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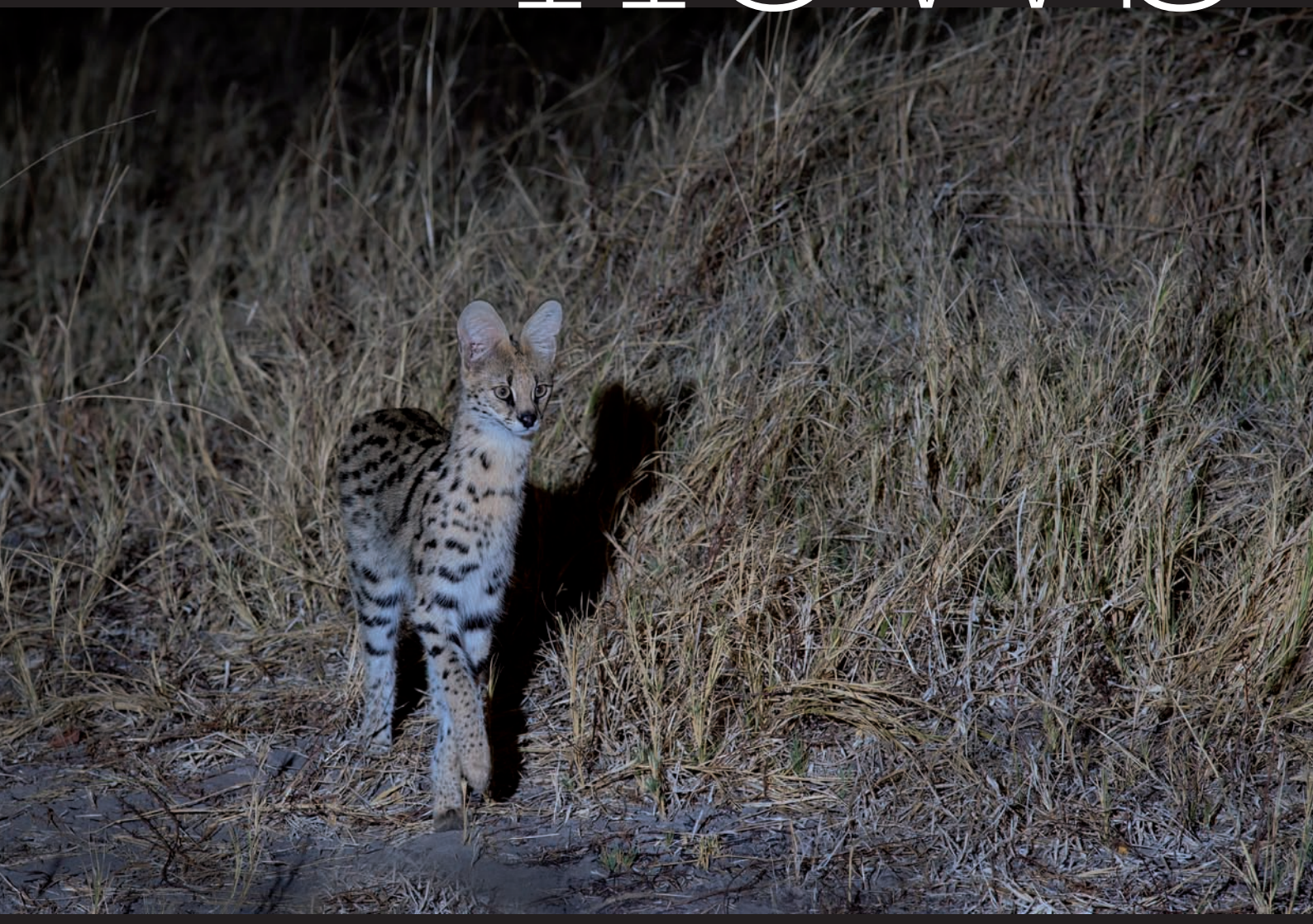

SPECIES SURVIVAL COMMISSION

CAT SPECIALIST GROUP

CATnews is the newsletter of the Cat Specialist Group, a component of the Species Survival Commission SSC of the International Union for Conservation of Nature (IUCN). It is published twice a year, and is available to members and the Friends of the Cat Group.

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Original contributions and short notes about wild cats are welcome
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Guidelines for authors are available at www.catsg.org/catnews

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Rusty-spotted cat: 12th cat species discovered in Western Terai of Nepal.

Rusty-spotted cat *Prionailurus rubiginosus* is the smallest wild cat, believed to be distributed only in India and Sri Lanka. Recently it was discovered from wider areas than previously thought but never recorded from Nepal. During a camera trap survey primarily targeted for tigers *Panthera tigris*, rusty-spotted cat was photographed multiple times on a single camera trap station in Shuklaphanta Wildlife Reserve in January and February 2016. The camera trap location is in dry-deciduous Sal *Shoresa robusta* forest in core area of the reserve at a distance of approximately 5 km from settlements. This is the first photographic evidence of rusty-spotted cat captured in camera traps in Nepal. Similarly, a photograph of a cat species taken by a park visitor in 2012 from Bardiya National Park was confirmed as rusty-spotted cat. With this record, Nepal has 12 felid species: tiger, common leopard *Panthera pardus*, snow leopard *Panthera uncia*, clouded leopard *Neofelis nebulosa*, Eurasian Lynx *Lynx lynx*, Asiatic golden cat *Catopuma temminckii*, fishing cat *Prionailurus viverrinus*, jungle cat *Felis chaus*, leopard cat *Prionailurus bengalensis*, marbled cat *Pardofelis marmorata*, Pallas's cat *Otocolobus manul* and rusty-spotted cat.

