

Project Update: February 2019

Introduction

With the funding from Rufford Foundation Small Grant, the first population assessment of agile gibbon (*Hylobates agilis*) commenced in April 2018 and ended in February 2019. The population density at nine study sites with different degrees of habitat disturbance have been surveyed using active bioacoustics survey (or fixed radius point count). The habitat characteristic of the study sites was quantified using vegetation "speed plot". The data collection methodology as well as data analysis were guided by Dr Susan Lappan (Appalachian State University) and Dr Thad Bartlett (University of Texas at San Antonio). The field trips were supported by numerous voluntary field assistants, as well as local forest guides.

Objective

- To estimate the population density of agile gibbon in Ulu Muda Forest Reserve, Kedah.
- To determine the relationship between population density and habitat disturbance.
- To identify the ecological predictor of population density.
- To extrapolate the total number of groups in Ulu Muda Forest Reserve where the elevation is below 450m above sea level

Activities so far

March 2018 – preliminary recce to Ulu Muda to establish relationship with local forest guides and the main accommodation provider, the Earth Lodge Malaysia, and to have a better understanding of the area.

April 2018 – first field trip to previously logged forest (1960s to 1990s) with Dr Susan Lappan as field supervisor, as well as core team members of UNGKA – Small Apes of Malaysia Research & Outreach (Nurul Iza Adrina Binti Mohd Rameli, and Adillah Suhailin Binti Kamarulzaman).

May 2018 – conduct two more field trips at two study sites in the previously logged forest without the presence of field supervisor.

June 2018 – preliminary recce to unlogged forest for trying out the difficulty of walking 4 km into the campsite. My field assistant, a forest guide, and myself spent a night in the forest to test the feasibility of camping in the forest for 5 days.

July 2018 – first field trip to the unlogged forest took place and we camped in the forest for 5 days. Dr Thad Bartlett was visiting Malaysia at the time therefore he participated the field trip to assist me as well as giving good advice.

September 2018 – attempt to camp in the forest for surveying two study sites in unlogged forest was called off due to heavy thunderstorm. We manage to salvage the situation by

establishing the trail and conducting a few vegetation “speed plots” to make the field trip in the future easier.

October – November 2018 – field trips to recently logged forest (2015 – 2017) continue despite raining season. We were staying in a village immediately adjacent to our field sites (less than 2 km). My field assistant and I first made a trip to meet and discuss with a kind villager, who is more than happy to guide and assist our trips around Ulu Legong (southern part of Ulu Muda).

November 2018 – preliminary trip to the deeper part of recently logged forest to mark the trail to the campsite. The forest quality was high in that area, despite located adjacent to a large logging road.

December 2018 – the last field trip to Ulu Legong which requires camping 5 days in the forest. We had a few close encounters of a gibbon group. This trip also experiences the change from wet to dry season.

January – February 2019 – We returned to unlogged forest to complete the population survey at two study sites we didn’t manage to do in September 2019. The surveys were successful and we experience almost no rain. This mark the end of the data collection phase.

March 2019 – March 2020 – I spent almost 1 year to sort and analyse my data, as well as writing up my thesis and publication. I have also performed a few workshops for showing my work to students from high schools, as well as presented in Rufford Conference Malaysia 2020 on 11th January 2020. More details of the talks will be included in the next report.

Preliminary results

- The group density in UMFR ranged from 3.8939 to 4.17 groups per km² (95% C.I.).
- The group density in UMFR did not show any significant difference among forest types ($p = 0.27$).
- The best ecological predictors for group density were “canopy cover” and “proportion of area deforested”.
- The total estimated number of *H. agilis* groups in areas < 450m asl in UMFR ranged from 3,028.35 to 2,825.41 groups (95% C.I.).

Achievement so far

- The results show that recently logged forest, despite being very close to human settlement, is also an integral habitat of agile gibbon.
- The results manage to describe “compression effect”: group density is slightly higher (though insignificant) in recently logged forest, which is a sign of compression where groups were forced into a smaller area.
- The volunteers who have participated the field trip are now more aware of the environment issues, particularly on the status of small apes in Malaysia.

Challenges

- Weather: The rainy season on the west coast of Peninsular Malaysia starts in April and usually ends in December. Most rains would start in the late afternoon (4 pm onwards). Our field trip that requires camping in the forest during the September 2018 trip was jeopardised due to heavy thunderstorm that endangered our lives.
- Volunteers: Initially, hiring volunteers were based on trust on any applicants who apply first. However, after a few cases of volunteers pulling out in the eleventh hour, no show, volunteers not capable of withstanding forest condition, weak physique, etc., I have to implement a stricter screening of the applicants by having to read their curriculum vitae and ask them questions. I have also required the participants to pay a deposit in which should they decided to quit in the last minute, or failed to turn up on the day, the deposit will not be refunded but channeled into this work.

Next Steps

- The thesis titled "Population Densities of Agile Gibbon (*Hylobates agilis*) and their Relationship with Habitat Characteristics and History of Disturbance in the Ulu Muda Forest Reserve, Malaysia" has been submitted to University Sains Malaysia on 17th April 2020. I am awaiting examination.
- I am currently working on the publication of the article with the same title.
- I am planning more talks and potential expeditions with high school students.
- As of January 2020, a few recce trips have been conducted with a new student in my hometown of Kluang, Johor. I am expanding the works (both research and education programme) into the state of Johor.



Left: Field trip to unlogged forest in February 2020. Right: Field trip to unlogged forest in January 2019.



Left: Field trip to recently logged forest in November 2018. Right: Field trip to unlogged forest in July 2018.



Left: Campsite by the river. Right: Before the treacherous march to the campsite in unlogged forest.



Left: More than 300 bird species have been recorded in Ulu Muda. Right: 112 mammal species have been recorded in Ulu Muda.



The upstream of the man-made reservoir - Lake Muda.