CEPF SMALL GRANT FINAL PROJECT COMPLETION REPORT

Organization Legal Name:	-
Project Title:	Status of freshwater fishes in the Kerala region of Western Ghats Hotspot: determining distribution, abundance and threats to data deficient species from ten major river systems.
Date of Report:	31st January 2011
Report Author and Contact Information	Rajeev Raghavan, Conservation Research Group (CRG), St. Albert's College, Kochi, Kerala, India rajeevraq@hotmail.com www.crgkerala.org/rajeev.htm

CEPF Region: Western Ghats

Strategic Direction: Strategic direction 2 of the CEPF Ecosystem Profile 'Improve the conservation of globally threatened species through systematic conservation planning and action' and 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

Grant Amount: $ 16,995 (Sixteen Thousand Nine Hundred Ninety-five only)
Project Dates: 1st September 2009 – 30th November 2010 (extension sought and approved till December 31st 2010)

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

1. ***International Union for Conservation of Nature (IUCN) – Freshwater Biodiversity Unit, Cambridge*** – Species level data generated from this small grant project has been submitted to the IUCN for their on going Freshwater Biodiversity Assessments in the Western Ghats. The data generated on 83 freshwater fish species of the Western Ghats were directly used for updating the Species Information System (SIS) of the IUCN and will be made available (open access) on the IUCN Red List Website (www.iucnredlist.com) from mid 2011.

2**.** ***Conservation Research Group (CRG), St. Albert's College, Kochi*** **- CRG** has been involved in the project as a major partner having contributed to all stages from design to implementation and analysis of data. CRG has supported the project by providing additional manpower during field surveys, equipments and laboratory facilities, office space and computing facilities.

Conservation Impacts

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

The project has generated baseline information on the status of 83 species of freshwater fish which were hitherto poorly known. The information generated included those on taxonomy, micro-level distribution, threats, livelihood values and conservation status. The project has played a big role in the on-going IUCN

Western Ghats freshwater biodiversity assessments, by providing new data on freshwater fish species (35% of the species covered by the IUCN in the entire Western Ghats Hotspot) of this region. The information has contributed to the Hotspot's Ecosystem Profile by inclusion of data on lesser known taxa/species (freshwater fish) in its conservation outcomes. Future conservation investments in the region can therefore focus on species and sites that have been identified through this project as in critical need of interventions.

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

Please provide the following information where relevant:

Hectares Protected: NIL

Species Conserved: Baseline data was generated, to inform conservation action for 83 species of freshwater fishes (See Appendix 1) of Kerala region of the Western Ghats falling under the Mysore Nilgiri, Anamalai and Periyar Agasthyamalai corridors.

Corridors Created: NIL

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

The short term and long term objectives of the project were to 1) enhance the Western Ghats ecosystem profile by including data on freshwater fishes, which were otherwise poorly studied taxa; 2) utilize this information to develop and implement species and site level conservation plans and 3) to support the IUCN in their Freshwater Biodiversity Assessment in the Western Ghats, and 4) increase the knowledge on these species by publishing data in peer-reviewered publications (see Appendix 2).

The project was successful in the fact that it could directly contribute to each of these three objectives by generating species and site level information on 83 species of freshwater fish from 10 rivers of Kerala (southern Western Ghats) (see Appendix 3) which falls into three CEPF corridors and many CEPF priority sites outside the existing Protected Area network.

Were there any unexpected impacts (positive or negative)?

None

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.

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

Selection of only 10 rivers which had the most number of data deficient and poorly known endemic species of freshwater fish as against doing a comprehensive survey in all the 44 rivers of the state (success)

This project could have been envisaged for 2 years instead of 1 year as we faced severe difficulties in carrying out field work which were planned during the regional monsoon months thereby imposing time restrictions on the subsequent surveys that were planned in the post monsoon months (shortcoming). This also had an impact on the budget as money expended under certain sub heads including professional charges and field expenses were higher than what was initially approved.

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

Selection of only 10 rivers which had the most number of data deficient and poorly known endemic species of freshwater fish as against doing a comprehensive survey in all the 44 rivers of the state (success)

This project could have been envisaged for 2 years instead of 1 year as we faced severe difficulties in carrying out field work which were planned during the regional monsoon months thereby imposing time restrictions on the subsequent surveys that were planned in the post monsoon months (shortcoming). This also had an impact on the budget as money expended under certain sub heads including professional charges and field expenses were higher than what was initially approved.

Other lessons learned relevant to conservation community:

There is an urgent need to undertake a thorough taxonomic revision of freshwater fish species in the Western Ghats as much of our knowledge on the taxonomy and identification of fish species of this region is a century old and contain many issues which will in the long term affect conservation programs.

