

## Biodiversity Record: Mainland leopard cat in Sungei Buloh Wetland Reserve

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

**Subjects identified by:** Joejyn M. Wan, Rachel S. K. Lee, Mishak Shunari and Norman T-Lon Lim.

**Location, date and time:** Singapore Island, Sungei Buloh Wetland Reserve; July and August 2013, June 2015, August 2016 and November 2019 (refer to Observations).

**Habitat:** Secondary forest and mangroves.

**Observers:** Mishak Shunari, Benjamin Cheng Fa Lee, Joejyn M. Wan and Halilah Ahmad.

**Observations:** The following are records of leopard cat obtained recently from the Sungei Buloh Wetland Reserve.

1. Camera trap image on 12 July 2013 at 0618 hrs (Fig. 1).
2. Camera trap image on 22 August 2013 at 0623 hrs (Fig. 2).
3. One relatively fresh carcass found near the visitor centre on 9 June 2015 (Fig. 3).
4. Camera trap image on 6 August 2016 at 0604 hrs (Fig. 4).
5. Camera trap image on 28 November 2019 at 2113 hrs (Fig. 5).

All four camera trap images show leopard cats walking at ground level.



Fig. 1. Camera trap image on 12 July 2013 at 0618 hrs. The prey item in the cat's mouth appears to be a frog. (Photograph by: National Parks Board).



Fig. 2. Camera trap image on 22 August 2013 at 0623 hrs. Subject in lateral view with head facing left. (Photograph by: National Parks Board).

**Remarks:** The camera trap images were obtained during wildlife monitoring surveys within the Sungei Buloh Wetland Reserve. In 2013 and 2016, the National Parks Board conducted a wildlife monitoring programme with the deployment of camera traps. The first survey used 20 camera traps from January to May 2013. The second survey involved seven camera traps from May to June 2016. The 2019 record comes from a camera trapping survey to study the ecology of free-roaming dogs in Singapore. It used 19 camera trap stations from 27 November 2019 to 20 January 2020.

Due to the generally poor quality of the camera trap images, it cannot be determined if the photographs recorded across the seven years are of the same animal. In the image taken on 12 July 2013 (Fig. 1), the leopard cat can be seen carrying what appears to be a frog in its mouth. This choice of prey supports reports in previous literature that frogs form a significant part of the leopard cat's diet (Grassman, 2000; Rajaratnam et al., 2007; Watanabe, 2009; Chua et al., 2016). Regarding the leopard cat carcass found in 2015, it cannot be determined if it is either of the individuals photographed in 2013. As the carcass appears relatively intact, the cause of its death is unknown.



Fig. 3. Leopard cat carcass found near the Sungei Buloh Wetland Reserve visitor centre on 9 June 2015. (Photograph by: National Parks Board).

The leopard cat is considered Singapore's last wild cat and has been classified as locally Critically Endangered (Davidson et al., 2008). Of the two sub-species of mainland leopard cats recognised by the International Union for Conservation of Nature (IUCN) Cat Specialist Group (Kitchener et al., 2017), the Singapore population is classified as *Prionailurus bengalensis bengalensis*. In Singapore, leopard cats have also been recorded at the Central Catchment Nature Reserve, Western Catchment Area, Pulau Ubin and Pulau Tekong (Chua, 2015; Chua et al., 2015, 2016; Fung et al., 2017). The camera trap images and the carcass featured here are the first records of leopard cat from the Sungei Buloh Wetland Reserve. They highlight the importance of the reserve as a refuge for native wildlife.

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Fig. 4. Camera trap image on 6 August 2016 at 0604 hrs. Rear view of subject shown. (Photograph by: National Parks Board).



Fig. 5. Camera trap image on 28 November 2019 at 2113 hrs. Subject in lateral view with head facing right. (Photograph by: Joejyn M. Wan).

**Literature cited:**

- Chua MAH (2015) Leopard cat in Western Catchment Area. Singapore Biodiversity Records, 2015: 6.
- 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.
- Chua MAH, Sivasothi N & Ng PKL (2015) Leopard cat in Central Catchment Nature Reserve. Singapore Biodiversity Records, 2015: 20.
- Davidson 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.
- Fung TK, Chua MAH, Teo RCH & Sivasothi N (2017) Mainland leopard cat on Pulau Ubin. Singapore Biodiversity Records, 2017: 160–161.
- Grassman LIJ (2000) Movements and diet of the leopard cat *Prionailurus bengalensis* in a seasonal evergreen forest in south-central Thailand. *Acta Theriologica*, 45: 421–426.
- Kitchener AC, Breitenmoser-Würsten C, Eizirik E, Gentry A, Werdelin L, Wilting A, Yamaguchi N, Abramov AV, Christiansen P, Driscoll C, Duckworth JW, Johnson W, Luo S-J, Meijaard E, O'Donoghue P, Sanderson J, Seymour K, Bruford M, Groves C, Hoffmann M, Nowell K, Timmons Z & Tobe S (2017) A revised taxonomy of the Felidae. The final report of the Cat Classification Task Force of the IUCN/SSC Cat Specialist Group. *Cat News*, Special Issue 11: 1–80.
- Rajaratnam R, Sunquist M, Rajaratnam L & Ambu L (2007) Diet and habitat selection of the leopard cat (*Prionailurus bengalensis borneoensis*) in an agricultural landscape in Sabah, Malaysian Borneo. *Journal of Tropical Ecology*, 23: 209–217.
- Watanabe S (2009) Factors affecting the distribution of the leopard cat *Prionailurus bengalensis* on East Asian islands. *Mammal Study*, 34: 201–207.