

# A Brief Study on Vulnerable Clouded Leopards of North East India

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**Abstract:** Species loss is a process of extinction of species, as a result of a changed environmental condition to which the species is not suited. Loss of species or biodiversity is an important global issue. But the most concerned endeavor the mankind can make is protecting the existing species, especially those are threatened of extinction. The endangered and the vulnerable really need a keen eye, conscientious activities and effective awareness to help them survive the extreme transformation the planet is going through. The Clouded Leopard or *Neofelis Nebulosa* is one of the very important vulnerable species inhabiting in the North-Eastern India and other parts of South East Asia. These are the smallest of big cats and is the evolutionary link between the *panthera* and *feline* species. A clouded leopard is easily distinguished from other leopard species owing to its very unique blotched patterned cloud like spots on its coat, making it a victim of the poachers and illegal traders. Due to their secretive lifestyle the exact number leopards in the taxon is not precisely estimated. But the International Union for Conservation of Nature (IUCN) has confirmed their declining trend of population. They are rapidly losing their habitat and becoming regionally lost due to lack of information and awareness. Thus, effective ventures are required, to understand the species and their problem before the planet regrets another species loss.

**Keywords:** - Species loss, Biodiversity, Vulnerability, Clouded Leopard, Habitat depletion, Conservation, Protection

## Introduction

Owing to changed environmental condition many species has globally disappeared. As for example Beleric Island Cave Goat of Spain became extinct during 3000 BC. Cave Lion, Cave Bear of Europe became lost around 10000 and 27000 BC. Similarly, there are some recent loss such as extinction of Caspian Tiger from Caucasian mountain around 1970, Carpathian Wisent (1790), Vietnam Javan Rhinoceros (2010). India also had been through the phenomena of species loss in prehistoric age and as well as in the recent past. Like Malabar Cient and Himalayan Quall has permanently disappeared within few decades to a century. There are many species yet which are slowly progressing towards extinction. In India faunal species like Great Indian Bustard, Indian One Horned Rhinoceros, Snow Leopard, Wild Dog etc are striving hard for survival. In North East such threatened fauna includes Pigmy Hog, Swamp Deer, Capped Langur, Asian Elephant, Flying Squirrel etc.

The Clouded Leopard is one of the remarkable threatened Neofelis species of North East India. The Latin name '*Neofelis Nebulosa*' is derived from '*Neo*' meaning 'new' and '*Felis*' meaning 'cat', '*Nebulosa*' denotes cloud, first mentioned by Sir Stanford Raffles in the **Descriptive catalogue of a collection made in Sumatra** and the scientific name given by Griffith in 1821. They are listed vulnerable by IUCN {criterion (1+2a) (1)} Red list of threatened species, version 2009.1 and schedule 1 of the Wild Protection Act; Government of India. They are also protected by legislation in most of its range countries and even included in CITES Appendix 1 extensive illicit trade.

## Objectives

The study envisages a close look at the species, activity patterns, food habits and behavior in the wild, making an endeavor to identify all the proximity and difficulties the taxon is facing, resulting a declining population trend. Clouded Leopards are the sheer prey of habitat loss and human interventions. The study therefore confronts all the environmental

and demographic factors which are responsible for rapid disappearance of the species from their original home in the perspective of North East India. Since the vegetative edens of North Eastern India states homes this rare species, this study throws light on this context, figuring out the best possible reason for its vulnerability and ways to conserve them.

### Population distribution and range of habitat

The habitat of *Neofelis Nebulosa* is distributed only in few countries of South East Asia, which includes foot hills of Nepal, North Eastern part of India, some parts of North Eastern Bangladesh, Myanmar, Thailand and South Eastern China.



**Fig: 1 Global distribution of Clouded (Source: Clouded Leopard, fanpop.com; Clouded Leopard Range)**

There are three subspecies of Clouded Leopard which are regionally confined; the *Neofelis Nebulosa* (South East Asia and Eastern Myanmar), *Neofelis Nebulosa Macrosceloid* (Nepal, India, Myanmar) and *Neofelis Brachyura* which is now extinct from Taiwan. The Clouded Leopard niche in India comprises Sikkim, Northern West Bengal, Assam, Arunachal Pradesh, Tripura and Meghalaya. The estimate population densities ranges from 0.58 to 6.53 individuals per 100 sq. km. As till now only 7 leopards has been tracked with radio collar, the home range is estimated from 33.6 to 39.7 sq. km for female leopards and 35.5 to 43.5 sq.km for male leopards.

### Physical Attributes

Although belonging to *Pantherine* class, a Clouded Leopard is actually a medium sized felid. The male leopard is about 81-108cm in size; females are slightly smaller about 68.6 - 94cm along with tail. They weigh around 11 - 23kg. They have short and stalky legs with specifically hind limbs longer than front limbs facilitating them with more jumping and looping capabilities than other cats. The exceptionally long upper canine tooth are almost three times of the basal width of the skull. The upper canine may measure 4 cm and the skull size is around 3.8 - 5cm. They are considered as modern day 'Saber tooth', as they have remarkable portion of canine as compared to their body size.



