

# A REPORT ON ORANGUTAN NEST RECCE SURVEY IN UPPER REACHES OF KATIBAS RIVER

*For Green Economy in The Heart of Borneo - Integrating Conservation, Economic Development  
and Well Being of Communities Across the Heart of Borneo Corridor*

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## SUMMARY

1. About 90% of the viable orang-utan populations are found within the forests of Batang Ai National Park and Lanjak-Entimau Wildlife Sanctuary, and the remaining populations are believed to occupy forests adjacent to the protected areas.
2. This study was carried out along the upper reaches of Katibas river, and was focused in Chemanong and Pasin buffer strip.
3. The surveys were conducted in areas where orang-utan were historically found or where residents have reported recent orang-utan presence. In total, seven nests were recorded and all nests were found in Pasin buffer strip.
4. We will conduct orang-utan population study in Pasin buffer strip next using the Marked Nest Count method.

## INTRODUCTION

The Bornean orang-utan from subspecies *Pongo pygmaeus pygmaeus* is only found in North-western Kalimantan, Indonesia and Sarawak, Malaysia. This subspecies number is currently estimated between 3,000 and 4,500 animals globally (Wich et al. 2008) and listed as Critically Endangered. In Sarawak, it is projected about 90% of the viable orang-utan populations are found within the forests of Batang Ai National Park (BANP) and Lanjak-Entimau Wildlife Sanctuary (LEWS), and the remaining populations are believed to occupy forests adjacent to the protected areas. A more recent surveys between 2011 and 2013 (WCS-Malaysia, unpublished) have identified several areas outside of these protected areas that still harbor orang-utans.

In 2015, five agencies had collaborated in a rapid assessment<sup>1</sup> in Pasin buffer strip, which had led to the discovery of orang-utans in the area. Orang-utans have been the subject of study in the area ever since, however, actual orang-utan population size of the area was never assessed during the studies.

This report investigates the presence of orang-utan nests in Chemanong and Pasin buffer strip by means of recording orang-utan nests found in the areas. The objectives of this study are:

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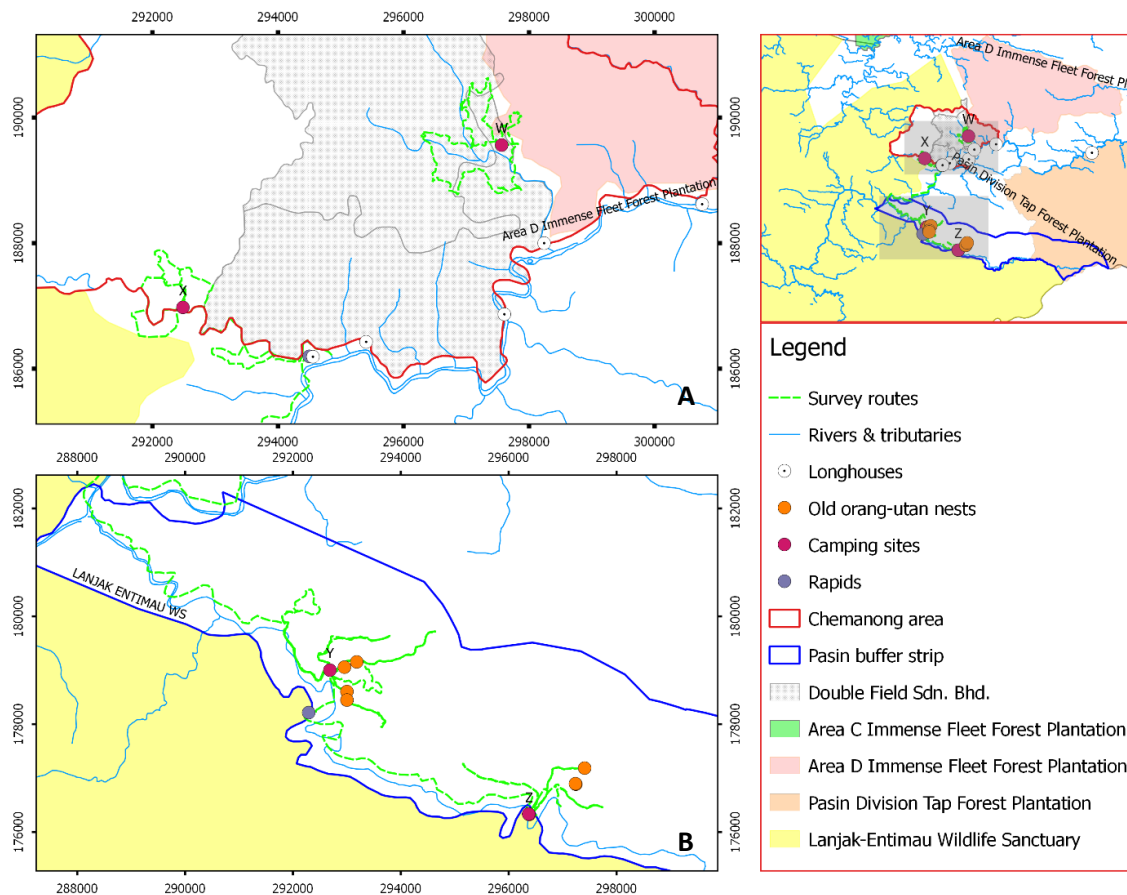
<sup>1</sup> Five agencies that had collaborated in the rapid assessment were: Forest Department of Sarawak as the lead, Sarawak Forestry Corporation, Ta Ann Group, WWF Malaysia, and WCS-Malaysia Programme. The rapid assessment was supported by Forest Department of Sarawak's Heart of Borneo Initiative.

