

# Spatial Distribution of Copper in Tiru Lake at Halli, Udgir, Dist. Latur

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## ABSTRACT

*Ground water and Surface water bodies are the main source of water for Domestic, Irrigation and drinking purpose .There is no perennial river in this region .So underground water and surface water has great importance .the nearest surface water body to Udgir. Tiru lake is situated in Halli village of Udgir which is 20 km away in this region agricultural practice is the main source of income. Atmospheric runoff is the major concern for the lake. As it deposit silt in it also the residues from agriculture. For present work four sampling sites were identified and the water quality was analyzed for heavy metal contamination on monthly basis for a period of one year. Heavy metals were detected by Atomic Absorption Spectrophotometer. The highest concentration found was for manganese is 0.0661 mg/L and lowest was 0.0110 in December. For copper it was 0.0535 mg/Lit May and 0.0190 in March 2017*

**Key Words:** Surface water body, Toxic metals Agricultural practice, Atmospheric runoff.

## 1. INTRODUCTION

Climate is governing all the spheres on the Earth. Water is an essential component of the environment and it sustains life on the earth. All organisms depend on water for their survival (Smitha et.al 2007). Freshwater bodies are important wetlands located in and around human habitations as they are generally semi natural ecosystems constructed by man in landscape suitable for water stagnation (Yadav et.al,2013). River-lake systems most often behave as hydrographic units, which undergo complex interactions, especially in the contact zone.( Angela Kuriata-Potasznik 2016). A lake can be viewed as the most attractive and expressive characteristic of a landscape. In India there are some natural lakes that lies in the Himalayan region and in the flood plains of the Indus, Ganga and Brahmaputra. These lakes with various dimensions possess different names that are summarized in Table 1. However during the last 1000 years a large number of man-made water bodies were constructed in the western and peninsular India (Gopal et al., 2010). Accumulation of heavy metals in the freshwater ecosystem is a problem of global concern. On the recent time scale due to the continuous rise in the population, rapid industrialization, toxic chemicals used by agricultural industries and the technologies involved in waste disposals, there is increase in the rate of release of pollutants into the environment than the rates of their purification (Jamshed Zaidi 2017)

## 2. STUDY AREA

Udgir is a city with a municipal council in Latur district in the Indian States and territories of India of Maharashtra. Udgir comes under semiarid climate with precipitation 700 mm/year The main occupation of the people of Udgir is agriculture as most of the rural area surrounding Udgir is rainfed and marginal and small farmers make up the rural setting. The soil as a part of Deccan plateau is black basalt soil, rich in humus. Tiru lake is situated at halli village Udgir, which is having the capacity to store 5594 cu. m. The main purpose of lake is to irrigation purpose. But Latur district is a drought prone area so it is also used for drinking and domestic purposes.

## 3. MATERIALS AND METHODS

For analysis of heavy metals in water, samples were collected from the study area in three different seasons during the year 2017. Water, samples were collected in plastic containers, which were thoroughly cleaned with nitric acid and rinsed several time with distilled water. Analysis was carried out to determine the concentration of various metals like Manganese and Copper by using atomic absorption spectrophotometer (AAS) (APHA-1995), S.K.Maiti (2001) Versatility of AAS can be realized from the fact that 70 elements, including most of the common rare earth metals, have been determined by it in concentration that range from trace to macro quantities, in the presence of other elements.

TABLE.1 .Levels of Copper in the year 2017 from Tiru Lake in mg/l

Sr.No	Month	Sampling site No.01	Sampling site No.02	Sampling site No.03	Sampling site No.04
01	Jan	0.0382	0.0285	0.0290	0.0210
02	February	0.0342	0.0261	0.0280	0.0212
23	March	0.0411	0.0310	0.0261	0.0190
04	April	0.0425	0.0325	0.0311	0.0223
05	May	0.0535	0.0410	0.0312	0.0221
06	June	0.0325	0.0408	0.0327	0.0210
07	July	0.0311	0.0290	0.0265	0.0233
08	August	0.0413	0.0301	0.0315	0.0221
09	September	0.0428	0.0352	0.0330	0.0231
10	October	0.0403	0.0311	0.0325	0.0321
11	November	0.0361	0.0326	0.0311	0.0231
12	December	0.0357	0.0368	0.0347	0.0310

