MAPPING OF WATER POLLUTION IN PATTIWILA AREA OF GAMPAHA DISTRICT, SRI LANKA, USING SURFACE INTERPOLATION METHOD

L. N.W. Perera and V.P.A. Weerasinghe*

Department of Zoology, Faculty of Science, University of Kelaniya, Kelaniya, Sri Lanka

*

Corresponding Author: primali@kln.ac.lk

ABSTRACT

Industries can be a huge source of water pollution and extremely harmful effects could be produced when there are no proper effluent discharge mechanisms. Residents in the Mabima West, Pattivila North and Pattivila South Grama Niladhari (GN) divisions of the Biyagama Divisional Secretary's Division in Sri Lanka also have health problems due to the water pollution in this area. Some years ago, the Pattiwila canal, which is a stream running through these GN Divisions was directly connected to the livelihood of the people living in Mabima and the Pattiwila region but today the water quality of this canal has been negatively affected by the wastewater discharges from several industrial activities of the study area. Sapugaskanda oil refinery, Sapugaskanda diesel power plant and gas filling industries are most possible effluent discharge sources to the Pattiwila canal.

The present study was carried out to investigate the spatial variation of water quality in the study area using surface interpolation method and compare with relevant water quality standards. Fourteen water quality parameters of surface and ground water in seven sampling sites were analyzed according to the standard procedures. Data was interpolated using ArcGIS 9.1 software and Inverse distance weighting (IDW) method was used as the surface interpolation method.

Results indicated that, oil and grease levels in water exceed the water quality standard for use as raw water for public water supplies and drinking purposes. It is not safe to use water as raw water for public water supplies, drinking purposes and irrigation and agriculture purposes without proper treatment, especially for oil and grease.

Key words: Oil and grease, water pollution, surface interpolation