

WILDLIFE

The wildlife monitoring activities was mainly focused at the Malua Forest Reserve (less disturbed forest) and Bukit Piton Forest Reserve (heavily disturbed). Both of these areas provided rare, threatened and endangered species under Malaysian National Interpretation for the High Conservation Value (HCVs). In 2020, the wildlife monitoring also was carried out in Lower Kawag (Ulu Segama Forest Reserve). The wildlife monitoring activities have been successful conducted, but some series of monitoring was postponed due to access problem along Malua Forest Reserve. Apart from that, issue of pandemics (Covid-19) also disrupted the activities that been planned.

Ground Orang-utan Nest Census

Census findings in 2020 recorded that the Bornean Orangutan (*Pongo pygmaeus morio*) densities ranges between 1.42 – 2.43 individual/km² in Malua Forest Reserve, and 1.92 - 3.18 individual/km² in Bukit Piton Forest Reserve. Some additional transect was established in year 2020 at Lower Kawag (which is in compartments 171/ 172, Ulu Segama Forest Reserve) and current densities is 0.89 individual/km² (Figure 2 and Figure 3). As usual, the Orangutan nest abundantly detected at the medium size trees and lower crowns of dominant trees i.e. pioneers species (*Neolamarckia cadamba*, *Pterospermum spp.*). In 2020, data shows higher densities in heavily disturbed forest at Bukit Piton Forest Reserve compare to less disturb forest in Malua Forest Reserve. Ground census in Bukit Piton Forest Reserve shows an increment number of nests since year 2017 to 2019 but slightly decrease in year 2020. The fluctuated results could be affected by various factor i.e. food abundant along the line transect and effort (detectability) during the census. However, the population of Orangutan particularly at Bukit Piton Forest Reserve being slowly improve as most planted trees provide suitable canopy for Orangutan nest and foods.

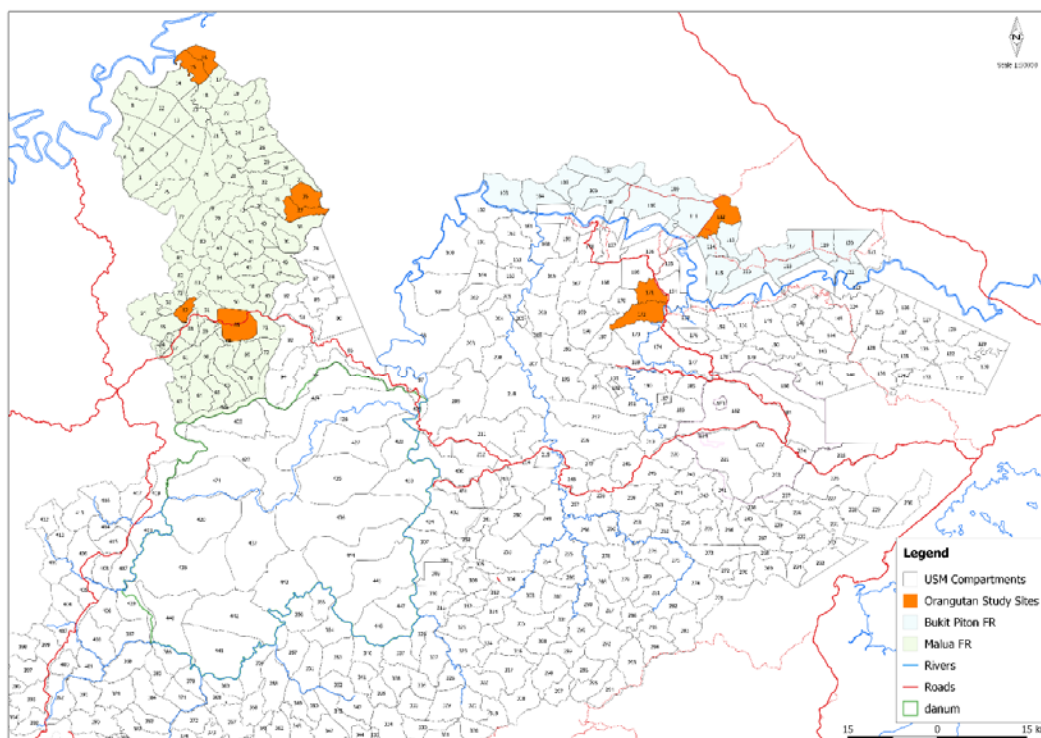


Figure 8: Locations of six (6) Orangutan Nest census in Malua FR, Lower Kawag (Ulu Segama FR) and Bukit Piton FR

