



PROJECT PROPOSAL

Conservation of northern white-cheeked gibbon (*Nomascus leucogenys*) in the conservation complex of Xuan Lien and Pu Hoat Nature Reserve, Vietnam

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Abstract

Northern white-cheeked gibbon (*Nomascus leucogenys*) is one of the planet's endangered primates and the most threatened species in Vietnam. *Nomascus leucogenys* historically occurs from Northwest Vietnam to Northern Laos and Southern China (Rawson et al., 2011). Habitat loss and poaching are major threats to the survival of the gibbon. The population of gibbon in China may now be as few as 10 individuals, which are unlikely to persist even in the short-term (Pengfei, 2010). The population in Laos is unknown. The population in Vietnam is highly fragmented and limited to three areas in Northern Vietnam (Rawson et al., 2011). Recently, the surveys about primate confirmed that the most viable populations of this species in Vietnam is now found in the forest complex of Xuan Lien Nature Reserve and Pu Hoat Nature Reserve located in the western area of the north-central region of Vietnam (Nguyen et al., 2013). However, the studies have focused on the efforts into researching in Xuan Lien and have not done in Pu Hoat. The lack of public attention about the survival of this critically endangered gibbon has still been a major concern, and the conservation gap is also one of the factors that lead to the declining of the gibbon in Vietnam. More importantly, Pu Hoat and Xuan Lien are believed to be the most important throughout for this species its range. Hence, it is urgently needed to provide better information on the true population and threats, opportunities to improve conservation for this species in the conservation complex. The information will be essential to prepare a conservation plan for the conservation complex to improve gibbon protection and conservation of wildlife that share the same landscape. This project will focus on implementing a population census for the gibbon with the whole conservation complex, including efforts to strengthen conservation capacity for relevant stakeholders, who are rangers and local community. Project activities will include: (i) to implement a survey of the gibbon population to provide a comprehensive understanding, (ii) to implement a training to improve capacity of reserve's staffs and local community on gibbon conservation, and (iii) to assist the reserves to design and to implement a long-term community-based gibbon outreach.

1. Introduction

Northern white-cheeked gibbon (*Nomascus leucogenys*) is listed as Critically Endangered by IUCN (Bleisch et al., 2011). However, the Northern white-cheeked gibbon is one of the least known gibbon taxa in the world (Bleisch et al., 2008). In Vietnam, the populations of this species have been confirmed to occur only in a few fragmented areas (Bleisch et al., 2011, Rawson et al., 2011). Pu Hoat was established in 2013 with an area of 80,000 ha of natural forest. The reserve is also one of the largest protected areas in Vietnam. Pu Hoat is a contiguous forest with Xuan Lien Nature Reserve in Thanh Hoa Province, the combination between two reserves became the largest conservation area in northern Vietnam, which covers more than 100,000 ha of natural forest.

The area is known as the key area for the critically endangered gibbon; however, it has received really low attention for conservation. There has been very few researches and conservation efforts done for this reserve. Gibbon and wildlife hunting seem to be common in the reserve, but these activities are not well documented. Gibbon and endangered wildlife will be soon vanished if there are no immediate actions to improve understanding of the wildlife population and related conservation issues inform management, to mitigate threats and to prepare long-term conservation approaches, including community engagement.

This project then focusses on providing comprehensive understanding of the gibbon population, their associated threats and assist the reserves on strengthening the conservation effort to protect the gibbon and other wildlife in the landscape.

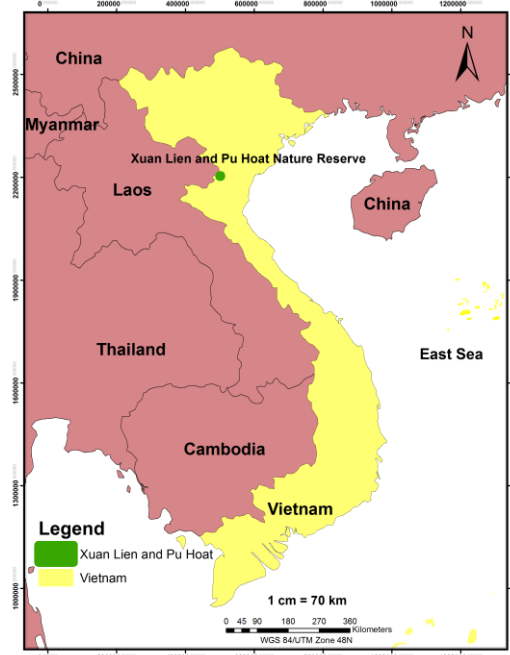


Figure 1. Location of Xuan Lien and Pu Hoat Nature Reserve - the study site in Vietnam

