First field data on the Laotian black crested gibbon (*Nomascus concolor lu*) of the Nam Kan area of Laos

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The enigmatic Laotian black crested gibbon (*Nomascus concolor lu*) has not been studied since its discovery in 1939, and its distribution area in northwestern Laos is a biogeographic anomaly. I carried out a gibbon survey in the Nam Kan Valley of Bokeo Province (northwestern Laos), confirming the continued occurrence of this gibbon in Nam Kan. The study site appears to be situated very close to the original type locality. During a four-week study I collected preliminary data on vocal behaviour, population density, group composition, conservation status and systematic affinities of this gibbon. In addition, interviews with the area's inhabitants revealed that Nam Kan Valley appears to be one of the very few places where gibbons are not hunted by the local ethnic group, which gives some hope for their continued survival.

Introduction

The Laotian black crested gibbon is one of the few gibbon populations that remains entirely unstudied in the wild. In January 1939, black crested gibbons (*Nomascus concolor*) were discovered during a French-American collecting expedition to Ban Nam-Khueng (20°25'N, 100°14'E, northwest Laos). A dozen individuals were collected, which were subsequently described as a new subspecies (*N. c. lu*) by Delacour (1951). Unfortunately, a re-examination of most of the available museum specimens by Geissmann (1989) suggested that the features distinguishing this form from *N. c. concolor*, as reported by Delacour, were not reliable, and the systematical distinctiveness of *N. c. lu* must be regarded as questionable (Geissmann, 1995). This was further supported when the remaining museum specimens were also examined (Geissmann *et al.*, 2000, and Geissmann, unpublished data).

Darker fur colouration, which was originally considered to be distinctive for females of *lu*, turned out to be based on inclusion of subadult females which have not completely finished their colour change from juvenile black to adult yellow. Fully adult females do not exhibit these characteristics. Males of *N. c. lu* have also been reported to exhibit a silvery-black line between eye and ear (Delacour, 1951). This characteristic does not occur in all specimens of *N. c. lu*, however, and moreover also occurs from time to time in other crested gibbons. Therefore, this characteristic does not appear to be of diagnostic value for identification of this taxon (Geissmann, 1989).

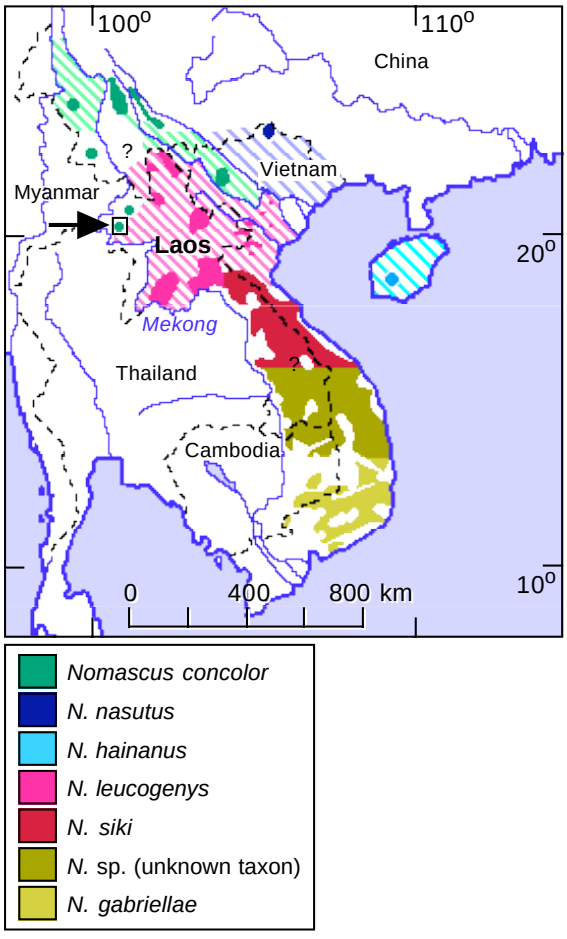

Fig. 1. Map showing Indochina and the distribution of the crested gibbons (genus *Nomascus*). The arrow indicates the location of the Nam Kan PPA – *Die Karte zeigt Indochina und die Verbreitung der Schopfgibbons (Gattung* Nomasus*). Der Pfeil zeigt die Lage des Nam Kan Provinz-Schutzgebietes (PPA).*

Regardless of whether the Laotian black crested gibbon is a distinct taxon or not, it certainly remains one of the most enigmatic of gibbon populations. In addition to its completely unknown status in the wild and questionable taxonomic status, these gibbons also exhibit an unusual, geographically isolated distribution. It is situated as an enclave within the distribution of the white-cheeked crested gibbon (*N. leucogenys*), some 100 km away from the nearest populations of *N. concolor* in northwest Vietnam and the Chinese Yunnan Province (Fig. 1). The distribution of the Laotian black crested gibbon appears to be restricted to a relatively small area near the east bank of the Mekong River, the opposite side of which marks the beginning of the distribution area of the white-handed gibbon (*Hylobates lar*), a representative of an entirely different gibbon genus.

