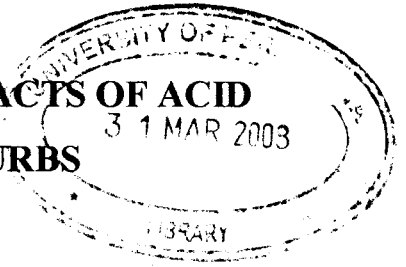


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**OCCURRENCES AND ENVIRONMENTAL IMPACTS OF ACID  
SULFATE SOILS IN COLOMBO SUBURBS**



A PROJECT REPORT PRESENTED BY

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to the Board of Study in Environmental Science of the  
**POSTGRADUATE INSTITUTE OF SCIENCE**

*In partial fulfillment of the requirement  
for the award of the degree of*

**MASTER OF SCIENCE IN ENVIRONMENTAL SCIENCE**

of the

**UNIVERSITY OF PERADENIYA**

**SRI LANKA**

**2006**

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**ABSTRACT**

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Acid sulfate soils are soils that containing iron sulfide which, produce sulfuric acid when they are disturbed or exposed to oxygen. They are found in several parts of the world in coastal areas influence by tides and also some inundated inland areas which contain sulfidic materials. The western coastal belt of Sri Lanka is subjected to sea water influence, frequently submergence with floods and high urbanization with development activities which facilitate the formation and disturbance of ASS. This is a pilot study to improve knowledge of acid sulfate soils using two study sites in western coast, named Kesbewa and Lunawa. The overall aims of the research were to determine the occurrences and environmental impacts associate with the acid sulfate soils.

Identification and characterization of acid sulfate soils were done using onsite and geomorphologic indicators, mineral constituents and chemical parameters of soils such as total actual acidity, total potential acidity and total sulfidic acidity were studied. Also field and laboratory measurements of water quality, questioner survey and accessing environmental impact were used for the studies of existing environmental impacts. Positive field indicators, questioner survey and water quality issues which related to actual acidity were observed in Kesbewa site. Recently after the excavation, high acidity was shown in the site. With the high flood events; levels of acidity, iron and aluminum concentrations are decreased. It has been observed that agricultural potential and engineering impacts in the site. High potential acidity values were found in the Lunawa site and results of mineralogical studies were contained minerals, related to acid sulfate soils as pyrite and jurbonite. Field indicators and existing environmental impacts are absent in the Lunawa site, due to the lack of large scale excavation projects. Using comparing assessment of soil acidity and nature of environment impacts in two selected sites, it can be concluded that Kesbewa site had temporary actual acidity while Lunawa site has high potential acid sulfate soils.