ISSN 1027-2992

CAT news

N° 68 | Autumn 2018

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.

For joining the Friends of the Cat Group please contact Christine Breitenmoser at ch.breitenmoser@kora.ch

Original contributions and short notes about wild cats are welcome
Send contributions and observations to ch.breitenmoser@kora.ch.

Guidelines for authors are available at www.catsg.org/catnews

CATnews is produced with financial assistance from the Friends of the Cat Group.

Design: barbara surber, werk'sdesign gmbh
Layout: Tabea Lanz und Christine Breitenmoser
Print: Stämpfli Publikationen AG, Bern, Switzerland

ISSN 1027-2992

Editors: Christine & Urs Breitenmoser
Co-chairs IUCN/SSC
Cat Specialist Group
KORA, Thunstrasse 31, 3074 Muri,
Switzerland
Tel ++41(31) 951 90 20
Fax ++41(31) 951 90 40
<urs.breitenmoser@vetsuisse.unibe.ch>
<ch.breitenmoser@kora.ch>

Associate Editors: Keith Richmond
Brian Bertram
Maximilian Allen
Juan Reppucci

Cover Photo: Clouded Leopard
Photo Yadav Ghimirey

NARESH KUSI[1,2*], PRAJWOL MANANDHAR[3], SAMUNDRA AMBUHANG SUBBA[4], KANCHAN THAPA[4], KAMAL THAPA[5], BIKRAM SHRESTHA[6], NARENDRA MAN BABU PRADHAN[7], MAHESWAR DHAKAL[8], NURENDRA ARYAL[9] AND GERALDINE WERHAHN[1]

Shadowed by the ghost: the Eurasian lynx in Nepal

The Eurasian lynx *Lynx lynx* is poorly studied in most of Asia and almost nothing is known about its status in Nepal. We present new data on lynx in Nepal collected during 2014 to 2017 based on non-invasive genetic sampling, camera trap survey, live observation and local report from the districts of Dolpa, Mustang and Humla. We combined this data with available past records of Eurasian lynx in Nepal. We found only 16 records from 1967 to 2017 (12 from this study of which 11 are from 2014–2017) which suggests that the species is sparsely distributed and little studied in Nepal. We believe that snow leopard *Panthera uncia* focused conservation activities have shadowed the importance of Eurasian lynx conservation in the country. The presence of lynx in the Nepalese Himalayas has a potential to contribute to human-carnivore conflicts. We identified the need for a baseline study of human-lynx conflict in connection to livestock depredation. The government of Nepal may need to amend the wildlife damage relief guidelines and include the Eurasian lynx as eligible for depredation compensation. More in-depth studies of the species are required in the Nepalese Himalayas which shall facilitate a systematic monitoring of this elusive cat along with other high altitude carnivores.

The Eurasian lynx is a wide ranging felid found across Eurasia from Norway in the northwest to China in the southeast (Nowell & Jackson 1996). Although Asia covers a large portion of its global range, most countries in this continent lack sufficient data to ascertain its status and trend (Nowell & Jackson 1996, Breitenmoser et al. 2015). Knowledge on the species in the countries neighbouring Nepal, including India, Pakistan and China, is available mostly in form of anecdotal reports and opportunistic sightings (Namgail 2004, Sharma & Dutta 2005, Din & Nawaz 2010). Recently, Din et al. (2015) assessed the Eurasian lynx population in the Hindu Kush mountain range of Chitral district in Pakistan where a minimum number of six independent lynx were identified in an area of 14,850 km^2.

Globally classified as Least Concern by the IUCN Red List (Breitenmoser et al. 2015), the Eurasian lynx is classified as Vulnerable in Nepal due to infrequent observations and lack of information on population size and distribution (Jnawali et al. 2011). The species is protected by the National Parks and Wildlife Conservation Act 1973 of the country (GoN 1973). The only available information on the species in Nepal to date comes from anecdotal reports, opportunistic sightings or incidental data obtained during researches on other wildlife.