After the type series of the Laotian black crested gibbon was collected in 1939, only very little information on this population became available. The position of the locality within the infamous "golden triangle" between Myanmar, Laos and Thailand made field research impossible for many years. Indeed, for a long time it was unknown whether gibbons still occurred in the area at all, until members of the French ecotourism project Forespace (J.-F. Reumaux, pers. comm. 1998) reported having seen some in the Nam Kan Provincial Protected Area (PPA) in Bokeo Province (northwest Laos). More recently, a few additional groups were discovered during surveys in the Nam Ha National Protected Area (NPA) in Luang Namtha Province, to the northeast of Nam Kan (Johnson *et al.*, 2005). Because the Nam Kan area is relatively close to the type locality of *N. c. lu*, I decided to carry out a brief survey to identify the gibbons, record their calls, and collect data on their status and biology.

The location of the common distribution boundary between *N. concolor* and *N. leucogenys* in Laos is unknown. Because rivers often act as distribution barriers for gibbon populations (e.g. Marshall and Sugardjito, 1986), I also carried out a rapid survey along the lower run of the Nam Tha River. This tributary to the Mekong River south of Nam Kan PPA is one possible candidate for the boundary between the two *Nomascus* species.

Material and Methods

The Nam Kan PPA (Fig. 2) covers an area of 775 km^2 at altitudes ranging from 440 to 1468 metres. Its limits were defined by a Department of Forestry study in 1993 (Forespace, 1999). The Bokeo Agriculture and Forestry Office has requested that the Nam Kan PPA be considered as a National Protected Area; but this area has not been selected to date. It is not clear what protective role the province presently plays in the Nam Kan Provincial Protected Area (WCS, 2003).

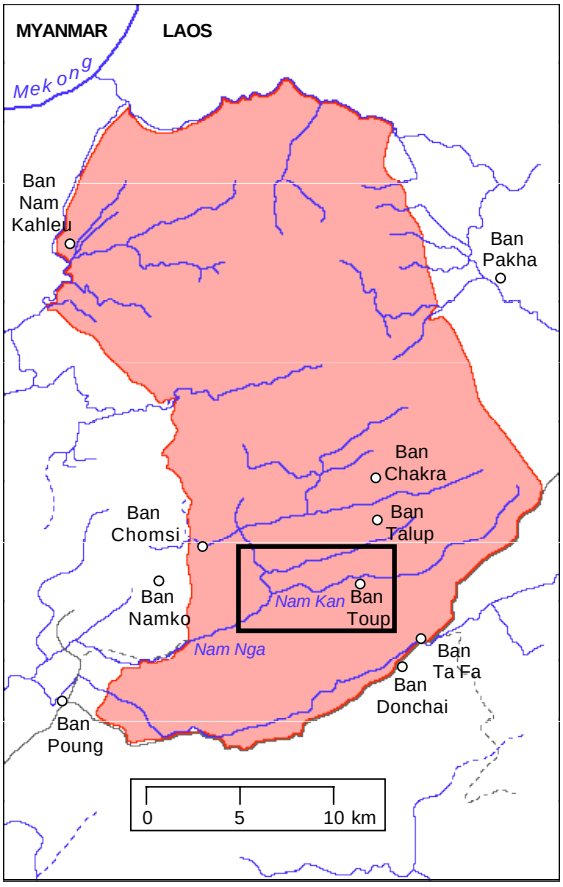

Fig. 2. Map showing the Nam Kan Provincial Protected Area (red area). The black rectangle indicates the study area in the Nam Kan Valley. – *Karte des Nam Kan Provinz-Schutzgebietes (rote Fläche). Das schwarze Viereck bezeichnet das Untersuchungsgebiet im Tal des Nam Kan Flusses.*

The reserve's southern access at Ban Donchai city is situated 48 km eastnortheast of Huay Xai (Houayxay), the capital of Bokeo Province.

This survey covers the central part of the Nam Kan Valley in the southern half of the reserve (Fig. 3). Ban Toup is the main village of this valley and belongs to the Hmong ethnic group. Field data were collected during 14 full survey days in March 1999. The area was surveyed from east to west as follows: 6–9 March west of Ban Toup village (= Ban Champa, Camp 1, 20°28.42'N, 100°48.02'E), 10–13 March around Ban Lao Xor village (Camp 2, 20°28.42'N, 100°47.17'E), and 14–19 March at the Forespace resort (Camp 3, 20°27.70'N, 100°45.03'E) (see also Forespace, 1999).

Laos is a monsoon country, with a rainy season from May to September and a dry one from October to April (Forespace, 1999). During the survey, the minimum nighttime temperature (mean±SD) was 13.3±2.0°C (range 11-17°C, n = 13) and the maximum daytime temperature was 31.8±2.1°C (range 28-35°C, n = 12); while the minimum daytime air humidity was 23.4±18.1% (range 0-43%, n = 12) and the maximum during the night 99.6±0.9% (range 97-100%, n = 13).

