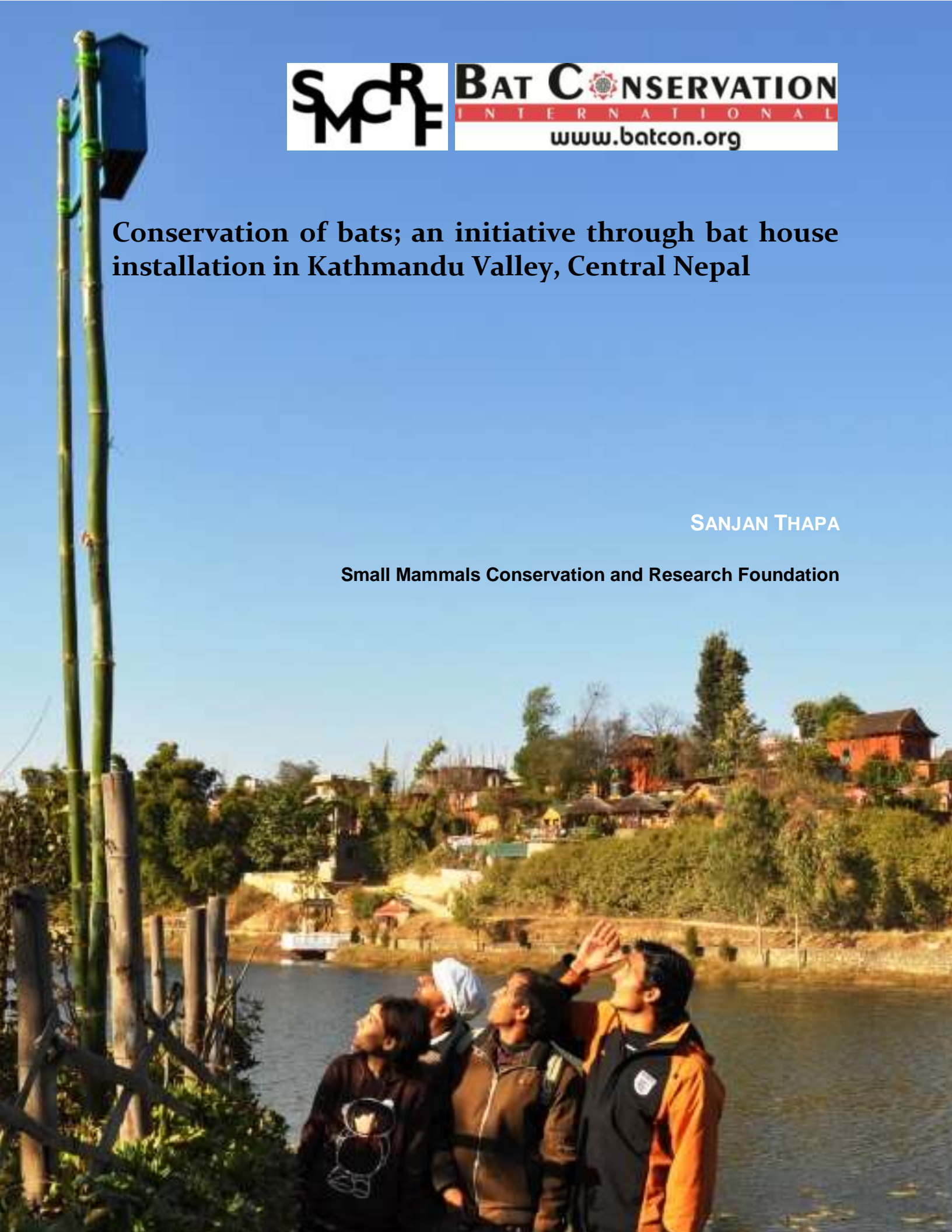




Conservation of bats; an initiative through bat house installation in Kathmandu Valley, Central Nepal

SANJAN THAPA

Small Mammals Conservation and Research Foundation



Final report submitted to Bat Conservation International (BCI), Austin, Texas, USA.

Team Members: Rameshwor Ghimire; Narayan Lamichhane; Sudeep Acharya; Rama Karki; Lokendra Bhatta.

Cover Photos: (Front): Team Members looking at the bat house installed at Nagdaha

(Back): Group Photo with bat house at Taudaha (Photo by: Aashish Rai)



No interest to see the bat house at Science Expo-2011 at Tribhuvan University, Kirtipur, Kathmandu (Photo: Sanjan Thapa).

All Photos by: Rameshwor Ghimire except those mentioned.

