

केवल सरकारी उपयोग हेतु

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गाद पुस्तिका

SEDIMENT DATA BOOK

नर्मदा बेसिन

Narmada Basin

जून 2017- मई 2018

June 2017 – May 2018



केन्द्रीय जल आयोग
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List of Abbreviation and Symbols

A	:	Area of section
AV	:	Average
C	:	Coarse sediment
Con	:	Concentration
Cumec	:	Cubic metres per second
Cum	:	Cubic metres
D	:	Day
F	:	Fine sediment
f	:	Average silt factor
G	:	Gauge
GD	:	Gauge and Discharge
GDS	:	Gauge, Discharge and Sediment
g/l	:	Grams per litre
km	:	Kilometer
L.B.	:	Left bank
M	:	Medium sediment
m	:	Metre
mm	:	Millimetre
m^3/s	:	Cubic metre per second
Mean dia 'd'	:	Mean Diameter
NDN	:	Narmada Division
P	:	Wetted Perimeter
%	:	Percentage
Q	:	Discharge
R	:	Hydraulic mean depth
R.B.	:	Right bank
R. Days	:	Remaining days
R.D.	:	Reduced distance
R.L.	:	Reduced level
S	:	Second
Sed	:	Sediment
S/G	:	Station gauge
$\text{km}^2/\text{sq.km}$:	Square kilo metre
m^2	:	Square metre
T/D	:	Tonnes per day
TDN	:	Tapi Division
V	:	Mean velocity
W.L.	:	Water Level
W.Year	:	Water year
W.Q	:	Water Quality
0°	:	Degree
'	:	Minute
"	:	Second
*	:	Estimated by unitary method
**	:	Estimated by interpolation
***	:	Estimated by average value
@	:	Estimated by graph
MMT	:	Million Metric Tones

1 Introduction

1.1 Scope

Central Water Commission is conducting sediment load observations & bed material observation along with discharge observations etc. During the reporting year 2017-18 sediment load & bed material observations in Narmada Basin were conducted at 11 stations under the jurisdiction of the Narmada Division, Bhopal and Tapi Division, Surat. 9 of these stations are located in the state of Madhya Pradesh and 2 stations in the Gujarat State. These stations have been functioning under plan schemes viz. "Development of Water Resources Information System", during 12th Five Year Plan. The name of the stations where suspended sediment load & bed material observations were conducted are given in Table – 1-1 :

Table 1-1: Sediment and Bed Material Observation Stations at Narmada River

Sl. No.	Name of Station	Code No.
1.	Orsang at Chandwada	010215032
2.	Narmada at Garudeshwar	010215030
3.	Narmada at Mandleshwar	010215026
4.	Narmada at Handia	010215022
5.	Narmada at Hoshangabad	010215019
6.	Narmada at Sandia	010215013
7.	Shakkar at Gadarwara	010215012
8.	Narmada at Barman	010215011
9.	Banjar at Bamni	010215006
10.	Burhner at Mohgaon	010215004
11.	Narmada at Manot	010215002

1.2 Sources of Information

The administrative controls of these 11 stations were distributed under two divisions, namely Narmada Division, Bhopal (Nine Stations) and Tapi Division, Surat (Two Stations). During the year 2017-18, the Division wise the stations and their code are given in Table 1-2:

Table 1-2: Division wise GD stations and their codes

Sl. No.	Name of Station	Code No.
Narmada Division, Bhopal		
1.	Narmada at Mandleshwar	010215026
2.	Narmada at Handia	010215022
3.	Narmada at Hoshangabad	010215019
4.	Narmada at Sandia	010215013
5.	Shakkar at Gadarwara	010215012
6.	Narmada at Barmanghat	010215011
7.	Banjar at Bamni	010215006
8.	Burhner at Mohgaon	010215004
9.	Narmada at Manot	010215002
Tapi Division, Surat		
1.	Narmada at Garudeshwar	010215030
2.	Orsang at Chandwada	010215032

1.3 Basin Description

Narmada is the largest west flowing and fifth largest river of India. It drains a large area in Madhya Pradesh besides some area in the states of Maharashtra and Gujarat. Narmada basin lies between East Longitudes $72^{\circ} 32'$ to $81^{\circ} 45'$ and North Latitudes $21^{\circ} 20'$ to $23^{\circ} 45'$. It flows through Deccan traps in between Vindhya and Satpura ranges of hills before falling into the Gulf of Cambay in the Arabian Sea. Narmada drains an area of $98,796 \text{ km}^2$ out of which nearly 87% lies in Madhya Pradesh. The state wise distribution of drainage area is shown in Table 1-3:

Table 1-3: Statewise Distribution of Drainage Area

Sl. No.	Name of State	Drainage Area (sq. km.)	Percentage
1.	Madhya Pradesh	85,859	86.9
2.	Maharashtra	1,538	1.5
3.	Gujarat	11,399	11.6
	Total	98,796	100.0

Narmada rises from a ‘Kund’ (spring) at an elevation of 1,057 m at Amarkantak in Maikal hills in Shahdol district of Madhya Pradesh and flows through Madhya Pradesh, Maharashtra and Gujarat between Vindhya and Satpura hill ranges before falling into the Gulf of Cambay in the Arabian sea about 10 km north of Bharuch. The total length of this west flowing river from its origin to outfall into the sea is 1,312 km. For the first 1,079 km it runs in Madhya Pradesh and there after forms the common boundary between Madhya Pradesh and Maharashtra for 35 km and 39 km. in Maharashtra and Gujarat boundary. In Gujarat, it stretches for 159 km. The

basin has an elongated shape, with a maximum length of 953 km from east to west and a maximum width of 234 km from north to south.

The river has a number of falls in its heads reaches. At 8 km from the origin, the river drops 24 m at the Kapildhara falls. At 0.4 km further downstream, the river again drop by 4.6 m at Dudhdhara fall. Burhner, the first major tributary of Narmada, joins the river from left at 248 km from its origin. Flowing in a generally south-westerly direction in the narrow and deep valley, the river has hairpin bends at some places. At 286 km from its source, the river turns towards the north and about 1 km further downstream, the Banjar tributary joins it. After flowing past Mandla town in a number of channels called Sahastra-dhara, the river at 404 km from the origin drops nearly 15 km at the Dhuandhar fall close to Jabalpur. Further down, the river flows through a channel through the famous marble rocks.

Emerging from the marble rocks, the Narmada enters the upper fertile plains. At a distance of 464 km from the origin, Hiran a major right bank tributary joins the river. Continuing to flow in a western direction through the upper plains, the river receives several tributaries like Sher, Shakkar, Dudhi, Tawa and Ganjal from the left and Tendoni, Barna and Kolar from the right. Flowing through west, it joins the middle plains near Panghat in East Nimar district. At Nandhar, 806 km from the origin, it drops 12 m at Dhardi, 853 km from origin, it again drops 12 m. At 966 km from the origin and nearly 6.4 km downstream of Maheshwar, the Narmada again drops by about 6.7 m at Sahastra-dhara falls. During this part of the journey through the middle plains, Chhota tawa and Kundi from the left and Man from the right joins it.

