



Wetland News Monitor

November - December 2016

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News on Fishes

Tilapia was banned in the country in 1959, but it has overrun lakes and reservoirs. It is an aggressive invasive entrant to India, now occupying every single water body in the State, elbowing out many native species. Tilapia, known as Jilepi in Tamil is a fish native to Africa and parts of West Asia. A perennial breeder capable of tolerating pollution, it is blamed by scientists for depleting resources that earlier were shared by several other species. A scientist at the Fisheries Training and Research Centre in Parakkai, Kanyakumari district reported that many native freshwater fishes including Rasbora, Danio, Macropodus and Barbus and other local cat fish species have borne the brunt of the tilapia invasion. Tilapia survives in water with very low oxygen level and its eggs retain life even in dry conditions. It has destroyed the habitat of native species which are already decimated by pollution. So real was the threat that the Fisheries Research Committee of India imposed a ban in 1959 on *Oreochromis mossambicus*, a tilapia species introduced in 1952.



A youth with Tilapia fish from a lake in South Chennai

Source: The Hindu Dt.: November 09, 2016

The Nile tilapia introduced in 1970 then emerged as an important component for aquaculture in India and became famous as ‘aquatic chicken’, the National Fisheries Development Board in 2015 issued guidelines for responsible farming of the fish. M. Arunachalam, former head, Department of fisheries, Manonmaniam Sundaranar University



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said that tilapia is omnivorous and exemplifies parental care while many native species are careless parents. Tilapia dig burrows to build nests and both male and female guard their young till they reach the juvenile stage. When predators approach, they keep the juveniles in their mouth.

The National Fisheries Development Board says a high population of the species has affected the fisheries in several reservoirs and lakes as in Vaigai, Krishnagiri, Amaravati, Bhavanisagar, Tirumorthy, Uppar and Pambar reservoirs in Tamil Nadu, Walayar, Malampuzha, Pothundy, Meenkara, Chulliar and Peechi reservoirs of Kerala, Kabini reservoir of Karnataka and Jaisamand lake in Rajasthan. The Board reported that the introduction of *Oreochromis mossambicus* in Jaisamand lake not only resulted in reduction of average weight of major carp, but also posed a threat to mahseers (*Tor tor* and *T. putitora*), which are on the verge of extinction. The report said that in 2005, the Yamuna harboured only a negligible quantity of Nile tilapia, but in two years, its proportion rose to about 3.5 per cent of total fish species in the river. In the Ganges river system, the proportion of tilapia is about seven per cent of total fish species. Dr. Arunachalam said even though *O. mossambicus* was banned, it wreaked havoc and proved a threat to native biodiversity. As a signatory of the Convention on Biological Diversity, India has a duty to protect its wild germ plasm before it is totally eradicated by exotic species.

Scientists give new lease of life to endangered fish species. In their latest breakthrough, Central Institute of Brackish Water Aquaculture (CIBA) scientists have bred *Etroplus canarensis*, a breed of fish assessed by the International Union of Conservation of Nature (IUCN) as endangered because of its restricted distribution. Dr. S.N.Sethi, senior scientist, CIBA stated that it has high ornamental value and is in huge demand overseas. Many times it is illegally exported. The price of each fish ranges between \$30 and \$ 40 in the U.S. and Europe and can help Indian farmers earn an income if bred the right way. The scientists from the CIBA had given a presentation about this breakthrough at the first International Agro Biodiversity Congress held in New Delhi. *Etroplus canarensis* commonly called as Canara pearlspot or banded chromide, belongs to the Cichlidae family. It is considered to be one of the most sought after cichlids by aquarium fish-lovers. It is endemic to the Western Ghats and assessed as endangered by the IUCN because of its distribution in only two locations namely, Kumaradhara

and Nethravathi rivers in Karnataka. Pollution, damming of main rivers, siltation, sand mining and threat of over collection for pet trade contributed to the decline of its habitat. The average length of the fish is 8.89 cm and its weight is 18 grams. It feeds on mosquito larvae and breeds after monsoon. It lays around 150 eggs at a time.