Acknowledgements

We would like to honor esteem acknowledgement to Bat Conservation International, Austin, Texas, USA for the financial support to the project as well as staffs of BCI for photographs, suggestion and help in poster design. We are indebted to Prof. Paul A. Racey, Co-Chair, IUCN SSC Bat Specialist Group and Prof. Thomas H. Kunz, Boston University for their encouraging continuous support and advice. We would like to thank Birendra Gautam, Aashish Rai, Arjun KC, Niroj Timilsina and Dinesh Ghimire and Suchita Shrestha of Central Department of Environment Sciences, Tribhuvan University, Kirtipur, Kathmandu; Suryaman Shrestha, Khowpa Engineering College, Bhaktapur; Pancha Ram Choudhary, Dibya Raj Dahal, Robin Rana and Sagar Dahal of Central Department of Zoology, Tribhuvan University, Kirtipur, Kathmandu for their assistance. I would also thank the local residents, offices administrations, school administration and Women group and local people of the project sites for co-operation.

Introduction

The bat conservation scenario of Nepal is very young when compared to that of other countries. It sprouted since early decade of this century. The Nepal Action Trust for Utility Resources and Education (NATURE) started the conservation of bat fauna in Nepal through the formation of bat clubs in schools of Kathmandu (Shrestha, 2005 and 2006). After a gap of three years, Small Mammals Conservation and Research Foundation (SMCRF) continued conservation actions in Kathmandu Valley through bat conservation flex board display at the entrance of Nagarjun Cave, Shivapuri-Nagarjuna National Park, Kathmandu. SMCRF in joint venture with NATURE established Arniko School Bat Club, Satdobato, Lalitpur.

In between, different conservation activities were organised in Pokhara city (Phuyal, 2007; Adhikari, 2008) and Palpa district of Western Nepal (Adhikari, 2009; Adhikari and Karki, 2010) and in three districts of Eastern Nepal (Sankuwasabha, Taplejung and Ilam) (Acharya, 2010). SMCRF launched nationwide bat conservation approaches through publication of brochures.

SMCRF also installed a bat house at Central Zoo to create awareness among zoo-visitors as well as to safeguard the bat house. In support from Rufford Small Grants Foundation, UK, 20 school awareness lecture program in 15 sites of the Kathmandu Valley was conducted. In the same project a nation-wide radio awareness programme on bat conservation was broadcast (Thapa *et al.*, 2010 a, b, c). Greeting card with poster of bats relevant to bat conservation was published and disseminated to different parts of Nepal. SMCRF also published a book “Bats of Nepal/A field guide”.

This is a new approach of bat conservation project in Nepal and a rare bat conservation practice in Nepal.

Objective

The aim of the project is to adopt an awareness campaign on bat house and their construction for the conservation of bats and nature for the substantial and long lasting time.

The specific objective is to induce local public to adopt bat house and maintain it for the long term conservation of the species.

Rationale

The rapid transformation of the land use pattern of the valley due to haphazard urbanization and industrialization has encroached the major roosting habitats of bats, may have influence to the species loss. Regular monitoring of the species and their roosting habitats did not approach since 1997.

Each species has its own role in the environment. The people of Nepal have a negative attitude towards bats and little knowledge of their ecological importance regarding healthy forest maintenance and pest control in agriculture and therefore has nullified attempts for their conservation. It has become necessary to aware the local people and initiate them into action oriented strategy for the conservation of bats as well as nature for their good health and well being.

Limitation of the project

Approval from local resident and authorities for installation of bat house was received lately from the targeted date which delayed in time of installation. The awareness programme could only be conducted fully fledged because of strikes, vacations, holidays and unavailability of time of the locals.

