

# Notes on the distribution of Large Indian Civet *Viverra zibetha* in Nepal

Yadav GHIMIREY\* and Raju ACHARYA

## Abstract

The distribution range of Large Indian Civet *Viverra zibetha* in Nepal is treated inconsistently in various sources. Verified point locality records presented here, and records from neighbouring India, suggest that it occurs widely across Nepal. Some published localities require verification.

**Keywords:** citizen science, documentation, Kathmandu valley, locality, photograph

नेपालमा ठुलो निरबिरालोको भौगोलिक विस्तारबारे टिप्पणी

## सारांश

ठुलो निरबिरालो कहाँदेखि कहाँसम्म पाइन्छ भन्ने कुरा भिन्न श्रोतहरूका अनुसार भिन्न हुने गरेको पाइन्छ। नेपाल तथा भारतमा भेटिएका प्रमाणित तथ्यहरूका आधारमा यो प्रजाति नेपालभरी नै पाइने देखिन्छ। यस लेखमा हामीले १९९० पछि नेपालमा पाइएका रेकर्डहरू प्रस्तुत गरेका छौं। यसको अवस्था अझै पनि सामान्य रहेको तर मानिससँग हुने द्वन्दका कारण मानिसले यसलाई मार्ने गरेको पाइन्छ।

## Introduction

Large Indian Civet *Viverra zibetha* is native to South and South-east Asia (Corbet & Hill 1992). There is considerable inconsistency in the definition of the western extent of its global distribution range. For example, *The IUCN Red List of Threatened Species* maps it west only to central Nepal (84°30'E) (Duckworth *et al.* 2008) and Corbet & Hill (1992) included only easternmost Nepal (east of about 87°E), whereas unverified reports summarised by Jnawali *et al.* (2011) suggest occurrence across most of the country. A wide generalised distribution in Nepal is mapped by Baral & Shah (2008). Incompatible with all of these, Lekagul & McNeely (1977) mapped it as almost absent from Nepal (but as occurring through much of east and

central and south India, in most of which it does not occur). This paper presents some locality records of the species in Nepal, in the context of this uncertainty.

## Methods

Large Indian Civet records were collected via four methods: the authors' survey records from Hugu-Kori forests in Annapurna Conservation Area (see Appel *et al.* 2013); chance observations collected from the Friends of Nature 'Facebook' page where conservationists and general people from various walks of life posted pictures of animals for assistance with species identification; literature review (both published and

**Table 1.** Records of Large Indian Civet *Viverra zibetha* in Hugu-Kori, Annapurna Conservation Area, Nepal, 2012.

Site	Location	Elev.	Time, date	Vegetation
Idi	28°23'14"N, 84°07'06"E	1,577	04h52, 23 Jan	<i>Alnus nepalensis</i> , <i>Cedrela tooni</i> , <i>Myrsine</i> , <i>Macaranga indica</i> , <i>Eliagnus parvifolius</i> , <i>Maesa chisia</i> , <i>Urtica</i> , fern
Tasha	28°23'20"N, 84°08'09"E	2,420	03h14, 7 Feb	<i>Quercus glauca</i> , <i>Myrsine</i> , <i>Fraxinus</i> , <i>Daphne papyracea</i> , fern
Dhoda	28°22'26"N, 84°07'32"E	2,049	20h31, 11 Feb	<i>Rhododendron</i> , <i>Lyonia ovalifolia</i> , Shyauladho (Gurung language)
Danda	28°22'52"N, 84°07'22"E	2,174	21h59, 11 Feb; 03h45, 13 Feb	<i>Q. glauca</i> , <i>Himalayacalamus brevinodus</i> , <i>Rhododendron</i> , fern
Raura	28°22'41"N, 84°07'33"E	2,250	22h26, 12 Feb	Dishidhu (Gurung), <i>Q. glauca</i> , <i>H. brevinodus</i> , fern
Raura	28°22'38"N, 84°08'03"E	2,126	19h26, 13 Feb; 02h54, 17 Feb	<i>Q. glauca</i> , <i>H. brevinodus</i> , <i>Berberis aristata</i> , fern
Raura	28°22'39"N, 84°07'49"E	2,128	23h53, 14 Feb; 03h30, 17 Feb; 05h18, 17 Feb	<i>B. aristata</i> – Shrubland

Locations are given under the datum WGS84. 'Elev.' = elevation asl, in meters.

