

# Heavy metal -- in and around the lakes

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Heavy metal pollution of lakes has a seriously detrimental impact on people and ecosystems that rely on such bodies of water. According to a study published in the current issue of *Interdisciplinary Environmental Review*, researchers have focused on the physicochemical properties and toxicology of water from and around Thane City of Maharashtra.

Environmental chemist Pravin Singare of Bhavan's College, in Mumbai, and colleagues highlight the fact that fresh [water](#) bodies all over the world are becoming increasingly polluted day by day and that this represents a growing problem in the developing world and beyond. They suggest that regular monitoring is crucial for the well-being and health of the surrounding population and as such, the team has carried out a systematic study to estimate the physico-chemical parameters and level of toxic heavy metal content in the Jail Talav and Kalwa Lakes of Thane City, as perhaps being indicative of similar problems with other bodies of water.

The team's measurements suggest that the presence of [heavy metals](#) such as iron, copper, nickel and zinc, which are essential for life at trace levels are well above permissible concentrations making them a significant threat to ecosystems and a problem for those who rely on the lakes for drinking water or crop irrigation. In addition mercury, arsenic and cadmium were all present at much higher than acceptable concentrations.

South Asia is home to more a fifth of the world's population, the researchers say, and is facing a serious water crisis. "This region, which is in the grip of flood and drought cycles, needs a long-term strategy for management of its water resources," the team says. Unfortunately, strategies adopted so far have all failed in India, the team asserts, this is obvious given the poor quality of the water revealed by their measurements of Jail Talav and Kalwa Lakes assuming these are typical of the region as a whole.

Food chain contamination by heavy metals has become an important issue partly because of the potential accumulation in biosystems, through contaminated water, the team adds. "A better understanding of heavy metal sources, their accumulation in water and the effect of their presence in water on plant systems are particularly impertinent in ongoing risk assessments," the researchers say.

**More information:** "Impact assessment of pollution in some lake water located at and around Thane City of Maharashtra, India: physico-chemical properties and toxic effects of heavy metal content," *Interdisciplin Environ Rev*, 2011, 12, 215-230. [DOI: 10.1504/IER.2011.041819](https://doi.org/10.1504/IER.2011.041819)

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