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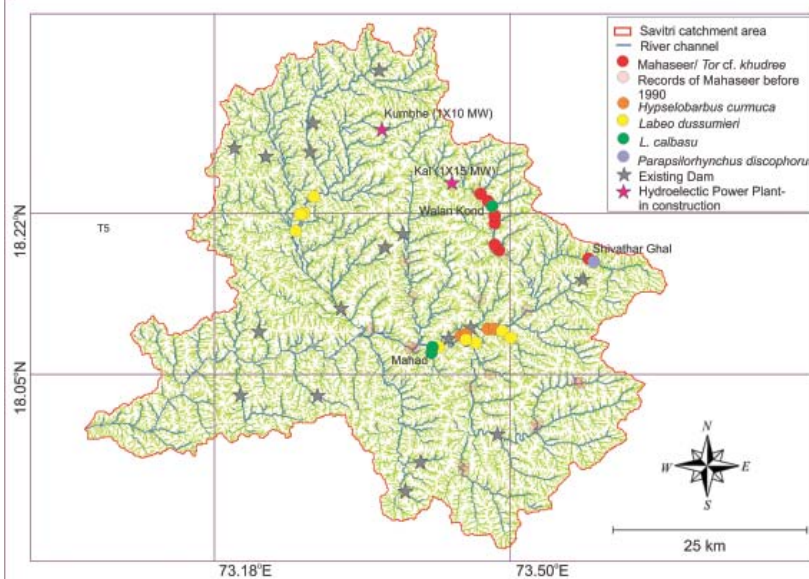


Where have all the mahseers gone?

Text: **Unmesh Katwate and Deepak Apte**

Photographs: **Unmesh Katwate**

The river Savitri is one of the five sacred rivers, or Panch Gangas, of India. This perennial river originates from the Mahabaleshwar hills in the Western Ghats (or Sahyadris) in Maharashtra, has a catchment area of 2,262 sq. km, and nourishes almost half of Raigad district. It flows rapidly westwards through the district and eventually meets the Arabian Sea at Harihareshwar. On her journey to the Arabian Sea, the river receives inflows from two major tributaries, the Kal and Gandhari.



Above: Google Earth image of Kal – A hydroelectric power project taken on December 12, 2011

Below: A map depicting the distribution of mahseer and other rare cyprinids across the Savitri river basin

Since 2009, BNHS has been documenting the freshwater fish diversity in the lesser explored areas of Raigad district and other parts of the Konkan while simultaneously working on different projects. As a part of this exercise, we started intensive surveys of the Savitri river basin with a CEPF-ATREE funded project to assess the fish fauna of Raigad district in 2013. The project aims to develop a database on the diversity and distribution of freshwater fish in the Konkan region, while building local capacity through the involvement of experts from various academic institutes, NGOs, civil society, and local fishing communities.

While going through the literature on the fish fauna of the Sahyadris, we found a report of the Deccan Mahseer *Tor khudree* from the Patalganga river by Dr. M. Arunachalam and his team in 2002. This was the only known record of the species from a west-flowing river of Maharashtra. We had been searching for this ‘king’ of Indian freshwater fish in Raigad for some time and finally found them in the Savitri river.

The mahseer (*mab*=big; *seer*=head), is prized by the angling community. Its massive strength and inherent fighting ability makes it the crown catch for anglers. There is no estimate of the number of *Tor* species found in India, mainly because

of several taxonomic ambiguities. Though mahseers contribute in a major way to inland fishery, they are also one of the most threatened and heavily exploited groups of mega fishes. Unsustainable fishery, dynamite fishing, and habitat degradation through pollution and dams are some of the major threats faced by mahseers in Indian waters.

Construction of large hydel power dams, along with small irrigation dams, has badly affected the mahseer population across the country. Building a wall across a river not only fragments the fish population but also poses a major barrier in the pathways of species that migrate or undertake long distance movements, especially for breeding. Mahseers usually prefer cool, deep, and oxygen-rich waters in the main river channel but in the breeding season, they migrate upstream to the shallows. In the northern Western Ghats, the breeding season of mahseers coincides with the onset of monsoon. Tackling the current of murky water churned up by the monsoon and other natural hurdles, they migrate to the shallow upstream river beds, and spawn in small boulder and cobble-strewn river beds. These dams become major hurdles for migratory fish species attempting to breed, and cause fragmentation of viable populations, which eventually lead to population declines and extinction.

Despite being one of the 20 mega fishes of the world and the most threatened fish group in Indian rivers, mahseers have not received legal protection in India. Most mahseer species like *T. khudree*, *T. kulkarnii*, and *T. malabaricus* are listed as Endangered globally in the IUCN Red List of Threatened Species, but none of these are included in the Indian Wildlife (Protection) Act, 1972. Some populations of mahseers in the Western Ghats are left unmolested through ‘community fish sanctuaries’ as they occur in the vicinity of Hindu temples, where fishing or killing of wildlife is taboo. At such sites,

one gets to see grand old specimens of these fishes. However, very few such refuges still exist in the Western Ghats; Karnataka has the largest number of these in the Western Ghats. They also existed at Alandi and Pandharpur along the Bhima river in Maharashtra, but rapid urban development and pollution have almost wiped out mahseers from these so-called ‘sanctuaries’ [information retrieved from Parineeta Dandekar’s article on the South Asia Network on Dams, Rivers and People (SANDRP) site: www.sandrp.wordpress.com].

