

# Project Completion Report

## Negombo Lagoon (2000)

### 1. Introduction

The marine environment is used extensively and a significant debate has focused on the relatively less attention given to the discharge of municipal effluents.

Some common problems associated with excess nutrient levels (e.g. eutrophication) and low oxygen levels (hypoxia) particularly in estuaries. Many metals and organic chemicals can cause severe, short term, acute impacts on marine organisms. Moreover, many organic chemicals and some forms of certain metals can dissolve and accumulate in the fatty tissues of these organisms.

Estuaries are susceptible to certain problems such as

- Impacts on water quality (eutrophication, hypoxia, turbidity, elevated concentrations of pollutants).
- Loss of submerged aquatic organisms.
- Impacts on entire marine communities.
- Accumulation of toxic pollutants in sediments and fatty tissues of aquatic organisms.

Estuaries refer to semi-enclosed bodies of water that have some connection to the open ocean and an input of fresh water that mixes with saltwater. Both ocean and land contribute to an ecosystem of specialized plants and animals. Estuaries provide habitat, nursery, productivity, water filtration, and food control.

Projection of continued or increasing degradation is of great concern because estuaries and coastal waters are among the most important of all the marine environments with respect to their commercial resources, recreational uses and ecological roles. Therefore the ability to detect land based pollution and understand its causes can meet up with monitoring and basic research.

### Study sites:

Three water bodies were subjected to this "Study of the effects of land based pollution in selected areas namely, Negombo Lagoon, Ja-ela, Muthurajawela and Dandugam Oya.

Negombo lagoon is a productive brackish water body situated in the western province. It receives the water body of the Attanagalla Oya drainage basin. It is also considered to be the estuarine part of the continued wetland system of the Muthurajawela swamp. (Scott, 1989). Negombo lagoon (3,164 ha.) is connected by a single narrow opening with the open sea at its north mouth and it receives its fresh water from Attanagalu Oya which empties as the Dandugam Oya and Ja-ela at its southern most tip. At its eastern boundary is the Muthurajawela marsh, where the Dutch Canal links Muthurajawela and Kelani River. The Dandugam Oya drains a catchment of 727 km<sup>2</sup> and discharges at the junction of the lagoon and the marsh. The Muthurajawela marsh-Negombo lagoon wetland system has served multiple uses including fishery, agriculture,