The miniature member of the feline family, the rusty-spotted cat is one of the lesser known small carnivore species (Sunquist & Sunquist 2014, Vyas & Upadhyay 2014). With an average adult weight of 1.1 kg for females and 1.6 kg for males (Phillips 1980), respectively, they are about half the weight of a typical house cat. Historically, it was believed to be confined to central and southern India and Sri Lanka (Pocock 1939, Phillips 1980, Khan & Mukherjee 2008). Nowell & Jackson (1996) reported an isolated record from Kashmir without evidence of continuous distribution in between. But in recent years, it has been recorded frequently and found widely distributed in India (Anwar et al. 2010, Athreya, 2010) either due to its range expansion or more likely due to the high probability of detection in the extensive coverage of camera trap surveys across the region. The species has recently been recorded in the Indian part of the transboundary Terai Arc Landscape TAL from the Pilibhit forest division (now Tiger Reserve) and Katarniaghat Wildlife Sanctuary in 2010 and 2012, respectively (Anwar et al. 2010, 2012). Similar habitat exists along the TAL-Nepal but rusty-spotted cat has never been recorded in Nepal before.

Rusty-spotted cat is believed to be primarily nocturnal (Nowell & Jackson 1996). Very little is known about their diet and habitat preference. They might be more common in grasslands, scrub, drier and open forests (Phillips 1980, Prater 1980) and apparently not found in closed forest types (Nowell & Jackson 1996). Multiple records in Sri Lanka and India show their tolerance to modified habitat such as denning and breeding in tea plantations in Sri Lanka (Phillips 1980). They were also found in attics of houses surrounded by paddy fields and coconut trees in southern India, old farm houses in mango plantations in Gujarat, or on farmlands on the outskirts of Banglore (Nowell & Jackson 1996). The cat preys on small mammals and birds (Nowell & Jackson 1996) although we don't know details. They sometimes also take domestic chickens (Pocock 1939, Phillips 1980).

Rusty-spotted cat has never been described from Nepal but other eleven felid species have been previously recorded. Ten felid species (tiger, common leopard, snow leopard, clouded leopard, lynx, Asian golden cat, marbled cat, jungle cat, fishing cat, leopard cat) are well documented (Baral & Shah 2008, Jnawali et al. 2011, Thapa 2014) and a new species i.e. Pallas's cat was discovered in 2013 from the Nepalese Himalayas (Shrestha et al. 2014). Here we report the photographic evidence of the rusty-spotted cat, the 12th cat species of Nepal, from two protected areas of western Terai, Shuklaphanta Wildlife Reserve SWR and Bardiya National Park BNP in Nepal.

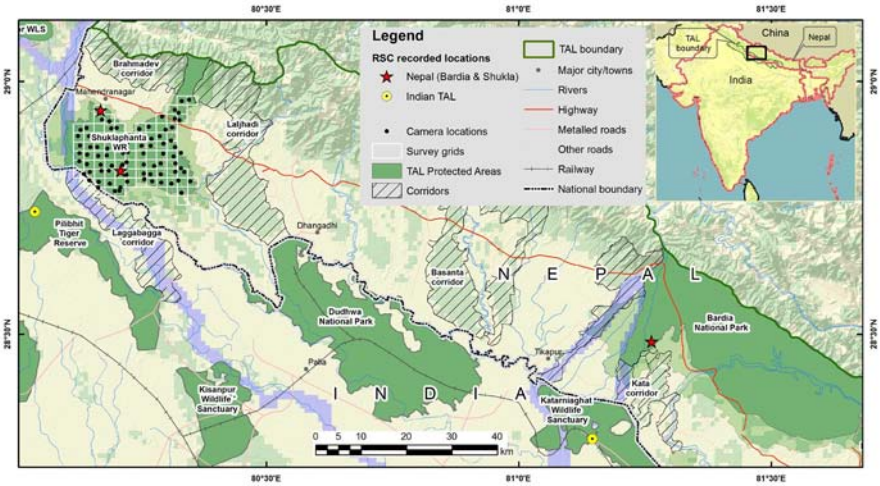

Fig. 1. Western Teria Arc Landscape showing rusty-spotted cat captured locations in Bardiya National Park (Nepal), Shuklaphanta Wildlife Reserve (Nepal), Katarniaghat Wildlife Sanctuary (India) and Pilibhit Tiger Reserve (India) along with other protected areas and forest corridors.