Flowing further west, the river enters the lower hilly regions and flows through a gorge where Goi enters from the left and Uri and Hatni from the right. The 113 km long gorge is formed by the convergence of Vindhya ranges from the north and Satpura ranges to the south. Emerging from the gorge, the river enters the lower plains and meanders in broad curves till it reaches Bharuch. The Karjan from the left and Orsang from the right joins the Narmada in this reach. Beyond Bharuch, the river valley widens and the river enters the Gulf of Cambay. The river has 41 tributaries of which 22 are on the left bank and 19 on the right bank, having catchment area more than 500 sq.km out of these some major tributaries like Burhner, Banjar, Hiran, Tawa, Orsang and Kundi are having catchment area more than 3,550 sq.km.

The average rainfall in Narmada Basin is 1,250 mm. The maximum temperature varies between 40°C to 49°C in the month of May when the land gets heated up. The temperature drops to a minimum range of 1°C to 9°C during the dry/cold season in December/January.

At present, there are 30 proposed/ongoing/completed major hydroelectric cum Irrigation projects. There are four major hydroelectric cum irrigation project namely *Bargi*, *Indira Sagar*, *Omkareshwar & Sardar Sarovar* Projects on main Narmada river which are almost completed and eight completed projects on different tributaries namely Matiyari, Barna, Tawa, Kolar, Sukta, Man, Jobat and Karjan.

There are 11 sediment-monitoring stations in Narmada basin. Out of eleven, 7 stations are located on the main river and remaining 4 are located on the principal tributaries viz. Orsang, Shakkar, Banjar and Burhner.

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2 Suspended Sediment Observation

3 2.1 Observation Techniques

3.1.1 Collection of Sediment Samples

Suspended sediment observations are conducted simultaneously along with discharge observation once a day starting at 08.00 hrs except on Sunday and holidays. The observations are conducted at station gauge line under normal condition. However, when the conditions become unsuitable for observation, say due to pooling, shallow depths, multi-channel formation etc., then the observation site is shifted to a temporary section at up-stream or down-stream of the station gauge line.

Sediment samples are collected at 0.6 depths from each vertical, where velocity observation is done for computation of discharge, provided depth of flow is above 0.3 m. The samples thus collected from each vertical are grouped in 1, 2, 3, 4 or 5 composite groups depending upon the width of the river in such a way that each composite group discharge + / - 10% of average segment discharge. Punjab bottle type sampler is commonly used for collection of suspended sediment sample for analysis. A uniform practice of holding the bottle in vertical position is being adopted. Thus samples from shallow depths (less 0.3 m) are collected from the surface. These surface samples at shallow depths are presumed as of 0.6 depths sampling. The water samples collected are kept in composite groups based on the data observed on previous day and carried to the site laboratory for analysis.

3.1.2 Analysis of the Suspended Sediment Samples

The analysis of the suspended sediment sample is carried out for these different grades namely, coarse sediment having particle diameter above 0.2 mm, medium sediment with diameter ranging from 0.075 mm to 0.2 mm and fine sediment with diameter less than 0.075 mm. The sediment samples from each group (as stated in para 2.1.1) are passed through 212 micron mesh sieve. The residue on sieve is washed with clean water several times, transferred to a pre-weighted crucible and its oven dried weight is determined. This gives the coarse sediments from which the concentration of the coarse sediment g/l for the group is worked out.

After removal of coarse sediment, the filtrate and washing which now contains medium and fine sediment is similarly passed through 75 micron mesh sieve. The residue on sieve is washed with clean water several times, transferred to a pre-weighted crucible and its oven dried weight is determined. This gives the medium sediment from which sediment concentration in g/l for the group is determined.

The filtrates and washing after separation of coarse and medium grades now contain only fine sediment. For fine sediment analysis, all the above groups (after removal of coarse and fine sediment) are combined into a single large sample to form a homogeneous liquid in a big bucket.

The sediment analysis of complete volume is carried out upto 10-12 litres with moderate sediment concentration. If either medium sediment is higher or volume of sample is more than 12 litres, then the water is stirred with a clean wooden rod, so that any sediment settled in the bucket mix with the whole sample thoroughly. Immediately at least four litres of homogeneous samples is taken into separate bucket for analysis of time sediment load. This homogeneous sample is kept overnight for settling. About 5 to 10 ml of 10% alum solution is added to hasten the coagulation of colloidal silt. After the settlement is complete, the supernatant liquid is siphoned off carefully and the remaining volume of suspension is filtered in pre-weighed filter paper (Whatman grade I) and transfer of entire settled additional washing with clean water ensures silt. The filter paper along with the sediment is dried and weighted to determine the concentration of fine sediment in g/l for the entire cross section.

The total suspended sediment load of the river along the section is worked out from the concentration, thus contained for coarse, medium and fine sediment group-wise for the entire cross section.

3.2 Explanatory Notes

The explanatory notes described hereunder are given to assist in the interpretation of hydrological parameters contained in the data presented. The note are, therefore, applicable in so far as the data presented in this book are concerned.

- i. Water year covers the period from 1st June of calendar year to 31st May of next calendar year and includes complete one hydrological cycle. The water year is further sub divided as:
 - Monsoon period from June to October and
 - Non-Monsoon period from November to May.
- ii. The gauging station code number is a unique nine-column numeric reference number, which facilitates storage and retrieval of sediment data in data banks. The first two columns are identifier of measuring authority. Third and fourth columns are for zone/basin fifth and sixth columns are for Independent River and last three i.e. seventh, eighth and ninth columns are for station numbers.
- iii. Sediment is classified as coarse, medium and fine according to diameter as indicated below:
 - Coarse: Sediment above 0.2 mm diameter,
 - Medium: Sediment between 0.2 & 0.075 mm diameter,
 - Fine: Sediment above 0.075 mm diameter.

3.3 Method of Presentation

Suspended sediment data is presented in Part - I of the book, comprising history sheet and suspended sediment flow tables. The chronology of suspended sediment observation station is arranged from the mouth of the river to upstream giving. The tributaries are arranged in similar fashion.

History sheet gives concise description of the suspended sediment observation station. The suspended sediment table includes the following:

- Daily observed sediment flow tables for the period from June to November, because during the period major part of the annual sediment load is transported by the rivers.
- Ten daily summary of coarse, medium and fine sediment for the full year.
- Monthly and seasonal summary of the sediment load.

3.4 Comments on Sitewise Data

3.4.1 Orsang at Chandwada

The total length of the river Orsang, a major right bank tributary of Narmada is 101 km in the plains of Gujarat state. The monitoring station Chandwada is situated at 9 km upstream of the confluence point of this river with Narmada. It has a drainage area of 3,846 sq km. The maximum value of sediment concentration is 0.003 g/l recorded on 27.07.2017. The annual sediment load works out to 516 metric tonnes.

2.4.2. Narmada at Garudeshwar

The river has drainage area of 87,892 sq km upto this station. The river flows over length of 1,169 km upto this station. The maximum sediment concentration is recorded as 0.048 g/l, on 24.07.2017. The annual sediment load work out to 1444 metric tonnes.

2.4.3. Narmada at Mandleshwar

The river Narmada has drainage area of 72,809 sq km and length 852 km from the origin to this station. The maximum sediment concentration is 0.12 g/l, which was observed on 30.08.2017. The total annual sediment load 129340.83 metric tonnes.

2.4.4. Narmada at Handia

The station is on main Narmada having a drainage area of 54,027 sq km. The river flows for a length of 774 km from the origin to this station. The maximum sediment concentration. is 1.30 g/l, which was observed on 30.07.2017. The total annual sediment load is 2231242.31 metric tonnes.

