

# Lake chains, snatched away

For centuries, the City's lakes remained connected, the linked ecosystem of wetlands and streams aiding a natural flow. But a disastrous mix of skewed lake development and real estate encroachments has severely disrupted this process even on the City's outskirts.

Lake connectivity was once Bengaluru's pride, its time-tested pillar of water self-sustainability. Designed in cascades from higher to lower elevations, the lakes allowed excess water to flow from one water body to the next along a natural gradient. But development destroyed this system in the City's core and massacred the linking wetlands. Do the lakes on the city's periphery now stand a chance?

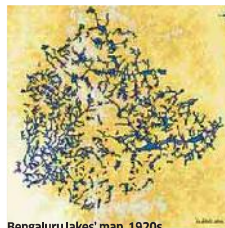
The signs are bleak, the telling instance of the Yele Mallappa Shetty lake near Hoskote sliced into two by the Old Madras Road offering no such hope. Satellite imagery clearly shows this water body's organic connection to the distant Hebbal lake. From Hebbal to Nagavara to Kalkere to Maragondanahalli, the link runs into the Mallappa Shetty lake, only to be disrupted by a highway.

The link was already broken on the wetlands of Nagavara lake, where a tech park emerged to disrupt an ecosystem that had ensured a natural flow of water for centuries. Obviously, the land developers had no clue or inclination to sustain a system

that acted as reservoirs to impound rain-water, store it for future use and recharge the ground water.

For the record, the city's topography has given it three main valley systems: Hebbal, Koramangala-Challaghatta and Vrishabhavati, along each of which the lakes have formed a chain of reservoirs. Cascading streams link the chain. In the city's core, stormwater drains have replaced these streams. Severely encroached and fed with sewage, the drains run into lakes, first polluting them and eventually killing the water bodies.

**Devastation in the periphery**  
In the City's periphery, this model of destruction is being replicated with devastating effect. As Umesh R, a landlord in Kadugodi explains in chilling detail, the streams and wetlands sustaining the lakes are getting filled up fast. "Mud excavated for large apartment complexes are dumped into these low-lying spots. The flow has stopped. The water table has sunk from 140 feet a few years ago to more than 1,000 feet now."



Bengaluru lakes' map, 2020s

The system of checkdams that helped in irrigating farms in and around the lakes has completely disappeared. Points out Umesh, "Everything has been filled with silt. Earlier, we used to get water even from Hebbal lake, uninterrupted. It would feed hundreds of acres of paddy fields." The landlord claims he and a few local environmental activists had approached the lo-

## Present status

Number of water bodies in city has declined to about 81, of which only 34 are recognized as live lakes. Reduction of water bodies is a high 35%, while water spread area is down 8.66 percent.

No of water bodies: **81**

Live lakes: **34**

cal MLA to widen the stormwater drains and streams. But the attempts have been in vain.

Once the linkage system is deliberately disrupted, real estate developers take over. Documents are fabricated, hands are greased. In due course, huge apartment complexes and layouts have emerged. A prominent property developer's bla-

tant takeover of 72 acres of wetland between the Bellandur and Agara lakes for a SEZ is just one instance. Rapped by the Karnataka Upa Lokayukta, the BBMP had to order stoppage of the project construction. Official reason: The project had no approval. But the developers had obtained layout approval from the Karnataka Industrial Area Development Board (KIADB), subject to clearance from the local authorities.

The Lake Development Authority (LDA) had observed that such a project built on the catchment area of the Bellandur lake would severely affect the lake and its surrounding ecosystem. Although the wetland was acquired from farmers through KIADB, LDA wanted the Board to reclaim part of the land to be restored as a valley zone. As it emerged later, this was clearly ignored.

## Takeover of wetlands

Hundreds of truckloads of construction debris were dumped on the Bellandur wetlands for months. No official winked at this daylight operation. Spot visits reveal

that temporary and even permanent-looking residential and business establishments have emerged here. Multi-storey residential complexes have risen on the beds of both Bellandur and Varthur lakes on the City's periphery.