Materials and methods

Study area

This study was conducted in an area of 305 km^2 of SWR in a single dry season (January-March 2016) and in BNP. SWR & BNP are located in the western region of the Terai Arc Landscape TAL, Nepal, which stretches over nearly 23,000 km^2 of alluvial floodplains and Churia hills (Wikramanayake et al. 2004). SWR lies in the south-western corner of Nepal. The reserve is bordered by Mahakali river in the west, settlements in the north, India in the south and Syali river in the east. It is connected to Pilibhit and Dudhwa Tiger Reserve in India through the Laggabagga corridor in the south (India) and the Laljhadi corridor in the east (Nepal), respectively. An opportunistic sighting of a rusty-spotted cat was reported from BNP

(968 km^2), from the Karnali River floodplain, stretching ca. 100 km^2 in the south-western part of BNP (Wegge et al. 2009). BNP is connected to Katarniaghat Wildlife Sanctuary in India through the 'Khata' corridor (Wikramanayake et al. 2004). Both BNP & SWR have sub-tropical monsoonal climate with three distinct seasons: monsoon (July-October), cool-dry (November-February) and hot-dry (March-June).

Camera trap survey

As a part of tiger monitoring programme in the Western Terai Landscape, a camera trapping survey was carried out covering the entire SWR in two blocks between 27 January and 2 March 2016. Camera traps were placed systematically by super-imposing a grid of 2 x 2 km^2 (Fig. 1) and deploying a pair of camera traps (Reconyx 550 & Bushnell trophy cam) in each grid cell over a standard sampling duration of 15 days. Habitat type and site parameters were collected at each camera location. Camera trap locations with-in each grid cell were selected following intensive sign surveys for tigers to maximise the chance of photo-captures (Dhakal et al. 2014). Camera trap pairs were placed 8-10 m apart facing each other at 45-60 cm above the ground. As the primary target species of the study was tiger, site selection, distance between paired cameras and camera height might have affected the optimum capture of rusty-spotted cat. All the photographic data were downloaded, photos were sorted per species and individuals were identified whenever possible. Photo capture of a species within a 30 minute interval was termed as 'independent event'. Capture rate (number of independent events per 100 trap nights) was calculated as an abundance index of rusty-spotted cat (Thapa et al. 2013). Spatial calculations were done using ArcGIS 10.0.

Opportunistic sighting of rusty-spotted cat

A local nature guide (Mr. Ramjan Chaudhary) provided a photo of a cat species to one of the authors (Rabin Kadariya) to check if it was a fishing cat. The photo was taken by a park visitor on 28 March 2012 during a jeep safari in Karnali floodplain of BNP. In consultation with small carnivore experts it was identified as rusty-spotted cat. Later, the location of sighting and other details were also recorded. Similarly, a rusty spotted cat was sighted by the first author during a jeep safari in SWR on 20 April 2016.

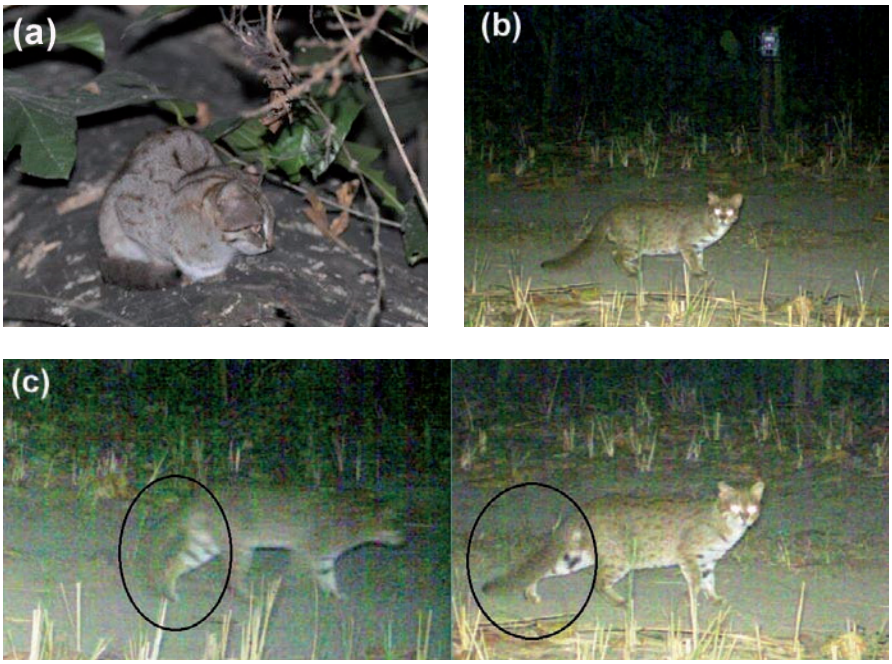

Fig. 2. (a) Photograph of rusty-spotted cat taken by a tourist (Ms. A. Clifford) in Bardiya NP during a jeep safari, (b) first camera trap picture of rusty-spotted cat captured in Nepal from Shuklaphanta Wildlife Reserve, (c) two different individuals of rusty-spotted cat identified from their stripe pattern (inner side of left hind limb) and tail.