After analyses and breeding trials at their Muthukadu Experimental Station, scientists found that the results indicated 100 percent survival rates in 5, 10 and 15 ppt treatments, but cent percent mortality in 20 ppt. It can tolerate low salinity range and survive in low saline brackish water ecosystems. If the salinity level is controlled, the species can soon be revived from endangered status. It has good scope of survival in brackish water and not just in freshwater.



Etroplus canarensis, an endangered species, is bred in captivity

Source: The Hindu Dt.: December 05, 2016

Source:

- <http://www.thehindu.com/news/cities/chennai/An-aggressive-invader-eclipses-native-fish/article16238430.ece>
- <http://www.thehindu.com/todays-paper/tp-national/tp-tamilnadu/article16761670.ece>

Report on Frog

Citizen-led project helps change scientific view of frog species. Trading their offices and urban confines for the rain-drench forests, a group of ‘frog enthusiasts’ teamed up with researchers to change the scientific view over the Sholiga narrow-mouthed frog. Though the tiny frog measuring 1.7 cm long was first discovered nearly 16 years ago in Biligiri Rangaswamy Temple Tiger Reserve, and it was widely believed that they were found in just a few locations. However, a citizen-led project, set up nearly four years ago, would go on to change that. From being an ‘endangered’ endemic species, it is now believed to have larger population, spread over 28,000 sq. km.



The Sholiga narrow-mouthed frog

Source: The Hindu Dt.: December 22, 2016

In 2012, IT professional Deepika Prasad formed a team of ‘frog enthusiasts’ to spend two nights in the small town of Bisle near Sakleshpur scouring for the elusive amphibians. Eventually, the ‘Bisle frog-watch team’ expanded to include researchers from Gubbi Labs and the National University of Singapore (NUS). On a monsoon night in 2015, the team started a chain of events that would uncover the mysteries of Sholiga narrow-mouthed frog.



Meanwhile, researchers from Ashoka Trust for Research in Ecology and the Environment (ATREE) had discovered the frog in their field station in BRTTR, and eventually, the network to hunt down the frog increased through the Western Ghats. The study reports that the frog's habitat is now widespread across an area of 28,000 sq. km., and has been found in 15 new locations, including Bannerghatta National Park on the outskirts of the city. This would see its status change from 'endangered' according to the International Union of Conservation of Nature to 'least concerned'.

Source:

- <http://www.thehindu.com/todays-paper/tp-national/tp-karnataka/Citizen-led-project-helps-change-scientific-view-of-frog-species/article16922209.ece>

News brief on Turtle

The Gulf of Mannar Marine National Park has recorded the maiden collection of sea turtle eggs this season as the Mandapam forest range personnel collected 98 eggs from a nest at Mukundarayar Chathiram, near Danushkodi. A team of seven turtle watchers was taking a stroll along the seashore in the early hours, surveying for turtle tracks when they found the nest and safely shifted all the 98 eggs to a nearby hatchery to protect them from predators and for healthy hatching.

On being informed, S. Sathish, Forest Range Officer (Mandapam range) reached the spot at 4 a.m. and supervised the shifting of the eggs to the hatchery. Sathish reported that all the eggs were safely shifted to the bed in the hatchery and the hatching is expected to take place in 45 to 60 days. Deepak S. Bilgi, Wildlife Warden said that after the GoM Marine National Park launched the turtle conservation project in 2013-14, turtle watchers used to locate nests during the last week of December and this was the first time a nest was found in early December. The breeding season begins in November and location of a nest in early December is a good sign for turtle conservation this season.

