



**SMALL MAMMALS CONSERVATION AND
RESEARCH FOUNDATION (SMCRF)**

Annual Report 2014





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Research Foundation**

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Publication team

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Small Mammal Conservation and Research Foundation (SMCRF) had been established with the aim of conservation of small mammals. It has already started the research and conservation work on Bats, Red Panda, Pangolin, Squirrels, Himalayan Marmots, Martins, Pika and other ecological interaction of small mammals and community. The conservation works does not sustain unless local community is awarded about the importance of the small mammals. Now, SMCRF has initiated small mammal hiking in Kathmandu and had successfully completed its one year. Similarly, Pteropus colony monitoring in Kathmandu valley is also new initiative of SMCRF for research and conservation. Beside this, SMCRF successfully conducted various awareness raising activities such as school children lectures classes, documentary show, and different research training on bat handling, bat acoustic training etc.

Our objectives are being fulfilled with the support and collaboration of National and International organizations; Particularly, Department of National Park and Wildlife Conservation (DNPWC), Nepal, National Trust for Nature Conservation (NTNC), World Wildlife Fund (WWF) Nepal, Critical Endangered Partnership Fund (CEPF), Himalayan Nature (HN), Zoo outreach, Bat Conservation International (BCI), Rufford Small Grants (RSG) deserves special thanks for their continuous support and enthusiasm.

For the successful completion of third year, major contribution goes to its team .Continuous effort for the excellence and all the hardship taken by the team members to establish SMCRF as an organization in such a small time is highly appraised. I love to say this team as a dream team in the field of conservation.

This Annual Report is summarizing few such initiatives. While efforts are put together to make this report more instructive and comprehensive however, there are always space for perfection. Valuable suggestion and comments are solicited for its continued improvements.

Thanking You.

Hem Bahadur Katuwal

Chairperson

Acknowledgement

Small Mammals Conservation and Research Foundation, SMCRF is proud to come up with the fourth annual report with another successful year working on conservation activities and scientific researches regarding small mammals. The organization would like to acknowledge everyone who has supported to achieve the goals set and made this year a vital one. Heartfelt gratitude to the advisors, supporting organizations, conservation community and other partners in Nepal. We would like to acknowledge our members and grantees to make this year a successful one. Moreover, we would like to extend our sincere thanks to WWF/ Hariyoban program.



Background

Small Mammals Conservation and Research Foundation is a non-profit making, non-governmental organization based at Kathmandu, Nepal. It is registered charity 903/065/066 with Government of Nepal and is also registered at Social Welfare Council (29919). It is dedicated to the conservation and research of small mammals within its priority areas and other potential sites throughout Nepal. Small mammals comprise major proportion (60%) in mammalian diversity of Nepal. But it is still among the least concerned taxa. The research on small mammals is hard to find, so their conservation status are not assessed scientifically on time being. So, the conservation initiative is being made by this organization.

Objectives:

- Fundraising and undertaking projects for conservation initiatives and researches of small mammals
- Organizing workshops/ trainings/seminars/ community awareness program and conferences regarding small mammals issues
- Publishing relevant articles of different conservationists and researchers through newsletter and journal.
- Supporting freelancers, students, conservationists technically and financially for the conservation and research of the small mammals in the form of thesis/case studies/individual research.
- Respecting conservationists of this field through awards.





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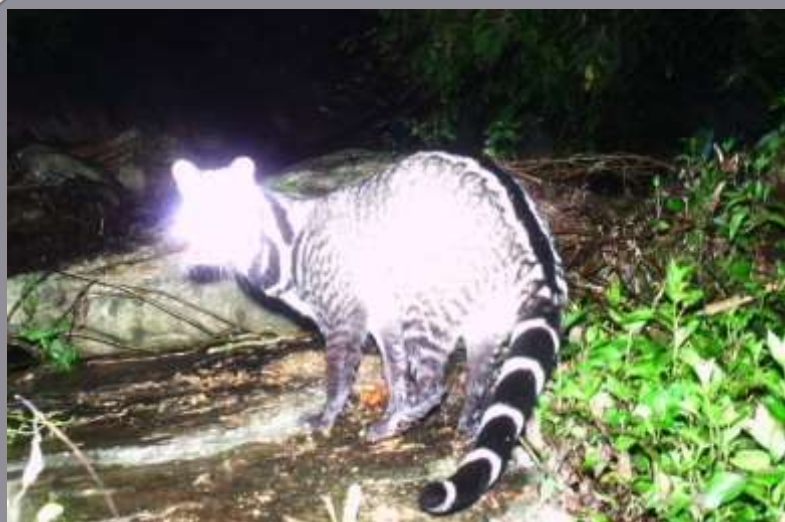
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1. Research and Conservation Activities

