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# **Evaluation of groundwater quality in five grama divisions of Maharagama urban area using Groundwater Quality Index (WQI)**

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## **ABSTRACT**

The Maharagama urban area is a heavily populated area in Colombo district. Groundwater in this area is having a great vulnerability for pollution by anthropogenic activities. The present study was carried out to monitor some important water quality parameters, to evaluate the quality of groundwater in the study area using a Water Quality Index (WQI) and to compare the water quality between Grama Niladari (GN) divisions in the study area. Five GN divisions (Jambugasmulla, Gangodawila south B, Wijerama, Navinna and Wattegedara) were selected for the study. 55 wells were sampled during the study. The resulted WQI values in groundwater ranged from 17.08 to 280.91. The results revealed that the water quality of the wells deviate from excellent to very poor quality. The nitrate concentration was high (>45mg/l) in some wells. Considering all the water quality parameters, the poorest water quality was recorded in Navinna GN division. It was observed that unregulated garbage dumping, uncontrolled application of organic and inorganic fertilizers, constructing toilet pits very close to wells and unregulated human settlements have been increasing in the study area.

**KEYWORDS:** Ground water, Nitrate, Water quality, Water Quality Index

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