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Natural History

# Distribution and new elevational record of *Melogale personata* (Carnivora: Mustelidae) from Khotang district, Nepal

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## Resumen

Dos individuos de una hembra viva y un macho vivo de tejón hurón de dientes grandes fueron vistos a una altitud de 2196 m s.n.m.en Phedi, municipio rural de Kepilashgadi, Khotang el 13 de junio 2020 a una altitud de 1885 m s.n.m. en Roksim Bhanjyang municipio rural de Khotehang RM el 3 de febrero de 2022 respectivamente. El récord a Phedi es el registro de elevación más alto del mundo de la especie, que es 579 metros más alto que el récord anterior.

**Palabras Clave:** Carnivora, Habitat, Mustelidae, Khotang, trampas,

## Abstract

Two individuals of one live female and one live male Large-toothed Ferret Badger were spotted at an altitude of 2,196 masl in Phedi, Kepilashgadi Rural Municipality, Khotang on 13 June 2020 and at an altitude of 1885 masl in Roksim Bhanjyang of Khotehang Rural Municipality on February 3, 2022 respectively. The record at Phedi is the global highest elevational record of the species which is 579 meters higher than the previous record.

**Keywords:** Carnivore, Habitat, Khotang, Mustelidae, Snares, Traps

Often neglected intensive research activities on small carnivores in Nepal led to scarce, fragmentary, or often confusing knowledge of them (Baral *et al*. 2019). Among the potentially overlooked species in Nepal, several are Mustelidae. The least investigated and least confirmed evidence available Mustelidae occurring in the country is large tooth Ferret Badger (*M. personata*). Before its confirmation records from Gauri Shanker Conservation Area (Pathak *et al.* 2022) and in the Annapurna Conservation Area, Nepal (Baral *et al*. 2022), there were no records of this species within any Protected Areas (PAs) of Nepal (Baral and Shah 2008). Moreover, Baral and Shah (2008) mentioned *M. personata* in eastern Nepal i.e., Ilam and Jhapa. Thapa (2014) excluded *M. personata* in a checklist prepared for mammals of Nepal. However, Duckworth *et al*. (2016) claimed its presence in Nepal with a lack of

details. Later on, a new locality record with photographic evidence of live *M. personata* in Syangja District was added by Bhatta *et al*. (2021). Concomitantly the paucity of this species' distribution data still occurs for the rest of the country. This paper attempts to discuss the global highest elevational record of this species which is distributed among its range countries Bangladesh, Cambodia, China, India, Lao People's Democratic Republic, Myanmar, Nepal, Thailand, and Vietnam (Duckworth *et al*. 2016).

Khotang is located in Eastern Nepal and is a hilly district. It is situated between the latitudes of 26.833333°N and 27.466667°N, and the longitudes of 86.433333° E and 86.966667°E with a central coordinate 27.2000°N and 86.7833°E as illustrated in Figure 1. The district lies with an area of 1,591 square kilometers and elevation range from 152 masl to 3620 masl. Khotang characterized by subtropical, temperate, subalpine, alpine, and nival vegetation provides refuge for different mammal species such as *Ursus thibetanus, Ailurus fulgens, Muntiacus vaginalis, Naemorhedus goral, Capricornis thar* (Division Forests Office 2020).