Habitat loss and alteration due to livestock grazing and infrastructure development, retaliatory killing in connection with livestock depredation, diseases such as rabies and parvovirus and low population size are the major threats to Eurasian lynx in Nepal (Jnawali et al. 2011, Breitenmoser et al. 2015).

This elusive felid shares its habitat in the Himalayan landscape of Nepal with another charismatic felid, the snow leopard. The snow leopard, also called "ghost of the mountains", is receiving significant attention by conservation projects and academic researches, which has led to positive conservation benefits for the species. In contrast, the Eurasian lynx currently receives very little attention by research and conservation. With this study we hope to initiate a positive change concerning the knowledge and preservation of the Eurasian lynx in the Nepalese Himalaya.

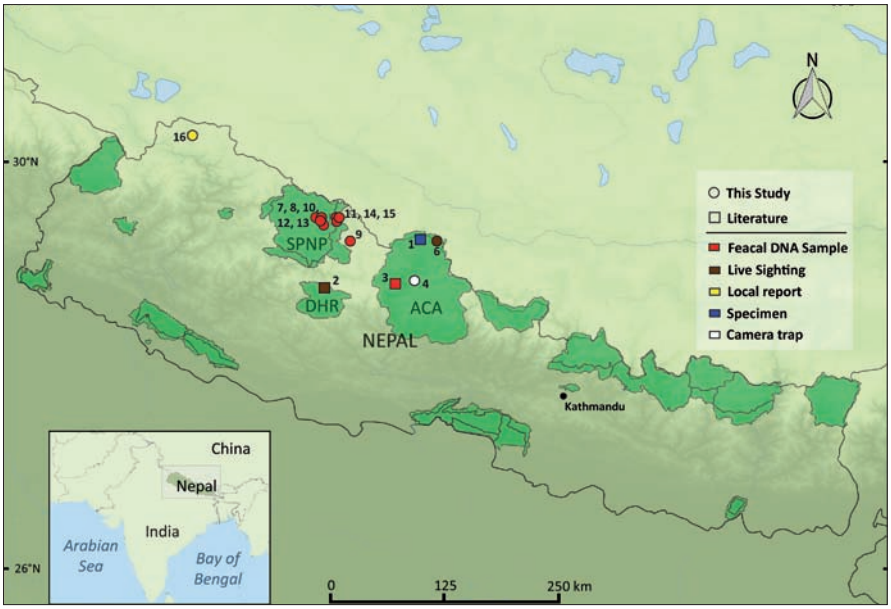

Fig. 1. Eurasian lynx records in Nepal (1967–2017). Numbers in the map represent serial numbers in Supporting Online Material SOM Table T1. The protected areas and buffer zones are indicated in dark green.

Materials and methods

Study area

We conducted studies in upper Humla, upper Dolpa, upper Mustang and lower Mustang from 2014 to 2017. The study sites fall within the arid zones of the Himalayas (Miehe et al. 2016) where the habitat is characterised by high altitude Tibetan desert steppe (Chetri et al. 2014). The vegetation of these areas comprises alpine grasslands and steppes interspersed with patches of shrubland (Miehe et al. 2016). Nomadic pastoralists use these grasslands seasonally to herd yaks *Bos grunniens*, horses *Equus ferus caballus*, sheep *Ovis aries* and goats *Capra aegagrus hircus* during late spring and summer seasons (Bauer 2004). All four study sites are situated above 3,000 m in the western Himalayan landscape of Nepal. Upper and lower Mustang lie entirely within the Annapurna Conservation Area ACA, large parts of upper Dolpa lie within the Shey-Phoksundo National Park SPNP and upper Humla lies outside the protected area system.

A multi-pronged approach was employed to gather information on spatial occurrence of Eurasian lynx in the study sites while conducting studies on Himalayan wolf (taxonomy unsolved; Werhahn et al. 2017, 2018a) and snow leopard.