Fig. 3. The Nam Kan River near Camp 3. Photo: Thomas Geissmann. – *Der Nam Kan Fluss in der Nähe von Camp 3.*

The auditory survey technique was employed to assess the gibbon population size (modified from Brockelman and Ali, 1987). In addition to eight days of single listening point surveys, the survey team split into two pairs on six days, stationed at neighbouring listening points, in order to locate the calling groups by mapping the compass bearing and estimated distance to groups from two known locations. A total of eight listening points, stationed roughly 0.5-2 km apart, were used in order to locate the calling groups (Fig.8). Each listening point was used on 1 to 5 days (mean = 2.6, SD = 1.5).

Surveys began at 05:00 hours, in order to be in position during the peak singing time of the gibbons, and variably ended between 11:00 and 14:00 hours. In addition, several surveys were carried out in the afternoons until 17:00, although no gibbons were observed or heard then. Listening posts were located on hills or ridges from which several valleys could be acoustically surveyed at once.

The following information was recorded: time of arrival at and departure from the observation post; time of dawn as judged from when the observer could recognize the green colour of leaves near the forest floor; local time of sunrise (i.e. the time at which the sun was visible over the horizon); gibbon calls. In terms of vocal behaviour, start and end time of calling bouts were recorded, as were the number of males and great calling individuals, the compass bearing and estimated distance to group, and visual information on group location when the terrain was visible from the observation post.

In addition to this work, a rapid survey along the Nam Tha River was carried out on 21-23 March 1999. Interviews were carried out at Ban Paktha (20°06.6'N, 100°35.7'E), a village located where the Nam Tha joins the Mekong, about 27 km southeast of Huay Xai (Houayxay), and in two villages upstream of the Nam Tha: Ban Don Savan (20°07.9'N, 100°38.9'E), and Ban Pakhat (20°08.8'N, 100°43.1'E), located some 6 km and 13 km northeast of Ban Paktha, respectively. From Ban Pakhat, I followed the little Nam Hat tributary upstream to the southeast and conducted further interviews in four villages on the left bank, up to 25 km southeast of Ban Paktha. Villages visited included Ban Xai Savan (20°06.1'N, 100°48.5'E), Ban Xai Oudom (20°05.7'N, 100°48.9'E), Ban Punxay (20°05.3'N, 100°49.2'E), and Ban Thin Keo (20°04.8'N, 100°49.6'E). Interview questions included: 1. "Do you know gibbons?" 2. "What do they look like?" 3. "Where do they live?" 4. "When did you last see or hear gibbons?"

Calling bouts were recorded on two sets of tape recorders: (1) Sony WM-D6C tape-recorder equipped with a JVC MZ-707 directional microphone; (2) Sony TC-D5M tape-recorder equipped with a Sennheiser ME80 (+K3U) directional microphone.

Tape recordings were digitized with a sampling rate of 22 kHz and a sample size of 16 bits. I generated sonograms (time vs. frequency displays) of the sound material via the Canary version 1.2.4 software (Cornell Laboratory of Ornithology) on a Macintosh PowerBook G4. The latter were computed by Fast Fourier Transformation (FFT). The FFT size of the sonograms was 4096 points with a time resolution of 128 points, overlap of 87.5%, frequency resolution of 5.38 Hz, and frame length of 4,096 points (Charif *et al.*, 1995).

Results from the Nam Kan survey

Gibbon habitat in the survey area mainly occurred at altitudes above 550 m (Figs. 4 and 5). Lower parts of the valley were mostly deforested (Fig. 6), or covered with secondary forest, or – in the westernmost part of the survey area – consisted of selectively logged forest.

Fig. 4. Inside the forest near Listening Post 2 (left), and near Camp 3, the only place in the survey area where some remnants of the primary forest remained below 550 m (right). Photos: Thomas Geissmann. – *Das Waldesinnere beim Hörposten 2 (links) und in der Nähe von Camp 3, dem einzigen Ort des Untersuchungsgebietes an dem noch Reste des Primärwaldes unterhalb von 550 m gefunden wurden.*

Fig. 5. Crown layer of the forest near Listening Post 5 (left), and near Listening Post 6 (right). Photos: Thomas Geissmann. – *Kronenregion des Waldes beim Hörposten 5 (links) und beim Hörposten 6.*

Fig. 6. Lower parts of the Nam Kan Valley are mostly deforested or covered with secondary forest, as shown at Camp 2 near Ban Lao Xor (left). Some secondary forest between Camp 2 and Camp 3 was freshly cut (right). Photos: Thomas Geissmann. – *Tiefliegende Gebiete des Nam Kan Tales waren zumeist entwalded oder trugen Sekundärwald wie die Gegend bei Camp 2 in der Nähe von Ban Lao Xor (links). Der Sekundärwald zwischen Camp 2 und 3 war stellenweise frisch gerodet worden (rechts).*