Sunset and sunrise at Hugu-Kori during the study time was about 07h00 and 18h00 respectively.



**Fig. 1.** Large Indian Civet *Viverra zibetha*, Hugu-Kori, Kaski, Nepal, 2008 (photo: Friends of Nature).

grey); and some direct consultation with people who might have credible records of Large Indian Civet in Nepal.

### Hugu-Kori forests in Annapurna Conservation Area

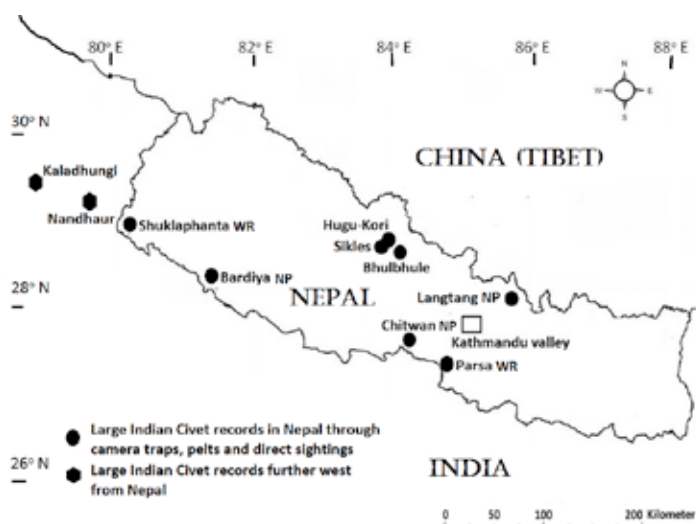
Camera-trap records of Large Indian Civet (Fig. 1) in Hugu-Kori are given in Table 1. The area had at least two Large Indian Civets (Appel *et al.* 2013) which were recorded in subtropical and temperate forest according to the bioclimatic zones of Shrestha (2008). Ring-cupped Oak *Quercus glauca* was present in four of seven (57%) locations where the species was camera-trapped, while three (43%) sites had the bamboo *Himalayacalamus brevinodus*. Furthermore, Large Indian Civet was also camera-trapped at three sites within the *Quercus–Himalayacalamus* association suggesting the species's frequent occurrence in it. Fern was the undergrowth in five (71%) of the sites; three sites (43%) had the *Quercus–Himalayacalamus–fern* association.

**Table 2.** Recent locality records of Large Indian Civet *Viverra zibetha* in Nepal.

Location	Date	Co-ordinates	Elev.	Source	Remarks
Shuklaphanta WR	March 1991	NA	200	Hem Sagar Baral verbally 2012	
Chitwan NP	1995	NA	NA	Joshi <i>et al.</i> 1995	Radio-collared
Bharatpur, Chitwan	1998	27°41'00"N, 84°26'00"E	250	Rajendra Suwal <i>in litt.</i> 2014	Direct sighting
Bhulbhule, Lamjung*	2008	28°17'28"N, 84°22'10"E	830	Ganga Ram Regmi <i>in litt.</i> 2014	Dead animal, partly eaten; wound suggests killed by Leopard <i>Panthera pardus</i>
Sikles, Kaski	Feb 2012	28°21'28"N, 84°06'19"E	2,000	Pramod Gurung verbally 2012	Bitten to death by a dog
Parsa WR	2012	27°19'36"N, 84°46'13"E	250	Babu Ram Lamichhane & Naresh Subedi <i>in litt.</i> 2014	Camera-trapped during annual Tiger camera-trapping
Hugu-Kori*	2012	–	–	See Table 1	–
Langtang NP, Rasuwa*	16 Mar 2013	28°06'25"N, 85°17'16"E	1,920	FON 2013	Camera-trapped. Fig. 6
Chitwan NP	2014	27°33'16"N, 84°20'23"E	150	Babu Ram Lamichhane & Naresh Subedi <i>in litt.</i> 2014	Camera-trapped during annual Tiger <i>Panthera tigris</i> camera-trapping
Bardiya NP	2014	28°30'18"N, 81°21'57"E	280	Babu Ram Lamichhane & Naresh Subedi <i>in litt.</i> 2014	Camera-trapped during annual Tiger camera-trapping
<b>Kathmandu valley</b>					
Jawalakhel, Lalitpur	1996	27°40'28"N, 85°18'44"E	1,330	Rajendra Suwal <i>in litt.</i> 2014	Caught near settlement; brought to Kathmandu Central Zoo
Shivapuri–Nagarjuna NP*	2010	NA	NA	Pandey 2010	Camera-trapped
Bhaktapur	14 May 2012	NA	NA	Sarita Jnawali <i>in litt.</i> 2012	Rescued by Kathmandu zoo; male about 5 yrs of age
Sunakothi, Lalitpur	16 May 2012	27°37'52"N, 85°18'56"E	1,400	Sarita Jnawali <i>in litt.</i> 2012	Rescued by Kathmandu zoo; female about 3 yrs of age
Gundu, Bhaktapur*	July 2012	27°38'30"N, 85°24'51"E	1,430	Kamal Raj Gosai <i>in litt.</i> 2013	Dead female, possibly poisoned. Fig. 5
Pharping*	24 Mar 2013	27°36'46"N, 85°15'52"E	1,580	Hari Basnet <i>in litt.</i> 2013	Dead animal. Fig. 7
Kirtipur*	25 May 2013	27°40'00"N, 85°17'00"E	1,400	Dibas Panta <i>in litt.</i> 2013	Dead animal, no deep wounds; possibly poisoned

