

**ACTION PLAN FOR RESTORATION OF POLLUTED STRETCH OF
NUNA RIVER ALONG BIJIPUR, PURI
UNDER PRIORITY CATEGORY-V**

EXECUTIVE SUMMARY ON PROPOSED ACTION PLANS

Sl. No.	DESCRIPTION OF ITEM	Details
1.	Name of the identified polluted river and its tributaries	: Nuna River. No tributary
2.	Is river is perennial and total length of the polluted river	: Nuna river is a small stream with a length of approximately 30 Km from its origin to its outfall into Chilika lake.
3.	No of drains contributing to pollution and names of major drains	: No drains
4.	Whether 'River Rejuvenation Committee (RRC) constituted by the State Govt./UT Administration and If so, Date of constitution of 'RRC'	: Yes. Constituted by the State Government vide letter No. 24426 dated 12.11.2018
5.	Whether 'River Rejuvenation Committee (RRC) have approved the Action Plan :	Yes. RRC have approved the Action Plan in its 3 rd meeting held on 04.06.2018.
6.	Major Towns on the banks of the river with population	: No ULB situated along the river.
7.	a. Total no. of existing STPs and the total capacities in MLD	: No STP has been established.
	b. Total MSW generation in TPA	: Insignificant
	c. Existing treatment and disposal facilities and total capacity	: Total MSW is being disposed in the earmarked dumping yard.
8.	a. Major industrial estates located with total no. of industries	: Not applicable
	b. No of CETP's and their treatment capacity	: Nil
	c. Gaps in treatment of industrial effluent	: Nil
	d. Existing HW Treatment and Disposal Facilities and total capacity with life span	: Nil

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1.0 Background

Water quality assessment of Nuna river has been carried out by the State Pollution Control Board, Odisha under the project “National Water Quality Monitoring Programme” at only one location, Bijipur in Puri district since May, 2017. The Biochemical Oxygen Demand (BOD) range in this stretch of Nuna river during 2017 was observed to be in between 0.8-3.1 mg/l. BOD has exceeded the tolerance limit of 3.0 mg/l in this stretch only once during the total period of observation.

The polluted river stretches are categorized under five different priorities based on the BOD values as per Central Pollution Control Board (CPCB) classification. Monitoring locations with BOD concentration exceeding 30 mg/l have been categorized as Priority-I. Monitoring locations with BOD concentrations in the range 20-30 mg/l, 10-20 mg/l, 6-10 mg/l and 3-6 mg/l are categorized as Priority-II, Priority-III, Priority-IV and Priority-V respectively. Based on this classification, the river stretch of Nuna river has been categorized by CPCB under Priority-V with the maximum BOD value being 3.1 mg/l. with the identified polluted stretch being at Bijipur in Puri.

2.0 Water quality of Nuna river

Nuna river, a distributary of Daya river, flows through Puri district in the State of Odisha before its outfall into Chilka lake from its northern sector. Chilika lake is the largest brackish water lake in Asia and also identified as first Indian wetland of international importance under the Ramsar convention. The flow in the Nuna river is marginal during non-monsoon season. Satellite image of Nuna river and location of water quality monitoring station on the river are shown in Fig. 1.

Water quality of Nuna river is being monitored by the Board at only one location, Bijipur in Puri district on regular basis since May, 2017. Monthwise water quality data of Nuna river with respect to Biochemical Oxygen Demand (BOD) during the year 2017 and 2018 are given in Table-1.