Non-invasive genetic sampling

We conducted non-invasive faecal sampling for snow leopards in the western snow leopard complex of Nepal in April 2014 (WWF Nepal 2016) and for Himalayan wolves in upper Humla in May–July 2014, June–August 2015 and in upper Dolpa in June–August 2016. The samples were genetically analysed at the Center for Molecular Dynamics Nepal CMDN. It was suspected that some of the samples might belong to Eurasian lynx.

Species identification

Snow leopards and Himalayan wolves were genetically identified using specific protocols described respectively in WWF Nepal (2016) and Werhahn et al. (2018b). On the samples that did not turn out to be from either snow leopards or Himalayan wolves, we performed general DNA barcoding for species identification. Carnivore specific primers were used for samples of WWF Nepal following Karmacharya et al. (2011). For the Himalayan wolf negative samples, we sequenced regions of the cytochrome b gene of the mitochondrial DNA using universal MCB primer pairs (Farrell et al. 2000, Verma & Singh 2003) and compared them with reference sequences in NCBI GenBank database using the Basic Local Alignment Search Tool BLAST to confirm the species.

Camera trap survey

We conducted camera trap surveys in lower Mustang in 2014 and 2016 to monitor snow leopards and other sympatric carnivores. We divided the study area (approx.100 km^2) into (4 x 4) km^2 grids and installed 48 remotely triggered camera traps (Bushnell HD camera and Trophy camera) with one or two camera traps per station. The surveys ran for 1,434 trap nights during two trapping sessions in the winter and summer seasons.

Literature review

We reviewed all published and unpublished records on Eurasian lynx in Nepal in journal articles, books and reports of local villagers. We also visited the Natural History Museum and the central zoo to collect data.

Opportunistic sighting

During a research expedition on wild yak *Bos mutus* in August 2017, we photographed a single individual Eurasian lynx in Dhalung rangeland of upper Mustang.

Results

The first Eurasian lynx specimen for Nepal was collected by Mitchell & Derksen (1976) in Mustang district. Fox (1985) observed a single adult individual in the western Dhaulagiri range, currently Dhorpatan Hunting Reserve DHR. A two months old kitten was caught by the staff of Annapurna Conservation Area Project ACAP in upper Mustang and brought to the central zoo in Kathmandu in August 1993. This individual survived in captivity for seven years before dying in July 2000 (S. Jnawali, pers. comm.; Fig. 2a). No information is available for the species in Nepal for the period of 2001–2010.

One faecal DNA sample was collected from lower Mustang in 2010 (Karmacharya et al. 2016). We genetically identified three occurrences of Eurasian lynx in 2014 and six in 2016 from upper Dolpa through faecal samples. We documented the presence of Eurasian lynx in upper Humla from a report by the local villagers in 2014 (Kusi & Werhahn 2016). One individual was camera trapped in Jhong, lower Mustang in 2016 (Fig. 2b), and an adult individual was photographed in the Dhalung rangeland of upper Mustang in 2017 (Fig. 2c). Details of the records are presented in SOM T1.

Of the 16 records, one record did not have any specifications on the geographical locations. For the other 15 records, we evaluated the habitat and slope. Most of the records (eight faecal DNA samples, one local report, one sighting and one specimen) were from alpine grassland habitat. Records in shrubland habitat included one faecal DNA sample and one camera trap image. One record was from sub-alpine forest and one from barren land. All 15 records were from northern slopes.

Discussion

In the Himalayas, the Eurasian lynx is believed to occur mainly in the northern slopes (Nowell & Jackson 1996), from both thick scrub woodland (Chundawat 1990) and barren rocky areas above the tree line (Roberts 1997). Observations by Namgail (2004), Sharma & Dutta (2005) and Kotia et al. (2011) in Ladakh, India and by Din & Nawaz (2010) and Din et al. (2015) in Chitral district, Pakistan and our records from Nepal support this.