2.4.5. Narmada at Hoshangabad

River Narmada has drainage area of 44,548 sq km and length of 521 km from the origin to this station. The maximum sediment concentration is 0.28 g/l, which was observed on 05.07.2017. The total annual sediment load is 144026.07 metric tonnes.

2.4.6. Narmada at Sandia

The station is 584 km from the origin of Narmada and has drainage area of 33,954 sq km and length 852 km from the origin to this station. The maximum sediment concentration is 1.01 g/l, which was observed on 05.07.2017. The total annual sediment load is 390036.11 metric tonnes.

2.4.7. Shakkar at Gadarwara

This station is on the tributary Shakkar on the left bank of Narmada and has a drainage area of 2,270 sq km. The length of the Shakkar upto this station is 140 km. The maximum sediment concentration is 1.34 g/l, which was observed on 21.07.2017. The total annual sediment load is 236955.83 metric tonnes.

2.4.8. Narmada at Barmanghat

Narmada traverses a length of 504 km upto this station and the drainage area is 26,453 sq km. The maximum sediment concentration is 2.32 g/l which was observed on 21.07.2017. The total annual sediment load is 634860.40 metric tonnes.

2.4.9. Banjar at Bamni

The Station is on the tributary Banjar on the left bank of Narmada and has a drainage area 1864 sq km. The maximum value of sediment concentration is 1.13 g/l, which was recorded on 06.08.2017. The annual sediment load works out to 40875.10 metric tonnes.

2.4.10. Burhner at Mohgaon

This station is on the tributary Burhner on the left bank of Narmada and has a drainage area of 3919 sq km. The length of the Burhner river upto this site is 177 km. The maximum sediment concentration is 3.48 g/l, which was observed on 16.07.2017. The total annual sediment load is 1460628.70 metric tonnes.

2.4.11. Narmada at Manot

The length and drainage area of Narmada at this station are 218 km and 4,667 sq km. respectively. The maximum sediment concentration is 1.16 g/l, which was observed on 21.07.2017. The total annual sediment load is 312569.74 metric tonnes.

4 Bed Material Observation

5 3.1 Observation Techniques

5.1.1 Collection of Samples

Depending upon the width of the river, 3 to 10 samples are collected from the site along the station gauge line. A scoop type bed material sampler is used for collecting the sample from flowing portion of the channel and where the bed is dry, samples are collected manually after scraping the upper layer at the bed to avoid local surface contamination. After drying the sample, about 1 kg of the sample is taken by coning and quartering process.

5.1.2 Packing of Samples

Bed material samples thus collected are filled in polythene bags and placed inside a thick cloth bag for protection. The details of the samples are inserted in the polythene bag and the same are sent to divisional laboratory for analysis.

5.1.3 Analysis of Sample

In the laboratory, analysis of samples is done either by sieve for Bed Material particles above 0.6 mm size or by wet process using Puri's Siltometer for particles below 0.6 mm size.

Analysis by Sieves: The sieves are arranged one above the other in order of their mesh sizes, largest at top and smallest (0.6 mm) aperture sieve at the bottom. Each representative sample is weighed and then put on the top metallic. The portion of the material passing through 0.6 mm sieve is collected in a metallic container placed at the bottom of the set of sieves. Shaking of the sieves is done either by gentle horizontal rotation or by a mechanical shaker for about 15 to 20 minutes. The material retained on each sieve is collected separately in a metallic container and is weighed. The material passing through 0.6 mm sieve is also weighed and recorded.

Analysis by Puri's Siltometer: For particles of size below 0.6 mm, the analysis is done by wet process using Puri's Siltometer. About 10 grams of the Bed Material sample passing through 0.6 mm sieve is released from the top of the siltometer. The sand, silt particles travel downwards at different velocities depending upon their diameter and the temperature of water. The trough of the Siltometer is rotated at a pre-determined rate to collect the fractions. Thus different fractions of a sample are redeposited in 20 receptacles in a trough. Each of these fractions is then collected in the silt measuring tube and compacted by tapping on the rubber pad. The volume of each fraction is noted.

From the result of the above analysis, summation curves are plotted and the mean diameter of the samples worked out as per the standard procedure. Statistical method is also used to work out the mean diameter. The silt factor is obtained from formula:

$$f = 1.76 (d)^{1/2}$$

Where 'd' is the mean diameter in mm of the particles.

5.2 Presentation of Data

The sequence of the stations for which analysis data has been presented in this book are downstream to upstream in part - II of the book.

Sr.	Name of Station	Code No.
1.	Orsang at Chandwada	010215032
2.	Narmada at Garudeshwar	010215030
3.	Narmada at Mandleshwar	010215026
4.	Narmada at Handia	010215022
5.	Narmada at Hoshangabad	010215019
6.	Narmada at Sandia	010215013
7.	Shakkar at Gadarwara	010215012
8.	Narmada at Barman	010215011
9.	Banjar at Bamni	010215006
10.	Burhner at Mohgaon	010215004
11.	Narmada at Manot	010215002

6 Part – I Sediment Data

6.1 Orsang at Chandwada

History Sheet

		Water Year	:	2017-2018
Site	:	Orsang at Chandwada	Code	01 02 15 032
State	:	Gujarat	District	Vadodara
Basin	:	Narmada	Independent River	Narmada
Tributary	:	Orsang	Sub Tributary	:
Sub-Sub Tributary	:		Local River	Orsang
Division	:	Tapi Division, Surat	Sub-Division	LNSD,Bharuch
Drainage Area	:	3846 Sq. Km.	Bank	Right
Latitude	:	22°01'48"	Longitude	73°25'30"
Zero of Gauge (m)	:	18 .000(M.S.L.)	01/10/1979	
		Opening Date	Closing Date	
Gauge	:	11/01/1979		
Discharge	:	01/11/1979		
Sediment	:	01/08/1988		
Water Quality	:	15/03/1980		

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Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Orsang at Chandwada (01 02 15 032)

