

**DIVERSITY AND ABUNDANCE OF  
DINOFLAGELLATES IN SEA BATHING SITES;  
MOUNT LAVINIA, POLHENA AND UNAWATUNA**

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by

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## ABSTRACT

Phytoplankton is a group of organisms which are capable of reflecting the conditions of water. They consist mainly of diatoms, dinoflagellates, and a variety of organisms from other divisions of the plant kingdom. Dinoflagellates are well known for producing marine toxins. In the present study, the phytoplankton abundance, species diversity and composition were investigated with special reference to toxic dinoflagellates in relation to some chemical parameters in three famous sea bathing sites; Mount Lavinia, Unawatuna and Polhena during August to October, 2016. A total of 119 species of phytoplankton were identified during the study. The phytoplankton abundance ranged from  $12.25 \times 10^3$  to  $0.57 \times 10^3$  cells/L. Among identified phytoplankton 34 species were dinoflagellates and of that 15 were identified as toxic species. The results of two-way ANOVA revealed that, the temporal and spatial variations of toxic dinoflagellate abundance were significant ( $p < 0.05$ ). Significantly higher toxic dinoflagellate abundance was recorded in September than that of August and October while the toxic dinoflagellate abundance was significantly higher in Unawatuna. The temporal and spatial variations of total phytoplankton abundance were also significant ( $p < 0.05$ ). The significantly higher total phytoplankton abundance was reported in September while significantly higher total abundance was found at Unawatuna than that of Mount Lavinia and Polhena. Phytoplankton abundance with Nitrite was negatively correlated ( $-0.44$  at  $p < 0.01$ ) while the correlation with Nitrate, Phosphate and Silicate was not significant. This baseline information on phytoplankton community structure obtained in relation to water quality parameters can be used for better management of these sites to develop marine tourism.