

Survey for southern white-cheeked gibbons (*Nomascus leucogenys siki*) in Dak Rong Nature Reserve, Quang Tri Province, Vietnam

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Summary

Dak Rong is the only protected area in Quang Tri Province. The reserve is identified as an important stronghold for a number of endangered mammals including the Indochinese tiger (*Panthera tigris*), gaur (*Bos gaurus*), saola (*Pseudoryx nghetinhensis*), and red-shanked douc (*Pygathrix nemaeus*). Results of our gibbon survey in 2003, 2004, and 2006 showed that the nature reserve is one of the most important distribution sites of the southern-white checked gibbon (*Nomascus leucogenys siki*) and red shanked douc. Gibbon distributes in Dakrong is concentrate particularly in two areas of the nature reserve: 1. A Cho1-A Cho2-Ba Le-A Pong area and 2. the forest are of Ta Long, Trieu Nguyen, Ba Long, Hai Phuc communes. In addition, Dakrong and Phong Dien Nature Reserves together form an important conservation area especially for gibbon and douc in the north central region of Vietnam.

Hunting and snare trapping poses a serious threat to terrestrial mammals and also to some macaque species in the area. Habitat degradation and disturbance by human activities such as hunting and logging also poses a serious threat to the nature reserve and primate habitat in the area. There is still discussion on the taxonomy of gibbons in Dakrong, therefore, further studies are crucial to clarify which gibbon taxon occurs in the nature reserve and this information will aid in developing an effective conservation action for gibbons in this important nature reserve.

Điều tra vượn đen má trắng siki (*Nomascus leucogenys siki*) ở Khu bảo tồn Thiên nhiên Đak Rông, tỉnh Quảng Trị, Việt Nam

Tóm tắt

Đak Rông là Khu bảo tồn Thiên nhiên duy nhất hiện nay được thành lập ở tỉnh Quảng Trị. Đak Rông cũng được đánh giá là một trong những khu vực phân bố quan trọng của nhiều loài động vật nguy cấp như hổ đông dương (*Panthera tigris*), bò tót (*Bos gaurus*), sao la (*Pseudoryx nghetinhensis*) và chà vá chân nâu (*Pygathrix nemaeus*). Kết quả điều tra vượn và linh trưởng trong các năm 2003, 2004 và 2006 của chúng tôi đã cho thấy Đak Rông là một trong những vùng phân bố quan trọng nhất của hai loài vượn đen má trắng (*Nomascus leucogenys siki*) và chà vá chân đỏ ở Việt Nam. Phân bố của vượn ở Đak Rông chủ yếu tập trung ở hai khu vực chính là (i) khu vực A Cho1-A Cho2-Ba Lê-A Pong và (ii) khu vực rừng nằm giữa các xã Ta Long, Triệu Nguyễn, Ba Long và Hai Phúc.

Săn bắn và bẫy bắt bất hợp pháp là những nguyên nhân chính ảnh hưởng đến quần thể các loài động vật ở Đak Rông, bên cạnh đó suy thoái sinh cảnh sống và sinh cảnh sống bị quấy rầy là những ảnh hưởng chính tác động đến sự tồn tại của vượn và các loài linh trưởng ở khu vực. Hiện nay, vẫn còn một số tranh luận về phân loại học của loài vượn đang tồn tại ở Đak Rông, vì thế, các nghiên cứu nhằm khẳng định về phân loại học của loài vượn ở đây là rất cần thiết và sẽ giúp ích to lớn cho việc bảo tồn loài vượn ở Khu bảo tồn quan trọng này.

Introduction

Dak Rong Nature Reserve (NR) is not only the newest nature reserve of Vietnam, but also the

only protected area in Quang Tri Province. The protected area covers 40,253 hectares of natural forest. The nature reserve connects with Phong Dien Nature Reserve (Thua Thien Hue Province), making the area a large block of protected natural forest, as well as an important conservation site for Truong Son Mountains within the two provinces. Dak Rong NR is located on a low mountainous area of the Truong Son range. This nature reserve is also the boundary of Quang Tri and Thua Thien Hue Provinces (CRES, 2005). The average elevation for the mountains of the reserve ranges from 500 m to 1,102 m asl from Ba Le Mountain to Ba Long area (Anon., 2000; CRES, 2005). The general terrain is strongly influenced by mountains, valleys, and streams. Dak Rong forest is a watershed forest for the Dak Rong and Thanh Han Rivers and other important streams in the area which provide irrigation for 6 communes and the Dak Rong District surrounding the nature reserve.

