

Abstract No: A-394

ORANGUTAN CONSERVATION IN SARAWAK, MALAYSIA

Oswald Braken Tisen* and Sundai Silang

Sarawak Forestry Corporation, Sarawak, Malaysia

*Corresponding author: oswaldtisen@sarawakforestry.com

SUMMARY

Traditionally, orangutan ranges through most of southern part of Sarawak. Today, orangutan has a limited distribution in Sarawak with main population in the Batang Ai National Park (BANP) – Lanjak Entimau Wildlife Sanctuary (LEWS) complex. Smaller population occurs in the peat swamp forest of the Sedilu – Sebuyau and Gunung Lesong complex. Orangutan research in Sarawak began with collections and body measurements by Alfred Russel Wallace in 1855. It was more than a hundredth year later, in 1958 that any serious efforts taken to conserve the specie by listing it as protected under the Wild Life Protection Ordinance. Rehabilitation efforts begin in 1963 in Bako National Park was unsuccessful. A concerted rehabilitation program was introduced in Semenggoh in 1975. By 1990, there was a growing population of semi-wild orangutan in Semenggoh – result of a successful rehabilitation program. Semenggoh being too small for more release thus the rehabilitations program was later moved to Matang Wildlife Centre in 1998. With continuing threats to orangutan in the wild, future research focus on the genetic viability of existing populations and identification of the resources required to sustain them in their natural habitat. Population estimates and updating of threats to the species also assist management authority to develop and implement strategic conservation initiatives.

Keywords: *Bornean orangutan, distribution, rehabilitation, peat swamp, Sarawak*

INTRODUCTION

The orangutan (*Pongo spp.*) is the largest ape in Asia. In earlier times, they covered a much larger area as fossil orangutans have been found in stone-age excavation from southern China to Borneo and Java (Frey 1978). At present, the natural population can only be found on the islands of Sumatra and Borneo with an estimated population of 6,600 and 54,000 respectively (Wich *et al.* 2008). More than a decade ago, the orangutans at the two islands were recognized as different species, namely *Pongo pygmaeus* in Borneo and *Pongo abelii* in Sumatra (Zhi *et al.* 1996; Warren *et al.* 2000; Groves 2001). Bornean orangutans are further divided into three sub-species; *Pongo pygmaeus pygmaeus* (in Western Borneo), *Pongo p. morio* (Northern Borneo) and *Pongo. p. wurmbii* (Southern Borneo) (Groves 2001). Orangutans have become increasingly rare during the last decades and are now confined to areas of suitable habitat on the island of Sumatra and Borneo.

ORANGUTAN HISTORY AND DISTRIBUTION IN SARAWAK

There are at least three large regions in Borneo that have never recorded an existence of orangutan. One of the regions is between Rajang River in Sarawak and Padas River in south-western Sabah, except for some upland records near the Kalimantan border (Payne and Francis 1985). Historically, the distribution of orangutan in Sarawak is mainly occurred in the south-western part of state. Harrison (1949) noted that there was a population of orangutan near Binatang (now Bintangor) but the area was heavily settled by Dayaks and Chinese before 1871. There were also few reports of orangutan occurred in other areas such as in Ulu Sungai Daro near Bintangor, Ulu Sungai Pasin in Sarikei district and from Sungai Assan and Sungai Naman southeast of Sibu near the Rajang River (Schaller 1961). Today, the area has been heavily cultivated and widely populated and no orangutan has been found to occur in these areas. In the northern part of Sarawak, the evidence of orangutan was found in Niah cave in Bintulu Division (Hooijer 1960; von Koenigswald 1958). For the last 50 years there has been no record of orangutan made within Bintulu Division

Studies have shown that the main population of orangutan in Sarawak (Figure 1) occurred in Sri Aman and Sibu divisions mainly in the areas between the upper Batang Ai and Lanjak Entimau (Blouch 1997; Gurmaya and Silang 2002; WCS unpublished report).

In 1992 Meredith conducted field studies in Batang Ai National Park (BANP) and estimated that there were about 360 individual orangutans in the area. The study also found that the species was concentrated in the southern and eastern parts of the park (Meredith, 1993). The following years (1993 and 1994) a field studies

conducted by Blouch (1997) in Lanjak-Entimau Wildlife Sanctuary (LEWS) showed that there were about 1,000 orangutans in the sanctuary with the highest density of 1.73 individuals/km² recorded at the southern part of the area. It was speculated that the reason could be due to the lower intensity of human disturbance in the southern region. In 2001, Gurmaya and Silang (2002) conducted a field studies in BANP and LEWS. The orangutan density based on medium-age nest analysis for BANP-LEWS complex was 0.7 ind/km². Their findings also indicated that the orangutans in LEWS are still concentrated at the southern part for LEWS, meanwhile for BANP were in the southern and eastern parts of the park.