2. Prior research and prior conservation action

Northern white-cheeked gibbon (*Nomascus leucogenys*) occurs in north-west Vietnam, northern Laos and southern Yunnan Province, China. The population in China may now be as few as 10 individuals in three groups, which are separated by large distances, and are unlikely to persist even in the short-term. In Laos, the status of the gibbon is largely unknown, but available data and large tracts of forest remaining in some areas suggest Laos may hold the largest remaining populations of this species (Rawson et al., 2011). The population distribution of Northern white-cheeked gibbons has the trend of pervading to north of Vietnam with 18 areas, and has less 80 groups confirmed (Le Thanh, 2013).

The surveys in 2012 (Nguyen et al., 2013), 2007 (Le and B, 2007), 2003 (Ha, 2005) confirmed that the presence of a nationally significant population of this species in Xuan Lien. These groups are, therefore, as part of a larger transboundary population with neighboring Pu Hoat Nature Reserve in Nghe An Province (Rawson et al., 2011). In Pu Hoat, four gibbon surveys have been conducted in this proposed reserve since 2002, which collectively suggested that at least 10 groups are present (Rawson et al., 2011). In 2009 and 2010, five gibbon groups were recorded and the possible occurrence of 2-3 others was identified (Bach and Rawson, 2010). At least four groups were recorded in 2007 (Rawson et al., 2011), at least three groups were in 2003 (Ha, 2005) and five groups were in 2002 (Rawson et al., 2011). In 2013, Pu Hoat officially established and expanded more than 50,000 ha of natural forests (UBND, 2013). There is a need for other surveys to fully determine the status of the population of the gibbon in Xuan Lien and Pu Hoat.

Pu Hoat was established in 2013, since then there have been no gibbon surveys in the reserve. Xuan Lien was established in 2000 and there were three gibbon surveys in the reserve, including the first rapid survey was conducted in 2004, 2007 (Rawson et al., 2011), and additional one was in 2012 (Nguyen et al., 2013). However, the three surveys only focused on the core evergreen forest in the reserve, that covers only 20% of the total area. Most of the reserves haven't been surveyed yet.

3. Project description

Goals:

To provide better understanding and strengthen conservation capacity to improve the protection of the critically endangered Northern white-cheeked gibbon.

Specific aims:

- To implement a survey of the gibbon population to provide a comprehensive understanding on the population of the critically endangered Northern white-cheeked gibbon in Xuan Lien - Pu Hoat conservation complex.
- To implement training to improve capacity of reserves' staffs, forest ranger and local community on gibbon conservation skills, including survey and outreach.
- To provide technical support and assist the reserve to design and to implement a long-term community-based gibbon monitoring program.
- To strengthen collaboration between scientists, local community, conservation sites on gibbon and wildlife protection.

Project design and implementation.

In coordination with National Department of Nature Conservation and host institution, the investigator will implement the project with the support from local community and Xuan Lien - Pu Hoat forest rangers.

Four local people (most of them are ex-hunters) will be hired to assist the principal investigator in the field, tracking gibbons and collecting data, and will be carefully guided by the investigator. In addition, the local participants will be trained and play as a core group of future community-based monitoring of gibbons in the long-term, that will be formed and sustained in Xuan Lien and Pu Hoat.

4. Methods

The hypothesis is that there will be the provisional groups and others in other parts of Pu Hoat and Xuan Lien which have never recorded and received no protection effort. The researcher will (1) conduct interviews with (ex-)hunters, local people, and forest rangers who know the forest and wildlife therein, (2) conduct fieldwork to confirm provisional information the forest, and (3) then to assist the reserve to design and to implement long-term conservation actions to cover all forest areas to ensure that all gibbons group will be properly monitored.

