

Population status of Francois' langur (*Trachypithecus francoisi*) at Ba Be National Park

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Summary

The Francois' Langur (*Trachypithecus francoisi*) is an endangered primate belonging to subfamily Colobinae. The species was historically widespread in seven northern provinces of Vietnam. Ba Be National Park is located in Vietnam's northern mountainous area, and is a home to several small groups of Francois' langurs. The objective of these surveys is to reveal distribution, group size and threats to the species and its habitat. Two status surveys were undertaken with a total of 21 field survey days between 13. to 26. February and 16. to 22. November 2009 at Ba Be National Park. Sightings of Francois' langurs were very rare and only two groups of two and four individuals respectively detected in Pac Ngoi. Hunting and habitat destruction are the main threats to langurs. Illegal logging poses a serious threat to the habitat, while shotguns and traps were identified as the main methods for hunting in the area. Immediate actions need to be taken to conserve the remaining small populations of Francois' langurs in Ba Be National Park.

Tình trạng quần thể Voọc đen má trắng (*Trachypithecus francoisi*) tại Vườn Quốc gia Ba Bể

Tóm tắt

Voọc đen má trắng (*Trachypithecus francoisi*) là loài Linh trưởng nguy cấp thuộc họ phụ Voọc (Colobinae). Trước đây loài này phân bố ở 7 tỉnh phía Bắc của Việt Nam. Vườn Quốc gia Ba Bể thuộc khu vực vùng núi phía Bắc Việt Nam và là nơi cư trú của một vài nhóm Voọc đen má trắng. Mục tiêu của đợt điều tra này là làm sáng tỏ phân bố, kích cỡ nhóm và các mối đe dọa đến loài và sinh cảnh của chúng. Hai cuộc điều tra được thực hiện với tổng số 21 ngày điều tra thực địa từ 13-26 tháng ba và 16 đến 22 tháng 11 năm 2009 tại Vườn Quốc gia Ba Bể. Quan sát trực tiếp Voọc đen má trắng là hiếm, chỉ có 2 nhóm khoảng 2 đến 4 cá thể được nhìn thấy tại khu vực Pác Ngòi. Săn bắn và phá hủy sinh cảnh là các mối đe dọa chính đến loài Voọc đen má trắng và sinh cảnh của chúng. Khai thác trái phép là mối đe dọa nghiêm trọng đối với sinh cảnh của Voọc đen má trắng, trong khi đó súng và bẫy là công cụ chính được sử dụng để săn bắt Voọc đen má trắng tại đây. Các hành động cần thiết cần thực hiện ngay để bảo tồn các quần thể nhỏ Voọc đen má trắng còn lại tại khu vực điều tra.

Introduction

The Francois' Langur (*Trachypithecus francoisi*) is listed as an endangered primate species (IUCN, 2010). The species is protected in Vietnam under Decree 32/2006/ND-CP and is classified

as “Endangered” in the Red Data Book of Vietnam (Ministry of Science, Technology, and Environment (2007).

The distribution of Francois’ langurs ranges from the Red River in Vietnam across the Chinese border to as far as the Daming Hills in Guangxi and Xingyi in Guizhou. It is restricted to habitats characterized by karst topography with plentiful cliffs (Groves, 2001). The species was historically widespread in seven northern provinces of Viet Nam (Lang Son, Cao Bang, Thai Nguyen, Bac Kan, Ha Giang, Tuyen Quang and Lao Cai Provinces) (Pham Nhat, 2002). Due to habitat loss and hunting for food and commercial sale, populations now only occur in four provinces (Lang Son, Ha Giang, Bac Kan and Tuyen Quang) (Pham Nhat, 2002; Nadler et al., 2003). All remaining populations are small (<50 individuals), isolated, and vulnerable to extinction (Nadler et al., 2003). The population estimates for China is about 1,400 to 1,650 individuals (IUCN, 2010), whereas the remaining population in Vietnam is estimated to be less than 300 individuals (Nadler et al., 2003). Main threats to the Langurs are hunting and habitat destruction. (Gang Hu et al., 2004; Li Youbang et al., 2007; Nadler et al., 2003).

Ba Be National Park is located in Vietnam’s northern mountainous area and is home to several small groups of Francois’ langurs. According to previous reports, the maximum number of individuals in a group recorded in Ba Be National Park did not exceed six individuals (Nadler et al., 2003). However, verbal reports from local communities indicated the existence of about 13 individuals in the Dau Dang karst massif (F. Potess, pers. comm., 2009). A survey on the population status of *T. francoisi* in Ba Be aims to determine population status of *T. francoisi* at Ba Be National Park and identify current threats to the species and its habitat.

