

## Human impacts on marshlands in and around Colombo: changes and challenges during the last decade

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### Abstract

Marshlands are valued for their ecological, economical, biological and aesthetic properties. However, they are more vulnerable to human interferences than other outdoor open spaces. With the acceleration of development processes and due to population pressure, a considerable extent of marshlands in and around Colombo have been utilized intentionally and/or unintentionally, even though some marshlands such as the Colombo Flood Retention Areas (CFRA) have been declared as conserved sites.

The objective of this study is to present an overview of human impacts on marshlands in and around Colombo City. The study highlights the changes that occurred in marshlands during the past ten years with respect to the reduction of extent and/or water holding capacity, deterioration of water and soil quality and alteration of floral and faunal species diversity and abundance.

Sites selected for the study were Yakbedda, Heen marsh, Bloemendhal, Sri Jayawardhanapura, Pagoda-Kotte and Bellanwilla –Attidiya marshlands. Information for the study was collected from published and unpublished reports including our earlier studies and current field work and observations, maps, questionnaire based surveys and discussions with government and non governmental agencies and residents.

The main reason for reduction of the water holding capacity of marshlands was directly related to legal and illegal reclamation of marshlands. A considerable extent of these low lying areas have been utilized for construction of government and private buildings while some areas have been allocated for developmental projects which are in progress. Cultivation of fruit crops and vegetables along the borders of marshlands interfered with the recognition of the exact physical boundaries of marshlands.

Contamination of surface run off (draining storm water) by wastes, domestic water and waste water from improperly maintained toilets of dwellings, direct discharge of domestic wastes and sewage to waterways was identified as the main way by which the quality of water is deteriorated. The input of industrial effluents, chemical fertilizer and pesticides through surface run off was least observed in these sites. Fishing, roaming of cattle and buffalo do not seem to affect the water quality of marshlands to a great extent while collection of plants for weaving, wrapping and medicinal purposes was at a sustainable level. The change in species diversity and abundance of the study sites was accelerated by the destruction and degradation of marshlands. The most problematic invasive plant, water hyacinth (*Eichhornia crassipes*) was not a threat to the network of water channels of these sites. However, wel aththa (*Ammona glabra*) continued its spread indicating the problem of changing the natural habitats in marshlands.

Failure to understand the long term implications of human activities and improper planning of certain developmental processes may have lead to the changes in ecological stability of these marshlands.