



Figure 4: A video grab of a juvenile Red Banded Langur with the mother. @Jason Hoo

The Red Banded Langur also occurs along the mangroves on the western Maludam peninsula. From 2016 to 2018, a few individuals of Red Banded Langurs were recorded in Betung Kerihun Danau Sentarum National Park in West Kalimantan, Indonesia. This record confirms the extended range of this species in our neighboring country. Nevertheless, the range of the Red Banded Langur is now believed to be restricted to the southwestern part of Borneo. The full estimate of the population across its range is not known, but possibly only in the hundreds and warrants serious conservation attention.

**Conservation status**

The Red Banded Langur's habitat is a fragile ecosystem, as peat swamp forest is known to be one of the most threatened ecosystems in Sarawak. The draining of peat for development is a constant threat, alongside conversion of remaining peat swamp forests to other land uses. Drained peat becomes a fire risk, alongside alterations to its chemical and physical properties, which then affect the vegetation health and composition.

There are no recent records of Red Banded Langur being hunted in Sarawak, and it is safe to presume none for now. However, a Red Banded Langur skin was found many years ago in an abandoned longhouse along Lupar River, presumably an incidental catch by the local people.

The Red Banded Langur is totally protected in Sarawak, and is listed in Schedule 1 of the

Sarawak Wild Life Protection Ordinance 1998. Maludam National Park is managed by the Sarawak Forestry Corporation. The national park is also rich in many other species; it is home to over 50 species of mammals and close to 200 species of birds. It is indeed rich in primates diversity, as seven species are found here, namely the Red Banded Langur, Long Tailed and Pig Tailed Macaques, Proboscis Monkey, Silvered Langur, Western Tarsier and Slow Loris. It is the only place in Sarawak where the Red Banded Langur is found. Access to the park is via Maludam town. A boat operated by the local people can be chartered to go upstream along the Maludam River. The people here are aware of the conservation importance of the Red Banded Langur and are happy to welcome naturalists and eco-tourists to Maludam, the home of the unique and elusive Red Banded Langur.

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 Jason Hoo's research interests are wildlife ecology, conservation spatial planning, forest management, peat conservation and environmental policies. He has been in the profession of environmental and wildlife conservation for more than 20 years and currently leads the WWF-Malaysia's Sarawak Conservation Programme. His main tasks are to oversee and coordinate the design and implementation of WWF-Malaysia's conservation strategies in Sarawak, aligned to local, national and transboundary conservation agenda. Among the key areas of his work are: development of spatial plans for conservation; wildlife surveys; community engagements and empowerment; and environmental policies. Other key roles include developing and maintaining strategic partnerships, developing project funding proposals, project management and monitoring; and promoting the use of technological tools in advancing conservation activities. He also supports civil societies and nature-based conservation bodies on project proposal development and technical report writing, as well as conducting public talks and lectures on conservation related subject matters. Jason holds a Doctorate of Philosophy and a Master of Science. He can be reached at [Jason@wwf.org.my](mailto:Jason@wwf.org.my).



## The Illusive Bornean Carnivore: The Sunda Clouded Leopard

Jayasikan Mohd Azlan



Figure 1: A male Sunda Clouded Leopard appears to investigate a scent mark. Many cats are known to be territorial, and such marking is a form of intraspecific communication to show their presence to competitors. @Jayasilan Mohd-Azlan

Wild cats are often regarded as charismatic flagship species to highlight conservation values of an area. Five wild cat species occur in Sarawak, the relatively large Sunda Clouded Leopard (*Neofelis diardi* ~ 11-25 kg), the mid-sized Bornean Bay Cat (*Cotopuma badia* ~ 3-5 kg) the Marbled Cat (*Pardofelis marmorata* ~ 2.5-5 kg), the smaller Leopard Cat (*Prionailurus bengalensis* ~ 2-2.5 kg) and the Flat-headed Cat (*Prionailurus planiceps* ~ 1.5-2.5 kg). Except for the Leopard Cat, most Bornean cats are highly secretive and difficult to study. Among these, the Sunda Clouded Leopard is one of the most elusive animals in the tropical rainforests of Borneo.

The Sunda Clouded Leopard, one of the larger carnivores endemic to Borneo and Sumatra, has been separated from its mainland relative, *Neofelis nebulosa* due to genetic and morphological differences. They are called clouded leopards because of the cloud-like

markings on their body, head, legs and tail. The most distinct morphological feature of this cat are the large rosettes, with their posterior borders edged in black. The clouds on and near the shoulders are the largest. There are also smaller black spots of various shapes continuing down both legs, and longitudinal stripes on the neck and blotchy stripes running from the outer edge of the eye to below the ear. The long tail has spots that appear as wide bands towards the posterior. The upper canines are relatively large, and may enable the grasping of prey caught in trees. The large canines of the clouded leopard may be used in skillfully dispatching prey (especially monkeys) by dislocating the vertebrae in the neck; this is essential in arboreal settings, where the predators have little time to handle prey.