Methods

Description of the survey area

Ba Be National Park is located in Ba Be District, Bac Kan Province (Fig. 1.). The national park comprises 7,608 ha of which about 85% is forested. The park is divided into three functional zones, comprising a strict protected area of 3,226 ha, a forest rehabilitation area of 4,082 ha, and administration area of 300 ha (Committee, 2001; Bui Van Dinh, 2003). Steep limestone hills and valleys characterize the topography of the park. The elevation ranges between 150 to 1,121 m asl, with the highest peak Cang Lo. Many limestone caves are found along the steep cliffs, with Puong cave at 300 m in length being the largest one.

There are mainly three types of forest in Ba Be National Park: forest associated with limestone hills and mountains, evergreen forest, and bamboo forest. Limestone forest occupy most parts of the park and feature thick vegetation cover, while evergreen forest are distributed on low earthen hills covered with a thicker soil layer. The fauna of the Ba Be National Park is composed of 65 mammals, 214 birds, 46 reptiles and amphibians, and 87 fish species (Bui Van Dinh, 2003; Pham Nhat, 2003). Among the list, 55 species are recorded in the Vietnam Red Data Book. The occurrence of Francois’ langurs has given the park greater importance as a national and international conservation area.

Data collection

The survey was separated into two missions. The first mission was implemented between 13. to 26. February 2009 at Dau Dang and Pac Ngoi and the second from 16. to 22. November 2009 at Keo Cap, Pac Ngoi, Ta Han. The focus was on the four possible occurrence areas of the langurs:



Fig.1. Location of Ba Be National Park in northern Vietnam.

Dau Dang area (Khu Qua, Nam Dai, and Khu Cum), Keo Cap (Tang Tang, Na Dien, and Khu Cum), Pac Ngoi (Choc Thep, Na Phoon, and Lung Quang), and Ta Han. I surveyed for 216 hours and the total area covered was 47 km².

Interviews

A diverse number of local people ranging from villagers, hunters, and rangers belong to national park staff were interviewed before surveys commenced. Key informants were determined by who had seen the Francois' langurs in recent times. The purpose of the interviews was to collect general information on family groups and population of the species, diet, habitat preferences and current and past distribution in the area.

Species Presence/Absence Surveys

Existing trails, transects, and reported sleeping sites were used to survey the presence/absence of family groups of Francois' langurs. The presence/absence of the species was determined from both direct and indirect evidence and utilizing the methods documented in Ross & Reeve (2003):

- Direct observation of animals;
- Indirect observation of characteristic signs (tracks, faeces, feeding signs, vocalizations, etc.);
- Observation of animals captured or killed (care should be taken to ascertain where the animals were obtained); and
- Reports from local communities.

Group size and composition

Given the small population of Francois' langurs at Ba Be National Park, opportunistic census was used to count the total number of animals in groups encountered. More effort was paid to the sleeping sites early in the morning and late in the afternoon, since this allowed observers to have good visible count of a whole group of animals, and to determine their age, sex, and composition of the group.

Sleeping site surveys

Local reports, indirect and direct evidence, as well as full-day follow were used to determine current sleeping sites of the langurs. Attempts were also made to search for caves on the middle or tops of the cliffs and brown deposits of langur excrement just below the caves (Chengming Huang et al., 2002; Qihai Zhou et al., 2007). GPS and topographic maps were used to get locations and mark sleeping sites of the species on the map.

Threats

Information on the presence of traps, snares, guns, crossbows, camps, hunting dogs, forest clearance, timber-cutting, huts, non-timber forest product collection, and livestock grazing were recorded during the surveys to assess the human impact on Francois' langurs and its habitat, as well as on wildlife as a whole.

Results

Distribution and group size of Francois' langurs

Sighting of langurs during the survey were very rare. Most information on distribution and group sizes were based on local reports (Fig. 2). Details of local people's observation of the langurs during the survey, as well as their location and group size, are shown in Table 1.

Langurs were sighted twice in the Pac Ngoi area during the surveys. A group of four individuals was observed on 22. February 2009 (0564901E/2476206N) close to the Pac Ngoi cliff. The group included one adult male, one adult female, one juvenile, and one infant. Another group of two adult-size langurs were also seen on 20. November 2009 in Pac Ngoi area (0565280E/2475689N). The observers were unable to determine the composition of the group because observation duration was too short. The actual group size of these groups is likely to be larger, since the observers might have missed some animals hidden in the dense foliage.

Based on local reports, there seems to be another small group of six to eleven animals residing in Pac Ngoi area. Old faeces of langurs were found at Na Phoon cliff (0563623E/2476201N) where according to locals from Nam Cuong Village, a group of 6 animals including 2 juveniles spent approximately 10 days in September 2009.