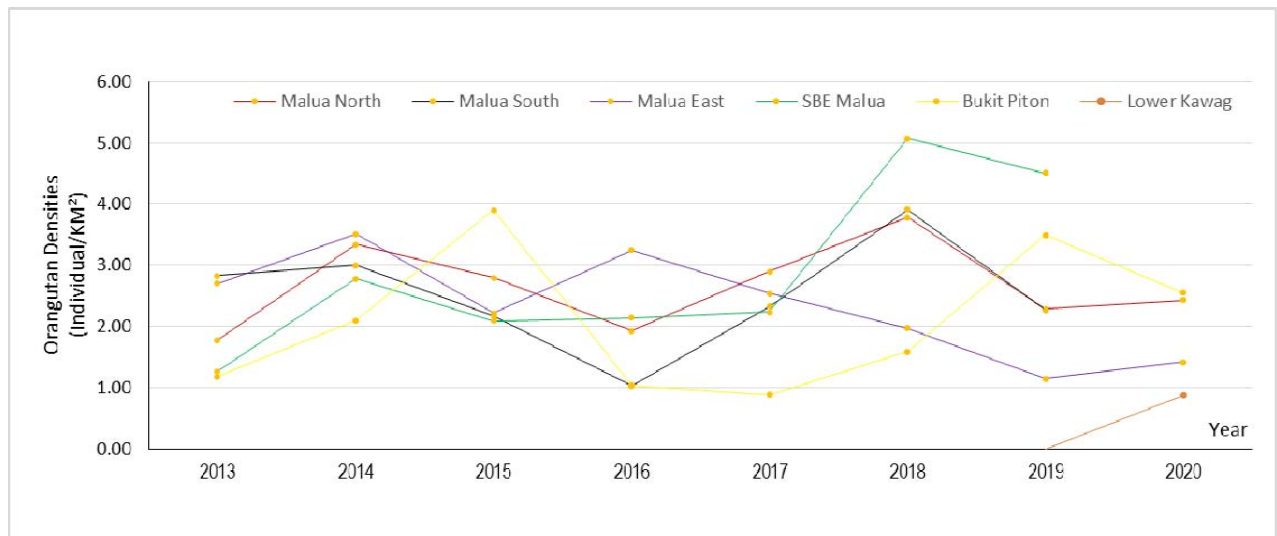


Figure 9: Graph of annual orangutan densities in five different study sites within Malua FR and Bukit Piton FR

Opportunistic Wildlife Sightings (Adhoc)

At least 10 large terrestrial mammals were sighted in 2020 and classified as threatened under IUCN red list criteria such as Bornean Orangutan, North Bornean gibbon, Bornean sun bear, Sunda pangolin, Bearded pig, Bornean pygmy elephant, Binturong, Proboscis monkey, Pig tailed macaque and Slow loris (Figure 10). Bornean pygmy elephant is the most common and frequently sighted (0.32 sighting/day), follow by Bornean Orangutan (0.13 sighting/day), Pig tailed macaque (0.11sighting/day) and Bearded pig (0.08 sighting/day). Generally, the RTE species sighting within to observation sites was low detection per day ($1 < \text{detection/day}$).

As of to date, 58 species of large terrestrial mammals with 24 families were recorded within USM area since the previous FMP. Eight (8) species are classified as totally protected based on the Wildlife Conservation Enactment 1997 i.e. *Bos javanicus*, *Helarctos malayanus*, *Nasalis larvatus*, *Neofelis nebulosa*, *Pongo pygmaeus mario*, *Dicerorhinus sumatrensis*, *Elephas maximus* and Sunda pangolin (Table 8), and more than 40 species classified under schedule II (protected species-limited hunting with license) and eight (8) species recorded under schedule III (protected species hunting with license).