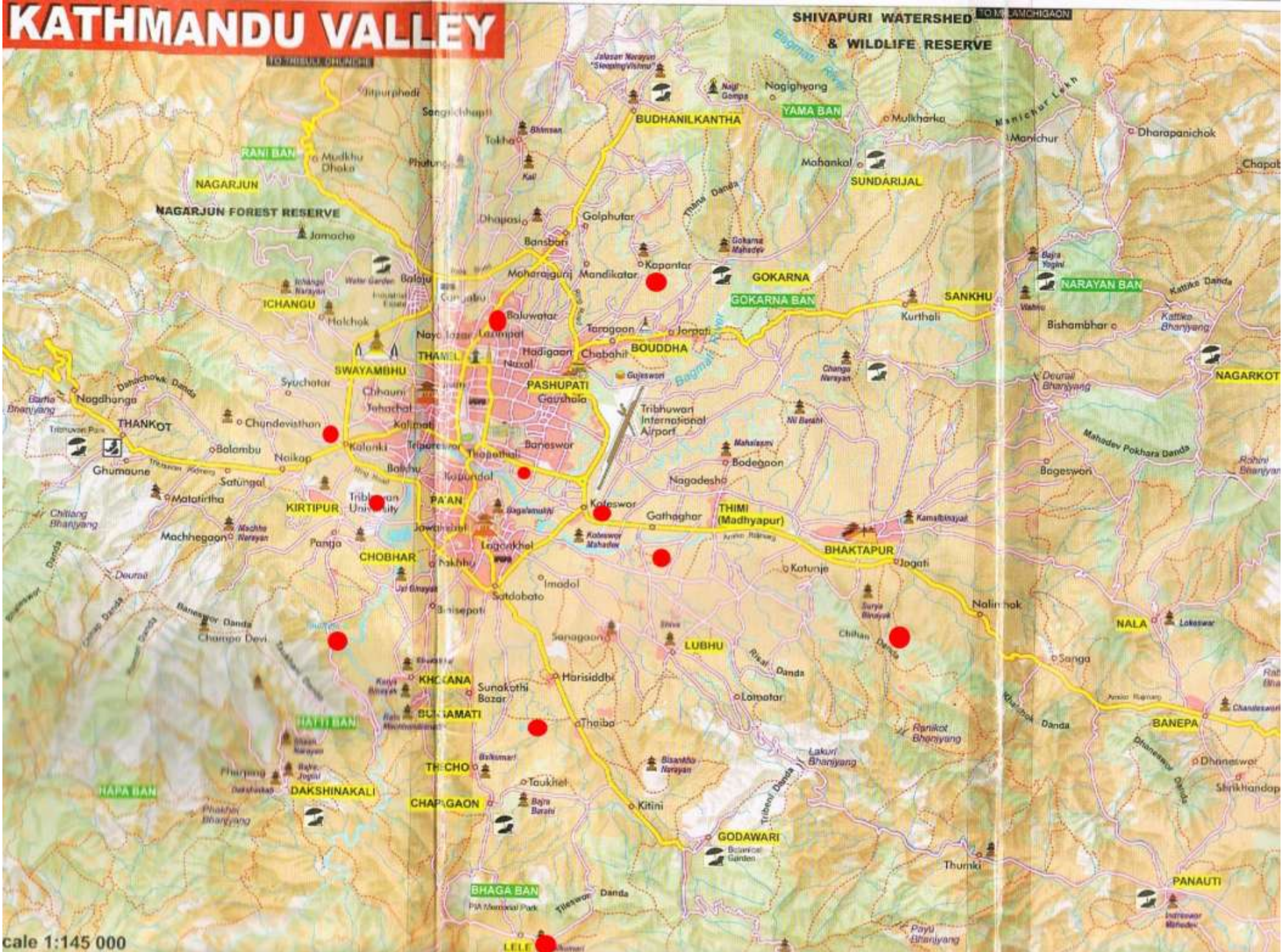
Materials and Methods

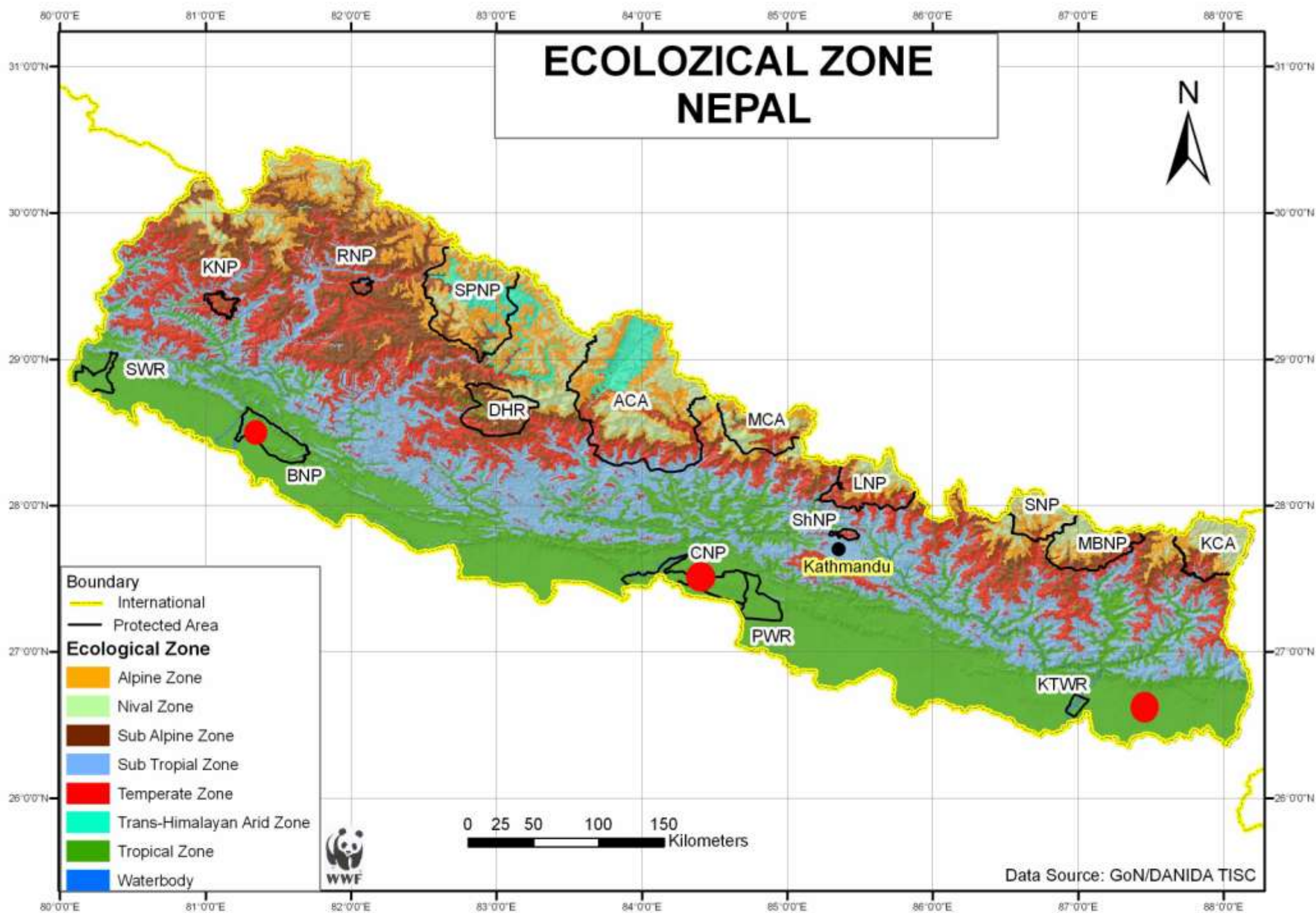
Project sites:

Altogether fifteen sites were chosen for the project. Twelve sites of the Kathmandu Valley namely; Taudaha, Nagdaha, Sipadol, Jagati, New Baneshwor, Kirtipur, Koteshwor, Kalanki,

Tikabhairab, Kapan, Lazimpat, Sunakothi, Also two sites in Chitwan (Central Nepal) and Bardia National Parks (Mid-Western Development Region of Nepal) and one at Itahari, eastern Nepal.

KATHMANDU VALLEY





Map 2. Map of Nepal plotted with bat houses installed locations outside Kathmandu Valley in red dots (Source: WWF).

Poster publication and dissemination:

Posters were published and disseminated to schoolchildren, staffs of office, local residents, women group members etc. They were also pasted and displayed in boards and walls at different sites.

Construction and installation of bat houses:

Bat houses were constructed according to four-chamber nursery house assembly diagrams. The bat houses were colored different colors (sky blue, green and yellow). They were mounted on 15 feet bamboo or attached to walls and pillar of building as well as trees. Bat houses were fixed at the suitable places such as; schools, lake sides, local's house and land; Village Development Committee (V.D.C.) office, National Parks office area.

Awareness campaign:

Awareness campaign was conducted at school at some project sites where lectures were conducted, posters were distributed and queries of students were answered. Information on bat's importance and the bat house were discussed with and shared to community groups as well as to locals and small mammals' club members.

