

CEPF Final Project Completion Report

Instructions to grantees: please complete all fields, and respond to all questions, below.

Organization Legal Name	Wildlife Trust of India
Project Title	Staying connected: addressing the impacts of linear intrusions on wildlife in the Western Ghats
CEPF GEM No.	62921
Date of Report	30 th November 2015
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CEPF Region: Western Ghats

Strategic Direction: 1: Enable action by diverse communities and partnerships to ensure conservation of key biodiversity areas and enhance connectivity in the corridor

Grant Amount: US \$ 75000.00

Project Dates: 1st July 2013 – 31st March 2015, extended to 30th September 2015

1. Implementation Partners for this Project (*list each partner and explain how they were involved in the project*)

- a. State Forest Departments of Tamil Nadu, Karnataka and Kerala- they have accorded the necessary permission to work in the Forest and Protected Areas. They have also provided data on previous animal mortality, habitat fragmentation and periodic inputs on various aspects from time to time during data collection, logistic support and also actively participated in the consultative meeting to discuss the outcome of the work.
- b. Highway Authorities: provided technical information on the roads for select sites. They also actively participated in the consultative meeting to discuss the outcome of the work and improve mitigation plan.
- a. Railways: provided permission and technical assistance to carry the work. They also provided information on various aspects of their management of track and wildlife mitigations. Actively participated in the consultative meeting to discuss the outcome of the work as well as to develop the mitigation plan.
- b. Tamil Nadu Electricity Board: shared information of pipelines and canals and allowed the team to collect data. They also actively participated in the consultative meeting to discuss the outcome of the work as well as to provide technical assistance during the course of study.

- c. Conservation Organisations like Nature Conservation Foundation, WWF, ATREE, FERAL, OSAI, Wildlife Conservation Foundation, Mysore, Indo American Wildlife Society, Chennai and faculty of A.V.C. College and Ooty College actively participated in the consultative meeting organised to share the results and discussion on linear intrusions.
- d. Ministry of Environment, Forest and Climate Change (MoEFCC): Discussed various aspects of linear intrusion with Project Elephant Directorate, Govt of India and their impacts. WTI is also working with them on how to mitigate elephant mortality by train hit in various regions of India as well as protecting elephant corridors.

Conservation Impacts

2. Describe how your project has contributed to the implementation of the CEPF ecosystem profile

The project mapped the linear intrusions (roads, railway tracks, pipelines, canals and power lines) in Nilgiri- Mysore landscape in critical wildlife areas and corridors and worked on site specific linear intrusions to assess their threats to habitat and animals and developed mitigation measures in consultation with various stakeholders. This could contribute towards strengthening the guidelines on linear intrusions prepared by National Board of Wildlife. This is in line with CEPF Strategic Director 1: Enable action by diverse communities and partnerships to ensure conservation of key biodiversity areas and enhance connectivity in the corridor.

It is also in line with CEPF Investment Priority 1.2(iii) “promote partnerships that demonstrate effective responses to the impacts of linear infrastructure and other development projects on ecological connectivity.” The entire project work involved working with stakeholders from highways, railways, power line and forest department as well as conservation organizations to understand the impact of these linear intrusion on wildlife and develop mitigation plan.

3. Summarize the overall results/impact of your project

Planned Long-term Impacts - 3+ years (as stated in the approved proposal): A sound policy and guidelines for avoiding, reducing and mitigating the negative impacts of linear infrastructure on wildlife in Western Ghats in particular, and at a national level facilitated to assist environment friendly linear development activities.

4. Actual progress toward long-term impacts at completion

The National Board of Wildlife came up with a draft “Guidelines for Linear Infrastructure Intrusions in Natural Areas,” in 2011 with a goal “To establish, as an essential part of long-term sustainable development in India, ecologically sound policy and practice in the creation, maintenance, removal, and realignment of linear infrastructures such as roads and electricity transmission lines (power lines) in order to avoid or minimize the negative impacts on natural areas and biodiversity.”

