

TERMS OF REFERENCE

Two national consultants to conduct gibbon survey in Pu Mat National Park

I. BACKGROUND

FFI's mission is to conserve threatened species and ecosystems worldwide, choosing solutions that are sustainable, based on sound science, and which take into account human needs. FFI's strategy to achieve this mission is to work with in-country organizations at all levels to support them in identifying and implementing country led sustainable solutions.

The FFI Programme in Vietnam is implementing projects to conserve Western black-crested gibbons at Mu Cang Chai Species & Habitat Conservation Area of Yen Bai province and Muong La Nature Reserve of Son La province, Cao Vit gibbons at Trung Khanh Species & Habitat Conservation Area of Cao Bang province, Cat Ba langurs at Cat Ba National Park of Hai Phong City, Delacour langurs at Kim Bang forest of Ha Nam province, Northern white-cheeked gibbons at Pu Mat National Park of Nghe An province, Grey shanked douc at Kon Plong forest of Kon Tum province, and Tonkin Snub-nosed Monkeys at Khau Ca Species & Habitat Conservation Area and Quan Ba district of Ha Giang province.

The northern white-cheeked crested gibbon (*Nomascus leucogenys*) is a Critically Endangered gibbon endemic to Vietnam, China and Laos. The species has been determined to be almost extinct in China. It is one of the six crested gibbon species in Vietnam. It is protected by Vietnamese laws (Decree 06/2019/NĐ-CP, Decree 60/2013/NĐ-CP). Surveys by Conservation International (CI) in Pu Mat National Park in 2010 determined that the park holds the most significant population of the species in Vietnam, with approximately 130 groups consisting of 455 individuals (Bach & Rawson, 2011). Pu Mat National Park (PMNP) is now a high priority for conservation of the northern white-cheeked crested gibbon in Vietnam. Population monitoring and protection measures need to be implemented regularly. However, since after CI's survey in 2010, there has not been any gibbon surveys until FFI's on-going survey in 2019.

FFI is working with PMNP to ensure that the population size of gibbons in PMNP is known and effective protection is in place by:

- Conducting a park-wide survey to establish an accurate estimate of gibbon population size;
- Overseeing regular monitoring of focal gibbon groups by community teams;
- Preventing gibbon poaching with effective patrolling and enforcement by Park rangers and Community-based Conservation Teams (CCT);
- Integrating the results of the population survey into a conservation action plan for gibbons in PMNP.

To ensure 91,113 hectares will be sampled, Experts of FFI together with technical staff of the park designed 18 systematic survey arrays throughout the park. In each array, three listening posts 500 m apart were set up and three survey teams will conduct surveys at the same time (see Annex for map of 18 arrays; 9 have already been surveyed). By March 2020, 50% of the field survey work (9 arrays) have been done by FFI's experts, technical staff of the park and CCT members, including arrays 7, 8, 11, 13, 14, 15, 16, 17, 18. A total of 19 groups have been recorded so far, with 52 gibbons.

FFI and the park are planning to complete the rest 50% field work (9 arrays) as soon as possible, depending on suitable weather conditions. Weather conditions must be good, because gibbons are much less likely to sing in rainy weather, meaning that time and money will be lost for no benefit. We have determined the next suitable weather period to be **October – November 2020** (when we think the rains will have decreased). Therefore, FFI is seeking for two national consultants as soon as possible to conduct the remaining field survey, using FFI’s data collection design and templates.

II. OBJECTIVE

The main objective of this consultancy service is to conduct the field survey work, and then provide FFI with clearly and comprehensively annotated, and highly accurate, gibbon detection data, following the templates provided by FFI. FFI will lead the analysis component of the work, but may seek clarification about any aspects of the underlying data.

Gibbon survey data for each array will be organized into 3 scenarios – “most likely”, “minimum” and “maximum” – to capture any uncertainty about the number of gibbon groups. These scenarios will be discussed and revised each day in camp, after sampling has concluded. FFI will provide a template and example of the data requirements, but it requires a careful and scientific approach to data collection.

As well as the paper data sheets, we will also provide access to a data collection mobile phone application called *Input*. Spatial data for each group calling event must also be collected in this app, because it allows for more accurate placement of locations than just writing down distances and bearings. *Input* is freely-available for iOS and Android, and FFI will provide access to the Pu Mat gibbon data collection template.

III. DELIVERABLES

The consultants are expected to deliver the following outputs:

- Field survey data, using FFI’s data collection templates, including the “minimum” and “maximum” scenarios for the gibbon groups
- Data collection in the *Input* mobile phone app, which can be regularly synced with FFI’s central QGIS project, whenever the consultants get 3G phone signal in the field;
- Shapefiles and-or .gpx files relevant to the survey, including the locations of: camps, access routes, listening posts and the approximate home-range centre of each detected gibbon group
- Video clips and pictures related to field surveys.

IV. SURVEY METHODS

Before conducting field surveys, consultants will work with FFI’s experts to discuss the survey methods in details and to ensure consultants will be able to conduct field survey following the methods and data collection templates suggested by FFI.

The survey method and analysis will follow the approach outlined in Kidney et al., (2016), i.e. acoustic spatial capture-recapture (A-SECR) The consultants will need to be familiar with the

basic idea and assumptions that A-SECR involves, but FFI will do the actual analysis, so statistical expertise in this area is not a requirement (but would be advantageous).

