CEPF FINAL PROJECT COMPLETION REPORT

Organization Legal Name:	Zoo Outreach Organization
Project Title:	Protected area analysis with respect to freshwater biodiversity and reptile assessments, and development of national policy for inclusion in legislation.
Date of Report:	31 December 2014
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CEPF Region: **Western Ghats**

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

Grant Amount: **$24,900.00**

Project Dates: **01 January 2012 - 30 September 2014**

Implementation Partners for this Project:

Zoo Outreach Organization – infrastructure for this project at various stages of the project such as identifying relevant policy makers through its network, analyze policies, networking and meeting policy makers, stakeholders, scientists and conservationists in person, dissemination of the educational materials, accounts keeping, publication and reporting.

IUCN SSC Freshwater Fish Specialist Group – South Asia: consultant for the Protected Area Gap Analysis.

Conservation Research Group – consultant for the fish related taxonomic information, and surveys in Periyar Tiger Reserve and Nelliampathys.

Indian Institute of Science, Education and Research - consultant for the Protected Area Gap Analysis, for the fish related taxonomic information, surveys in Nelliampathy hills, and statistical analysis.

South Asian Reptile Network – Assessments of reptiles in the Western Ghats, and protected area gap analysis

IUCN SSC Freshwater Biodiversity Unit – Key Biodiversity Area analysis of freshwater areas in Kerala, Tamil Nadu, and parts of southern Karnataka.

IUCN SSC Global Reptile Assessment – Analysis and maps.

Wildlife Information Liaison Development (WILD) Society – Development of education materials and sharing of resources from CEPF education project on freshwater biodiversity

Individual contributors:
Dr. Rajeev Raghavan, Co-Chair, Freshwater Fish Specialist Group, South Asia
Dr. Neelesh Dahanukar, Indian Institute of Science Education and Research, Pune
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Dr. B.A. Daniel, Scientist, Zoo Outreach Organization, Coimbatore
Ms. Priyanka Iyer, Researcher on the project, Zoo Outreach Organization, Coimbatore

Conservation Impacts

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

Investment Priority 2.1 Monitor and assess the conservation status of globally threatened species with an emphasis on lesser-known organisms such as reptiles and fish

This project is a step towards ensuring that species assessed as globally threatened under CEPF projects receive strengthened legal protection through systematic decision making and rational thought for upgrade or inclusion on the schedules of the Indian Wildlife (Protection) Act. Of the four freshwater biodiversity taxonomy groups, only fishes were considered for inclusion. However, during the course of consultations it was evident that including all fishes in the WPA would be counter productive. Hence only 30 of the 100 threatened species were prioritized for inclusion.

The prioritization is further being processed through consultations with various stakeholders informally so as to get a consensus before the final list can be placed for consideration to the Ministry of Environment, Forests and Climate Change. Responses are awaited at this point in time and we hope to submit the final list to the Ministry beginning of the next financial year (April 2015) for action. The next steps also include inter-ministerial meetings to be held in Delhi in end 2015 (depending on funds raised) to get a consensus on integrated management and conservation of freshwater biodiversity and ecosystems.

All reptiles of the Western Ghats assessed in another CEPF funded project were analyzed for distribution and threats. Since most reptiles are already included on the WPA, no attempt was made to modify the status on the list as it became clear during the project that reptiles are poorly studied and until major taxonomic studies are conducted the assessments are only tentative and hence there is no need to change the status on the WPA.

Investment Priority 2.3 Evaluate the existing protected area network for adequate globally threatened species representation and assess effectiveness of protected area types in biodiversity conservation

This project dealt with preliminary analyses of previous freshwater biodiversity and reptile assessments to evaluate the adequacy of existing protected area network throughout the Western Ghats. The analysis indicated poor representation of freshwater fishes and reptiles in the existing protected areas in the Western Ghats.

In addition, one protected area (Periyar Tiger Reserve) and one non-protected area (Nelliampathy Hills) in Kerala were chosen as case studies to improve on the existing management plan and working plan, respectively, with inputs from freshwater biodiversity management, especially freshwater fishes.

