

# Binnamangala Lake: RESTORATION, MANAGEMENT AND CONSERVATION

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Class IX

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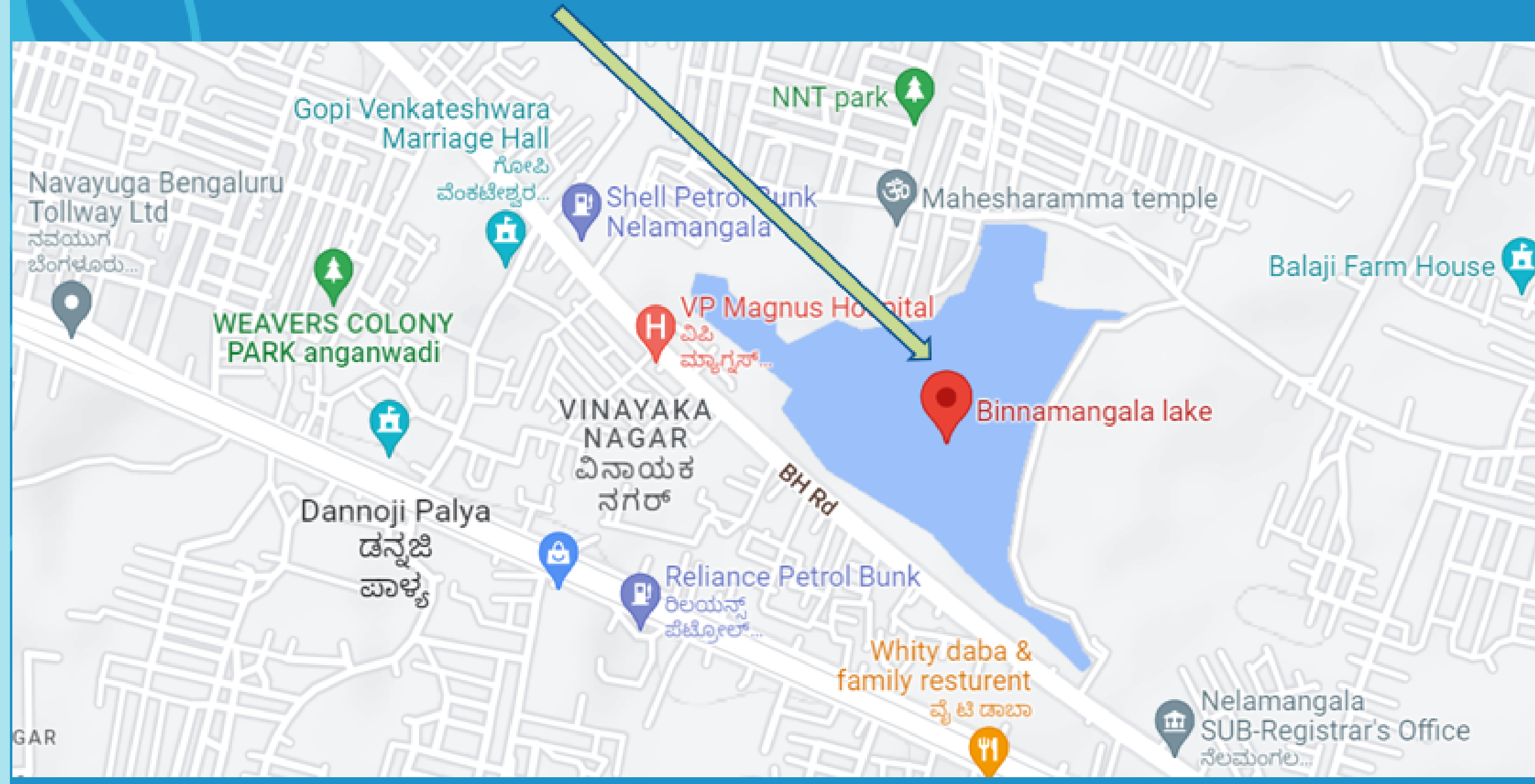
**Geographic Details-**  
**13°05'22.0"N 77°24'47.4"E**  
**Area- 0.2 km<sup>2</sup>**  
**Perimeter-2.76 km**

### Objectives

- To study current status of Binnamangala lake.
- To find restoration ways, proper management & conservation.