The proposed project felt the relevance of strengthening the discussions through providing supportive evidences and information, in order to move towards a sound policy and legislation for avoiding, reducing and mitigating the negative impacts of linear infrastructure on wildlife in Western Ghats in particular, and at a national level.

The project has been able to demonstrate the negative impacts of various linear intrusions in Nilgiri-Mysore landscape and has also been able to develop mitigation plans for select infrastructures at specific locations. The outcome of the work and mitigation measures were then discussed with all stakeholders (highways, railways, power line and forest department as well as conservation organizations) at a consultative meeting organised in Coimbatore on 29th September 2015 to further refine and strengthen the mitigation plan. These findings will definitely help in strengthening the guidelines prepared by NBWL and will be shared with MoEF and relevant people to further strengthen the guidelines.

Planned Short-term Impacts - 1 to 3 years (as stated in the approved proposal)

List each short-term impact from Grant Writer proposal

1. Increased understanding of the ecological impacts of linear infrastructure in the Mysore-Nilgiri corridor landscape till Palakkad gap.
2. Shared understanding of key conservation issues related to linear infrastructure developed among multiple non-governmental, governmental and private sector actors in the Mysore-Nilgiri corridor landscape till Palakkad gap.
3. Practical measures to mitigate the ecological impacts of linear infrastructure formulated at a minimum of three specific localities within the Western Ghats (Mysore-Nilgiri landscape till Palakkad gap)
4. Recommendations on mitigating impacts of linear infrastructure incorporated into at least one state and/or national policy.

5. Actual progress toward short-term impacts at completion

The project has been able to map the roads, railway, pipelines, canals and power lines in the Nilgiri-Mysore landscape passing through forest and wildlife corridors. A total of four railway lines were mapped, 1384 kms length of roads (including four National Highway, 13 State/interstate highways passing through 33 forest stretches of 14 Forest divisions covering 414 km) assessed and mapped. Seven pipelines, two canals and 31 power lines in the study area were also mapped and select ones taken up for detailed study.

Detailed studies were taken up in one railway track (Coimbatore to Palakkad), two National Highways (NH 67 and NH 209), two pipelines (Pararli and Glenmorgan-Singara), two canals (Parali canal and Maravakandy- Moyar flume canal) and two power lines (Gudalur-Singara and Upper Bhavani-Kundah) to understand the extent of impacts of these linear intrusion on forest and wild animals and to develop mitigation measures to

minimize their impacts. During field study, information on these linear infrastructures were collected from various stakeholders apart from primary data and were also consulted to prepare the site specific recommendations. These were then discussed with the stakeholders in a formal consultative meeting held on 29th September 2015 at Coimbatore, Tamil Nadu. Informal discussion was also held with different stakeholders at various stages of the project to understand the issues and formulate the mitigation plans.

Hence, the project has definitely been able to achieve the first three short term impacts. WTI will work with relevant stakeholders to incorporate the findings of the results and recommendations on mitigating impacts of linear infrastructure at both State and National level. In fact, WTI is currently working with Railways and State Forest Departments at regional and national level to address the mortality of elephants and other wild animals due to train hit.

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

The project itself was quite ambitious trying to map all the linear infrastructures in terms of roads, railway lines, pipelines, canals and power lines passing through forest and wildlife corridors, especially elephants and tigers and then work at site specific level on selected ones to understand the impacts and also to develop site specific mitigation plans.

The project has been largely able to achieve this in the limited time period and thanks to CEPF for extending the time period by six months to complete the project. But the biggest challenge is to get these recommendations incorporated in the mitigation plans and guidelines of the linear agencies, State and National Governments. WTI will work with relevant stakeholders towards this.

