The Myanmar Hoolock Gibbon Conservation Status Review: First results

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This report summarises results from 25 surveys conducted for the Myanmar Hoolock Gibbon Conservation Status Review Project between November 2008 and 2010. Myanmar holds large intact areas of prime gibbon habitat and is believed to support the majority of remaining hoolock gibbons, but, there is no up-to-date information on the species' conservation status in Myanmar. This project confirms the occurrence of gibbons in the larger areas of forest in five states and divisions. Habitat loss and degradation were recorded as the main threats and hunting was identified as a serious threat in some areas, whereas in other areas no threats were found.

Introduction

Myanmar

Myanmar is the largest country in mainland South-East Asia, with a land area of 680,000 km^2 and a coastline of 2,832 km. The country encompasses several mountain ranges in the west, north and east, while a large lowland plain occurs in the central part (Fig. 1). Over 9,600 plant species, around 360 species of reptiles, around 1,050 bird species and over 300 mammal species have been recorded. Among the latter are 15 species of non-human primate, including gibbons, leaf monkeys, macaques and slow lorises. All primates in Myanmar are threatened to some degree.

Hoolock gibbon distribution

Hoolock gibbons (genus *Hoolock*) occur in forested areas from eastern India and Bangladesh to Myanmar and southern China (Fig. 1). Geographically, these apes' natural range extends from east of the Brahmaputra River to west of the Salween River.

Currently, two species of hoolock gibbon are recognized, the western hoolock (*H. hoolock*) and the eastern hoolock (*H. leuconedys*) (Geissmann, 2007). The main distribution areas of both hoolock species are located in Myanmar. Their respective ranges are separated by the Chindwin River, which flows into the Irrawaddy (= Ayeyarwady) River (Groves, 1967, 1972). The boundary between the two species is uncertain in the Chindwin headwaters in the north, and possibly includes a zone of intermediates.

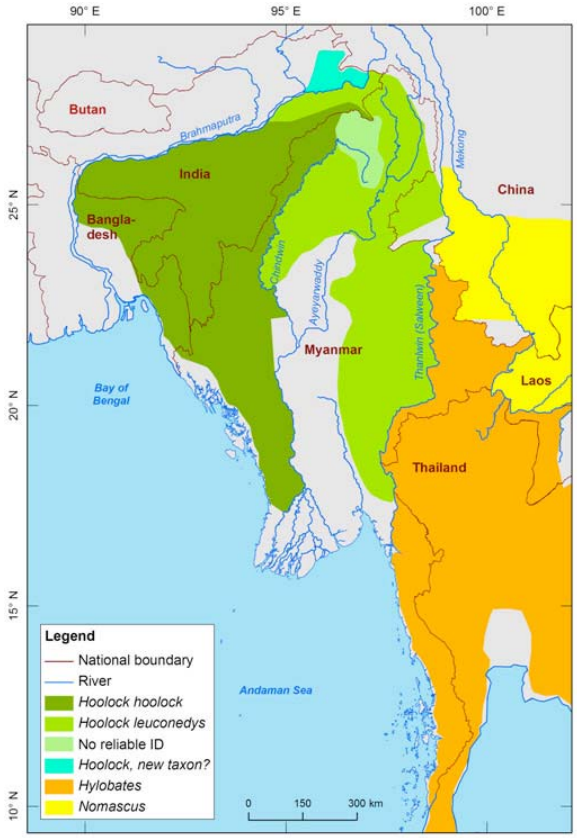

Fig. 1. The distribution of the hoolock gibbon (genus *Hoolock*) and gibbon of the genera *Hylobates* and *Nomascus* in Myanmar and adjacent areas.

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Hoolock Gibbon Conservation Status Review Project

This project is jointly implemented by the Biodiversity and Nature Conservation Association (BANCA), Fauna & Flora International (FFI) and the People Resources and Conservation Foundation (PRCF).