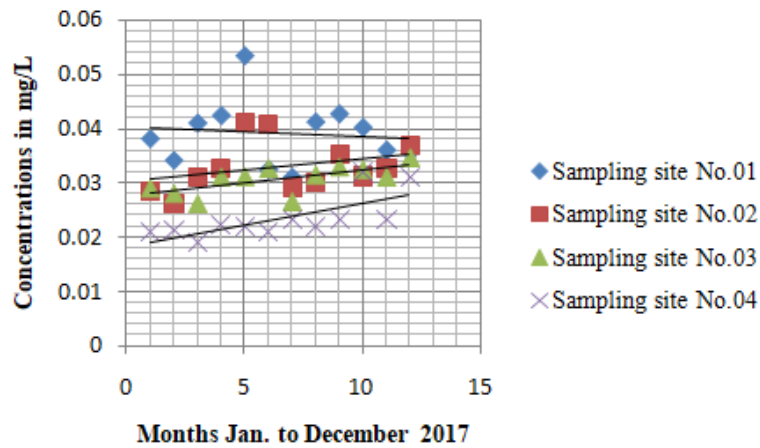
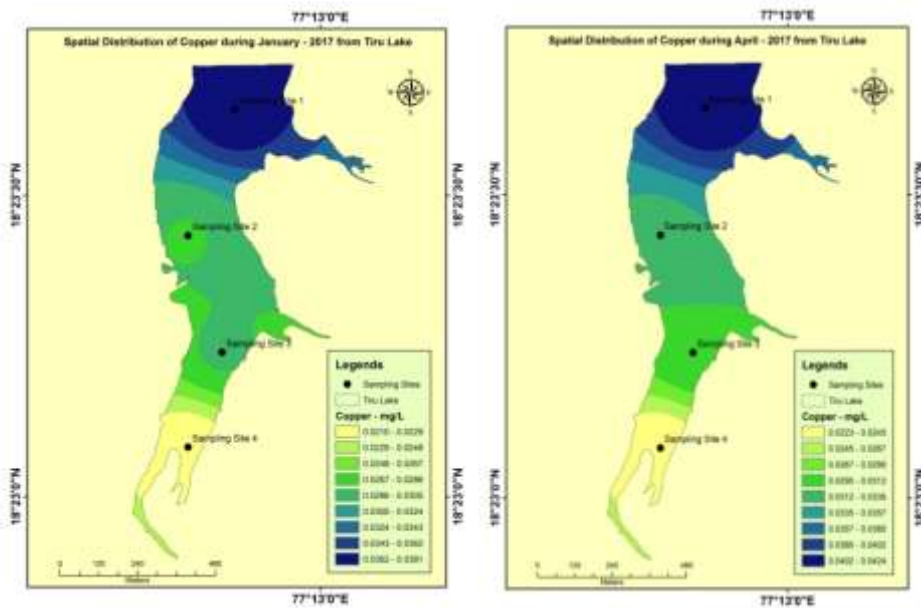
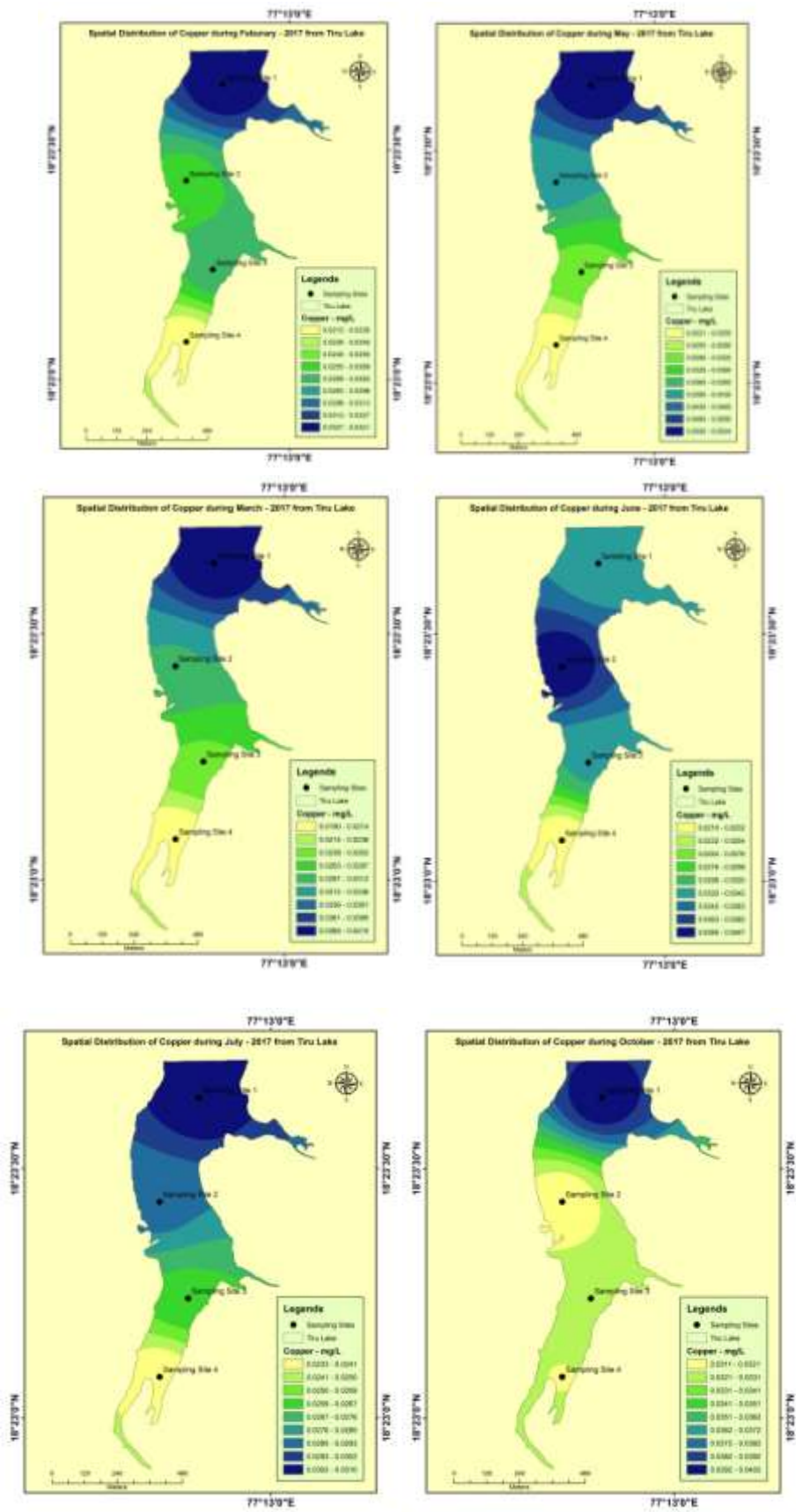
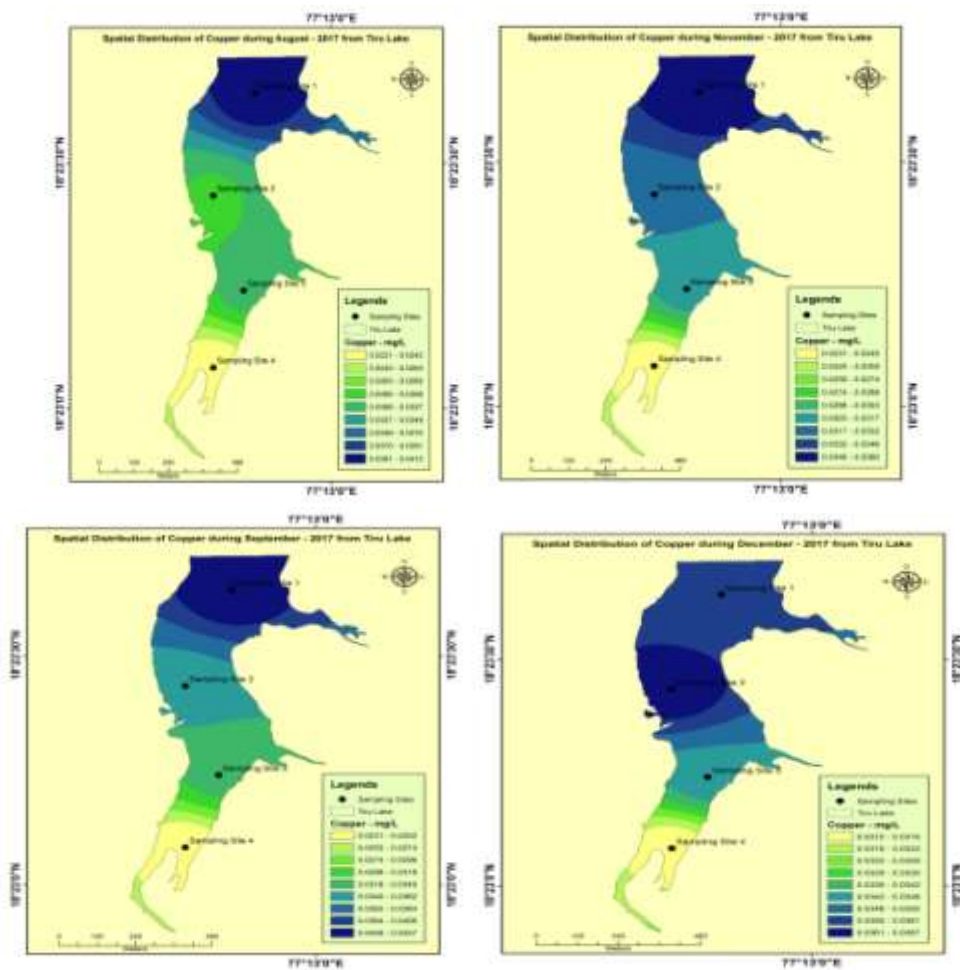


Figure 1 Levels of Copper In Tiru lake 2017

3.1 Spatial Distribution of Copper in Tiru Lake from Jan. to Dec.2017







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