At present, there are confirmed to occur in the nature reserve: 1,053 species of plants, 17 species of amphibians, 32 species of reptiles, 72 species of fish, 193 species of birds and 67 species of mammals (excluding bats and some rodents). Among the mammals, there are several globally endangered species, including the gaur (*Bos gaurus*), saola (*Pseudoryx nghetinhensis*), giant muntjak (*Muntiacus vuquangensis*), tiger (*Panthera tigris*), red shanked douc (*Pygathrix nemaeus*) and white-cheeked gibbon (*Nomascus leucogenys siki*) (Anon., 2000; CRES, 2005; Nguyen Manh Ha, 2005).

The white-cheeked gibbon is identified as one of the most endangered primates in Vietnam (Geismann *et al.*, 2000; Government of Vietnam, 2006). In Vietnam, the distribution of this gibbon is limited to the western part of the Da River and the southern most distribution of this species is Bach Ma National Park, Thua Thien Hue province (Dao Van Tien, 1983; Pham Nhat, 2002). In a gibbon survey in the north-central region identified, Dak Rong as the most important distribution stronghold for this gibbon taxa for its entire range in Vietnam (Nguyen Manh Ha, 2005). This gibbon is seriously threatened in Vietnam due to accelerated deforestation, illegal hunting, and trade throughout all of its range (Nguyen Manh Ha, 2005; Geissmann *et al.*, 2000; Ministry of Science, Technology and Environment, 2000). Nevertheless, information on this endangered primate is lacking, with uncertain population numbers and distribution, and there are no estimated population sizes at national or even local level.

Hence, in this 2nd survey, we wish to collect more information on the population status and distribution of the white-cheeked crested gibbon in Dak Rong NR. This survey yields a clearer view of the gibbon's status in the nature reserve, with recommendations for follow-up conservation work for this endangered species in the nature reserve and the north-central region of Vietnam.

Field surveys were carried out in Dak Rong from January 12 to January 23, 2006 and additional field surveys were conducted from June 11 to June 18, 2006. The survey team was a combination of one researcher from CRES, and two rangers from the Dak Rong NR. Surveys focused on two major areas in the nature reserve: one in the south-west part (Hong Thuy, A Bung, Ta Long and Huc Nghi communes) and one in the north-east part (Trieu Nguyen, Ba Long, Hai Phuc communes). These two areas were identified as the most concentrated distribution areas for gibbons in the nature reserve previously (Nguyen Manh Ha, 2005).

Methods

Methods used in this survey followed the primate training manual (Long *et al.*, 2004). However, the most important methods are briefly described below:

Interviewing survey

Rapid interviewing trips were made to 9 villages in Hong Thuy, A Bung, Huc Nghi, Ta Long, Trieu Nguyen, Ba Long and Hai Phuc Communes. The purpose of the interviews was to collect updated information on gibbon presence in the area and to identify the local consumption or hunting of wildlife products to provide the survey team better information on the human impact on the fauna (including gibbons) in the nature reserve. In addition, these interviews provided reliable information allowing the team to make an effective survey schedule in areas where gibbons appeared the most frequently in the nature reserve.

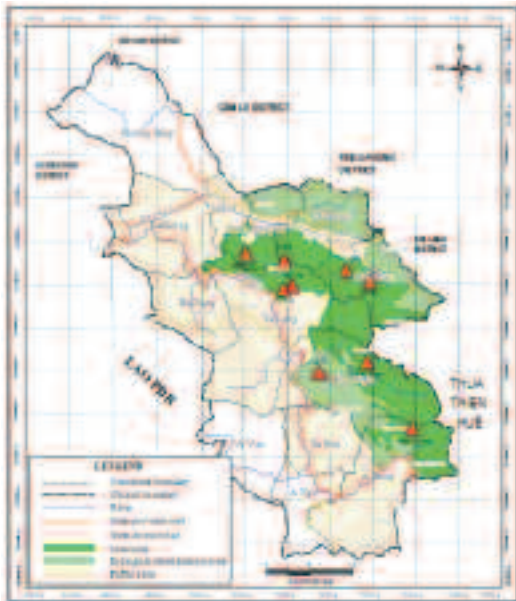


Fig. 1. Gibbon records in Dak Rong Nature Reserve, Quang Tri Province.