The effectiveness of protected area analysis conducted on freshwater fishes and reptiles have helped understand the needs and highlighted the gaps in the present network. Results of these analyses have not been submitted to the concerned ministry or departments. Further detailed

analyses along with maps will be published as scientific peer-reviewed articles, the results of which will be submitted to the ministries along with all data sets soon after completion. Personal representation and presentation on the issue will be made at the ministry in the middle or end of 2015. A follow-up action to this is pursuing setting up of a committee in the ministry for freshwater biodiversity conservation in and outside of protected areas.

Please summarize the overall results/impact of your project.

- Network of policy makers, subject experts and other stakeholders
- Preliminary meeting with subject experts to analyze the Wildlife Protection Act and species listed in the act
- A policy framework including strategies in linking the IUCN Red List assessments of biological value to the Indian Wildlife (Protection) Act of cultural, economic and aesthetic value.
- A draft format for freshwater fish species prioritization for inclusion into the Wildlife Protection Act has been developed.
- Preliminary look at six different national policies namely, Wildlife Protection Act, Indian Fisheries Act, Biological Diversity Act, National Water Policy, Wetland rules, Water (Prevention and control of Pollution) Act and the Forest Rights Act.
- Preliminary look at policies related to freshwater ornamental fish trade, namely – Green Certification and EXIM (Export-Import) Policy.
- Detailed analyses of data generated from the freshwater and reptile assessments by the respective IUCN units to understand the current effectiveness of the protected area system.
- Inputs into one management plan of a protected area and a working plan of a non-protected area.
- State specific information culled out from the status report and communicated to the relevant state departments
- Develop illustrative posters and projections with brochures in simple language for conservationists, foresters and policy makers to disseminate results of the detailed analyses at the ground level as well as the state and central government levels.
- Personal visits to the Ministry of Environment and Forests, Department of Animal Husbandry, Dairying and Fisheries, National Institute of Malaria Research (in relation to introduction of exotic fish for disease control); State forest departments of Western Ghats states, State Biodiversity Boards of Western Ghats states, NGOs working with freshwater systems and national institutes involved in fish and fisheries research.
- List of freshwater fish species that may be added to the Wildlife Protection Act and possible amendments.

Planned Long-term Impacts - 3+ years:

Since this project is a follow up of the earlier funded CEPF projects on freshwater biodiversity and reptile assessments, it lays the foundation for developing and implementing long term strategies by developing policies and through outreach. It complements another project on outreach proposed by WILD, which focuses on species aspects, while this project focuses on habitat, protected area networks and legislation. Each project complements the other in ensuring not only the sustainability, but also provides an opportunity for developing long lasting conservation strategies for follow up by different stakeholders, especially the governments at the centre and states.

Once the policies are in place and the analyses are disseminated, this will provide the national legislation with ample baseline information for systematic implementation of conservation strategies. If this works in India, similar exercises in other CEPF regions can emulate, especially

in regions such as Sri Lanka and Eastern Himalaya/Indo-Burma where the political and other situations resemble that of India.

Actual Progress Toward Long-term Impacts at Completion:

1. An overview of the existing policies on freshwater biodiversity conservation in India compiled.
2. Draft policies on inclusion of freshwater fishes in Wildlife Protection Act, and effectiveness of existing protected areas on freshwater fish and reptiles developed.
3. A prioritizing method for inclusion of freshwater fish species on the Wildlife Protection Act developed.
4. State specific data on freshwater systems sent to the relevant officials
5. Data provided to forest officials and encouraged to add freshwater data into management plans.

Planned Short-term Impacts - 1 to 3 years:

1. Establish a working network of freshwater stakeholders at the state and central governments.
2. Analyze gaps in existing protected area network for freshwater fish taxa.
3. Establish one protected area and one non-protected area as case studies for freshwater/reptile conservation action.

