

## Photographic evidence of the Large-toothed Ferret Badger *Melogale personata* I. Geoffroy Saint-Hilaire (Carnivora: Musteliade) in the Annapurna Conservation Area, Nepal

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### Abstract

Four specimens of the Large-toothed Ferret Badger *Melogale personata* I. Geoffroy Saint-Hilaire were found at separate sites in Marshyangdi Rural Municipality, Ward No 4, Srichaur, Tangring, Lamjung district, Nepal. The first individual was captured alive by local people on 4th January 2017 and the second was found dead on 17th January 2017. The third alive and fourth road-killed specimens of *M. personata* were photographed from Marshyangdi Rural Municipality, on 9th July 2020, and 26th November 2021, respectively. The species was recorded at the border region of the Annapurna Conservation Area, approximately 203 km from Kathmandu in a tropical forest alongside the Marshyangdi River. The specimens were examined carefully and identified on a morphological basis. The present account represents the first authentic record of *M. personata* in the Annapurna Conservation Area, moreover also for Nepal.

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The Large-toothed (or Burmese) Ferret Badger *Melogale personata* I. Geoffroy Saint-Hilaire, 1831 (Mustelidae Fischer de Waldheim) is native to southern Asia and represents one of the lesser-known small carnivores (Pocock, 1941; Duckworth et al., 2016). It is found in northeast India, Nepal, Bangladesh, Myanmar, Thailand, Cambodia, Laos, Vietnam, and southern Yunnan province (China) (Pocock, 1941; Duckworth et al., 1999; Wang, 2003; Robertson, 2007; Dang et al., 2008;

Islam et al., 2008; Than et al., 2008; Schank et al., 2009; Robichaud, 2010; Choudhury, 2013; Coudrat and Nanthavong, 2013; Chutipong et al., 2014; Kakati et al., 2014).

There are 212 mammal species known from Nepal. Among them, 49 species (23% of Nepalese mammals) were listed as nationally threatened under the following statuses: nine Critically Endangered (18%) species, 26 Endangered (53%), and 14 Vulnerable (29%) (Amin et al., 2018).

Limited information is available on the distribution and abundance of *Melogale personata* (Coudrat and Nanthavong, 2013). Pocock (1941) mentioned three specimens of this species as being present in the British Museum (London). These specimens were collected by the British naturalist and ethnologist, Brian Houghton Hodgson from Nepal during the 1860s. One specimen was collected from the Rapti River and the other two were from an unknown location in eastern Nepal (Pocock, 1941). Hodgson also distinguished a Nepalese subspecies *M. personata nipalensis* (Hodgson, 1836). However, after Pocock's (1941) account, this species has not been reported by other researchers in the scientific literature in relation to Nepal.