The project aims to assess the conservation status of the hoolock gibbons in Myanmar, while strengthening the capacity of the conservation movement in primate surveying, monitoring and conservation in Myanmar.

Three main objectives are (1) increase knowledge of the distribution and relative abundance of hoolock gibbons in Myanmar, (2) identify major threats to gibbons in Myanmar and (3) raise awareness among relevant stakeholders about gibbon conservation.

Methods

Activities

A training and capacity building workshop was conducted at the beginning of the project in 2008. The participants included lecturers and students from Yangon University, Western Yangon University, Pyay University and Dawei University, and local NGO staff from BANCA and Rakhine Coastal Association (RCA).

After the training workshop, field surveys were conducted in five states and divisions from December 2008 to May 2010. A workshop on the results of the conservation status review and on conservation action planning was held in May and June 2010.

Priority survey sites

Priority areas for the field survey sites were selected based on the forest cover maps of Myanmar (Stibig, 2003, 2004). A total of 14 areas were chosen as targets for hoolock gibbon field surveys.

Field surveys

A total of 25 field surveys were conducted from December 2008 to May 2010 in five states and divisions. Nine field surveys were conducted in the distribution area of the western hoolock gibbon, including Naga Land and areas along the Rakhine Mountain Range, and sixteen field surveys were conducted in the distribution area of the eastern hoolock gibbon, including areas in northern and southern Kachin State and in Kayin State (Geissmann et al., 2008, 2009, in prep.; Lwin et al., 2010a, b;).

Survey method

Field survey techniques most suitable to estimate densities of gibbons are variants of the Fixed Point Method, during which the loud morning songs of the gibbons are monitored simultaneously from four fixed listening points per site (Brockelman and Ali, 1987; Brockelman and Srikosamatara, 1993).

Listening posts were about 400 m apart and located on hilltops, in order to enable the survey participants to hear gibbons from as many directions as possible. Monitoring gibbon calls was carried out from dawn to noon for five consecutive days at each listening post.

Each listening post was manned by one to two surveyors. Time, direction, estimated distance, and type of all gibbon songs were recorded on a field form. Song types included (1) solo song bouts, (2) duets with just two participants, (3) duets with more than two participants, and (4) duets involving an unknown number of participants.

All information from each day were plotted and triangulated on graph paper. Density of gibbon groups was estimated based on the triangulated results.

Although songs of wild gibbons can often be heard over distances greater than 1 km, gibbons singing behind hills are often estimated to be further away than 1 km. Furthermore, different gibbon groups beyond 600 m from the listener are more difficult to be distinguished than groups singing at closer distances. As a result, gibbon densities were estimated using both a 0.6 km and a 1 km listening radius.

Results

Group densities

Group densities were estimated for 25 study areas. The lowest density was 0.13 group/km^2 and the highest density was 3.76 group/km^2 for western hoolock gibbon. The corresponding densities found for the eastern hoolock gibbon were 0.56 group/km^2 and 7.07 group/km^2, respectively.

Preliminary estimates of gibbon group densities are summarized in Table 1.

Threats to gibbons

The results of 25 field surveys confirmed that habitat loss and degradation caused by shifting cultivation and timber extraction are the main threats to both gibbon species (Table 2). Hunting for trade and subsistence was also recorded as a serious threat in seven study areas in the distribution area of eastern hoolock gibbon. In six study areas, no threat to gibbons was detected.

Table 1. Gibbon group density (mean ± standard deviation)

Species	Number of sites	Gibbon group density/km^2	
		Listening radius	
		600 m	1 km
H. hoolock	9	2.27±1.44	1.55±0.95
H. leuconedys (also including Mahamyaing WS, Brockelman *et al*., 2005, 2009)	17	2.63±1.76	2.05±0.98
Hoolock sp., Hukaung valley (Saw Htun *et al*., 2006)	13	2.15±1.28	1.90±0.91
Total	27	2.49±1.61	1.88±0.96