1.1 Pangolin Trade, Status, Distribution, Ethnicity and its Conservation at eastern Nepal

Eastern Nepal has suitable habitat for pangolin, but it has been also considered as prone pangolin trade area. The trade scenario, status, distribution, ethno-zoological importance, threats to the pangolin was analyzed and simultaneously performed conservation awareness program in seven VDC's of two districts (Dhankuta and Ilam) of eastern Nepal from March-May 2014.

We recorded 1328 burrows (old-1046, new-207 and fresh-75) of Chinese pangolin (*Manis pentadactyla*) in 168 hectares land. The burrow density (fresh) was higher at Ilam (0.623/ha) than Dhankuta (0.293/ha). Distribution pattern of the burrow was significantly different along the VDCs and elevational gradients. Higher number of burrows was recorded at Ghorlikharka VDC, Dhankuta and burrows were abundant along 1100-1200 m asl. Maxent model predicted soil type, annual precipitation and elevation as major determinant for the pangolin distribution at Dhankuta whereas annual precipitation, aspect, elevation and landcover at Ilam. We also found higher number of burrows at agricultural land where water bodies directly influenced their distribution. We also found Bengal Monitor Lizard (*Varanus bengalensis*), Himalayan Crestless Porcupine (*Hystrix brachyura*) and Indian Hare (*Lepus nigricollis*) utilizing the burrows of the pangolin



a) Pangolin Burrow



b) Scales

Most of the respondents were unaware of the ethno-zoological importance of pangolin, although 59.3% of them had tasted its meat. However, few people perceived that meat has high nutritional

and medicinal value such as to cure gastro intestinal problem, cardiac problem, back pain relief, bone problem etc. Their scale was used to make rings and in curing burn wounds. We found 71.1% of the respondents who had negative perception towards pangolin, they said that sighting of the pangolin will be bad luck, but this perception had not played any role in reducing pangolin trade.

We conducted community and school awareness program through posters and brochures distribution and broadcast awareness program through media (FM) to educate people about the benefits of pangolins for their livelihood.



Photo 2: Awareness program

1.2 Successful One year completion of Small Mammals Hiking Program in Kathmandu

SMCRF has been conducting “Small mammals Hiking” since June 15, 2013 in Kathmandu valley regularly on every second Saturday of each month. The main aim of this hiking program was to motivate students of natural science (zoology, environment science, botany, forestry etc.) of different universities to take up research and promote conservation of small mammals as well as to make local people and other nature lovers aware of small mammals along with larger mammals of their areas. The visited area will be monitored for long time period and the collected data helps for the habitat modeling of small mammals in future. This is the first effort to organize such a program in Nepal.

During hiking, roads and trails were followed slowly and mammals and their signs like burrow, fecal matter and footprints were encountered. During hiking, small mammals like martens, squirrels, civets, bats, different species of rodents and burrows of pangolin have been recorded. White-bellied Squirrel, Orange-bellied Himalayan Squirrel, Barking Deer and Rhesus Macaque were frequently seen mammals during hiking. Participants not only enjoy mammalian fauna, but also birds butterflies and simply nature watching. In this one year, SMCRF have successfully completed 11 hiking events in eight different places like Bajrabarahi Forest, Suryabinayak Community Forest, parts of Nagarjun-Shivapuri National Park, Machhegaun Community Forest, Chovar- Bagmati Corridor etc. where more than one hundred nature lovers and students have participated