Results

Poster Printing and dissemination

Four thousand copies of 25 X 19 square inches sized poster were printed in Nepali language. The poster contains five pictures including of an installed bat house on a background photo of bat flight; a short description of bats, focused on importance of them in agro economy and public health as well as well being of nature. They were disseminated to school childrens, university students, locals, V.D.C. Office, Ward Office, NGO's and other government offices.



धरबाट नल
 आकर्षक क
 बनाइ घरक
 कठपौट
 बलियो
 हलुका
 हेनमा
 एउटा
 हावा



Bat house construction and installation

All together fifteen bat houses were constructed and installed. Each bat house was kept at the twelve sites within the Kathmandu Valley and two each at Chitwan National Park and Bardia National Park and one at Itahari, eastern Nepal.

1. Bardia National Park

A bat house was installed on January 9, 2011 at Bardia National Park Headquarters office, Thakurdwara. It was attached on the beam of roof of two storied old abandoned house near jungle.



Bat house installed at Bardia (Photo: Sagar Dahal)

2. Taudaha

Bat house was mounted at top on two bamboos poles each about 15 feet long. It was installed at southern corner at the bank of lake on January 11, 2011.

3. Nagdaha

Bat house was mounted at top on two bamboos poles each about 15 feet long. It was installed at South-eastern corner at the bank of lake on January 13, 2011.