The Endangered Deccan Mahseer *Tor khudree* was described from the Mula-Mutha river near Pune. Indiscriminate expansion of the city and increasing pollution has completely wiped out this species from its type locality (the type locality is the site where the species was first collected and described for science). The last wild specimen of *T. khudree* in Pune was caught in 1999. Fortunately, researchers have found other healthy populations of *T. khudree* in adjoining areas like Neera and Koyna rivers (Dr. Neelesh Dahanukar *pers. comm.*).

While surveying and documenting the fish fauna at Mahad, as part of a community involvement programme, we interacted with the local fishermen of the Katkari and Bhoi community. In our earlier surveys, we did not get any information about mahseers from the locals, which was not unexpected as this fish is not known as ‘mahseer’ in this area. However, when we showed them photographs of mahseer, surprisingly, they were familiar with it. They told us that this is one of the rare species in the Savitri river, locally known as *kbadas*. This was the first possible report of its occurrence in Raigad after 2002. Our field assistants urged us to survey and

Above: Fast-flowing perennial riffles of the Kal river supply rich, dissolved oxygen to a pool of water at *Walan kond*

Below: A shoal of mahseer at *Walan kond*





Freshwater resources are a prime source of livelihood for the *Katkari* community

fish in the upper catchment areas of Savitri, like Walan and Shivathar *ghal*, and we recorded the first mahseer from Savitri while fishing at Mangharun and Shivathar *ghal*. According to the locals of Shivathar, mahseers are rare and sacred fishes associated with a local goddess Vardayani Mata. It is here that we learnt of a large protected population of mahseers at Walan *kond*.

Walan *kond*, one of the biggest pools in the Savitri watershed, is a notable example of a ‘community fish sanctuary’ in the northern Sahyadri. It is situated on the main stream channel of the Kal river, a major tributary of Savitri. The term *kond* usually refers to a big pool in a river. Walan *kond* is popularly associated with the deity Vardayani Mata. Locals regard mahseers as the children of this goddess. The local Katkari fishing community believe that the presence of *khadas* (mahseers) not only indicates the good health of the river, but also that the sacred river has the potential to nurture humankind. We spotted around 50–60 large mahseers at Walan *kond*. Villagers have declared a complete fishing ban across the 1.5 km stretch of the river. Based on the survey till now, the population of mahseers in the Savitri basin appears to be restricted to just two small upstream tributaries at the Walan, Shivathar *ghal* and Mangharun sites.

We obtained past records of mahseers in the Savitri river through interviews with the elders of tribal communities. From these, it is clear that mahseers were well-distributed throughout the river basin before the spurt in industrial growth at Mahad and Birwadi during the early 1990s. The river is also severely impacted with a large number of existing irrigation and proposed 10–15 MW hydroelectric power dams. The complete absence of mahseers in the tributaries of the Savitri which have dams at numerous sites clearly indicates that the dams have adversely affected the distribution of this species in the river and its tributaries. Along with the mahseer, other rare fish species such as the Curmuca Barb *Hypselobarbus curmuca*, Malabar Labeo *Labeo dussumieri*, Orangefin Labeo *L. calbasu*, and Ratnagiri Minnow *Parapsilorhynchus discophorus* also seem to be affected, with discontinuous distribution across the river system.

The mahseer habitats in the upper catchment areas of the Savitri are still free



Umesh Katwate is currently working as Scientist-A at BNHS. His work deals with the conservation, taxonomy, and ecology of freshwater fishes and amphibians of the Western Ghats.

from industrial and urban pollution. However, two hydroelectric power projects, namely Kal (1x15 MW) and Kumbhe (1x10 MW) proposed by the Water Resource Department of Maharashtra are almost complete. Kal is just 7–8 km upstream from the Walan *kond* community fish sanctuary, and may pose a direct threat to it. Once operational, the excess water released from the Kal project may impact the water quality at Walan *kond* and other adjoining areas. The drastic rise and fall in water levels could alter the chemical and biological properties of the water, adversely impacting the fish population, including the mahseers of Walan *kond*. Though it is mandatory that the company owning/operating the dam must undertake an Environmental Impact Assessment (EIA) before the start of project, we have not come across any such EIA studies for the Kal and Kumbhe projects. Such cases of negligence do take place in the Western Ghats and other areas of India, as we have heard every so often!

To conclude, though it appears that community sanctuaries can provide protection to the mahseers (as long as religious sentiments persist amongst local communities), this alone cannot shield the species from the threats from dams, industrialisation and its accompanying ills, which are on the increase in the Western Ghats. There is a pressing need for involvement of government officials, researchers, and conservationists to formulate effective policies to conserve the freshwater systems of the Western Ghats (and other regions of India). Only then can we ensure that the mighty mahseer and other aquatic fauna thrive in these biodiversity hotspots that our country is blessed with. ■



Deepak Apte, Chief Operating Officer at the BNHS, is a marine ecologist and Open Water PADI diver.