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UPDATING SPATIAL INFORMATION OF 27 MAMMAL SPECIES IN NEPAL

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ABSTRACT

Information on species distribution range is a prerequisite for setting conservation strategies. Conservation efforts in Nepal have been focused on flagship species, such as Bengal Tiger (*Panthera tigris*), Asian Elephant (*Elephas maximus*) and Greater One-horned Rhinoceros (*Rhinoceros unicornis*). By contrast, distribution data and conservation efforts for other mammalian species are scarce. Here we documented the spatial locations of 27 mammal species based on direct sightings and photographic evidence from 70 m to 4,800 m of elevation across Nepal. We mapped their geographic distributions, delineated their elevation ranges and summarized the potential threats within their distribution ranges. We observed expanded elevation range for *c*. 30% of the 27 species (8 species), with the most noticeable upward expansion of the Common Palm Civet (*Paradoxurus hermaphroditus*) from <1,500 m to 2,990 m, and downward expansion of the Fawn-colored Mouse (*Mus cervicolor*) from >1,150 m to 200 m. These updated, high-quality spatial information on a subset of Nepal's diverse mammalian fauna, highlight new opportunities to study the effects of climate change on mammals in the Himalayan region.

Key words: altitudinal distribution, geographic distribution, range shift, threatened species, wildlife.

INTRODUCTION

Mammals play a major role in ecosystem functioning and services (Pringle *et al*., 2007; Suzan *et al*., 2008; Walker and Hawkins, 2013; Ripple *et al*., 2014; Rocha *et al*., 2014; Bertolino *et al*., 2015). Comprehensive temporal and spatial data on species geographic distribution, endemism and endangerment are needed for setting conservation strategies for mammals and non-mammals alike (Ceballos and Brown, 1995; Schipper *et al*., 2008). A rich body of literature exists exploring the patterns of spatial (altitudinal and latitudinal) distributions for many mammalian species (Hunter and Yonzon, 1993; Heaney, 2001; Ceballos and Ehrlish, 2009; Scheffers *et al*., 2012; de la Sancha and D'Elia, 2015), which provides crucial information for conservation planning (Grenyer *et al*., 2006). However, such spatially-informed conservation efforts are often limited to flagship species, particularly in developing countries where research funds are limited and many species are not prioritized.

Nepal, a developing country that is also home to approximately 4% of the world's mammal species, has been struggling to obtain more complete spatial information on its mammals, including two endemic species the Himalayan Wood Mouse (*Apodemus gurkha)* and Csorba's Mouse-eared Myotis (*Myotis csorbai)* (Hunter and Yonzon, 1993; Baral and Shah, 2008; Jnawali *et al*., 2011). Although there have been continuous efforts to study Nepal's mammals since the 1950s (Ellerman and Morrison-Scott, 1951; Gee, 1959; Larwood, 1962; Gee, 1963), especially after the establishment of Protected Areas (PAs) in the 1970s (Seidensticker, 1976; Dinerstein, 1979a, 1979b; Hunter and Yonzon, 1993; Pearch, 2011), most studies have focused on charismatic large mammals (Dinerstein, 1979a, 1979b, 1980; Green, 1986; Yonzon and Hunter, 1991; Smith *et al*., 1998; Pradhan *et al*., 2011; Carter *et al*., 2012; Katuwal *et al*., 2013; Karki *et al*., 2015). In recent years, a few studies have adopted a more systematic approach to update spatial information on Nepal's mammals. Specifically, Jnawali *et al*. (2011) provided information on potential range expansion for 208 mammal species through interviewing with park officials and field researchers; Thapa (2014) updated the checklists of 192 mammalian species based on literature reviews. Nevertheless, more direct evidence, such as photographic records, are critical to confirm or revise some of the findings in these recent updates.

