

Mahseer's as flagships for freshwater fish conservation in Western Ghats: participatory assessment of stock status and harvest levels in Chalakudy and Periyar River(s) of Kerala, India



Interim Report

December 2009



Executive Summary

Conservation of freshwater fish resources depends on stewardship and knowledge. This project aims to conserve the threatened endemic Mahseer species of Chalakudy and Periyar rivers in the Western Ghats biodiversity hotspot in Kerala, India, by collecting population dynamics and harvest data to inform management decisions. Working with local fishers, the project will raise awareness about solutions to over-fishing and provide baseline data for the development of participatory harvest management. The long-lived, slow growing Mahseer are much relished as food, popular as aquarium pets and renowned for sport fishing, and the project aims to promote them as flagships for freshwater fish conservation.

The Rufford Mahseer Project

Involving stakeholders in decisions affecting the fishery is an essential part of a successful management plan. The proposed project aims to build up a database on Mahseer stocks in Kerala by using data generated from field surveys carried out in association with local fishers to create a model for sustainable fishery management.

The project will generate a comprehensive database on stock structure, population dynamics, life history and exploitation patterns of Mahseer in two of the most important fishing regions in Kerala. Population information will allow calculation of Maximum Sustainable Yield (MSY) to form the basis for fishery regulations. Life history information on spawning migrations, reproductive biology and larval life cycle will allow development of in-situ conservation such as protected areas and closed seasons. As the project is the first attempt to look at the 'life history-population-exploitation' relationship of Mahseer in Kerala, our results would be the basis for any future decision making. Information generated from this study would also be useful inputs for international agencies including IUCN for their global freshwater fish threat assessment that is yet to be initiated in Western Ghats. Local communities will be involved at all stages of the project from data collection to decision making. All results will be discussed with the concerned stakeholders and their opinions will be incorporated into the management plans to be developed for implementation by government.

Major news since the project started

Deccan Mahseer (*Tor khudree*) is an ENDANGERED species

The latest version of the IUCN Red List of Threatened Species (IUCN 2009) has listed *Tor khudree* as **ENDANGERED** because of a 60-70% decline in the native wild population during the past three generations (20 years), as a result of exploitation and habitat degradation. This was the first time that *Tor khudree* was placed in the IUCN Red List.



For more details

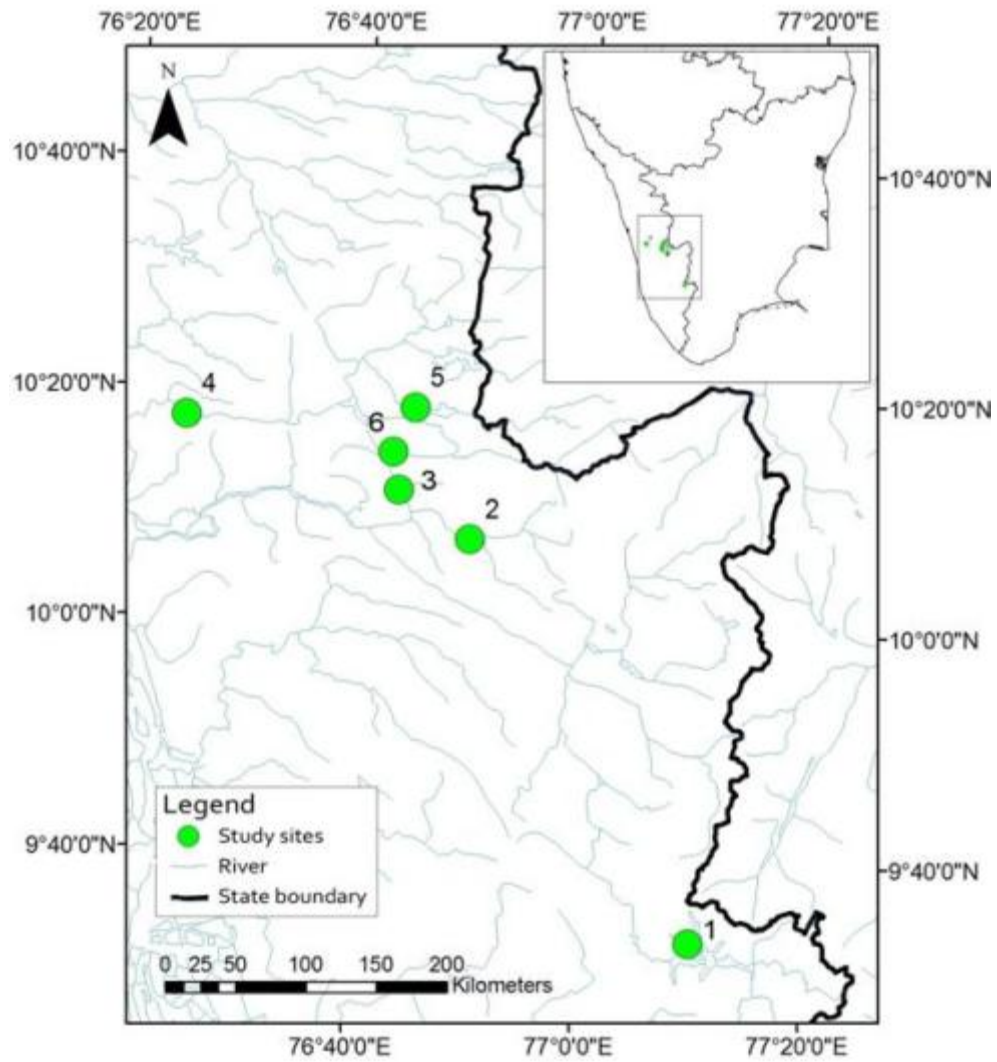
<http://www.iucnredlist.org/apps/redlist/details/169609/0>