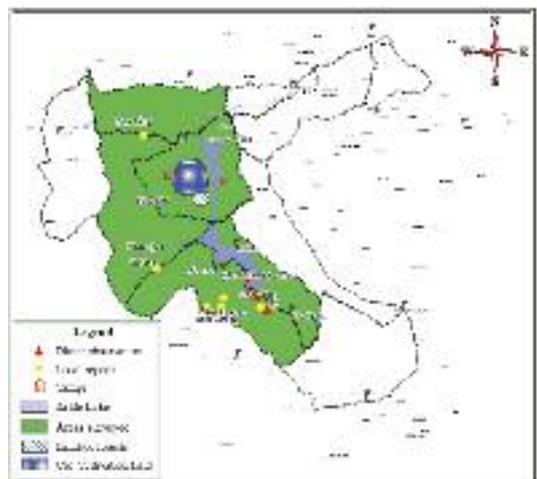


Fig. 2. Records of Francois' langurs (*Trachypithecus francoisi*) in Ba Be National Park.

Table 1. Records of Francois' langurs (*Trachypithecus francoisi*) at Dau Dang, Ta Han, Na Phoon, and Pac Ngoi areas, Ba Be National Park. (Historical records in Ba Be National Park prior 1989 see Nadler et al., 2003).

No.	Date	Sites	Locations (WGS84)	Group sizes	Evidence	References
1	August 1989	Dau Dang	?	?	One hunted individual	Ratajszczak et al., 1990
2	1994	Puong cave	?	?	?	Kemp et al., 1994
3	1996	Nam Dai (outside national park)	?	4 - 5	Sighting	Hill et al., 1996
4	April 1999	Pac Ngoi	?	6	Sighting	Nong The Dien, pers. comm.. 2000 (cited in Nadler et al., 2003)
5	2004	Dau Dang	?	13	Sighting	Potess, F., pers. comm. 2009
6	2009	Dau Dang	?	4-6	Sighting	T.Nadler, pers.comm. 2009
7	Dec. 2008	Na Phoon	0563541E 2475872N	4-6	Sighting	Hoang Phuc Thanh, Nam Cuong Village, pers. comm..
8	June 2008	Na Phoon	0563541E 2475872N	11	Sighting	Nguyen Van Tam, Na Ban ranger station, pers. comm..
9	10. Jan. 2008	Dau Dang	0560543E 2482765N	1 (4)	Sighting	Dong Van Cu, Dau Dang Village, pers. comm..
10	12. Jan. 2008	Dau Dang	0560543E 2482765N	4-6	Sighting	Nong Thi Moi, Dau Dang Village, pers. comm..
11	22. Feb. 2009	Pac Ngoi-Choc Thep	0564901E 2476206N	4	Sighting	This survey
12	April 2009	Ta Han cliff	0561043E 2477336N	1	Sighting	Hoang Van Khoanh, Coc Toc Village, pers. comm..
13	August 2009	Dau Dang	0560543E 2482765N	2	Sighting	Dong Van Cu, Dau Dang Village, pers. comm..
14	Sep. 2009	Na Phoon	0563623E 2476201N	6	Sighting	Hoang Phuc Thanh, Nam Cuong Village, pers. comm..
15	20. Sep. 2009	Pac Ngoi	0565280E 2475689N	2	Sighting	This survey

No signs of langurs were observed in other surveyed areas (Dau Dang, Keo Cap, Ta Han). However, groups of two to six animals have been recently seen by local people in these areas (Table 1). In Ta Han area, one adult-size animal was seen in Ta Han Cliff (0561043E/2477336N) in April 2009. The solitary animal spent two days in this area, emitted loud vocalizations and then disappeared (Hoang Van Khoanh, pers. comm.).

Sleeping sites

No sleeping sites of the langurs were determined during the survey, though efforts were made at dawn and dusk to search for possible sleeping sites. For instance, search was carried out at caves at middle or top of the cliffs near deep brown deposits of langur excrement in Dau Dang and Pac Ngoi cliffs. Two possible sleeping caves are located at Na Phoon cliff (0563623E/2476201N and 0563541E/2475872 N), where both local people and a forest ranger have seen langurs entering

the cave last year (Tam Thanh, pers. comm.). Furthermore, old faeces were also seen on the ground below the former cave. However, it is believed the langurs may have abandoned the later sleeping cave since 2008 due to the construction of an ecotourism road to Na Phoon Cave. This observation was confirmed by locals who admitted they had not seen the langurs since the roadwork started.

Threats to the Francois' langurs

Information on the presence of human activity in the forests was also recorded during the surveys. Signs of human activity can generally be grouped into two main categories: hunting (hunters encountered, gunshots heard, dogs, and campsites for hunting) and habitat destruction (illegal logging, stacked timber, campsites for logging, fire wood and bamboo shoot collection, livestock grazing and cutting trees for grazing).