Results and discussion

We recorded 22 photographs of rusty spotted with total search effort of 1,317 trap nights from 85 camera trap grids in SWR. The species was identified based on body structure, pattern on the body (black spots on pale grey background), white belly with black lines and dark unmarked bushy tail. Photographs were obtained from six independent events on five different dates. The rusty-spotted cat was captured only in a single location with multiple recaptures (n = 6). The encounter rate of rusty-spotted cat within the core area of SWR was 0.46/100 trap nights. All the captures were made between 20:29 h in the evening and 04:54 h in the morning. Photographs from two events (28 January and 3 February 20:29 h) with similar position of the animal allowed us to confirm at least two individual males (Fig. 2). For the rest of the events, we were not able to confirm their individual identity. The location of the rusty-spotted cat records was in relatively open and dry Sal forest (Supporting Online Material SOM Figure F1) in the core area of the reserve with minimal human disturbance, about 4.6 km from the nearest forest edge. We also recorded additional eight mammal species, including six carnivores, in the same location where the rusty-spotted cat was captured (Table 1). Both tiger and rusty-spotted cat were also captured in a single trap night on 28 January 2016 (Fig. 3).

In addition to the camera trap, opportunistic sighting of a rusty-spotted cat was also recorded by the first author in SWR at 20:05 h of April 20, 2016 during ca. 50 km long jeep drive. The cat was found walking on the forest road, at the edge of the relatively open dry deciduous sal forest. The location (28°56'35.34'' N / 80°10'20.7588'' E, elevation 216 m) is very close (< 100 m) to the settlements and 13.8 km north-west of the camera trapped location.

In Bardiya, a rusty-spotted cat was recorded in the evening (ca. 18:00 h) of 28 March 2012 during a ca.15 km long opportunistic jungle safari in the Karnali floodplain. The cat was sitting on a log lying on the ground in a Sal forest and was photographed by a park visitor (Fig. 2a). Looking at its position, the cat was probably ambushing prey. Conspicuous small head structure, forehead stripes and pale grey coat with rusty spots enabled a confident identification as rusty-spotted cat. The sighting location lies within a dry deciduous Sal forest ca. 700 m from the nearest forest edge. All the records of rusty-spotted cat were from a forested area. But it was recorded from fringe (<1 km) to deep inside the core areas. Similar observations were done along the TAL-India (Anwar et al. 2010, 2012). In TAL-India, all records were recent and the species was not recorded earlier in regular camera trapping surveys (Anwar et al. 2012, Jhala et al. 2008). Comparable to our camera trap sur-

Table 1. Details of camera trap location where rusty-spotted cat was captured in Shuklaphanta Wildlife Reserve, Nepal.

Location ID	SWR 42
GPS	28.82346° N / 80.21171° E
Elevation	192 m
No. of independent events	6
No. of photos	22
Duration of Camera Trap	Jan 28 to Feb 12, 2016
Photo Captured dates	**Time (in 24 hrs)**
28 Jan 2016	22:42 h
31 Jan 2016	20:31 h
02 Feb 2016	19:54 h
03 Feb 2016	04:54 h
03 Feb 2016	20:29 h
08 Feb 2016	22:31 h
Terrain	flat
Camera location	forest road
Habitat type	sal forest
Nearest distance to village (km)	4.6
Other mammal species captured in the same camera trap station	tiger, common palm civet, small Indian civet, honey badger, bengal fox, Himalayan crestless porcupine, chital, muntjac, Indian hare

vey findings, captures of the rusty-spotted cat were made during the night (20:29 h-04:54 h) across TAL. However, the direct sighting records were made during the evening 18:00 h, 19:35 h and 20:05 h (Anwar et al. 2012 and present study).

This study presents the conclusive record for the presence of the rusty-spotted cat in Nepal and brings the total number of cats in the country to 12 (SOM T1). According to the National Red List of Nepal (Jnawali et al. 2011), two felid species i.e. marbled cat (whose photographic evidence has not been found in recent years) and Asiatic golden cat are listed in Data Deficit DD category. Two new species (Pallas's cat and rusty-spotted cat) discovered after 2013 have not been assessed in the National Red List. The discovery of two new cat species in Nepal also highlights the importance of research on status, distribution and ecology for their conservation in the country.

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Supporting Online Material SOM Figure F1 and Table T1 are available at www.catsg.org.