In 2013, a survey was conducted by SARAWAK FORESTRY Corporation (SFC), FDS (Forestry Department Sarawak), WCS (Wildlife Conservation Society) and BA (Borneo Adventure) in Ulu Menyang, further south of BANP (Forestry Department Sarawak unpublished report). The result showed that there was substantial orangutan population occurred in the area with 995 orangutan nests were recorded. A total of 22 sightings of orangutan were made during the survey. The Ulu Menyang area is covered by a mosaic old secondary forest and virgin forest. In 2014, another survey was carried out by the same team (SFC, FDS, WCS and BA) in the area call Ulu Telaus (between Engkari River and Batang Ai River) located at the south-western part of BANP. The survey recorded 53 orangutan nests which showed that there were orangutans in this area (progress report in preparation). In 2014, a helicopter survey was carried out by SFC in Ulu Sebuyau National Park (USNP) and Sedilu National Park (SNP) (Sarawak Forestry Corporation unpublished report). These two national parks with a total area of more than 24,000 ha occurred in the peat swamp area in the lower part of Batang Lupar River. A total of 151 orangutan nests were spotted with 75 nests in USNP and 27 nests in SNP. The other 49 nests were located outside the national parks. This survey recorded more nest as compared to study by Silang *et al.* (2010) at the north-eastern part of USNP, mainly at the upper part of Sebuyau River which recorded only 13 nests.

