Source : www.thehindu.com Date : 2019-12-18

FISH IN TROUBLED WATERS

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

Red-bellied pacu.

Climate change and unprecedented floods resulting from cloud bursts have facilitated the introduction of aquatic invasive alien species into new habitats in India. This phenomenon threatens ecosystems, habitats and native species. Recently, a study by Biju Kumar and others from the Department of Aquatic Biology and Fisheries, University of Kerala, revealed the role of the 2018 floods in introducing the most dangerous fish species into Kerala's wetlands. The authors said that exotic fishes such as arapaima and alligator gar were reported or caught by the residents after the floods. These are illegally imported fish that are reared by ornamental and commercial fish traders across India.

Researchers say that during heavy floods, invasive alien fishes which are illegally farmed in fragile systems, including domestic aquarium tanks, ponds, lakes and abandoned quarries, effortlessly escape from captivity and enter nearby wetlands. After a while, they slowly begin to wipe out local diversity and the economy by altering the functions of the ecosystem. And yet no State or Union Territory has any strong policy or law on the illegal rearing, breeding and trading of such invasive ornamental and commercially important fish species. And it is not as though they are completely unaware of the phenomenon and its impact.

In Tamil Nadu, for instance, stocking illegally imported ornamental and commercially important fish species is good business. Kolathur in north Chennai is known for its ornamental fish trade (with more than 80 shops) and most of the residents in the area are involved in breeding and selling 150-200 exotic ornamental fish species. People mostly use small cement cisterns, earthen ponds, plastic-lined pools, homestead ponds and the Retteri lake for breeding these species. And then the seasonal monsoon floods in the area wash away the exotic breeding stocks and adult fishes into freshwater bodies.

During the monsoon, government officials release details about the amount of rainfall, water level in reservoirs, and how the flood paralysed essential services including transport, communication and electricity. But there is no information about biodiversity loss and the impact of the flood on freshwater diversity.

India is endowed with 2,319 species of finfish. Studies from several parts of the country show that the diversity of freshwater fish is depleting at an alarming pace due to the invasion of commercially important and ornamental exotic fish species. Many native species, especially Indian major carps in various riverine systems, have been affected because of the invasion of exotic fish species such as Nile tilapia, African catfish, Thai pangus and common carp. Apart from commercially important exotic species, ornamental fishes such as guppy, piranha, suckermouth, blue perch, goldfish and platy have been recorded in rivers, lakes, traditional village ponds and other inland freshwater bodies. These also accelerate the extinction of natural varieties from local water bodies.

A team of researchers from Madurai Kamaraj University found that the exotic ornamental Amazon sailfin catfish poses a serious threat to the native fish species of Vandiyur Lake, Madurai. Theys reported that the biomass of the Amazon sailfin catfish is statistically significant compared to the indigenous varieties. This clearly shows the negative impact of this exotic aquarium fish on inland aquaculture in terms of diminished production/catch of edible fish. Further, sailfin catfish species do not hold any commercial value; therefore, people discard the

species on the banks of the lake where it is not even scavenged by other animals and birds. Thus more than 15 exotic ornamental species have successfully established a reproductive population in our freshwater bodies and we still don't know the magnitude of the impact of this species on the native diversity of fish.

On September 23, 2019, the Tamil Nadu government sanctioned 38.52 crore to purchase special equipment to strengthen the state disaster response force to tackle the possible impacts of the northeast monsoon. Further, 4,399 places were identified as vulnerable sites and 6,000 trained personnel were positioned across the State.

There is, however, no information on the aquatic biodiversity conservation policy. We can only infer that the State government has not yet framed any policy to control and manage the escape of invasive alien fish species during the monsoon season. It is time to draft a policy in consultation with experts. The State government would also do well to establish a unique research centre to address this issue.

S. Sandilyan is a former Fellow on Invasive Alien Species, Centre for Biodiversity Policy and Law, National Biodiversity Authority, Chennai

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