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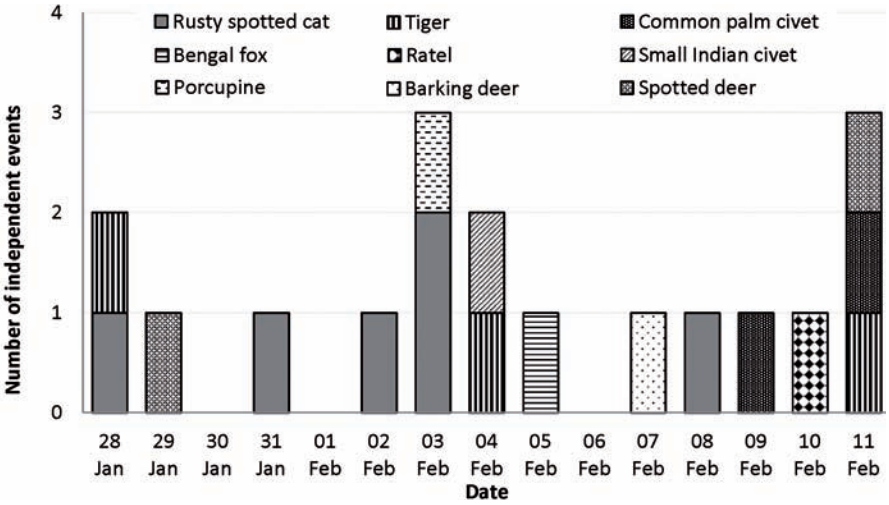

Fig. 3. Temporal pattern of mammal species capture in camera trap station (CT 042) where rusty-spotted cat was captured in Shuklaphant Wildlife Reserve, Nepal.

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Stability of tigers in Chitwan National Park, Nepal

Tiger *Panthera tigris* monitoring using radio-telemetry, pugmark tracking and camera trapping was conducted for four decades in an area of approximately 100 km² in the western part of Chitwan National Park, Nepal. The aim was to record the life history, longevity and reproductive status of the resident breeding tigers. From 1985 to 2015, the data shows a density of six breeding females / 100 km² and considerable disparity in reproductive success for male and female tigers. Seven long-lived females (12-17 years) produced a mean of 5.14 litters, yielding an average litter size of 2.89. Nearly 60 percent of the cubs survived up to the age of dispersal. Such high reproductive success and constant number of breeding females are the contributing factors in the stability of the Chitwan tiger population.

Chitwan National Park CNP, a UNESCO World Heritage Site, was established in 1973 largely to protect two iconic endangered species, the greater one horned rhinoceros *Rhinoceros unicornis* and the Bengal tiger *Panthera tigris tigris*. Prior to the park's establishment, most of the area was a Rhinoceros Sanctuary, which was created in 1962. A force of armed guards, called the Gaida Gusti (Rhino Patrol), manned a series of guard-posts throughout the area to prevent poaching. However, nothing was done to curtail the overgrazing by large numbers of domestic cattle and buffaloes. Large livestock numbers simply compensated for decline in deer numbers. With less natural prey available, tiger numbers were also down.

When the park was created, one of the first priorities was the control of illegal domestic livestock grazing. This task was tackled energetically by Tirtha Man Maskey, the first Chief Warden of CNP. Additionally, in 1975, a contingent of the Nepal Army was stationed inside the Park to protect rhinoceros and tigers but also to deter illegal human activities within the park. Livestock were rounded up and kept in enclosures at the guard posts until the owners paid a fine for their release. It took almost three years, but eventually domestic livestock grazing was controlled. The result was that deer numbers rose and the tiger numbers followed suit. However, very little was known about tiger biology, behaviour, reproduction, dispersal, movement/activity pattern, and habitat requirements that could assist the park management for better protection. To address this lack of knowledge, the Smithsonian Nepal Tiger Ecology Project began in 1973 and continued through 1980. For the first time, radio-telemetry was used on tigers to monitor the movement and activities of individual tigers. One of the major findings of the project was that breeding tigers maintain exclusive home ranges defined as territories (Sunquist 1981). Females compete for resources to establish exclusive territories to maintain themselves and to raise their offspring. Males compete for reproductive females, with successful ones establishing territories that monopolise several females (Sunquist 1981).

In 1980, McDougal was made a Smithsonian Research Associate to conduct a long term tiger monitoring LTTM project as a follow up to the earlier Smithsonian Studies in the 1970s. The objective was to gain a long-term perspective on the population dynamics, life histories, and reproduction, including cub survival to age of dispersal. In this paper, we analyse the data collected during this project to determine the life histories of the resident