Actual Progress Toward Short-term Impacts at Completion:

1. A network of stakeholders and policy makers in the Western Ghats states and central has been compiled. This network includes the Ministry of Environment, Forests & Climate Change (MoEFCC), National Biodiversity Authority, Department of Fisheries, Marine Products Export Development Authority, National fisheries institutes and state forest department and biodiversity boards and local communities and stakeholders and other NGOs.

2. Gaps in the existing protected area network have been identified for threatened freshwater fish and reptiles by analyzing the distribution ranges overlaid with protected area layers.

3. Analysis of freshwater fishes in trade and the Green Certificate proposed by the Marine Products Export Development Authority (MPEDA) of the Ministry of Commerce indicates several threatened species promoted for exports from wild harvests; some of the species with highly restricted ranges and some from within protected areas.

4. Suggested additions to the management plan of one protected area (Periyar Tiger Reserve) and to the working plan of one non-protected area (Nelliampathy Hills) in Kerala on freshwater fishes as a taxonomic group representing freshwater biodiversity. The protected area identified for freshwater fish conservation in the Western Ghats is the Periyar Tiger Reserve with its three single location endemic species found only within the Periyar Lake and Stream System. Informal interactions with local communities informed of the problem of the invasive African Catfish *Clarias gariepinus* and the threat faced by the native species. PTR has a detailed management plan with a list of freshwater fishes. Additions to this management plan including research of aquatic biodiversity and possible management initiatives have been suggested/proposed.

Please provide the following information where relevant:

Hectares Protected: Not applicable
Species Conserved: Not applicable
Corridors Created: Not applicable

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

Challenges:

1. Frequent changes in taxonomy owing to new surveys and molecular studies for freshwater fish.
2. Lack of communication between the different ministries involved with the management and use of fresh waters and freshwater biodiversity.
3. Constant transfer of policy makers and officials.
4. No freshwater fish conservation organization within the Indian Council of Agriculture Research, Department of fisheries, Ministry of Environment, Forests and Climate Change.

Success stories:

1. A first-of-its-kind decision tree for conservation of freshwater fish and possible inclusion within the Wildlife Protection Act.
2. Analyses of the protected area effectiveness for freshwater fish and reptiles in the Western Ghats.
3. Development of a board game as an innovative tool to popularize the policy scenario concerning freshwater fish in India.
4. Exchange of information and findings on Indian freshwater fish policies with policy makers, scientists and conservationists from different countries at the COP 11 at Hyderabad and at the IUCN Conservation Breeding Specialist Group annual meeting in Delhi.
5. Use of CMS Vatavaran as a platform to highlight threats and promote freshwater fish conservation.
6. Meetings conducted by ATREE on National Ramsar sites and Mahseer Trust on anglers as stakeholders, used as an avenues to discuss and exchange information.
7. Leveraging from other projects on freshwater fish AZE project to gather data on community perceptions towards native and exotic freshwater fish.

Were there any unexpected impacts (positive or negative)?

The Reptile assessment results got published with unexpected delay and hence we had to wait for a long time to get the final results for inclusion in the resource materials. However, it did not affect the components of the project.

Project Components

Project Components*: Please report on results by project component. Reporting should reference specific products/deliverables from the approved project design and other relevant information.*

Component 1 Planned:

A working relationship with policy makers at the central and state governments

Component 1 Actual at Completion:

Personal meetings, telephonic conversations and email communications were undertaken throughout the project period. Relevant officials in the MoEFCC and national institutes involved with working on freshwater systems were identified.

State forest department and biodiversity board officials were contacted to understand the management of freshwater systems. Freshwater biodiversity information pertaining to the particular state was shared and exchanged.

A list of central and state policy makers from the fishery, forest, minor forest produce, imports/exports and other related departments who have a stake in reptile and freshwater taxa utilization and/or conservation has been compiled.

The records of meetings with the policy makers have been documented.

Component 2 Planned:

Development of a policy framework and strategies for linking the IUCN Red List assessments to the Indian Wildlife (Protection) Act in partnership with the Wildlife Protection Society of India, and selected reptile and freshwater experts.