Division : Tapi Division, Surat

Local River : Orsang

Sub-Division : LNSD,Bharuch

Day	Jun						Jul						Aug					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	0.000	0.000	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000	0	21.99	0.000	0.000	0.002	0.002	4
2	0.000	0.000	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000	0	21.45	0.000	0.000	0.001	0.001	2
3	0.000	0.000	0.000	0.000	0.000	0	6.380	0.000	0.000	0.002	0.002	1	34.88	0.000	0.000	0.002	0.002	6
4	0.000	0.000	0.000	0.000	0.000	0	6.380	0.000	0.000	0.002	0.002	1	33.14	0.000	0.000	0.001	0.001	3
5	0.000	0.000	0.000	0.000	0.000	0	5.780	0.000	0.000	0.001	0.001	0	31.24	0.000	0.000	0.000	0.000	0
6	0.000	0.000	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000	0	35.45	0.000	0.000	0.000	0.000	0
7	0.000	0.000	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000	0	28.37	0.000	0.000	0.001	0.001	2
8	0.000	0.000	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000	0	27.54	0.000	0.000	0.000	0.000	0
9	0.000	0.000	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000	0	26.71	0.000	0.000	0.000	0.000	0
10	0.000	0.000	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000	0	25.42	0.000	0.000	0.000	0.000	0
11	0.000	0.000	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000	0	25.03	0.000	0.000	0.000	0.000	0
12	2.400	0.000	0.000	0.002	0.002	0	0.000	0.000	0.000	0.000	0.000	0	25.03	0.000	0.000	0.000	0.000	0
13	2.300	0.000	0.000	0.002	0.002	0	0.000	0.000	0.000	0.000	0.000	0	29.45	0.000	0.000	0.000	0.000	0
14	2.420	0.000	0.000	0.002	0.002	0	0.000	0.000	0.000	0.000	0.000	0	17.13	0.000	0.000	0.000	0.000	0
15	1.910	0.000	0.000	0.001	0.001	0	0.000	0.000	0.000	0.000	0.000	0	18.29	0.000	0.000	0.000	0.000	0
16	1.820	0.000	0.000	0.002	0.002	0	0.000	0.000	0.000	0.000	0.000	0	16.66	0.000	0.000	0.000	0.000	0
17	1.700	0.000	0.000	0.002	0.002	0	14.68	0.000	0.000	0.002	0.002	3	14.57	0.000	0.000	0.000	0.000	0
18	1.230	0.000	0.000	0.001	0.001	0	22.05	0.000	0.000	0.002	0.002	4	13.56	0.000	0.000	0.000	0.000	0
19	1.647	0.000	0.000	0.001	0.001	0	14.79	0.000	0.000	0.001	0.001	1	13.23	0.000	0.000	0.000	0.000	0
20	1.353	0.000	0.000	0.001	0.001	0	13.77	0.000	0.000	0.001	0.001	1	29.88	0.000	0.000	0.000	0.000	0
21	1.260	0.000	0.000	0.001	0.001	0	12.94	0.000	0.000	0.001	0.001	1	26.34	0.000	0.000	0.000	0.000	0
22	0.000	0.000	0.000	0.000	0.000	0	15.28	0.000	0.000	0.002	0.002	3	133.4	0.000	0.000	0.002	0.002	23
23	0.000	0.000	0.000	0.000	0.000	0	15.95	0.000	0.000	0.002	0.002	3	45.11	0.000	0.000	0.002	0.002	8
24	0.000	0.000	0.000	0.000	0.000	0	24.31	0.000	0.000	0.002	0.002	4	40.16	0.000	0.000	0.001	0.001	3
25	0.000	0.000	0.000	0.000	0.000	0	20.82	0.000	0.000	0.002	0.002	4	37.78	0.000	0.000	0.001	0.001	3
26	0.000	0.000	0.000	0.000	0.000	0	23.40	0.000	0.000	0.002	0.002	4	33.44	0.000	0.000	0.001	0.001	3
27	0.000	0.000	0.000	0.000	0.000	0	24.29	0.000	0.000	0.003	0.003	6	100.2	0.000	0.000	0.003	0.003	26
28	0.000	0.000	0.000	0.000	0.000	0	23.14	0.000	0.000	0.002	0.002	4	129.0	0.000	0.000	0.002	0.002	22
29	0.000	0.000	0.000	0.000	0.000	0	27.24	0.000	0.000	0.003	0.003	7	120.3	0.000	0.000	0.002	0.002	21
30	0.000	0.000	0.000	0.000	0.000	0	27.10	0.000	0.000	0.003	0.003	7	165.3	0.000	0.000	0.002	0.002	29
31							22.58	0.000	0.000	0.002	0.002	4	113.2	0.000	0.000	0.002	0.002	20
Ten Daily Mean																		
Ten Daily I	0.000	0.000	0.000	0.000	0.000	0	1.854	0.000	0.000	0.001	0.001	0	28.62	0.000	0.000	0.001	0.001	2
Ten Daily II	1.678	0.000	0.000	0.001	0.001	0	6.529	0.000	0.000	0.001	0.001	1	20.28	0.000	0.000	0.000	0.000	0
Ten Daily III	0.126	0.000	0.000	0.000	0.000	0	21.55	0.000	0.000	0.002	0.002	4	85.84	0.000	0.000	0.002	0.002	14
Monthly Total						2						58						174

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Orsang at Chandwada (01 02 15 032)

Division : Tapi Division, Surat

Local River : Orsang

Sub-Division : LNSD,Bharuch

Day	Sep						Oct						Nov					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	107.9	0.000	0.000	0.002	0.002	19	30.10	0.000	0.000	0.001	0.001	4	0.000					
2	114.5	0.000	0.000	0.002	0.002	21	30.25	0.000	0.000	0.001	0.001	4	0.000					
3	113.1	0.000	0.000	0.002	0.002	20	29.97	0.000	0.000	0.001	0.001	3	0.000					
4	103.5	0.000	0.000	0.002	0.002	18	11.90	0.000	0.000	0.001	0.001	1	0.000					
5	100.6	0.000	0.000	0.001	0.001	9	11.84	0.000	0.000	0.001	0.001	1	0.000					
6	96.78	0.000	0.000	0.001	0.001	8	9.320	0.000	0.000	0.001	0.001	1	0.000					
7	50.46	0.000	0.000	0.001	0.001	4	9.290	0.000	0.000	0.001	0.001	1	0.000					
8	50.52	0.000	0.000	0.001	0.001	4	9.450	0.000	0.000	0.001	0.001	1	0.000					
9	46.98	0.000	0.000	0.001	0.001	4	9.170	0.000	0.000	0.001	0.001	1	0.000					
10	46.25	0.000	0.000	0.001	0.001	4	4.240	0.000	0.000	0.000	0.000	0	0.000					
11	49.67	0.000	0.000	0.001	0.001	4	4.100	0.000	0.000	0.000	0.000	0	0.000					
12	50.59	0.000	0.000	0.001	0.001	4	30.64	0.000	0.000	0.001	0.001	3	0.000					
13	52.22	0.000	0.000	0.001	0.001	5	22.29	0.000	0.000	0.001	0.001	2	0.000					
14	126.1	0.000	0.000	0.002	0.002	22	14.02	0.000	0.000	0.001	0.001	1	0.000					
15	123.7	0.000	0.000	0.002	0.002	21	14.27	0.000	0.000	0.001	0.001	1	0.000					
16	53.73	0.000	0.000	0.002	0.002	9	13.97	0.000	0.000	0.001	0.001	1	0.000					
17	55.45	0.000	0.000	0.002	0.002	10	13.94	0.000	0.000	0.001	0.001	1	0.000					
18	45.52	0.000	0.000	0.002	0.002	8	5.010	0.000	0.000	0.001	0.001	0	0.000					
19	52.25	0.000	0.000	0.002	0.002	9	5.180	0.000	0.000	0.001	0.001	0	0.000					
20	48.87	0.000	0.000	0.002	0.002	8	15.12	0.000	0.000	0.001	0.001	1	0.000					
21	48.08	0.000	0.000	0.002	0.002	8	4.630	0.000	0.000	0.001	0.001	0	0.000					
22	52.63	0.000	0.000	0.002	0.002	9	4.520	0.000	0.000	0.001	0.001	0	0.000					
23	47.24	0.000	0.000	0.001	0.001	4	0.000						0.000					
24	42.05	0.000	0.000	0.001	0.001	3	0.000						0.000					
25	38.28	0.000	0.000	0.001	0.001	3	0.000						0.000					
26	36.35	0.000	0.000	0.001	0.001	3	0.000						0.000					
27	32.36	0.000	0.000	0.001	0.001	3	0.000						0.000					
28	33.11	0.000	0.000	0.001	0.001	3	0.000						0.000					
29	21.14	0.000	0.000	0.001	0.001	2	0.000						0.000					
30	21.73	0.000	0.000	0.001	0.001	2	0.000						0.000					
31							0.000											
Ten Daily Mean																		
Ten Daily I	83.06	0.000	0.000	0.001	0.001	11	15.55	0.000	0.000	0.001	0.001	2	0.000					
Ten Daily II	65.81	0.000	0.000	0.002	0.002	10	13.85	0.000	0.000	0.001	0.001	1	0.000					
Ten Daily III	37.30	0.000	0.000	0.001	0.001	4	0.832	0.000	0.000	0.001	0.001	0	0.000					
Monthly Total						253						28						

