

**Assessment of pollution of the St. Sebastian South canal,
Orugodawaththa: A case study**

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Abstract

Fresh water pollution threatens the health and the well-being of humans, plants and animals. This issue is generally observed specially in highly populated areas in our country. St. Sebastian South canal in Colombo North area is one of the main storm water drainage canals which drain the storm water in the Colombo basin through Kelani River finally in to the sea. There is a large number of low-income housing on both sides of the canal with very limited access to proper sanitary facilities, garbage disposal and garbage collecting systems. This canal is highly contaminated with human sewage, industrial waste and garbage. There are small scale commercial premises such as vehicle spare part shops, workshops, boutiques and industries in that area. Keththarama Cricket Stadium is also located close to this area.

The objectives of this case study were to identify the sources of pollution in St. Sebastian South canal, in Orugodawaththa and to identify the effects of pollution on residents in that area.

Replicate water samples were collected at three predetermined sites of the canal. Site No 01 (S1) was heavily polluted with domestic kitchen waste. Site No 02 (S2) was highly contaminated with human sewage and the third selected site (S3) showed signs of oil spills, and oil slicks on top of water. Water samples were collected from the canal and physical parameters such as temperature, odour, colour change, presence or absence of oil , conductivity and, visibility were tested on the obtained water samples , at the same time, Chemical parameters such as dissolved oxygen content (DO), pH, salinity and

biological parameters such as *E.coli* count, algal growth, presence and absence of zooplankton and phytoplankton were also tested using the obtained water samples.

Residents were interviewed regarding the problems which they face as a result of this aquatic pollution in this area. It was noted that the residents of the area frequently suffered from various skin diseases like skin sepsis and fungal infection, vector borne diseases such as Dengue, and Filariasis, water borne diseases mainly diarrhea hepatitis and typhoid etc. Problems due to breeding of scavengers, were also noted. Stray dogs and cats were real nuisance to both residents and passers-by. Unpleasant odor emanating from heaps of garbage makes the area unsuitable for living. There seemed to be no proper Garbage collection and disposal method in the area. The Residents further stated that houses were inundated with highly contaminated water during rainy days due to flooding. A few child deaths were also recorded due to drowning in contaminated flood.

Considerable variations in readings were observed in total dissolved solid, dissolved oxygen, electrical conductivity and visibility of the collected samples. The dissolved oxygen concentration was very low in the S1 and S2 sites due to the direct discharge of the sewage in to the canal from nearby houses. Algal growth was also observed in some areas of the canal. Some phytoplankton and zooplankton were also observed. The fecal coliform tests showed positive results which indicated fecal contamination of water.

The results of this preliminary study shows that St. Sebastian South canal in Orugodawatta is heavily polluted with sewage, household waste, non-degradable waste and industrial waste. The pollution problem is worsened due to over population, urbanization, decrepit infrastructure and breaches in the local government management system. The results of this study highlights the need of immediate control measures to overcome the ecological and health impacts of pollution of the St. Sebastian South canal.

Keywords: St. Sebastian South canal, water quality parameters, aquatic pollution