Of Nepal's 208 mammal species, 4% are currently listed as Critically Endangered (CE), 12% Endangered (E), 7% Vulnerable (V), 3% Near

Threatened (NT), 35% Least Concern (LC) and the remaining 38% Data Deficient (DD) (Jnawali *et al*., 2011; DNPWC, 2015). Most of the species occurrence records are from the PAs, which cover 23% of Nepal's total area (Jnawali *et al*., 2011). However, more than 70% of the known mammal species are distributed outside the PAs (Baral and Shah, 2008), whose survival is likely under even greater anthropogenic pressure including habitat fragmentation, encroachment of agriculture and grazing, poaching and illegal trade (Heinen and Kandel, 2006; WWF, 2006; Kafle, 2009; Sharma *et al*., 2014; Katuwal *et al*., 2017). Through our interactions with local people and herders in different parts of the country, we suspect that spatial distributions of many mammalian species in Nepal are underestimated. To fill this knowledge gap, we present here updated information on 27 mammalian species that were sighted and photographed in different parts of the country from October 2008 to July 2016 This updated spatial information should help to establish more effective conservation and management policies for Nepal's mammalian fauna.

MATERIALS AND METHODS

Nepal has a land area of 147,181 km^2 (80°04'-88°12'E and 26°22'–30°27'N), bordering China in the north and India in the south, east and west. The precipitation is highest in the east and gradually decreases to the west (Nepal *et al*., 2012). Monsoon occurs from June to September, and annual rainfall is *c*. 1,600 mm (DHM, 2016). The elevation ranges from 60 m to 8,848 m, driving altitudinal gradients in climate and vegetation. The area is divided into five climatic zones: Terai (tropical), Siwalik (sub-tropical), Mid Hill and Mountain temperate, High Himal subalpine and Alpine (LRMP, 1986). The tropical zone (60-1,000 m) is dominated by *Shorea robusta, Dalbergia sissoo* and *Acacia catechu;* followed by *Schima wallichii, Castanopsis indica, Pinus roxburghii* and *Alnus nepalensis* in the sub-tropical zone (1,000-2,000 m); *Quercus* spp., *Rhododendron* spp. and *Juglans regia* in the temperate zone (2,000-3,000 m); *Abies spectabilis, Pinus wallichiana, Betula utilis* and *Rhododendron* spp. in the sub-alpine zone (3,000-4,000 m); and *Juniperus* spp. and *Rhododendron* spp. in the Alpine zone (>4,000 m) (Dobremez, 1976). The complex climate and topography of Nepal has resulted in high biodiversity, including 118 ecosystems, 75 vegetation types, 35 forest types, and four biodiversity hotspots (Dobremez, 1972, 1976).

Mammal occurrences were opportunistically recorded from October 2008 to July 2016 during biodiversity surveys or while visiting the areas for different purposes. The spatial information (latitude, longitude, elevation) of all mammal occurrences was recorded using a handheld GPS (Garmin *Etrex* 10). The observed mammals were photographed (Figure 2) whenever possible. We included only those species for which we obtained photographs or direct sightings. Species were identified by comparing photographs with museum specimens and field guides (e.g., Baral and Shah, 2008). We classified these species into one of the five conservation categories based on the IUCN Red List and Nepal's National Status (Jnawali *et al*., 2011): Data Deficient (DD), Least Concern (LC), Near Threatened (NT), Vulnerable (V), and Endangered (E). Finally, we compared the recorded elevation ranges of these species to previously reported ranges (e.g., Baral and Shah, 2008; Jnawali *et al*., 2011; Ghimire and Acharya, 2012; Appel and Khatiwada, 2014) to assess potential range shifts.

RESULTS AND DISCUSSION

We sighted, photographed and updated distributions of 27 mammal species belonging to 12 families across five orders (Table 1). However, we did not get spatial information on recent changes in remaining 181 species. We recorded new locations for 6 species of Rodentia, 10 species of Carnivora, 1 species of Cetartiodactyla and 1 species of Eulipotyphla from 70-4,800 m of elevation (Table 1). Of the 27 species with new location records, 11.11% (3 species) are currently listed as DD, 3.7% (1 species) as NT, 18.5% (5 species) as V and 11.11% (3 species) as E according to Nepal's National status whereas 11.11% (3 species) of the species are currently listed as NT and 7.4% (2 species) as V on the IUCN Red List.