Installing at Taudaha (Photo: Ashish Rai)



At Koteswor

4. Koteswor

Bat house was fixed on a wall at south direction of Kathmandu Metropolitan City (K.M.C.) Ward no. 35, office AT Pepsi cola on January 28, 2011.



At Kapan

5. Kapan

Bat house was fixed at the top of a concrete pillar of a house owned by Mr. Sudeep Acharya (A team member) on February 3, 2011.



At SMCRF Office, New Baneshwor (Photo: Sanjan Thapa)

6. New Baneshwor

A bat house facing south direction was tied to the railing of first floor of SMCRF office building on February 5, 2011.

7. Sipadol

Bat house was fixed to the wall first floor of Village Development Committee office in South-western corner on February 19, 2011.



At Sipadol



At Chitwan National Park (Photo: Sagar Dahal)

8. Chitwan National Park

Bat house was attached to the Silk Cotton Tree (*Bombax ceiba*) about 15 feet above the ground at Chitwan National Park office, Sauraha, Chitwan District on March 1, 2011.

9. Tikabhairav

Bat house was fixed on the wall of first floor room at the north-western corner of Tikabhairav English School, Champi-3, Lalitpur on March 8, 2011.



At Tikabhairav



At Gatthaghar

10. Gatthaghar, Bhaktapur

Bat house was attached to Bakaina (*Melius* sp.) tree about 15 feet above the ground in the kitchen garden of Mr. Suryaman Shrestha (a local) on March 9, 2011. The site is aside a marshy area.

11. Kalanki

Bat house was installed on a wall of room at north-western corner on second floor of Honour International School on March 15, 2011.



At Kalanki

12. Central Department of Zoology

Bat house was installed on a wall of CDZ building at Tribhuvan University, Kirtipur on April 1, 2011.

13. Itahari, Sunsari district

Bat house was installed on a wall of Little Flower Secondary School, Pachruki, Itahari-5 on April 10, 2011.



At Central Department of Zoology (Photo: Dibya Raj Dahal)



At Itahari (Photo: Dibya Raj Dahal)

14. Sunakothi, Lalitpur
Bat house was installed
on a wall of BalKumari
Higher Secondary
School building on May
30, 2011.



At Sunakothi (Photo: Suchita Shrestha)

15. Lazimpat, Kathmandu

A bat house was installed on a
wall of Dr. Hem Sagar Baral's
House, Lazimpat, Kathmandu.



At Lazimpat (Photo: Suchita Shrestha)

Awareness Program

Lectures on importance of bats and the need of bat house construction and installation were delivered to schoolchildren of different classes from Class VI to Class IX at three sites namely Tikabhairav, Kalanki and Sunakothi. A



School awareness program at Honour International School, Kalanki

gathering of Little Flower Secondary School Small Mammals club students at Itahari was organized. Also discussion was organized for team of Sakriya Mahila Samudaik Ban Upabhokta Samuha, Chapagaun, (Active Women Community Forest User Group). Similarly, information was shared to general public (locals) and residents of the other eight sites. We requested the schoolchildren and locals to disseminate the facts on bats importance and need of the bat house to their family, friend circle and society. Bat house was also kept in exhibition at Science Expo-2011 at Tribhuvan University, Kirtipur, Kathmandu.