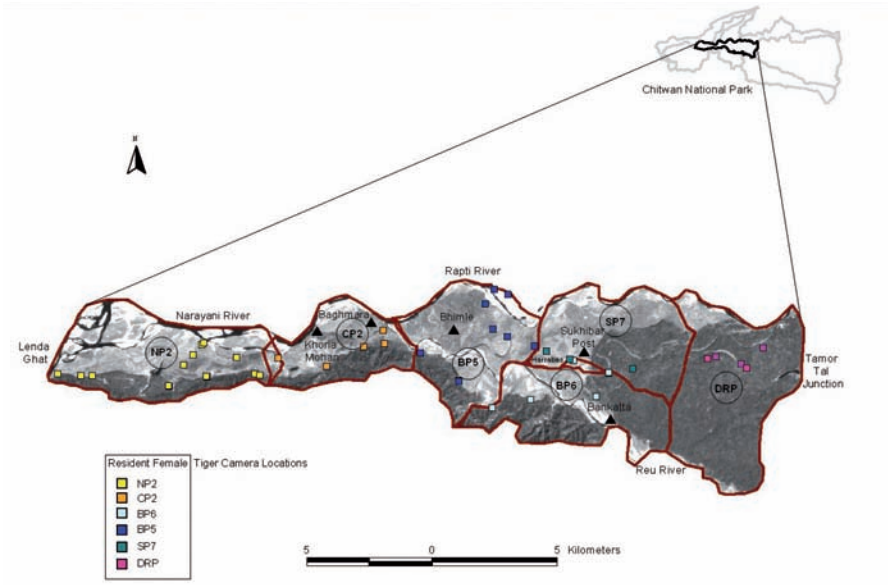

Fig. 1. Study area with camera trapping locations and territories of six breeding resident females during the season 2013-14.

breeding tigers and their reproductive contribution to the population.

Study area

CNP (~ 950 km²) is a dun, or interior valley, between the two outermost ranges of the Himalayas, the Mahabharat and the Siwaliks, in south central Nepal. Rich alluvial soils support a diverse floodplain covered with tall grassland and riverine forest, which constitute 30% of the park; 70% consists of upland Sal forest. The study area of approximately 100 km² contains grassland, riverine forest, and the lowland Sal forest. The area is bounded by Tamor Tal Junction, on the east, and Lenda Ghat, on the west; between the Rapti and Narayani Rivers, on the north, and the Reu River and the base of the Someswar Hills on the south (Fig. 1). The park contains large populations of prey species for tigers: sambar, spotted deer, hog deer, wild boar, and gaur. The CNP is part of the larger Chitwan-Parsa-Valmiki Tiger Conservation Unit that has a regional priority of tiger population persistence over a long term (Sanderson et al. 2006). The large tiger population of Chitwan is the mainstay of this Conservation Landscape.

Methods

Ever since the creation of the park, McDougal and colleagues have been monitoring resident breeding tigers in the same study area. An adult female was considered a resident if she was accompanied by cubs or juveniles or if she was recorded in the same locality in two consecutive seasons. Monitoring season was between mid-September and mid-June. We used three different tiger monitoring methods: radio-telemetry, pugmarks and camera trapping. Radio-telemetry was used between 1975 and 1980, when each resident individual became an identification number based on the radio frequency (Sunquist 1981). During this time a reliable system of identifying tiger by their tracks (pugmarks) was developed and tested (Smith et al. 1999). We monitored radio-collared tigers until the last batteries died out and we used pugmark tracking between 1980 and 1995. Individual tigers were monitored by diagnostic features found on any of their four pugmarks (McDougal 1999). As a cross check on pugmark identification, we used camera trap photography on ad hoc basis.

Finally, between 1995 and 2015, we used systematic camera trapping. We first used the Trailmaster camera traps (Goodson Associates, Kansas, USA) and after 2008 we used digital passive infrared motion detecting Moultrie game cameras (Moultrie Feeders, Alabaster, Alabama, USA). We divided the study area into 4 blocks (range ~ 17 to 29 km²) that were successively camera trapped each season. We equipped each block with 4 - 10 camera locations spread 1 and 1.5 km apart. Each block was trapped 1-3 times per year and for 10-27 trap nights. We set up two cameras in each location, along roads, trails, and other frequent tiger travel routes. Two cameras facing each other were used to simultaneously photograph both sides of an animal to ensure a complete identification of an individual tiger. We used a handheld Garmin eTrex (Garmin International Inc., KS, USA) global positioning system GPS receiver to record the location of each camera trap.

We identified individual tigers from the pugmarks (unique features from any of the four feet) and pictures using their unique stripe patterns and facial marking (McDougal 1977). We then gave names to the identified tigers and used the abbreviation in the database (Table 1, Supporting Online Material SOM Table T1a, b). We also recorded the number of cubs born to the resident females, when first accompanying them approximately at 3 months of age and monitored them up to the age of dispersal. Finally, we mapped the territory of each breeding female based on the radio-telemetry locations, pugmark distribution and camera trapping locations (Fig. 1).

Results

We recorded a total of 34 resident breeding females with 6, 12 and 16 females identified during radio-tracking, pugmark tracking and camera trapping periods respectively (SOM T1 a, b). Five females recorded in previous periods were monitored in the next successive period, where a total of 17 and 21 females were monitored during the pugmark tracking and camera trapping period. The number of resident breeding females (mean = 6.1) ranged from 3-8. The mean numbers of females in each period were: radio-tracking (mean = 3.50), pugmark tracking (mean = 5.87), and camera trapping (mean = 6.35).

Camera trapping period

There were two gaps in data collection in this period. We camera trapped 17 seasons: ten seasons from 1995-2005, five seasons from 2007-2012, and two seasons from 2013-2015, over a total period of 20 years (SOM T1b). Even during the 2 intervals between the 3 periods, we were able to collect data on individual residents, so that we have a complete data set covering 20 years.

During that time we recorded 20 resident breeding females and one post-reproductive one. Likewise, there were 10 resident breeding males. Among these males and females, 146 cubs were recorded belonging to 53 litters. The mean litter size was 2.80.