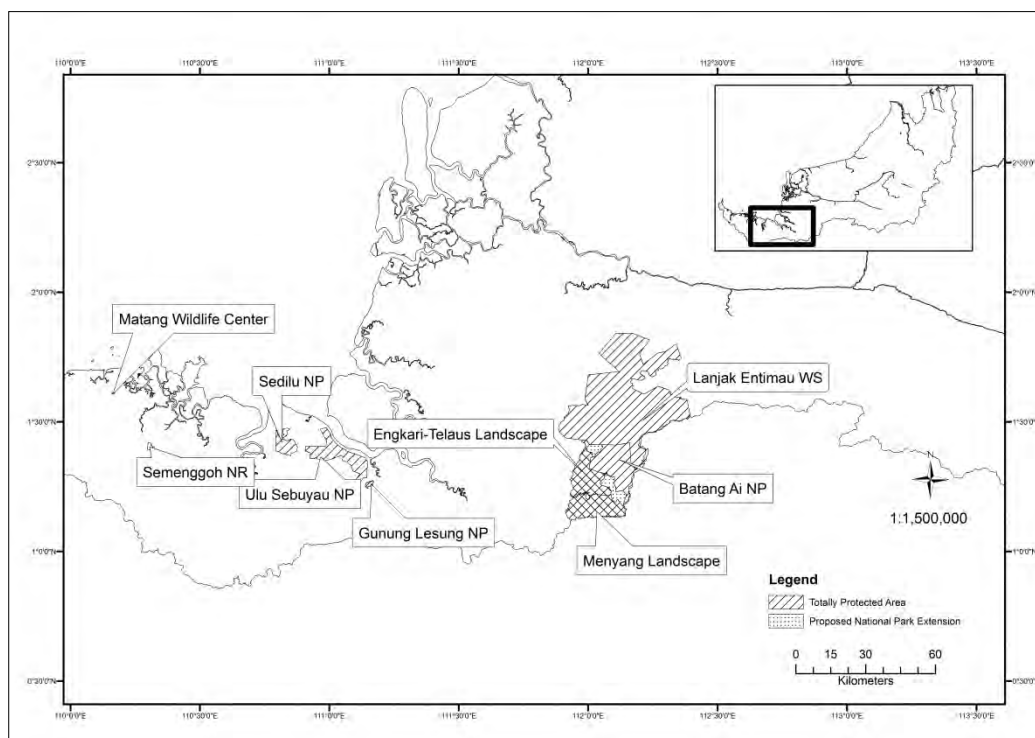


Figure 1: Currently known distribution of orangutan in Sarawak, Malaysian Borneo

RESEARCH AND CONSERVATION OF ORANGUTAN IN SARAWAK

The conservation of orangutan in the state started when there is a concern about the continued decline of the species population which prompted the colonial government of Sarawak to form the *Maias Protection Commission* in 1959 (Harrisson, 1961). The Commission's task was to make a census of the orangutan population in Sarawak and to make recommendations for its protection. According to the Commission's report there were probably 700-900 orangutans in Sarawak at that time. Even in those early days they identified rapid development and increasing human population, coupled with collection of orangutan for zoos and other institutions abroad, as the main culprits for the rapid decline in the population. Forested areas which harbour oangutan were recommended for protection but it was acknowledged that this would be difficult since forests were earmarked for logging which is a more lucrative activity. Harrisson (1961) attributed the disappearance of orangutan from the Balai Ringin and Sabal area to the opening of the Kuching-Simangang (now Sri Aman) road which opened the area to extensive logging

and hunting activities. In order to better protect the species and to ensure their survival in the future, the state government has set aside nearly 2,000 -km² of forest for the protection of orangutan. These include the BANP and LEWS complex which is the largest totally protected areas (1,687 km²) solely for the protection and conservation of orangutan (Figure 1).

Research on orangutan in Sarawak probably started by Alfred Russel Wallace with his report on the body measurements of specimens he shot at Simunjan in 1855 (Wallace 1869). He was the first person to record body measurements of the animal. Wallace reported that adult orangutan vary little in height (4 feet 1 inch to 4 feet 2 inches tall), the extent of the outstretched arms varied from 7 feet 2 inches to 7 feet 8 inches and the width of the face from 10-13.5 inches. Wallace also described the habits of orangutan and their preferences towards the unbroken virgin forest in his book *The Malay Archipelago: the land of the orangutan and the bird of paradise*. Apart from studies on orangutan population and its distribution, there were also other studies that focus on behaviour of the species.

Wesley (2001) studied the activity budget of semi-wild orangutan at Semenggoh Wildlife Rehabilitation Centre (SWC). The study showed that there was no significant difference in terms of time spent moving, foraging, nesting and fighting between disturbed and less disturbed area, except for resting and sleeping activities. The study also found that orangutan prefers more secure and less human presence to rest and sleep. Husen (2001) in his study found that the semi-wild orangutan in SWC foraged actively in the evening and this could be due to the food provided to them on a feeding platform in the morning. A study on nesting ecology of semi-wild orangutan in SWC by Mohd-Rahmantullah (2001) found that the animals tend to build nests at between 15 and 25 m on the trees top and reuse of old nests are more frequent. Silang *et al* (2006) conducted a study in BANP looking at potential fruit trees for orangutan in the area. The study recorded a total of 1,570 fruit trees from two areas (Lubang Baya and Batang Ai sites) comprised of 89 species, 44 genera and 24 families. The five most dominants families are Sapindaceae, Fagaceae, Euphorbiaceae, Moraceae and Myrtaceae. In terms of species, the most abundant fruit trees found in the area were *Nephelium daedaleum* (Kedabang), *Trigonopleura malayana* (Sedi) and *Prunus beccarii* (Enteli) with 127, 122 and 111 trees respectively. Their study showed that there was no significant different ($p>0.05$) in term of fruit trees species diversity between Lubang Baya and Batang Ai sites.

In Sarawak the orangutan has been listed as Totally Protected Animals under the Wild Life Protection Ordinance 1998, where a person who hunts, kills, captures, sales or in possession of any recognizable part or derivative of the animal shall be guilty of an offence and the penalty will be imprisonment for two years and fine of thirty thousand ringgit. Besides that, orangutan had also been listed in Appendix 1 under CITES, where trade is banned for the species. Past and current research on orangutan in Sarawak has contributed to the effective conservation and management of orangutan in the state.

REHABILITATION WORK AND ACTIVITIES

The first orangutan rehabilitation project in Sarawak was initiated by Barbara Harrisson in 1960s, in the Bako National Park. The idea was to rehabilitate the confiscated orangutan so that they could be released back to the forest. The rehabilitation work ended abruptly and the orangutans were transfer to Sepilok which had just been opened (Harrisson, 1987). In the 1970s Sarawak received many confiscated or surrendered orangutans and other wildlife species which later brought about the idea to establish a wildlife rehabilitation centre in the state. The animals were sent to the Forestry Department Sarawak to undergo the rehabilitation program and Semenggoh Nature Reserve was chosen as a strategic place due to its locality and suitability of habitat in the area.