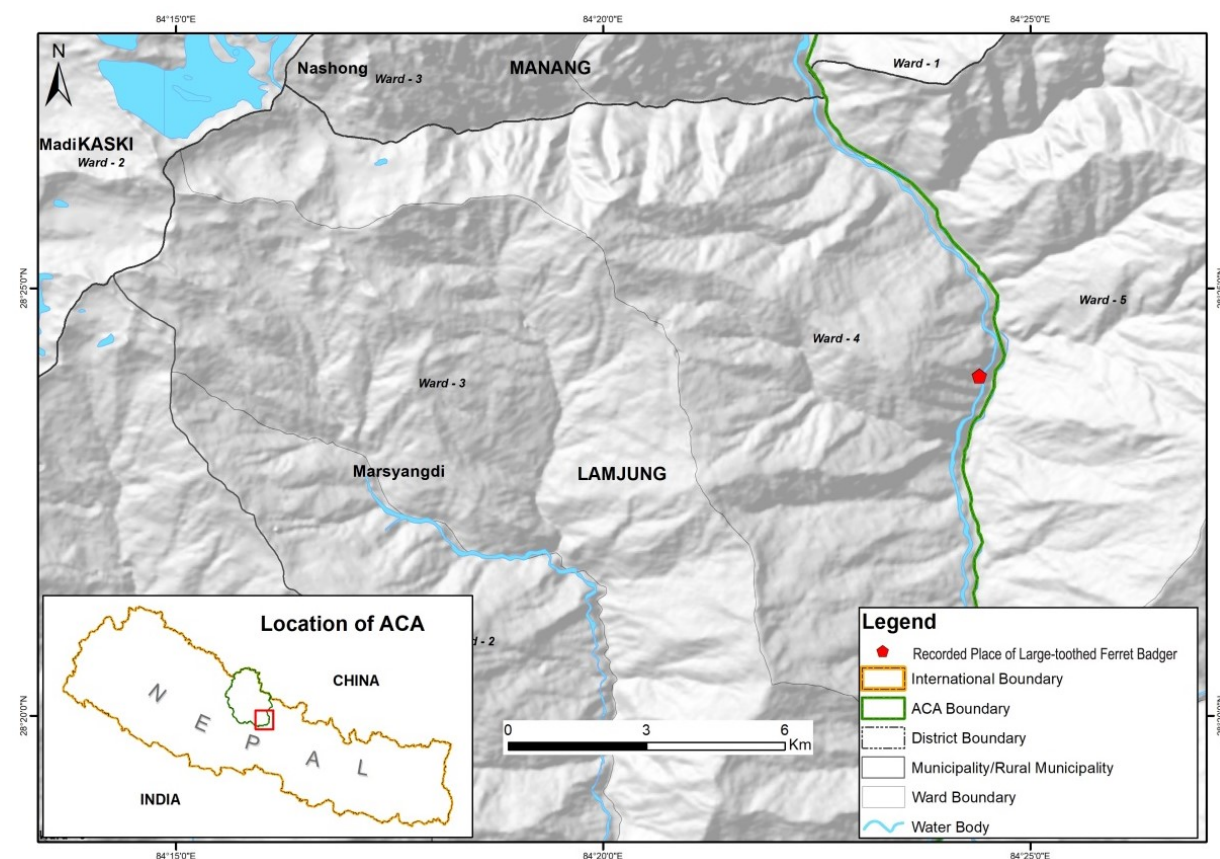
*Melogale personata* is primarily nocturnal; however, they do have limited day activity that is usually focused around dawn and dusk and lasts no more than few hours (Jackson, 2001). In this study, we present conclusive evidence for the occurrence of the *Melogale personata* from the Annapurna Conservation Area, western Nepal.

An individual of *Melogale personata* was live captured by a local farmer on 4<sup>th</sup> January, 2017 at Srichaur village, Marsyangdi Rural Municipality (Ward no. 4), Lamjung district, western Nepal (Fig. 1). The second record of *M. personata* was made on 17<sup>th</sup> January, 2017 when a dead specimen was found in the forest about 100 m away from the previous

record. The exact location of the recorded species (28°24'5.04" N, 84°24'31.68" E) at 1024 m a.s.l. was in the border region of the Annapurna Conservation Area (Fig. 1), Lamjung district, Srichaur village, approximately 8 km north of Besisahar, and 203 km from Nepal's capital city, Kathmandu. This border region is tropical forest. The species was found along the riverside of the Marshyangdi (Fig. 2).

The first specimen of *M. personata* (Fig. 3A, B) was found raiding inside a wooden chicken coop and was captured. It was then tied with rope and kept outside the house. The local villagers took photographs of the animal and sent them to the Annapurna Conservation Area- Unit Conservation Office (ACAP-UCO), Bhujung for identification. However, it managed to escape into the forest by chewing the rope during the following night.

We suspect that the above mentioned captured individual might have died. The local villagers informed the ACAP-UCO about the dead animal (Fig. 3C, D). It was a male individual. The dead body was collected from the forest, thoroughly examined, and its morphometric information was taken (Abramov et al., 2008; Schank et al., 2009). The dead animal was then skinned and mounted. The mounted specimen (Fig. 4) was deposited in the museum collection of the National Trust for Nature Conservation– Biodiversity Conservation Center (NTNC-BCC), Chitwan, Nepal. This museum is located approximately 153 km southeast of the species' recorded location.