Sharing information with local resident at Nagdaha

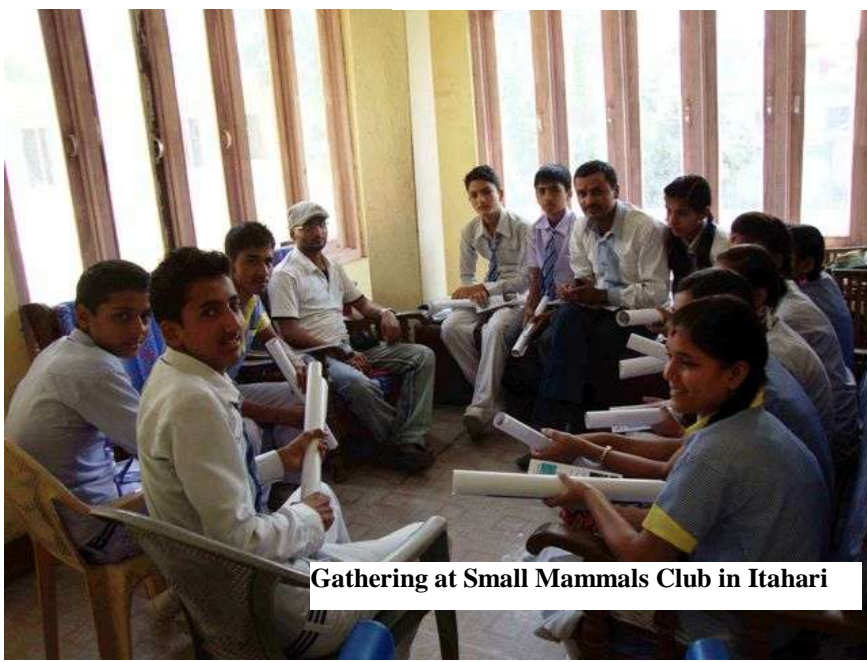




School awareness program at Tikabhairav English Boarding School



Discussion with Sakriya Mahila Samudaik Ban Upabhokta Samuha (Active Women Community Forest User Group), Chapagaun.



Gathering at Small Mammals Club in Itahari

Table 1. Bat house installation

S.N.	Date	Place	Surrounding habitat	Attached to
1.	January 9, 2011	Bardia National Park, Thakurdwara, Bardia	Forest	Old abandoned house
2.	January 11, 2011.	Taudaha, Kathmandu	Lake	Bamboo poles
3.	January 13, 2011	Nagdaha, Lalitpur	Lake	Bamboo Poles
4.	January 28, 2011	Koteswor, Kathmandu	Urban area	Metropolitan Ward Office
5.	February 3, 2011	Kapan, Kathmandu	Urban area	Concrete pillar of a house
6.	February 5, 2011	New Baneshwor, Kathmandu	Urban area	SMCRF Office railing
7.	February 19, 2011	Sipadol, Bhaktapur	Suburb area	V.D.C office
8.	March 1, 2011	Chitwan National Park	Forest	Tree
9.	March 8, 2011	Tikabhairav, Lalitpur	Suburb area	School building
10.	March 9, 2011	Gatthaghar, Bhaktapur	Urban area	Tree
11.	March 15, 2011	Kalanki, Kathmandu	Urban area	School building
12.	April 1, 2011	Kirtipur, Kathmandu	Suburb area	Central Department of Zoology (Tribhuvan University) building
13.	April 10, 2011	Itahari, Sunsari	Suburb area	School building
14.	May 30, 2011	Sunakothi, Lalitpur	Suburb area	School building
15.	May 31, 2011	Lazimpat, Kathmandu	Urban area	Dr. Hem Sagar Baral's house

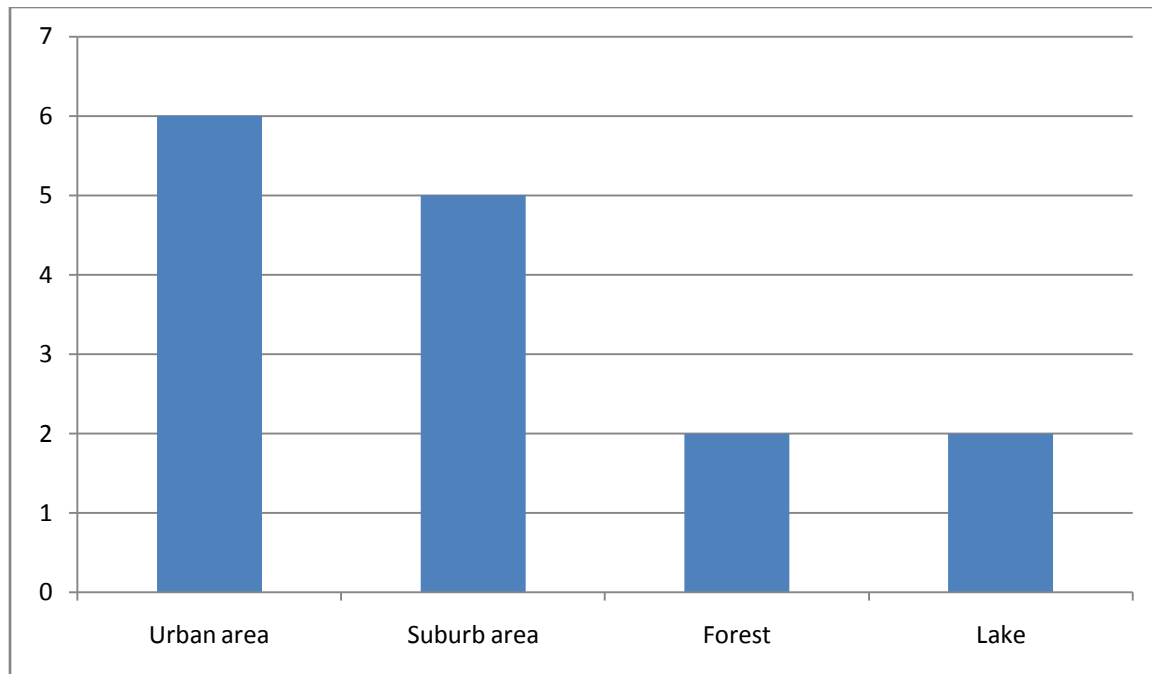


Fig. 1. Habitat of bat house installment.