\* Identification verified from photograph.

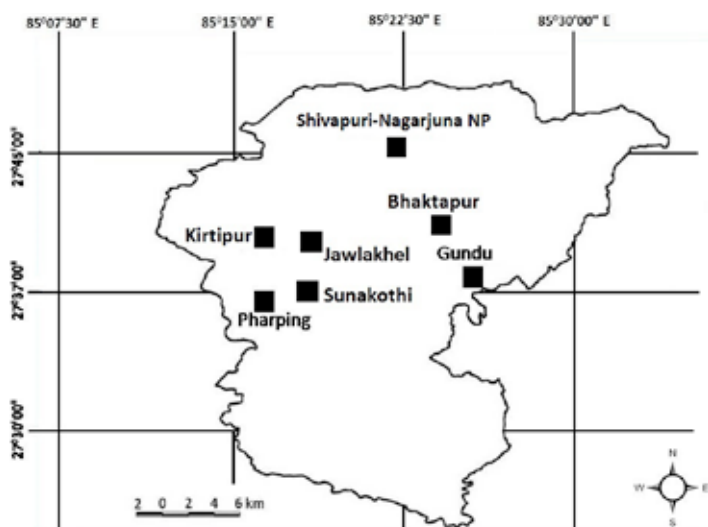
Locations are given under the datum WGS84. 'Elev.' = approximate elevation asl, in meters, derived by various methods.



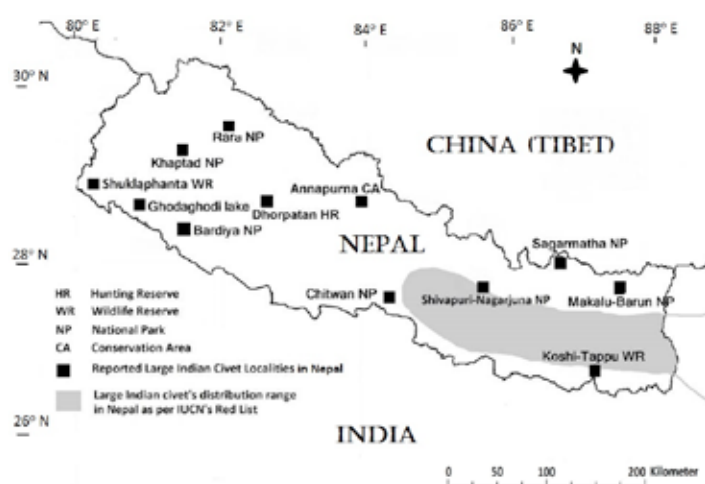
**Fig. 2.** Recent Large Indian Civet *Viverra zibetha* records in Nepal. Two localities further west in India are shown by a different symbol. Nandhaur is the westernmost documented record globally (Bista *et al.* 2012), while there is a sight record from Kaladhungi (Hem Sagar Baral *in litt.* 2014). The small square, the Kathmandu valley, is expanded in Fig. 3).

