

Second Seminar on Small Mammals Conservation Issues 2011

Conserve Small Mammals for Sustainable Forest



ABSTRACTS



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HABITAT STATUS AND CONSERVATION OF RED PANDA (*Ailurus fulgens*) IN DHORPATAN HUNTING RESERVE, NEPAL

¹TULSI RAM SUBEDI & ²ARJUN THAPA
¹Red Panda Network, Baluwatar, Kathmandu
²Small Mammals Conservation and Research
Foundation, New Baneshwor, Kathmandu
Correspondence: subeditr@yahoo.com
thapa.nature@gmail.com

Red Panda is herbivore mammal; belongs to order carnivore and single member of family Ailuridae, which is endemic to the narrow altitudinal range of Himalayas where fir-ringal habitat predominates. Its population is threatened due to its natural low birth rate and high mortality among cubs that is associated with disturbance by human induced activities like forest fire, habitat fragmentation, overgrazing and disturbance by livestock and natural predators. IUCN red data list states red panda as endangered species (IUCN, 2007). This study has been conducted with the aim of finding distribution pattern and microhabitat characteristics in Dhorpatan Hunting Reserve. We have adopted altitudinal line intercepts survey method for distribution and ten tree-plot less method (Mueller-Dombois and Ellenberg 1974) and quadrat sampling method to access microhabitat. Study shows red panda are highly limited to very narrow altitudinal range of 3200-3600 m. where distribution is significantly related to altitude ($\chi^2 = 148.9$, $df = 5$, $P < < 0.05$) and sites ($\chi^2 = 152.59$, $df = 8$, $P < < 0.05$) of the study area. Microhabitat analysis shows 10 species of trees and 7 species of shrubs in red panda plot that is highly dominated by *Tsuga dumosa*, *Rhododendron arboreum*, *Betula utilis* and *Arundinaria* sps. between the altitudinal range of 3200-3400 m.

Key words: Red panda, Distribution, Microhabitat, Dhorpatan Hunting Reserve

NON-VOLANT SMALL MAMMALS OF RAJASTHAN: AN ECOLOGICAL ANALYSIS

PARTAP SINGH
Department of Zoology
Government Dungar College,
Bikaner-334001, India
Correspondence: partapsk@gmail.com

The state of Rajasthan is the largest state of India and quite interesting from Zoogeographic point of view. The Aravalli mountain range, one of the oldest in the world, diagonally bisect the state to western arid and eastern semiarid regions. Only hot desert of India,

the Thar, is situated in North-western part of the state and occupies 61% of the geographical area of the state. State of Rajasthan is abode to 25 species of small mammals and out of these seven are endemic to Indian sub-continent. As far as IUCN status of small mammals of the state is concerned, most of them are categorized in “least concerned” or “near threatened” categories. General perception among public about small mammals, especially rodents, is that they are vermin and should be exterminated at the very first sight. However, very few people know that this largest group of mammals is one of the most threatened groups. Some of the non-volant small mammals such as *Funambulus pennanti*, *Tatera indica*, *Rattus rattus*, *Cremnomys cutchicus*, *Golunda ellioti*, *Meriones hurrianae*, *Bandicota bengalensis*, *Mus musculus*, *Mus phillipsi* and *Suncus murinus* are widely distributed and abundant in number and presently have no serious threats. Some rodents of Thar such as *Gerbillus nanus*, *G. gleadowi* and *Millardia gleadowi* have restricted distribution to this region and very little is known about them. Major threats small mammals of Rajasthan are facing are: habitat loss due to fragmentation, rampant increase of pesticide use during last few years, Changing climatic conditions, canal irrigation and road accidents. The fact remains that this group of small mammals is still poorly studied in Rajasthan and lot is yet to be explored about these secluded animals.

Key words: Rajasthan, Thar, non volant, small mammals, rodents, threats, distribution

SURVEY OF DISTRIBUTION AND HABITAT TRACKING OF THE GREY SLENDER LORIS (*Loris lydekkerianus malabaricus*) AT ARALAM WILDLIFE SANCTUARY, KERALA

SANIL R. & SHAMEER T.T

Department of Zoology & Wildlife Biology,
Government Arts College, Udhamandalam -643
002, The Nilgiris.