- i. To conduct orang-utan nests surveys as they are proxies for the use of the area by orang-utans;
- ii. To create a spatial overlay of orang-utan nest encounters for the areas.

We initiated this study by conducting Free, Prior Informed Consent (FPIC) sessions with village chiefs or representatives from the gazetted villages, namely Rumah Sa, Rumah Suning, Rumah Api and Rumah Sapai (Appendix 1: Image 1). Upon receiving their consents subsequently, the surveys in both sites were carried out.

## STUDY AREA

This study was carried out along the upper reaches of Katibas river, and was focused in Chemanong and Pasin buffer strip (Figure 1). The areas are located approximately 36 km from the nearest town, and at the time of writing, only accessible by river transport (Appendix 1: Image 2). The areas have a combined size of 156 km<sup>2</sup>, by which a large portion is composed of logged over forests as the results of commercial timber-harvesting and agriculture activities. Both areas are within the provisional Heart of Borneo boundary.



**Figure 1.** Map showing areas where this study was conducted. Chemanong is on Panel A and Pasin buffer strip is on Panel B.

## METHODOLOGY

The surveys are carried out as follows:

- From base camp, teams of three to five observers move to their allocated start points and commence the assessment by trekking on existing trails, ridges, or streams.
- The teams record all orang-utan nests observed. Trees with new orang-utan nests (Class A or Class B) are tagged. The purpose of tagging trees with new nest is to ensure that they are properly documented should the validity of the assessment data be disputed.

**Table 2. Class for orang-utan nests.** This classification system is adapted from van Schaik *et al.* (1995).

<i>Class</i>	<i>Nest category</i>	<i>Description</i>
A	With green leaves	: Fresh; leaves are still green
B		: Older; leaves may still be attached and the nest is still firm and solid
C	No green leaves	: Old; leaves are gone and holes are visible in the nests
D		: Very old; twigs and branches are still present but no longer in the original shape of the nest

- Each team is allocated one Global Positioning System (GPS) unit to mark the location of nests and to collect a track log the team's movement.
- Nesting trees are identified as far as possible to species level. Vernacular names of nesting tree are translated to scientific names using 'A New Checklist of the Trees of Sarawak' checklist and with the help from relevant experts.

