Theme 7: Lakes, rivers, estuaries: water quality, biotic resources, sustainable management

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STUDY ON RESTORATION OF LAKE ECOSYSTEM - A CASE STUDY OF AVARGERE LAKE, SITUATED NEAR DAVANGERE IN CENTRAL PART OF KARNATAKA

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Lakes and ponds are depressions containing standing water. Lake supports life of many aquatic plants and animals. In a healthy system, the availability of the nutrients viz. carbon, phosphorous and nitrogen is sufficiently small as to limit the production of algae and a dynamic equilibrium is maintained throughout the ecosystem. Heavy dependence on ground water with an increase in population and erratic urbanization have all led to the slow disappearance of many ponds in our country leading to acute ground water depletion and pollution. Agricultural run-off contains fertilizer components, particularly nitrogen and phosphorus, which reaches nearby Lakes and other water bodies and causes over nourishment. This gives rise to a phenomenon called Eutrophication and will finally makes the lake "a lifeless ecosystem".

Hence, restoration of ponds is very much necessary in the present day scenario. The restoration of Lakes helps in Irrigation requirements, Soil conservation, Moisture conservation, Moisture for the open wells, Foods supply like fish and others, Sources of drinking water for humans and for animals and Recreational aspects like boating, etc. Davangere is a district head quarter situated in central part of Karnataka with a population of around 5 Lakhs. There are three major lakes in and around Davangere City. These are Bathi Lake, Kundawada Lake and Avaragere Lake. Because of entry of city sewage and agricultural runoff, all of these lakes are polluted and the water has become unfit for drinking.

A detailed study has been conducted on Avargere Lake from Aril 2004 to March 2006. Analysis of lake water along with nearby ground water has been carried out. Detailed study has been conducted about the amount of sewage and other contaminants entering the lake. Based on the data obtained in the present study, a complete procedure for restoration of the lake has been developed considering all the engineering design aspects. The present paper describes this study in detail.