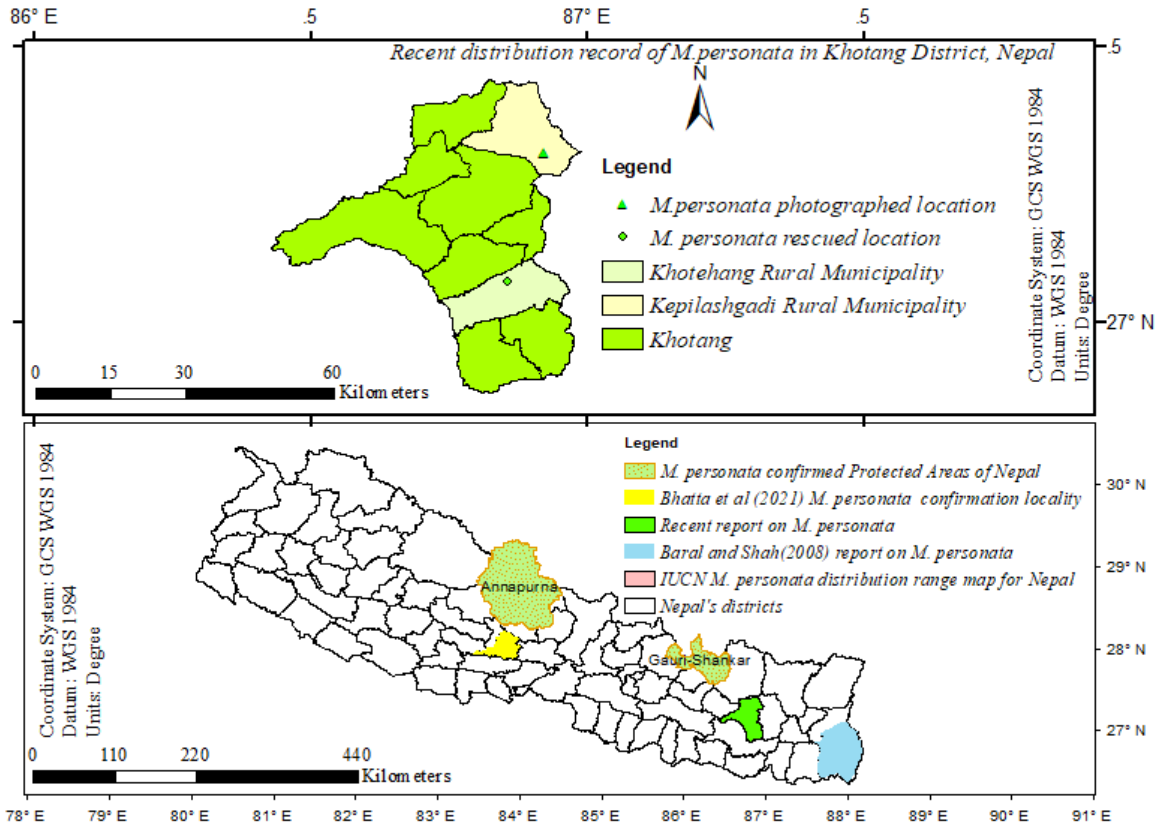



**Figure 1:** Study area map illustrating *M. personata* confirmed distribution range and localities in Nepal.

On June 13, 2020, in the evening, a live female of *M. personata* accidentally trapped on a snare laid for porcupines was rescued at 27.307293°N latitude 86.921551°E longitude at an altitude of 2196 masl by the villagers at Phedi of Kepilashgadi RM, Khotang and was photographed using a cell phone (Figure 2). Microbial contamination leading to purulent discharge from both of its forelimbs trapped in snares was observed and was returned to its natural habitat. The total length was 57 cm (body length= 42 cm; tail length = 15 cm). This

individual was rescued from fallow land covered with *Canna Sps, Galinsoga parviflora* adjacent to a newly constructed road that divided a continuously forested area dominated by *Schima wallichii* and *Castanopsis indica* similar to the habitat described by Bhatta *et al.* (2021).



**Figure 2:** *Melogale personata* at 27.307293°N latitude 86.921551°E longitude in Kepilashgadi RM (photograph: Rajan Sampang Rai)

Likewise, on February 3, 2022, a male *M. personata* accidentally entered a house at 27.07202°N latitude 86.85686°E longitude at an altitude of 1885 masl in Roksim Bhanjyang of Khotehang RM. The total length was 59 cm (body length = 43 cm; tail length = 16 cm). The home it was rescued from lies adjacent to a newly constructed road that divided continuously forested areas dominated by *Schima wallichii* and *Castanopsis indica* similar to the habitat described by Bhatta *et al.* (2021). Local residents were unaware of the existence of this species earlier and thereby, we did not find any anecdotal report on its ethnozoology.

Here we report the highest elevational record of *M. personata* and the first record of the species from Khotang. There are no other species of *Melogale* presumably present in the area. The black-dominated pelage with a white dorsal stripe on the body, large and wide-crowned molar teeth, and distinct facial markings with white spots on the face, ear, and foot were observed; these are diagnostic morphological characteristics of the *M. personata* (Islam *et al.* 2008; Kakati *et al.* 2014; Duckworth *et al.* 2016).

*M. personata* is categorized as Least Concern globally (Duckworth *et al.* 2016) and as Data Deficient nationally under Red List criteria (Amin *et al.* 2018). The individual at Phedi was found outside its previously recorded altitudinal limit along with its range countries

between 15 masl (Schank *et al*. 2009) and 1,617 masl (Pathak *et al*. 2022); we can confidently say that the altitudinal record of 2196 masl at Phedi is the global highest altitude ever for *M. personata* which is 579 meters higher than the previous record. This discovery suggests that the altitudinal range limits of this small nocturnal mammal have generally been underestimated and unexplored due to the lack of intensive research on it.

Conservation challenges in areas outside the PAs are mostly associated with the contextual socio-cultural status of the people living there (Primack *et al.* 2013, Olson and Dinerstein 1998). Acharya et al. (2016) demonstrated that human-dominated landscapes outside PAs are the major wildlife conflict hotspots in Nepal which have been inferred a part in Khotang by the accidental trap of *M. personata* targeted for the retaliatory killing of porcupines by people in retribution of crop depredation. A collection of this information on this species is still far from being exhaustive for the country but yet could play a pivotal role to in circumventing Wallacean and Linnean shortfalls (Lomolino, 2004; Whittaker *et al*., 2005; Brown and Lomolino, 1998) in the Mustelidae family in the country.

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