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Orangutan nest distribution survey in Bukit Piton Forest Reserve, May 2013

Survey period: 15th May 2013
Report Dated: December 2013

Survey team members
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Objective

To map and annually monitor changes in orang-utan nest distribution in Bukit Piton Forest Reserve (part of Ulu Segama Malua Class I (protection) Forest Reserve).

Activities conducted

Aerial transects were flown by helicopter for counting and recording locations of orangutan nests.

Survey methods

An aerial survey of orang-utan nest distribution was conducted on 15th May 2013, with a total helicopter flying time of 3 hours, including travel from Sandakan to the study site and back.

A set of parallel line transects, with 1-km spacing between them were flown by a helicopter, maintaining a speed of about 70 km per hour. The flying elevation was kept at 70 - 80 m above tree canopy. Location coordinates of orangutan nests were recorded using Garmin GPSMap 62s units. Two observers sat on the back seat and used the two side windows for counting nests, while another researcher in the front seat assisted the pilot with navigation and took occasional photos to record forest condition.

The nests observed were summed up for each 500 m section along the transect line to represent nest abundance for that segment. The nest abundances were then translated to relative abundance classes (abundant, rare and so on) for the purpose of representation in maps. The nest abundance data for each segment was considered as the value at the centre point of the segment, which was in turn used to generate a predicted nest distribution map of the area, using a surface interpolation ('spline') method.

Main findings

Distribution of orangutan nests in Bukit Piton forest reserve

In general, orangutan nests were found to be common in Bukit Piton Forest Reserve. An abundance gradient from the West to the East of the study area was observed (Fig. 1). In the western parts of the survey area, more sample segments were in the classes 'abundant' and 'frequent' while in the eastern parts more segments were in the classes 'rare' or 'absent'. Number of segments falling in the various classes of nest abundance in the four different survey blocks of Bukit Piton are listed in Table 1.

An increasing trend of abundance over the past six years (since 2007) of surveys, and an expansion in nest distribution from west to east over the years were also observed. The details of the multi-year comparative analysis will be presented in a separate report.



Fig. 1. Relative abundance of orangutan nest in the various segments of the strip transects (east - west transects) surveyed from a helicopter in May 2013.



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Table 1. Number of sampled transect segments in various abundance classes of orangutan nests. Bukit Piton Forest Reserve (11,612 ha) was divided to 4 survey blocks (Fig. 2) for comparison purposes.

Survey Blocks	No. of segments sampled	Abundance classes of orangutan nests				
		Abundant	Frequent	Occasional	Rare	Absent
West (of WWF) block (approx. 3,900 ha)	73	7	47	18	0	1
WWF forest restoration block (approx. 2,400 ha)	46	6	35	4	0	1
Sime Darby – West block (approx. 2,600 ha)	52	4	25	21	2	0
Sime Darby – East block (approx. 2,700 ha)	52	0	6	30	9	7

