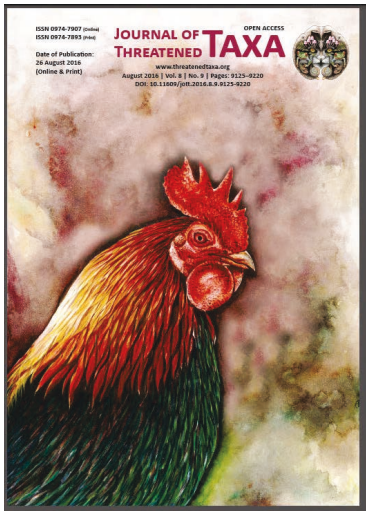

Journal of Threatened Taxa

The international journal of conservation and taxonomy

www.threatenedtaxa.org

ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

COMMUNICATION

PEOPLE'S ATTITUDES TOWARD STRIPED HYAENA (*HYAENA HYAENA* LINNAEUS, 1758) (MAMMALIA: CARNIVORA: HYAENIDAE) CONSERVATION IN LOWLAND NEPAL

Shivish Bhandari & Mukesh Kumar Chalise

26 August 2016 | Vol. 8 | No. 9 | Pp. 9125–9130
10.11609/jott.2518.8.9.9125-9130

Journal of Threatened Taxa | www.threatenedtaxa.org | 26 August 2016 | 8(9): 9125–9130

People's attitudes toward Striped Hyaena (*Hyaena hyaena* Linnaeus, 1758) (Mammalia: Carnivora: Hyaenidae) conservation in lowland Nepal

ISSN 0974-7907 (Online)
ISSN 0974-7893 (Print)

Shivish Bhandari [1] & **Mukesh Kumar Chalise** [2]

[1,2] Central Department of Zoology, Tribhuvan University, Kirtipur, Kathmandu, Nepal
[1] shivish.bhandari@yahoo.com (corresponding author), [2] mukesh57@hotmail.com

OPEN ACCESS

Abstract: This study aimed to explore people's attitudes toward Striped Hyaena conservation in lowland Nepal. Structured questionnaire sheets were used to collect information on major threats, human casualties, and people's perception towards Hyaenas and other carnivores. People's perceptions toward Hyaenas and conservation were overall positive. During the study, 400 people were interviewed and questionnaire sheets were filled. It was discovered that 63% had a positive attitude toward the Hyaenas. On the other hand, 37% of the people had a negative attitude regarding the species' conservation. It was found that local people had understood various aspects of Hyaena ecology. Sixty-five percent of the people responded that the Hyaena entered human populated areas due to an absence of food in the natural forests and habitat degradation. A total of 19% of the respondents reported killing carnivores including the Hyaena due to human-carnivore conflicts.

Keywords: Carnivore, conflict, habitat degradation, questionnaire survey.

Nepali abstract: यस अध्ययनको उद्येश्य नेपालको तराई भूभागमा पाटे हड्डीबाघ बारे स्थानिय जनताको मनसुवा पत्तो लगाउनु हो । सबै खालका मांसहारी तथा हड्डीबाघबारेका खतरा, मानवीय क्षती, आम जनताको धारणालाई हामीले फाराममा तयार गरिएका प्रश्नावलीहरू मार्फत संकलन तथा आंकलन गर्‍यौं । समान्यतया यस प्राणीप्रति तथा संरक्षणबारेमा स्थानीयहरू सकारात्मक पाईयो । सुचना जम्मा गर्न करिब ४०० मानिसहरूसँग भेटघाट गरियो र फाराम भरियो । भेट भएका मध्ये ६३ प्रतिशतको हड्डीबाघ प्रति सकारात्मक धारणा पाईयो भने ३७ प्रतिशतमा भने प्रजाति संरक्षणगर्ने कुरामा नकारात्मक सोचाई पाईयो । स्थानीयहरूमा हड्डीबाघबारे विविध जानकारी रहेको देखियो । सूचना दिने मध्ये ६५ प्रतिशतले जंगलमा खानाको अभाव तथा बासस्थान ह्रासले हड्डीबाघ मानव बस्तीमा आउने विचार राखे भने १९ प्रतिशतले मानवसँगको द्वन्द्वमा मांसहारी मारिने गरेको भने ।
मुख्य कुंचि: मांसहारी, द्वन्द्व, बासस्थान ह्रास, प्रश्नावली

DOI: http://dx.doi.org/10.11609/jott.2518.8.9.9125-9130

Editor: Hari Balasubramanian, EcoAdvisors, Nova Scotia, Canada. **Date of publication:** 26 August 2016 (online & print)

Manuscript details: Ms # 2518 | Received 19 January 2016 | Final received 07 June 2016 | Finally accepted 28 July 2016

Citation: Bhandari, S. & M.K. Chalise (2016). People's attitudes toward Striped Hyaena (*Hyaena hyaena* Linnaeus, 1758) (Mammalia: Carnivora: Hyaenidae)conservation in lowland Nepal. *Journal of Threatened Taxa* 8(9): 9125–9130; http://dx.doi.org/10.11609/jott.2518.8.9.9125-9130

Funding: This study was funded by Rufford Small Grant Foundation, UK 2015.