Component 2 Actual at Completion:

A preliminary meeting with subject experts was held to develop parameter for prioritizing species to propose inclusion in the Wildlife Protection Act. A set of values were defined (Socio-economic, aesthetic, use, livelihood, commerce) and species were checked for these values and prioritized accordingly. Mammal species were used to initially test this method as more information is available for this group and it is well represented in the Wildlife Protection Act. Also, this helped find out if there is any method behind the listing of species in specific schedules.

Freshwater fish, on the other hand, require a different strategy with a little more rigour as they have high use value at multiple levels ranging from local consumption to export for ornamental trade. As a follow up, a flow chart has been developed to run species through it and identify freshwater fish that may be listed in the WPA.

Our informal interactions with local communities inform us that most local communities prefer native freshwater fish. Some exotic fish that have been introduced more than two decades ago are considered a part of native fish fauna by the communities, for e.g., Tilapia (*Orechromis mossambicus*). Whereas, recent invasive species such as the African Catfish *Clarias gariepinus* are not preferred and do not have demand in the market. A report on general community perception gathered through informal interactions and secondary data collection with a special case study on Periyar Tiger Reserve is compiled.

Component 3 Planned:

Current effectiveness of protected area networks in the Western Ghats at conserving globally threatened reptile and freshwater taxa evaluated through analysis of the results of the recent Red List Assessments

Component 3 Actual at Completion:

The distribution ranges of threatened freshwater fishes of the Western Ghats were estimated based on the published literature and personal observations within different hydrobasins. This was overlaid with the protected are coverage to understand the extent of protection for each species. The analyses indicates that some threatened species found within protected areas are being promoted by Marine Products Export Development Authority (MPEDA), which is illegal as per the Wildlife Protection Act. In addition to this, the terrestrial protection mechanism is not necessarily working out for freshwater biodiversity conservation.

The protected area effectiveness of freshwater fish of the Western Ghats has been successfully analyzed and documented to inform further action and propose better protection to the central government.

A similar assessment was conducted for reptiles found in the Western Ghats and interestingly; it informed that not a single reptile species is completely protected. In fact, only one threatened species has over 50% distribution within a protected area. One Critically Endangered species is found completely outside of the protected area coverage. In addition to this, the fact that many of the reptiles species are assessed as Data Deficient suggests the likelihood for change based on more research. And even within protected areas, reptiles are overlooked many times and become victims of road-kills as roads connecting different cities crisscross most of the protected areas in India.

Report on the current effectiveness of Western Ghats protected area networks with regard to conservation of globally threatened reptiles has been submitted along with this report.

Component 4 Planned:

Advocacy and outreach conducted with targeted policy makers in the five Western Ghats states.

Component 4 Actual at Completion:

Periyar Tiger Reserve (PTR) was selected as the one protected area cause it houses three Alliance for Zero Extinction freshwater fish species and has recently been recognized as a freshwater Key Biodiversity Area; it has a strong fishing community with whom the management has been working closely. Among the threats plaguing PTR's native freshwater fishes, invasive fish are the biggest threat. We collaborated with another CEPF grantee and together conducted a pilot exercise for removal of the invasive African Catfish. PTR's management plan is very detailed and has clearly demarcated sections. We have submitted information and initiatives to be added to specific chapters where we could supply relevant data to the state forest department and the Deputy Director of PTR.

Nelliampathys was selected as the non-protected area rich in freshwater biodiversity since two of the key biodiversity areas fall within this region. But the region is not protected and has many estates and plantations. This in turn has lead to pesticide pollution and our surveys recorded individuals with distorted fins and pustules. Effective management strategies have been suggested to be included into the working plan of the region based on previous studies, the Red List Assessment report and the local stakeholder network.

In addition to this targeted exercise that was used as a case study to reach out to policy makers in the state, education material produced in another CEPF funded project to WILD on freshwater conservation were distributed to policy makers and others either personally or by post in all of the Western Ghats states.