Updated species range: We recorded elevational range expansion for *c*.30% of the 27 species (8 species). The elevational ranges expanded upward for four species and downward for four. The upward expansions include the Common Palm Civet (*Paradoxurus hermaphroditus*) by 1,490 m, Hoary-bellied Squirrel (*Callosciurus pygerythrus*) by 300 m, and Mountain Weasel (*Mustela altaica*) and Wild Boar (*Sus scrofa*) by 200 m (Table 1, Figures 1 and 2a-d). The downward expansions include the Fawn-colored Mouse (*Mus cervicolor*) by 950 m, Black Giant Squirrel (*Ratu fabicolor*) by 290 m, Masked Palm Civet (*Paguma larvata*) by 50 m, and Small Asian Mongoose (*Herpestes javanicus)* by 140 m (Table 1, Figures 1 and 2e-h).

The Fishing Cat (*Prionailurus viverrinus*) was recorded in the far-west region (Suklaphata Wildlife Reserve) during the current study while Baral and Shah (2008) and Jnawali *et al*. (2011) had mentioned its distribution up to Bardia National Park. Our record is approximately 140 km to the west from the previous records. We observed the Yellow-bellied Weasel (*Mustela kathiah)* in Ilam and Kathmandu district for the first time. We confirmed new locations of the Yellow-throated Marten (*Martes flavigula*) in SNNP, Sundarijal,

Matatirtha, Suryabinayak Forest, and Baglung district (Table 1), however, all of these locations are within the previously recorded elevational range (see Baral and Shah, 2008; Ghimire and Acharya, 2012; Appel *et al*., 2013; Katuwal *et al*., 2013; Appel and Khatiwada, 2014). Similarly, Large Indian Civet (*Viverra zibetha*) from Kathmandu (Machhegaun, Farping, Chandragiri) and Palpa and Masked Palm Civet (*Paguma larvata*) from Kathmandu (Godawari, Chandragiri), Hetuada and Dhankuta were new records. Furthermore, records of the Leopard Cat (*Prionailurus bengalensis*), Mountain Weasel (*Mustela altaica*), Hyaena (*Hyaena hyaena*) and Common Palm Civet (*Paradoxurus hermaphroditus*) from Chandragiri, Shey Phoksundo National Park, Dang and Rara National Park, respectively, were new to our national distribution records.

Range overlap and human-wildlife conflicts: Despite generally considered a widespread species (Baral and Shah, 2008), we confirmed new locations of the Greater Bandicoot Rat *(Bandicota indica*) in the capital of Nepal, and that of the Asian House Shrew (*Suncus murinus*) in Ilam and Chitwan (Table 1). Even though we do not have disease data on these two species, their presence near human settlements are concerning given the potential of small mammals acting as reservoirs for zoonotic diseases (Jonsson *et al*., 2010).

Of the 13 species of Sciuridae in Nepal (Baral and Shah, 2008), five had confirmed new locations both inside and outside PAs (Table 1). The Northern Palm Squirrel (*Funambulus pennantii*) was newly recorded in central (Kathmandu) and western (Pokhara) Nepal (Table 1), which is an expansion from their previously recorded geographic range in southern Nepal (Suwal and Verheugt, 1995; Jnawali *et al*., 2011). Similarly, we confirmed the new locations of Orange-bellied Himalayan Squirrel (*Dremomys lokriah*) in Fulchoki forest of central Nepal (Table 1). Furthermore, we found the Red Giant Flying Squirrel (*Petaurista petaurista*) in Fulchoki forest in central Nepal and in Annapurna Conservation Area in western Nepal (Table 1).

Threats to the Red Giant Flying Squirrel (*Petaurista petaurista*) from stray dogs and road kills are likely increasing in Nepal. For example, we witnessed three dead bodies of the Red Giant Flying Squirrel (*Petaurista petaurista*) during our study, at Shivapuri Nagarjun National Park (SNNP), Annapurna Conservation Area and Manaslu Conservation Area respectively. Road kills and poisoning are recognized as increasing threats to the survival of small mammals (Clevenger *et al*., 2003; Russell *et al*., 2009; Bullock *et al*., 2011; de Freitas *et al*., 2015). It is not allowed to kill wild animals in Nepal (HMG, 1973), however, we recorded hunting and selling of Indian Hares (*Lepus nigricollis)* for bush meat frequently in Janakpur (Figure 3a), hunting of Barking Deer (*Muntiacus vaginalis*) and Masked Palm Civets (*Paguma larvata*) at Ghorlikharka, Dhankuta. In fact, hunting of Common Leopards (*Panthera pardus*) and Wild Boar (*Sus scrofa*) was also reported for most part of rural and urban areas across Nepal (Kantipur, 2016). Similarly, we found wildlife being kept as pets in many parts of Nepal during our study for example Leopard Cat (*Prionailurus bengalensis*) at Lamjung (later it was released in the wild in presences of government officials; Figure 3b) and Barking Deer (*Muntiacus vaginalis*) at Surkhet (Figure 3c), Kavre and Ilam. The practice of keeping wildlife, even the threatened species, as pets is common in rural areas of Nepal (Annapurna, 2016), suggesting insufficient public awareness of the danger and conservation issues involved in keeping wildlife as pets.