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Orsang at Chandwada (01 02 15 032)

Division : Tapi Division, Surat

Local River : Orsang

Sub-Division : LNSD,Bharuch

Day	Dec						Jan						Feb					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	0.000						0.000						0.000					
2	0.000						0.000						0.000					
3	0.000						0.000						0.000					
4	0.000						0.000						0.000					
5	0.000						0.000						0.000					
6	0.000						0.000						0.000					
7	0.000						0.000						0.000					
8	0.000						0.000						0.000					
9	0.000						0.000						0.000					
10	0.000						0.000						0.000					
11	0.000						0.000						0.000					
12	0.000						0.000						0.000					
13	0.000						0.000						0.000					
14	0.000						0.000						0.000					
15	0.000						0.000						0.000					
16	0.000						0.000						0.000					
17	0.000						0.000						0.000					
18	0.000						0.000						0.000					
19	0.000						0.000						0.000					
20	0.000						0.000						0.000					
21	0.000						0.000						0.000					
22	0.000						0.000						0.000					
23	0.000						0.000						0.000					
24	0.000						0.000						0.000					
25	0.000						0.000						0.000					
26	0.000						0.000						0.000					
27	0.000						0.000						0.000					
28	0.000						0.000						0.000					
29	0.000						0.000											
30	0.000						0.000											
31	0.000						0.000											
Ten Daily Mean																		
Ten Daily I	0.000						0.000						0.000					
Ten Daily II	0.000						0.000						0.000					
Ten Daily III	0.000						0.000						0.000					
Monthly Total																		

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Orsang at Chandwada (01 02 15 032)

Division : Tapi Division, Surat

Local River : Orsang

Sub-Division : LNSD,Bharuch

Day	Mar						Apr						May					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1							0.000											
2							0.000											
3							0.000											
4							0.000											
5							0.000											
6							0.000											
7							0.000											
8							0.000											
9							0.000											
10							0.000											
11							0.000											
12							0.000											
13							0.000											
14							0.000											
15							0.000											
16							0.000											
17							0.000											
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23							0.000											
24							0.000											
25							0.000											
26							0.000											
27							0.000											
28							0.000											
29							0.000											
30							0.000											
31																		
Ten Daily Mean																		
Ten Daily I							0.000											
Ten Daily II							0.000											
Ten Daily III							0.000											
Monthly Total																		

Sediment Data Year Book 2017-18

Annual Sediment Load for period : 1989-2018

Station Name : Orsang at Chandwada (01 02 15 032)

Division : Tapi Division, Surat

Local River : Orsang

Sub-Division : LNSD,Bharuch

Year	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1989-1990	1707848	0	1707848	1097
1990-1991	2902510	0	2902510	2782
1991-1992	1714771	0	1714771	858
1992-1993	908882	0	908882	589
1993-1994	827289	0	827289	974
1994-1995	1887533	0	1887533	4035
1995-1996	702121	0	702121	579
1996-1997	3226266	0	3226266	2348
1997-1998	1632617	0	1632617	1999
1998-1999	999417	0	999417	1389
1999-2000	2884450	0	2884450	1070
2000-2001	52131	0	52131	43
2001-2002	1397910	0	1397910	1009
2002-2003	732254	0	732254	447
2003-2004	1734616	0	1734616	1706
2004-2005	3831760	0	3831760	2297
2005-2006	4509	0	4509	953
2006-2007	2268661	0	2268661	2812
2007-2008	1191464	0	1191464	2229
2008-2009	913355	0	913355	947
2009-2010	84582	0	84582	323
2010-2011	676260	0	676260	808
2011-2012	257612	26	257638	1104
2012-2013	10657	24	10681	1439
2013-2014	308796	0	308796	4306
2014-2015	9316	0	9316	720
2015-2016	1101	0	1101	329
2016-2017	1883	0	1883	549
2017-2018	516	0	516	340

Sediment Data Year Book 2017-18

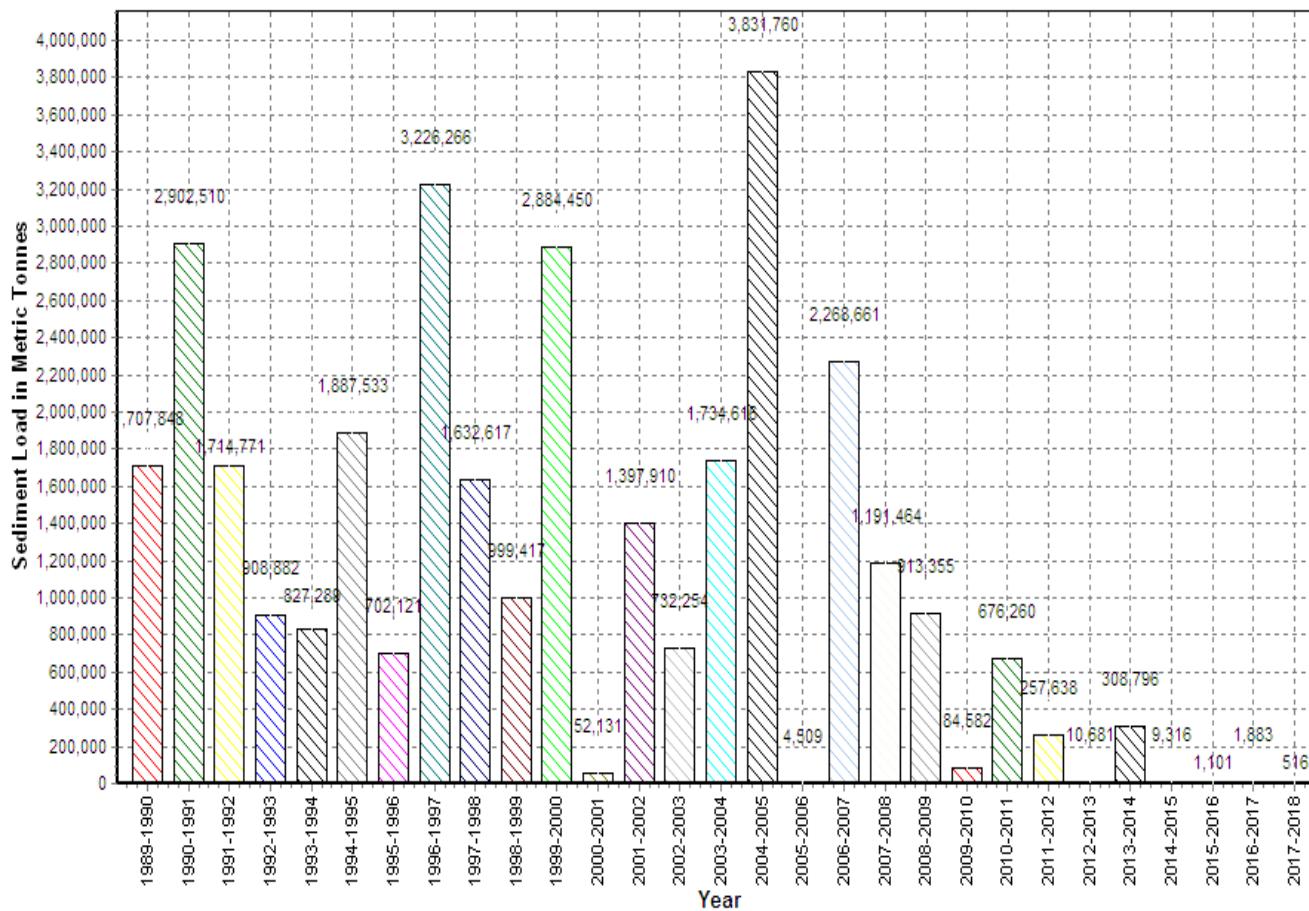
Annual Sediment Load for the period: 1989-2018

