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**RISK MAPPING AND ECOLOGICAL ANALYSIS OF HUMAN  
LEPTOSPIROSIS IN KANDY, SRI LANKA**

A PROJECT REPORT PRESENTED BY

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to the Board of Study in Earth Sciences of the  
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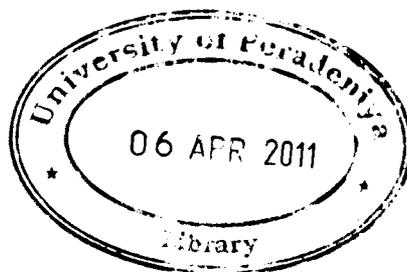
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**Abstract****RISK MAPPING AND ECOLOGICAL ANALYSIS HUMAN  
LEPTOSPIROSIS IN KANDY, SRI LANKA**

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Leptospirosis has been recognized as an emerging public health problem in Sri Lanka. Before implementation of strategies to control and to prevent the disease at local level, studies are essential to describe the frequency and distribution pattern with the aim of identifying where the public health interventions are urgently required.

The main objective of this study was to identify the high risk areas for leptospirosis and associate disease risk factors within the Kandy district.

To ensure complete ascertainment of clinically confirmed leptospirosis cases for the period of 2000 to 2008, 23 offices of Medical Officer of Health those are located within the Kandy district were approached. Medical data describing patient's age, gender, place of residence, and disease onset was compiled. Three types of analysis; descriptive analysis, geographic information system analysis and statistical analysis were performed to illustrate the frequency and pattern of the disease, to identify high risk areas, to determine correlation of patient incidence with risk factors respectively. Multiple regression analysis was performed to describe the correlation of patient incidences climatic factors like rainfall, humidity and temperature, also linear regression analysis was performed to describe the correlation of patient incidences with occupational group (number of skilled agricultural and fishery workers) or poverty (the index of the household below poverty) at Divisional Secretariat level.

In total, clinically confirmed 652 leptospirosis patients were available for the ecological analysis. Leptospirosis confines to 324 (27.27%) Grama Niladhari (GN) divisions in Kandy. The vulnerable GN divisions for leptospirosis in Kandy district were highly dispersed. The present study revealed that majority of patients were middle aged (35 - 49 years) males. The monthly pattern of leptospirosis patients distinguishes two peaks; April to June and October to December and these were associated with cultivation cycles and monsoons. The disease incidence was significantly correlated with monthly average rainfall and humidity in wet zone. However, disease incidence was neither correlated with occupational group or the household population below poverty.

Approximately one fourth of the GN divisions in Kandy are under risk of leptospirosis, public health interventions have to be clearly focused to those areas in early monsoons.