On December 9, Collector S. Natarajan had addressed a meeting of stakeholders and sensitised them to the measures to be taken to preserve sea turtles during the nesting season. Mr. Bilgi said that as per the directives of the Madras High Court, a district level committee, with Collector as Chairman has been formed to monitor the conservation project, implemented under the Tamil Nadu Biodiversity Conservation and Greening Project. Forest department, Indian Coast Guard, Marine police of the Coastal Security Group, local police, local administration, non-governmental organisations and representatives of mechanised and country boat fishermen have been roped in to ensure safety to the turtles during the nesting season.

In the last season, the Marine National Park had collected more than 3,000 eggs and achieved more than 90 per cent survival rate in the hatchings from two hatcheries in Danushkodi and Opilan. They keep close vigil in the 90-km-long stretch from Arichalmunai to Mariyur and this year, they proposed to establish one more hatchery at Kilakarai, depending upon the need. The nesting season ends in March-April and the hatchings in May end.



Forest personnel collecting sea turtle eggs from a nest at Mukundarayar Chathiram near Rameswaram for hatching

Source: The Hindu Dt.: December 14, 2016



The poor North-East monsoon and the Vardah cyclone are said to have affected the arrival of sea turtles in the coastal area of Nagapattinam although Forest Department has made all arrangements for collecting the eggs for their safe hatching. The 154-km coastline in the district provides a favourable nesting habitat for Olive Ridley turtles which arrive here from December to March. The officials reported that the arrival of sea turtles has been delayed. The movement of sea turtles has been disturbed by the high tides and rough sea. The district administration had made all arrangements even a month ago anticipating the arrival of sea-turtle. It had advised the fishermen to set up Turtle Excluder Devices. The administration had also advised the fishermen to let the captured turtles back into the sea.

The entire coastline where the movement of sea-turtle is noticed had been kept clean free from any garbage of sea waste. They have also been asked to keep dogs away from the coastal villages. Dogs immediately sniff the smell of the eggs to be eaten away. The Department has hatching centres at three places -- Kottagaimedu near Sirkali, Koolaiar and Vanagiri. While the first two units can hatch 1,000 eggs, the one at Vanagiri has a maximum capacity of hatching 10,000 eggs.

Nature has made the Rushikulya rookery coast in Ganjam district of Odisha conducive to mass nesting of Olive Ridleys, which is expected to occur by last week of February. The Rushikulya rookery coast is a major mass nesting site of the endangered marine turtles. No mass nesting occurred here last year, although lakhs of Olive Ridleys had gathered in the sea near the coast. At present mating has started. Hopes are high that in the coming nesting season, the turtles will arrive to lay eggs at the Rushikulya rookery coast.

Berhampur Divisional Forest Officer (DFO) Ashis Behera reported that some positive changes at the coastline have made the beach more favourable for mass nesting in comparison to past years. These are shifting of the Rushikulya river mouth, erosion and vanishing of a large sandbar and widening of sandy beach through deposition. During the past few months, the river mouth has shifted around three kilometres towards Purunabandha from near Gokharkuda village. Due to this, a stretch of over three kms, about 300 to 500 metres wide, has emerged. Sand is loose in this region, which is favourable for nesting as the mother turtles dig it up to lay their eggs. Earlier this stretch of beach was eroded by the sea and was too narrow for mass nesting.



Sea erosion and its deposition had formed a large sandbar of over 1.5 km long and 10 to 20 metre wide near Gokharkuda. This was preventing the turtles from reaching the coast and they were nesting on this sand bar. Several nests were washed away by the waves from here. The erosion had started in 2016 beginning. Mr. Behera stated that now this sand bar has completely vanished and its sand is deposited on the coast, widening it. Now the turtles would be able to reach the beach directly and easily. To protect the mating turtles, a special squad of officials from the Forest and Marine Fishery Departments has started patrolling the sea near the coast. The squad has two speed boats from the Forest Department, one trawler each from the Fisheries Department and Gopalpur port. Nine on-shore camps have been established by the Forest Department on the coast where the turtles usually come to nest near the rookery. Beach cleaning process has also started.