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
Conservation Research Group, St. Albert's College, Kochi, India	In Kind Contributions		Office and laboratory facilities, computing desks, library, equipments, additional manpower for field surveys.

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.

A follow up project to conserve the most critical freshwater fish habitats in the Southern Western Ghats has been planned and a proposal for a medium grant for the same has been submitted to the CEPF –Western Ghats 3rd call. In addition, proposals are being prepared for other funding agencies including the Mohammed Bin Zayed Conservation Grant and the Rufford Small Grants for projects on the conservation of critically endangered freshwater fishes of Western Ghats.

Summarize any unplanned sustainability or replicability achieved.

None

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

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, 2007 to June 30, 2008. (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

I would like to thank CEPF and ATREE for providing this grant and the RIT at ATREE for their excellent coordination and support throughout the grant making and project implementation stage. IUCN Freshwater Biodiversity Unit at Cambridge and the Zoo Outreach Organization, Coimbatore, have been great collaborators in the project. I am grateful to the Kerala State Forest and Wildlife Department for permits to work in protected areas. Conservation Research Group at St. Albert's College, have played the central organizational role in this project having provided all necessary logistical support. It was truly a memorable experience working with CEPF-ATREE Western Ghats Team and I look forward to future associations.

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:

Name: Rajeev Raghavan
Organization name: Conservation Research Group (CRG), St. Albert's College
Mailing address: Banerji Road, Ernakulam, Kochi 682 018, Kerala, India
Tel: +91-484-2394225 – ext 244
Fax: +91 -484 -2391245
E-mail: rajeevraq@hotmail.com

Appendix 1. Contributions to the IUCN Freshwater Biodiversity Assessments in the Western Ghats

Species data generated from the CEPF-ATREE small grant project on 'data deficient freshwater fishes of Kerala part of Western Ghats' were compiled and added to the IUCN Species Information Service (SIS) as part of the on going IUCN Freshwater Biodiversity Assessments in the Western Ghats.

The status of the following species was assessed by me, and a colleague from my organization (Mr. Anvar Ali). The assessments were later evaluated during the IUCN Freshwater Fish Evaluation Workshop held at Coimbatore in October 2010 and is now under going peer review by IUCN.

1. *Batasio sharavatiensis*
2. *Mystus canarensis*
3. *Homaloptera menoni*
4. *Homaloptera pillai*
5. *Homaloptera santhamparaiensis*
6. *Indoreonectes evezardi*
7. *Mesonoemacheilus remadevii*
8. *Nemacheilus kodaguensis*
9. *Nemacheilus monilis*
10. *Nemacheilus periyarensis*
11. *Nemachilichthys shimogensis*
12. *Schistura dayi*
13. *Schistura nagodensis*
14. *Travancoria jonesi*
15. *Barbodes carnaticus*
16. *Barilius canarensis*
17. *Devario fraseri*
18. *Garra ceylonensis*
19. *Garra periyarensis*
20. *Garra surendranathanii*
21. *Horalabiosa joshuai*
22. *Hypselobarbus dobsoni*
23. *Hypselobarbus kolus*
24. *Hypselobarbus micropogon*
25. *Laubuca dadiburjori*

26. *Lepidopygopsis typus*
27. *Osteobrama bakeri*
28. *Osteobrama cotio peninsularis*
29. *Osteochilus nashii*
30. *Puntius chalakkudiensis*
31. *Puntius deccanensis*
32. *Puntius pookodensis*
33. *Puntius sahyadriensis*
34. *Puntius pookodensis*
35. *Tor malabaricus*
36. *Bunaka gyrinoides*
37. *Pterocryptis wynaadensis*
38. *Glyptothorax kudremukhensis*
39. *Glyptothorax lonah*
40. *Monopterus digressus*
41. *Monopterus eapeni*
42. *Monopterus roseni*
43. *Carinatetraodon imitator*
44. *Aplocheilus dayi*
45. *Hemibagrus punctatus*
46. *Horabagrus brachysoma*
47. *Horabagrus nigricollaris*
48. *Mystus occulatus*
49. *Balitora mysorensis*
50. *Homaloptera montana*
51. *Mesonoemacheilus pamabarensis*
52. *Nemacheilus anguilla*
53. *Nemacheilus guentheri*
54. *Nemacheilus keralensis*
55. *Nemacheilus menoni*
56. *Nemacheilus mooreh*
57. *Nemacheilus semiarmatus*
58. *Schistura sharavathiensis*
59. *Travancoria elongata*
60. *Horaglanis alikunhi*
61. *Dayella malabarica*
62. *Pangio bashai*