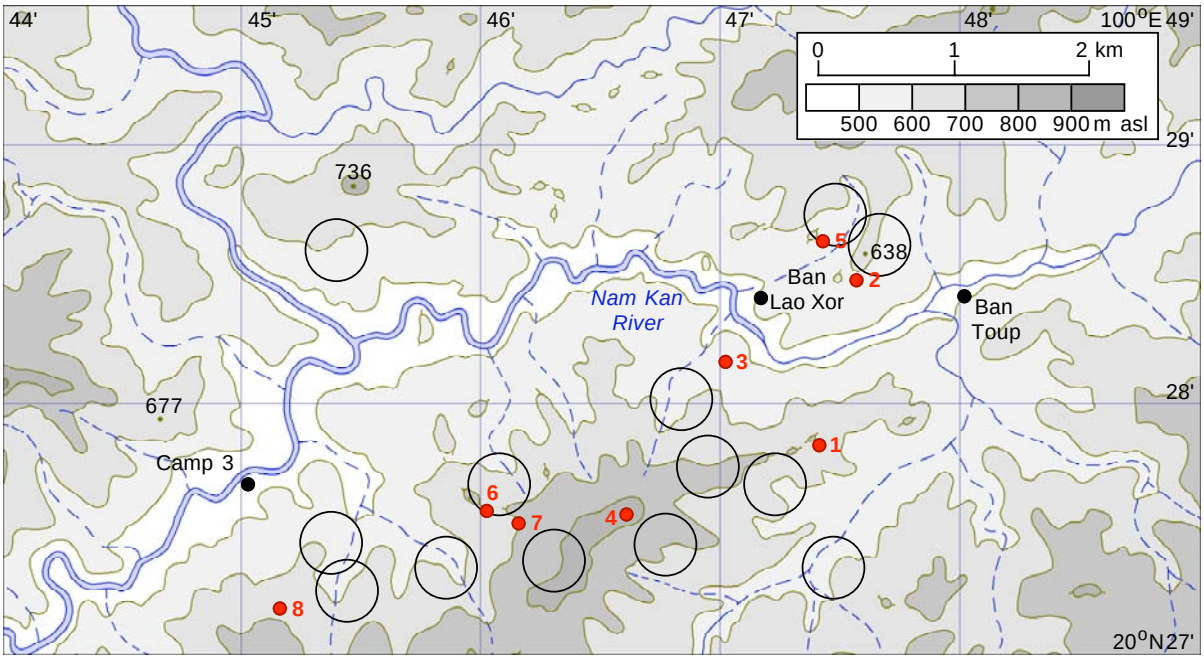

Fig. 7. Map of the survey area. Red dots (numbered 1 through 8) indicate the location of listening posts used during this study; open circles indicate the approximate distribution of gibbon groups heard during the survey. – *Karte des Untersuchungsgebietes im Nam Kan Tal. Rote Punkte (nummeriert von 1 bis 8) bezeichnen die Hörposten, von denen aus die Gibbongesänge überwacht wurden, und die Kreise zeigen die ungefähre Verteilung der gehörten Gibbongruppen.*

During our survey in the Nam Kan PPA we heard a total of 62 gibbon song bouts (counting only those heard during full days in the forest, i.e. 14 days). Based on location of singing groups and temporal overlap between song bouts, we estimate that we heard at least 13 distinct gibbon groups (Fig. 7). On average (±SD), we heard a total of 4.4±1.7 bouts per day (range 1-7, n = 14) and 4.0±1.6 bouts per listening point (range 1-7, n = 14).

As we acoustically surveyed an area of roughly 6 km^2, gibbon density can be tentatively estimated as 2.2 groups/km^2.

Two gibbon groups were directly observed during the survey, both near camp 3. One group contained three individuals (an adult pair and one black infant), the other four individuals (an adult pair, one juvenile, and one black infant). Both groups fled immediately upon noticing the observers. As forest is only left on steeper hills and few paths were available inside the forest, following the gibbons was difficult. Yet, one of the latter two groups, after having been twice relocated by us, was subsequently followed during a 20-minute period. Group compositions observed during this study, as well as compositions reported by our guides during this survey, are listed in Table 1 and suggest an average group size of 3.6–3.8 individuals (standard deviation 1.1–1.4 individuals). Based on this estimated group size, gibbon population density in the Nam Kan Valley can be tentatively inferred to be around 8–8.4 individuals/km^2.

