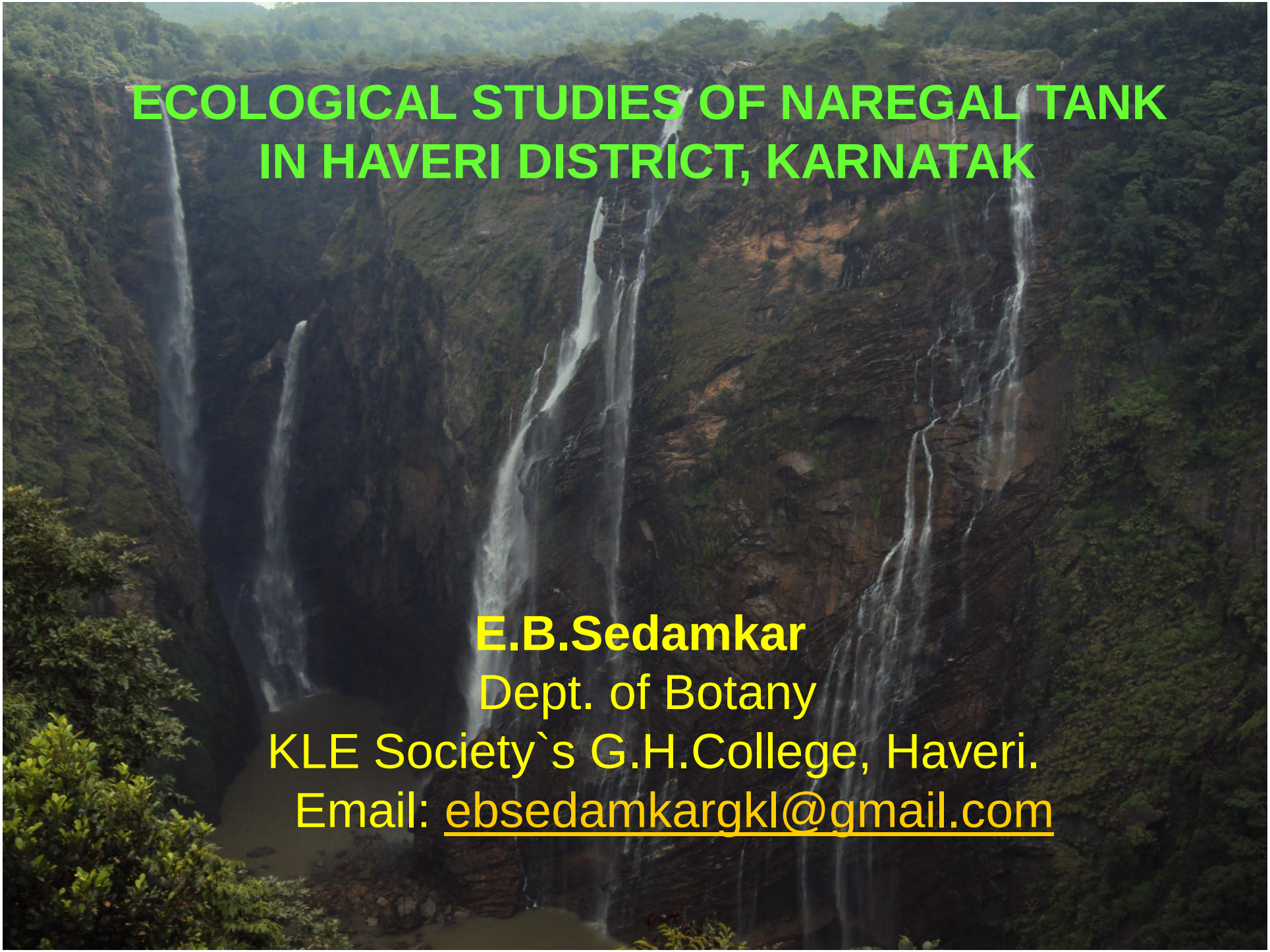

ECOLOGICAL STUDIES OF NAREGAL TANK IN HAVERI DISTRICT, KARNATAK

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INTRODUCTION

Water bodies have great importance as they are recharging resources for drinking, domestic & agricultural use. The present investigation involves the following objectives.

1. Effect of Physico-chemical parameters on Phytoplankton's.

2. Identification of Phytoplankton's.

3. Assessment of water quality & pollution.

MATERIALS AND METHODS

Monthly surface water samples were collected in Five different sites, \from Jan 2010 to October 2010.The average reading is recorded for physico-chemical & biological factors described in APHA (2005).

STUDY AREA

Naregal tank comes under Naregal village of Hanagal taluk (west side) in Haveri district. It is 18 km away from Haveri (Fig-1-3). The normal annual rainfall of Hanagal taluk is 800 mm to 1000 mm.The major crop is Maize, Jawar and Cotton etc. District has subtropical climate with temperature ranging in between 180c to 400c. The major part of the soil is red sandy soil, followed by the medium black soil and deep black soil. The detail information of the Naregal tank is given in the table- 1.

RESULTS ANDDISCUSSION

In the present investigation the water samples were collected and analyzed for various parameters and distribution of Phytoplankton population were studied. The results are summarized in brief. The Conductivity of water sample shows less than 127µmhos are oligotrophic lake (Rawson 1960), the present study shows the similar observations. High chloride content may be an indicator of pollution (Michael 1984), however the tank shows slight high content of chloride during summer season.

Cyanophyceae

In the present study it was observed that the blue-green algal population is steadily increased from south west mansoon and declined in summer.In this water the cyanophycean species viz; *Nostoc sps*, *Oscillatoria sps*, *Lyngbya sps & Chroococus sps.* The higher number of BGA recorded in southwest mansoon can be attributed to the high value of PH, Carbondioxide, Dissolved oxygen, TDS, Phosphate, Nitrate and BOD. Prescotte (1948) and Zafar (1964) have also made an observation that high nutrients favour the luxuriant growth of cyanophyceae

Chlorophyceae

It was observed that the Chlorophyceae members are more in the month of April and June, it attains maximum and gradually declined in the south west monsoon, Due to high Temperature, Alkalinity, Nitrate, Phosphate, TDS, and BOD. Totally 8 species represents the chlorophyceae viz: *Chlamydomonas sps, Cosmarium sps*, *Volvox sps, Zygnema sps, Spirogyra sps*, *Chlorella sps, Closterium sps and Chara sps.* Philipose (1967)Considered thate Chlorophyceae members are grow well in water rich in nitrate and phosphate. Philipose(1967),consided that chlorophycae members are grow well in water that are rich in nitrate and phosphate. Seenayya (1971) & Munawar (1970), according to them, the periodicity of chlorococcales have attributed to their mode of nutrition.

Bacillariophyceae

In this water body the high number of Diatoms is recorded in southwest monsoon. It appears that the presence of high PH, Oxygen, TDS, Phosphate, Calcium, and BOD are the factors which favoured the growth of diatoms. It represents only two species viz: *Navicula rhomboibis* and *Fragilaria sps.* They are completely dominated during the month of July. Zafar(1964) Opinioned that calcium rich water bodies have high number of the diatoms. Patrick (1948), have observed that high PH favoured the high number of diatoms.

Euglenophyceae

The seasonal fluctuations of euglenophyceae in Naregal tank was observed in summer and southwest mansoon and it reaches maximum in May and July, Only two species of euglenophycea viz : *Euglena acus* & *Phacus arbicularies*. The high PH , Temperature, Chloride, TDS , Sulphate & BOD are played an important role in the development of eauglenophyceae. Seeneyya(1971),states that temperature above 25 C are favorable for the growth of euglenophyceae Hegade and Bharati (1984), observed that the high PH favoured the growth of euglenophyceae

CONCLUSION

The monthly average values of Physico-chemical parameters of Naregal tank shows more than permissible limit especially Nitrate, Chloride, Fluoride .The water was alkalinity throughout the study period. However the Phytoplankton's of the tank shows few in number (Table-2). During the present study period totally Sixteen species of Phytoplanktons Belonging to four major classes of algae were recorded from Naregal tank and they are represented throughout the study period. Organic pollution of the tank shows less pollution as that of oligotrophic lake. There is an urgent need to avoid the Washing cloths, Bathing cattle's and entry of chemical fertilizer and pesticides in the tank. Thus the purity of this tank can be maintained.

Table : 2-List of Phytoplanktons identified in Naregal tank

Chlorophyceae	Bacillariphyceaea
Spirogyra sps	*Navicula rhomboidis*
Chlamydomonas sps	*Fragillaria sps*
Chlorella sps	Euglenaceae
Closterium sps	*Euglena acus*
Cosmarium sps	*Phacus orbicularis*
Chara sps	Cyanophyceae
Volvox sps	*Nostoc sps*
Zygnema sps	*Oscillatoria sps*
	Lyngbya sps
	Chroococcus sps

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ThankQ