SEMENGGOH WILDLIFE CENTRE

In 1975, Semenggoh Wildlife Rehabilitation Centre (SWC) was officially established to cater for rehabilitation of orangutans and other wildlife species in Sarawak. The SWC is located near to Kuching about 30 minutes' drive from the centre of the town. The centre is located within the 653 hectares Semenggoh Nature Reserve of tropical rainforest. The main function of SWC now is to manage the semi-wild orangutans that live within the Semenggoh Nature Reserve. Besides that, it also caters for research, environmental education and ecotourism activities. The facilities in SWC include information and activity centres, kitchen, administrative centre, trails and staff accommodation. Since its establishment, SWC has cared for about 700 animals (protected and non-protected species) in the period between 1975 to the end of 1997 (Abang & Onuma, 1997).

Until 1991 the centre had released 17 individuals of the 42 confiscated orangutans to the Semenggoh Nature Reserve. Six (6) orangutans which had never been included in the rehabilitation training because of their big size and they had been kept in captivity for so long. For safety reasons, it was decided that these animals were kept in the cage for education purposes. To date, 27 individual orang utans live in Semenggoh Nature Reserve as free ranging animals.

MATANG WILDLIFE CENTRE

The Matang Wildlife Centre (MWC) was established in 1998 as a sister facility to SWC. The centre is located about 35km from Kuching, within the tropical forest of Kubah National Park with a total area of approx. 2200 ha. Since 1998, the function of orangutan and other wildlife rehabilitation activities were carried out at MWC and the SWC is only caters for free ranging or semi-wild orangutans. The MWC initially starting with 4 orangutans and all of them were transferred from SWC. Since then all newly confiscated orangutans were sent to MWC. To date, the centre had trained fourteen orangutans and of these numbers, eleven had been release to the forest area within the Kubah National Park. Record showed that only four orangutans occasionally return back to the centre for supplementary food. The others had never return to the centre although there were signs of them (e.g. old nest) in the place where they were previously released.

ORANGUTAN BORN AND MORTALITY IN THE REHABILITATION CENTRE

Altogether a total of 25 orangutans were born in SWC and MWC in the period between 1979 and 2014. In SWC, all babies were born in the wild, whereas in MWC most of the babies were born in captivity. The birth intervals for free ranging orangutans in SWC were observed to be between 3 and 5 years.

To date, the centres had recorded eighteen deaths, which were mainly occurred in SWC during the early days of the establishment of the centre. The main causes of the death were mainly due to diseases. Most of the confiscated orangutans that were sent to SWC during that time were in poor conditions or under nourishment because they were not properly kept or fed by the owners. There were few cases where orangutan died due to electrical shock and other natural causes. Mortality rate among infants that were born as semi wild animal in the centres was low probably due to the natural care by their semi-wild mother orangutans.

CONCLUSION

From the conservation effort carried out by the state, the government had established Totally Protected Area (TPA) specifically for the protection of the species and these include the Batang Ai National Park, Lanjak-Entimau Wildlife Sanctuary, Ulu Sebuyau National Park and Sedilu National Park. In Sarawak, orangutan conservation played a vital role in ensuring the survival of the species. Conservation in the future will focus on human factor such as awareness program especially for the communities living in the areas surrounding orangutan habitat range. Continuous monitoring will be carried out as part of the conservation program for the species to monitor the population status, movement patterns, threats etc. More research should be encouraged on genetic diversity through DNA analyses. Local graduates should be encouraged to undertake research on the orangutan to produce more local experts in this field. Generally, conservation efforts that had been carried out in Sarawak have contributed significantly to the better management of the species in the state.