Table 1. Gibbon group compositions in the Nam Kan Valley. Observers were not confident about the presence of the individual in parenthesis. – *Zusammensetzung von beobachteten Gibbongruppen im Nam Kan Tal. Über die Präsenz des Individuums in Klammern waren sich die Beobachter nicht sicher.*

Group No.	Composition				Total
	Adult male	Adult female	Juve-nile	Infant	
Direct observation during this study					
1	1	1	1	1	4
2	1	1		1	3
Reported by guides					
3	1(+1)	2	2		5(+1)
4	1	2	1	2	4
3	1	1			2
Total	5(+1)	7	4	4	18(+1)

The distribution of gibbon calls across the day is shown in Fig. 8. The gibbons exhibited a preferred calling time right after dawn, with 64.5% of all song bouts (40 out of 62) produced between 06:00 and 07:00 hours. On average, the first song bout per day started at 06:26±00:15 hours (range 06:14-07:02, n = 15, while the last song bout per day started at 08:37±02:24 hours (range 06:30-12:32 hours, n = 14).

Song bouts had an average duration of 11.7 minutes (standard deviation 4.4 min., range 2-28 min., n = 59 song bouts).

Fully developed male song contributions of both *N. concolor* and *N. leucogenys* consist of single booms produced during inflation of a throat sac, as well as staccato and multi-modulated phrases; whereas female song contributions are great-call phrases (e.g. Geissmann *et al*., 2000). *Nomascus concolor* and *N. leucogenys* differ in several species-specific song characteristics, as described by Geissmann *et al*. (2000). The most notable of these differences are listed in Table 2.

Representative sonagrams of *N. concolor* song excerpts from Nam Kan PPA are shown in Fig. 9, together with sonagrams of homologous song sections from Laotian *N. leucogenys*. As can be seen in the sonagrams, the gibbon songs recorded in the Nam Kan study area correspond to *N. concolor* in each of the characteristics listed in Table 2 and differ from those of *N. leucogenys*.

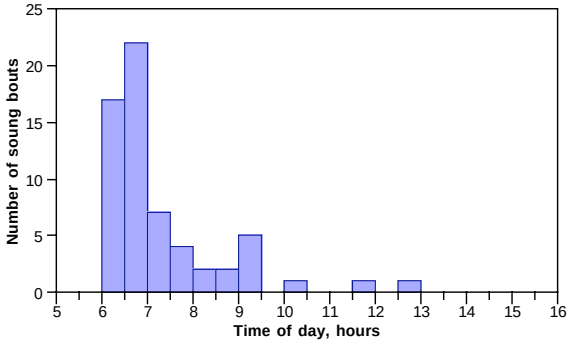

Fig. 8. Frequency distribution of the starting time of gibbon song bouts (n = 62) in the Nam Kan Valley. – *Häufigkeitsverteilung der Startzeit von Gibbongesängen (n = 62) im Nam Kan Tal.*

In addition to gibbons, northern pig-tailed macaques (*Macaca leonina*) were encountered repeatedly, but in all probability, these sightings represented just two groups, one near Camp 2, the other one near Camp 3.

Interviews with members of the local ethnic group (Hmong) in the study area revealed that there is a taboo against hunting gibbons. According to the interviewees, this taboo was introduced only as late as 1975. The village head of Ban Toup (the father of one of the interviewees) reportedly introduced the taboo in a special ceremony and declared it as binding for the whole community. When asked about the reasons for introducing this measure, I was told that – unlike some monkeys – gibbons were basically harmless and "nice" animals because they were not raiding crops and because they were singing in the morning.

Table 2. Distinctive song characteristics of *N. concolor* and *N. leucogenys* (extracted from Geissmann *et al*., 2000). – *Gesangsmerkmale, die zwischen Schwarzen Schopfgibbons (*N. concolor*) und nördlichen Weisswangen-Schopfgibbons (*N. leucogenys*) unterscheiden (nach Geissmann et al., 2000)*.

Song element	Song phenotype	
	N. concolor	*N. leucogenys*
(1) Number of great-call notes:	≤ 10 notes	> 10 notes
(2) Note shape in great-call climax:	First descending, then ascending frequency (v shaped)	Ascending frequency only
(3) First note in fully expressed multi-modulated phrases:	Ascending frequency	First part of stable frequency, then rapid down-up-sweep