The IUCN Freshwater Biodiversity Program has been interested in the Rufford Mahseer project since its inception and had even provided a letter of support. The Rufford project team leader is also one of the main in-country (India) collaborators for the upcoming IUCN Freshwater Biodiversity Assessments in the Western Ghats. The results of the Rufford project on Mahseer will be shared among the IUCN experts during a workshop to be held in India in January 2010, and relevant information will be passed on for updating the Red List.

For the upcoming Freshwater Biodiversity Assessments in the Western Ghats please see

http://cms.iucn.org/about/work/programmes/species/our_work/about_freshwater/what_we_do_freshwater/western_ghats/

Participatory Assessment of Mahseer stocks in Kerala - Study sites



Major activities

1. A series of **Informal workshops** were conducted in the first and second week of November 2008 with fishers in the six fishing villages (Map on Page 3) to appraise them regarding the objectives and relevance of the study, and to gather fisher knowledge on Mahseer, areas of occurrence, fishery seasons; and to recognize the importance of sustainability. Various sites were selected from within the six villages from where weekly data will be collected for a year.



Workshop for Local fishers in River

2. During the third and fourth week of November 2008, selected fishers in the study sites were provided **training in simple data collection** relevant to fish population dynamics and life history studies. This included teaching them to measure length and weight of the fish samples, dissecting the fish and preserving the fish for scientific research.



Left: Training in Data collection for local fishers. Right: Participatory Rural Appraisal.

3. Weekly trips are being undertaken from December 2008 to the six fishing villages and the various study sites selected within the villages to collect measures of body samples and representative individuals for studying life history traits in the laboratory. The fishers who were provided training in data collection have shown remarkable interest in associating with the study and have supported the project team by providing data on length and weight of sub samples within the exploited population as well as by providing the team with well preserved specimens of Mahseer from their fishery. The fishers have also provided data on fluctuations in catches as well as shared any problems associated with the fishery since the project began.



Mahseer fishers in River Chalakudy



Local fisher in Chalakudy



Gut of a fully grown Mahseer, *Tor khudree*

Way ahead

The project will end in January 2010. The data on population dynamics and life history will be analyzed and a draft report formulated. This will be then circulated among relevant stakeholders and a final workshop will be conducted to develop management plans for the Deccan Mahseer in Kerala with inputs from fishers, researchers, local NGO's and government. The data arising out from the study will also be submitted to peer reviewed international journals in Fisheries and Conservation.

