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ASSESSMENT OF WATER QUALITY OF GODAVARI RIVER PAITHAN CITY, MAHARAHSTRA STATE INDIA

Dr. Satish Saraf
Department of Zoology,
Pratishthan Mahavidyalaya, Paithan, Dist. Aurangabad, Maharashtra, INDIA.

ABSTRACT:

Godavari is the largest river in Maharashtra. It originates from Triambakeswar, Nashik, Maharashtra and finally discharges into the Bay of Bengal near Narasapuram in West Godavari district of Andhra Pradesh. The study is taken near the Paithan city and select thirteen locations were selected for collection of water samples from the river and water samples were analyzed for water quality parameters. In this study we observe that untreated or partially treated sewage along with industrial wastewater is entering into the river at twelve prominent locations in the study stretch. The results of Godavari river indicates that its water quality as 'Good' from Paithan city. Based upon the results, the existing conservation measures have been reviewed and additional measures are suggested. The study concludes that infiltration of sewage is the main precursor of Godavari river pollution and available sewage treatment facilities in the region are inadequate.

KEYWORDS: *Water quality index, Sewage treatment plant .*

INTRODUCTION:

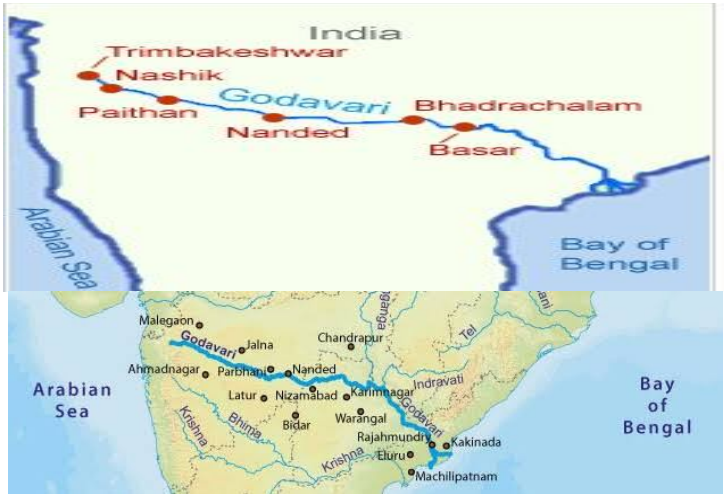
Unregulated growth of urban areas , particularly over the last two decades, withoutproviding infrastructure services for proper collection, transportation, treatment anddisposal of domestic waste led to increased pollution and health hazards. Themunicipalities and such civic authorities have not been able to cope up with thismassive task which could be attributed to various reasons including erosion ofauthority, inability to raise revenues and inadequate managerial capabilities. In Indiaall 15 major rivers have become polluted. Ganga, Godavari,Gomti,Cauvery,Narmadaand Mahi all are facing pollution problems. In Ganga river half burnt dead bodies,pesticides and other wastes are discharge andThe chief sources of water pollution are (i) sewage andother waste (ii) industrial effluents (iii) agricultural discharges and industrial wastesfrom chemical industries, fossil fuel plants.

STUDY AREA

The Godavari River runs from western to southern India and is considered to be oneof the big river basins in India. With a length of 1465 km, it is the second largest riverin India (only after the Ganges), that runs within the country. Godavari riveroriginates from Brahmagiri Mountain(at 19.56000N, 73.20000E) having 920 melevation located at Triambakeswar in the Nashik District of Maharashtra. Itdischarges into the Bay of Bengal near Narasapuram in West Godavari district ofAndhra Pradesh. The major towns located along the river in Maharastra

areTriambakeswar, Nashik, Kopargaon, Paithan, Gangakhed, Nanded, Sironcha, Gevrai(Beed) while in Telangana& Andhra Pradesh are Adilabad, Nizamabad, Dharmapuri,Warangal, Bhadrachalam, Rajamundry, Yanam, Kovvur, Tallapudi, Narasapur,Antarvedi, Tadipudi etc.

We are study in Paithan city near 13 Km area from Paithn city.



MATERIALS & METHODS

The study has covered about 15 km length of the river starting from Paithan city. Thirteen important river water sampling stations selected in the Studylength 1km. Water samples were collected as per standard methods of Sampling techniques asdescribed in APHA(2012).Analysis of the water samples were done as perstandard methods of water & waste water examination, APHA (2012).Various physicochemicalparameters such as Temperature, pH, Electrical conductivity(EC),Alkalinity,Total Hardness(TH), Total Dissolved solids(TDS), Total Suspended Solids (TSS) ,Transparency, Dissolved Oxygen (DO) ,Phosphate. Turbidity was determined at allthe sampling stations. pH was determined on the spot using pH Pen and DO of the samples was fixed on site using manganoussulphate& alkali azide solutions. DO wasthen determined using Winklier's method.hardness was estimated using EDTAtitrimetry, phosphates by molybdenum blue complex formation using aspectrophotometer. Turbidity was determined using nephelometer.

Table - Water parameter Reading

sit/Parameter	Atmospheric Tempreture	pH	Transperancy	total hardness	Total alkalnity	total suspended solid	Dissolve oxigen	Phosphate	free carbon di-oxide	TDS
p1	36.20	8.15	32.45	111.40	148.50	293.88	5.23	0.14	2.53	293.88
p2	31.40	7.35	31.48	116.20	140.25	282.98	6.43	0.14	2.70	282.98
p3	28.00	8.20	31.83	115.68	147.75	285.25	6.30	0.14	2.73	285.25
p4	27.33	8.33	34.55	117.20	148.50	259.93	6.80	0.13	3.58	259.93
p5	27.98	8.15	36.30	107.05	150.25	257.80	6.63	0.12	2.84	257.80
p6	26.48	8.20	39.05	105.45	148.75	270.80	6.45	0.10	3.08	270.80
p7	21.30	8.23	35.20	101.23	157.75	279.55	6.63	0.09	1.88	279.55
p8	20.40	8.43	35.93	105.98	165.75	300.90	6.25	0.10	1.55	300.90
p9	19.80	8.43	33.50	109.45	171.50	310.78	6.16	0.11	1.67	310.78
p10	27.63	7.10	32.43	112.80	179.50	321.10	5.55	0.12	1.75	321.10
p11	33.78	7.23	32.50	115.53	177.50	325.80	5.71	0.12	1.60	325.80
p12	36.53	8.45	34.75	115.30	180.00	325.73	5.13	0.13	1.83	325.73
p13	33.20	8.28	33.23	115.53	154.25	297.30	6.48	0.14	2.58	297.30

4. RESULTS & DISCUSSION

River water quality was observed at the 13 no. sampling stations .Water quality at selected stations was determined using National SanitationFoundation Water Quality Index (NSFWQI),which is the most widely used waterquality index throughout the world. To calculate value of parametersnamely Dissolved Oxygen, pH, Biochemical Oxygen Demand,Temperature change, Total Phosphate, Nitrate, Turbidity & Total Solids areused..Dissolved Oxygen(D.O.) and Faecal Coliform were considered more important sorelatively more weightages were given to them as compared to the remainingparameters.

CONCLUSIONS

The assessment of water quality of 15 km stretch of Godavari river from Paithan city indicates that the river good qulity in the river from different point sources. There is appreciable change in water quality from good to bad.

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