## RESULTS

**Table 1.** List of people who were involved in the surveys.

<i>No.</i>	<i>Name</i>	<i>Organisation</i>	<i>Remark</i>
1	Lukmann Haqem Alen	WWF Malaysia	Biologist
2	Harry Morrison	Sarawak Forestry Corporation	Park Ranger
3	Aimi Hafiza	WWF Malaysia	Research assistant
4	Kok Cze Jhin	WWF Malaysia	Intern
5	Sandra Wong Jye Wen	WWF Malaysia	Intern
6	Ayaka Kanaike	WWF Malaysia	Intern
7	Ngindang Ajong	Rumah Suning	Field assistant

8	Kasau Picai	Rumah Suning	Field assistant
9	Udin Lau	Rumah Jabu	Field assistant
10	Julius Jengging	Rumah Jabu	Field assistant
11	Sapai Ajom	Rumah Sapai	Field assistant
12	Uyam Limi	Rumah Sapai	Field assistant
13	Dennisen Satin	Rumah Sapai	Field assistant
14	Lucas Sapai	Rumah Sapai	Field assistant
15	Umin Nyara	Rumah Sapai	Field assistant
17	Davis Endit	Rumah Api	Field assistant
18	Jerry Ujom	Rumah Api	Field assistant
19	Ujom Tadong	Rumah Api	Field assistant
20	Kubung Engkamat	Rumah Api	Field assistant

Overall, 20 surveyors were involved with the surveys. Field assistants were recruited from nearby longhouses. The Park Ranger from Sarawak Forestry Corporation who had accompanied WWF staff during FPIC session also assisted in the first survey. The team also received assistance from two interns from University Malaysia Sarawak and one from University of Kyoto (Appendix 1: Images 3 & 4) in subsequent surveys.

**Table 2.** Survey effort versus number of nests recorded on the given dates.

<i>Camp site</i>	<i>Date</i>	<i>Survey mode</i>	<i>Survey effort (km)</i>	<i>Number of old nests detected</i>
Nayai river (W)	19 Apr 2017	Boat and foot	4.45	0
	20 Apr 2017	Foot	3.78	0
	21 Apr 2017	Foot	1.14	0
	23 Apr 2017	Foot	2.06	0
Ngeranau river (X)	16 Aug 2017	Boat	11.64	0
	18 Aug 2017	Foot	10.25	0
	19 Aug 2017	Foot	8.82	0
	21 Aug 2017	Foot	6.74	0
	23 Aug 2017	Foot	6.59	0
Buai river (Y)	06 Jan 2018	Boat and foot	5.92	0
	07 Jan 2018	Foot	4.46	2
	08 Jan 2018	Foot	2.12	2
	10 Jan 2018	Foot	2.32	0
	11 Jan 2018	Foot	2.41	0
	12 Jan 2018	Foot	4.22	0
Jenua river (Z)	14 May 2018	Foot	3.91	0
	15 May 2018	Foot	3.33	1

17 May 2018	Boat and foot	3.41	2
	<b>TOTAL=</b>	<b>87.33</b>	<b>7</b>

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Surveys were conducted in areas where orang-utan were historically found or where residents have reported recent orang-utan presence. The surveyors only surveyed the forest periphery, however, because the centre is difficult to access. Trekking while making observation was rather challenging because the routes were covered by dense undergrowth and it was not possible to survey more extensively because the forest periphery was degraded by commercial logging and most of the time were spent cutting down vines and ferns in order to create passageways. Further, some surveys were cut short due to prolonged showers.

In total, seven nests were recorded. All nests were found in Pasin buffer strip. The nests were old, and even though the twigs and branches were still present, part of the nest structure have already sunken or collapsed. Most nests were constructed on tall trees, mainly the upper parts of tree crowns at sites that provided a clear view of the surroundings (Appendix 1: Image 5).