Hunting

Hunting activities appeared to remain in some parts of the survey areas. The team encountered hunters in Pac Ngoi area. Gunshots were heard several times during the first few days of each survey mission in all survey areas, and appeared to reduce during the proceeding days probably due to the presence of the surveyors and park rangers. The use of guns for hunting seemed to be more prevalent and extensive in Dau Dang, Kep Cap and Ta Han areas than at Pac Ngoi. Old hunting campsites were observed in all survey areas.

Hunting signs were generally found in the more remote and difficult (terrain wise) areas, which hold better quality forest habitat, are more remote from established ranger stations and are less regularly visited by park rangers.

Direct evidence of killed langurs was not found during the survey. Local people reported that they once used to kill langurs to consume their meat and to make a medicine from their bones, called "cao". This product can be used for domestic family medicinal purposes, sold in locals markets and to traders. The purposes of hunting langurs may have changed from the past, as a whole animal can be sold now for VND 200.000/kg (ca. USD10/kg). It is also believed that the gall bladders of the langurs are of higher quality than those of bears for customary medicinal purposes. This may create a demand on langurs.

Habitat Destruction

Habitat destruction observed in some parts of the forest, had an impact on the forest integrity. Evidence of habitat destruction observed included trees cut for timber, stacked timber boards, campsites for logging, well used trails for transporting logs, non-timber forest product collection, livestock grazing and cutting trees for grazing fodder.

Trees cut for timber and stacked timber boards were encountered along existing trails in the forest. Much of the felling was undertaken with the use of chainsaws rather than with traditional pit sawing methods. Illegal logging often takes place at night or early morning and is very difficult to control since only a small number of park rangers are available on site. The trees cut are often large and valuable timber species such as Tong Du (*Toona sinensis*), Nghien (*Burretiodendron hsienmu*).

Livestock grazing and cutting trees for grazing are also having an impact on the habitat of the langurs and wildlife in general. This activity is far less widespread than hunting and illegal logging. Livestock grazing often takes place at abandoned cultivations and lower elevation sites in the

forest. In most cases, the tree cut for grazing is *Streblus brenieri*.

Bamboo shoot collection by local people occurs between June and September in the Keo Cap area where there are several patches of bamboo forest. Collectors harvested fresh bamboo shoots and often dried the vast majority of product inside the forest. Dried bamboo shoot products are then transported out of the forest and sold to traders or in local markets, attracting a local value of VND 70-80.000/kg.

Firewood collection is also traditional and cultural customs of ethnic minority groups. Several times the survey team encountered groups of three to six people cutting firewood inside known langur habitat in Pac Ngoi area.

Discussion

Distribution and group size

The results indicate that the distribution of langurs is now restricted to three areas: Dau Dang, Pac Ngoi, and Ta Han. Records are extremely rare, only 15 records in 20 years (Table 1). Group size is also extremely low compared with those in reports on surveys in China. Historically, Francois' langurs were found in a number of areas within the Ba Be National Park (Nadler et al., 2003). The mean group size of Francois' langurs in China is seven (Li Youbang et al., 2007) and mean densities are 0.6 - 1.2 individuals/km² (Gang Hu et al., 2004). A possible explanation for these differences is the degree of pressure from threats (especially hunting) to the langurs. Encounter rates of signs of human impacts are high.

Threats to Francois' langurs

The results of the surveys show that hunting and habitat destruction are the main threats to the species. Hunting for meat and traditional medicine has been recorded in previous reports (Nguyen Xuan Dang et al., 2006; Li Youbang et al., 2007; Nadler et al., 2003). Although there was no direct evidence of hunting langurs during the survey, however according to local reports the species used to be hunted for food and traditional medicine purposes. The langurs are usually shot or trapped. Information supplied by local people indicates that shotguns have been and perhaps continue to be used to shoot langurs. Traps have not previously been reported. However, reports from local sources indicate that one individual was trapped last year in the Pac Ngoi area.

Habitat destruction is also an important factor contributing to the decline. Habitat destruction generally takes the form of logging, subsistence farming, grazing, firewood collection and non-timber forest product collection.

Conclusions

The distribution of Francois' langurs appeared to be restricted to three locations within Ba Be National Park: Dau Dang, Pac Ngoi and Ta Han areas. Sightings of langurs are very rare. Two groups of two and four animals were detected during this survey in the Pac Ngoi area. Group size seems to be lower than that in China. These surveys appear to suggest a downward trend of population numbers of Francois' langurs in Ba Be National Park

Like in other primate populations, hunting and habitat destruction are the main threats to species and its habitat. Illegal logging poses a serious threat to the habitat of Francois' langurs, and shotguns and traps are identified as the main methods used for hunting. Both activities were often observed in remote and difficult access areas where the influence and presence of park rangers is irregular due to limited number of staff.

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