**Fig: 2 A clouded leopard (Source: @cloudedleopardproject; facebook.com)**

They have large paws with very sharp claws. Eyes are large with vertical apertures. The dark grey and ochreous ground coloured fur is obliterated by black and dark dusky grey blotched pattern. The elongated blotches continue down the spine and legs are irregularly blotched. Ear and head are ornamented with black spots and broken stripes are seen on the corner of the eyes, mouth and neck.

### Habitat Preference and Use

The early documentation of Clouded Leopard states that they only prefer dense core area of the forest, but the recent study and observation suggests that they are pretty versatile and could definitely thrive in different sorts of habitat which may even include secondary or selectively logged forest, dry tropical forests, mangrove swamps and open grassland. These studies are based on local interviews, records of hunting tracks and direct observations. The recent radio telemetry and Camera Trapping studies in Thailand and Malaysia reveals their existence in both primary evergreen forest and open grassland, depending on hunting preference and food availability. Another traditional concept of Clouded Leopard demanded their existence only in the plain area. A very rare occurrence in the elevation was documented. But recent studies via Camera Trapping confirmed their prevalence at the high altitude region of Thailand and Malaysia. In contemporary India such detailed field study has not been made but past studies documented a rare presence of the species at 2,585m and 2,157m altitude in North Eastern India. Hence contemporary observations claim their frequent appearance and constancy at the higher altitudes, which is quite opposed to the previous studies, firmly advocates the phenomena of habitat change.

### Activities and Behaviors

The past studies have always confirmed a Clouded Leopard to be strictly nocturnal in nature. But the contemporary studies have raised questions on this claim. Studies in Thailand with Camera Trap and Radio Collar has validated their diurnal activities. They were found hunting and travelling during the day time. A typical arrhythmic pattern has been witnessed with frequent morning activities followed by evening and crepuscular hours. The activity patterns of Clouded Leopards are dependent on certain factors like the activity hours of the prey. Many felids are reported to track the activity period of the prey and align themselves according to it. Other factors include temporary change of functioning hour to avoid the dominant carnivorous. *Neofelis Nebulosa* being no exception as a felid is subjected to these variables.



**Fig3: A Clouded Leopard on a move (Source: @cloudedleopardproject;facebook.com)**

Because of their arboreal nature and talent, a Clouded Leopard is often mentioned as a 'tree tiger' by the locals and in the early literature. They are excellent climbers, and with their additional jumping capability makes them perform many actions which other panther

species is unable to perform. They can climb horizontal branch with back towards ground. They are adept of climbing vertical trunks and even observed climbing down with head first. The stalky legs and a long tail favors them with low center of gravity apposite for their arboreal life style. They are related with hunting style as hanging along the branches and jumping on the passing prey. Unlike other pantherine they had also been witnessed killing the prey penetrating at the back of neck. Their sharp canine makes them accustomed of killing large animals through deep penetration.

Studies suggests the communication pattern of a *Neofelis Nebulosa* is similar to other felid category. Scent marking, male territory dominance, urine spraying, claw marking, cheek rubbing are a very conventional way of conduct. Their reproduction system is also much alike with a gestation of 90 days. The reproduction pattern is dependent on the duration of day and availability of light.

### Food Habits

The Clouded Leopards are much shy, generally avoids human disturbances. Thus a very little is known about their food habits. Hence recent studies have validated that unlike other felid and pantherine species, their sustenance include primates, rodents, ungulates, fishes and even snakes. A Clouded Leopard visiting human civilization and preying on domestic animals are also frequently reported. They are capable of killing large animals because of their precise canines. Historical evidence specifies their nature of returning to the dead prey. A large kill pursues them to take multiple days for full consumption. The availability of prey is one of the cardinal factors determining their energy level, home range and population density.

### Clouded Leopard conservation sites of North East India

North Eastern India being the hearth of biodiversity with numbers of National Parks, Wildlife Sanctuaries and global Hotspots is the exact milieu for an elegant species like *Neofelis Nebulosa*. Here are some of the astonishing places were this majestic animal can be caught into sight -