**Binnamangala wetland**, a natural freshwater lake (13°05'22.0"N 77°24'47.4"E) of Nelamangala taluk, Bangalore Rural district in Karnataka, was chosen as the main system for the study.

## I- Binnamangala Lake



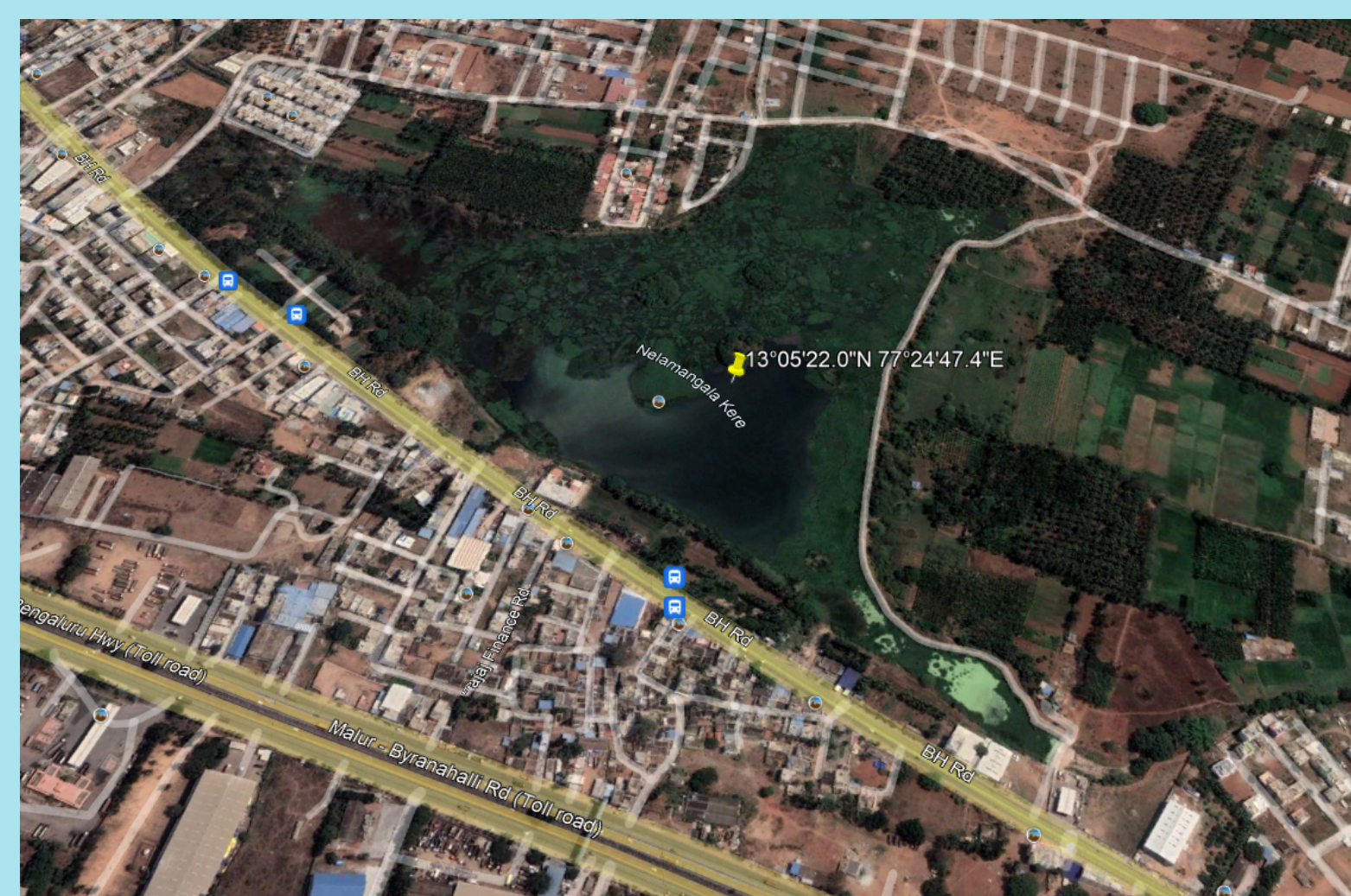
### Major Problems

- Excessive growth of weeds and algae.
- Sedimentation.
- Dumping of waste- Urban and agricultural pollutants; Outlets of pollutants.
- Overflows and floods in residential areas.
- Urbanisation



