

Biodiversity Record: Mainland leopard cat in Kranji Marshes and Lim Chu Kang

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Recommended citation. Chiok WX, Luskin MS & Chua MAH (2022) Biodiversity Record: Mainland leopard cat in Kranji Marshes and Lim Chu Kang. *Nature in Singapore*, 15: e2022112. DOI: 10.26107/NIS-2022-0112

Subjects: Mainland leopard cat, *Prionailurus bengalensis* (Mammalia: Carnivora: Felidae).

Subjects identified by: Wen Xuan Chiok and Marcus A. H. Chua.

Location, date and time: Singapore Island, Kranji Marshes and vicinity of Lim Chu Kang Road; September, November and December 2021 (refer to Observations).

Habitat: Degraded secondary forest and freshwater swamp forest.

Observers: Wen Xuan Chiok and Shivaram Rasu (for scat sample), and images recorded by camera trap.

Observations: Four video images of one individual recorded in the Kranji Marshes by camera trap —
1) On the ground near the edge of a degraded secondary forest on 2 November 2021 at 2311 hrs (Fig. 1).
2) At a separate location in degraded secondary forest on 11 November 2021 at 1926 hrs (Fig. 2).
3) At another distinct location in freshwater swamp forest on 30 November 2021 at 0136 hrs (Fig. 3).
4) At the same location as the first record (on 2 November) on 3 December 2021 at 2007 hrs (Fig. 4).



Figs. 1–4. Images captured by camera traps of an individual mainland leopard cat at three locations on four separate occasions over one month. Note that Fig. 1 and Fig. 4 are of the same location. (Camera trap photographs by: Wen Xuan Chiok)

In addition, a scat sample was collected in the middle of a gravel path through degraded secondary forest in the vicinity of Lim Chu Kang Road by Wen Xuan Chiok and Shivaram Rasu at 1938 hrs on 19 September 2021 (Fig. 5). The

sample was incidentally discovered and believed to be fresh as the observers only encountered it when making a detour after traversing the same path.

Remarks: In Singapore the mainland leopard cat is classified as critically endangered (Davison et al., 2008). It is locally scattered across fragmented forest patches on Singapore Island in the Western Catchment (Chua, 2015a), Central Catchment Nature Reserve (Chua, 2015b) and the Sungei Buloh Wetland Reserve (Wan et al., 2021), as well as on Pulau Ubin (Nathan, 1997, Fung et al., 2017, Said, 2022) and Pulau Tekong (Chua et al., 2016), two islands in the north-east. Occurrence records are thus crucial in mapping its distribution.

The present record confirms the occurrence of the mainland leopard cat in the Kranji Marshes. This emphasises the importance of preserving secondary forests patches (albeit fragmented) for habitat connectivity. It lends further support to the National Parks Board's designation of the Sungei Buloh Nature Park Network, which focuses on safeguarding complementary wetland habitats by linking Kranji Marshes to Kranji Coastal Nature Park and Sungei Buloh Wetland Reserve (National Parks Board, 2022). The variety of habitats within Kranji Marshes provide multiple niches for wetland specialists and endangered terrestrial mammals alike, and this highlights the importance of ecological connectivity/corridors for them.

With regards to the scat, a sub-sample was verified via PCR and DNA sequencing with reference to the genetic markers identified by Chua et al. (2016) to be of *Prionailurus bengalensis* origin. Previously, scat collection and diet analyses conducted by Chua et al. (2016) noted the diet of mainland leopard cats on the offshore island of Pulau Tekong. As the featured scat sample seems to be the first collected on Singapore Island, it is believed to have significant value for understanding the biology of the mainland leopard cat there (Chua et al. 2016).



Fig. 5. Leopard cat scat collected along Lim Chu Kang Road. Photo of the sample in-situ (left). Photo of the sample with the distinct hairs and leaf embedded (right). (Photographs by: Wen Xuan Chiok)

Note: Camera trap media reported here were obtained during wildlife monitoring surveys conducted within Kranji Marshes by the Asian School of the Environment, Nanyang Technological University, in collaboration with the National Parks Board. The authors thank Max Khoo and Benjamin Lee for their support in this research, which was conducted as part of a study of the ecology of wild boars in Singapore, in collaboration and funded by the National Parks Board. The National Parks Board and staff of Sungei Buloh Wetland Reserve are acknowledged for facilitating site access (permit no. NP/RP20-047).

Literature cited:

- Chua MAH (2015a) Leopard cat in Western Catchment Area. Singapore Biodiversity Records, 2015: 6.
- Chua MAH (2015b) Leopard cat in Central Catchment Nature Reserve. Singapore Biodiversity Records, 2015: 20.
- Chua MAH, Sivasothi N & Meier R (2016) Population density, spatiotemporal use and diet of the leopard cat (*Prionailurus bengalensis*) in a human-modified succession forest landscape of Singapore. Mammal Research, 61: 99–108.
- Fung TK, Chua MAH, Teo RCH & Sivasothi N (2017) Mainland leopard cat on Pulau Ubin. Singapore Biodiversity Records, 2017: 160–161.
- Davison GWH, Ng PKL & Ho HC (eds.) (2008) The Singapore Red Data Book: Threatened Plants and Animals of Singapore. Second Edition. Nature Society (Singapore), Singapore, viii + 285 pp.
- Nathan D (1997) Leopard cat found recently on Pulau Ubin. The Straits Times, 1 April 1997: 44.
- National Parks Board (2022) Nature Park Network & Nature Corridors. <https://www.nparks.gov.sg/gardens-parks-and-nature/nature-park-network> (Accessed 15 Sep 2022)
- Said F, Yu K, Tan R, Henricksen M & Chua MAH (2022) Biodiversity Record: Recent sightings of mainland leopard cats on Pulau Ubin. Nature in Singapore, 15: e2022013.
- Wan JM, Mishak S, Muhammad Fadhli bin A, Ng SKW, Lee RSK & Lim NT-L (2021) Biodiversity Record: Mainland leopard cat in Sungei Buloh Wetland Reserve. Nature in Singapore, 14: 13.