Human-wildlife conflicts are on the rise in Nepal, which often result in accidental or retaliatory killing of carnivores (Jnawali *et al*., 2011; Kantipur, 2016). Specifically, the Jungle Cat (*Felis chaus*), Leopard Cat (*Prionailurus bengalensis*), Common Leopard (*Panthera pardus*) and Golden Jackal (*Canis aureus*) are becoming more frequently sighted in urban areas (Table1, Kantipur, 2016). During our study, we recorded a new location of a Bengal Fox (*Vulpes bengalensis*), along with five pups, in the city of Hetauda in southern Nepal (Figure 3e&f). Local people are likely to view the presence of this species as a potential threat to their chicken and goats. We also documented the death of three Large Indian Civets (*Viverra zibetha*) (Figure 3d) at Kathmandu valley near human settlements, with unknown cause of the death. In the meantime, a Common Leopard (*Panthera pardus*) was poisoned at Farping, Kathmandu in 2013 (B. N Rijal Pers. commn.), and nationally endangered Striped Hyaena (*Hyaena hyaena*) was killed by vehicles in the Dang Valley in 2015 (C. Khanal Pers. Comm.). Carnivores are relatively tolerant of human presence (Samia *et al*., 2015), which makes their encounter with human more likely and the outcomes more devastating. The hunting of bush meat (Figure 3a) is another form of human-wildlife conflicts. We recorded new locations of the Nilgai (*Boselaphus tragocamelus*) in the fragmented habitats of Rautahat, Sarlahi and Kamala River of eastern Nepal, where hunting is a common practice. Instances of human-wildlife conflicts could only increase as wildlife ranges increasingly overlap with human settlements, which highlight the urgent needs to develop conservation plans for urban areas.

In Nepal, species conservation activities are typically focused on flagship species inside the PAs, such as the Bengal Tiger (*Panthera tigris*) and Greater One-horned Rhinoceros (*Rhinoceros unicornis*) in Chitwan National Park (Carter *et al*., 2012; Subedi *et al*., 2013). It is understandable given that the PAs are logistically easier to access with greater availability of research funding. However, the extremely low population numbers of many mammals, such as the Striped Hyaena (*Hyaena*

hyaena) (10-100 individuals), Fishing Cat (*Prionailurus viverrinus*) (150-200 individuals), Nilgai (*Boselaphus tragocamelus*) (<350 individuals), and Black Giant Squirrel (*Ratufa bicolor*)(<500 individuals), as well as the insufficient data for other species, such as the Yellow-bellied Weasel (*Mustela kathiah)* and Red Fox (*Vulpes vulpes*) (Jnawali *et al*., 2011), highlight the needs for more research and conservation initiatives on non-flagship mammals both within and outside the PAs. Conducting systematic surveys to update spatial information of Nepal's mammalian fauna within and outside the PAs should be an integral component of effective conservation and management of Nepal's wildlife.