### Restoration

- Naturally:
  - Summer- Weed control, Sediment cleaning, catchment area management, proper fences
  - Monsoon-Pure Rainwater storage
- On-shore treatment technique: pumping water on-shore, water treatment, and then allowing the treated water to re-enter the lake.



NOW  
OR  
NEVER



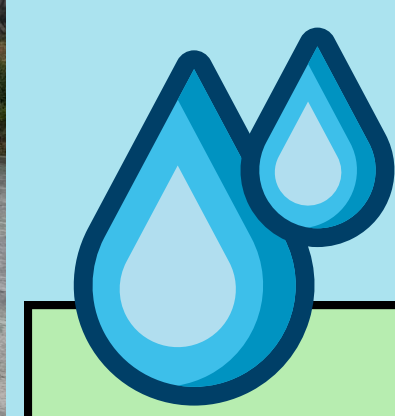
Garbage thrown



Outlets of pollutants



Overflow of water to residential areas



### Constructions in catchment area

### Management

- Maintenance of Catchment area.
- Sewage/ Sediments management.
- Diversion of sewage channels.
- Excess water to agricultural lands nearby.
- Maintenance of the lake depth according to average rainfall.
- Proper fences to be built.
- Strong regulations in case it is polluted.

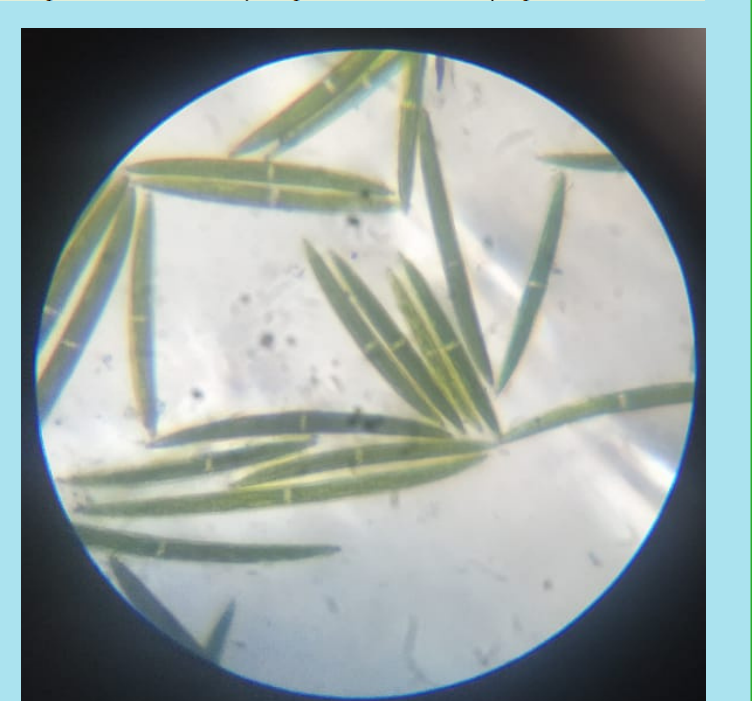
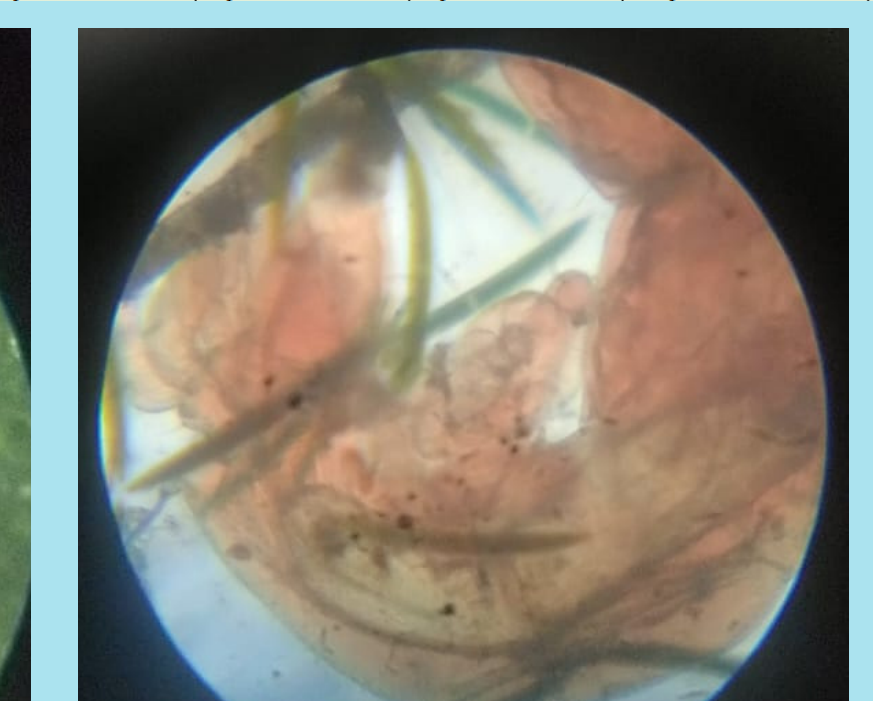
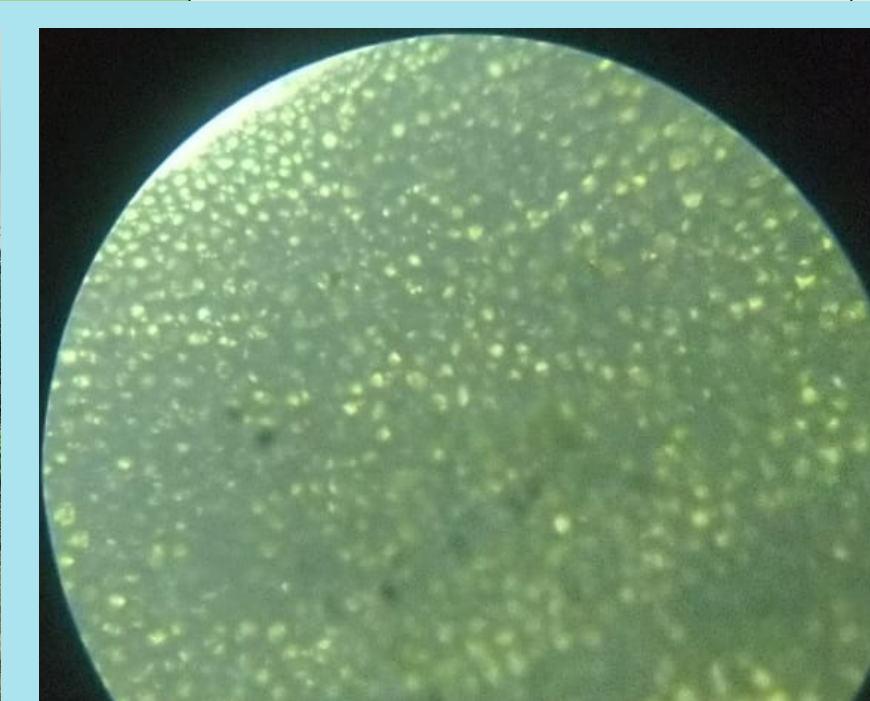
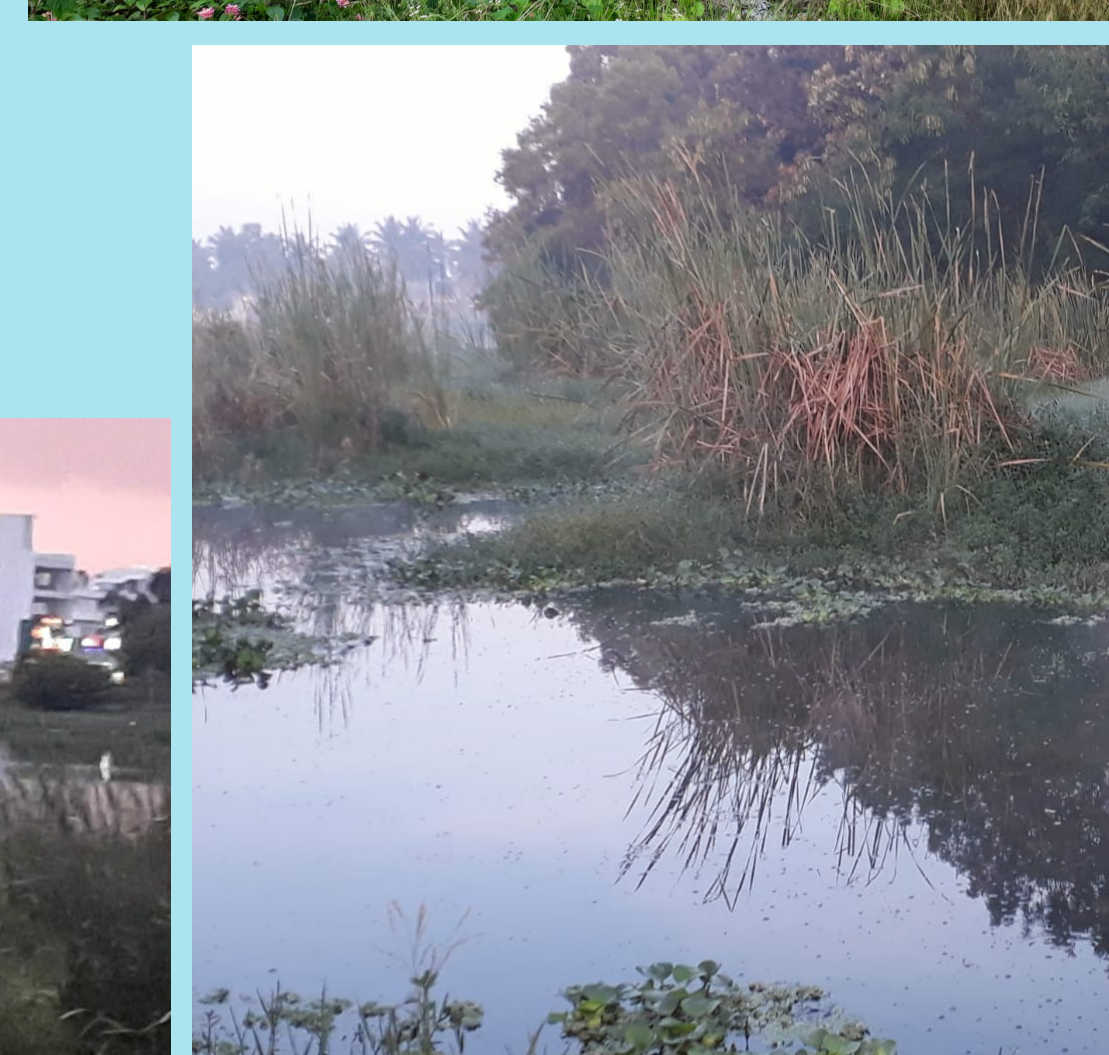


