

**A STUDY ON SPATIAL AND TEMPORAL CHANGES OF GROUND WATER
QUALITY IN THE TSUNAMI AFFECTED NAVALADY AREA IN THE
BATTICALOA DISTRICT**

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A PROJECT REPORT PRESENTED BY

KALPANA GOWRITHASAN

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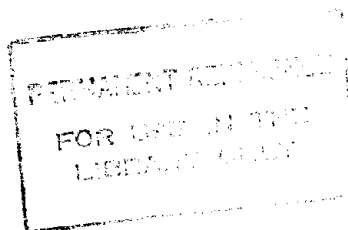
**A STUDY ON SPATIAL AND TEMPORAL CHANGES OF GROUNDWATER
QUALITY IN THE TSUNAMI AFFECTED NAVALADY AREA IN THE
BATTICALOA DISTRICT**

Ms. G. Kalpana
Postgraduate Institute of Science
Peradeniya

The major tsunami of 26th December 2004 that hit many South Asian countries bordering the Bay of Bengal severely devastated the coastal region of Sri Lanka. In the coastal areas of eastern Sri Lanka, majority of the population is relying on groundwater for their domestic and agricultural activities. The water supply for domestic purposes was affected through the disruption of pipe lines and through the filling of wells with debris and saltwater.

Aims of the study are to understand the impacts of the tsunami on the groundwater bodies in the Navalady area in the Batticaloa District and the effect of anthropogenic activities on the water quality of the area. The field and laboratory analyses were carried out to understand the spatial and temporal changes of the quality of shallow groundwater during July to December, 2006.

The study revealed that the spatial and temporal changes of the Electrical Conductivity (EC) of studied water do not change systematically. The pH of water is in the range of 7 to 8.6. The levels of turbidity of most of wells are always below 1. Some wells exhibit higher levels of nitrate and phosphate. The values of nutrients of studied wells depend on the location and anthropogenic activities. The analytical data imply that the tsunami affected groundwater bodies in the areas are recovering slowly and the groundwater bodies in the area are heterogeneous in terms of chemistry. The area is highly susceptible to groundwater contaminations by anthropogenic and natural activities.



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