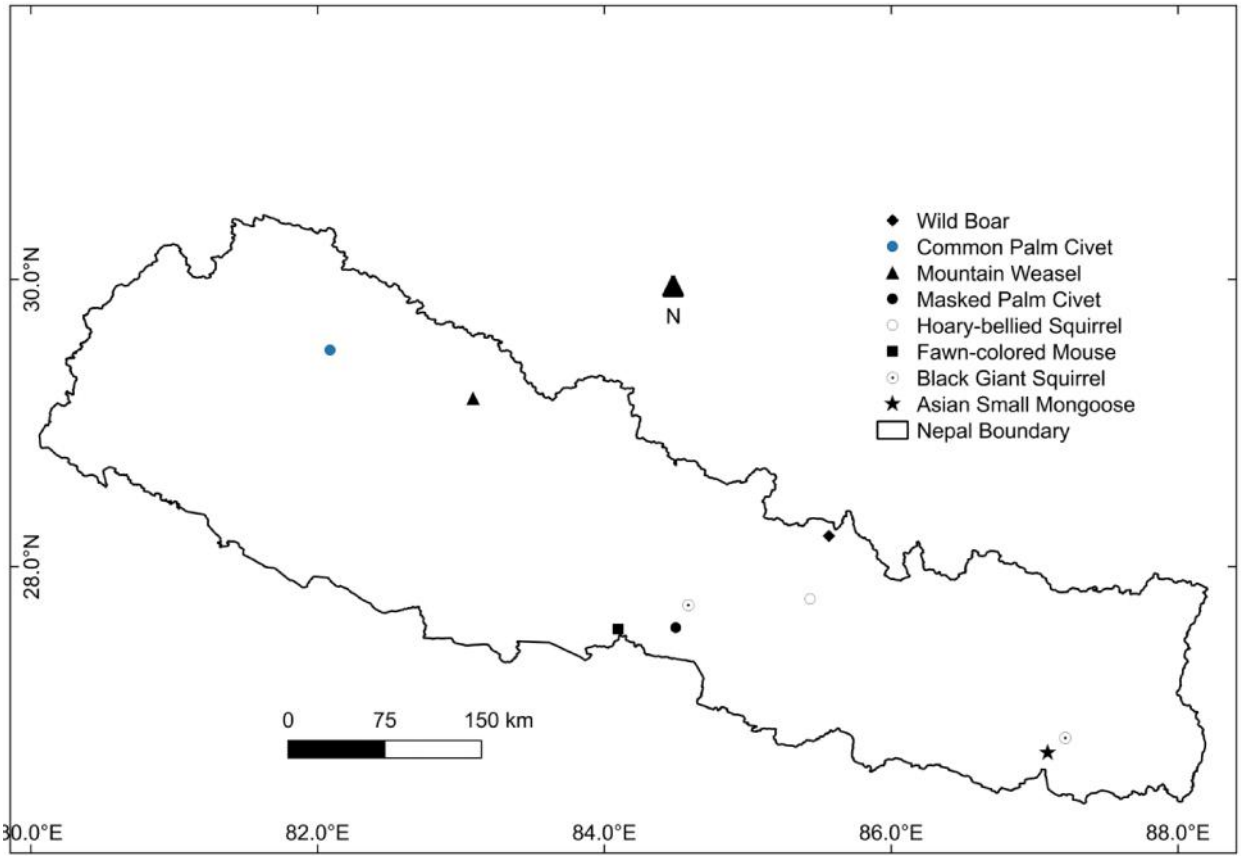

Figure 1 Updated mammal species that shows range shift in Nepal

Figure 2 Photos of the mammal species with updated elevational ranges. (a) Common Palm Civet at Mugu (Rara National Park), (b) Hoary-bellied Squirrel at Shivapuri, (c) Mountain Weasel (Shey Poksudo National Park), (d) Wild Boar at Kenjing (Langtang National Park), (e) Fawn-colored Mouse at Amaltari (Nawalparasi), (f) Black Giant Squirrel at Sunsari, (g) Masked Palm Civet at Pokhara, (h) Small Asian Mongoose at Kathmandu

Figure 3. Photos of the mammal occurrences indicative of human-wildlife conflicts. (a) Three Indian Hares killed for bush meat at Janakpur (b) A Leopard Cat at Lamjung; (c) A Barking Deer kept as a pet at Surkhet; (d) A Large Indian Civet killed at Kathmandu; (e) A Bengal Fox at Chitwan; (f) A group of Bengal Fox pups at Hetauda.

