CEPF SMALL GRANT FINAL PROJECT COMPLETION REPORT

Organization Legal Name:	Bombay Natural History Society (BNHS)
Project Title:	Distribution and assessment of the population status of Critically Endangered Kondana Soft-furred Rat *Millardia kondana*, with special emphasis on implementation of the conservation management plan at Sinhgad.
Date of Report:	3 July 2015
Report Author and Contact Information	Mr. Sameer B. Bajaru

CEPF Region: Western Ghats (Sahyadri-Konkan)

CEPF Strategic Direction 2: Improve the conservation of globally threatened species through systematic conservation planning and action.

Grant Amount: $ 18,963.41

Project Dates: 1st September 2013 to 31st January 2015

Implementation Partners for this Project (please explain the level of involvement for each partner):

- **Maharashtra Forest Department** - The Maharashtra Forest Department provided the permission for conducting this study.

- **National Centre for Biological Sciences (NCBS), Bangalore** - Dr. Uma Ramkrishnan, NCBS, made available the facilities for sequencing and analysis of DNA of *M. kondana.* She also provided the guidance and training to conduct this analysis. All financial expenses of the sequencing are covered by NCBS.

- **Centre for Environmental Education (CEE), Pune** - CEE facilitated the development and implementation of Kondana Soft-furred Rat education and awareness programme.

  Please refer chapter 7 in technical report for more details.

Conservation Impacts

Please explain/describe how your project has contributed to the implementation of the CEPF ecosystem profile.

The outline of landscape and local level conservation management initiates is developed based on this investigation and it will implement through key policy making bodies (Please refer Chapter 6 and 7 in the technical report for more details).

Please summarize the overall results/impact of your project against the expected results detailed in the approved proposal.

1. The species validation results determine the conservation status and policies for conservation of M. kondana and also contribute to the taxonomy of murids of Indian subcontinent.

The morphological identity of *M. kondana* confirmed through this study is partially settled the debate on validity of the species. The preliminary molecular phylogenetic analysis also indicated the species level distinctness of *M. kondana*, but need further investigation to support the findings.

These identity of the species was established through investigation would help the policy making bodies to improve conservation status of the species (now in Schedule V-vermin and pest)- Please refer Chapter 4, section 4.1 in technical report for more details.

2. The data obtained from this study on distribution, population density, habitat requirement and other life history traits of Kondana Soft-furred Rat, have fulfilled knowledge gap about this species and is being useful in development of robust conservation management plan of the species.
A new population of the species was discovered in this study (Please refer Chapter 4, section 4.1, p-19 in the technical report for more details).

Landscape level occupancy estimation of species revealed that it had very strong preference for rugged terrain (Please refer Chapter 4, section 4.2, in the technical report for more details).

The findings also showed that species had strong temporal and spatial microhabitat preferences (Please refer Chapter 4, section 4.3, in the technical report for more details).

The population density estimated was highest at Sinhgad compared to Rajgad and Torna Fort. All three sites showed seasonal variation in population density - it was highest in winter and dropped down in summer (Please refer Chapter 4, section 4.5, in the technical report for more details).

Therefore based on this study I have suggested adaptive management system for long term conservation of *M. kondana* (Please refer Chapter 7 in the technical report for more details).

3. This project is adding to the baseline ecological data for deeper understanding of the impact of invasive species such as domestic cats, strong generalist competitor like House Rat, and anthropogenic habitat alterations on endemic species Kondana Soft-furred Rat, through long term investigations beyond the project. This study would also act as a model for understanding interaction among human, invasive species and endemic species, especially small mammals, and its implementation in conservation of the species.
The House Rat *R. rattus* does not seems to be competing with *M. kondana*, because its activity was restricted in and around human habitation and *M. kondana* was dominant species in the grasslands surrounding human habitation at Sinhgad. However, forest species of rats appears to be negatively affecting the *M. kondana* (Please refer Chapter 4, section 4.1, p-19 & Chapter 5 in the technical report for more details). I have not studied predation of domestic cats due to time constrain and need special methodology which was not possible in this short duration of study.

In Sinhgad, human disturbance such as plantation of agave, *Furcraea foetida* created a habitat for *M. kondana* and empirical evidence in microhabitat and occupancy analysis strongly supported the positive response of the species towards it (Please refer Chapter 4, section 4.3, in the technical report for more details). On the contrary, intensive grazing, burning and clearing of trees and shrubs from grassland might be indicated extirpation of the species (Please refer Chapter 5, p-34, in the technical report for more details).

4. The final report, conservation management plan and publications in peer reviewed journals based on this proposed project will help the policy makers to develop appropriate policies for effective conservation of the species.
Though I did not published any scientific or popular article based on this investigation, couple of will be expected soon and those along with report would help the policy makers in decision

making about conservation of *M. kondana* (Please refer Chapter 6 in the technical report for more details).

5. Capacity building among the forest staff for conservation of M. kondana, would also be used for other conservation initiatives in this landscape. This activity will be sustained by BNHS after end of the project.

It was not possible to conduct the capacity building of the forest staff for conservation management of the species due to lack of quantitative data on temporal and spatial habitat preference of the species, which is very crucial for management practices. It was generated at almost end of the project and therefore we are planned to conduct the capacity building programme soon through internal funding of the BNHS or through external funding agency. However, meanwhile I have conducted similar capacity building programme for volunteers participated in this project (Please refer Chapter 6 in the technical report for more details).

6. This project has enhanced the conservation status of critically endangered Kondana Soft-furred Rat through preservation of Alliance of Zero Extinction Site –Sinhgad and other sites in this landscape with active participation of the Forest Department.

The outline of landscape and local level conservation initiates is developed based on this investigation and will implemented through key policy making bodies (Please refer Chapter 6 and 7 in the technical report for more details).

