in the area. A total 13 primate species were assumed to live in Hin Namno were listed. Some species were not confirmed by this study and need more field investigation. Hin Namno NPA is probably a single area that supports the highest number of primates in Laos and it is considered the best place for primate rescue areas because of inaccessible limestone places. Therefore, the area is significant for primate conservation.

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