7. Were there any unexpected impacts (positive or negative)?

None

Project Components and Products/Deliverables

Component 1 (as stated in the approved proposal)

List each component and product/deliverable from Grant Writer

1. Identify and map the linear infrastructure in the forests of Mysore-Nilgiri landscape till Palakkad Gap in Southern Western Ghat

8. Describe the results from Component 1 and each product/deliverable

- 1.1.** Map showing the linear infrastructures in the project area uploaded onto the Western Ghats Portal

1.2. Report documenting the various linear infrastructures in the project area and presenting a selection of sites for pilot studies based upon the application of criteria

The project has worked on five linear intrusions (railways, roads, pipelines, canals and power line) in Nilgiri-Mysore landscape. A total of four railway lines were mapped, 1384 kms length of roads (including four National Highway, 13 State/interstate highways passing through 33 forest stretches of 14 Forest divisions covering 414 km) assessed and mapped. Seven pipelines, two canals and 31 power lines mapped and select ones taken up for detailed study.

A site selection report documenting the linear intrusions was prepared (incorporated in the final report). Based on selected criteria for each linear intrusion, sites were selected for detailed study. These includes, one railway track (Coimbatore to Palakkad), two National Highways (NH 67 and NH 209), two pipelines (Pararli and Glenmorgan-Singara), two canals (Parali canal and Maravakandy- Moyar flume canal) and two power lines (Gudalur-Singara and Upper Bhavani-Kundah). With completion of study and the report, the maps will be sent to Western Ghat Portals for uploading and sharing with people.

Component 2 (as stated in the approved proposal)

List each component and product/deliverable from Grant Writer

2. Assess the impact of these infrastructures in biological corridors and critical wildlife habitats by conducting representative pilot studies

9. Describe the results from Component 2 and each product/deliverable

- 2.1.** Site specific reports on at least three pilot studies to look at the linear infrastructure/s, its impact and possible mitigation measures

The impact of the linear intrusions we assessed in above selected sites for all the five linear intrusions and specific recommendations developed for each linear intrusion. Information on impact on habitat loss and fragmentation, edge effect, barrier to movement of key species, spread of invasive species, wildlife mortality, etc were collected for specific linear intrusion at selected site (as mentioned above in component 2) and then the mitigation plan for each linear intrusion at specific site prepared for discussion with all stakeholders through a consultative meeting.

Component 3 (as stated in the approved proposal)

List each component and product/deliverable from Grant Writer

3. Prioritize issues to be addressed and develop site specific mitigation plan based on pilot studies

10. Describe the results from Component 3 and each product/deliverable

3.1. At least three site specific plan (short and long-term) with issue specific solutions on the impact of linear infrastructures on wildlife habitats and the species to be produced by WTI in consultation with relevant stakeholders

The pilot studies undertaken for the linear intrusions in Nilgiri-Mysore landscape has helped in developing site specific mitigation plans (short-terms and long-term) for five linear infrastructures. These impacts and mitigation plan was then discussed with all stakeholders through a consultative meeting held at Coimbatore on 29th September 2015. The stakeholders included members from State forest department, Railways, Highways, Electricity Board, faculties from Universities (A.V.C. College and Ooty College) and Conservation Organizations (Nature Conservation Foundation, WWF, ATREE, FERAL, OSAI, Wildlife Conservation Foundation, Mysore, Indo American Wildlife Society, Chennai). The members discussed on issue specific solutions, remedies and helped in streamlining the mitigation plan. This has helped in finalizing the issue specific plan for each linear intrusion (minutes of the consultative meeting enclosed).

Component 4 (as stated in the approved proposal)

List each component and product/deliverable from Grant Writer

4. Develop comprehensive plans and guidelines and work towards incorporation of these plan in various Government policies on linear development

11. Describe the results from Component 4 and each product/deliverable

4.1. A combined report mapping and identifying high impact linear infrastructures in biological corridors and critical wildlife habitats and formulating policy guidelines for future development of linear infrastructures and mitigation measures.

4.2. Minutes of the consultative meeting with National Tiger Conservation Authority and Project Elephant to disseminate policy recommendations on mitigating the impacts of linear infrastructure in tiger and elephant corridors

4.3. Minutes of the consultative meeting with FC and other relevant divisions of Ministry of Environment and Forests, Govt of India to disseminate policy recommendations on mitigating the impacts of linear infrastructure in critical wildlife areas

A combined report mapping and identifying high impact linear infrastructures in Nilgiri-Mysore landscape has been prepared. This will now be shared with various stakeholders including Project Elephant, NTCA and other divisions of Ministry of Environment, Forests and Climate Change to disseminate the major recommendations of the report and to see that these are used to strengthen the guidelines on linear intrusion prepared by National Board of Wildlife.