Unlike in Europe, the species seems less frequently found in forested areas in Asia (Roberts 1997, Din & Nawaz 2010). The sighting by Fox (1985) in DHR remained the only published record from a forested southern slope for almost four decades. But recently, Din et al. (2015) presented more observations from forest habitats. Also the faecal DNA record by Karmacharya et al. (2016) is from a forest habitat near Jomsom in lower Mustang. The Eurasian lynx possibly comes down to forested regions, usually during cold winter months, in search of musk deer *Moschus* sp. on which they are reported to prey occasionally (Breitenmoser et al. 2015).

We observed a single adult lynx from upper Mustang in 2017. Observations by Fox (1985), Namgail (2004), Din & Nawaz (2010) and Kotia et al. (2011) were also of single individuals. These findings are in line with the reported solitary nature of this cat (Nowell & Jackson 1996). The only published account of sighting more than one individual in the Himalayas is by Sharma & Dutta (2005) who observed three (two adults and one sub-adult) lynx together in Ladakh.

The Eurasian lynx seems rare in Nepal (Jnawali et al. 2011). This study supports the notion as very few records of lynx were found

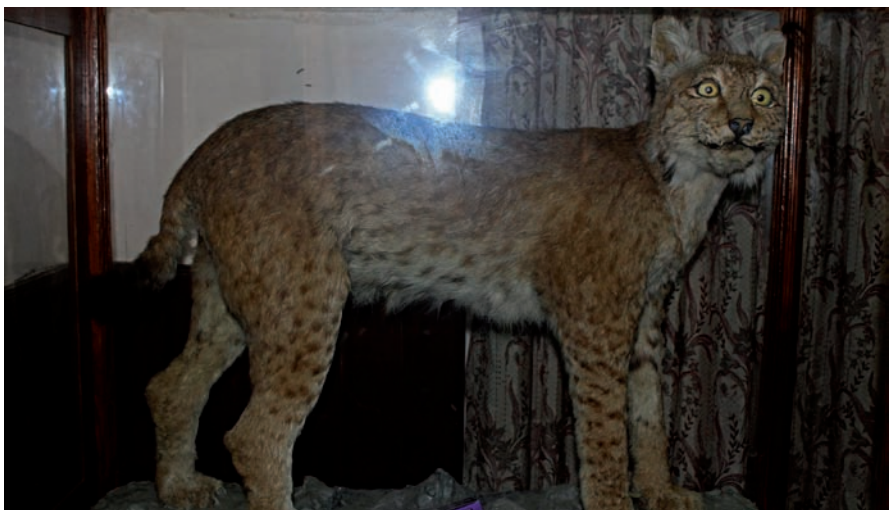

Fig. 2. The taxidermy specimen of Eurasian lynx, in central zoo, Kathmandu, Nepal (Photo N. Kusi).

Fig. 3. The Eurasian lynx recorded by a camera trap in Jhong, lower Mustang, in July 2016 (Photo B. Shrestha).

compared to other predators although we covered large sampling areas spatially and temporally. We collected 300 non-invasive faecal DNA samples from the western landscape in 2014 (WWF Nepal 2016) of which only three (1%) turned out to be lynx. During 2014, the local villagers from upper Humla had reported killing an adult lynx that was caught in a stone trap set for snow leopards in 2004 (Kusi & Werhahn 2016). For the Himalayan wolf research, we collected 102 non-invasive genetic samples in 2014 and 103 in 2015 from upper Humla. None of these samples turned out to be lynx. So, we currently lack any hard evidence to support the local report. But the presence of landscapes similar to upper Mustang suggests a possibility of finding Eurasian lynx in upper Humla, for which a detailed study focusing on lynx is required. During the 2016 sampling in upper Dolpa, we collected 145 non-invasive genetic samples of which six (4.12%) turned out to be lynx. Similarly, only one lynx capture occasion in a total of 1,434 trap nights of camera trap survey presents the capture rate of 0.06 per 100 trap nights. Poor prey density is often discussed as the underlying cause for this rarity (Herfindal et al. 2005). But this may not be the most important reason for its rarity in the Nepalese Himalayas as we found abundant small mammal prey in all our study sites. The woolly hare *Lepus oiostolus*, Himalayan marmot *Marmota himalayana*, and Royle's pika *Ochotona roylei*, some of the most preferred prey of the elusive cat (Nowell & Jackson 1996), all seemed fairly abundant in the study sites. The interaction of Eurasian lynx with other coexisting carnivores such as the Himalayan wolf and the snow leopard, and their influence on the local abundance of lynx remains to be studied.