In May 2013, a study by the Centre for Ecological Sciences, IISc, had concluded that the SEZ around Bellandur lake will trigger demand for at least 4.58 million litres of water per day, bringing 14,000 vehicles, besides leading to irreversible damages to the surrounding ecosystem. Topographical alterations in the lake's vicinity, the study found, will also increase the potential for flooding.

But rescuing lakes and wetlands from just the real estate developers will not suffice, reason ecologists. Lakes cannot be rejuvenated by cutting off the inlets and remodelled only for recreational and aesthetic purposes. The renovation of Nagavara lake cannot be a model to emulate. Explains S Sudhira, a researcher from Gubbi Labs, "The City's water bodies need to be reimaged. We should see lakes/tanks as collectors of water, a consequence of various small streams. They cannot be seen in isolation."

This thinking is yet to percolate down to lake developers even in the new BBMP areas. Take for instance, the Hanayakanahalli lake on the downstream of the Bellandur lake, and off Sarjapur Road. As Dr Rohan D'Souza from the Ashoka Trust for Research in Ecology and the Environment (ATREE) points out, the village panchayat that controlled the lake of over 40 hectares focused only on beautification. "They aren't looking at lake connectivity, but only on superficial aesthetics. This won't help the water body."

## Need to reimagine

If in the past, tanks and lakes fulfilled the roles of storage and washing, they need to be reimaged as drinking water sources today, says Sudhira. "By covering the drains, and resorting to what we call 'stream burial', the BBMP is cutting off supply of oxygen from direct sunlight." This aids methane formation in the drains, and also cuts off rainwater. The flow to the lakes is disrupted yet again.

The LDA model too is skewed, adds D'Souza. "The conversion of linear bunds to ring bunds leads to minimal overflow of lake water into the wetlands. This hastens the process of lakes becoming stand-alone bodies," he elaborates. The Rachenahalli lake's apparent revival by this model might just be short-lived. The message is clear: A lake just cannot survive without its surrounding ecosystem and natural linkages to water bodies downstream. A model that ignores this has no business to be there.

Rasheed Kappan

## Threatened ecosystem of Lakes & Streams

Wetlands were acquired and developed to make way for tech parks, such as the one near Nagavara lake



2002



2014

Google Earth images show the rapid decline of the ecosystem that sustained the lake chain from Hebbal lake to Yele Mallappa Shetty lake.

## Dharmambudhi, from a water tank to a bus station

Dharmambudhi tank / lake was once a major water body opposite the city railway station, right at the spot where the BMTC and KSRTC bus stations are now located. It was once the most critical water source for people in the old city's Pete region. The tank was connected to all open wells around it, to small tanks, and to small lakes a few kilometres away and was the cleanest source of drinking water. So what happened to this link?

"This tank, more than a 100 years old, would re-charge all the tanks and lakes around it. The existence of channels and pathways for water to circulate to different locations in the city reveals the water management plans even then were brilliant. The engineering sense you get from the all-round connectivity is a reflection of capabilities at the time. The landscape now is completely different and so are the sensibilities," says environmentalist and civil engineering expert Yellappa Reddy.

The tank used to serve essential tasks of the day such as bathing, washing vessels, conducting poojas, cooking and drinking. The water was said to be so pure that people would collect it directly

## The tank was once linked to Sankey tank and Hebbal lake by a system of streams

from the wells and percolation tanks connected to the lake. The recharging of water by the lake indicates its importance as a crucial ecosystem in the early days of colonial Bengaluru. "We had good technical people even then. For those times, the system that they devised to distribute water to other tanks and lakes was good. Due to development and rise in population, the lake began to shrink gradually," recalls Reddy.

According to S Srinivas, a blogger, in 1877 when famine struck the Mysore state, the government took up the desilting work of the Dharmambudhi tank to provide jobs. In the process, the tank's

supply channels were repaired, leading to increased supply of good drinking water to the inhabitants of the Pete (city).