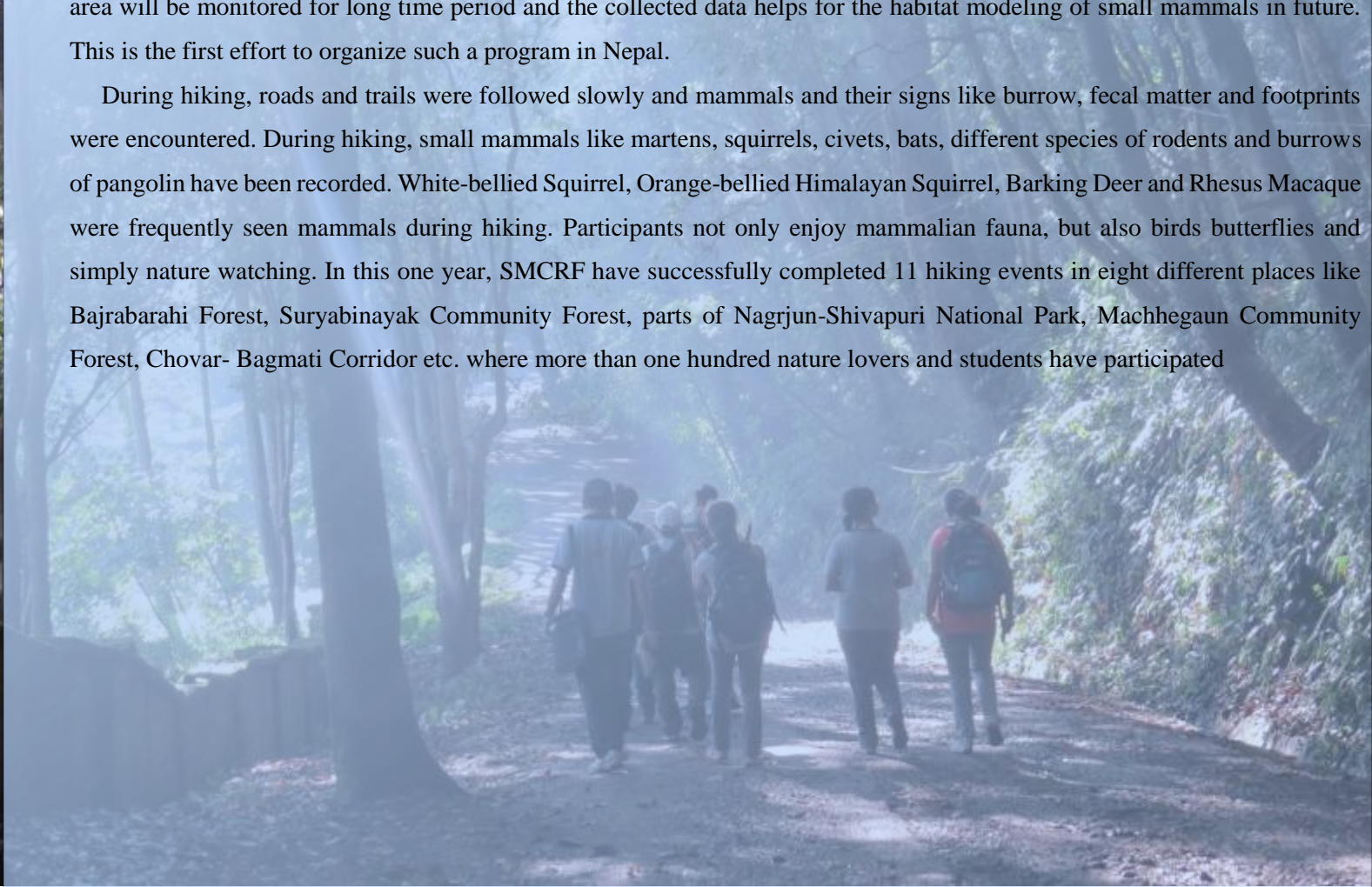


Photo 3: (clockwise from left upper) a) Hikers at Shivapuri Nagarjun National Park b) Recorded fresh burrow of pangolin during Hike. c) Hikers at Chovar, Bagmati River d) White-bellied Squirrel seen during the Hike



1.3 Pteropus Colony Monitoring

SMCRF has been conducting “Monthly Pteropus Colony Monitoring” since June 30, 2013 in Kathmandu valley regularly on every last Saturday of each month. We have been monitoring the *Pteropus* colony of Sallaghari, Bhaktapur and Kesharmahal, Durbarmarg, Kathmandu. Students of natural science of different faculty and local people are being involved in are being involved in the monitoring program. This program has awared the local people about the importance of bat species and they are encouraged to save them.





Photo 4: (Clock wise from left upper) a) *Pteropus gingiaticus* at Kesharmahal b) Colony of *Pteropus c.* and d. participants of monitoring at Sallaghari Bhaktapur and Kesharmahal respectively.