Three coat patterns are known for the Eurasian lynx: predominantly spotted, predominantly striped and unpatterned (Nowell & Jackson 1996). The lynx observed by Fox (1985) was golden-brown in colour without any distinctive markings. The taxidermy specimen in the central zoo has faint spots, the camera trapped individual from lower Mustang and the cat photographed from upper Mustang had unpatterned coats (Fig. 2). Our results confirm that the Eurasian lynx is sparsely distributed in the transhimalayan habitats of western Himalayan landscape in Nepal, which are similar to the findings of Fox (1985) and Jnawali et al. (2011). Confirmed records of its presence are available to date only from the protected areas of ACA, DHR and SPNP. We could not verify the record from Rara National Park mentioned in Jnawali et al. (2011).

The Eurasian lynx in Asia is threatened by habitat fragmentation and loss due to livestock grazing, infrastructure development, resource extraction and logging activities, poaching and retaliatory killings (Krester et al. 2012, Mousavi et al. 2014). The disease scabies *Sarcoptes scabiei* has appeared as a new threat in Pakistan (Hameed et al. 2016). Killing by shepherd dogs and road accidents are also significant in China (Bao 2010). A significant number of lynx poaching through shooting, snaring, poisoning and removing kittens from dens is reported from China, India and Pakistan (Chundawat 1990, Schaller 1998, Bao 2010, Din & Nawaz 2010). Use of their pelt as clothes or garment decorations by the Tibetan communities continues to elevate poaching risk despite the species being listed in CITES Appendix II (Breitenmoser et al. 2015). However we do not have indication for significant lynx poaching in Nepal.

In Nepal habitat fragmentation is a serious concern as it can result in local extinction of the species because the population size is indicated to be already low. Further, habitat fragmentation due to expansion of human activities in rural areas inhabited by lynx might result in population isolations enhancing the risk of inbreeding depression as a result of reduced gene flow and decrease in genetic diversity (Bao 2010).

Researches and conservation efforts in the Himalayan landscapes of Nepal are focusing on snow leopards. The Eurasian lynx to date receives little to no international funding. Similar to the reports of Namgail et al. (2007) in India, Bao (2010) in China and Din & Nawaz (2010) in Pakistan, the presence of Eurasian lynx in the Nepalese Himalayas potentially contributes towards human-carnivore conflict. Hence, a baseline study of human-lynx conflict in connection to livestock depredation is required. The government of Nepal may then need to amend the wildlife damage relief guidelines (GoN 2015) and include the Eurasian lynx as eligible for depredation compensation. Then, a reliable mechanism should be put into action for the successful implementation of these legal guidelines. Also adjusting the legislation and implementation of conservation payments is an important step towards increasing the tolerance of mountain communities for the Himalayan carnivores including the Eurasian lynx. We further recommend conservation awareness efforts to broaden their scope by including all high altitude carnivores rather than following a single species approach. More extensive studies on Eurasian lynx in Nepal to understand their population number, taxonomic status, ecology, and conservation issues will be vital to develop a long term conservation strategy for the species and to assure that this elusive cat remains truly "Least Concern". This study presents the first knowledge base on which to develop the aforementioned researches.