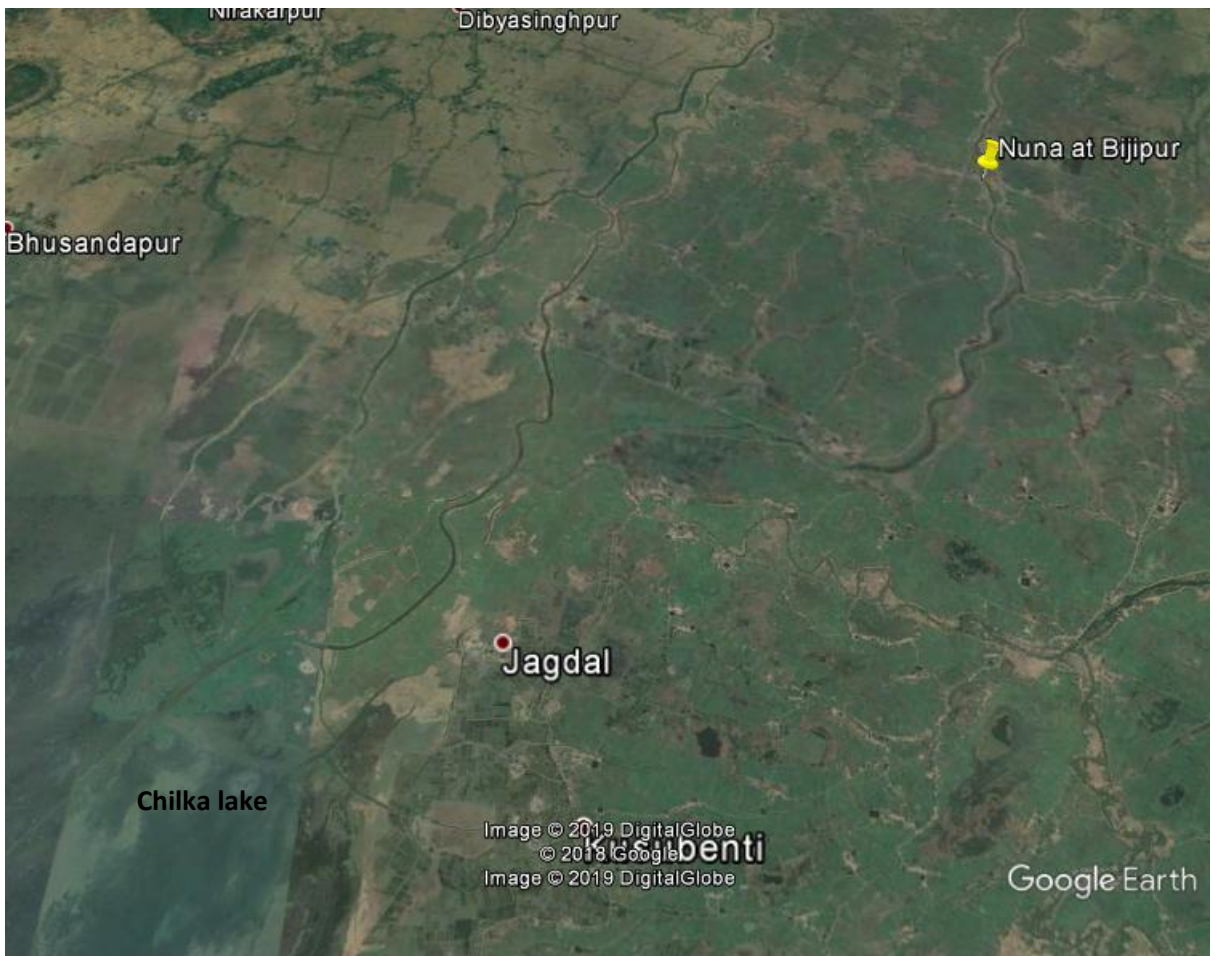


Fig. 1 Satellite image of Nuna river and location of water quality monitoring station on Nuna river

Table-1 Monthwise BOD (mg/l) in Nuna river during 2017 and 2018

Month	BOD, mg/l	
	Nuna river at Bijipur	
	2017	2018
January	-	2.0
February	-	1.0
March	-	1.0
April	-	0.7
May	1.2	0.2
June	0.75	1.0
July	1.2	1.2
August	3.1	1.8
September	1.3	2.7
October	0.9	1.7
November	1.4	1.0
December	1.2	1.0
Minimum BOD, mg/l	0.8	0.2
Maximum BOD, mg/l	3.1	2.7
Average, BOD, mg/l	1.4	1.3

The data shows that BOD has exceeded the tolerance limit of 3.0 mg/l marginally only once during August, 2017 throughout the period of observation during 2017-2018. Otherwise, BOD remained within the tolerance limit of 3.0 mg/l during rest period of the year.

The river flows through small villages upto its outfall into Chilika lake. There is no urban local body situated along the bank of Nuna river Therefore, there is no organized wastewater discharge to Nuna river upto its confluence with Chilika lake. However, the observation of single marginally deviating BOD value during monsoon period (August, 2017)

may be ascribed to some unusual incidents and therefore may be treated as an outlier of total observation.

3.0 Action plan for restoration of Water quality of Nuna river

As evidenced from the foregoing discussions, there is no identified point source of pollution to Nuna river. This is also reflected in the BOD values of Nuna river in which most of the time BOD remained within the tolerance limit of 3.0 mg/l during the period 2017-2018 excepting only one occasion. Such single marginal deviation may be treated as outlier or may be due to some incidental effects.

In Para 42 of the order of the case No. 673/2018 (More river stretches are now critically polluted), Hon'ble NGT has suggested a two-fold concept for restoration of polluted river stretches as follows.

1st concept : To target enhancement of river flow through interventions on the water sheds/ catchment areas for conservation and recharge of rainwater for subsequent release during lean flow period in year. This concept will work on dilutions of pollutants in the rivers and streams to reduce concentration to meet the desired level of water quality.

2nd concept : Regulation and enforcement of standards in conjunction with the available flow in rivers/ streams and allocation of discharges with stipulated norms.

BOD value in the river most of the time remains within 3.0 mg/l excepting a single occasion. The water quality of the river can be maintained within the tolerance limit throughout the year by enhancement of river flow through interventions of the river catchment area for conservation and recharge of rainwater for subsequent release during lean flow period in the year.

The implementation of Swachh Bharat Abhiyan and construction of individual household toilets and community/public toilets, provision of water supply and increase in awareness among local inhabitants have significantly reduced the open defecation practice of the local inhabitants in the stretch.

Since Nuna river is a small river with a length of approximately 30 Km, action plans covering aspects w.r.t. Flood Plain Zone protection and its management, maintaining E-Flows and water shed management, good irrigation practices setting up of Bio-Diversity parks, removal of encroachment and Plantation on both sides of the river are not feasible in the catchment of such river.

4.0 Implementing Authority

Panchayati Raj and Drinking Water Department in Govt. of Odisha has the mandate to implement Swaach Bharat Abhiyan (Gramin) in all the village and make the people of peripheral villages of a river aware to use toilets and to provide health sanitation facilities.

5.0 Conclusion

There is no wastewater discharge to Nuna river in its catchment. Single marginal deviation in BOD values from the tolerance limit of 3.0 mg/l observed in the period 2017-2018 in the identified stretch of Nuna river may be attributed to some sporadic events or in-stream activities. The single marginal deviation of BOD values (3.1 mg/l in 2017) may be treated as an outlier and **therefore the river stretch may be considered as not polluted.**

On the above background, the categorization of the river stretch of Nuna River by CPCB under Priority category – V with the identified stretch “Along Bijipur, Puri” and maximum BOD values in the range 3.1 mg/l needs reconsideration. Because of single marginal deviation in BOD value over a two year of observation 2017 and 2018, the stretch **may be deleted** from the list of polluted river stretch.