WTI would also like to take this forward by working with various stakeholders to incorporate the findings of the results and recommendations on mitigating impacts of linear infrastructure at both State and National level. In fact, WTI is already working with Railways and State Forest Departments at regional and national level to address the mortality of elephants and other wild animals due to train hit.

12. If you did not complete any component or deliverable, how did this affect the overall impact of the project?

The project has been able to complete all the component except sharing the final report with various wings of Ministry of Environment, Forests and Climate Change due to field delay and in finalising the report. However, WTI is already working with Railways and State Forest Departments at regional and national level to address the mortality of elephants and other wild animals due to train hit.

13. Please describe and submit any tools, products, or methodologies that resulted from this project or contributed to the results

The project has come up with a report documenting the impact of linear intrusions and mitigation measures along with maps.

CEPF Global Monitoring Data

Respond to the questions and complete the tables below. If a question is not relevant to your project, please make an entry of 0 (zero) or n/a (not applicable).

14. Did your organization complete the CEPF Civil Society Tracking Tool (CSTT) at the beginning and end of your project? (Please be sure to submit the final CSTT tool to CEPF if you haven't already done so.)

Yes – submitted.

15. List any vulnerable, endangered, or critically endangered species conserved due to your project

The project area supports a large array of endangered and endemic species. The implementation of the recommendation will help in protecting a large number of the species in the landscape affected due to habitat degradation, loss, fragmentation, mortality, etc due to the linear intrusion through forest and wildlife corridors.

Hectares Under Improved Management

Project Results	Hectares*	Comments
16. Did your project strengthen the management of an existing protected area?		<i>None</i>
17. Did your project create a new protected area or expand an existing protected area?		<i>No</i>

18. Did your project strengthen the management of a key biodiversity area named in the CEPF Ecosystem Profile (hectares may be the same as questions above)		Not during project stage. However, the outcome of the study and the implementation of the recommendations will contribute to strengthening conservation in Mysore-Nilgiri landscape
19. Did your project improve the management of a production landscape for biodiversity conservation		

* Include total hectares from project inception to completion

20. In relation to the two questions above on protected areas, did your project complete a Management Effectiveness Tracking Tool (METT), or facilitate the completion of a METT by protected area authorities? If so, complete the table below. (Note that there will often be more than one METT for an individual protected area.) No

Protected area	Date of METT	Composite METT Score	Date of METT	Composite METT Score	Date of METT	Composite METT Score

21. List the name of any corridor (named in the Ecosystem Profile) in which you worked and how you contributed to its improved management, if applicable.

The Nilgiri-Mysore landscape has 17 identified elephant corridors, most of them impacted by linear intrusions. This project did not work towards its management but reducing the impact of linear intrusions passing through the corridors will definitely help in improving its protection.

Direct Beneficiaries: Training and Education

Not applicable

<i>Did your project provide training or education for . . .</i>	Male	Female	Total	Brief Description
22. Adults for community leadership or resource management positions				
23. Adults for livelihoods or increased income				
24. School-aged children				
25. Other				

26. List the name and approximate population size of any “community” that benefited from the project. Not applicable

Community name, surrounding district, surrounding province, country

Population size

27. Socioeconomic Benefits to Target Communities

Not applicable

Based on the list of communities above, write the name of the communities in the left column below. In the subsequent columns under Community Characteristics and Nature of Socioeconomic Benefit, place an X in all relevant boxes.