Please provide the following information where relevant:

Hectares Protected: NIL (unless there is a declaration by ASI/MFD)

Species Conserved: *Millardia kondana*

Corridors Created: NIL

Describe the success or challenges of the project toward achieving its short-term and long-term impact objectives.

NA

Were there any unexpected impacts (positive or negative)?

NA

Lessons Learned

Describe any lessons learned during the design and implementation of the project, as well as any related to organizational development and capacity building. Consider lessons that would inform projects designed or implemented by your organization or others, as well as lessons that might be considered by the global conservation community.

The most important lesson learned during this project - the networking and collaboration between multiple institutes, NGO's and government bodies having diverse background from fundamental research to community capacity building is key component of success of the conservation projects.

Project Design Process: (aspects of the project design that contributed to its success/shortcomings)

1. The temporal (post-monsoon, winter and summer) and spatial (Sinhgad, Torna Fort and Rajgad) sampling was greatly helped in understanding the variations in habitat preference of the

species and which was crucial while recommending conservation management initiatives and for further detailed study.

2. In addition to local sampling, the landscape level sampling design revealed the scale dependent response of the species to predictor variables and it was helped in making landscape level conservation recommendations and provided baseline data for thorough investigation in future.

Project Implementation: (aspects of the project execution that contributed to its success/shortcomings)

The support from the Maharashtra Forest Department through giving permission for conducting this work was timely. And the collaboration with NCBS for fundamental research, CEE - for educational and awareness programme and capacity building of the volunteers and BNHS assistants for small mammal handling and habitat sampling are contributed greatly in success of this project.

Other lessons learned relevant to conservation community:

NA

ADDITIONAL FUNDING

Provide details of any additional donors who supported this project and any funding secured for the project as a result of the CEPF grant or success of the project.

Donor	Type of Funding*	Amount	Notes
NCBS	A	Rs. 50,000	DNA sequencing of M. kondana and other species for phylogenetic analysis.
BNHS	Salary (Field assistant)	Rs. 75,000	Providing assistance in the field during official duty timing.

***Additional funding should be reported using the following categories:**

A *Project co-financing (Other donors contribute to the direct costs of this CEPF project)*

B *Grantee and Partner leveraging (Other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF project.)*

C *Regional/Portfolio leveraging (Other donors make large investments in a region because of CEPF investment or successes related to this project.)*

Sustainability/Replicability

Summarize the success or challenge in achieving planned sustainability or replicability of project components or results.

NA

Summarize any unplanned sustainability or replicability achieved.

NA

Safeguard Policy Assessment

Provide a summary of the implementation of any required action toward the environmental and social safeguard policies within the project.
NIL

Performance Tracking Report Addendum

CEPF Global Targets

(Enter Grant Term)

Provide a numerical amount and brief description of the results achieved by your grant.
Please respond to only those questions that are relevant to your project.

Project Results	Is this question relevant?	If yes, provide your numerical response for results achieved during the annual period.	Provide your numerical response for project from inception of CEPF support to date.	Describe the principal results achieved from 1st September 2013 to 31st January 2015 (Attach annexes if necessary)
1. Did your project strengthen management of a protected area guided by a sustainable management plan? Please indicate number of hectares improved.	No			Please also include name of the protected area(s). If more than one, please include the number of hectares strengthened for each one.
2. How many hectares of new and/or expanded protected areas did your project help establish through a legal declaration or community agreement?	No			Please also include name of the protected area. If more than one, please include the number of hectares strengthened for each one.
3. Did your project strengthen biodiversity conservation and/or natural resources management inside a key biodiversity area identified in the CEPF ecosystem profile? If so, please indicate how many hectares.	No			
4. Did your project effectively introduce or strengthen biodiversity conservation in management practices outside protected areas? If so, please indicate how many hectares.	No			
5. If your project promotes the sustainable use of natural resources, how many local communities accrued tangible socioeconomic benefits? Please complete Table 1below.	No			

If you answered yes to question 5, please complete the following table.

Table 1. Socioeconomic Benefits to Target Communities

Please complete this table if your project provided concrete socioeconomic benefits to local communities. List the name of each community in column one. In the subsequent columns under Community Characteristics and Nature of Socioeconomic Benefit, place an X in all relevant boxes. In the bottom row, provide the totals of the Xs for each column.

Name of Community	Community Characteristics								Nature of Socioeconomic Benefit												
									Increased Income due to:												
	Small landowners	Subsistence economy	Indigenous/ ethnic peoples	Pastoralists/nomadic peoples	Recent migrants	Urban communities	Communities falling below the poverty rate	Other	Adoption of sustainable natural resources management practices	Ecotourism revenues	Park management activities	Payment for environmental services	Increased food security due to the adoption of sustainable fishing, hunting, or agricultural practices	More secure access to water resources	Improved tenure in land or other natural resource due to titling, reduction of colonization, etc.	Reduced risk of natural disasters (fires, landslides, flooding, etc)	More secure sources of energy	Increased access to public services, such as education, health, or credit	Improved use of traditional knowledge for environmental management	More participatory decision-making due to strengthened civil society and governance.	Other
Total																					

If you marked "Other", please provide detail on the nature of the Community Characteristic and Socioeconomic Benefit:

Additional Comments/Recommendations

Though CEPF-ATREE funding the research project they are few compared to pure conservation or policy based project. I would recommend fund more research based project, especially for lesser fauna and flora, in order to fill knowledge gaps and develop effective conservation policies.

Information Sharing and CEPF Policy

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned, and results. Final project completion reports are made available on our Web site, www.cepf.net, and publicized in our newsletter and other communications.

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List of appendices:
1 – Detailed Technical Report