Conflict of Interest: The authors declare no competing interests.

Author Details: Mr. Shivish Bhandari has completed an MSc in Zoology from Central Department of Zoology, Tribhuvan University, Kathmandu, Nepal and is currently working as a principal investigator in the field of wildlife research and conservation. Mukesh Kumar Chalise, PhD works at Central Department of Zoology, Tribhuvan University in the position of Associate Professor and has more than 25 years of experience in research and teaching in the field of wildlife ecology and behavior.

Author Contribution: Both authors equally contributed for the preparation of research, field study and writing of paper. First author lead field data collection.

Acknowledgements: We would like to thank Rufford Small Grant Foundation for funding the study. We are very thankful to the Central Department of Zoology, Tribhuvan University, NEBORS and KACF for field equipment support. We are thankful to the research team and all correspondents. Our sincere thanks go to Mr. Dave Johnson and Ms. Lindy Gates for comments and suggestion on an earlier version of this manuscript.

INTRODUCTION

The order 'Carnivora' has attracted scientific attention due to its inter-specific diversity and variations in behavioral and ecological adaptations. Most large carnivores have a tendency to come into conflict with humans because of the large territory requirements (May et al. 2008; Singh et al. 2010) and a prey-based diet which often includes livestock (Holekamp et al. 1997; Michalski et al. 2006). The Striped Hyaena (*Hyaena hyaena* Linnaeus, 1758) is one of the large carnivores (Hofer 1998; Reiger 1981; Singh et al. 2010; Mondal et al. 2012) that has been classified on the IUCN Red List as "Near Threatened" and protected by the Government of Nepal "National Park and Wildlife Conservation Act 2029 (1973)". As a species, it is facing threats due to retaliatory killings, persecution, depleting prey populations and loss of habitat (Chalise 2001; Jnawali et al. 2011). Striped Hyaenas are primarily solitary and nocturnal scavengers that are found over a widespread geographic range extending through the Middle East, Caucasus region, Central Asia, and the Indian subcontinent, with their southern and western limits in Africa (Hofer & Mills 1998; Qarqaz et al. 2004; Kasparek et al. 2004; Wagner 2006; Harihar et al. 2010; Mondal et al. 2012). They are found in the forest and grassland ecosystems (Athreya et al. 2013) mostly preferring open areas or lands with short shrubs in their natural distribution areas (Harihar et al. 2010; Akay et al. 2011). Compared to other types of hyaenas, there is not much known about Hyaenas and how they contribute to the ecosystem by consuming the remains of dead animals. In Nepal, the Hyaena is found in the lowlands of the southern part of the country including protected areas and a few other places (Shrestha 2003; Majupuria & Majupuria 2006). However, little is known about its past and present occurrence in Nepal (Hofer & Mills 1998; Jnawali et al. 2011). The population of the Hyaena has been considered to be in decline and the current population in Nepal is estimated to be less than 100 individuals (Hofer & Mills 1998; Jnawali et al. 2011). Consequently, conservation efforts urgently require knowledge of hyaena ecology in Nepal. Information on factors influencing the hyaena populations across their distribution ranges in Nepal is also limited. People's attitude toward the Hyaena and other carnivores can play a significant role for their conservation and maintain the forest and grassland ecosystems. Effective management and conservation of protected areas requires monitoring the population trend of all wildlife species to provide better management and conservation efforts (Alam et al. 2015). This study was conducted in the human dominated Terai (lowland) landscape to document the attitudes of the local people toward Hyaena conservation.