- Singalila National Park in the Darjeeling district of West Bengal is well known for the trekking route to Sandakphu peak. The park falls in the Indomalaya eco-zone and homes number of mammals including clouded leopard, serows, takin, red panda, leopard cat and yellow-throated marten.
- The Buxa National Park is one of the very important Tiger Reserve in West Bengal, located in the Buxa Hills. Buxa This is one of the location in Bengal to spot majestic Clouded Leopard in India.
- Kanchenjunga National Park is part of the Khangchendzonga Biosphere Reserve, located in Sikkim and first Mixed Heritage site of India. The Kanchenjunga Park is home to third highest peak in the world and wild animals like musk deer, snow leopard, Clouded Leopard and Himalayan tahr.
- Clouded Leopard National Park of Tripura is India's first wildlife park to Clouded Leopards, located inside the Sipahijola Wildlife Sanctuary. It covers an area of about 5.08 sq. km.
- The Dibru Saikhowa National Park is one of the largest parks in Assam and top nineteen biodiversity hotspots in the world. The national wildlife park has rich and diverse fauna and one of the national park to house maximum number of wild cats in India.
- Manas National Park of Assam is another most famous natural world heritage site and known for its rare and endangered endemic wildlife. The sanctuary homes largest population the endangered wildlife like the Assam roofed turtle, clouded leopards, golden langur and pygmy hog.
- Namdapha National Park of Arunachal Pradesh is the largest national park of Northeast in terms of area and also the third largest national park in India. The park has one of the richest biodiversity in the country and the only national park in India to host four big cat species of Snow leopards, Clouded Leopards, Indian leopards and Tigers.
- Phawngpui National Park or the Blue Mountain National Park is home of wonderful range of birdlife and rare animals like mountain goat, leopard, serow and goral. The clouded leopard was also spotted and documented in natural habitat of Phawngpui Blue Mountain National Park.

- Balphakram National Park, also called as Grand Canyon National Park of India, located extreme South of Garo Hills in Meghalaya. Clouded Leopard is the state animal of Meghalaya and one of the wild cat that live throughout the forests of Garo, Khasi and Jaintia

### **Declining population and threats on the perspective of North East India**

The Wild Wide Find (WWF) has reported the estimate presence of about 10,000 Clouded Leopards globally and existence of only 1000 matured animals. The National Stud Book of India sanctioned the declining trend in the wild of North East India. Analyzing the attributes and life style of the *Neofelis Nebulosa* species we can recognize the threats and the reasons of vulnerability of the respective taxon.

The Clouded Leopard is mentioned to be versatile in respect of food and habitat. The availability of prey demarks its habitat range and structures its activities. A traditional study has always mandated their preference of forest core area but recent observation has also confirmed their show up in shallow forests and grassland. The contemporary studies even advocate their increased activities in the higher altitude. This precisely indicates that the depletion of habitat and lack of food lured them to such locations where they were never conventionally expected to be. Their short stature is a usual draw back before the dominant big carnivorous. Thus when they are pushed beyond their genuine zone of survival, they experience the habitat overlapping with other big predators. The unfair competition owing to this overlapping is a real restraint for survival and population growth, even inside the protected areas. The habitat loss, threats from big beasts and food insecurities push them towards human settlements probing for domestic animals. This induces a bitter man leopard conflict, where mostly leopards are the victim. The arboreal nature of the 'tree tiger' requires abundance of vegetation. Deforestation and cutting of trees due to shifting cultivations and human civilization expansion curtails their arboreal activities. This hinders their hunting strategies and prey frequency. More often they have to settle for the lower order animal causing dietary deficiency, effecting their survival.

The human threats are equally perilous. The unique and gorgeous coats are hugely in demand for the Asian poachers and illicit traders. In 2005, five skins were caught by Assam police at a shop near Milan Bazaar. In 2008 more skins were rescued by West Bengal police near Bhutan border. Though the wild life protection act version 2009.1; schedule 1 of Government of India legally secures the taxon but lack of awareness and conscience the Homo Sapiens are becoming the greatest antagonist that exposes the *Neofelis Nebulosa* more into vulnerability.

### **Recommendations**

In India the chronicle of *Neofelis Nebulosa* is often overshadowed by much celebrated species like Bengal Tiger. Very less knowledge and information are derived regarding Clouded Leopard as compared to other *pantherine* species. Many Indians are even unaware of its existence. To learn more about the species, detailed studies and observations should be conducted. Technological assistance like radio collars and trap cameras should be more often used. Motion triggered cameras should be implemented for understanding its activity pattern in the wild. Though the species shows positive aspects in the captivity. But multiplying them in their wild habitat is the real deal. Since the planet is going through major environmental and climatic changes, animal survival in the wild is becoming more resilient, especially for sensitive animals like a Clouded Leopards.

Human interventions should be strictly forbidden and their habitat also must be kept absolutely undisturbed. Active eye on shifting cultivations, deforestation and vegetation depletion are expected. But most important necessity is increasing human awareness regarding the species. Programmes can be arranged to protect the species and their habitat and local people should be compulsorily involved. Cautions are supposed to be increased regarding poaching and illegal trade.

### **Conclusion**

India is a country of surprising faunal diversities and North East India is a very special homestead of many rare and infrequent life. North East India comprises that narrow fringe of Clouded Leopard territory. Sadly, less studies have been conducted on them and people also possess limited knowledge regarding their habitat and lifestyle. This species has been hugely victimized due to human greed. Other than poaching they had widely been traded to different rich pet

collectors. In China their bone and flesh are used for making wine and ointments. Even their flesh was served in Chinese and Thai restaurants for wealthy Asian customers. This clearly indicates people's low conscience and lack of ethical duty on the planet they are living upon.

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