Correspondence: sanilravi@gmail.com

Lorises are a group of organisms which gets more attention in the current scenario due to the diminishing number and dwindling habitat. A study was conducted at Aralam Wildlife Sanctuary to assess the habitat and distribution of the grey slender Loris (*Loris lydekkerianus malabaricus*) as it is the major area of loris citation. The study was conducted from December to March. The sanctuary is divided into three sections for the administrative reasons. A preliminary survey was conducted to collect the distribution of Loris based on sightings, as the survey inside deep forest in night is a difficult task. A detailed habitat study was conducted in these areas and identified as Loris crucial habitats. In the day time a detailed survey was conducted in all sections for the Loris crucial habitats and was identified. Line transects were laid in these habitats of varying

length and surveys were conducted through this transects. The distance traveled, efforts taken and the time taken were noted and predicted the possibility of occurrence in each area. The detailed vegetation analysis also shows that the lorises prefer habitats which have more climbers. The Loris seems to appear to a height based on the height to which climber is seen. The climbers which have thorns were seemed to be the preferred habit, since it offers protection from predators. The study also shows the animal prefer near human habituation and are more insectivores. Because in any of the study area berries or wild fruits were found, but have good percentage of insect larva. Based on the raw observations, the study raises a significant doubt that the hauling sound produced by the animal may be an echolocation or a method to detect the prey.

Key words: Loris, Aralam, Habitat, distribution

A REVIEW ON OCCURRENCE OF BATS IN PROTECTED AREAS AND THEIR BUFFER ZONES OF NEPAL

SANJAN THAPA

Small Mammals Conservation and
Research Foundation, New Baneshwor, Kathmandu
Correspondence: sanjan_thapa@yahoo.com

Assemblage of 53 bat species has been recorded within elevations of 64m a.s.l. (Taaghandubba-5, Jhapa district) to 4154m a.s.l. (Makut, probably Mukut in Dolpa district). Literatures reporting bats assemblage within 10 protected areas were reviewed. Number of bat species occurring in protected areas counts 41, distributed at an elevation range from 70m a.s.l. (Koshi Tappu Wildlife Reserve) to 3600m a.s.l. (Shey-Phoksundo National Park). Six species are exclusively reported from protected areas and their buffer zones. Annapurna Conservation Area harbors the maximum number of bat species assemblage amongst 10 protected areas. Detailed survey should be exercised to other untouched nine protected areas and their buffer zones. Since most of the literatures reviewed are outdated, monitoring of bat assemblage in those protected areas should also be carried out to prepare the up to date chiropteran database.

Key words: Bat, elevation range, Annapurna Conservation Area, detailed survey, chiropteran database.

REPRODUCTIVE BEHAVIOUR AND POPULATION DYNAMICS OF INDIAN FLYING FOX (*Pteropus giganteus*)

VIRENDRA MATHUR, YUVANA SATYA PRIYA, HARENDRA
KUMAR & VADAMALAI ELANGO VAN
Department of Applied Animal Sciences, Babasaheb Bhimarao
Ambedkar University, Vidya Vihar, Rae Bareilly Road, Lucknow
- 226 025, India
Correspondence: elango70@yahoo.com

Reproductive behavior and population dynamics of Indian flying fox (*Pteropus giganteus*) were studied in an age-old maternal colony in Uttar Pradesh. About 300 individuals of *P. giganteus* roost in the maternal colony during early spring which increased exponentially when they actively engaged on pair formation and copulation. After the occurrence of mass copulation, the population size of colony was declined gradually and maintained an apparent stability. General maintenance behaviors such as wing fanning, wing stretching, grooming, locomotion, sleeping, urination and defecation were observed along with social behaviors including antagonistic vocal display, courting females and copulation. Two modes of copulatory behaviors (frontal and dorsal) were observed during copulation of *P. giganteus*. Courtship displays and copulatory behaviors were observed throughout the day at the diurnal roost. Peak copulation was observed between 1000 h and 1200 h and an average each mating held for 90 ± 19.5 sec. *Pteropus giganteus* used auditory, olfactory and tactile communications during pre and post-copulation period. In contrast to the earlier reports, *P. giganteus* had undergone two mating cycles (spring and autumn). Female bats which involved in copulation during the spring season given birth at the beginning of June. The lactating females retained their pups with them until the latter become three months old. The postpartum females left their first cohort and involved on pair formation and copulation during autumn reproductive season of the same year.

Key words: colony aggregation, mating season, population size, *Pteropus giganteus*, reproductive behavior.

PRESENCE / ABSENCE AND STATUS OF SQUIRRELS (Sciuridae) IN MAKALU BAARUN NATIONAL PARK

YADAV GHIMIRE, RAJU ACHARYA,
BINOD GHIMIRE & VICKY KOIRALA
Friends of Nature, Baneshwor, Kathmandu, Nepal
Correspondence: pantherapardusypg@gmail.com

Status of flying squirrels and squirrels was assessed in Makalu-Barun National Park during April-May 2009, November-December 2009 and June 2010. Camera trap images, direct sightings with photographs, pelt records and information from local people were

used to derive the information on the status species. Two species of flying squirrels namely Red Giant Flying Squirrel *Petaurista petaurista* and Particoloured Flying Squirrel *Hylopetes alboniger* were recorded while four squirrel species viz. Hoary bellied Squirrel *Callosciurus pygerythrus*, Black Giant Squirrel *Ratufa bicolor*, Himalayan striped Squirrel *Tamiops maccllellandi*, Orange bellied Himalayan Squirrel *Dremomys lokriah* were recorded during the study. Taking aside some sporadic incidents squirrels were not found to be sought after for killing however black giant squirrel was prone to retaliation by humans. Killing of flying squirrels is relatively common in the district as record of two Red giant flying squirrel pelts and many other anecdotal records suggest. People were also observed to catch the young pups and rear them in captivity. However there were no conclusive evidences to suggest an existence of their illegal trade.

