

## Environmental Impact of Ganpati Idol Immersion on Water Quality of Two Lakes in Mumbai



### Environment

**KEYWORDS :** Pollution, Aarey Lake, Malad Lake, Idol Immersion

**Mr. Sachin Bhagat**

Patkar-Varde College, Goregaon (west), Mumbai 400062

**Miss. Anju Singh**

Patkar-Varde College, Goregaon (west), Mumbai 400062

### ABSTRACT

*Ganesh festival is celebrated traditionally in the state of Maharashtra all in a big way as a social and community activity. It was started by Lokmanya Tilak, the objective of the festival was mainly to bring people together and promote freedom movement. Now with the passage of time, the celebration of Ganesh festival has changed. These activities cause concerns in terms of water pollution, air pollution, noise pollution etc. After predetermined time idol is immersed in water bodies every year. As the extent of idol immersion increases with increasing population with limited water bodies hence water pollution increases. The water bodies selected for the study was Aarey lake and Malad Lake of Goregaon and Malad, Mumbai. The immersion of idol of Lord Ganesh is a major source of contamination and sedimentation to the lake water. The analysis was carried out for pH, Density, specific gravity, DO, BOD, COD, Turbidity, Total hardness, Electric conductivity, Nitrates and Nitrites, Chlorinity & salinity parameters. The trend of increasing such Physiochemical parameters indicates that idol immersion affect the water quality of the lakes.*

### I. INTRODUCTION

Water is life! Human beings and animals and all the living beings need it to survive so water resources like oceans, seas, lakes all play a very important role in daily life. Water is essential for a country's progress. Water helps in the generation of electricity, fishery, agriculture and lots more! So it is necessary to protect the water resources keep them away from pollution and decrease the wastage of water and prevent the depletion of water resources. Water resources provide life to all from minute microscopic organisms to the human beings. Water resources are undergoing all kinds of depletion they are being polluted fresh water is no more available because of the increased water pollution. Most of the water bodies all over the world are getting polluted due to domestic waste, sewage and industrial waste, agricultural and religious activities like idol immersion. Mostly idols are made up of plaster of paris contains gypsum, sulphur, phosphorus & magnesium. Chemical paints contain mercury, cadmium, lead & carbon. Immersion of these idols poisons the water of lakes by increasing acidity & the content of heavy metals. Such pollution damages the ecosystem because it kills fishes, damages plant and block the natural flow of water. It damages health of human being also by polluting drinking water sources. Festivals like Ganesh Chaturthi & Durga Puja involves processions which gathers large amount of crowd who bother little about the effects caused due to immersing idols & dumping garlands & non biodegradable waste in & near the lake area. During the immersion articles such as flowers, polythene bags, foam, decorations, metal, polish, plastic sheets are thrown into the water adding to the already caused damage.



**Aarey Lake (After Ganpati Idol Immersion)**

### II. MATERIAL AND METHOD:

The water samples was collected from surface layer during morning hours from Aarey idol immersion point (Aarey lake) & Panchrangi bhujale talav (Malad lake) and the site of idol immersion at different intervals i.e. pre immersion and post immersion in the period of Ganesh Chaturthi in the month of September. Pre idol immersion samples were collected three days before the commencement of the immersion activities. Post idol immersion samples were collected 4 days after the completion of immersion activities. The samples were subjected to various physio-chemical analysis and the parameters namely pH, Density, specific gravity, DO, BOD, COD, Turbidity, Total hardness, Electric conductivity, Nitrates and Nitrites, Chlorinity & salinity were analyzed.