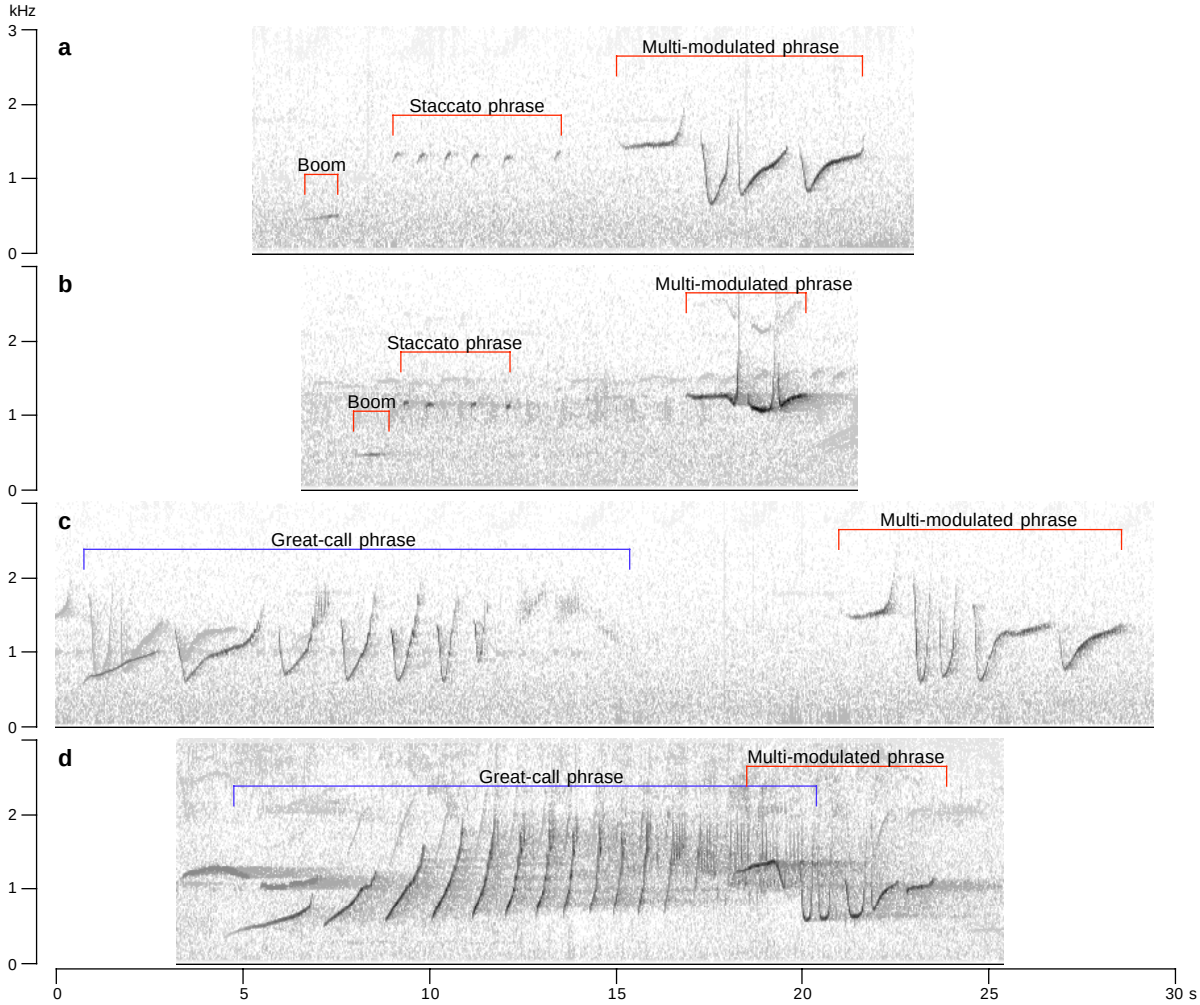

Fig. 9. Comparison of representative song sections between *N. concolor* from the Nam Kan Valley in Bokeo Province (northwest Laos, this study) and *N leucogenys* from Houaphanh Province (northeast Laos, recordings by Pete Davidson). (a *N. concolor* male song segment, (b) homologous *N. leucogenys* male song segment from Nam Xam NBCA, (c) *N. concolor* duet segment, (d) homologous *N. leucogenys* duet segment from Phou Louey NBCA. Red brackets indicate male song elements, blue brackets indicate female song elements. – *Vergleich repräsentativer Gesangsausschnitte der Schwarzen Schopfgibbons (N. concolor) aus dem Nam Kan Tal der Provinz Bokeo (Nordwest-Laos, vorliegende Studie) mit homologen Gesangsausschnitten Nördlicher Weiss-wangen-Schopfgibbons der Provinz Houaphanh (Nordost-Laos, Aufnahmen von Pete Davidson). (a)* N. concolor*, Gesangssegment eines Männchens, (b) homologes Segment eines Mänchens von* N. leucogenys *aus dem Schutzgebiet Nam Xam, (c)* N. concolor*, Duettsequenz, (d) homologe Duettsequenz von* N. leucogenys *aus dem Schutzgebiet Phou Louey. Rote Klammern bezeichnen männliche Gesangs-elemente, blaue bezeichnen weibliche Elemente*.

Results from the Nam Tha and Nam Ha survey

In the hope of obtaining information on the location of the common distribution boundary between *N. concolor* and *N. leucogenys*, a rapid survey along the lower run of the Nam Tha River (a tributary to the Mekong River south of Nam Kan PPA and 27 km southeast of Huay Xai [Houayxay]) was also carried out (Fig. 10). The forest along the river was found to have largely gone or to be so strongly degraded that it is extremely unlikely that any gibbons survive in that area (Fig. 11).