Station Name : Orsang at Chandwada (01 02 15 032)

Division : Tapi Division, Surat

Sub-Division : LNSD,Bharuch

Local River : Orsang



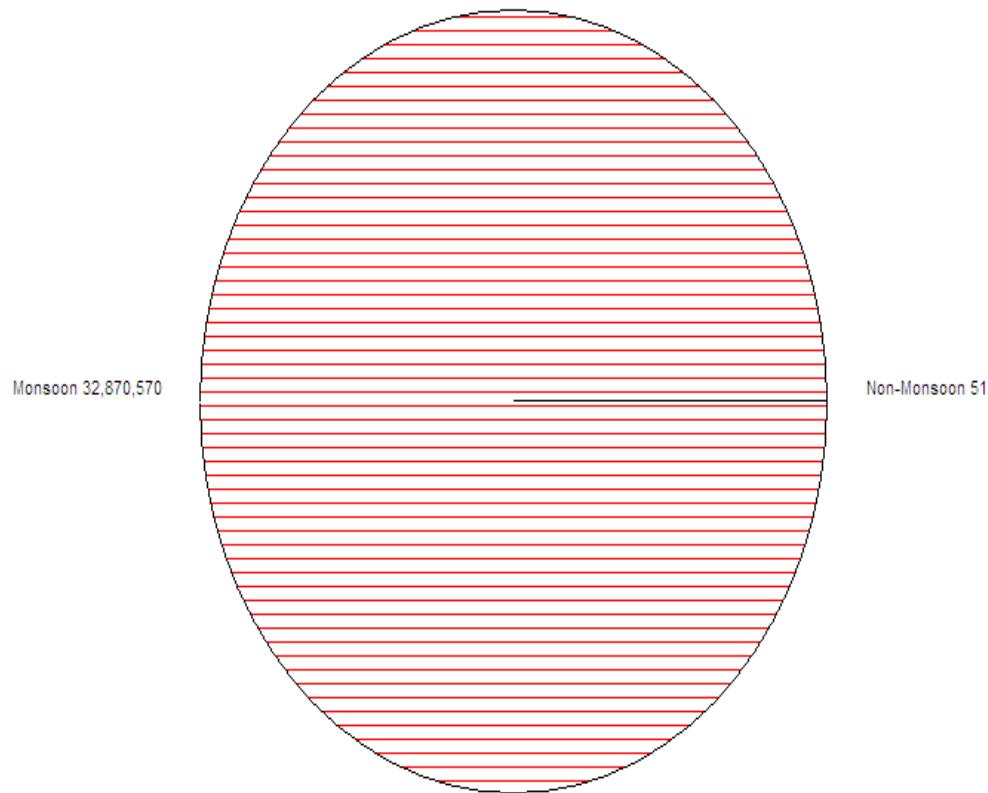
Seasonal Sediment Load for the period : 1989-2018

Station Name : Orsang at Chandwada (01 02 15 032)

Local River : Orsang

Division : Tapi Division, Surat

Sub-Division : LNSD,Bharuch



Sediment Data Year Book 2017-18

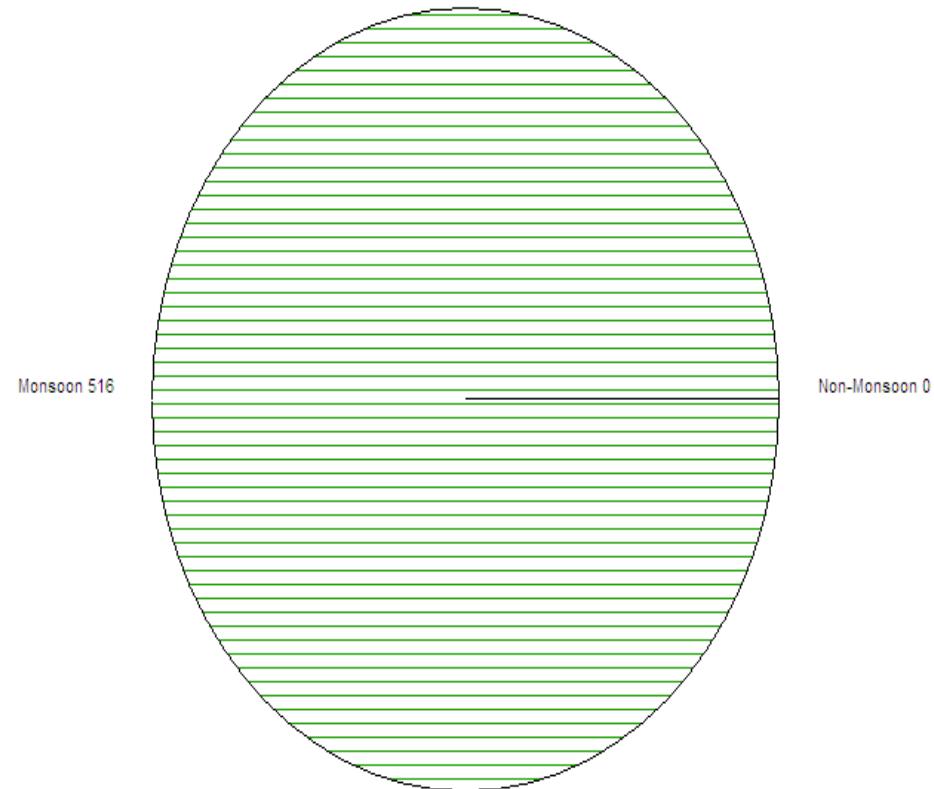
Seasonal Sediment Load for the Year: 2017-2018

Station Name : Orsang at Chandwada (01 02 15 032)

Local River : Orsang

Division : Tapi Division, Surat

Sub-Division : LNSD,Bharuch



6.2 Narmada at Garudeshwar

History Sheet

		Water Year	:	2017-2018
Site	: Narmada at Garudeshwar	Code	:	01 02 15 030
State	:	District	:	Bharuch
Basin	:	Independent River	:	Narmada
Tributary	:	Sub Tributary	:	
Sub-Sub Tributary	:	Local River	:	Narmada
Division	:	Sub-Division	:	LNSD,Bharuch
Drainage Area	:	Bank	:	Right
Latitude	:	Longitude	:	73°39'00"
Zero of Gauge (m)	: 10 .000(M.S.L.)	22/12/1971		
	Opening Date	Closing Date		
Gauge	:	22/12/1971		
Discharge	:	23/03/1972		
Sediment	:	21/03/1973		
Water Quality	:	15/06/1977		

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Garudeshwar (01 02 15 030)