**Impact of Ganesh idol immersion on water quality of Aarey Lake and Malad Lake**



**Aarey Lake (Before Ganpati Idol Immersion)**

PARAMETER (AAREY LAKE)	BEFORE IMMERSION	AFTER IMMERSION	PARAMETER (MALAD LAKE)	BEFORE IMMERSION	AFTER IMMERSION
pH	6.8	7.5	pH	6.7	7.5
Density	0.992 gm/cc	1.01gm/cc	Density	0.98 gm/cc	0.992gm/cc
Specific gravity	0.98773gm/cc	1.0056gm/cc	Specific gravity	0.97579gm/cc	0.9887gm/cc
Electric conductivity	0.458 ms	0.642ms	Electric conductivity	0.673 ms	1.07ms
Turbidity	0.19 gm/litre	0.22gm/litre	Turbidity	0.18 gm/litre	0.22gm/litre
Total hardness	0.4 mg/litre	0.6mg/litre	Total hardness	0.5 mg/litre	0.9 mg/litre
Dissolved oxygen	0.5 mg/litre	2.5 mg/litre	Dissolved oxygen	0.4 mg/litre	1.4mg/litre
BOD	0.113 gm/litre	0.339gm/litre	BOD	0.078 gm/litre	0.339gm/litre
COD	10 mg/litre	4.4 mg/litre	COD	6.4 mg/litre	18mg/litre
Chlorinity & salinity	0.3 gm/litre	0.5gm/litre	Chlorinity & salinity	0.2 gm/litre	0.4gm/litre
Nitrates & nitrites	0.06mg/litre	0.08 mg/litre	Nitrates & nitrites	0.01mg/litre	0.03 mg/litre

### III. RESULT AND DISCUSSION

The results of this research work have been shown in table. The environmental impact of Ganesh idol immersion activity on water quality of Aarey and Malad Lake was assessed and significant changes in physico-chemical properties of water were observed. The pH of water is important because it affects solubility of nutrients. pH was determined by the pH paper and BDH indicator & significant variation was observed during the study. The pH of water is important as it governs solubility of nutrients were found before immersion 6.7-6.8, but after immersion it changes to 7.5. The changes in pH might be due to the addition of organic matter and material used in the preparation of Ganesh idol. The temperature of the lakes also changes leading into increasing specific gravity and electrical conductivity. Rising in temperature speed up the chemical reaction and biological activity that reduce the solubility of gases in water. Dissolved oxygen (DO) heaving great importance in water quality monitoring and it considered an important factor which reflects physical and biological process in water body. Dissolve oxygen is one of the important parameter for the assessment of the suitability of water for fauna and flora. During pre immersion period

dissolved oxygen was observed very low 0.4-0.5mg/litre while it was observed comparably high during the post-immersion 1.4-2.5 mg/litre. Because of Ganpati idol immersion activity BOD, COD, Total hardness, Chlorinity and salinity, turbidity of the lake also increases.

### IV. CONCLUSION

The present study on assessment of idol immersion on physical-chemical parameters of Aarey & Malad lake of Mumbai stretch revealed that idol immersion activity has negative impact on water quality of Aarey and Malad. Immersing idols in lakes and rivers is an age-old tradition which poses a grave threat to water bodies. During the Hindu festival season, hundreds of idols of God and Goddess are immersed in the lakes polluting the lake's eco-system. The possible ways of dealing with this problem is by creating awareness among the people. Use eco-friendly clay idols painted with natural colors. Avoid public water bodies to immerse the idols, instead immerse idol in tub or artificial pond. Careless dumping of Ganesh idols in water bodies blocks the natural flow of water. This results in stagnation and breeding of mosquitoes and harmful pests.

### REFERENCE

- Aniruddhe Mukerjee A Case Study of Idol Immersion in the Context of Urban Lake Management Jabalpur Municipal Corporation, Jabalpur, Madhya Pradesh, India. | | A.Bajpaiz,A.Vyas,N.Verma and D.D.Mishra Effect of idol immersion on water quality of twin lakes of Bhopal with special reference to heavy metals. Poll Res.27(3) : 517-522 (2008). | Biba Jasmine Kaur, George. M.P, Sandeep Mishra, Water quality assessment of river Yamuna in Delhi stretch during Idol immersion INTERNATIONAL JOURNAL OF ENVIRONMENTAL SCIENCES Volume 3, No 6, 2013 | |G.M.\*, Raval V.H., Zadafiya S.K. and Patel A.V.(March 2012) Idol immersion and Physico-Chemical properties of South Gujarat Rivers, India, Navyug Science College, Surat – Gujarat, INDIA Research Journal of Chemical Science, Vol- 2 (3), 21-25. | | Kausik Kumar Das, Tanuja Panigrahi, Dr. R.B.Panda, Idol Immersion Activities Cause Heavy Metal Contamination in River Budhabalanga, Balasore, Odisha, India. International Journal of Modern Engineering Research (IJMER). VOL.1.2, Issue 6, Nov- Dec- 2012PP-4540-4542. ISSN : 2249 – 6645. | N.C.UJANIA AND CHAITALI A.(2012),Environmental impact of idol immersion on tapi river, Department of aquatic biology, International Journal Of Geology, vol.2(3), September- December, pp.11-16. |