MATERIALS AND METHODS

Study Area

The study area Rautahat and Sarlahi districts, represents a human dominated lowland landscape of central Terai, Nepal which stretches from 26^{0}96'27"–27^{0}04'87"N & 85^{0}31'36"–85^{0}56'12"E (Fig. 1). Four blocks: Paurahi, Toribari, Phuljoor and Sagarnath forests of the districts were selected as study sites. They cover an area of 300km^2 and 80–150 m vertical span with Sal *Shorea robusta* forest, human settlements, grassland, *Acacia* forest, and mixed riverine forest. The study site connects the Terai Arc Landscape (TAL) area in the west. TAL is a greater landscape conservation program initiated in 2001 and extends from the Bagmati River of Nepal in the east to Yamuna River of India in the west. It encompasses 11 protected areas and forest corridors stretching along the Indo-Nepal border from Parsa Wildlife Reserve of central Nepal to Rajaji National Park of India (Kanagaraj et al. 2011). In Nepal, TAL encompasses 23,129km^2 of 14 districts including 75% of the remaining forests of lowland Nepal including

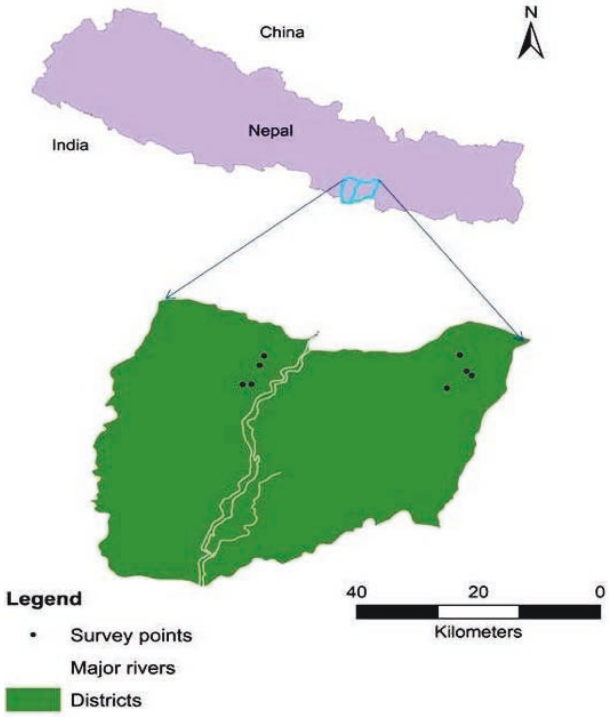

Figure 1. Study site location: Rautahat and Sarlahi districts of Nepal

the Churia hills and some protected areas (MFSC 2006; Kanagaraj et al. 2011).

Methods

The local people were interviewed and structured questionnaire sheets were used from August to November 2015 to collect information on the major threats to the Hyaena, human casualties and people's attitudes toward the Hyaenas as well as other large carnivores. Four hundred people (one person per house) including local club members and community forest users were surveyed. Sampling was random in nature however it was systematic, therefore one respondent from each household was asked and the information regarding attitudes toward the species, threats, associated species, and habitats was sought. A chi-square test was used to explain the equality of the conservation status of Hyaena in the study sites.

RESULTS

Based on the questionnaire survey, there were no reported human casualties due to Hyaena attacks since 2000. The negative attitudes of people were high toward *Canis aureus* rather than *Panthera pardus* possibly due to the higher rates of predation on livestock in the village by *Canis aureus*. The attitude of local people towards *Panthera tigris* and *Hyaena hyaena* conservation were positive (Fig. 2).

The respondents (n=400) demonstrated with mostly positive attitudes toward the Hyaena with 63% people liking the Hyaena, while 37% did not like them and wanted them to be eradicated. The answers for yes/no questions were relatively positive (Fig. 3).

The majority of local people (63%) believed that the Hyaena have an ecological role and they explained that the Hyaena cleans forests and helps ecosystems, their presence indicates a healthy ecosystem, they are least studied and their numbers are decreasing, and they are beautiful and charismatic (Fig. 4).

It was discovered that 15% of the respondents had no knowledge on Hyaena ecology, conservation and behaviour. Also 19% of the respondents often kill carnivores including the Hyaena due to human-carnivore conflicts. The chi-square at d.f.3 on P=0.05 is 7.81 while the obtained value is 55.628 which was much higher. This showed that the conservation status of the Hyaena in all areas were not equal. There were, 210 (53%) people who said that the Hyaena was generally seen in the river belt, 153 (38%) people said that the Hyaena

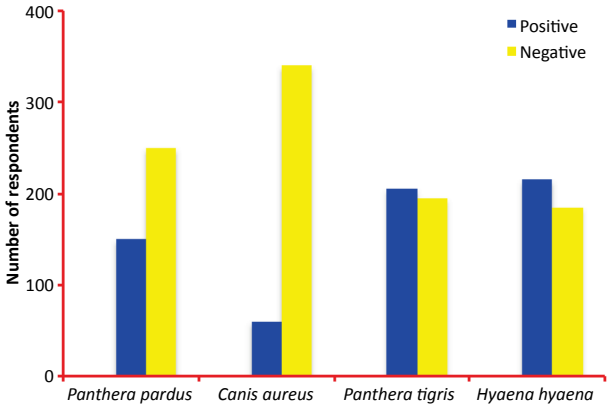

Figure 2. Local people's general attitude towards major carnivores in the study site (n=400).

