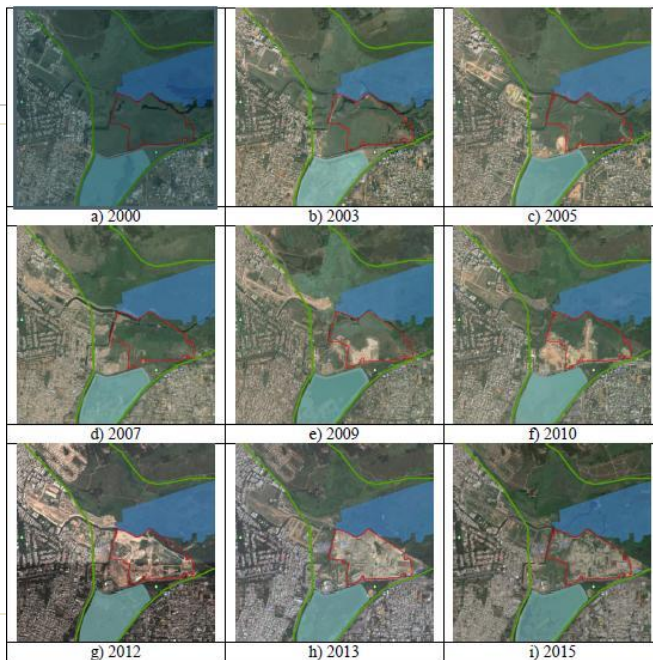


New research says the three dying lakes in the city cannot be revived unless threats to the wetlands linked to these lakes are removed



Bengaluru: In the garden city of Bengaluru, a lake caught fire in the middle of May.

Flames licked the surface of the Bellandur lake for hours before it went out. Two days later, the fire resurfaced. No one knows what caused the fire, or how it went out.

Toxic froth and filth have carpeted Bellandur, Agara and Varthur, the three lakes in the city poisoned by industrial and domestic effluents, for long. But the fire was something new and raised alarm about the levels of pollution in the city.

Now, a new research says these dying lakes cannot be revived unless threats to the wetlands linked to these lakes are removed.

Land use in the catchment area of the Agara-Bellandur wetland ecosystem has changed vastly, notes the report, published last week

by a three-member team from the Indian Institute of Science (IISc). This is Bengaluru's largest wetland ecosystem, connecting the city's three big lakes.

If the trend continues, it will eventually kill the lakes, warns T.V. Ramachandra, head of the Center for Ecological Sciences at IISc, who led the study.

"Wetlands are required as these ecosystems ensure water security and act like kidneys of the landscape removing contaminants," says Ramachandra. But now, he says, the city is slowly losing this fragile ecosystem.

Monitoring agencies supposed to protect lake-related ecosystems have been highly ineffective, says Ramachandra. Despite at least a dozen laws to protect wetlands and bar construction there, the area is thick with residential and office buildings, the report said.

Ironically, the latest masterplan for Bengaluru city (Comprehensive Development Plan 2015) had delineated the region as a no development zone.

Here are three images on landscape dynamics in the region that his team mapped on temporal Google Earth data during 2000 to 2015. It shows the spread of damage caused by unplanned development and poor law enforcement to one of the largest ecosensitive regions in Bengaluru.

The image shows wetlands (green) converted to open lands (white) during 2000 to 2015 in the region.

According to the researchers, the alterations in the wetland began in 2005 and aggravated post 2007 with Karnataka Industrial Area Development Board (KIADB) identifying this region for the construction of a special economic zone (SEZ) in an area of 63 areas and 37.5 guntas.

The image obtained using overlaying cadastral maps on Google Earth data shows how the conversion of wetland extends to the encroachment of lakes itself. According to the scientists, this is how one private builder compounded and encroached lake and other areas, apart from the land allocated by KIADB, in the SEZ project site. This violation was noticed by National Green Tribunal recently, leading to a verdict in May where the court fined the two private builders `139 crore for flouting environmental norms.

As per the report, the spatial extent of the SEZ land has increased to 74 acres 12.1 guntas due to the encroachment of *rajakaluves* (local name for storm water drains) and some of the Bellandur lake.

Alterations of these wetlands were initiated by filling the low-lying areas with excavated earth debris, followed by other construction activities,

said Ramachandra.

The land fillings have breached both *rajakaluve* and the Bellandur lake, says the report. The width of *rajakaluves* has reduced from as high as 35m to about 15m, apart from the loss of stream network connecting Agara to Bellandur lake.

Incidentally, after protests from legislators, the state assembly had set up a 11-member committee to probe lake encroachments across Bengaluru.

Although the initial deadline for the panel to submit its final report along with recommendations was three months, the panel is still working on the report.

"We are finalising our report. Anyway, it will be tough to remove or regularise the encroachments. The government-run Bangalore Development Authority itself has encroached more than 3,500 acres of lake area," said K.B. Koliwad, a legislative assembly member who heads the panel.