RESEARCH ARTICLE

An Efficient Acoustic Density Estimation Method with Human Detectors Applied to Gibbons in Cambodia

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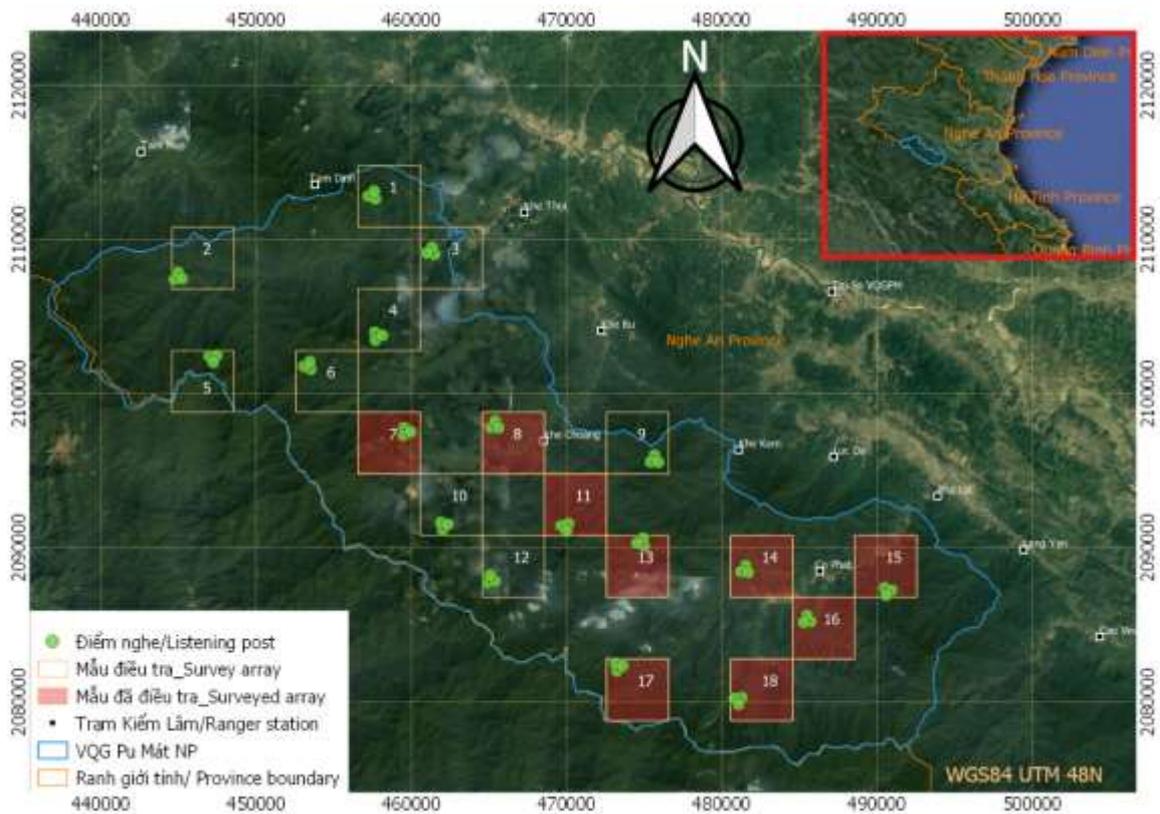
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As detailed above, there are a total of 18 survey arrays that have been placed across Pu Mat NP, of which 9 remain to be surveyed. (Figure 1). Each array consists of three listening posts 500 m apart. The three listening posts in each array are surveyed simultaneously by three survey sub-teams in three mornings, from 4h45 to 11h00.

When hearing a gibbon or a group of gibbons, the surveyors record the time of calling (start and stop), compass bearing, estimated distance to the calling gibbons, gibbon group structure, and any characteristics of the calling group. GPS locations of the listening posts are taken; weather information is also needed. A datasheet template has been designed for daily data collection at each listening post.

On a daily basis, all three surveyor groups come back to the camp, discuss and analyse and synthesize their findings in order to have data on all gibbon groups and composition thereof. Another data template has also been designed for gibbon group detections. Besides, a project on the *Input* smartphone app has been developed, which allows surveyors to input data directly into a map. Instruction on the methods, data templates and the app will be delivered before the survey team goes into the field.



Annex. Design of gibbon survey arrays in Pu Mat National Park

V. SCOPE

The field work will cover 9 arrays (1, 2, 3, 4, 5, 6, 9, 10, 12) in PMNP, Nghe An Province. The estimate of man-day is around 40 – 45 days per consultant, including travel days in between arrays (in forest). The exact number of day will be discussed and decided before signing contract.

VI. MAIN TASKS

- Work with FFI's experts to understand the survey methods and data collection;
- Work with FFI's assigned staff to develop logistical details of plan for field work;
- Conduct field survey, collect data and input data into app;
- Submit all data to FFI.

Remarks:

- It is noted that travel days from Hanoi to Pu Mat headquarter and back to Hanoi will not be the subject for charging into consultant fees;
- FFI will mobilize project staff (1-3 people) and CCT members (up to 12) to support the consultants during field surveys.

VII. QUALIFICATIONS AND EXPERIENCE

- University degree in one of the following fields: conservation biology, natural conservation, or forestry;
- At least 5 years of experience in primate research and gibbon surveys;

- Able to communicate confidently in English (speaking and writing) about research matters
- Experienced in leading research teams in the field
- Familiar to Pu Mat National Park (advantage);

VIII. ADMINISTRATIVE SUPPORT

FFI will provide the consultant with the following support:

- Administrative procedures to work in the field and FFI's local partners;
- FFI will cover all costs relating to the field trip based on actual expenditures and not exceeding FFI's cost norm.

Note: *Field work cost is receipt-based, not lump-sum. In other words, it depends on the actual expenditures and will not exceed FFI's cost norm.*

Interested candidates are invited to send CV in English to Ms. Le Hong Viet via email viet.hong.le@fauna-flora.org no later than **31st August 2020**. Only shortlisted candidates will be contacted for interviewing.

For more information about FFI, please visit <http://www.fauna-flora.org>