Acknowledgements

We thank the Department of National Parks and Wildlife Conservation and Department of Forests, Kathmandu, Shey-Phoksundo National Park, Dolpa, National Trust for Nature Conservation NTNC-ACAP and District Forest Office, Humla for permitting the study. We also thank all members of the field research teams including Pema Rikzin Lama, Kunjok Rangdol Tamang, Pasang Dorje Tamang, Tashi Dondup Lama, Bir Bahadur Sunar, Tshiring Lhamu Lama, Tshiring Nima Gurung, Ramu Magar, Aakash Nath Uprety and Tshering Dawa Gurung. We thank Sarita Jnawali from NTNC for providing data on the zoo specimen and Dibesh Karmacharya from CMDN for permitting the use of his data. We are grateful to the Rufford Foundation, UK, WWF UK, WWF US and USAID, Panthera, US, the Cat Survival Trust, UK and GA CR (grant No. GB14-36098G) for financial support. Thanks to Friends of Nature Nepal and Green Governance Nepal for undertaking the field works in the western snow leopard complex in 2014.

References

Bao W. 2010. Eurasian lynx in China – present status and conservation challenges. Cat News Special Issue 5, 22–25.

Bauer K. L. 2004. High Frontiers: Dolpo and the Changing World of Himalayan Pastoralists. Columbia University Press. New York, USA.

Breitenmoser U., Breitenmoser-Würsten C., Lanz T., von Arx M., Antonevich A., Bao W. & Avgan

B. 2015. *Lynx lynx* (errara version published in 2017). The IUCN Red List of Threatened Species 2015: e.T12519A50655266. Downloaded on 09. August 2018.

Chetri M., Odden M., McCarthy T. & Wegge P. 2014. First record of Steppe Polecat *Mustela eversmanii* in Nepal. Small Carnivore Conservation 51, 79–81.

Chundawat R. S. 1990. Lynx survey in Nubra valley, Ladakh. Wildlife Institute of India Newsletter 5, 42–44.

Din J. U. & Nawaz M. A. 2010. Status of the Himalayan Lynx in District Chitral, NWFP, Pakistan. Journal of Animal and Plant Science 20, 17–22.

Din J. U., Zimmermann F., Ali M., Shah K. A., Ayub M., Khan S. & Nawaz M. A. 2015. Population assessment of Himalayan lynx (*Lynx lynx isabellinus*) and conflict with humans in the Hindu Kush mountain range of District Chitral, Pakistan. Journal of Biodiversity and Environmental Science 6, 31–39.

Farrell L. E., Roman J. & Sunquist M. E. 2000. Dietary separation of sympatric carnivores identified by molecular analysis of scats. Molecular Ecology 9, 1583–1590.

Fox J. L. 1985. An observation of lynx in Nepal. Journal of Bombay Natural History Museum 82, 394–395.

GoN 2015. Wildlife damage relief guidelines 2012, first amendment 2015. Ministry of Forests and Soil Conservation, Kathmandu.

GoN 1973. National Parks and Wildlife Conservation Act 1973.

Hameed K., Angelone-Alasaad S., Din J. U., Nawaz M .A. & Rossi L. 2016. The threatening but unpredictable *Sarcoptes scabiei*: first deadly outbreak in the Himalayan lynx, *Lynx lynx isabellinus*, from Pakistan. Parasites & Vectors 9, 1–3.

Herfindal I., Linnell J. D. C., Odden J., Birkeland Nilsen E. & Andersen R. 2005. Prey density, environmental productivity and home-range size in the Eurasian lynx (*Lynx lynx*). Journal of Zoology 265, 63–71.

Jnawali S. R., Baral H. S., Lee S., Acharya K. P., Upadhyay G. P., Pandey M., Shrestha R., Joshi D., Lamichhane B. R., Griffiths J., Khatiwada A. & Amin R. 2011. The status of Nepal's mammals: The national Red List series. *Lynx lynx*. Department of National Parks and Wildlife Conservation, Kathmandu, Nepal. 266 pp.