Field survey

Pu Hoat Nature Reserve was established in 2013 with an area of 80,000 ha of natural forest, Xuan Lien was established in 2000 and covers the area of 22,000 ha of natural forest. Our team plans to spend a total of six months in these reserves to achieve the above-mentioned objectives. The fieldwork will allow our team to work closely with the reserves, local community to survey and understand the population of the gibbon as well as threats, conservation options and opportunities to improve the engagement of local community in supporting gibbon and wildlife conservation. The fieldwork also allows our team to implement indispensable training and to provide technical support for local rangers and local community on gibbon and wildlife conservation as well as to raise the awareness for local community on the significance of gibbon and wildlife protection.

Semi-structured interview method will be used to interview local hunters, forest rangers in locations where the gibbon was last observed, the encounter season, the number of cases of illegal hunting, the main threats to the gibbon population, gibbon habitats and specific areas that the surveying team should focus on Xuan Lien and Pu Hoat.

In the project, we will use the auditory point count method to assess gibbon population size and density during the survey (Brockelman, 1987). Gibbons can be detected by their loud and long songs (Geissmann, 2000, Geissmann and Orgeldinger, 2000). Then, auditory point count method will be used to assess gibbon population size and density during the survey. A high point, such as a hilltop or mountain peak, ridge will be used as listening post for gibbon survey. Surveyors will record the key following information at each listening post in a standard datasheet: compass bearing and estimated distance to the calling group, start and end time of song bouts, and song type (duet or solo), habitat type, and sign of impact and human occurrence in gibbon area. GPS will be used to record the location of the listening

posts. Listening post will be at early morning (from 05:00 AM to 11:00 AM) using audio recorder, then data from recorders will be used to aid the auditory point count method. Each sampling point will be recorded for at least 3 days. Three listening posts will be used each day.

Data analysis: Locations of gibbon groups will be determined through the triangulation using the angle and distance from surveyors because there is an overlap among listening posts in MapInfo 11.5 (Pitney_Bowes_Business_Insight). Different groups will be differentiated by their locations. If detected groups are over 500m apart (Brockelman, 1987) they will be considered separate groups.

Distance sampling method will be used (Buckland et al., 2005) to estimate the population density in the study area. In addition, the project will calculate the gibbon group density and total population of gibbon by using the methods outlined (Thinh and Rawson, 2011) to compare with the distance sampling method.

Education and public information

Based on the survey results, a gibbon conservation seminar will be organized to disseminate the findings and recommendations. Participants of the meeting will be from the reserves, the local community, and local authorities. In the meeting, the team will share information on the gibbon population, habitat, threats and recommendations to improve gibbon and wildlife conservation for the reserves, including how local community and stakeholders should be engaged to support the conservation effort. In addition, findings from this study will be published in national scientific journal and the center website (www.ccd.org.vn) and the reserves' websites (www.puhoat.vn and www.xuanlien.org.vn).

5. Timetable

Activity	Mar. 2020	Apr. 2020	May 2020	Jun. to Oct. 2020	Nov. 2020	Dec. 2020
Planning	-	-	-	-	-	-
Training for forest ranger and local community				-		
Interviewing and Fieldwork	-	-	-		-	-
Community meeting	-	-				-
Technical meeting and Reporting	-	-				

6. Team members

1. Mr. Bui Thanh Tung (tung.bui@ccd.org.vn) - Team leader

Mr. Tung has Master's degree from Vietnam National University of Forestry. He has participated in more than five projects of conservation, including ungulates and primate studies in central and southern Vietnam. He had worked for VNUF for 3 years. Currently, he has worked as Research and Conservation Officer (from 2018 to present) at CCD, taking responsibility for biodiversity research and conservation. He has expertise experiences in gibbon through his participation in the project “Monitoring and conservation for crested gibbon (*Nomascus leucogenys*) in Thanh Hoa Province (2018-2019); Mr. Tung also works as a field biologist for “Indochinese gray langur (*Trachypithecus crepuscules*) conservation in Xuan Lien Nature Reserve” (2019-2020). He had published an article on the conservation of the southern yellow-cheeked gibbon (*Nomascus gabriellae*) in Southern Vietnam. Tung also has experiences in studying other macaques in Vietnam and good skills to work with local community and local forest rangers.

