MATERIAL

AND

METHODS

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The objective of present work was to study the water resources with respect to human and wild life at Radhanagari forest. The study was conducted in selected area and carried out from August, 1994 to August, 1995.

The cumulative rain fall data was collected from the office of Forest Department at Dajipur for understanding the water resource conditions.

SURVEY OF WATER RESOURCES :

The location of major water resources were first observed from small scale ordain survey map. For the study of water resources from forest, area was visited extensively. The hydrological conditions were observed during rainy, winter and summer seasons and information such as their types & discharge was collected. The other relevant information such as uses of water resource, type of use (drinking, washing etc.), use by domestic animals and wild life etc. were collected.

In rainy season, survey of water resources was very difficult because of heavy rainfall and foggy atmosphere. Thus during rainy season's survey, study area was visited only by tourist road and sampling sites were fixed on sides of road.

In winter and summer season, with the help of local people, the water resources from interior forest were surveyed and information regarding their use and hydrological conditions were collected.

From the survey results, on the basis of resource type, uses and location some important water resources were selected as representatives of study area, and the sites were fixed for sampling from protected forests and drinking water from villages for quality study.

Sampling :

After observation of different water resources from study area, eight sampling sites (A,B,C,D,E,F,G,H.) from protected forest, five sites (I,J,K,L,M.) of drinking water sources from villages and four sites (N,O,P,Q.) from back water of Radhanagari dam were selected for physico-chemical parameter study. The study area was visited frequently for collection of water samples.Regular sampling has been made on seasonal basis (4 times in a season) from August, 1994 to August, 1995 (Plate 1). The representative samples were collected in 5 litres plastic can and were brought to laboratory for physico-chemical parameter analysis. During the transport the samples were handled in such a way that there was no significant change in composition before analysis. The parameters such as dissolved oxygen and free carbon-di-oxide (CO_2) were determined immediately.

The temperature and pH values of water samples were recorded at the sampling stations and other physico-chemical parameters such as DO, Free CO_2, total alkalinity, total acidity, chlorides, hardness, calcium, magnesium, nitrates and total solids were analysed in laboratory by following standard methods (APHA, 1980 and Trivedy, et. al., 1987). The chemical used for analysis were all of analar grade.

PLATE - 1

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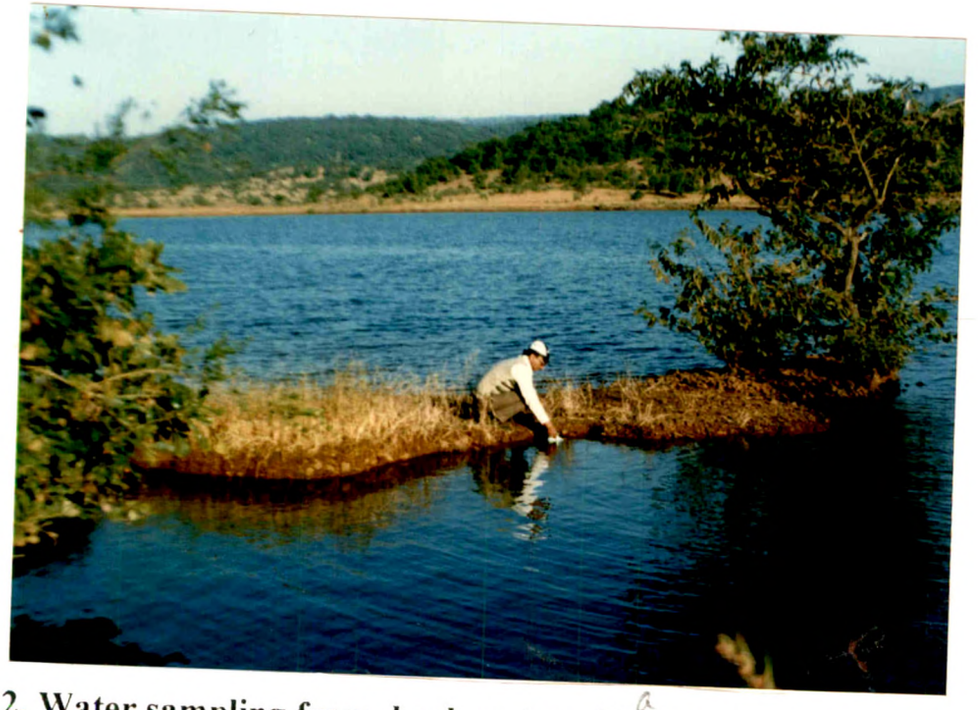
1. Stream water sampling at a study area



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2. Water sampling from back water of Rdhanagari reservoir

For metal analysis water samples were collected separately in pre-treated poly-ethylene bottles of 100 ml. capacity. Immediately after collection water samples were preserved and transferred to the laboratory.

Pre-treatment of bottles :

The polyethylene bottles were filled with 1:1 HNO_3 and kept for 24 hours. After 24 hours acid was taken out and bottles were washed with double distilled water twice.

Preservation of samples :

The samples were preserved by addition of 2 ml. conc. HNO_3 in each bottle at the time of collection.

Digestion of sample :

Why to use acid

In 100 ml. collected water sample 5 ml. concentrated HNO_3 was added and evaporated on water bath, till it's volume reduced upto 15 to 20 ml. Then 5 ml. concentrated HNO_3 was again added to it and evaporated upto a small quantity and finally it was diluted upto 100 ml. with double distilled water.

The digested samples were used to determine metal contents such as Fe, Co, Ni, Mn, Pb, Zn and Cu by using Atomic Absorption Spectrophotometer. (APHA, AWWA, WPCF, 1985).

Where ?

At — not available