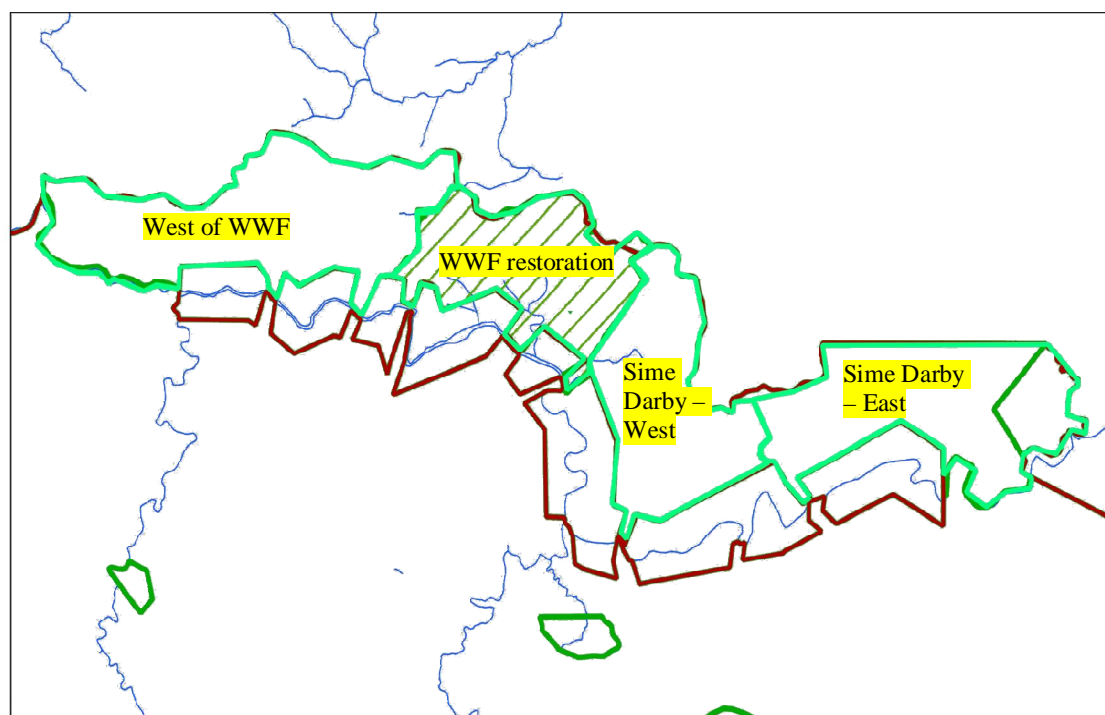


Fig. 2. Four different survey blocks of Bukit Piton Forest Reserve considered for comparative data analysis.

Predicted distribution of orangutan nest abundance

The surface interpolation ('spline') based prediction of orangutan nest distribution depicted certain patches of high, moderate and low abundance areas in Bukit Piton forest reserve (Fig. 3).

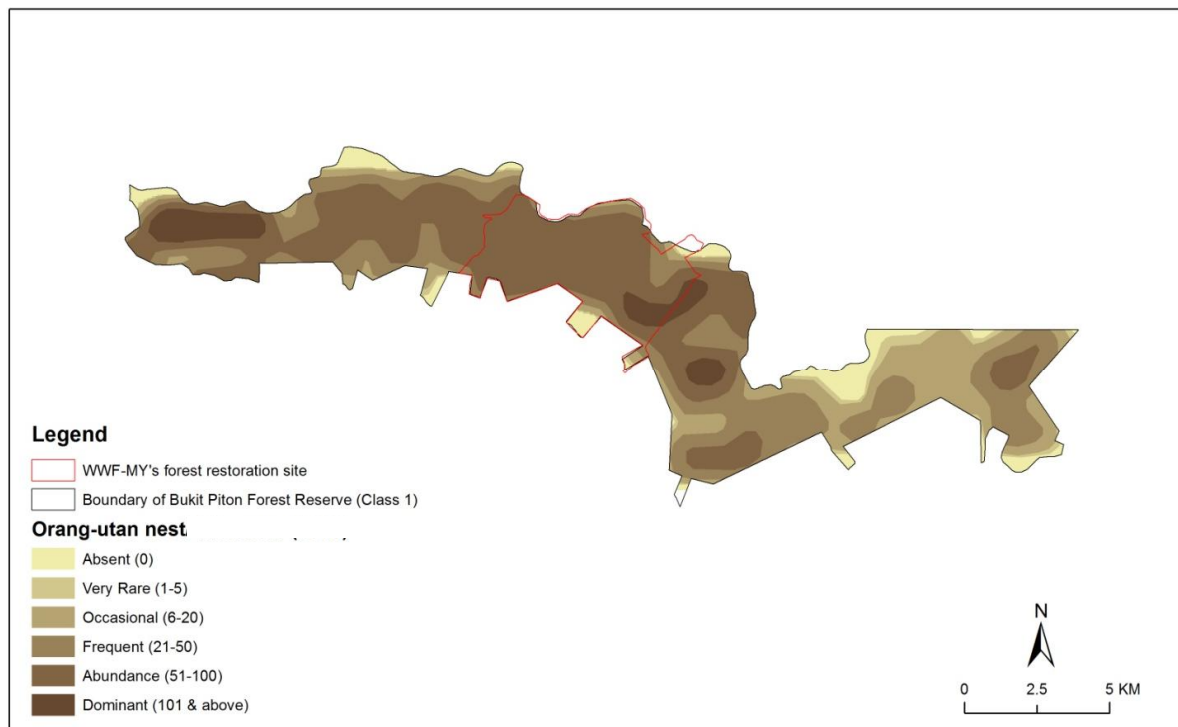


Fig. 3. Predicted distribution of orangutan nest abundance based on nests observed in May 2013 survey.

Conclusion

Orangutan usage appears to be wide-spread in Bukit Piton forest reserve, suggesting that the past few years of forest conservation efforts due to responsible forest management and protection from further exploitation and human disturbance by Sabah Forestry Department (SFD), and the forest restoration efforts by WWF, SFD, Sime Darby Foundation and others are showing positive impacts. However, a detailed analyses of data from current and past surveys are necessary to identify patterns, any possible relationships between orangutan abundance and forest cover expansion and other possible causal factors of observed patterns. Such a report is in preparation by WWF-Malaysia's Sabah Terrestrial Conservation Programme team and will be shared with SFD and other conservation partners.