Interviews with numerous people in villages up to several kilometres away from the river revealed that gibbons apparently became extinct in the area about 30-40 years ago. Only older men (mostly former hunters) remembered gibbons, and only one man reported personally hunting them, having shot one gibbon of a group of four individuals as recently as 6–7 years ago. The locality (Ban Hanly) he reported for that gibbon group was situated so far upstream that I was not able to travel there during the time available for this study.

Based on details of the descriptions of gibbons obtained during these interviews, it was often possible to assess the reliability of the interview data. When asked about the cheek colouration of the black gibbon individuals, both white and black cheeks were confirmed for localities on either side of the Nam Tha River. This contradictory information makes it impossible to determine whether the Nam Tha River

was the distribution boundary between black crested and white-cheeked crested gibbons in the past.

Fig. 10. The Mekong River at Ban Paktha, about 27 km downstream from Huay Xai, the capital of Bokeo Province. In the dry season, the river is not very broad here. The mouth of the Nam Tha River can be seen in the foreground. Photo: Thomas Geissmann. – *Der Mekong Fluss bei Ban Paktha, ewa 27 km flussabwärts von Huay Xai, der Hauptstadt der Provinz Bokeo. Während der Trockenzeit ist der Fluss hier nicht sehr breit. Im Vordergrund erkennt man die Einmündung des Nam Tha.*

Discussion

On average, 4.4 song bouts per day were heard in the Nam Kan Valley. This value is higher than the numbers recorded during some other surveys of crested gibbons in China and Vietnam (range: 2.1–3.1 songs/day; Chan *et al*., 2006; Geissmann *et al*., 2007; Ruppell, 2007), except for data on *H. c. concolor* in the Ailao Mountains of Yunnan Province, China (6.0 songs per day, Geissmann, unpublished data 1990). A tentative density estimate of 2.2 gibbon groups/km^2 in the Nam Kan Valley is also higher than density estimates for *N. concolor* in Yunnan Province (range 0.43–0.82 groups/km^2, review in Chan *et al*., 2005) and *N. concolor* at Che Tao, northern Vietnam (1.6 groups/km^2 (Tallents *et al*., 2000). The density estimate for the Nam Kan Valley is also higher than estimates for *N. hainanus* (0.50-0.57 groups/km^2, Zhang *et al*., 1995), *N.* cf. *siki* in central Vietnam (0.7–1.3 goups/km^2, Geissmann *et al*., 2007; Ruppell, 2007). Only some estimates for *N. gabriellae* and *N. siki* in eastern Cambodia are higher (range 0.0–3.73 groups/km^2, average of 1.47 groups/km^2, Traeholt *et al*., 2005).

In general, density estimates for crested gibbons should be regarded with caution, however, because many of them (including the one resulting from this study) are based on very short surveys. As a trend, the results of this study suggest that the survey area supports a relatively high density of gibbons, and may be an indicator of a relatively undisturbed gibbon population.

The Nam Kan PPA of Bokeo Province is not part of the national protected area system (Duckworth *et al*. 1999). The people living in the survey area of the Nam Kan Valley reported that they have not hunted gibbons since 1975 owing to a local taboo. This may have contributed considerably not only to the ongoing survival of the gibbons in that area, but also to their apparently high estimated density. This hunting taboo does not appear to be the result of official conservation measures, which – according to my personal experience in various Indochinese forests – are often ignored by forest-living ethnic groups. Unfortunately, the Nam Kan area is in a region of human immigration (Duckworth *et al*., 1999), and as new settlers are unlikely to share the beliefs, it is unclear how effective local hunting taboos will continue to be in protecting this species.

Fig. 11. The areas visited along the Nam Tha River (left) and its tributary, the Nam Hat River (right) were largely deforested or supported only traces of secondary forest in the best case. Photos: Thomas Geissmann. – *Die besuchten Gebiete entlang des Nam Tha Flusses (links) und seines Zuflusses, des Nam Hat (rechts) waren weitgehend entwaldet oder wiesen im besten Fall noch Spuren von Sekundärwald auf.*

As this outlying population is currently assigned subspecific rank (as *N. c. lu*), it has a high conservation priority. Its very limited distribution puts the subspecies at risk, and the small and shrinking overall range of the species, together with its gravely threatened status in Vietnam and China (Geissmann, 2007; Geissmann *et al.*, 2000) means that the Bokeo population is of high international importance. The only other modern record of *N. concolor* from Laos stems from the Nam Ha National Protected Area (NPA) in Luang Namtha Province, northeast of our study area. Although this area is part of the national protected area system, gibbons there were heard on only five of 12 survey days and only about five different groups were heard in total (Johnson *et al.*, 2005). This suggests that Nam Ha NPA supports a lower gibbon population density than in Nam Kan PPA, and further underlines the importance of the Nam Kan gibbon population.