Transect survey

Nine random transect surveys were made. The length of transects were approximately 2 to 4 km, for a total of about 26 km during the surveys. The regular time of the transect walks were 09:00 to 11:00 and 14:00 to 16:00. In general, transect surveys were made after the survey team finished at listening posts. However, due to the extreme isolation of the mountainous terrain and the very dense and closed tropical forest canopy which limited observation distance (limited 10 to 15 metres), consequently, no gibbons were observed during the transects.

Listening post survey

Six listening posts were set up on mountain peaks and ridge tops for gibbon surveys. Each listening post was spaced 1 to 1.5 km apart to avoid duplicating the survey for the same gibbon group. Gibbon records were marked daily on a topographic map for gibbon census in the survey area.

The times spent at the listening posts were from 05:00 to 11:00. Survey team (three people) arrived at the listening post before 05:00. The compass and recording equipment were ready to go, and at 09:00 two people left the post for transect surveys. One ranger remained in the post for listening surveys until 11:00. Each listening post was surveyed for three days continuously (three listening posts were surveyed for four days due to bad weather).

Six groups of gibbons were tape recorded for future sonographic analysis and other conservation purposes.

Ranger Training

The survey provided field training for gibbon and primate survey skills for two rangers in the nature reserve. The rangers had good opportunities to learn and practice field survey skills and using field equipment such as unidirectional microphones and field recording equipment for gibbon survey, gibbon census techniques, and primate species identification. In addition, other field survey skills including using a GPS, reading a map, and using a compass were transferred to the rangers. These essential field survey skills will help the rangers in the protection of biodiversity of the Dak Rong NR.

Results

Gibbon records

During our survey, a minimum of 12 gibbon groups were confirmed by sound (Fig. 1). Bad weather and continuous raining during this survey may have limited the number of gibbon groups recorded as well as difficulties for the team while moving from camps within the survey area. However, results of the interview surveys suggested that the local population of gibbons had likely increase during the past few years as a consequence of improved forest protection activities and no gibbon hunting in the area.

In addition, information from our previous gibbon and mammal surveys in 2003 and 2004, (Nguyen Manh Ha, 2004; Nguyen Manh Ha, 2005) combined with this survey suggests that the forest complex A Cho1-A Cho2-Ba Le-A Pong (within Hong Thuy, A Bung, Ta Long and Huc Nghi communes) and forest complex within Ta Long, Trieu Nguyen, Ba Long, Hai Phuc communes are the two main gibbon distribution areas in Dak Rong (CRES, 2005; Nguyen Manh Ha, 2004; Nguyen Manh Ha, 2005).



Fig. 2. Habitat in Dak Rong Nature Reserve, Quang Tri Province. Photo: Nguyen Manh Ha.

The reasons for the gibbon concentration in these areas include the following: the areas include a major portion of the primary forest in the nature reserve; and these forest complexes are located away from local villages which may limit the impact from human activities to these forest resources (Fig. 2).

Among the 12 groups of gibbons recorded, most singing bouts range from 05:32 to 07:07 with the longest song bout being 17 minutes and the shortest bout being 05 minutes. The effects of weather on the singing behaviour of gibbons was clearly shown during the survey, e.g. in at least 3 listening posts, the gibbons did not sing until the third day of the survey due to raining and heavy fog. Conversely, the gibbons sang all morning when it was sunny (at least 3 posts had gibbons sing the entire three morning of surveying).

In comparison within the range of white-checked gibbons in the north-central region, Dak Rong is likely the most important area for this taxon (Nguyen Manh Ha, 2005). The reason that makes this area a stronghold for the white-cheeked gibbon is that Dak Rong and its neighbour Phong Dien NR combin to form a large block of natural forest (more than 80,000 ha of natural forest). Hence, this significant forest area probably forms a favourable habitat for the development of a sustain gibbon population in Dak Rong and Phong Dien.

Threats to gibbons and other conservation issues

Deforestation remains the most serious threat to wildlife (including gibbons) in Dak Rong NR. Evidence of deforestation in the forest area surrounding Dak Rong is clearly present, and this nature reserve now only connects to Phong Dien NR. These two nature reserves connect to form a green island.