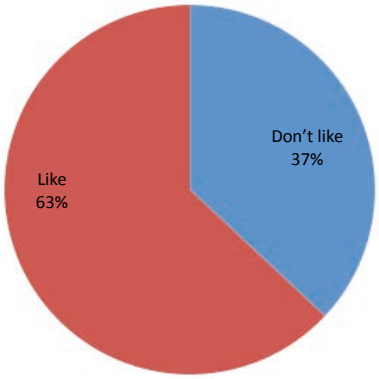

Figure 3. Local people's attitudes toward Striped Hyaena - like and don't like (n=400).

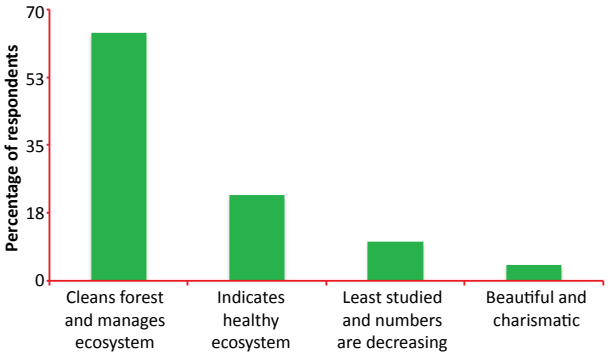

Figure 4. Local people's arguments for the Striped Hyaena

was sighted in the Sal forest, and 37 (9%) respondents stated that the Hyaena was generally seen on agriculture land (Fig. 5).

There were 65% of the respondents who answered that the Hyaena entered human populated landscapes from time to time due to the absence of food resources in the natural forest and habitat degradation.

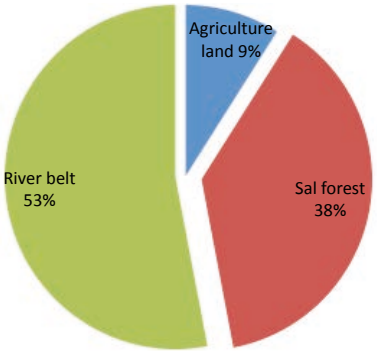

Figure 5. Striped Hyaena sighted by local people in different habitats.

Additionally, habitat destruction was considered as a major threat to the declining Hyaena population. There were 67% of the respondents who argued for controlling deforestation to save the Hyaena population. The local people's dependency on forests (government managed and community managed government forests) was significant with 364 (91%) households depending on the forest for firewood and livestock grazing. Further, illegal collection of firewood was found to be a major contributor to loss of habitat for wildlife.

DISCUSSION

Conflicts with wildlife are universal, and people with a near ubiquitous negative attitude toward carnivores and the conflicts are a major challenge to biodiversity conservation (Woodroffe 2000; Woodroffe & Frank 2005). Human-wildlife conflicts present an increasing challenge to conservation, particularly in densely populated parts of low-income countries (McGuinness & Taylor 2014). The conflicts are difficult to understand and manage because they are influenced by many factors including religious values, cultural and economic values of carnivores and their body parts, and the economic loss imposed by carnivore damage (Dickman 2010). Of consequence, it is important to identify the degree of influence from these factors in order to lay a foundation for designing specific conservation programs and policies (Li et al. 2013).