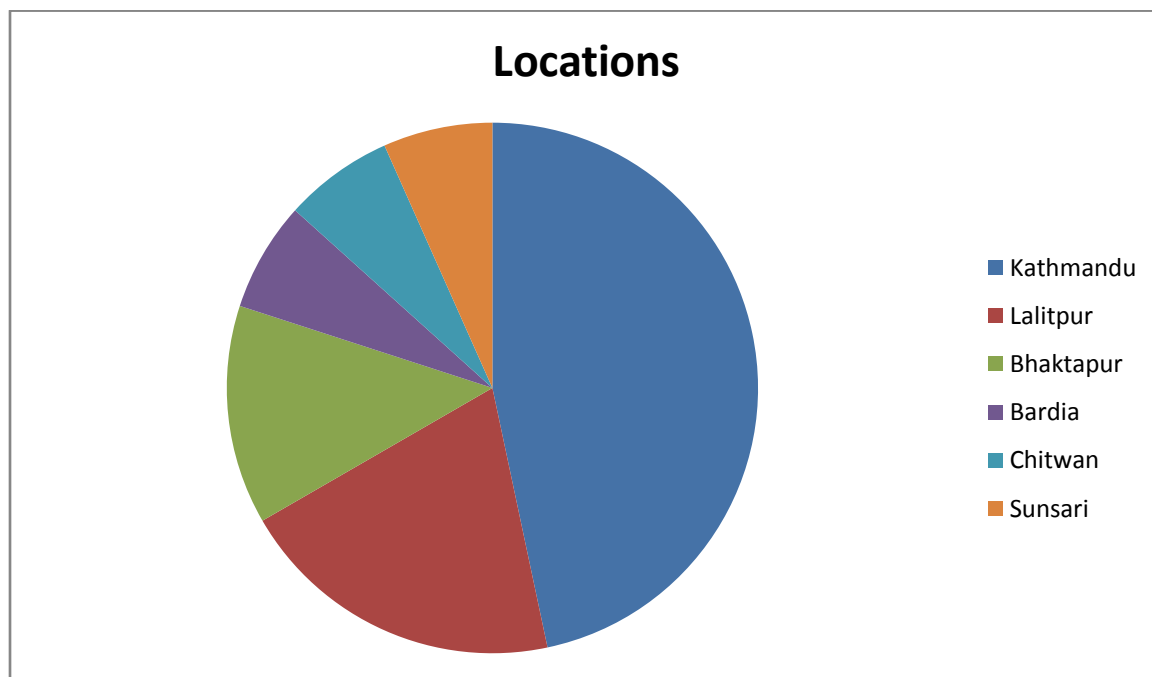


Fig. 2. Locations of bat house installment.

