

Moving to safe waters

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Mahseer conservation is a success story that has breathed new life into this endangered wonder of the aqua world. The efforts include one of the longest-running conservation initiatives in the country

POLLUTED air, depleting forest cover and drying water sources do paint a dismal picture in spite of all the rhetoric about stemming the degradation of natural resources. But in the midst of this bleak scenario, there are certain success stories that keep the hope of a better future for our planet alive. If Save Tiger has been a success in bringing the Indian tiger back from the verge of extinction then in the same league is another conservation story involving the tiger of freshwaters — the mahseer — that has given a fresh lease of life to this species in different parts of the country. Declared an endangered species by the Washington-based International Union of Conservation of Natural Resources, consistent efforts to save it have scripted a success story that is worth sharing.

Fish lovers are not strangers to the mahseer, which is among the 20 mega fish in the world that is hunted for sport and food. Also known as anglers' delight, mahseer fishing is among the top challenges for fishing enthusiasts due to the robust and swift fight the catch puts up. This longest-living freshwater fish is native to mountainous and sub-mountainous regions available at altitudes of up to 2,000 metres above sea level and is omnivorous. This 'giant' fish not only stands out due to its size but also is considered a delicacy for connoisseurs and foodies. One thing that many surely are unaware of about this species is that not long ago it was on the verge of extinction due to increased urbanisation, pollution, construction around rivers and decreasing quality of fresh water habitats.



The mahseer conservation project has been documented in a monograph and is being used by scientists involved in breeding and conservation programmes across India and in several South East Asian countries

Swimming in troubled waters

With its name derived from two Persian words 'mahi' meaning fish and 'seer' (pronounced *sher*) meaning tiger, mahseer is also known as the tiger among fish. Ironically, mahseer is also as endangered as the big cats of the jungle are. Though this fish can grow up to 7-9 feet and weighs over 26 kg, its breeding pattern makes it extremely vulnerable. The mature fish swim upstream for spawning and spawn in shallow warm waters. River bed sand and pebbles are home to the eggs till these are hatched and then the tiny fishlings make their way to the fresh water streams and rivers. But, for the tiny mahseer fishlings, it is not a smooth swim as a huge number perishes before attaining maturity due to attacks by predators, destruction of natural nesting grounds and construction activities along the rivers. Apart from this, fishing in upstream areas during spawning period, and catching young fish have also made the situation worse for mahseer.

"In recent years, uncontrolled fishing, destruction in breeding grounds and destructive fishing devices have adversely affected the riverine population of this species. Human intervention has affected their usual breeding and feeding grounds, resulting in depletion to complete extinction of the species," says Dr ST Indulkar, Professor & Head, Fisheries College, Ratnagiri, Maharashtra. According to a 2010 report, the number of mahseer is estimated to have declined by more than 50 per cent in

recent years and, without any intervention, the population might further dip down to 80 per cent in the future.

A helping hand

This multi-pronged threat made it necessary to create safe breeding grounds for them. A number of such initiatives supported by government as well as private players are operational in different parts of the country. Among the more recent ones is an artificial propagation programme launched in Himachal Pradesh last year. Under this programme, a hatchery with an outlay of Rs 6 crore has been set up at Machhial near Jogindernagar in Mandi district. The brooder fish collected from rivers and streams in the state will be bred in this hatchery and fingerlings will be released into the wild. The longest-running conservation initiative, however, is the one being run by Tata Power. The company rolled out its mahseer conservation initiative in 1975 as part of its eco-restoration and eco-development project for the lakes by setting up a breeding centre in Lonavla. Currently, the Act for Mahseer project is operational in seven lakes in the region and the catchment areas in the surrounding hills from where rainwater collects in reservoirs. The conservation was facilitated through ecological improvement of the lakes, for food and sport and for breeding, conserving and rehabilitating the endangered fish. Till date, the company has produced in excess of 102.5 lakh seed of mahseer and distributed these all over the country.

The hatchery continues to breed over three to four lakh fingerlings every year, whereas the breeding centre is the only one till date which breeds and supplies fingerlings to various states including Jammu & Kashmir, Haryana, Punjab, Uttarakhand, Orissa, Rajasthan, Maharashtra, Gujarat, Karnataka, Andhra Pradesh and Assam.

As mahseer is difficult to breed in captivity due to its love for fresh running water, its breeding patterns were studied in its natural habitat. Thereafter, healthy mahseer was transported from its Himalayan habitat to Lonavla. "The fish needed to be acclimatised to the changed environs and higher temperatures. They also needed to be reared for three years, until they reached maturity and were ready to breed. After carrying out several experiments, our biodiversity experts at the hatchery spiraled down on mahseer breeding", says Anil Sardana, MD and CEO, Tata Power.

After the initial vigilant monitoring of the mahseer's behaviour, the first batch of eggs, approximately 14,000, was procured through a process known as dry stripping. These were artificially fertilised and about 10,000 were brought to maturity. "This was the first step that helped us turn the tide for the mahseer. Over the years, the project has gained momentum and has successfully produced in excess of 10.25 million seed of mahseer," adds Vivek Vishwasrao, Head, Biodiversity, Tata Power.

Today, the project is the biggest breeding stock of mahseer in India, and produces four to five lakh mahseer seed every year. The eggs, whose survival rate is over 80 per cent, are carefully packed in moist cotton before being shipped off to distant shores. This year, too, in response to a call from the state government, 50,000 baby mahseer would be sent to Uttarakhand.

The entire mahseer conservation project has been documented in a monograph and is now extensively used by scientists involved in the breeding and conservation programmes across India and in several South East Asian countries. "After the success of the project, we have extended training facilities to over 600 fishery scientists across India, and have organised national workshops for senior scientists and policymakers to formulate recommendations for mahseer conservation," adds Sardana.

