Fading Fins, Flowing Hopes: A Perception Study on Denison's Barb and its Riverine System - Part 4

After completing our perception studies along four major rivers- Iruvazhanjippuzha, Payaswini, Valapattanam, and Iritty, we decided to explore another important river in Kerala, the Periyar River. Stretching about 244 km (152 mi), the Periyar is the longest river in the state. It originates from Chokkampatti Mala, a peak on the southern boundary of the Periyar Tiger Reserve. The river is of immense importance to Kerala's economy, as it generates a major share of the state's electricity through the Idukki Dam and serves as a vital source of water for agriculture, industry, and domestic use. In fact, nearly 25% of Kerala's industries are located along its banks, which is why the river is often called the 'Lifeline of Kerala'.

We began our journey on 20 July 2025, traveling to Aluva and staying at Neeleeswaram, close to the river. An earlier pilot study had documented the presence of *Sahyadria denisonii* (Miss Kerala) from this stretch up to Pooyamkutty. However, we modified our study area from Neeleeswaram to Pambla, where the Lower Periyar Dam is located. This adjustment was necessary because Pooyamkutty lies within the Thattekad Bird Sanctuary under the Forest Department, and obtaining permission for surveys there is a lengthy process.

On the first day, we conducted perception studies along the stretch from the Lower Periyar Dam at Pambla to Inchathotty. Here, one side of the river is partially inhabited while the other remains forested. Most locals we spoke to had either never seen the fish or had only observed it 2–3 years ago, usually in small pools or streams during summer. Fishing in this area is mainly for consumption, using thandadi nets and hooks. Harmful practices such as electrofishing, poisoning, and dynamite fishing were said to be rare but still occurring secretly, despite Forest Department restrictions. Outsiders were often blamed for these illegal activities, especially at night, as locals avoid venturing out due to frequent elephant movement. Residents also mentioned significant changes in the river after the 2018 floods and landslides, which widened the river and forced many people to migrate, though they still return seasonally for farming. Locals also said the Fisheries Department regularly releases hatchlings at the dam under a government scheme, but these are often caught downstream.

On the second day, we continued our study near Inchathotty Bridge, where we met a fisherman who recognised the fish as "kaniyan paral" or "chenkaniyan" in the local language. He reported

occasional accidental catches but no targeted fishing of this species. He also noted that some fish appeared briefly after the 2018 floods and later disappeared, along with several local species. Others observed that sand deposition had altered the river's structure, reducing the number of deep pools. A group of fishermen we met confirmed that Miss Kerala was occasionally caught below the Boothathankettu Dam but never in abundance. They mentioned that a fisheries officer had instructed locals to report any catches of this fish. At Boothathankettu, locals said fishing was uncommon because of forest department restrictions near the dam. However, they also highlighted effluent discharge from nearby quarries, which has impacted fish populations. In the past, dynamite fishing was common here, but now mainly nets and hooks are used. Some also noted that the local panchayat had released Miss Kerala into the river. In this region, the fish is called "Chenkaniyatti".

On the third day, we surveyed the Kodanad area and spoke to a fisherman who had just seen the species that morning while going fishing in the river. He recalled that earlier, outsiders used to pay us well to catch this fish, but now they don't come, thinking the demand has gone down. He also reported shifts in fish communities over time, including the presence of large non-native species such as Rohu (20–30 kg), which likely escaped from farms during floods. Others mentioned damage and loss of the river's side

walls. A local stated the presence of a river protection group in the area as part of an ecotourism programme. They have a checkpost in the road which leads to the river, and they won't allow illegal activities such as dynamite fishing and sand mining in the river.

On the fourth day, we visited the Kaladi–Neeleeswaram stretch. Locals here reported that outsiders often fish during summer, setting nets overnight. Fishing among locals was said to be uncommon. Two fishermen we met stated that when they caught it for the first time, they had a discussion that it might have escaped from some aquarium, dams or fish breeding centres, as these fish were not seen earlier before the 2018 floods in this place by them. He also stated the presence of this fish now from Mekkalady to Neeleeswaram, as it is the stretch

that he goes fishing. He also stated this fish is very rarely caught and only 4–5 in numbers. They also reported declining native fish populations, increasing carp, and major changes caused by sand mining. A young boy stated that he had seen this fish in the river and caught it, and kept it in the aquarium. Later, we met a person who caught the fish recently, stating his story of curiosity about fish (Miss Kerala). He stated that he recently caught it one day in the net, and he had never seen this fish before when he was actively fishing in earlier days. So, in curiosity and excitement, he removed it from the net, and eventually a crow snatched it from him and took off. He also spoke about harmful fishing practices in the past, such as using gelatin sticks that caused blasts up to 6–7m high.

These practices have since stopped due to constant monitoring by pump house operators, who report violations to the police. Locals further observed that the riverbed has changed drastically-mud and sand now dominate, while stones, pebbles, and alluvial deposits have declined or shifted, altering the river's flow.

Overall our perception study along the Periyar River revealed that the presence of Miss Kerala is highly fragmented and localised, with only a few accidental sightings or rare bycatches reported in recent years. Many locals associated the decline of fish species with the 2018 floods and landslides, which altered the river's structure, reduced deep pools, and changed patterns of sand deposition. Widespread pressures such as sand mining, effluent discharge, illegal fishing practices, and the introduction of non-native species have further impacted the river ecosystem. Although government agencies occasionally release hatchlings into the river, these efforts appear insufficient in ensuring stable populations, as most are caught downstream or fail to establish.

The study also highlighted gaps in awareness: many locals were unfamiliar with the species. However, the fish continues to hold distinct local names across regions. Conservation measures such as stricter regulation of fishing practices, continuous monitoring, habitat restoration, and awareness programs, are crucial to safeguard this species. Given its restricted and declining presence, the Periyar population of *Sahyadria denisonii* requires urgent attention if the species is to survive in its natural habitat. It's important to note that these insights are based on preliminary observations from various study areas in a location and have not yet been thematically analysed in depth.

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