#### DISCUSSION

According to Mathewson et al. (2008), old orang-utan nests observed at Lesan Protected Area of East Kalimantan, Indonesia lasted between 72 and 424 days before disappearing. If the duration by Mathewson et al. (2008) were to be used for this study, then orang-utans were probably present in Pasin buffer strip at least up to 400 days prior the surveys.

Our findings are almost consistent with findings from previous study (Table 3). Nests recorded in Pasin buffer strip is an encouraging sign that orang-utans are still present and that the area is being actively utilized by them. It is possible that orang-utans in this area could have been migrated from the eastern regions because of logging or human pressures there. It is also possible that orang-utans from LEWS have move in to recolonize this area after logging operation in Pasin FMU has ceased.

Based on the absence<sup>2</sup> of orang-utan signs in Chemanong area, it is possible that they have moved out from the area to avoid on-going disturbance. Prior to 2017, the communities of Chemanong area allegedly have reached an agreement with Double Field Sdn. Bhd. in a deal concerning harvesting valuable timber in their communal lands (Refer to Map 1) in return for road access to their respective longhouses. During the surveys in April and August 2017, trees were being harvested and sound of vehicles and heavy machineries were heard as far as the areas surveyed. Changes to forest structure as the cause of logging disturbance could have

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<sup>2</sup> The center is less disturbed so it might yield different results.

reduce fruit availability and canopy continuity and therefore likely to reduce the density of populations (Van Schaik & Rao 1997; Felton et al. 2003).

**Table 3. Comparison between nest indices from 2015 and 2018 surveys.**

<i>Area</i>	<i>Nest index (num. of nest detected / survey effort)</i>	
	<i>2015<sup>3</sup></i>	<i>2018</i>
Buai river (Y)	0.206	0.186
Jenua river (Z)	0.191	0.281

Source: Reconnaissance survey of orang-utan nests at the Ulu Pasin (Extension III) of LEWS and Pasin Concession Area (PCA), Ulu Katibas, Song, Sarawak.

#### RECOMMENDATION

We will conduct orang-utan population study in Pasin buffer strip next. The Marked Nest Count method sampling by Plumptre & Cox (2006) will be used in the study. Following suggestion by Boyko & Marshall (2010), at least 0.26% of the area will be surveyed to achieve accurate estimate of population size. We will also look at the impacts of habitat disturbance on orang-utans and compare habitat preference over time by incorporating stratified sampling and quantified observations of orang-utan demographics (Felton et al. 2003; Meijaard et al. 2010). As this will be a specialized work, a team of four technicians will be recruited and trained prior to setting up of the survey plots and doing the data collection.

The Chemanong area should not be dismissed as worthless but should be protected from further disturbance. Formal protection of forest on the borders of LEWS would help maximize the amount of contiguous forest habitat available to orangutans at upper reaches of Katibas river. In addition, conservation efforts at upper reached of Katibas river should focus on opposing the conversion of large areas around LEWS to oil palm plantation. These commercial monocultures stretch for kilometers and provide a daunting barrier to animals that travel arboreally. Preventing such land conversion should be considered as high a conservation priority.

#### ACKNOWLEDGEMENT

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<sup>3</sup> According to the report, new and old orangutan nests were recorded during the joint survey, but the count was low compared to study from adjacent areas in 2012. Even with lower density of nests, this did not undermine the significance of Pasin buffer strip as a viable orangutan habitat.

Forestry Corporation for assisting in liaising with the local communities. Lastly, we expressed our sincere gratitude to all the people involved in the field surveys.

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#### APPENDICES

##### **Appendix 1.** Pictorial summary of the recce surveys.



**Image 1.** Free, Prior, and Informed Consent (FPIC) session at one of the longhouses.



**Image 3.** Traveling upriver to camp site.



**Image 4.** Trekking along trails and conducting orang-utan nests survey.



**Image 5.** A group photo of the surveyors.



**Image 6.** Example of orang-utan nest found during the survey at one of the sites.