Sewage Water

*If not us, who?  
If not now, when?*



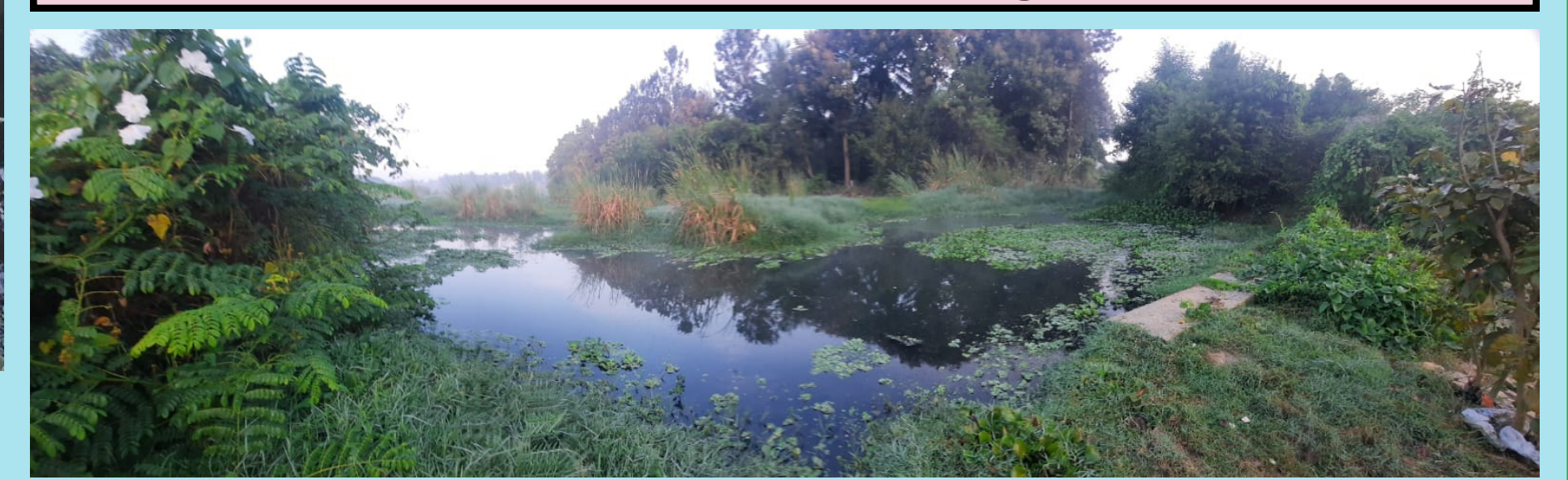
Sl. No.	Parameters	Requirement/ Permissible Limit	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7
1	Colour	(Bluish) transparent	slight greenish	slight brownish	slight greenish	translucent (algae)	(green) translucent	(green) translucent	brownish
2	Odour	odourless	Not Good	Not Good	Not Good	Bad	Foul	Foul	Bad
3	pH	6.5 - 8.5	8.5	8.5	7.5	7.5	8.5	7.5	8
4	Temperature(°C)	25°C	22°	20°	21°	17°	19°	20°	21°
5	Turbidity(NTU)	10 NTU	20	75	60	35	140	100	60
6	Flouride	1.0 - 1.5mg/l	0.2	0.1	0.2	1	0.5	1	0.2
7	Ammonia	0.5mg/l	1	1.5	2	1.5	0.5	1	2
8	Residual Chlorine	0.2- 0.5mg/l	Absent	Absent	Absent	Absent	Absent	Absent	Absent
9	Chloride	250mg/l	30	30	40	40	60	40	30
10	Phosphorous	0.05mg/l	1	0.5	1	1.5	1	2	1.5
11	Hardness	200mg/l	180- hard	160- hard	200- hard	200- hard	200- hard	300- hard	300- hard
12	Dissolved Oxygen	6.5-8 mg/l	5	3	4	2.5	2	4	3.5
13	Nitrate	45mg/l	45	50	100	120	100	100	80
14	Iron	0.3mg/l	0.2	0.1	0.1	0.25	1	0.2	0.25
15	Coliform Bacteria	Should be absent	(black) present	(black) present	(black) present	(black) present	(black) present	(black) present	(black) present



### Flora and Fauna

Currently, the lake is filled with weeds, but it was a place with Macrophytes such as Lotus, and Water lilies; Yet today, these are found:

- Water hyacinth, Grass, blue-green algae, red worms etc. (Phytoplanktons and Zooplanktons).
- Fishes; Birds: Ducks, Cranes, Grey Herons, Sparrows, Parrots, Peacocks, Kingfishers.



### Conservation

- It is in people's hands.
- Educate people.
- Self- service organizations formation.
- Dos Don'ts near the lake.
- Regular inspection and tests of lake.



### References:

- <http://cgwb.gov.in/Documents/WQ-standards.pdf>
- [https://www.youtube.com/watch?v=FCGQzTG2\\_x8](https://www.youtube.com/watch?v=FCGQzTG2_x8)
- <https://www.youtube.com/watch?v=xhIRCyuAdOQ>

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