

Phosphate and the fate of Bangalore's lakes

What detergent you use makes a difference. Don't believe us? Read on.

[Preethi Ravi](#) May 27, 2015



Rag pickers seen dip into the contaminated foam formed Yamalur lake.

From afar, it looks like a song sequence from a romantic Sandalwood movie, where the hero and the heroine dance behind a mountain of foam. But this isn't a scene from a movie but a real and deadly concoction of phosphates, nitrates and myriad industrial pollutants combining to create a foamy lather. This is the ugly truth of Bangalore's largest lakes Bellandur and Varthur.

Yellappa Reddy, Environmentalist, reminisces on how Bellandur lake had served Bengaluru's water needs right up to the 1970s. "The water was used for drinking, irrigation agriculture and fishing. A variety of crops, including rice and ragi besides vegetables were grown. Fishing was significant in the lake. It was a home for several migratory birds but in the 1980', industrial growth and encroachment from the builders began to affect Bellandur lake" he says.

Dr. T V Ramchandra, Scientist, Centre for Ecological Sciences, IISc, along with his students who tested samples from Bellandur Lake, concluded that the foam appeared because of higher concentration of phosphates in the lake, that is partly due to the detergents used in households. Bellandur lake receives about 500 million litres of sewage per day. During the pre-monsoon season, high winds coupled with high rainfall leads to churning of the lake and that in turn leads to frothing. If froth was a dangerous indication, there was more horror waiting. The frothy lake caught fire which was triggered by the chemicals and effluent released by the industries in the vicinity. When people inhale this affected air that is infused with high amounts of phosphate, it affects their lungs, causing irritation, skin allergies are a common symptoms.

“One of my students during the research, decided to stay there for a couple of days. After returning home, he fell ill and was hospitalised for three days. Me and two of my students of mine visited the spot for a few hours which affected our eyes, skin allergies and gave us fever. We were there only for a few hours, but imagine those who reside there, they are so much more vulnerable!” he says.

What caused the deadly froth? Environmentalists and scientists point out on rapid modernisation, encroachment by builders on the wetlands and unplanned developmental activities. However, it has been established that the high levels of phosphate used in detergents has caused the deadly froth.

Dr. T V Ramchandra believes that a reduction in the use of phosphate based detergents will have a positive impact on the on surface water bodies. “All the detergents contain a large amount of phosphate which is damaging to water bodies. A number foreign of countries have been successful in reducing eutrophication (excessive richness of nutrients in a lake or other body of water, frequently due to run-off from the land, that causes a dense growth of plant life.) through implementation of measures to reduce phosphorus loads. Some of the examples are Lake Geneva in Switzerland, Lake Erie in the USA and Lake Endine in Italy. A reduction in phosphorus by 70%-90% is necessary to significantly reduce eutrophication. To promote lake/river recovery and improve tropic status it is imperative that phosphorus loads entering surface waters are reduced.”

He further adds, “Phosphate is not renewable and when the waste water that contains detergent enters the lake, it causes pollution. The neighbouring villages surrounding the Bellandur lake use the same water for irrigation and agriculture. Therefore the vegetables we eat are metal-laden and poisonous. Their chemical content should be eliminated.”

Phosphorus discharges can be reduced considerably by both banning detergents and improving our sewage system.

Measures that the Government should undertake

1. Re-establish wetlands in the vicinity.
2. Remove the encroachments and establish interconnectivity among the lakes.

3. Install more sewage plants and let only treated water into the lake.
4. Protect ecological integrity of lake by ensuring normal water flow in the lake.

Measures people can take



[Pic via www.wiwaterpollution.blogspot.in](http://www.wiwaterpollution.blogspot.in)

1. Locals can approach pro-active courts to initiate action against violators.
2. To eliminate sewage from the lake, identify points where the sewage has been let in.
3. Find out the source of the polluters and report it to the lake authorities.
4. Bring in a law to reduce the amount of phosphorus in detergents that can restore our lakes.
5. Increase vegetation cover around lakes, as decreased vegetation has lowered water yield in the catchment, affecting the groundwater recharge.