Component 5 Planned:

Advocacy and outreach conducted with targeted policy makers at the central level.

Component 5 Actual at Completion:

Much of this was conducted through direct meetings with various officials from different ministries and their departments including the MoEFCC (several departments including wildlife trade, soil and conservation, NBA), Ministry of Health, Ministry of Agriculture (Department of Fisheries, ICAR), Ministry of Commerce (MPEDA), among others.

In addition, we used the CMS Vatavaran festival on wildlife films as a medium to disseminate freshwater conservation issues in Delhi where several officials from ministries visited.

Were any components unrealized? If so, how has this affected the overall impact of the project?

Almost all components of the project were carried out albeit with reduced effort due to the difference in the amounts requested and granted. One major component that was missed out was that of a formal proposal to be submitted to the Ministry of Environment and Forests, for establishment of dedicated fund(s) for threatened taxa and habitat conservation. This was however brought up in the initial meetings, but not followed through.

The project has not been affected in any way as this project has leveraged other sources and opportunities to reach its goals. It has also provided a platform for long-term commitment and follow up on freshwater conservation policies by ZOO.

Please describe and submit (electronically if possible) any tools, products, or methodologies that resulted from this project or contributed to the results.

This Report is accompanied by a Technical Report with activities and tools, products and methodologies resulting from the project. The Technical Report has the following contents:

Policy Briefs on the above topics are in preparation as more comments are expected from policy makers regarding the methodology used in prioritizing fishes for inclusion in the Wildlife Protection Act, and there are some unresolved issues in taxonomy of fishes and reptiles holding back the PA effectiveness, which we hope will be resolved soon. After the publication of scientific papers on the PA effectiveness, Green Certificate and trade issues, policy briefs on the topics will be published and distributed.

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.

1. Policy change is not an overnight effort. It requires a long-term sustained effort with constant follow up with policy makers, and patience to re-initiate and follow up with new transfers.

2. With the ministries not communicating with one another, concerted efforts in bringing out an overarching policy is more time consuming and expensive.

3. As an NGO with a national reach and recognition, ZOO has had the advantage of networking with and being encouraged by different ministries to coordinate between government agencies to bring about a change in freshwater conservation.