Karmacharya D., Manandhar S., Shakya J., Thapa K., Bista M., Sah G. P., Sharma A. N., Sherchan A. M., Dhakal M., Hero J. M., Hughes J., Janecka J., Kelly M. & Waits L. 2016. Incidental discovery of non-focal carnivore species during genetic study of Bengal tiger (*Panthera tigris tigris*) and snow leopard (*Panthera uncia*) in Nepal. Asian Journal of Conservation Biology 5, 81–88.

Fig. 4. The Eurasian lynx photographed in Dhalung rangeland, upper Mustang, in August 2017 (Photo N. Kusi).

Karmacharya D., Thapa K., Shrestha R., Dhakal M. & Janecka J. 2011. Non-invasive genetic population survey of snow leopards (*Panthera uncia*) in Kangchenjunga Conservation Area, Shey-Phoksundo National Park and surrounding buffer zones of Nepal. BMC Research Notes 4, 516.

Kotia A., Angmo K. & Rawat G.S. 2011. Sighting of a Eurasian lynx near Chushul village in Ladakh, India. Cat News 54, 18–13.

Krester E.H., Johnson F. M., Hickey M. L., Zahler P. & Bennett L. E. 2012. Wildlife trade products available to U.S. military personnel serving abroad. Biodiversity Conservation 21, 967–980.

Kusi N. & Werhahn G. 2016. HUMLA-Journey into the hidden Shangri-la. Himalayan Map House, Kathmandu, Nepal. 128 pp.

Miehe G., Pendry C. & Chaudhary R. (Ed). 2016. Nepal: An Introduction to the Natural History, Ecology and Human Environment of the Himalayas. Royal Botanic Garden Edinburgh, Edinburgh, UK. 876 pp.

Mitchell R. & Derksen D. V. 1976. Additional new mammal records from Nepal. Mammalia 40, 55–62.

Mousavi M., Moqanaki E. M., Farhadinia M. S., Sanei A., Rabiee K., Khosravi S. & Mohammadi H. 2014. The largest lesser cat in Iran: current status of the Eurasian lynx. Cat News Special Issue 10, 33–37.

Namgail T. 2004. Eurasian lynx in Ladakh. Cat News 40, 21–22.

Namgail T., Fox J. L. & Bhatnagar Y. V., 2007. Carnivore-caused livestock mortality in Trans-Himalaya. Environ. Manage. 39, 490–496.

Nowell K. & Jackson P. 1996. Wild cats: status survey and conservation action plan. IUCN/SSC Cat Specialist Group, Gland, Switzerland and Cambridge, UK. 381 pp.

Roberts T. J. 1997. The mammals of Pakistan. Oxford University Press. 525 pp.

Schaller G. B. 1998. Wildlife of Tibetan Steppe. The carnivores. The University of Chicago Press, Chicago, USA. pp. 178–211.

Sharma S. & Dutta T. 2005. Sighting of Lynx (*Lynx lynx isabellinus*) in Hemis National Park, Ladakh. Zoos's Print 20, 14.

Verma S. K. & Singh L. 2003. Novel universal primers establish identity of an enormous number of animal species for forensic application. Molecular Ecology Notes 3, 28–31.

Werhahn G., Senn H., Ghazali M., Karmacharya D., Sherchan A. M., Joshi J., Kusi N., López-Bao J. V., Rosen T., Kachel S., Sillero-Zubiri C. & Macdonald D. W. 2018a. The unique genetic adaptation of the Himalayan wolf to high-altitudes and consequences for conservation. Global Ecology and Conseration. https://doi.org/10.1016/j.gecco.2018.e00455

Werhahn G., Kusi N., Karmarcharya D., Sherchan A. M., Manandhar P., Manandhar S., Bhatta T. R., Joshi J., Bhattarai S., Sharma A. N., Kaden J., Ghazali M. & Senn H. 2018b. Eurasian lynx and Pallas's cat in Dolpa district of Nepal: Insights into genetics, distribution and diet from non-invasive sampling. Cat News 67, 34–36.