Table 8: A list of threatened wildlife species (terrestrial mammals) recorded since year 2009 to 2020 within Ulu Segama-Malua SFM project area

Species (Common Name)	Scientific Name	WCE (SWD). 1997	Status IUCN Red list
Sumatran rhinoceros	<i>Dicerorhinus sumatrensis</i>	I	Critically Endangered
Sunda pangolin	<i>Manis javanica</i>	1	Critically Endangered
Bornean Orangutan	<i>Pongo pygmaeus morio</i>	I	Critically Endangered
Bornean Banteng	<i>Bos javanicus</i>	I	Endangered
Bornean Bay Cat	<i>Catopuma badia</i>	II	Endangered
North Borneo Gibbon	<i>Hylobates funereus</i>	II	Endangered
Bornean pygmy elephant	<i>Elephas maximus borneensis</i>	1	Endangered
Flat headed cat	<i>Prionailurus planiceps</i>	II	Endangered
Otter civet	<i>Cynogale bennettii</i>	II	Endangered
Proboscis monkey	<i>Nasalis larvatus</i>	I	Endangered
Bearded pig	<i>Sus barbatus</i>	III	Vulnerable
Bearcat / Binturong	<i>Arctictis binturong</i>	II	Vulnerable
Bornean Clouded Leopard	<i>Neofelis diardi</i>	I	Vulnerable
Horsfield's tarsier	<i>Tarsius bancanus</i>	II	Vulnerable
Sabah grey langur	<i>Presbytis sabana</i>	II	Vulnerable
Small-clawed otter	<i>Aonyx cinerea</i>	II	Vulnerable
Pig-tailed macaque	<i>Macaca nemestrina</i>	II	Vulnerable
Sambar deer	<i>Cervus unicolor</i>	III	Vulnerable
Slow loris	<i>Nycticebus sp</i>	II	Vulnerable
Bornean Sun bear	<i>Helarctos malayanus</i>	I	Vulnerable
Tufted ground squirrel	<i>Rheithrosciurus macrotis</i>	II	Vulnerable

*Based on current IUCN red list status; www.iucnredlist.org. Retrieved 20th February 2021