**Hunting Techniques**

The clouded leopard is known to climb down trees head first. It is essentially a solitary predator that stalks and ambushes its prey. Clouded leopards are known to hunt terrestrial and arboreal prey, such as barking deer, juvenile bearded pigs, porcupines, primates and terrestrial birds. Camera trapping studies in Sarawak reveal that the clouded leopard's activity is mostly at night, with minimal activity during the day. As they are spatially aggregated, they use scrapes, cheek rubbings and scent markings as a form of intraspecific communication to show their presence to competitors and females that are ready to mate.



Figure 2: A Sunda Clouded Leopard camera-trapped early in the morning in the interior of Sarawak. In general this animal is active nocturnally, with sporadic diurnal activities. @Jayasilan Mohd-Azlan

### Habitat and distribution

In Borneo, they are distributed in lowland rainforests below 1,500 m, and at lower densities, in logged forest. In Sarawak, they have been reported from the primary forest of Lambir, to logging concession areas in Ulu Baram, Ulu Baleh and Ulu Kapit, and secondary forest southeast of Bintulu. A dearth of historical evidence and the absence of this species from reports and surveys suggest that the clouded leopard may occur in extremely low densities in western Sarawak. In Sabah, it has been reported from Ulu Segama, Tabin, Maliau, Danum and Kinabatangan regions.

The clouded leopard is an adaptable, yet rare species, found in both primary and selectively logged dipterocarp forest. Despite the fact they have been reported to thrive in secondary forest, they seem to be negatively affected by logging. Besides logging, which affects habitat and potential prey species, hunting also appears to contribute to the decline of this species. While the Sunda Clouded Leopard appears capable of utilising some modified habitats, the effects of anthropogenic disturbance on its population and distribution remain speculative. Past studies have shown the effects of elevation on the distribution of the clouded leopard, along with its tolerance of secondary forest but not Oil Palm plantations or coastal regions. In Sarawak, the occurrence of clouded leopards appeared to be associated with rivers and elevation above 900 m, but not with roads which are often used by hunters.

### Status

Hunting of non-protected species (such as wild boars and deer) is a privilege given by law to the Indigenous Peoples of Sarawak. However, incidental and opportunistic hunting of non-target species such as the clouded leopard during hunting expeditions may have had an adverse effect on their distribution and population in Sarawak's rainforest. In the past, clouded leopard skins were used by many tribes in Sarawak for rituals. Existing skins are considered relics, and local communities are allowed to keep them, while artificial substitutes are encouraged. The clouded leopard's skull and pelage (fur) can be sold for up to USD500 in the black market. However, it is believed that international trade may not be the driving factor in hunting of this species in Sarawak.



Figure 3: Sunda Clouded Leopard skins were used by many Indigenous Peoples in Sarawak as part of rituals; existing skins are considered relics. @Jayasilan Mohd-Arhan

The Sunda Clouded Leopard is protected throughout its range and has Totally Protected status in the Sarawak Wild Life Protection Ordinance 1998. Any offence leading to a conviction may lead to a fine of up to RM25,000 (USD6,250). However, a species included under this law can be killed if it is thought to cause harm to human life or danger to property, and if enough warning has been given. It is classified as Vulnerable on the IUCN Red List, primarily due to habitat loss and fragmentation, and also receives protection from international trade through its listing in Appendix I of CITES. Besides maintaining a connected network of forests, long-term multipronged approaches need to be considered to ensure the viability of this beautiful animal. These include:

- consistency in enforcing laws and regulations;
- education and awareness programmes, especially targeting the younger generations;
- forest stewardship programmes for local communities.

The local communities and authorities need to work together to enhance the enforcement and awareness campaigns for the long term conservation of this species in the wild.



Figure 4: Sighting of clouded leopard meat in the market is uncommon. This lot of Sunda Clouded Leopard meat was sold for approximately RM10 per 250 g in the interior of Borneo. @Jayasilan Mohd-Arhan



### Jayasilan Mohd-Arhan

Dr. Jayasilan Mohd-Arhan received his Bachelor Degree in Forestry from UPM, Masters of Science degree in Conservation Biology from U.K.M and PhD from Charles Darwin University, Australia. His work on various species of conservation importance in Malaysia, Indonesia and Australia has resulted in over 100 scientific articles. Currently he is a member of several IUCN Species Survival Commissions Specialist groups, his research group focuses on how species respond to forest fragments in Borneo. He is passionate about conservation and works on-the-ground action for promoting protection of biodiversity especially through local community involvement.