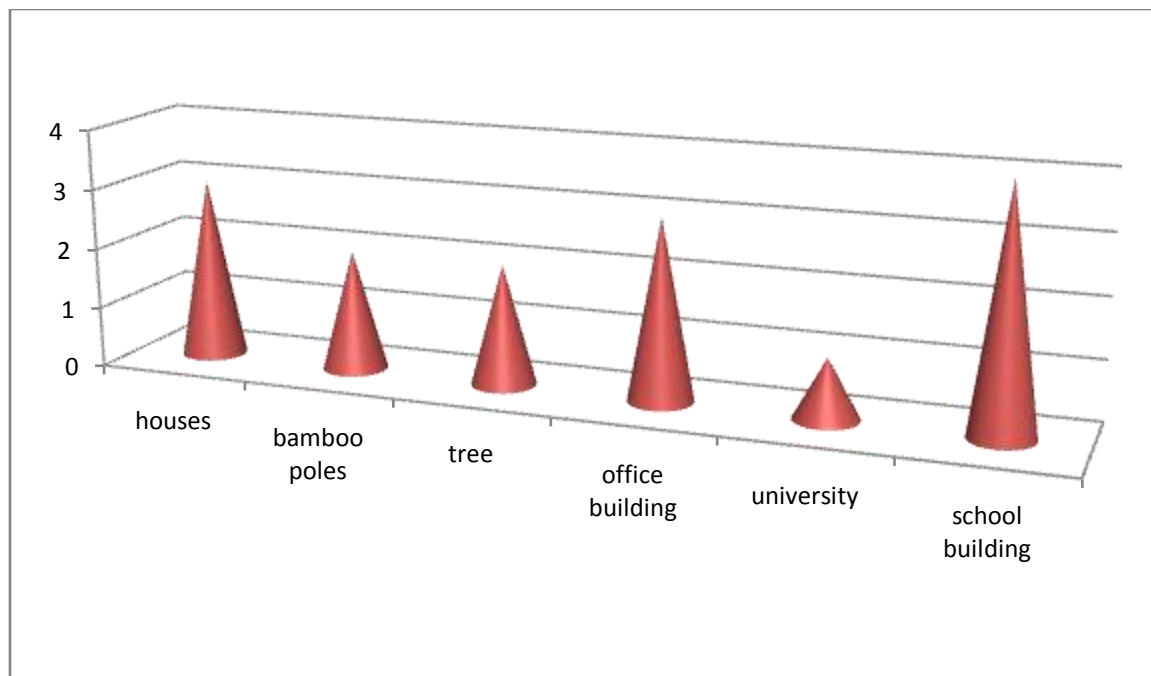


Fig.3. Bat house installed to the features.

Discussion and Conclusion

Maximum bat houses were installed in Central Development Region (Kathmandu Valley) among three Development Regions. Among the other two development regions, bat house was installed within urban area in Itahari Municipality at Eastern Development Region. In the Kathmandu valley, maximum bat houses were installed in Kathmandu District. In Bhaktapur district one site (Sipadol) was out of the busy city while next site (Gatthaghar) was within the busy city. However, in Lalitpur District both sites were out of busy city whereas in Kathmandu District maximum sites falls within busy city.

In total, maximum bat houses were installed at schools. Few bats were placed aside lake and forest edges of national parks. Similarly maximum bat houses were attached to the wall of building. The number of bat houses attached to bamboo and to the trees equals.

Monitoring of these bat houses is needed which will be carried out periodically after six months and the result of monitoring will be disseminated through articles in newspapers, newsletters, magazines etc. as well as through journal articles.

In conclusion, this project is an example of rare attempts of bat conservation project in Nepal.

References

Acharya, P. R. 2010. Bat Diversity Hot Spots and its Conservation Implication in Kangchenjunga Singalila Complex and Makalu Region of Eastern Himalaya, Nepal. Final report submitted to Critical Ecosystem Partnership Fund, WWF-Nepal, v+85pp.

Adhikari, H. 2008. From Radio Annapurna to Nepal. BAT NET-CCINSA Newsletter, Vol.9, No.1, 23pp.

Adhikari, H. 2009. Awareness Programme makes a difference in Madan Pokhara Valley, Nepal. (combined) BAT NET - CCINSA Newsletter and Rat-A-Tattle – RISCINSA Newsletter, Volume 1, Number 1, Zoo Outreach Organization, Coimbatore, India, 15-16pp.

Adhikari, H. and Karki, L. 2010. Research and Conservation Awareness of Bats in Palpa District of Nepal, Hari Adhikari and Laxmi Karki, Small Mammal Mail - Bi-Annual Newsletter of CCINSA & RISCINSA Volume 2, Number 1, 33-35pp.

Phuyal, S.P. 2007. Conservation awareness on bats of Pokhara Valley: a blooming stride towards the conservation of Chiroptera fauna of Nepal. Bat Net Newsletter, Vol.8, No.1, CCINSA, Zoo Outreach Organization, Coimbatore, India. 28-29pp.

Shrestha, G. 2005. CCINSA NATURE Boudha school Bat Club, Nepal, Field Trip Report, Third Meeting. Bat Net Newsletter, Vol.7, No.1-2, CCINSA, Zoo Outreach Organization, Coimbatore, India. 18pp.

Shrestha, G. 2006. CCINSA/NATURE Bat Clubs, Kathmandu, Nepal. Bat Net Newsletter, Vol.7, No.1-2, CCINSA, Zoo Outreach Organization, Coimbatore, India, 25-26pp.

Thapa, S. 2010a. Detailed monitoring survey of bats and their conservation through radio awareness programme and outreach programme to school children in Kathmandu Valley. A first phase report submitted to Rufford Small Grants, UK, vii+41pp.

Thapa, S., Shrestha, S., Dahal, S. 2010b. A Report on National Radio Awareness Programme for Bat Conservation in Nepal. A report submitted to Rufford Small Grants Foundation, UK, 26pp.

Thapa, S., Shrestha, S., Dahal, S. 2010c. Detailed monitoring survey of bats and their conservation through radio awareness programme and outreach programme to school children in Kathmandu Valley. A second phase report submitted to Rufford Small Grants, UK.



Small Mammals Conservation &
Research Foundation (SMCRF)

चमरेराफ

Bat Conservation
International