Table 2. Threats to gibbons

Species	Major threats			Minor threat	No threat
	Habitat fragmentation	Habitat degradation	Hunting	Hunting	
H. hoolock (9 sites)	8 (89%)	–	–	2 (22%)	1 (11%)
H. leuconedys (16 sites)	4 (25%)	4 (25%)	7 (43%)	–	5 (31%)

Hoolock locality records

Gibbon survey data from Myanmar can be roughly grouped into three time periods: historical records (before 1960), modern records (1980-2004) and recent records (2005-2010). A total of 148 hoolock gibbon locality records were recorded in ten states and divisions. For the western hoolock gibbon, fifteen historical, 15 modern and 22 recent localities were recorded. For the eastern hoolock gibbon, the corresponding numbers were 35 historical, 12 modern and 44 recent localities. Only two modern and three recent localities were recorded for *Hoolock* sp. (Fig. 2).

Sixty-two (42%) of 148 localities were recorded from the status review project and 86 localities were recorded from the other sources.

Action plan from the status review workshop

A hoolock gibbon status review workshop was held on 25 June 2010, during which actions for hoolock gibbon conservation, research and transboundary activities were planned. Planned activities for the hoolock gibbon conservation include conducting a national-level awareness program, reviewing the Myanmar protected species list, raising legal awareness among stakeholders and reviewing the protected area system to strengthen gibbon conservation. Planned research activities include conducting additional field surveys, conducting long-term behavioural research/ecology studies and establishing monitoring at selected sites. Planned transboundary conservation activities include improving cooperation with China.

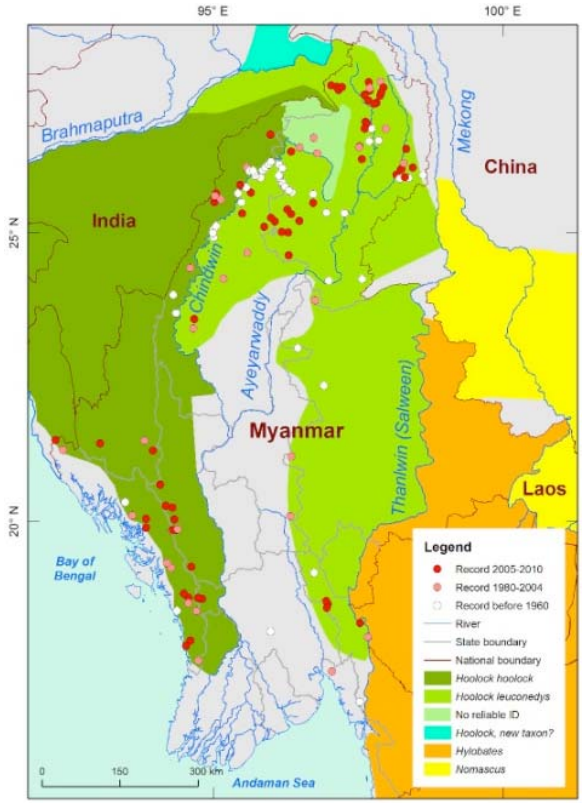

Fig. 2. Hoolock gibbon locality records in Myanmar.

Conclusions

Although hoolock gibbon surveys were conducted in some areas of Myanmar prior to the Hoolock Gibbon Conservation Status Review Project, this project is the first nationwide hoolock gibbon status review. During its course, 25 field surveys were conducted in five states and divisions covering most of the hoolock gibbons' main distribution areas.

This project estimates the density of hoolock gibbons in Myanmar and confirms the conservation status of these apes in Myanmar. A conservation action plan was also designated for future activities. More field surveys will be conducted in two protected areas and a site-based conservation program will be established at one protected area.

Acknowledgements

We thank Arcus Foundation Great Apes Program, the United States Fish and Wildlife Service, Great Apes Conservation Fund, and Gibbon Conservation Alliance for financial support for this project. The use of US grant funds in Myanmar for this project is authorised by the US Treasury Department's Office of Foreign Assets Control.

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