Werhahn G., Senn H., Kaden J., Joshi J., Bhattarai S., Kusi N., Sillero-Zubiri C. & Macdonald D. W. 2017. Phylogenetic evidence for the ancient Himalayan wolf: towards a clarification of its taxonomic status based on genetic sampling from western Nepal. Royal Society Open Science 4, 1–15.

WWF Nepal. 2016. Non-invasive Genetic Population Survey of Snow leopard and Wolf.

Supporting Online Material SOM Table T1 is available at www.catsg.org.

[1] Wildlife Conservation Research Unit, Department of Zoology, University of Oxford, Tubney House, Abingdon Road, Tubney, OX13 5QL, UK
[2] Resources Himalaya Foundation, Sanepa, Lalitpur, Nepal
[3] Center for Molecular Dynamics Nepal, Kathmandu, Nepal
[4] Wildlife Unit, WWF Nepal, Kathmandu, Nepal
[5] Dreamer Himalaya Expedition, Nepal
[6] Department of Biodiversity Research, Global Change Research Institute, Academy of Sciences of the Czech Republic and Biodiversity and Environment Enhancement Nepal, Kathmandu, Nepal
[7] IUCN Nepal
[8] Ministry of Forests and Environment, Kathmandu, Nepal
[9] Department of National Parks and Wildlife Conservation, Kathmandu, Nepal
*<naresh.kusi@gmail.com>

Kusi N., Manandhar P., Subba S. A., Thapa K., Thapa K., Shrestha B., Pradhan N. M. B., Dhakal M., Aryal N. & Werhahn G. Shadowed by the ghost: the Eurasian lynx in Nepal. Cat News 68, 16-19. Supporting Online Material.

Table 1. Records of Eurasian lynx in Nepal (1967-2017).

S. N.	Area	Latitude	Longitude	Elevation(m)	Type of record	Year	References
1	Mustang	29.2° N	83.95° E	3945	specimen	1967-1970	Mitchell & Derksen (1976)
2	Dhorpatan Valley	28.767° N	83.017° E	4500	live sighting	1975	Fox (1985)
3	Lower Mustang	28.8222° N	83.6895° E	3935	faecal DNA	2010	D. Karmacharya unpublished data (2010)
4	Jhong/ lower Mustang	28.829° N	83.878° E	3844	camera trap image	2016	B. Shrestha camera trap survey (2016)
5	Mustang	NA	NA	NA	zoo specimen	1993	S. Jnawali personal communication (2016)
6	Dhalung/ upper Mustang	29.245° N	84.109° E	5023	live sighting	2017	N. Kusi personal observation (2017)
7	Dolpo	29.459° N	82.935° E	4389	faecal DNA	2014	WWF Nepal unpublished data (2014)
8	Dolpo	29.447° N	82.963° E	4547	faecal DNA	2014	WWF Nepal unpublished data (2014)
9	Dolpo	29.237° N	83.257° E	4649	faecal DNA	2014	WWF Nepal unpublished data (2014)
10	Dolpo	29.427° N	82.961° E	4806	faecal DNA	2016	G. Werhahn unpublished data (2016)
11	Dolpo	29.449° N	83.140° E	4330	faecal DNA	2016	G. Werhahn unpublished data (2016)
12	Dolpo	29.395° N	82.985° E	4817	faecal DNA	2016	G. Werhahn unpublished data (2016)
13	Dolpo	29.436° N	82.946° E	4739	faecal DNA	2016	G. Werhahn unpublished data 2016
14	Dolpo	29.445° N	83.123° E	4502	faecal DNA	2016	G. Werhahn unpublished data 2016
15	Dolpo	29.407° N	83.123° E	4645	faecal DNA	2016	G. Werhahn unpublished data 2016
16	Humla	30.253° N	81.728° E	4572	local report	2004	Kusi & Werhahn (2016)