There was considerable disparity in reproductive success for both sexes. Seven long-lived females (recorded more than 10 seasons; 35% of the total) produced 61% of the young (Table 1). These seven females produced a mean of 5.14 litters during their

lifetimes (range 4-6). The 36 litters were comprised of 104 young, yielding a mean litter size of 2.89. Survival rate to dispersal age was 58%. The seven females reached on average 14.5 years (range 12-17). One male, EB, in his 6 year breeding life, sired 16 litters with 10 different females; five of those were long-lived females who resided in EB's territory concurrently from 1999 through 2001 (Table 1).

Discussion

The most surprising result of our study was the stability of the number of resident females in the area. In 1975, when the park was two years old, there were only three breeding females in the study area. Ten years later, in 1985-86 the number increased to six breeding females. Since then until the present, the number has remained at six, occasionally rising to seven or eight. For example, in 1995-96 the newly established female BP3 replaced her post-reproductive mother JP, reducing the number of females that year from seven to six. The mean density of six breeding female tigers per 100 km² is also supported by previous publication (Barlow et al. 2009). There was a large fluctuation in the numbers of nonbreeding sub-adult and transient tigers, something that is not possible to identify in a single season. As such, more than two consecutive season of monitoring is recommended to differentiate breeding and nonbreeding adults in the population.

For reproduction, the critical resource of a tiger population is its resident reproductive females: their number, stability, density, longevity, and reproductive success. Males are also important. When resident males were stable, cub survival to dispersal was very high (Smith & McDougal 1991). However, during the period of interregnum, infanticide was widespread. Increased rates of infanticide have also been documented in lions, leopards (Packer et al. 2010) and cougars (Packer et al. 2009) following the loss (removal) of resident males.

Both male and female tigers showed considerable disparity in reproductive success, which is also reported by Smith et al. (2010). The longest-lived female produced a significantly higher percentage of cubs and the dominant male produced the majority of the offspring. During the camera trapping period, the three longest-lived females, SP7 (Sukhibar Pothi), LP3 (Lucky Pothi), and CP2 (Chamka Pothi), all lived to the age of 17 years. All three produced litters by the same two males, first EB and then IB. In the process three cases of likely infanticides were reported. SP7 and LP3 lost each one litter of three cubs of EB by IB, but CP2 lost none because there was a three month gap before IB replaced EB. LP3 lost her first litter, an additional two cubs, when EB replaced NB.

CP2 and SP7 were migrants into the area where they settled. However, LP3 settled in her natal area. Her mother RP2 displaced her neighbour, AP, and settled in AP's former territory leaving her own original territory vacant for her daughter, LP3.

All three females were photographically well-documented (Fig. 2) but only LP3 was recorded during all her life stages. We have photos of her as a 9/10 month old cub, as a sub-adult female, as a mother with cubs, and at the end of her life. LP3 was a relatively small tiger and highly aggressive. On one occasion a mature female with three cubs came out of the sub-optimal habitat in the hills to the south and tried to settle in the prime riverine habitat already occupied by LP3. The young tigress repulsed her and drove her back into the hills. LP3 produced five litters, but lost half of her 14 cubs.

Although SP7 only produced nine surviving offsprings, she was the most successful tigress as three of her daughters became resident breeding females. CP2 was still alive at the time of the last camera trapping season in 2015. She produced five litters containing 15 cubs, of which 9 survived. Her cubs were sired by four different males, EB, IB (x 2), KB2 and LB (Table 1).

Conclusions

CNP has a stable number of breeding females that occur at very high density and can raise their young in territories of <20 km². Mean territory size in this study was 16.6 km². Long-lived resident females giving birth to nearly five litters each during their lives characterise the population. Reproductive success is high. The limiting factor is the small amount of breeding habitat available in the park, which is almost entirely confined to riverine habitat, consisting of alluvial grassland, riverine forest, and lowland Sal forest. The majority of the park consists of unsuitable upland Sal forest.

In 1995, a tiger count of CNP results tabulated a total of 30 resident breeding females (DNPWC 2007). Given the degree of stability described over the last 20 years, one cannot expect any dramatic increase. More tigers require more prey and since the prey base in the park is in synch with the habitat, the only way to increase the prey is to increase the habitat. A big step in this direction has been the creation of the buffer zone BZ. Improved management of the BZ community forests has resulted in the creation of additional tiger habitat outside the park in the BZ.

