

Conserving Denise & Friends



Background

Freshwater ecosystems require urgent attention owing to multiple threats such as habitat destruction, overexploitation, pollution and invasive species. With this growing concern, Zoo Outreach Organisation set out to conserve subterranean fish, and unsustainable harvest of threatened endemic species from the Western Ghats (Red-line Torpedo Barb *Sahyadria denisonii* and associated species). The two components of the project are carried out under the LivelyWaters! programme with the subterranean component led by Dr. Rajeev Raghavan and the Denise & Friends component led by Dr Sanjay Molur.



Sahyadria denisonii or Denise. © Koshik V. Rao

Activities conducted during the reporting period 1 April 2025 – 31 March 2026

- Literature review, perception surveys and species presence/absence surveys were conducted at different sites across Kerala and southern Karnataka.
- Habitat assessments during surveys (habitat types - riffles, cascades, eddies, pools, forests, villages, fields, riverine forests with *Terminalia arjuna*, *Ochlandra travancorica*, *Barringtonia acutangula*, *Homonium riparia*, tussock grasses, deeper in the moist forest giants like *Elaeocarpus tuberculatus*, *Vateria indica*, *Syzygium bourdillonii*, *Semecarpus travancoricus*, *Syzygium travancoricum*, *Myristica malabarica*, etc.)
- Assessing trade status and economics through community surveys
- Assessing threats such as sandmining, pollution (run off from pesticides, plastic),

invasive species, unsustainable fishing and destructive fishing practices, aquarium trade through field surveys

- Developed dual language education materials like a manual and education packets using the data collected to reach the public to activate participation in protecting the species.

Key achievements and outcomes

- These surveys provided clarity on stakeholder understanding and connection towards freshwater ecosystems and threatened species.
- Education materials in English and Malayalam (local language) that is based research, collated data, pedagogy including games and activities to teach using experiential learning techniques.



Exploring the riverbanks of Chaliyar with Local fishermen. © Koshik V. Rao

Challenges faced

Accessibility of the streams to study presence of *S. denisonii* owing to erratic monsoon, sand mining, destructive fishing practices, and other developmental projects.

Participant numbers and locations

Total participants-152 villagers from 59 locations in 56 villages in and around the banks of Iruvanjippuzha (Chalyar River), Periyar River, Bavali River, Veni River, Kanjirappuzha (Iritty River), Valapattanam River, Payaswini/ Chandragiri River.

Key partnerships and collaborations

Partnered with experts from Kerala University of Fisheries and Ocean Studies (KUFOS), and a few local conservation enthusiasts.

Measurable outcomes

- 💧 Four publications providing key report on survey findings
- 💧 Confirming locations with presence/ absence of Red Line Torpedo Barb *Sahyadria denisonii* and other associated fish species
- 💧 Completion of initial perception and knowledge surveys to understand attitude towards Denise and the river systems, threats and possible interest towards conservation of the species/ecosystem.
- 💧 Selecting specific locations from existing network of stakeholders relevant for the workshops and outreach programs
- 💧 Preliminary mapping of threats in specific locations

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Fishes struggling for survival in polluted water of Payaswini River. © Deepak



Ghost nets disposed at the sides of the Periyar River. © Koshik V. Rao



A local family catching fish at Chandragiri River. © Koshik V. Rao



Children fishing at the sides of Periyar River. © Koshik V. Rao



Fishermen catching fish using nets in Periyar River.
© Koshik V. Rao



Fishermen at Reservoir of Pazhassi Dam of Iritty River.
© Koshik V. Rao



Fishes the fishermen caught at Reservoir of Pazhassi Dam of Iritty River. © Koshik V. Rao



Rubber Latex factory effluent at sides of Payaswini River.
© Koshik V. Rao

Future plans/next steps

- 💧 Workshops for community elders, educators, and school teachers using the developed education materials such as the teacher training manual and education packets.
- 💧 Facilitation workshops focused on setting up behaviour change mechanisms towards sustainable harvest.
- 💧 Build local stewards to champion the cause of sustainable harvest to ensure species conservation and livelihood security.



Observing the Riverbanks of Periyar for Denise. © Sidharthan



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