Lack of maintenance in the subsequent years led to shrinking of water in the tank. During 1892-93, when monsoons failed, Bengaluru witnessed water shortage. The government pumped water from the springs in the Jakkarayana tank valley into the Dharmambudhi tank. Also about 23,20,000 gallons of water was pumped into the tank from the Hebbal tank. Says Srinivas, "The term pumping here probably meant to let water flow from one tank to another via channels through gravity. In this case, it was probably from Hebbal tank to Sankey tank and from there to Dharmambudhi tank via Jakkarayana-kere (the present BBMP playground on Platform Road). From 1896 onwards, Bengaluru town was supplied with piped water from the Hesaraghatta reservoir. This made the municipality neglect maintenance of the Dharmambudhi tank, which became completely dry."

When water supply completely dried up, Dharmambudhi tankbed became a hub of public meetings. "In 1931, Jawaharlal Nehru addressed a meeting here and hoisted the tricolour. Exhibitions and shows were also held here at regular intervals. In 1963, the government handed over 1,36,294 square yards of land of the Dharmambudhi tank bed to KSRTC to construct a bus stand," informs Srinivas.

G Krishnaprasad, a long-time resident of Seshadripuram and a frequent visitor to the lake in the 1950s, agrees that the lake area was transformed into a public space when it could no longer meet Bengaluru's drinking water needs. "I remember having gone to see the circus and exhibitions at one corner of the tank. The circus, in particular, was the most important entertainment for people of Bengaluru 40-50 years back. I also remember people playing cricket. There was a small bus stand too, from where around 30-40 buses would operate. All this was possible because the lake was drying up. The question then was what do we do with the open space? While there was the lake, some part of it which was dry would be utilised for entertainment purposes and public activity." The transformation then, of the lake into a bus station, soon became permanent.

Prashanth G N



Encroachment of Varthur lake wetlands follows the same strategy adopted for Bellandur lake. DH PHOTOS/KISHOR KUMAR BOLAR



As many as 72 acres of wetland between the Bellandur and Agara lakes were acquired for a SEZ. BBMP later ordered stoppage of work as it had no approval.

## Another lake committee, another hope

Five reports on lake encroachments in 10 years, and not a single person behind bars. If this shows how seriously the government acts against lake killers, here's another point to ponder: Yet another Legislature Committee set up to prepare a report on encroachment of water bodies will need for the first time on November 12.

Headed by K B Kolivwad, the Ranebennur MLA, and comprising 10 other MLAs as members, the committee is expected to invite suggestions from wetland experts and others who were part of earlier such panels. Lake conservationists are hopeful that at least this time, the report will lead to some action against the encroachers.

In recent years, the encroachments have reached dangerous proportions, with the unchecked growth of residential and commercial buildings on lakebeds and wetlands hitherto demarcated as no-zones.



Dharmambudhi lake in 1975. DH PHOTO ARCHIVES



Kempegowda KSRTC/ Subhashnagar BMTC bus station at the lake site today.



JAGADEESH GIRI  
Yelahanka New Town

Lakes are ecologically important as they aid recharging of ground-water. The High Court order banning construction within 30 metres of the lake periphery should be strictly followed.



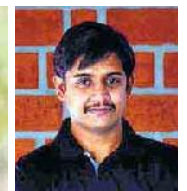
MUNISWAMAPPA  
Resident, Bellandur

In the last six decades that I have been staying near the Bellandur lake, I've seen it get systematically destroyed. Farmers once relied on it for irrigation. You can't even get close now.



UMESH R  
Landlord, Kadugodi

Mud excavated during construction of apartment complexes are dumped into the wetlands and streams that link the lakes. The natural flow has stopped. The water table has sunk dramatically.



SUDHIRA H S  
Researcher, Gubbi Labs

Tanks and lakes should be reimaged as collectors of various small streams. They cannot be seen in isolation and revived only for recreational and aesthetic purposes.