Community Name	Community Characteristics								Nature of Socioeconomic Benefit													
	Small landowners	Subsistence economy	Indigenous/ ethnic peoples	Pastoralists / nomadic peoples	Recent migrants	Urban communities	Communities falling below the poverty line	Other	Increased income due to:				Increased food security due to the adoption of sustainable	More secure access to water resources	Improved tenure in land or other natural resource due to	Reduced risk of natural disasters (fires, landslides,	More secure sources of energy	Increased access to public services, such as education,	Improved use of traditional knowledge for environmental	More participatory decision-making due to strengthened	Other	
									Adoption of sustainable natural resources	Ecotourism revenues	Park management activities	Payment for environmental services										

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

Lessons Learned

28. 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

Mapping all the linear intrusion and undertaking site specific impact assessment of all linear intrusion within the stipulated time was an uphill task but with right approach, study design and hard work of the team, and with extension of the project by CEPF, the team has successfully complete the work. The project helped the team to look beyond conventional conservation approach looking at holistic level the impacts of various linear intrusions and could the views of

linear agencies and conservation organization be synergized to address the impacts on natural areas and biodiversity.

The study has amply demonstrated that many of the negative impact of linear intrusion could be addressed with adequate planning at project implementation stage. Large sum of money is used at later stage to address the negative impacts (habitat fragmentation and loss, wildlife mortality, increased human-wildlife conflict). The conservation organisations has to work with local linear agencies and develop successful working model which could then be shared with policy makers and this could then be replicated with site specific approach.

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

The project was well designed with set methodologies to address the questions that will help in addressing the impacts envisaged for the project. The refinement of information was possible due to various informal and formal stakeholders' consultations and meeting.

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

One of the major challenges was to complete the project within stipulated time. The project was largely delayed due to delay in getting permission from one State. However, the team was able to complete most of the proposed work with extension from CEPF through rigorous field assessment and consultations.

31. Describe any other lessons learned relevant to the conservation community

With more than 1.2 billion human population in the country and lack of land to support their increasing need, it is high time that when linear intrusions are planned through forest; wildlife mitigation plan should form an integral component of their project proposal and enforced through stringent EIA. The mitigation plan could be jointly planned by the linear development agency in consultation with forest department, conservation organizations and researchers. Lately the linear agencies have started realizing this fact, both for the safety of people and to minimize foot prints of development on environment. Successful example from across the globe has shown that with proper planning at inception stage, many of the negative impact of linear intrusions could be markedly address during the implementation stage itself. The synergy between development and environmental conservation has to be strengthened for the welfare of animals, development and safety of people and economic growth of the country.

Sustainability / Replication

32. Summarize the success or challenges in ensuring the project will be sustained or replicated

The outcome of the project has not only demonstrated the negative impact of linear intrusion but also the fact that with right planning and approach, many of the problems could be addressed.

The success of the project will depend on how best the suggested recommendations could be incorporated as part of the conservation plan of the area in consultation with stakeholders and policy makers. Efforts will also have to be made to incorporate the practical suggestions in the policy guidelines to mitigate the negative impact.

33. Summarize any unplanned activities that are likely to result in increased sustainability or replicability

Nothing specific

Safeguards

34. If not listed as a separate Project Component and described above, summarize the implementation of any required action related to social, environmental, or pest management safeguards

The project worked towards assessing the negative impact of linear intrusion of wildlife and how could this be mitigated. This does not have any negative impact on the environment or people.

Wildlife Trust of India (WTI) is committed to ensure that there is no adverse impact on the local communities (which includes tribal and forest dwelling communities) which share the areas with wildlife. In fact, it is our endeavours that through our various programs, we not only ensure that the local communities are not adversely impacted but rather to ensure that they are beneficiaries and stakeholders in our conservation efforts.

Additional Comments/Recommendations

35. Use this space to provide any further comments or recommendations in relation to your project or CEPF

None

Additional Funding

36. Provide details of any additional funding that supported this project and any funding secured for the project, organization, or the region, as a result of CEPF investment

No additional support received

Donor	Type of Funding*	Amount	Notes

* Categorize the type of funding as:

- A *Project Co-Financing (other donors or your organization contribute to the direct costs of this 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 funded project)*
- C *Regional/Portfolio Leveraging (other donors make large investments in a region because of CEPF investment or successes related to this project)*

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.

Please include your full contact details below:

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