REFERENCES

1. Abang, M.A.T. & Onuma, M. 1997. Review of activities at Semenggoh Wildlife Rehabilitation Centre. Forest Department Sarawak (unpubl. report).
2. Blouch, R. A. 1997. Distribution and abundance of orangutans (*Pongo pygmaeus*) and other primates in the Lanjak Entimau Wildlife Sanctuary, Sarawak, Malaysia. *Tropical Biodiversity*. 4(3): 259-274.
3. Frey, R. 1978. Wildlife management in Southeast Asia. *Biotrop Special Publication* Vol.8: 199-217.
4. Groves, C. (2001): Primate taxonomy. Smithsonian Institution Press, Washington.
5. Gurmaya, K.J. and Sundai, S. 2002. Development of Lanjak Entimau Wildlife Sanctuary as a totally protected area. Phase III. ITTO Project PD 16/99 Rev.2 (F): A study of habitat conditions, populations, and distribution of orangutan in Lanjak Entimau Wildlife Santuray and Batang Ai National Park, Sarawak, Malaysia. International Tropical Timber Organization, Yokohama, Japan and Forest Department Sarawak. Malaysia.
6. Harrison, T. 1949. Large mammals of Borneo. *Malayan Nature Journal* IV (2): 70-76
7. Harrison, B. 1961. Orangutan - what chances of survival? *The Sarawak Museum Journal* 10 (17-18): 238-261.
8. Hooijer, D. A. (1960). The orangutan in Niah Cave pre-history. *The Sarawak Museum J.* 9 (15-16): 408-421.
9. Husen, A. Z. (2001). Foraging ecology of semi-wild orangutan at Semenggoh Wildlife Rehabilitation Centre, Sarawak. Undergraduate Thesis. Universiti Malaysia Sarawak. Kota Samarahan (unpublished).
10. Meredith, M. E. 1995. A faunal survey of Batang Ai National Park, Sarawak, Malaysia. *The Sarawak Museum Journal* 48 (No. 69 New Series): 133-155.

11. Mohd-Rahmantullah (2001) Mohd-Rahmantullah, M. H. 2001. *Nesting ecology of semi-wild orangutans at Semenggoh Wildlife Rehabilitation Centre, Sarawak*. Thesis (undergraduate), Universiti Malaysia Sarawak, Kota Samarahan.
12. Payne, J and Francis C. M. 1985. A field guide to the mammals of Borneo. The Sabah Society, Kota Kinabalu, Sabah, Malaysia.
13. Schaller, G. B. 1961. The Orangutan in Sarawak. *Zoologica*. 46 (6): 73.
14. Silang, S., Laman, C.J. and Demies, M. (2006). Orangutan Habitat Monitoring: Fruit Trees for Orangutan in Batang Ai National Park. *Hornbill Vol. 8*, 177 - 189.
15. Silang, S., Wahab, T., Dagang, P. and Robi, N.J. (2010). A Preliminary Checklist of Terrestrial Fauna in the Ulu Sebuyau National Park. Paper presented in the Sarawak Biological Resources Forum, 29-31 March 2010, Kuching, Sarawak, Malaysia.
16. Wallace, A. R. 1869. *The Malay Archipelago: the land of the orang-utan and the bird of paradise*. London: Macmillan and Co.
17. Warren, K.S., Nijmian, I.J., Lenstra, J.A., Swan, R.A., Heriyanto & den Boer, M. (2000). Microsatellite DNA variation in Bornean orangutans (*Pongo pygmaeus*). *Journal of Medical Primatology* 29(2): 57-62.
18. Wesley, M. N. 2001. *Activity budget of mother-infant pairs of semi-wild orangutans at Semenggoh Wildlife Rehabilitation Centre*. Thesis (undergraduate) Universiti Malaysia Sarawak, Kota Samarahan.
19. Wich, S.A., Meijaard, E., Marshall, A.J., Husson, S. Ancrenaz, M., Lacy, R.C., van Schaik, C.P., Sugardjito, J., Simorangkir, T., Traylor-Holzer, K., Doughty, M., Supriatna, J., Dennis, R., Gumal, M., Knott, C.D. & Singleton, I. (2008). Distribution and conservation status of the orang-utan (*Pongo* spp.) on Borneo and Sumatra: how many remain? *Oryx* 42(3): 329-339.
20. von Koenigswald, G.H. 1958. Remarks on the prehistoric fauna of the great cave at Niah. *Sarawak Museum Journal* VIII (12): 620-625
21. Wildlife Conservation Society (WCS)-Malaysia Program. (unpublished). Orangutan nest count surveys at the proposed extension areas of Lanjak-Entimau Wildlife Sanctuary and Batang Ai National Park. Final Report prepared on 26 August 2013.
22. Zhi, L., Karesh, W. B., Janczewski, D. N., Frazier-Taylor, H., Sajuthi, D., Gomber, F., Andau, M., Martenson, J. S. and O'Brien, S. J. 1996. Genomic differentiation among natural populations of orangutan (*Pongo pygmaeus*). *Current Biology*. 6(10): 1326-1336.