2. Ms. Ta Tuyet Nga (ngatt@vnuf.edu.vn) - Conservation communication

Ms. Nga has Master's degree from Forest Resources and Environment Management department of Vietnam National University of Forestry. She is a Zoology lecturer in Department of Wildlife, Vietnam National University of Forestry. She has four years experience in zoology studying and monitoring. She also participated in many primate conservation projects and training for Vietnamese young primatologists and forest rangers, especially for the staffs of protected areas.

3. Ms. Phung Thi Tuyet (tuyet.phung@ccd.org.vn) - File assistant

Ms. Tuyet has two years experience in conservation. She is working on conservation communication for CCD from 2018 to present. She is undertaking Master program in Zoology at the Vietnam National University of Forestry.

4. Mr. Le Thanh An (an.le@vnppa.org.vn) - File assistant

Mr. Le Thanh An got his bachelor's degree in the major of Natural Resource Management (in collaborating with Colorado State University) from Vietnam National University of Forestry in 2018. In January 2018, he was a project officer at the Endangered Primate Rescue Center (EPRC) of Cuc Phuong National Park. Since February 2019, he has been working for Vietnam National Parks and Protected Areas Association. He has experience in loris and macaque *Macaca spp.* in Pu Huong Nature Reserve as well as Western Nghe An Biosphere Reserve.

5. Mr. La Quang Trung (trung.la@ccd.org.vn) - Advisor

Mr. Trung has BSc. degree in Forest Resources Management and obtained MA degree in Sustainable International Development at Brandeis University, USA. He is a well-known Vietnamese field biologist, who has participated in major primate conservation efforts in Vietnam for nearly 15 years. Mr. Trung is among the team members, who rediscovered the Cao Vit gibbon (*Nomascus nasutus*) – also known as Eastern black-crested gibbon – in Vietnam in 2002, which was thought to be extinct for more than 40 years at that time.

6. Budget

Item	Unit	No. Unit	Unit cost (\$)	Total cost	GCA	PCI	CCD
Transport				1,700	-	-	1,700
Round-trip fare Hanoi - Nghe An - Thanh Hoa	unit	6	200	1,200	-	-	1,200
Local travel (vehicle, motorcycle rental) (\$0.3/km x 1000km)	km	1,000	0.5	500	-	-	500
Training				345	-	-	345
Classroom and training facilities (\$15/day x 3 days)	day	3	15	45	-	-	45
Accommodation (\$10/day x 10 days x 3 rooms)	day	30	10	300	-	-	300
Field Costs				11,820	2,520	4,200	5,100
Principal investigator (Bui Thanh Tung)	day	60	25	1,500	-	-	1,500
Scientific staff (\$20/person x 3 people x 60 days)	day	60	60	3,600	-	-	3,600
Forest ranger (\$12/person x 2 people x 60 days)	day	60	24	1,440	1,440	-	-
Food (\$8/person x 6 x 60 days)	day	60	48	2,880	780	2,100	-
Local labours (\$10/person x 4 people x 60 days)	day	60	40	2,400	300	2,100	-
Equipment				1,152	352	-	800
Recording equipment	unit	2	100	200	100	-	100
GPSs	unit	2	100	200	100	-	100
Maps	unit	6	12	72	72	-	-
Medical kit	set	2	40	80	80	-	-
Cameras	unit	2	300	600	-	-	600
Conservation activity				1,950	1,950	-	-
Poster	set	40	15	600	600	-	-
T-shirt	unit	60	15	900	900	-	-
Community meeting	unit	3	150	450	450	-	-
Total				16,967	4,822	4,200	7,945

Project grand total: \$16,967

Request from GCA (Gibbon Conservation Alliance): \$4,822

PCI (Primate Conservation, Incorporated, (PCI#1609)): \$4,200

Contribution from CCD: \$7,945

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