Table 1: Updated spatial and ecological information for 27 mammalian species in Nepal. Spatial location includes Annapurna Conservation Area (ACA), Banke National Park (BaNP), Bardia National Park (BNP), Chitwan National Park (CNP), Dhorpatan Hunting Reserve (DHR), Gaurishankar Conservation Area (GCA), Koshi Tappu Wildlife Reserve (KWR), Langtang National Park (LNP), Parsa Wildlife Reserve (PWR), Rara National Park (RNP), Shivapuri-Nagarjun National Park (SNNP), Shey Pokshundo National Park (SPNP), and Suklaphata Wildlife Reserve (SWR). Threatened status: Data Deficient (DD), Least Concern (LC), Near Threatened (NT), Vulnerable (V), Endangered (E)) and previously recorded elevation were based on Baral and Shah (2008), Jnawali *et al.* (2011), Ghimire and Acharya (2012) and Appel and Khatiwada (2014). All records are photographic and direct sighting and * represents species recorded near urban or human settlement, data not available (NA).

Taxa	Common/ scientific name	IUCN/ National status	Sighted locality	Previously reported spatial distribution	Present recorded spatial distribution	Elevation range shift (m)	Updated geographic range
				Elevation (m)			
Order- Rodentia Family-Muridae	Greater Bandicoot Rat *(Bandicota indica)*	LC/LC	Kalopul (Kathmandu)*	NA	1300	NA	No update
	Fawn-colored Mouse *(Mus cervicolor)*	LC/LC	Amaltari (Nawalparasi)	1150-3200	200	Downward 950	Amaltari (Nawalparasi)
Order- Rodentia Family-Sciuridae	Hoary-bellied Squirrel (*Callosciurus pygerythrus*)	LC/LC	SNNP, CNP*, MCA*, Phulchoki, Chandragiri*, Ilam*, Gorkha*, Dhankuta*, Suryabinayak Forest, Kavre*, ACA, Gulmi*, Nuwakot*, GCA (Jagat)	<1500	120-1800	Upward 300	SNNP, MCA, Chandragiri, Phulchoki, Gorkha, Dhankuta, Suryabinayak Forest, Kavre, Gulmi, Nuwakot, GCA (Jagat)
	Orange-bellied Himalayan Squirrel (*Dremomys lokriah*)	LC/LC	Phulchoki, LNP, SNNP, Nangethati (ACA)	1000-3000	1500-2760	No change	Phulchoki
	Red Giant Flying Squirrel (*Petaurista petaurista*)	LC/LC	SNNP*, ACA*, Phulchoki, Resunga (Gulmi)	150-3000	1200-1500	No change	Resunga, Phulchoki
	Black Giant Squirrel (*Ratufa bicolor*)	NT/E	Patnali Forest (Dharan-Sunsari), Siraechuli (Chitwan)	500-2000	210-450	Downward 290	Siraechuli (Chitwan), Patnali forest (Sunsari)
	Northern Palm Squirrel (*Funambulus pennant*)	LC/LC	Kathmandu*(Kamal Pokhari, Budanilkantah, Basbari, Darbarmarg, Lainchour), Janaki Mandir*, Pokhara*	63-1500	80-1400	No change	Kathmandu, Pokhara
Order- Lagomorpha Family- Leporidae	Indian Hare (*Lepus nigricollis)*	LC/LC	Dhankuta*, CNP, SWR, Nawalparasi, Pokhara, Ilam*, Okhaldhunga, Janakpur*	63-2500	120-1500	No change	No update
Order Carnivora Family-Herpestidae	Small Asian Mongoose (*Herpestes javanicus)*	LC/LC	Kathmandu*, Lalitpur*, Bhaktapur*, Kavre*, Sunsari	240-1500	100-1300	Downward 140	No update
Order- Carnivora Family-Felidae	Jungle Cat (*Felis chaus)*	LC/LC	Sankhu*, SNNP, KWR, Kirtipur*, Thankot*, Chovar*, Lalitpur*, Dharan Forest, Gulmi*, Lumbini*, Jagdsipur Reservoir*	63-4000	180-1800	No change	No update
	Leopard Cat (*Prionailurus bengalensis)*	LC/V	SNNP, ACA, BNP, LNP, Lamjung, Chandragiri	200-3000	165-2200	No change	Chandragiri