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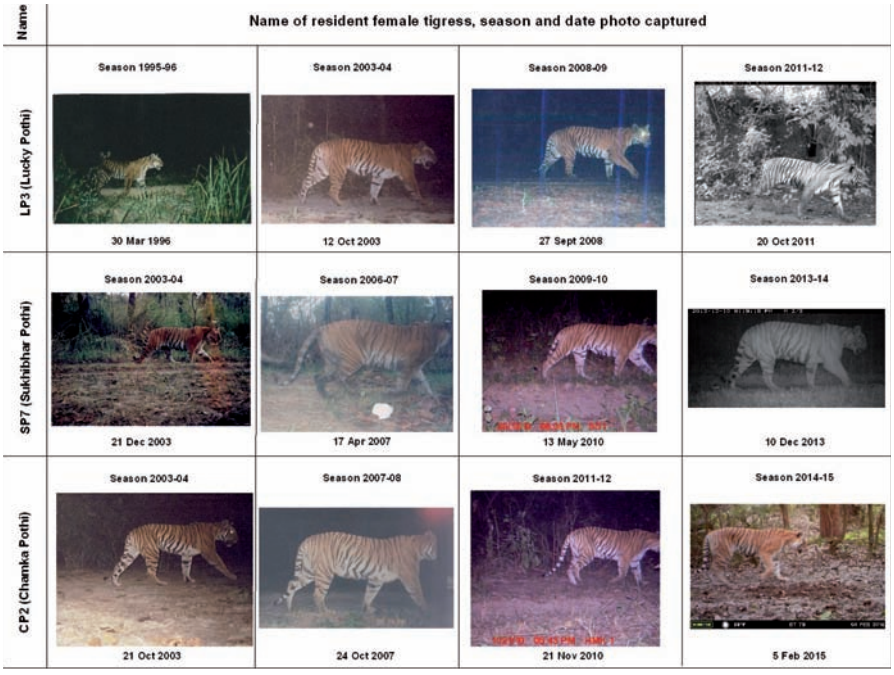

Fig. 2. Partial photo records of three long-lived breeding resident females during the camera trapping period.

Table 1. Litter size at detection and cub survival at dispersal of seven breeding resident females recorded more than ten seasons during the camera trapping in Chitwan National Park, Nepal.

Female	Male	Litter Year	Litter size	Survival	% Survival
AP	LB	1985	3	1	39%
	BB2	1987	3	2	
	DB	1989	2	0	
	NB	1990	2	2	
	NB	1992	3	2	
	NB	1996	2	0	
	NB	1997	3	0	
BP3	NB	1997	3	0	62%
	EB	1999	4	4	
	EB	2000	3	2	
	EB	2004	3	2	
CP2	EB	2002	4	3	60%
	IB	2005	4	4	
	IB	2008	3	0	
	KB2	2010	2	1	
	LB	2013	2	1	
LP3	NB	1998	2	0	50%
	EB	1999	2	2	
	EB	2001	4	3	
	EB	2004	3	0	
	IB	2006	3	2	
RP2	NB	1991	3	0	40%
	NB	1992	2	2	
	NB	1995	4	4	
	MB2	1998	3	2	
	MB2	2000	3	0	
SP7	EB	2001	4	3	75%
	EB	2005	2	0	
	IB	2006	3	3	
	DB2	2008	3	3	
TP	NB	1992	3	2	71%
	NB	1994	4	4	
	NB	1996	3	3	
	NB	1998	2	0	
	EB	1999	3	3	
	EB	2001	2	0	
Total			**104**	**60**	**58%**

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Supporting Online Material SOM Table T1a, b is available at www.catsg.org.

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Lamichhane B. R., Kadariya R., Subedi N., Dhakal B. K., Dhakal M., Thapa K. & Acharya K. P. 2016. Rusty-spotted cat: 12th cat species discovered in Western Terai of Nepal. Cat News 64, 30-33. Supporting Online Material

SOM F1. Camera trap location where rusty-spotted cat was captured in Shuklaphanta Wildlife Reserve. The location was at typical forest road in Sal forest (visible on the background of photo).

SOM T1. Natural history of felid species recorded in Nepal.

SN	Scientific name	Common name	IUCN Red List (Global)	IUCN Red List (National)	Nepal's Protected Animal List	Size category	Source
1	*Catopuma temminckii*	Asian Golden Cat	NT	DD	-	Medium	Ghimirey & Pal 2009
2	*Felis chaus*	Jungle Cat	LC	LC	-	Medium	Karki 2011
3	*Lynx lynx*	Eurasian lynx	LC	VU	Protected	Medium	Thapa 2014
4	*Neofelis nebulosa*	Clouded Leopard	VU	EN	Protected	Medium	Lamichhane et al. 2014
5	*Panthera pardus fusca*	Leopard	NT	VU	-	Large	Thapa et al. 2014
6	*Panthera tigris tigris*	Bengal Tiger	EN	EN	Protected	Large	Dhakal et al. 2014
7	*Panthera uncia*	Snow Leopard	EN	EN	Protected	Large	Jackson 1996
8	*Pardofelis marmorata*	Marbled Cat	NT	DD	-	Small	Jnawali et al. 2011
9	*Prionailurus bengalensis*	Leopard Cat	LC	VU	Protected	Small	Karki 2011
10	*Prionalurus rubiginosus*	Rusty-spotted cat	VU	N/A*	-	Small	This study
11	*Prionailurus viverrinus*	Fishing Cat	EN	EN	-	Medium	Mishra 2012
12	*Otocolobus manul*	Pallas's cat	NT	N/A*	-	Small	Shrestha et al. 2014