Division : Tapi Division, Surat

Sub-Division : LNSD,Bharuch

Local River : Narmada

Day	Jun						Jul						Aug					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	30.82	0.000	0.000	0.000	0.000	0	30.33	0.000	0.000	0.000	0.000	0	49.15	0.000	0.000	0.009	0.009	38
2	58.95	0.000	0.000	0.000	0.000	0	25.00	0.000	0.000	0.000	0.000	0	47.22	0.000	0.000	0.005	0.005	20
3	255.5	0.000	0.000	0.000	0.000	0	22.59	0.000	0.000	0.000	0.000	0	36.61	0.000	0.000	0.008	0.008	25
4	255.8	0.000	0.000	0.000	0.000	0	29.90	0.000	0.000	0.000	0.000	0	36.52	0.000	0.000	0.005	0.005	16
5	262.0	0.000	0.000	0.000	0.000	0	23.45	0.000	0.000	0.000	0.000	0	37.09	0.000	0.000	0.005	0.005	16
6	268.6	0.000	0.000	0.000	0.000	0	23.25	0.000	0.000	0.000	0.000	0	38.00	0.000	0.000	0.005	0.005	17
7	271.6	0.000	0.000	0.000	0.000	0	23.14	0.000	0.000	0.000	0.000	0	37.84	0.000	0.000	0.007	0.007	23
8	59.36	0.000	0.000	0.000	0.000	0	23.68	0.000	0.000	0.000	0.000	0	36.73	0.000	0.000	0.010	0.010	32
9	25.23	0.000	0.000	0.000	0.000	0	23.92	0.000	0.000	0.000	0.000	0	37.72	0.000	0.000	0.012	0.012	39
10	52.49	0.000	0.000	0.000	0.000	0	26.75	0.000	0.000	0.000	0.000	0	37.22	0.000	0.000	0.010	0.010	32
11	51.55	0.000	0.000	0.000	0.000	0	26.76	0.000	0.000	0.000	0.000	0	37.36	0.000	0.000	0.006	0.006	19
12	50.12	0.000	0.000	0.000	0.000	0	26.85	0.000	0.000	0.000	0.000	0	34.01	0.000	0.000	0.005	0.005	15
13	52.37	0.000	0.000	0.000	0.000	0	26.54	0.000	0.000	0.000	0.000	0	33.50	0.000	0.000	0.005	0.005	14
14	53.28	0.000	0.000	0.000	0.000	0	27.42	0.000	0.000	0.000	0.000	0	33.34	0.000	0.000	0.005	0.005	14
15	202.2	0.000	0.000	0.000	0.000	0	27.91	0.000	0.000	0.000	0.000	0	32.80	0.000	0.000	0.005	0.005	14
16	57.35	0.000	0.000	0.000	0.000	0	28.01	0.000	0.000	0.000	0.000	0	32.65	0.000	0.000	0.004	0.004	11
17	231.0	0.000	0.000	0.000	0.000	0	32.87	0.000	0.000	0.000	0.000	0	35.35	0.000	0.000	0.005	0.005	15
18	250.2	0.000	0.000	0.000	0.000	0	32.71	0.000	0.000	0.000	0.000	0	33.97	0.000	0.000	0.004	0.004	12
19	141.4	0.000	0.000	0.000	0.000	0	31.06	0.000	0.000	0.000	0.000	0	33.45	0.000	0.000	0.004	0.004	12
20	159.9	0.000	0.000	0.000	0.000	0	31.09	0.000	0.000	0.000	0.000	0	33.45	0.000	0.000	0.004	0.004	12
21	50.86	0.000	0.000	0.000	0.000	0	31.99	0.000	0.000	0.000	0.000	0	38.45	0.000	0.000	0.013	0.013	43
22	23.56	0.000	0.000	0.000	0.000	0	36.27	0.000	0.000	0.000	0.000	0	37.68	0.000	0.000	0.013	0.013	42
23	199.2	0.000	0.000	0.000	0.000	0	36.25	0.000	0.000	0.000	0.000	0	38.32	0.000	0.000	0.012	0.012	40
24	504.6	0.000	0.000	0.000	0.000	0	40.67	0.000	0.000	0.048	0.048	169	49.79	0.000	0.000	0.001	0.001	4
25	450.6	0.000	0.000	0.000	0.000	0	40.08	0.000	0.000	0.020	0.020	69	56.13	0.000	0.000	0.001	0.001	5
26	400.1	0.000	0.000	0.000	0.000	0	42.09	0.000	0.000	0.018	0.018	65	57.26	0.000	0.000	0.001	0.001	5
27	364.5	0.000	0.000	0.000	0.000	0	41.93	0.000	0.000	0.013	0.013	47	100.7	0.000	0.000	0.002	0.002	15
28	302.8	0.000	0.000	0.000	0.000	0	41.93	0.000	0.000	0.010	0.010	36	154.6	0.000	0.000	0.005	0.005	67
29	144.6	0.000	0.000	0.000	0.000	0	49.95	0.000	0.000	0.010	0.010	43	60.16	0.000	0.000	0.013	0.013	68
30	24.81	0.000	0.000	0.000	0.000	0	55.10	0.000	0.000	0.011	0.011	53	58.40	0.000	0.000	0.013	0.013	66
31							55.45	0.000	0.000	0.005	0.005	24	55.82	0.000	0.000	0.010	0.010	48
Ten Daily Mean																		
Ten Daily I	154.0	0.000	0.000	0.000	0.000	0	25.20	0.000	0.000	0.000	0.000	0	39.41	0.000	0.000	0.008	0.008	26
Ten Daily II	124.9	0.000	0.000	0.000	0.000	0	29.12	0.000	0.000	0.000	0.000	0	33.99	0.000	0.000	0.005	0.005	14
Ten Daily III	246.6	0.000	0.000	0.000	0.000	0	42.88	0.000	0.000	0.012	0.012	46	64.30	0.000	0.000	0.008	0.008	37
Monthly Total						0						506						800

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Garudeshwar (01 02 15 030)

