

Final Evaluation Report

Your Details	
Full Name	Trinh Dinh Hoang
Project Title	Surveying Delacour's langur using unmanned aerial vehicle in Van Long Nature Reserve, northern Vietnam
Application ID	38222-1
Date of this Report	21-04-2024

1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
To provide up-to-date data on Delacour's langur abundance and distribution in Van Long Nature Reserve			x	A new baseline for Delacour's langur in Van Long – Dong Tam Area has been established by our survey, highlighting the most important stronghold for Delacour's langur.
develop surveyor/investigator expertise and experience of applying this method to survey arboreal primates			x	The principal surveyor/investigator has become competent and experienced in drone survey. During the survey, he also trained staff of Van Long Nature Reserve and Three Monkey Nature Conservancy in using drone to survey Delacour's langurs.
Report sharing and publication would probably inform people a like on the method, which could be applied for surveying other species		x		A technical report has been developed and shared to Van Long NR and Three Monkeys Nature Conservancy The data are used to input analysis for a scientific journal article as part of the grantee's PhD output, planned to be completed in 2025.

2. Describe the three most important outcomes of your project.

a). Up-to-date population status

Our findings - 44 groups and 308 individuals, higher than that (25 groups and 207-215 individuals) of the last survey in 2018 - serve as a new baseline for Delacour's langur in Van Long – Dong Tam Area. The result also highlights that Van Long-Dong Tam population continues to be the largest population of Delacour's langur and that Van Long - Dong Tam Area the most important stronghold for Delacour's langur conservation. However, the high density (6.36 groups/km²) in the poorly vegetated

area in the southern part (Hoang Quyen and Hang Tranh area) raises a concern that this southern sub-population is approaching the habitat carrying capacity (i.e., is overpopulated). The limited space and food resource are likely the constraints for the sub-population to further grow.

b). Capacity development: The investigator has become competent in operating the drone and applying the methods of data collection and analysis. Staff of the NGO and the PA were also trained in using drone to survey Delacour's langurs. The survey further proved the effectiveness of the new drone survey method for Delacour's langur, inspiring the NGO and protected area (PA) managers to apply the drone method for future survey and monitoring of Delacour's langur.

c). Partnership between researcher, conservation manager and organisation: The NGO Three Monkey has a long partnership with Van Long Nature Reserve, working together, they further consolidated their close relationship. They plan to use the finding to raise fund for conservation in the area. In addition, the researcher has also built a good partnership with the NGO. They further had a cooperation for Delacour's langur in other area (Yen Mo – Tam Diep Forest, Ninh Binh Province) and potentially cooperate other surveys in other areas when funds are raised.

3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

My drone survey for the Delacour's langur in Van Long NR was planned for January – March 2023. However, it did not occur as planned. FFI's old drone did not function well and batteries have reduced their capacity after being used continuously for months. Therefore, I cooperated with another NGO Three Monkeys Wildlife Conservancy (3MWC) for a drone survey in Van Long Nature Reserve. 3MWC bought a new DJI Mavic 3 Thermal and six longer life batteries. The late arrival of the equipment imported from abroad postponed our flying permit application, which requires equipment specification details. In addition, we had to wait for cold/cool weather time to continue surveying Delacour's langurs. With your agreement on the project extension, we finally completed the survey in February 2024.

4. Describe the involvement of local communities and how they have benefited from the project.

This is a wildlife research project. Local people were hired to support the field research. Communication has informed and educated them on conservation of Delacour's langur.

5. Are there any plans to continue this work?

I will apply the method to survey Delacour's langur in other areas in the species range. The data will be used to estimate langur abundance for multiple sites, and for modelling habitat availability for whole species and input population viability

analysis, which are topics of my PhD project. All of these will also inform species conservation action planning.

6. How do you plan to share the results of your work with others?

The results are shared in the form of a technical report to stakeholders (protected area managers, Conservation NGO Three Monkeys), who will, in liberty, deliver it to the ones in need.

I will also present the findings at species conservation action planning workshops and develop a scientific journal article as part of the grantee's PhD output, planned to be completed in 2025.

7. Looking ahead, what do you feel are the important next steps?

There is a need to:

- Replicate the drone survey in other areas reported to have Delacour's langurs to have a full picture of the species' status.
- Analyse and assess population viability of the Delacour's langur populations to inform conservation action planning and management.

8. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?

I added The Rufford Foundation logo onto the report and will display the logo on my workshop presentation.

9. Provide a full list of all the members of your team and their role in the project.

No.	Name	Role	Notes
1	Trinh Dinh Hoang	Principal investigator	57 days
4	Tran Van Giang	Field assistant	40 days
2	Nguyen Van Linh	Field assistant	40 days
3	Ta Quang Trung	Field assistant	40 days
6	Pham Van Thang	Field assistant	40 days
5	Nguyen Van Dung	Field assistant	20 days
7	Ta Van Binh	Field assistant	40 days
8	Nguyen Xuan Luat	Field assistant	16 days

9	Nguyen Van Tuyen	Field assistant	17 days
10	Pham Van Cuong	Field assistant	20 days
11	Dinh Tuan Dat	Field assistant	13 days

10. Any other comments?