**Figure 1:** Map of Nepal showing the location in the Annapurna Conservation Area from where *Melogale personata* was recorded.



**Figure 2:** Location near the boundary of the Annapurna Conservation Area, Nepal where the dead *Melogale personata* was found.



**Figure 3:** Live *Melogale personata* (A, B; Photo by Bichha Bahadur Gurung), and the dead specimen of *Melogale personata* (C, D; Photo by Basudev Neupane).

The identification of the dead animal was solely based on its external morphology including the diagnostic large size of the upper fourth premolar and the relative size of the upper first and second premolars in relation to one another (Abramov et al., 2008; Schank et al., 2009).

Two specimens of the Large-toothed (or Burmese) Ferret Badger *Melogale personata* (Figs. 3, 4) were found in two different sites from Marshyangdi Rural Municipality, Ward No 4, Srichaur, Tangring, Lamjung district, Nepal (28°24'5.04" N, 84°24'31.68" E; 1024 m a.s.l.). One of the two specimens escaped alive from captivity (Fig. 3A, B) and the other specimen (male) was collected when dead (Figs. 3C, D, and 4). Some morphometric characteristics of the dead specimen of *Melogale personata* were measured: weight= 1.16 kg;

total length (head to tail)= 58 cm; height from forelimbs= 12 cm; height from hindlimbs= 14 cm; skull length= 9 cm; ear length= 9 cm; total abdomen circumference= 24 cm; paw length including nail= 3.5 cm; paw breath= 2 cm; white dorsal stripe length= 19.5 cm; and number of teeth in upper jaw= 11.

We tried our best to collect the new records of *M. personata* from that area, but later on July 09, 2020, we found another live individual of the species from the same area from Marshyangdi Rural Municipality, Ward No 4, Srichaur, Tangring, Lamjung district, Nepal. This photographic evidence (Fig. 5) was sent by the anti-poaching unit from the same area, which has a big difference of the capture of the species after three years in the same locality.



**Figure 4:** Mounted specimen of *Melogale personata* at the museum of the Biodiversity Conservation Center, Chitwan, Nepal.



**Figure 5:** Live photograph of a juvenile of *Melogale personata* from Lamjung district, Nepal. Photo by Pancha Bahadur Gurung.



**Figure 6:** Road killed specimen of *Melogale personata* by vehicles, between Ghattekhola and Kimche, Nepal. Photo by Pancha Bahadur Gurung.

Also, a road-killed specimen (Fig. 6) was found from Marshyangdi Rural Municipality, Ward No 4, between Ghattekhola and Kimche (28°25'15.99"N, 84°24'10.82"E) on November 26, 2021. These two new records were provided by a teacher named Pancha Bahadur Gurung.

According to Lariviers and Jennings (2009), there are three subspecies *i.e.* *M. p. personata*, *M. p. nipalensis* and *M. p. pierrei*. *Melogale personata nipalensis* is known only from Nepal (Hinton and Fry, 1923). Globally *M. personata* is considered to have a conservation status of Least Concern (Duckworth et al., 2016), however due to lack of information it is listed as Data Deficient in relation to the status of mammals in Nepal (Amin et al., 2018). *Melogale personata* is categorized as Least Concern by the IUCN Red List of Threatened species (IUCN, 2016). This classification is under review, given the rather few recent records of verifiable identity from throughout its range. *Melogale personata* was additionally reported from Syangja District, Nepal in June, 2020 (Bhatta et al., 2021).

The present records increase the number of mammal species documented from the Annapurna Conservation

Area (ACA) to 128. The present records are also the westernmost records of the species. Additional surveys from elsewhere in Nepal and improved data collection are necessary to understand the distribution and status of this species in the country.

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## Conflict of interest

All the authors declare that there are no conflicting issues related to this short communication.

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