1.4 Study of Feeding Ecology of Assamese macaque in Shivapuri Nagarjun National Park

We are not only focused on research of Small mammals. This year we study the feeding ecology of Assamese macaque in Nagarjun forest with the financial support of Primate Conservation Inc, USA. Equipment needed for the study was donated by IDEA WILD. Assamese macaque (*Macaca assamensis*) of Nepal is designed as 'Nepal Population' which is endemic and endangered primate species of Nepal. This study is focused on their diet and its preference and general behavior in Nagarjun forest of SNNP. Scan sampling and All-occurrence sampling was used for feeding and behavioral observations from August 2013 throughout a year in different four seasons. Two troops of Assamese macaque were selected for the study from two different study sites depending on their feeding habit.

Altogether, 2008 scan and 21257 behavior events were recorded from the scan sampling of 508 hours. Among the two troops studied one group spend more time on resting followed by feeding while next group spend more than 50% of time on feeding and foraging purpose. Distribution pattern and availability of artificial food is directly affecting the activity budget of the macaque in Nagarjun forest.

Unlike other studies of Assamese macaque, Assamese macaques of Nagarjun forest are highly frugivorous during the study period and they utilize a wide range of trees, herbs, shrubs and climbers including insects and their secretions. Tree contributed large proportion of diet than other life form of plants. Tree species having highest IVI are food plants of macaque and most of food species in both study sites were patchily distributed in space.



Photo 5: An adult male and zero year baby of Assamese macaque resting (Right), an adult female Assamese macaque feeding on fruit of *Machilus duthiei* (Left)



Photo 6: Recording data by scan sampling and measuring the DBH of a tree in habitat of macaque.

1.5 Functionality study of North-South Linkage in Chitwan-Annapurna Landscape

The project “Functionality study of North-South Linkage in Chitwan-Annapurna Landscape” is WWF/Hariyo Ban funded project with its partner organizations USAID, WWF, CARE, FECOFUN and NTNC. Functionality of the corridor study of the North-South linkage in CHAL is under investigation to understand the genetic flow of fauna (e.g., herbivores, carnivores, bats, birds, and fishes), and flora along the elevational gradient of CHAL. It will also help to understand whether the land in between Chitwan and Annapurna could act as refuge for animals. This is an important biodiversity landscape which can facilitate a long term survival of species and maintenance of biodiversity. The main goal of this study is to investigate faunal diversity and understand the functionality of north-south corridor, which is important for effective conservation of biodiversity and sustainable livelihood of the local people of CHAL.



2. Trainings, seminar and conference

2.1 Training Workshop on Building National Capacity in Research and Monitoring of Small Mammals

Seven days Training Workshop on Building National Capacity in Research and Monitoring of Small Mammals was conducted at the premise of Biodiversity Conservation Center, National Trust for Nature Conservation, Sauraha, Chitwan. SMCRF organized this training with support of WWF/Hariyo Ban Program with its partner organizations (USAID, WWF, CARE, FECOFUN and NTNC), Chester Zoo and Zoo Outreach. Twelve participants were chosen for the training from different institutions viz. Central Department of Zoology, TU, Institute of Forestry, Hetauda and Pokhara, T.U., Kathmandu Forestry College, Kathmandu, Khwopa College, TU and Central Department of Botany, TU. Training included the theoretical classes followed by practicals in the buffer zone of Chitwan National Park. Trainees were introduced with the general concept of small mammal's species of Nepal which included bats, rodents, shrews, small cats, small carnivores, pangolins and red panda and their practical research techniques. Trainees were also made familiar with GIS technology, First aid methods during the field wildlife photography and data analysis using open software R. The training practical included the bat survey using mist nets and bat detectors. Trainees were shown the methods to handle the bats in the field and take necessary morphometric measurement needed for the identification of bats. Tube traps were used to study the rodents and shrews. Camera traps were used to record the nocturnal animals, like cats, civets etc. Training workshop was followed by seven days bat survey of Deukhuri valley in Dang. The survey focused on diversity and distribution of bat species, their habitat mapping and impact of climate change on bat population. Nine species of bats namely *Hipposiderous armiger*, *Rousettus leschenaulti*, *Megaderma lyra*, *Scotophilus heathii*, *Cynopterus sphinx*, *Pteropus giganteus*, *Pipistrellus sp.*, *Rhinolophus sp.*, *Nyctalus sp.* were recorded from different sites of Deukhuri valley of Dang district.



Photo 7. Different activities of participant during the training

- a) Participants of the training
- b) Learning Camera Trapping
- c) Learning the morphometric measurement of Bat and
- d) Preparing traps for rodents