4. A separate long-term funding for this project is needed to achieve all of the above points.

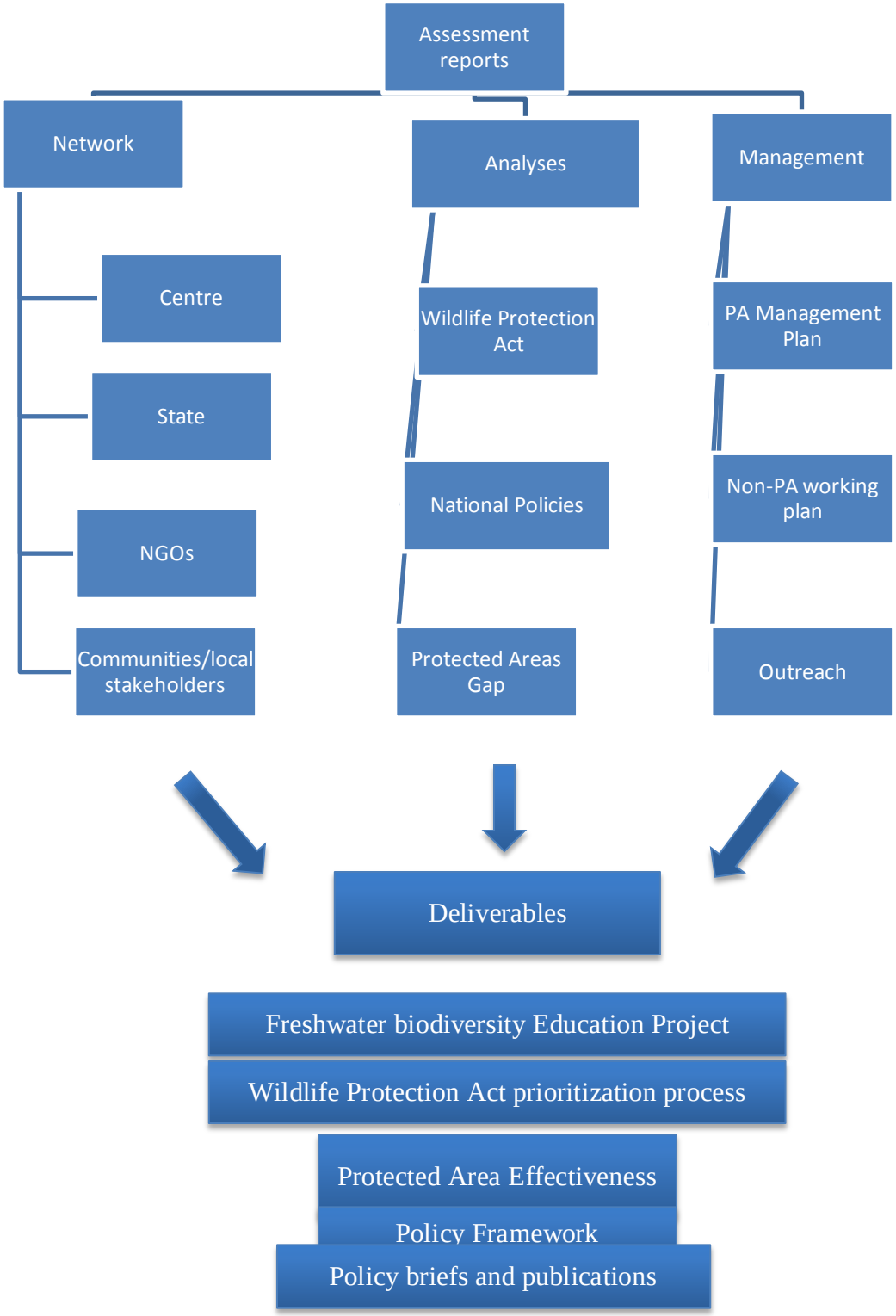
Project Implementation: (aspects of the project execution that contributed to its success/shortcomings)

The strong network and collaboration of Zoo Outreach Organization with individual subject experts and NGOs in addition to the prior experience in working on policy issues was of utmost value and contributed immensely to project implementation.

Other lessons learned relevant to conservation community

Policy interventions or changes in India pertaining to wildlife conservation are dependent on many use values and not on the IUCN Red List biological and conservation value alone. Freshwater biodiversity that have been “taken for granted” since time immemorial have very many stakeholders and policy makers and all them come from very different backgrounds. There is a need to understand how to provide information to policy makers that is not too scientific as this may not be the best way of presenting research findings. Lastly, policy interventions take time just like working with communities and one needs to follow up on regular intervals and keep abreast with the changes taking place at political, developmental and conservation scenarios to be ready for the right moment to strike.

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



Additional Funding

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 the CEPF investment in this project.

Donor	Type of Funding*	Amount	Notes
None			

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

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.)*

Sustainability/Replicability

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

1. The Wildlife Protection Act species prioritization process can be replicated for other groups/species with a few minor changes depending on the values involved.
2. Implementation of systematic conservation of high priority freshwater species can be initiated based on the baseline information on protected area effectiveness provided by this project

Summarize any unplanned sustainability or replicability achieved.

Not applicable.

Safeguard Policy Assessment

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

Not applicable.

Additional Comments/Recommendations

Although no additional funding was sought for this project, other ongoing projects at ZOO and WILD were leveraged for pursuing actions, such as trips to Delhi on other projects (e.g., Himalayan Langur Project, CBD, CMS Vatavaran, Ministry committee meetings, personal visits). Based on the results of this project further funding will be sought to pursue all follow-up actions.

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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*****If your grant has an end date other than JUNE 30, please complete the tables on the following pages*****

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 July 1, 2013 to May 30, 2014. (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: