Tragic Status of Chikkabanavara Lake

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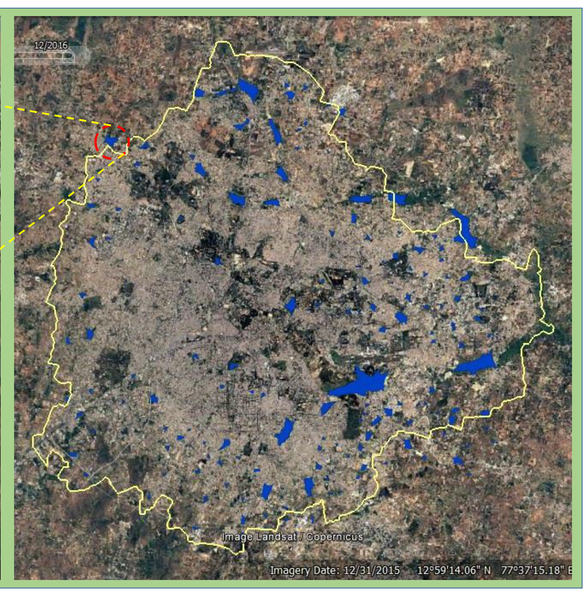
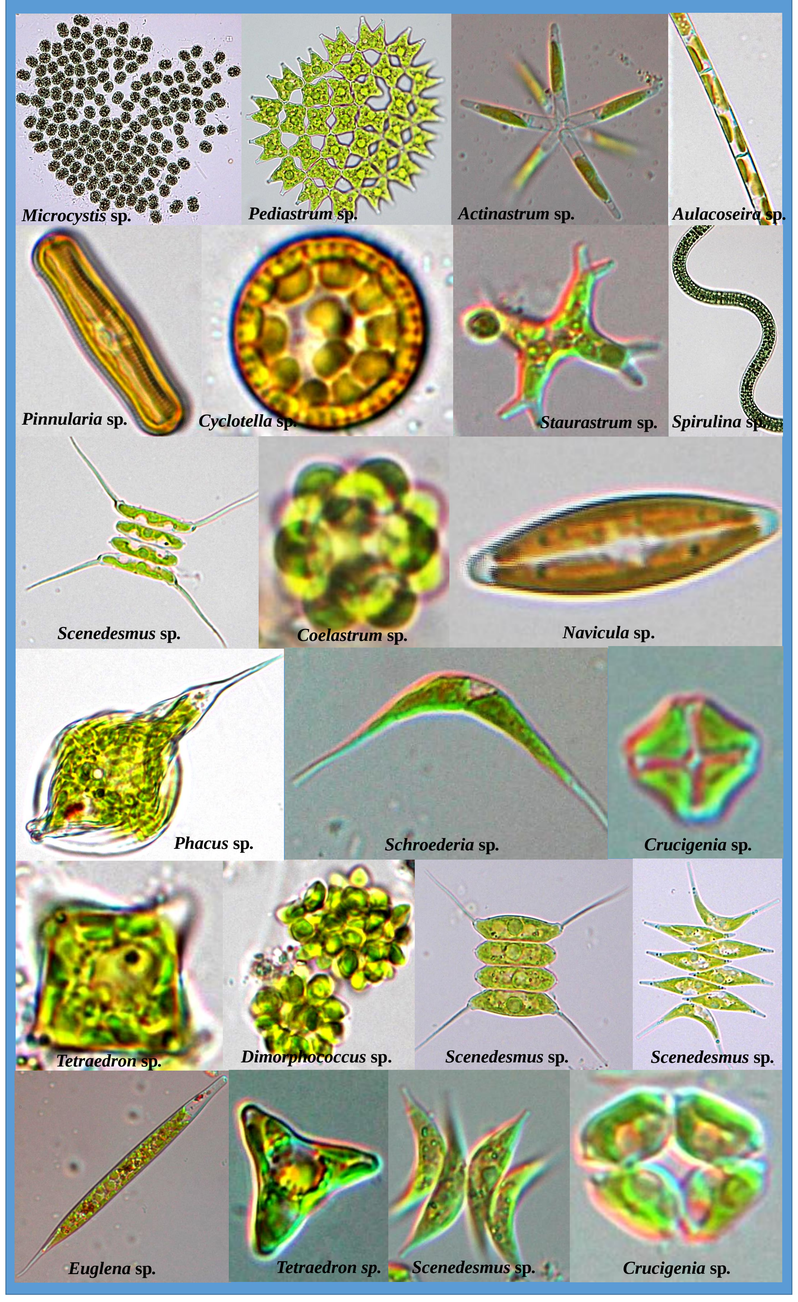
Chikkabanavara Lake

- Located in Chikkabanavara, North East of Bengaluru.
- Area of Lake ~ 100 Acres (2016), Arkavathy river valley
- Non restored lake, under high anthropogenic pressure.
- People use the lake water for bathing, washing and fishing purposes.

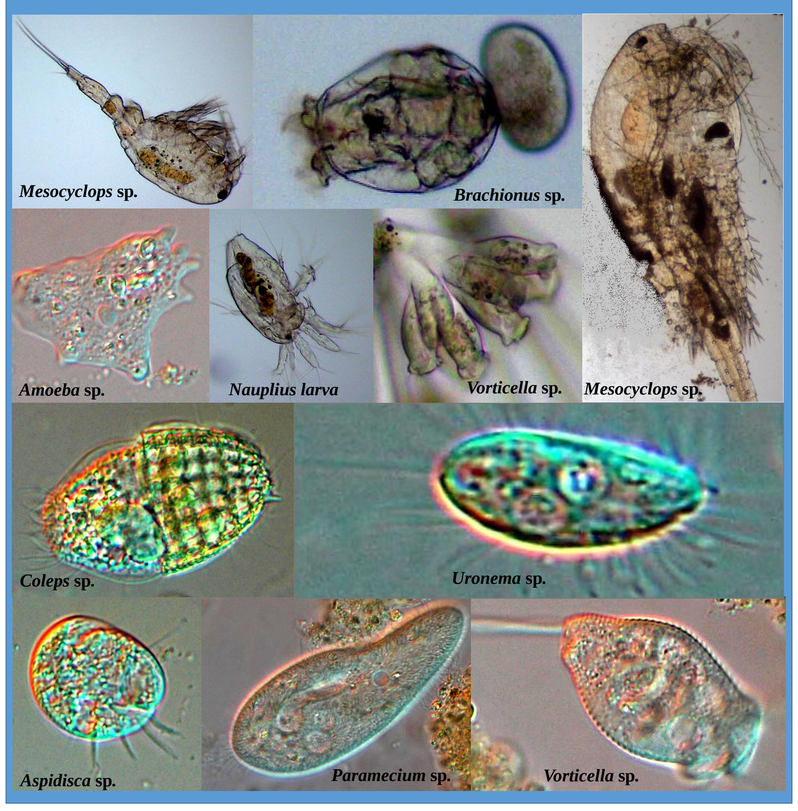


THREATS: **a) Inflow of untreated sewage; b) Plastic wastes dumped at shoreline; c) Construction debris deposited near shoreline; d) Weed and macrophyte growth; e) Plastic wastes dumped outside lake; f) Absence of Fencing ; g) Damaged Fencing; h) Algal bloom**

PHYTOPLANKTON



ZOOPLANKTON



Parameters	Chikkabanavara		Water quality Standard IS 10500, 1991-2011	
	Site1	Site 2	Desirable	Permissible
Water Temperature (˚C)	25.7	25.7	-	-
TDS (mg/l)	852	820	500	2000
EC (µS)	1125	1097	-	-
pH	7.61	7.81	6.5-8.5	No relaxation
DO (mg/l)	2.36	11.63	-	-
BOD (mg/l)	28.46	24.39		
COD (mg/l)	58	54	-	-
Alkalinity (mg/l)	412	400	200	600
Chloride (mg/l)	242.82	241.4	250	1000
Total Hardness (mg/l)	420	416	300	600
Calcium (mg/l)	96.19	94.59	75	200
Magnesium (mg/l)	43.87	43.87	30	100
Ortho-Phosphate (mg/l)	2.881	3.402	-	-
Nitrate (mg/l)	0.277	0.334	45	100
Sodium (mg/l)	255.5	261	-	-
Potassium (mg/l)	50	45.5	-	-

Experiments: Physico-chemical and Biological (plankton) Analysis
(https://www.researchgate.net/publication/289531068_Wetlands_Treasure_of_Bangalore)

CONCLUSION

As per CPCB classification of inland surface water, Chikkabanavara lake falls under E (Class E – Water for irrigation, industrial cooling and controlled waste disposal).

- Phytoplankton composition includes large number of Chlorophyceae, Bacillariophyceae and Euglenophyceae that are pollution tolerant.
- Zooplankton composition includes huge number of Protozoa and Rotifera which are mainly found in polluted lakes.
- The lake and its surroundings are facing lot of threats and is found to be polluted and needs immediate attention and restoration measures.

RECOMMENDATIONS

- Ensure proper fencing of the lake and regular harvesting of macrophytes.
- Impose restrictions on dumping solid waste and letting untreated sewage into lake and lake bed
- Implementation of ‘polluter pays’ principle as per Water Act, 1974
- Let only treated waste water into the lake. Treatment of wastewater through constructed wetlands and algal ponds (as in Jakkur lake) can be a better option.

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