Source:

- <http://www.thehindu.com/todays-paper/tp-national/tp-tamilnadu/Mandapam-forest-range-personnel-collect-98-sea-turtle-eggs/article16803210.ece>
- <http://www.thehindu.com/todays-paper/tp-national/tp-tamilnadu/Monsoon-failure-cyclone-delay-arrival-of-sea-turtles/article16908992.ece>
- <http://www.thehindu.com/todays-paper/tp-national/tp-otherstates/Rushikulya-rookery-beckoning-Olive-Ridley-turtles/article16936604.ece>

Reports on Wetland Birds

Coots are jet black birds with snowy white beak and a white streak on the head. During a birdwatching exercise along the Polachira wetlands, a team of birdwatchers from the Quilon Nature Society sighted a white coot. Charan Hariharan, who headed the team, says it was a Eurasian coot and though juveniles of the species sport a grey colour, the bird sighted and clicked was an adult. Authorities in the field attribute the white colour of the coot to “progressive greying.



Recorded sightings of birds affected by progressive greying have been rare in India and it is the first time that a Eurasian coot with such a phenomenon has been sighted. These migratory water birds are found along freshwater bodies. While they are excellent swimmers, their feet are not webbed. During the birdwatching exercise, the team sighted about 60 species of water birds.

Waterbodies at the Vedanthangal Bird Sanctuary have been replenished by the recent rain during Cyclone Vardah and are attracting thousands of migratory birds. Ranger G. Subbaiah said that from the time the bird sanctuary opened its doors on September 30, more than 17,000 birds have come to breed. When the sanctuary was opened, there were about 4,000 birds and the numbers have gradually increased. The cyclone had less impact, with only some on the banks uprooted in the winds.

The birds that have made this venue their home include Glossy Ibis, White Ibis, Grey Pelicans, Cormorants, Moorhens, and so on. The sanctuary features thousands of birds coming from various countries, some of which can be easily identified. It is a good tourist spot. Northern pink tailed ducks, spoonbills, black-headed ibis and teals are among the birds seen this year. The officials say some birds might stay back longer if the water levels at the sanctuary remain high. The officials have desilted all the channels and have added fish fingerlings.

Source:

- <http://www.thehindu.com/todays-paper/tp-national/tp-kerala/White-coot-sighted-at-Polachira-wetlands/article16810651.ece>
- <http://www.thehindu.com/todays-paper/tp-national/tp-tamilnadu/Vedanthangal-sees-spike-in-arrival-of-winged-visitors/article16947923.ece>

Wetland Restoration

Residents protest against degradation of Devanur lake in the city. Residents of Rajiv Nagar, Udayagiri, Nagarajappa Enclave, Christian Colony, N.R. Mohalla and other localities gathered on the lakebed holding placards to save the lake, which has become a cesspool of sewage. The once pristine waterbody was not only the source of water for irrigating the

nearby agricultural lands, but also used to attract migratory birds from far and wide. But because of the negligence of the authorities, the storm-water drains, which also bring underground drainage, enter the lake from the eastern and western sides. With the lake also becoming the dumping ground for garbage and animal waste from meat shops, it has been attracting pigs and dogs.



Residents protesting against the continued neglect of Devanur lake in Mysuru

Source: The Hindu Dt.: December 02, 2016

With the fresh water channels to the lake choked, sewage water flows endlessly into it. There is no hope for the lake unless steps are taken immediately. Already, the lake lets out a stench and has become a breeding ground for mosquitoes. This exposes the residents to vector-borne diseases such as dengue and chikungunya. The farmers used to grow crops using water from the lake till a few decades ago. Now, there is no freshwater in the lake, which is flooded with sewage water from Ghousia Nagar, Shanti Nagar, Rajiv Nagar and Udayagiri from the eastern side, and from Jalpuri, Gandhinagar and N.R. Mohalla from the western side. The



committee representatives later submitted a memorandum to Deputy Commissioner D. Randeep, requesting the authorities to immediately divert sewage from the lake, set up sewage treatment plants, mark the boundary of the lake as per official records, put up a fence to prevent its encroachment, and develop the lake as a tourist spot along the lines of Karanji lake.

