

## Notes on the occurrence of Marbled Cats at high altitudes in Bhutan

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### ABSTRACT

Marbled Cat is one of the rarest and the least known felid in South Asia. Owing to its reclusive nature, hardly anything is known about the species in the region and previous records from elsewhere suggests the species to be primarily an animal of the moist tropical forest. However, with increasing use of camera traps for biodiversity surveys in Bhutan, Marbled Cats are getting infrequently recorded above 3000m, suggesting wider altitudinal occurrences and habitat preferences. This could either be attributed to the use of highlands as habitat and/or natural corridors or a shift in habitat niche due to rising anthropological pressures in the lowlands.

#### KEYWORDS

Marbled Cat, rare, Bhutan, altitudinal range, UWICE

### Introduction

The Marbled Cat is distributed in Southeast Asia, across Nepal and Bhutan into Southwest China and through Indochina, into Borneo and Sumatra. It is one of the rarest and the least studied felid in Southeast Asia (Nowell and Jackson, 1996; Sunquist and Sunquist, 2002) and perhaps the most confounding (Lyngdoh *et al.* 2011). There is little data on the present status of the species and not many affirmed information, as it is once in a while seen or captured in the wild contrasted with other sympatric felids (Hearn *et al.* 2010). This has regularly been credited to the arboreal way of the species, however could likewise be brought on by its reclusive nature (Jutzeler, Xie and Vogt, 2010). To date there have been hardly any fruitful studies concentrated exclusively on this species. However not the target species, with an increase in camera trapping surveys across Southeast Asia in recent decades, photos of Marbled Cats are occasionally recorded and may offer an understanding to a few parts of the species' nature (Wibisono and McCarthy, 2010). Though confirmed to few locations (Nowell and Jackson, 1996; Sunquist and Sunquist, 2002), its occasional records are providing an insight into the species habitats and altitudinal occurrences. The species is forest dependent, primarily associated with "moist and mixed deciduous-evergreen tropical forest" (Nowell and Jackson, 1996) and may prefer hill forests (Duckworth *et al.* 2005; Holden *et al.* 2001; Grassman *et al.* 2005). In the Indian region, the species is by all accounts confined towards the eastern foothills somewhere around 1500m and 3000m elevation in "moist deciduous and semi-evergreen forest habitats" (Biswas and Ghose, 1982; Banerjee, 1989). However, it is thought to be primarily a species of the moist tropical forest (Wangchuk *et al.* 2004).

In Bhutan, the species was first confirmed in 2012 through

camera traps in Royal Manas National Park (Tempa *et al.* 2013) and then later in 2013 in a biological corridor survey by the Department of Forest and Park Services (MoAF, 2013). With the recent increase in the use of camera traps in Bhutan, the surveys have recorded the cat relatively infrequently (Tempa *et al.* 2013; Thinley *et al.* 2015). However, it is providing new insights into the cat's ecology and distribution. In a study in Jigme Dorji National Park in northern Bhutan, the Marbled Cat was recorded at elevations from 3488m to 3810msl in broadleaved and mixed conifer forest (Thinley *et al.* 2015) and it is the highest recorded elevation for the species in its range countries. The previous published record stood at 3000m in Sikkim state of India (Sunquist and Sunquist, 2002). In a more recent camera trapping exercise in eastern Bhutan by the Ugyen Wangchuck Institute for Conservation and Environment (UWICE), we recorded the Marbled Cat at three sites in Wangchuck Centennial National Park and all the sites were above 3000msl and again in mixed conifer forests. Our observations suggest a wider elevation range for the species and also that the highlands are being used by Marbled Cat. The highlands may serve as critical habitats for the species and also as natural corridors for traversing across landscapes. Fortunately more than half of the country is under protected areas and a major portion of the protected areas consist of high altitude valleys (Fig. 1).

Classified as Near Threatened by the IUCN and listed as Schedule I species by CITES, Marbled Cat is primarily threatened by continuing forest loss and degradation across its range (Ross *et al.* 2015). It is also threatened by hunting by indigenous communities (Lyngdoh *et al.* 2011; Selven *et al.* 2015), and is infrequently observed in wildlife trade (Ross *et al.* 2015). The species is thought to be rare and regionally endangered and its population is believed to be declining (Hearn *et al.* 2010). In Bhutan, with numerous



**Figure 1.** Marbled Cat camera trapped at 3177msl in Wangchuck Centennial National Park, Bhutan (Photo courtesy: UWICE).

ongoing and upcoming developmental activities such as hydropower and road constructions, land conversion could be a major threat to the species and its habitat. They may also be threatened by indiscriminate snaring (Ross *et al.* 2015). Owing to the reclusive nature of the species and its habitat undergoing disturbances as aforementioned, it could be driving the Marbled Cat to undergo shift in habitat niches. So it is important to look at the effects of habitat degradation on the distribution of the species. Clearly, the information on the species is very scarce and dedicated research is recommended. There has been a number of camera trapping exercises conducted in the country such as the recent nationwide Tiger survey and the Snow Leopard survey. Data from such sources needs to be pulled together and consciously looked into to assess its distribution, habitat and threats in Bhutan.

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