Crested gibbons (the '*concolor*' group, genus *Nomascus*) present one of the most challenging taxonomic issues for South-east Asian large mammals, with little consensus on their relationships and how many species are involved (Duckworth *et al*. 1999). More to the point, it is unclear if the black crested gibbon inhabiting northwest Laos, currently recognized as *N. concolor lu*, is in fact a valid subspecies, as the supposed morphological difference may be due to other sources of variation (see Introduction). Previous assessments of the affinities of this gibbon population were based on fur colouration characteristics. The song structure of the gibbons from Nam Kan does not exhibit any conspicuous differences from that of other populations of *N. concolor* (i.e. *N. c. concolor*, *N. c. jingdongensis*, and *N. c. furvogaster* from China and Vietnam; Geissmann *et al*., 2000 and unpublished data), but markedly differs from that of *N. leucogenys*.

Contradictory information was obtained during my interviews in the lower Nam Tha River area (south of Nam Kan PPA), making it impossible to determine whether this river was the distribution boundary between black crested and white-cheeked crested gibbons in the past. Similar interview results were also obtained during a study carried out in the Nam Ha National Protected Area (NPA) in Luang Namtha Province, adjacent to Bokeo Province (Johnson *et al*., 2004, 2005). These interview results do not necessarily suggest that the two gibbon species are or were sympatric anywhere in Laos. More likely, the interviewees were familiar with only one gibbon species, but the immense variability of intermediate fur colouration patterns that crested gibbons exhibit during their ontogeny (Geissmann, 1993, 2003) may make interview data on gibbon fur coloration less reliable, especially in areas where gibbons are very rare or have become extinct several decades ago. Interview data may not be reliable to determine which of the two gibbon species is, or was, present in an area.

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Zusammenfassung

Erste Freilanddaten vom Laotischen Schwarzen Schopfgibbon (*Nomascus concolor lu*) des Nam Kan Gebietes in Laos

Der rätselhafte Laotische Schwarze Schopfgibbon (*Nomascus concolor lu*) blieb seit seiner Entdeckung im Jahre 1939 im Freiland kaum untersucht. Sein Verbreitungsgebiet stellt eine biogeographische Anomalie dar: Es liegt wie eine Enklave im sonst von Weisswangen-Schopfgibbons (*N. leucogenys*) bewohnten Nordlaos, mehrere 100 km entfernt vom nächsten Vorkommen Schwarzer Schopfgibbons (*N. concolor*) in der chinesischen Provinz Yunnan. Während einer Expedition in das Nam Kan Tal der Provinz Bokeo (Nordwest-Laos) während der Trockenzeit konnte ich bestätigen, dass die Schwarzen Schopfgibbons dort immer noch vorkommen. Das Gebiet liegt innerhalb des Nam Kan Provinz-Schutzgebietes und scheint sich relativ nahe bei der Typuslokalität dieser Gibbonform zu befinden. Diese Studie präsentiert erste Daten zu Rufverhalten, Populationsdichte, Gruppenzusammensetzung, Bedrohungsstatus und systematischer Verwandtschaft dieser Gibbons.

Der für Gibbons geeignete Lebensraum im Untersuchungsgebiet liegt vorwiegend auf Hängen von über 550 m, während der Wald im Talboden weitgehend gerodet oder stark ausgeholzt ist. Während 14 Tagen wurden 62 Gibbongesänge gehört (im Durchschnitt 4.4 Gesänge pro Tag), von denen die Mehrheit (65%) zwischen 06:00 und 07:00 Uhr und alle zwischen 06:00 and 13:00 Uhr begannen. Fünf beobachtete Gruppen bestanden aus 2 bis 5 oder 6 Individuen (Durchschnitt 3.6–3.8). Die Gesänge stammten von 13 verschiedenen Gibbongruppen, und die geschätzte Populationsdichte im untersuchten Gebiet betrug grob 2.2 Gruppen/km^2 oder 8–8.4 Individuen/km^2. Interviews mit Bewohnern des Nam Kan Tales ergaben, dass die dortigen Gibbons seit 1975 unter einem Jagdtabu stehen. Dies dürfte zur relativ hohen Gibbondichte in diesem Gebiet beigetragen haben und gibt Anlass zur Hoffnung für die Zukunft dieser Gibbons. Die Gesänge aus dem Nam Kan Tal gleichen denen anderer Schwarzer Schopfgibbons aus China und Vietnam, unterscheiden sich aber stark von denen der Nördlichen Weisswangen-Schopfgibbons (*N. leucogenys*).

Eine zusätzliche Expedition wurde in das weiter südlich gelegene Tal des Flusses Nam Tha durchgeführt, um zu untersuchen, ob dieser Fluss die gemeinsame Grenze zwischen *N. concolor* und *N. leucogneys* darstellen könnte. Die Gegend erwies sich aber als weitgehend entwaldet. Interviews in verschiedenen Dörfern ergaben, dass die Gibbons dort vor etwa 30-40 Jahren ausgestorben waren. Des Weiteren fielen die Interviewdaten zu widersprüchlich aus, als dass sich daraus nachträglich die Gibbonart hätte bestimmen lassen, die früher in den Wädern beidseits desNam Tha gelebt hatte.