Key words: squirrel, flying squirrel, anecdotal, camera trapping

IMPACTS OF ROADS ON SMALL MAMMALS IN THE AGRO PASTORAL LANDSCAPE IN THE AGRO PASTORAL LANDSCAPE OF KACHCHH, GUJRAT

KAMLESH K. MAURYA, I. P. BOPANNA,
SUTIRTHA DUTTA & Y. V. JHALA
Wildlife Institute of India, Post Box # 18,
Chanadarbani, Dehradun-248001 (Uttarakhand)
Correspondence: kamlesh.amu@yahoo.co.in

Opportunistic surveys were carried out in and around Abdasa tehsil of Kachchh, the largest district in Gujarat to record all readily identifiable kills on or immediately adjacent to roads in this region from 2006 to 2010. Over 5 years, we recorded 630 roads kills of 38 species including mammals (18), birds (9) and reptiles (11). The largest group of road kill was mammals which represented 58.1% followed by reptiles (33.2%) and birds (8.7%). The overall kill rate was estimated at 21.32 animals/100 km/day. Mammalian kill rate was found to be the highest (15.38 kills/100km/day) than bird (1.24kills/100km/day). A high mortality in the agro-pastoral landscape of Kachchh is reported, with marked differences in kills between seasons, road types, and land use types.

Key words: Road kills, road network, wildlife, Domestic dog, Golden Jackal, agropastoral landscape

BACTERIAL ENTERITIS IN AN INDIAN PALM CIVET (*Paradoxurus hermaphroditus*) AND ITS SUCCESSFUL MANAGEMENT- A CASE REPORT

PRASENJIT DHAR¹, VIJAY KUMAR², MANDEEP SHARMA¹, SHAILJA KATOCH¹, RAJESH CHAHOTA¹ & SUBHASH VERMA¹

¹Department of Veterinary Microbiology, Veterinary College, CSKHPKV, Palampur Himachal Pradesh, India

² Veterinary Officer, Wild life, Monkey Sterilization Centre, Kanga, Himachal Pradesh, India

Correspondence: dharprasen@gmail.com

Enteritis was recorded in an Indian palm civet (*Paradoxurus hermaphroditus*) that was kept in an enclosure in a zoo. The animal had loss of appetite, showed sluggish movement and voided watery feces that had an offensive smell. Bacterial culture of the feces revealed the association of hemolytic *E. coli* and an unidentified gram negative bacteria that were moderately sensitive to ciprofloxacin and streptomycin. The animal was successfully treated with injectable ciprofloxacin and oral rehydration solution. No parasitic eggs / protozoal oocysts or hemoproteoan parasites could be detected in the animal. This appears to be a unique case of bacterial enteritis in a captive Indian palm civet.

Key words: Indian palm civet (Paradoxurus hermaphroditus), E. coli, Diarrhea

SMALL MAMMALS SURVEY IN AND AROUND KOSHI TAPPU WILDLIFE RESERVES, NEPAL

PRAVA PANDEY & PRATIVA KASPAL

Himalayan Nature, Laimpat, Kathmandu, Nepal

Correspondence: research@himalayannature.org
data@himalayannature.org

Small mammals regarded as “pests” should not be viewed separately from other components in the ecosystem. They play significant influences on vegetation and soils, exert predatory pressure on other animals and provide food for predators. Survey on small mammals was thus conducted to know their diversity and distribution in the area through camera trappings and semi structured questionnaires. Awareness programs were held in the local level to inform people about the role of small mammals on the ecosystem and on human beings. Altogether 5 species of small mammals belonging to 5 genera and 4 families were recorded during the study period.

Key words: Small mammal, diversity, Koshi Tappu Wildlife Reserve (KTWR), camera trappings.

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Small Mammals Conservation and Research Foundation (SMCRF)

114-Kantimarga, New Baneshwor, Kathmandu-10, Nepal

P.O.Box 9092, Sundhara, Kathmandu, Nepal

Tel: 977-01-4780984

Email: info@smcrf.org, URL: <http://www.smcrf.org>