### Distribution elsewhere in Nepal

Large Indian Civet has been recorded in recent decades from various localities across Nepal (Table 2, Fig. 2), including several in the Kathmandu valley (Table 2, Fig. 3). Based on reports from protected area personnel, Jnawali *et al.* (2011) reported Large Indian Civet widely in Nepal, including areas in the far west (Fig. 4). Areas they reported (but not necessarily verified) to hold the species comprise Annapurna Conservation Area, Bardiya National Park (= NP), Chitwan NP, Dhorpatan Hunting Reserve, Ghodaghodi lake (unprotected), Khaptad NP, Koshi-Tappu Wildlife Reserve (= WR), Makalu-Barun NP, Rara NP, Shivapuri-Nagarjuna NP, Sagarmatha NP and Suklaphanta WR. A high camera-trapping effort in Koshi-Tappu WR for



**Fig. 3.** Recent Large Indian Civet *Viverra zibetha* records in the Kathmandu valley, Nepal.



**Fig. 4.** Localities in Nepal reported by Jnawali *et al.* (2011) to hold Large Indian Civet *Viverra zibetha*. Some localities have been omitted (see text).

Fishing Cat *Prionailurus viverrinus* since 2011 has recorded, among civets, only Small Indian Civet *Viverricula indica* as yet (Hem Sagar Baral *in litt.* 2014). Large Indian Civet was also mapped as occurring in some high Himalayan districts such as Humla and Mugu by Jnawali *et al.* (2011). These very high altitude reports should be considered cautiously unless direct evidence of its presence is provided. Hence, they are not included on Fig. 4.

### Distribution in neighbouring countries

Bista *et al.* (2012) recorded Large Indian Civet in India in the Nandhaur area of Uttarakhand state. This lies west of all records and reports in Nepal. Thus, it is quite possible that the species occurs throughout suitable habitat in Nepal. One Large Indian Civet was sighted at the village of Kaladhungi (Nainital district, Uttarakhand state, India) in 1991 (Hem Sagar Baral *in litt.* 2014), which lies about 50 km further west of Nandhaur. A claim from even further west in India, from Himachal Pradesh (Archana *et al.* 2000) was discredited by Bista *et al.* (2012). The species's occurrence in the northwest of its range,



**Fig. 5.** Large Indian Civet *Viverra zibetha*, Gundu, Bhaktapur, Kathmandu, Nepal, July 2012 (Photo: Kamal Raj Gosai).



**Fig. 6.** Large Indian Civet *Viverra zibetha*, Langtang National Park, Rasuwa, Nepal, 16 March 2013 (Photo: Friends of Nature).



**Fig. 7.** Large Indian Civet *Viverra zibetha*, Pharping, Kathmandu, Nepal, 24 March 2013 (photo: Hari Basnet). Note the intestine lying on the floor above the animal's rear back.

in China, is also treated inconsistently. Wang (2003: 91) accepted records in China west only to "Xizang (south-eastern part)". Even though this is imprecise and Xizang is a very large province, under any definition its south-east lies well east of Nepal. By contrast, Smith & Xie (2008) mapped, as well as a cluster of purported localities in south-east Xizang, a single outlying location some 1,500–2,000 km to the west, along the Nepal border at about 85°E. This source is riddled with errors in its treatment of species distributions (Duckworth 2008), so this location should be discounted unless an original record can be traced.

## Discussion

This confirmation of a broader distribution in Nepal than previously documented, together with the extension of the known altitudinal range (up to 2,420 m) by records in Hugu-Kori (Appel *et al.* 2013) (and to 3,080 m in India; Khatiwara & Srivastava 2014) suggest this civet may be more numerous in Nepal than has often been assumed. There is little hard evidence of the types and levels of threat facing Large In-

dian Civet in Nepal. Its occurrence close to human settlements, perhaps because of availability of easy prey, e.g. poultry as mentioned by Prater (1971), could increase the risk of retaliatory killings of the species. The incidents of encountering dead civets (three in 10 months in the Kathmandu valley alone) suggest that the conflict with people could be quite high.

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**Friends of Nature (FON Nepal), P.O. Box 23491,  
Sundhara, Kathmandu, Nepal.  
\*Email: yghimirey@hotmail.com**