



Diard's clouded leopard (*Neofelis diardi*)



Also known as: Enkuli clouded leopard, Sunda clouded leopard, Sunda Islands clouded leopard, Sundaland clouded leopard

Kingdom	Animalia
Phylum	Chordata
Class	Mammalia
Order	Carnivora
Family	Felidae
Genus	<i>Neofelis</i> (1)
Size	Head-body length: 61 – 106 cm (2) Tail length: 55 - 91 cm (2)
Weight	16 – 23 kg (2)

STATUS

Classified as Vulnerable (VU) on the IUCN Red List and is listed on Appendix I of CITES (1). **Subspecies:** *Neofelis diardi borneensis* and *Neofelis diardi diardi* are both listed as Endangered (EN) on the IUCN Red List (1).

DESCRIPTION

Previously considered to be a **subspecies** of the clouded leopard (*Neofelis nebulosa*), Diard's clouded leopard has recently been recognised as a distinct species. Aside from genetic and anatomical differences (3) (4), Diard's clouded leopard can be recognised by its darker, grey or greyish-yellow fur and smaller cloud-like markings (3). These markings, from which the common name is derived, comprise ellipses partially edged in black, with the insides a darker colour than the background colour of the pelt (5). The limbs and underbelly are marked with large black ovals, and the back of the neck is conspicuously marked with two black bars (6). The thickly-furred tail is exceptionally long, often equivalent to the body length, and is boldly marked with black rings (5). Well adapted to forest life, Diard's clouded leopard has stout legs and broad paws, which make it excellent at climbing trees and creeping through thick forest (2). Perhaps the most remarkable feature of clouded leopards is that, in proportion to their body size, they possess the largest canines of all the cats (7) and Diard's clouded leopard has, on average, even larger and more knife-like canines than *Neofelis nebulosa* (4). Indeed, although they are considered to be of an unrelated evolutionary lineage, clouded leopards have independently evolved teeth and jaws that are remarkably similar to the primitive members of the extinct group of sabretoothed cats, such as the 8-10 million year-old, puma-sized *Paramachairodus* from Europe and Asia (8).

RANGE

Diard's clouded leopard is believed to be restricted to the islands of Sumatra and Borneo (1).

HABITAT

A forest-dwelling species, Diard's clouded leopard is most abundant in hilly, montane areas of rainforest on Sumatra, but may also be found in lowland rainforest on Borneo. Small numbers may occur in areas of logged forest and around the outskirts of oil-palm plantations (1).

BIOLOGY

Like the mainland clouded leopard, Diard's clouded leopard has impressive tree climbing abilities, and is capable of running head-first down tree trunks, climbing about on the underside of branches, and hanging upside down by its hind feet with the tail providing balance. The ability to climb trees allows it to forage for food in the canopy although it mainly uses the tree branches for resting (5). Interestingly, it appears to spend less time in the trees in regions where tigers and leopards are absent (1). It was originally thought that the long canines were for preying on large **ungulates** (7), though recent studies show that this species feeds on a variety of terrestrial and **arboreal** prey including proboscis monkeys, grey leaf monkeys, young sambar deer, barking deer, mouse deer, bearded pigs, palm civets, fish and porcupines (1). Prey is either stalked on the ground or ambushed from above (6) (9).

Clouded leopards are believed to be solitary, except when breeding or accompanied by cubs (10). Most information about clouded leopard reproduction comes from captive individuals (6), but as these generally comprise the mainland species, very little is known about the reproductive biology of Diard's clouded leopard (3).

THREATS

The principal threat to Diard's clouded leopard is the catastrophic level of deforestation that is occurring on Sumatra and Borneo as a result of logging and clearance for oil palm plantations. In addition, accidental capture in snare traps used to catch other animals, as well as deliberate poaching of this species' commercially valuable pelt are having a significant impact on its population (1).

CONSERVATION

Diard's clouded leopard receives national protection in Sumatra, Kalimantan, Sabah, Sarawak and Brunei, as well as international protection through its listing on Appendix I of the Convention on International Trade in Endangered Species (CITES) (1). It also occurs in most protected areas along the Sumatran mountain spine, and in the majority of protected areas on Borneo. Nevertheless, given the severity of habitat loss within this species' range, as well as the illegal hunting that is occurring, increased protective measures are urgently required (1).

The recognition of Diard's clouded leopard as a distinct species has important conservation implications, as unlike the mainland clouded leopard, there is not currently a captive breeding program in place (3). Hopefully, given its new status, efforts will be made to establish a healthy captive population.

FIND OUT MORE

To learn more about clouded leopard conservation visit:

- Smithsonian National Zoological Park:
<http://nationalzoo.si.edu/ConservationAndScience/ReproductiveScience/ConsEndangeredCats/CloudedLeopards>
- The Clouded Leopard Project:
www.cloudedleopard.org

AUTHENTICATION

Authenticated (11/05/2009) by Dr Per Christiansen.

GLOSSARY

- **Arboreal:** an animal which lives or spends a large amount of time in trees.
- **Subspecies:** a population usually restricted to a geographical area that differs from other populations of the same species, but not to the extent of being classified as a separate species.
- **Ungulates:** hoofed mammals.

REFERENCES

1. IUCN Red List (May, 2009)
<http://www.iucnredlist.org>
2. Nowak, R.M. (1999) *Walker's Mammals of the World*. Johns Hopkins University Press, Baltimore, Maryland.
3. Kitchener, A.C., Beaumont, M.A. and Richardson, D. (2006) Geographical variation in the clouded leopard, *Neofelis nebulosa*, reveals two species. *Current Biology*, **16**: 2377 - 2383.
4. Christiansen, P. (2008) Species distinction and evolutionary differences in the clouded leopard (*Neofelis nebulosa*) and Diard's clouded leopard (*Neofelis diardi*). *Journal of Mammalogy*, **89**: 1435 - 1446.
5. CAT SSC (May, 2009)
<http://www.catsg.org>
6. Nowell, K. and Jackson, P. (1996) *Wild Cats*. IUCN, Gland, Switzerland.
7. Macdonald, D. (2001) *The New Encyclopedia of Mammals*. Oxford University Press, Oxford.
8. Christiansen, P. (2006) Sabertooth characters in the clouded leopard (*Neofelis nebulosa* Griffiths 1821). *Journal of Morphology*, **267**: 1186 - 1198.

9. Matsuda, I., Tuuga, A. and Higashi, S. (2008) Clouded leopard (*Neofelis diardi*) predation on proboscis monkeys (*Nasalis larvatus*) in Sabah, Borneo. *Primates*, **49**: 227 - 231.
10. The Clouded Leopard Project (May, 2009)
http://www.cloudedleopard.org/default.aspx?link=about_main