When contacted, Minister for Primary and Secondary Education Tanvir Sait, who is also the MLA from the area, said the lake was earlier under the Mysuru City Corporation. But, a detailed project report prepared by MCC turned out to be faulty.

Source:

➤ <http://www.thehindu.com/todays-paper/tp-national/tp-karnataka/Residents-protest-against-degradation-of-lake/article16741092.ece>

News on Wetland Pollution

First polluted river in the world was discovered. Scientists have discovered what could be the world's first polluted river, contaminated about 7,000 years ago by Neolithic humans who may have been producing copper metals from ores. In the now-dry riverbed in the Wadi Faynan region of southern Jordan, Professor Russell Adams from the University of Waterloo in Canada, and colleagues found evidence of early pollution caused by the combustion of copper. The findings shed light on a turning point in history, when humans began moving from making tools out of stones to making tools out of metal. This period, known as the Chalcolithic or Copper Age, is a transitional period between the late Neolithic or Stone Age and the beginning of the Bronze Age.

The technological innovation and the spread of the adoption and use of metals in society mark the beginning of the modern world. People created copper at this time by combining charcoal and the blue-green copper ore found in abundance in the area in pottery vessels and heating the mixture over a fire. The process was time-consuming and labour-intensive and, for this reason, it took thousands of years before copper became a central part of human societies. Many of the objects created in the earliest phase of copper production were primarily symbolic

and fulfilled a social function within society. Attaining rare and exotic items was a way in which individual's attained prestige. As time passed, communities in the region grew larger and copper production expanded. People built mines, then large smelting furnaces and factories by about 2600 BC. This region is home to the world's first industrial revolution. This really was the centre of innovative technology. However, people paid a heavy price for the increased metal production. Slag, the waste product of smelting, remained.

Heavy rain over the past few days has seen a familiar problem crop up dramatically frothing in Varthur lake. With increased inflow of water to the severely-polluted lake, foam at Varthur Kodi at the busy intersection of Old Airport Road spilt over to the road. The foam continues to serve as a reminder of the unchecked pollution of Belandur and Varthur lakes. Further upstream, frothing at Yemlur on the outlet of Belandur lake, has also increased. However, temporary relief is provided through a tall screen-covered fence.



Frothing in Varthur lake intensified following rains in the past few days, and overflowed on to the road at Varthur Kodi

Source: The Hindu Dt.: December 17, 2016



The froth in Varthur has been seen before, and rather dramatically in April 2015, and was a common sight after every spell of heavy rain. This had prompted the BBMP to install sprinklers to douse the foam. However, over the days, the sprinklers have either broken down or been stolen. Elangovan Kulandaivelu, a member of the citizen action group, Whitefield Rising said that as an immediate solution, the lake should be desilted and the macrophytes (aquatic plants) removed. He also pressed for intensifying the drive to verify whether Sewage Treatment Plants (STPs), which is mandatory in apartments, are functional. Phosphates and detergents in sewage are blamed for the frothing.

Karnataka State Pollution Control Board (KSPCB) Chairperson Lakshman has instructed regional officers of the Board to inspect the area. He has also scheduled a meeting with the BBMP commissioner to find a solution. He added that KSPCB continues to monitor STPs, and all 581 STPs commissioned across the city, including around Varthur and Belandur, will be completed soon. In the long term, officials hope that the STPs being constructed by the BWSSB to treat 1,450 MLD of waste water will be operation by 2019, and would solve much of the frothing problem.

Source:

- <http://timesofindia.indiatimes.com/home/environment/pollution/First-polluted-river-in-the-world-discovered/articleshow/55791644.cms>
- <http://www.thehindu.com/todays-paper/tp-national/tp-tamilnadu/Varthur-lake-froth-spills-onto-road/article16879687.ece>