

Impact of Human Activities on the Surface Water Resources of the Densu Delta Ramsar Site

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ABSTRACT

The Densu Delta Ramsar site is of international importance according to the Ramsar convention. The functions include water quality improvement, floodwater storage, fish and wildlife habitat, aesthetics, and biological productivity. In recent times the wet land has come under serious threat from the activities of humans which include housing developments, farming and improper disposal of all sorts of wastes, encroachment and pollution of their water bodies. This study was therefore carried out over a five-month period from October 2010 to February 2011 within the Densu Delta wet land to investigate the level of pollution and also how the land structure has changed over 15- year period using satellite images. To assess the level of pollution, 13 physico-chemical parameters were analyzed from five carefully selected sites. The satellite images used in the analysis were 1985, 1990 and 2000 Landsat images. The values obtained for the physico-chemical analysis of the water samples from the various sites showed wide variations. Conductivity and turbidity values ranged from 160-57600µS/cm and 0.10- 152NTU respectively. Temperature, suspended solids and pH also ranged between 25.10- 26.80°C, 2.00-118 mg/l and 6.98-8.17 respectively. Chemical parameters like BOD and DO also had their values between 0.20-8.30 mg/l and 2.10- 9.20mg/l respectively. The analysis of land use in the Densu Delta Ramsar site showed an alarming trend in canopy (or forest) cover. In 1985 the closed canopy cover occupied an area of 21.8205km²; this decreased drastically to 0.009km² in 2000. The area covered by bare surface in the wetland also increased from 1985 to 2000. There were changes also in the areas covered by grass, water body, open canopy and herbs. Based on the findings, it was concluded that pollution and the very rapid degradation of land in the Densu Delta wet land were as a result of human activities. Amongst the recommendations made were that the

Environmental Protection Agency (EPA) should play its watchdog role, and also further studies needed to be carried out to ensure proper management of the Densu Delta Ramsar site to ensure sustainability.

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