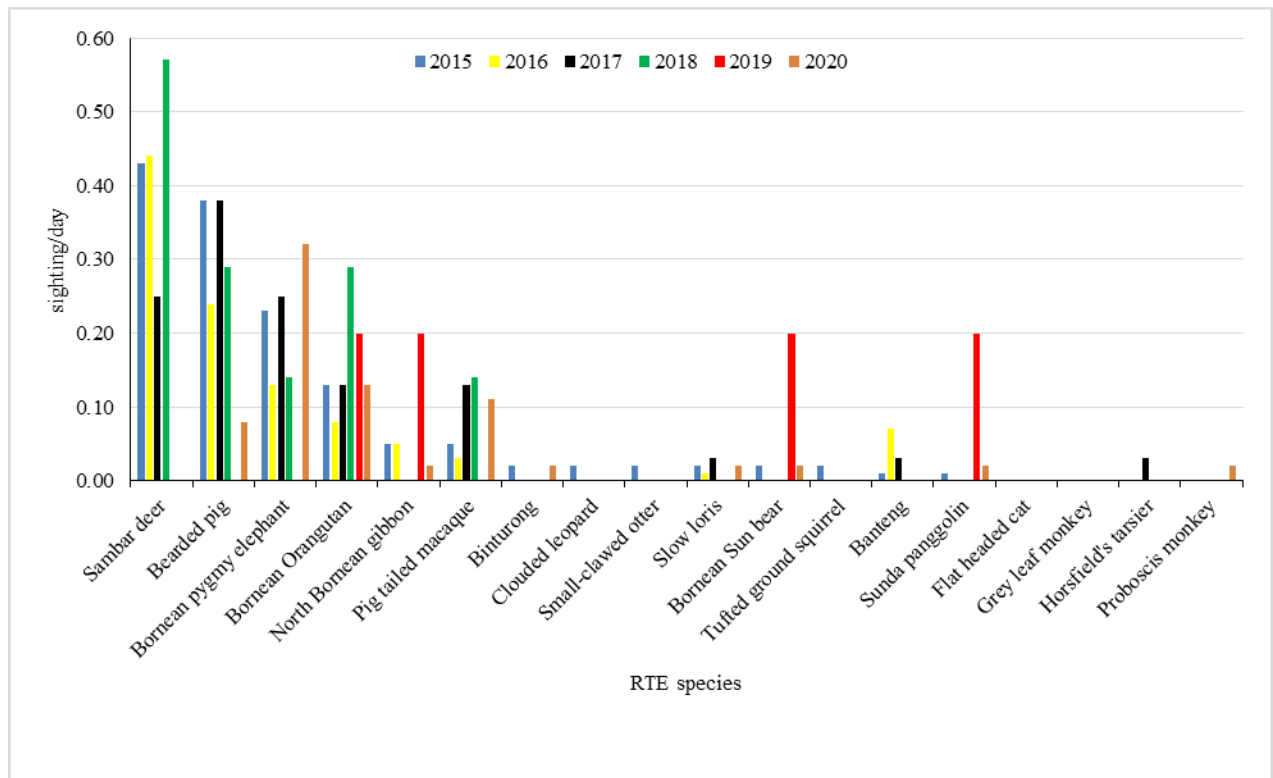


Figure 10: Annual sightings of RTE wildlife within USM

Nightspot by using vehicle

The night survey in 2020 recorded with low detection of threatened wildlife species which ranging between 0.003-0.060 sighting/day/km. Nightspot indicates a different result whereby Sambar deer and Bearded pig were frequently sighted in Malua FR, whereby some species such as Slow loris, Clouded leopard, Western tarsier and Bornean pygmy elephant were sighted at Bukit Piton Forest Reserves. The nightspot series for Malua FR mostly postponed due road problem, and graph in figure 11 show that the differences in sampling effort between sites have not be accounted. But, general finding shown that Bukit Piton FR has detected more species variations (threatened species) comparing to Malua FR (Figure 11).

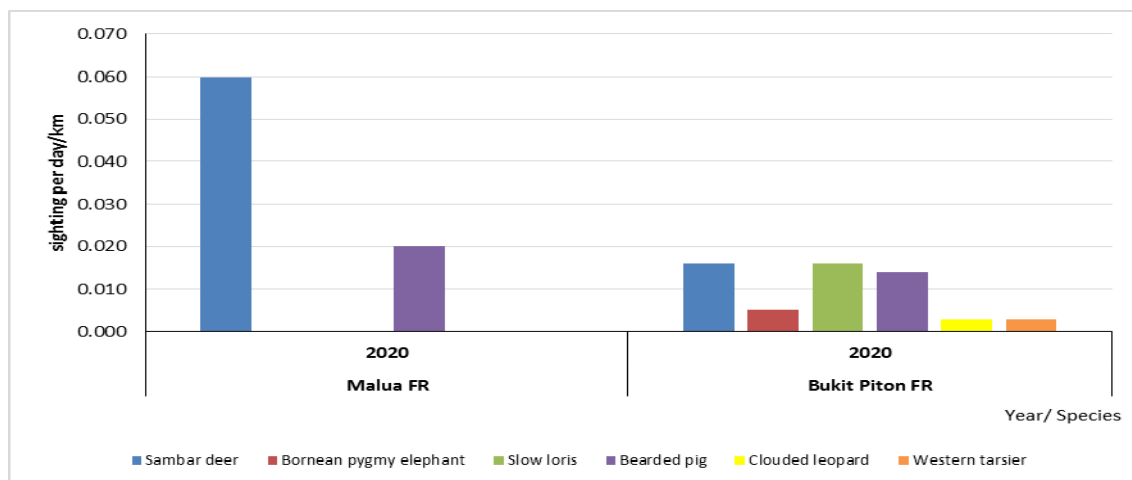


Figure 11: Patterns of some “threatened species” detection (average detection per day/km) during nightspot activities carried out within two (2) different habitat treatment in USM SFM project area for year 2020

Bird Survey

No additional of new bird species surveyed in 2020. Record for both areas maintain at 177 bird species whereby 6.21% or 11 of bird species were classified as threatened under the IUCN red list i.e. Helmeted hornbill, Storm's stork, Black crowned pitta, Blue headed pitta, Bornean wren babbler, Scaly-breasted Partridge, Great slaty woodpecker, Large billed blue flycatcher, Large green pigeon, Short toed coucal and Wallace's hawk eagle. Whereas, 93.79% or 166 of bird species classified as low risk.