63. *Pangio goaensis*
64. *Crossocheilus periyarensis*
65. *Esomus thermoicos*
66. *Garra gotyla stenorhynchus*
67. *Garra menoni*
68. *Hypselobarbus dubius*
69. *Hypselobarbus lithopidos*
70. *Hypselobarbus periyarensis*
71. *Labeo dussumieri*
72. *Laubuca fasciata*
73. *Osteobrama neilii*
74. *Osteochilus longidorsalis*
75. *Puntius bimaculatus*
76. *Puntius muvattupuzhaensis*
77. *Puntius ophicephalus*
78. *Salmophasia novacula*
79. *Sicyopterus griseus*
80. *Psuedotropius mitchelli*
81. *Glyptothorax anamalaiensis*
82. *Ichthyocampus carce*
83. *Puntius denisonii*

In addition, I also served as a Red List Expert/Facilitator at the Second IUCN Western Ghats Freshwater Biodiversity Evaluation Workshop at Coimbatore from 24th to 28th January 2010 where conservation status of 440 species of aquatic plants was assessed.

Appendix 2. **Manuscripts generated out of the CEPF-ATREE Small Grant- Rajeev Raghavan**

1. F. Baby, J. Tharian, A. Ali & **R**. **Raghavan.** 2010. A checklist of freshwater fishes of the New Amarambalam Reserve Forest (NARF).
Journal of Threatened Taxa **2(12):** 1330-1333.

2. F. Baby, J. Tharian, K.M. Abraham, M. Ramprasanth, A. Ali & **R**. **Raghavan**. Comparisons of length weight relationship and condition factor of the endemic stone sucker, *Garra gotyla stenorhynchus* from an east and a west flowing river in the Western Ghats Hotspot of peninsular India.
Journal of Threatened Taxa **3(6):** 1851-1855

3. Benziger, A., Philip, S., **Raghavan, R**., Anvar Ali, P., Sukumaran, M., Tharian, J., Dahanukar, N., Baby, F., Peter, R., Devi, K., Radhakrishnan, K., Haniffa, M., Britz, R., & Antunes, A. (2011). Unraveling a 146 Years Old Taxonomic Puzzle: Validation of Malabar Snakehead, Species-Status and Its Relevance for Channid Systematics and Evolution.
PLoS ONE, ***6*** **(6)** DOI: 10.1371/journal.pone.0021272

4. S. Solomon, M. Ramprasanth, F. Baby, J. Tharian, B. Pereira, A. Ali & **R**. **Raghavan.** Reproductive biology of *Puntius denisonii* (Day), an endemic and threatened freshwater aquarium fish of the Western Ghats and its implications for current and future conservation.
Journal of Threatened Taxa. **Accepted pending minor revisions**

5. F. Baby, J. Tharian, A. Ali & **R**. **Raghavan**. A checklist of the fishes of Achankovil forests with a note on the range extension of an endemic cyprinid, *Puntius chalakkudiensis*.
Journal of Threatened Taxa **Revised Manuscript submitted**

6. A. Ali, N. Dahanukar, F. Baby, J. Tharian, S. Philip & R. Raghavan. The identity of *Garra stenorynchus* (Jerdon, 1849) (Cyprinidae: Labeoninae) with a designation of a neotype**. In Preparation.**

*****Additional 12 manuscripts are under various stages of preparation and will be submitted to journals including *Journal of Threatened Taxa*; *Biodiversity and Conservation*; *Journal of Fish Biology*; and *Current Science*.

Appendix 3. Study locations

No	River System	Protected Areas	Other CEPF Sites	CEPF Corridor
1	Chandragiri			Mysore Nilgiri Corridor
2	Kabini	Wayanad WLS, Muthanga WLS		Mysore Nilgiri Corridor
3	Chaliyar		Old Amarambalam RF, New Amarambalam RF, Nilambur North	Mysore Nilgiri Corridor
4	Bharatapuzha	Silent Valley NP	Nemmara FD	Anamalai
5	Chalakudy	Parambikulam WLS	Vazachal FD	Anamalai
6	Periyar	Idukki WLS, Thattekad Bird Sanctuary, Periyar Tiger Reserve	Malayattur FD	Periyar Agasthyamalai
7	Pampa	Periyar Tiger Reserve		Periyar Agasthyamalai
8	Pambar	Chinnar WLS		Periyar Agasthyamalai
9	Achenkovil		Achankovil FD, Ranni FD	Periyar Agasthyamalai
10	Neyyar	Neyyar WLS		