The Hyaena, being at the apex of the food chain (Mills & Hofer 1998), influences the ecosystem structure and function despite their low densities in population. They are sensitive to habitat loss and fragmentations because of their large territories, high mortality rates and conflict with people in terms of predation of livestock, and they show a differential response to human induced land-use modifications. There are few populations of Hyaena in Nepal (Shrestha 2003; Majupuria & Majupuria 2006; Jnawali et al. 2011) and many tropical, wide ranging carnivorous mammals are now threatened because of the depletion of their prey reserves and anthropogenic pressures that come into conflict with their basic ecological needs (Woodroffe & Ginsberg 1998; Treves & Karanth 2003; Chutipong et al. 2014). The attitudes of people toward wildlife depend on human tolerance for them. Frequent conflicts (loss of livestock and human casualties) result in decreased tolerance levels among the local communities and trigger antagonism towards conservation, and can actively encourage them to kill wildlife (Maharjan 2015). Most examples of large carnivores in urban landscapes are from countries with a low human population density although in the case of mountain lions in southern California, it has been seen that a part of their home ranges overlap with densely populated urban landscapes (Athreya et al. 2013). Mostly, where large carnivores co-exist with human settlements, it might be due to loss of natural prey and habitat degradation. In most parts of the world, large carnivores inhabit human-dominated landscapes. According to Athreya et al (2013) carnivores like Leopard *Panthera pardus* and Striped Hyaena *hyaena hyaena* inhabit a human-dominated agriculture landscape. As a result, conflicts between human and Striped Hyaena have increased. Hyaenas are under the continuous pressure of several threats throughout the world (Mills & Hofer 1998; Qarqaz et al. 2004; Wagner 2006) that directly or indirectly affect their occurrence and abundance (Qarqaz et al. 2004; Alam et al. 2015) and show population decline in many places (Mills & Hofer 1998; Wagner 2006; Khorozyan et al. 2011). We found similar results in our study sites. Habitat degradation is one of the major causes of decline of the wildlife population and the dependency of local people on the forests in our study sites were relatively high that would affect the Hyaena by decreasing their natural sources of food. Singh et al (2010) suggested that Hyaenas, despite the ability to adapt to human-modified landscapes, require natural habitats free of anthropogenic disturbances to serve as refugia for source populations. Successful conservation of carnivores depends on tolerant sociopolitical landscapes and favorable ecological conditions because humans have caused most of the carnivore mortality worldwide and most of the recent extirpations of carnivore populations (Treves & Karanth 2003).

This study was conducted in a human dominated landscape and it was concluded that habitat destruction was one of the major threats to the survival of the

Image 1. Striped Hyaena in Phuljoor forest, Sarlahi, Nepal

Hyaena (Image 1) population.

Although, this elusive species has scientific and conservation interest, rigorous inferences about their population dynamics are scarce because of methodological problems of sampling populations at the required spatial and temporal scales (Karanth et al. 2006). The prevalence of positive attitudes toward Hyaena conservation holds potential for the long-term conservation of this species in and outside the protected areas of lowland, Nepal.

REFERENCES

Akay, A.E., S. Inac & I.C. Yildirim (2011). Monitoring the local distribution of Striped Hyenas (*Hyaena hyaena* L.) in the Eastern Mediterranean Region of Turkey (Hatay) by using GIS and remote sensing technologies. *Environmental Monitoring and Assessment* 181: 145–455; http://dx.doi.org/10.1007/s10661-010-1840-6

Alam, M.S., J.A. Khan & B.J. Pathak (2015). Striped Hyena (*Hyaena hyaena*) status and factors affecting its distribution in the Gir National Park and Sanctuary, India. *Folia Zoological* 64: 32–39.

Athreya, V., M. Odden, J.D.C. Linnell, J. Krishnaswamy & U. Karanth (2013). Big cats in our backyards: Persistence of large carnivores in a human dominated landscape in India. *PLoS ONE* 8(3): e57872; http://dx.doi.org/10.1371/journal.pone.0057872

Chalise, M.K. (2001). Nepal's Wildlife (Part - 2). Natural History Society of Nepal, Publication, Kathmandu, Nepal.

Chutipong, W., J.L. Antony, S. Robert, S. Tommaso & A.G. George (2014). Sampling mammalian carnivores in western Thailand: Issues of rarity and detectability. *Raffles Bulletin of Zoology* 62: 521–535.

Dickman, A.J. (2010). Complexities of conflict: the importance of considering social factors for effectively resolving human–wildlife conflict. *Animal Conservation* 13: 458–466; http://dx.doi.org/10.1111/j.1469-1795.2010.00368.x

Harihar, A., M. Ghosh, M. Fernandes, B. Pandav & S.P Goyal (2010). Use of photographic capture-recapture sampling to estimate density of Striped Hyena (*Hyaena hyaena*): implications for conservation. *Mammalia* 74(1): 83–87; http://dx.doi.org/10.1515/mamm.2009.072

Hofer, H. & G. Mills (1998). Population size, threats and conservation status of hyaenas, pp. 64–79. In: Mills, G. & H. Hofer (Comps.) Hyenas. Status Survey and Conservation Action Plan. IUCN/SSC Hyena Specialist Group, IUCN, Gland, Switzerland and Cambridge, UK.

Hofer, H. (1998). Species accounts: striped hyena Hyaena (*Hyaena hyaena* Linnaeus, 1758), pp. 21–26. In: Mills, G. & H. Hofer (Comp.) Status Survey and Conservation Action Plan. IUCN/ SSC Hyaena Specialist Group, IUCN, Gland, Switzerland, and Cambridge, UK.

Holekamp, K. E., L. Smale, R. Berg & S.M. Cooper (1997). Hunting rates and hunting success in the spotted hyaena. *Journal of Zoology* 242(1): 1–15; http://dx.doi.org/10.1111/j.1469-7998.1997.tb02925.x

Jnawali, S.R., H.S. Baral, S. Lee, K.P. Acharya, G.P. Upadhyay, M. Pandey, R. Shrestha, D. Joshi, B.R. Lamichhane, J. Griffiths, A. Khatiwada & R. Amin (compilers) (2011). *The Status of Nepal Mammals: The National Red List Series*. Department of National Parks and Wildlife Conservation, Kathmandu, Nepal.

Kanagaraj, R., T. Wiegand, S.K. Schadt, M. Anwar & S.P. Goyal (2011). Assessing habitat suitability for tiger in the fragmented Terai Arc Landscape of India and Nepal. *Ecography* 34: 970–981; http://dx.doi.org/10.1111/j.1600-0587.2010.06482.x

Karanth, K.U., J.D. Nichols, N.S. Kumar & J.E. Hines (2006). Assessing tiger population dynamics using photographic capture - recapture sampling. *Ecology* 87(11): 2925–2937; http://dx.doi.org/10.1890/0012-9658(2006)87[2925:ATPDUP]2.0.CO;2

Kasparek, M., A. Kasparek, B. Gozcelioglu, E. Çolak & N. Yigit (2004). On the status and distribution of the Striped Hyena (*Hyaena hyaena*) in Turkey. *Zoology in the Middle East* 33: 93–108.

Khorozyan, I., A. Malkhasyan & M. Murtskhvaladze (2011). The Striped Hyaena *Hyaena hyaena* (Hyaenidae, Carnivora) rediscovered in Armenia. *Folia Zoologica* 60: 253–261.

Li, J., H. Yin, D. Wang, Z. Jiagong & Z. Lu (2013). Human-snow leopard conflicts in the Sanjiangyuan Region of the Tibetan Plateau. *Biological Conservation* 166: 118–123; http://dx.doi.org/10.1016/j.biocon.2013.06.024

Maharjan, S. (2015). Human wildlife conflict: crop raiding by wild animals in proposed buffer zone of Shivapuri National Park Nepal. MSc thesis. Central Department of Environment Science, Tribhuvan University, Kathmandu, Nepal.

Majupuriya, T. & R.K. Majupuriya (2006). *Wildlife and protected areas of Nepal*. Craftsman Press Ltd, Bangkok, Thailand.

May, R., J.V. Dijk, P. Wabakken, J.E. Swenson, J.D.C. Linnell, B. Zimmermann, J. Odden, H.C. Pedersen, R. Andersen & A. Landa (2008). Habitat differentiation within the large-carnivore community of Norway's multiple-use landscapes. *Journal of Applied Ecology* 45: 1382–1391.

McGuinness, S. & D. Taylor (2014). Farmers' perceptions and actions to decrease crop raiding by forest-dwelling primates around a rwandan forest fragment. *Human Dimensions of Wildlife* 19(2): 179–190; http://dx.doi.org/10.1080/10871209.2014.853330

MFSC (2006). Terai Arc Landscape - Nepal Annual Progress Report, Ministry of Forests and Soil Conservation, Nepal.

Mills, M.G.L. & H. Hofer (1998). *Hyaenas. Status Survey and Conservation Action Plan*. IUCN/SSC Hyaena Specialist Group. IUCN, Gland, Switzerland and Cambridge, UK, vi+154pp.

Michalski, F., R.L.P. Boulhosa, A. Faria & C.A. Peres (2006). Human–wildlife conflicts in a fragmented Amazonian forest landscape: determinants of large felid depredation on livestock. *Animal Conservation* 9(2): 179–188; http://dx.doi.org/10.1111/j.1469-1795.2006.00025.x

Mondal, P.C.K., K. Sankar & Q. Qureshi (2012). Food Habits of Golden Jackal (*Canis aureus*) and Striped Hyaena (*Hyaena hyaena*) in Sariska Tiger Reserve, Western India World. *Journal of Zoology* 7: 106–112; http://dx.doi.org/10.5829/idosi.wjz.2012.7.2.63139

Qarqaz, M.A., M.A.A. Baker & Z.S. Amr (2004). Status and ecology of the Striped Hyaena, *Hyaena hyaena*, in Jordan. *Zoology in the Middle East* 33: 87–92; http://dx.doi.org/10.1080/09397140.2004.10638067

Reiger, I. (1981). Hyaena hyaena. *Mammalian Species* 150: 1–5.

Shrestha, T.K. (2003). *Wildlife of Nepal*. B. Shrestha, Kathmandu,

Nepal.

Singh, P., A.M. Gopalaswamy & K.U. Karanth (2010). Factors influencing densities of Striped Hyaenas (*Hyaena hyaena*) in arid regions of India. *Journal of Mammalogy* 91(5): 1152–1159; http://dx.doi.org/10.1644/09-MAMM-A-159.1

Treves, A. & K.U. Karanth (2003). Human-carnivore conflict and perspectives on carnivore management worldwide. *Conservation Biology* 17(6): 1491–1499; http://dx.doi.org/10.1111/j.1523-1739.2003.00059.x

Wagner, A.P. (2006). Behavioral ecology of the Striped Hyena (*Hyaena hyaena*). PhD Thesis, Bozeman, Montana State University.

Woodroffe, R. & L.G. Frank (2005). Lethal control of African Lions (*Panthera leo*): local and regional population impacts. *Animal Conservation* 8(1): 91–98; http://dx.doi.org/10.1017/S1367943004001829

Woodroffe, R. & J.R. Ginsburg (1998). Edge effects and the extension of populations inside protected areas. *Science* 280: 2126–2128.

Woodroffe, R. (2000). Predators and people: using human densities to interpret declines of large carnivores. *Animal Conservation* 3(2): 165–173; http://dx.doi.org/10.1111/j.1469-1795.2000.tb00241.x

Journal of Threatened Taxa

OPEN ACCESS

ISSN 0974-7907 (Online); ISSN 0974-7893 (Print)

August 2016 | Vol. 8 | No. 9 | Pages: 9125–9220
Date of Publication: 26 August 2016 (Online & Print)
DOI: 10.11609/jott.2016.8.9.9125-9220
www.threatenedtaxa.org

Communications

People's attitudes toward Striped Hyaena (*Hyaena hyaena* Linnaeus, 1758) (Mammalia: Carnivora: Hyaenidae) conservation in lowland Nepal
-- Shivish Bhandari & Mukesh Kumar Chalise, Pp. 9125–9130

On the Behaviour, abundance, habitat use and potential threats of the Gangetic Dolphin *Platanista gangetica* in southern West Bengal, India
-- Mahua Roy Chowdhury, Sangita Mitra & Saswati Sen, Pp. 9131–9137

Habitat preference and roosting behaviour of the Red Junglefowl *Gallus gallus* (Aves: Galliformes: Phasianidae) in Deva Vatala National Park, Azad Jammu & Kashmir, Pakistan
-- Faraz Akrim, Tariq Mahmood, Muhammad Siddique Awan, Siddiqa Qasim Butt, Durr-e-Shawar, Muhammad Arslan Asadi & Imad-ul-din Zangi, Pp. 9138–9143

Indigenous ornamental freshwater ichthyofauna of the Sundarban Biosphere Reserve, India: status and prospects
-- Sandipan Gupta, Sourabh Kumar Dubey, Raman Kumar Trivedi, Bimal Kinkar Chand & Samir Banerjee, Pp. 9144–9154

Pollination ecology and fruiting behavior of *Pavetta indica* L. (Rubiaceae), a keystone shrub species in the southern Eastern Ghats forest, Andhra Pradesh, India
-- A.J. Solomon Raju, M. Mallikarjuna Rao, K. Venkata Ramana, C. Prasada Rao & M. Sulakshana, Pp. 9155–9170

Short Communications

On the status of the Long-tailed Marmot *Marmota caudata* (Mammalia: Rodentia: Sciuridae) in Kargil, Ladakh (Indian Trans-Himalaya)
-- Tanveer Ahmed, Mohammad Shoeb, Pankaj Chandan & Afifullah Khan, Pp. 9171–9176

The decline of the interspecific agonistic displays in an adult female Indian Eagle Owl *Bubo bengalensis* (Aves: Strigiformes: Strigidae): a case of habituation to human approach
-- M. Eric Ramanujam, Pp. 9177–9181

Effect of vehicular traffic on wild animals in Sigur Plateau, Tamil Nadu, India
-- A. Samson, B. Ramakrishnan, A. Veeramani, P. Santhoshkumar, S. Karthick, G. Sivasubramanian, M. Ilakkia, A. Chitheena, J. Leona Princy & P. Ravi, Pp. 9182–9189

Range extension of *Heliogomphus lyratus* Fraser, 1933 (Anisoptera: Gomphidae) with notes on its identification, habits and habitat
-- Amila P. Sumanapala & Himesh D. Jayasinghe, Pp. 9190–9194

A second record of *Knipowitschia byblisia* Ahnelt, 2011 (Teleostei: Perciformes: Gobiidae) from southwestern Anatolia, Turkey
-- H. Ahnelt, Pp. 9195–9197

New records of polypores (Basidiomycota: Aphyllophorales) from the southern Western Ghats with an identification key for polypores in Peechi-Vazhani Wildlife Sanctuary, Kerala, India
-- A. Muhammed Iqbal, Kattany Vidyasagaran & P. Narayan Ganesh, Pp. 9198–9207

Notes

Notes on three species of Palaearctic satyrinae (Lepidoptera: Nymphalidae) from northwestern Himalaya, India
-- Arun P. Singh, Pp. 9208–9215

Two additions to the flora of the Palni Hills, southern India
-- S. Soosairaj, P. Raja, B. Balaguru & T. Dons, Pp. 9216–9220

zooh! ZÜRICH

WILD ZOO Threatened Taxa

Journal of Threatened Taxa

OPEN ACCESS

ISSN 0974-7907 (Online); ISSN 0974-7893 (Print)

August 2016 | Vol. 8 | No. 9 | Pages: 9125–9220
Date of Publication: 26 August 2016 (Online & Print)
DOI: 10.11609/jott.2016.8.9.9125-9220
www.threatenedtaxa.org

Communications

People's attitudes toward Striped Hyaena (*Hyaena hyaena* Linnaeus, 1758) (Mammalia: Carnivora: Hyaenidae) conservation in lowland Nepal
-- Shivish Bhandari & Mukesh Kumar Chalise, Pp. 9125–9130

On the Behaviour, abundance, habitat use and potential threats of the Gangetic Dolphin *Platanista gangetica* in southern West Bengal, India
-- Mahua Roy Chowdhury, Sangita Mitra & Saswati Sen, Pp. 9131–9137

Habitat preference and roosting behaviour of the Red Junglefowl *Gallus gallus* (Aves: Galliformes: Phasianidae) in Deva Vatala National Park, Azad Jammu & Kashmir, Pakistan
-- Faraz Akrim, Tariq Mahmood, Muhammad Siddique Awan, Siddiqa Qasim Butt, Durr-e-Shawar, Muhammad Arslan Asadi & Imad-ul-din Zangi, Pp. 9138–9143

Indigenous ornamental freshwater ichthyofauna of the Sundarban Biosphere Reserve, India: status and prospects
-- Sandipan Gupta, Sourabh Kumar Dubey, Raman Kumar Trivedi, Bimal Kinkar Chand & Samir Banerjee, Pp. 9144–9154

Pollination ecology and fruiting behavior of *Pavetta indica* L. (Rubiaceae), a keystone shrub species in the southern Eastern Ghats forest, Andhra Pradesh, India
-- A.J. Solomon Raju, M. Mallikarjuna Rao, K. Venkata Ramana, C. Prasada Rao & M. Sulakshana, Pp. 9155–9170

Short Communications

On the status of the Long-tailed Marmot *Marmota caudata* (Mammalia: Rodentia: Sciuridae) in Kargil, Ladakh (Indian Trans-Himalaya)
-- Tanveer Ahmed, Mohammad Shoeb, Pankaj Chandan & Afifullah Khan, Pp. 9171–9176

The decline of the interspecific agonistic displays in an adult female Indian Eagle Owl *Bubo bengalensis* (Aves: Strigiformes: Strigidae): a case of habituation to human approach
-- M. Eric Ramanujam, Pp. 9177–9181

Effect of vehicular traffic on wild animals in Sigur Plateau, Tamil Nadu, India
-- A. Samson, B. Ramakrishnan, A. Veeramani, P. Santhoshkumar, S. Karthick, G. Sivasubramanian, M. Ilakkia, A. Chitheena, J. Leona Princy & P. Ravi, Pp. 9182–9189

Range extension of *Heliogomphus lyratus* Fraser, 1933 (Anisoptera: Gomphidae) with notes on its identification, habits and habitat
-- Amila P. Sumanapala & Himesh D. Jayasinghe, Pp. 9190–9194

A second record of *Knipowitschia byblisia* Ahnelt, 2011 (Teleostei: Perciformes: Gobiidae) from southwestern Anatolia, Turkey
-- H. Ahnelt, Pp. 9195–9197

New records of polypores (Basidiomycota: Aphyllophorales) from the southern Western Ghats with an identification key for polypores in Peechi-Vazhani Wildlife Sanctuary, Kerala, India
-- A. Muhammed Iqbal, Kattany Vidyasagaran & P. Narayan Ganesh, Pp. 9198–9207

Notes

Notes on three species of Palaearctic satyrinae (Lepidoptera: Nymphalidae) from northwestern Himalaya, India
-- Arun P. Singh, Pp. 9208–9215

Two additions to the flora of the Palni Hills, southern India
-- S. Soosairaj, P. Raja, B. Balaguru & T. Dons, Pp. 9216–9220

zooh! ZÜRICH

WILD ZOO Threatened Taxa