	Fishing Cat (*Prionailurus viverrinus)*	V/E	SWR, KWR	<300	75-150	No change	SWR
	Common Leopard (*Pantherapardus*)	V/V	Gorkha*, Lalitpur*, Farping*, SNNP, Gulmi*, Lamjung*, Kavre*, Chandragiri*	<4400	1100-1500	No change	No update
Order- Carnivora Family-Canidae	Golden Jackal (*Canis aureus)*	LC/LC	Bajrabarahi*, Chovar*, Tokha*, Hattigauda*, BNP, CNP, KWR, SWR, ACA*, RNP, DHR, MCA*, Bajura*, Makwanpur*, Gorkha*	<4000	80-3800	No change	No update
	Bengal Fox *(Vulpes bengalensis)*	LC/V	Hetauda*, Bagmara community Forest (CNP)*, Rupendehi (Butwal)*, BaNP	<2700	170-410	No change	Hetauda, BaNP
	Red Fox (*Vulpes vulpes)*	LC/DD	Dolpa (SPNP), LNP	3000-5500	4600	No change	No update
Order-Carnivora Family-Hyanidae	Striped Hyena (*Hyaena hyaena)*	NT/E	BNP, Dang valley	<1000	165-200	No change	Dang
Order- Carnivora Family-Mustelidae	Yellow-throated Marten (*Martes flavigula)*	LC/LC	SNNP*, SNP, Gorkha*, LNP, Phulchoki, Matatirtha*, Suryabinayak*, Baglung*, Gulmi*, Makwanpur*	100-4510	400-2500	No change	Phulchoki, Matatirtha, Chandragiri, Sundarijal, Suryabinayak, Baglung, SNNP
	Yellow-bellied Weasel (*Mustela kathiah)*	LC/DD	Ilam*, Kathmandu*	1000-2000	1300	No change	Ilam
	Mountain Weasel (*Mustela altaica)*	NT/DD	Dolpa (SPNP)	2135-4600	4800	Upward 200	Dolpa (SPNP)
Order- Carnivora Family-Viverridae	Large Indian Civet (*Viverra zibetha)*	LC/NT	Machhegaun*, Bajrabarahi* CNP, Farping*, Palpa*, Chandragiri*, Bhaktapur*, Argakhachi*	<2500	150-1500	No change	Machhegaun, Farping, Chandragiri, Palpa, Argakhachi
	Masked Palm Civet (*Paguma larvata*)	LC/LC	Godawari (Phulchoki), Chitwan*, Hetauda*, Pokhara* (Damside),Ilam*, Dhankuta*, Chandragiri*, *Bhaktapur (Sankha)	200-2200	150-1400	Downward 50	Godawari, Bhaktapur, Chandragiri, Pokhara,Hetuada, Dhankuta
	Common Palm Civet (*Paradoxurus hermaphroditus)*	LC/LC	CNP, RNP, Ilam	<1500	150-2990	Upward 1490	RNP
Order- Cetartiodactyla Family-Cervidae	Barking Deer (*Muntiacus vaginalis)*	LC/V	SNNP, CNP, Phulchoki, Kavre*, SWR, LNP, ACA, Gulmi*, Gorkha*, Machhegaun*, Matatirtha*, Ilam*, Dhankuta*	63-3500	150-3000	No change	No update
Order- Cetartiodactyla Family-Bovidae	Nilgai (*Boselaphus tragocamelus)*	LC/V	KWR, Kamala River*, Sarlahi*, Bagmati River (Rautahat)*, CNP, Lumbini*, SWR	75-300	110	No change	Rautahat, Sarlahi, Kamala River
Order- Cetartiodactyla Family-Suidae	Wild Boar (*Sus scrofa*)	LC/LC	LNP*, SNP, CNP, PWR, SWR, DHR, RNP, KWR, SNNP, Bajura*, Rautahat*, Kavre*, Dang*, Chandragiri*, Kathmandu*	63-4000	120-4200	Upward 200	No update
Order- Eulipotyphla Family-Soricidae	House Shrew (*Suncus murinus*)	LC/LC	Ilam*, CNP, Chitwan*, Kathmandu*, Bhaktapur*, Lalitpur*	<2825	200-1300	No change	CNP, Ilam

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