Forest degradation by illegal logging is also a common phenomenon that occurs in the north and north-eastern part of the nature reserve. During our survey, at least 4 illegal logging places were recorded in the area of Ba Long and Trieu Nguyen Communes, and two others were recorded at Ta Lao and Huc Nghi. Local residents log for local consumption (housing and furniture) and a large part of logging is used for commercial purpose. Logging activity not only degrades the forest quality but also causes disturbance to the ecosystem.

Hunting and snare trapping are serious conservation problems in Dak Rong. Snare traps were



Fig. 3. Confiscated snare traps in a hunter camp.
Photo: Nguyen Manh Ha.



Fig. 4. Ammunition collected in Dak Rong Nature Reserve.
Photo: Nguyen Manh Ha.

recorded in the forest area of Hong Thuy, Ta Long, and Trieu Nguyen Communes (Fig. 3). Additionally, 100 snare traps were found in A Cho forest (Hong Thuy commune) and a hundred more were set in lesser concentrations in Ta Long and Trieu Nguyen. In addition, according to local information, there were hundreds more set up along the border of Dak Rong and Thua Thien Hue Province (Phong Dien NR). According to the nature reserve management board, snare trapping poses a serious threat to the mammals of Dak Rong, especially ungulates, cats, macaques, civets, as well as other animals. Hunting, using military gun, is also a critical threat to animals in the area. We met one group of two hunters using SKS military rifles (7.62x39 mm) in Dak Rong (Ba Le, Hong Thuy). The hunters informed us that they would hunt whatever mammals they found in the forest; however ungulates, large cats, bears, and primates are preferred! They confirmed that there are no exclusions for gibbons or any other endangered mammals during their hunting trip. Nevertheless, there were recent records of gibbons being killed by hunters in Dak Rong; however, we do not know if gibbons are a targeted species for hunting in the area.

War materials and unexploded ordinance collection is also common in the nature reserve (Fig. 4). Three groups of collectors were observed in the forest of Hong Thuy. The collectors travel in groups of 3-5 people to collect various types of war materials such as steel, bullets, un-exploded bombs, and other ordinance. Many people travel in search of material in the forest and probably cause a significant amount of disturbance to the natural habitat. In addition, the collectors sometimes burn collected materials causing explosions, this activity yields extreme disturbance in the forest and can lead to forest fires.

Discussion

Dak Rong NR is located between the natural range of two gibbon taxa: the yellow-checked gibbon (*Nomascus gabriellae*) and southern white-cheeked gibbon (*Nomascus leucogenys siki*). Because of this there has been recent discussion about the taxonomy of gibbons in Dak Rong. Are these yellow-cheeked gibbons, southern white-cheeked gibbons, hybrids or a third taxon? Therefore, additional taxonomic attention needs to be focused on these gibbons to help direct future conservation action in this area.

A comprehensive gibbon and endangered primate survey needs to be carried out for the forest complex that encompasses Phong Dien-Dak Rong Nature Reserves in order to provide further information about the status of gibbons and other endangered primates in this important area. In addition, a gibbon and endangered primate monitoring program is crucial to understand how populations of these species are changing.

Hunting and trapping are still big challenges to conservation in the area; therefore, effective enforcement of the law to control hunting and trapping is a crucial need in these nature reserves to ensure the survival and development of wildlife in this area.

During this survey only 12 gibbon groups were recorded. This record is lower than the record of a minimum of 25 groups in 2004 and 2005 (Nguyen Manh Ha, 2004 and Nguyen Manh Ha, 2005). Bad weather including rain may have influenced the survey results as well. There are two main distribution areas for gibbon in the nature reserve. These areas are A Cho1-A Cho2-Ba Le-A Pong area and the forest of Ta Long, Trieu Nguyen, Ba Long, Hai Phuc Communes. Dak Rong combines with Phong Dien Nature Reserve (Thua Thien Hue Province) to form a large forest complex in the north-central region of Vietnam providing suitable habitat for survival and development of gibbon populations in Quang Tri and Thua Thien Hue Provinces. Deforestation and nature forest degradation are continue to be major threats to gibbons in the area. In addition, hunting and snare traps pose serious threats to the mammals in Dak Rong NR.

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