Local River : Narmada

Division : Tapi Division, Surat

Sub-Division : LNSD,Bharuch

Day	Sep						Oct						Nov					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	53.44	0.000	0.000	0.010	0.010	46	39.85	0.000	0.000	0.000	0.000	0	32.22	0.000	0.000	0.000	0.000	0
2	52.18	0.000	0.000	0.010	0.010	44	37.20	0.000	0.000	0.000	0.000	0	31.14	0.000	0.000	0.000	0.000	0
3	52.00	0.000	0.000	0.010	0.010	44	37.08	0.000	0.000	0.000	0.000	0	32.24	0.000	0.000	0.000	0.000	0
4	50.26	0.000	0.000	0.001	0.001	4	37.68	0.000	0.000	0.000	0.000	0	32.20	0.000	0.000	0.000	0.000	0
5	48.44	0.000	0.000	0.000	0.000	0	30.48	0.000	0.000	0.000	0.000	0	32.58	0.000	0.000	0.000	0.000	0
6	50.45	0.000	0.000	0.000	0.000	0	31.58	0.000	0.000	0.000	0.000	0	30.16	0.000	0.000	0.000	0.000	0
7	48.40	0.000	0.000	0.000	0.000	0	32.53	0.000	0.000	0.000	0.000	0	29.69	0.000	0.000	0.000	0.000	0
8	46.21	0.000	0.000	0.000	0.000	0	33.95	0.000	0.000	0.000	0.000	0	30.70	0.000	0.000	0.000	0.000	0
9	42.31	0.000	0.000	0.000	0.000	0	30.84	0.000	0.000	0.000	0.000	0	30.57	0.000	0.000	0.000	0.000	0
10	40.12	0.000	0.000	0.000	0.000	0	40.88	0.000	0.000	0.000	0.000	0	29.38	0.000	0.000	0.000	0.000	0
11	37.74	0.000	0.000	0.000	0.000	0	40.48	0.000	0.000	0.000	0.000	0	30.98	0.000	0.000	0.000	0.000	0
12	38.60	0.000	0.000	0.000	0.000	0	30.43	0.000	0.000	0.000	0.000	0	30.88	0.000	0.000	0.000	0.000	0
13	39.09	0.000	0.000	0.000	0.000	0	30.34	0.000	0.000	0.000	0.000	0	30.90	0.000	0.000	0.000	0.000	0
14	39.45	0.000	0.000	0.000	0.000	0	30.16	0.000	0.000	0.000	0.000	0	30.70	0.000	0.000	0.000	0.000	0
15	40.20	0.000	0.000	0.000	0.000	0	30.44	0.000	0.000	0.000	0.000	0	39.60	0.000	0.000	0.000	0.000	0
16	40.07	0.000	0.000	0.000	0.000	0	29.78	0.000	0.000	0.000	0.000	0	30.44	0.000	0.000	0.000	0.000	0
17	40.10	0.000	0.000	0.000	0.000	0	29.93	0.000	0.000	0.000	0.000	0	30.33	0.000	0.000	0.000	0.000	0
18	41.39	0.000	0.000	0.000	0.000	0	30.00	0.000	0.000	0.000	0.000	0	30.75	0.000	0.000	0.000	0.000	0
19	41.23	0.000	0.000	0.000	0.000	0	30.12	0.000	0.000	0.000	0.000	0	30.70	0.000	0.000	0.000	0.000	0
20	40.29	0.000	0.000	0.000	0.000	0	29.95	0.000	0.000	0.000	0.000	0	30.58	0.000	0.000	0.000	0.000	0
21	41.36	0.000	0.000	0.000	0.000	0	29.95	0.000	0.000	0.000	0.000	0	30.29	0.000	0.000	0.000	0.000	0
22	39.80	0.000	0.000	0.000	0.000	0	30.12	0.000	0.000	0.000	0.000	0	29.05	0.000	0.000	0.000	0.000	0
23	39.82	0.000	0.000	0.000	0.000	0	34.14	0.000	0.000	0.000	0.000	0	30.22	0.000	0.000	0.000	0.000	0
24	40.90	0.000	0.000	0.000	0.000	0	33.75	0.000	0.000	0.000	0.000	0	29.30	0.000	0.000	0.000	0.000	0
25	41.10	0.000	0.000	0.000	0.000	0	33.46	0.000	0.000	0.000	0.000	0	29.71	0.000	0.000	0.000	0.000	0
26	40.56	0.000	0.000	0.000	0.000	0	33.55	0.000	0.000	0.000	0.000	0	29.71	0.000	0.000	0.000	0.000	0
27	39.13	0.000	0.000	0.000	0.000	0	32.57	0.000	0.000	0.000	0.000	0	30.46	0.000	0.000	0.000	0.000	0
28	40.46	0.000	0.000	0.000	0.000	0	33.59	0.000	0.000	0.000	0.000	0	29.96	0.000	0.000	0.000	0.000	0
29	40.22	0.000	0.000	0.000	0.000	0	32.65	0.000	0.000	0.000	0.000	0	29.10	0.000	0.000	0.000	0.000	0
30	40.28	0.000	0.000	0.000	0.000	0	32.53	0.000	0.000	0.000	0.000	0	29.05	0.000	0.000	0.000	0.000	0
31							32.28	0.000	0.000	0.000	0.000	0						
Ten Daily Mean																		
Ten Daily I	48.38	0.000	0.000	0.003	0.003	14	35.21	0.000	0.000	0.000	0.000	0	31.09	0.000	0.000	0.000	0.000	0
Ten Daily II	39.81	0.000	0.000	0.000	0.000	0	31.16	0.000	0.000	0.000	0.000	0	31.59	0.000	0.000	0.000	0.000	0
Ten Daily III	40.36	0.000	0.000	0.000	0.000	0	32.60	0.000	0.000	0.000	0.000	0	29.68	0.000	0.000	0.000	0.000	0
Monthly Total						138						0						0

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Garudeshwar (01 02 15 030)

Division : Tapi Division, Surat

Sub-Division : LNSD,Bharuch

Local River : Narmada

Day	Dec						Jan						Feb					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	28.76	0.000	0.000	0.000	0.000	0	31.68	0.000	0.000	0.000	0.000	0	38.67	0.000	0.000	0.000	0.000	0
2	28.70	0.000	0.000	0.000	0.000	0	32.01	0.000	0.000	0.000	0.000	0	34.47	0.000	0.000	0.000	0.000	0
3	29.00	0.000	0.000	0.000	0.000	0	31.16	0.000	0.000	0.000	0.000	0	34.98	0.000	0.000	0.000	0.000	0
4	29.46	0.000	0.000	0.000	0.000	0	33.76	0.000	0.000	0.000	0.000	0	36.10	0.000	0.000	0.000	0.000	0
5	31.43	0.000	0.000	0.000	0.000	0	33.26	0.000	0.000	0.000	0.000	0	36.72	0.000	0.000	0.000	0.000	0
6	30.72	0.000	0.000	0.000	0.000	0	32.23	0.000	0.000	0.000	0.000	0	38.43	0.000	0.000	0.000	0.000	0
7	31.52	0.000	0.000	0.000	0.000	0	32.25	0.000	0.000	0.000	0.000	0	36.85	0.000	0.000	0.000	0.000	0
8	29.64	0.000	0.000	0.000	0.000	0	33.80	0.000	0.000	0.000	0.000	0	46.80	0.000	0.000	0.000	0.000	0
9	29.64	0.000	0.000	0.000	0.000	0	36.87	0.000	0.000	0.000	0.000	0	45.82	0.000	0.000	0.000	0.000	0
10	30.00	0.000	0.000	0.000	0.000	0	35.11	0.000	0.000	0.000	0.000	0	43.89	0.000	0.000	0.000	0.000	0
11	30.10	0.000	0.000	0.000	0.000	0	36.14	0.000	0.000	0.000	0.000	0	45.50	0.000	0.000	0.000	0.000	0
12	29.45	0.000	0.000	0.000	0.000	0	36.32	0.000	0.000	0.000	0.000	0	45.78	0.000	0.000	0.000	0.000	0
13	29.99	0.000	0.000	0.000	0.000	0	36.27	0.000	0.000	0.000	0.000	0	44.25	0.000	0.000	0.000	0.000	0
14	31.55	0.000	0.000	0.000	0.000	0	35.35	0.000	0.000	0.000	0.000	0	40.24	0.000	0.000	0.000	0.000	0
15	31.81	0.000	0.000	0.000	0.000	0	35.56	0.000	0.000	0.000	0.000	0	42.26	0.000	0.000	0.000	0.000	0
16	31.48	0.000	0.000	0.000	0.000	0	36.24	0.000	0.000	0.000	0.000	0	41.92	0.000	0.000	0.000	0.000	0
17	31.48	0.000	0.000	0.000	0.000	0	36.82	0.000	0.000	0.000	0.000	0	40.74	0.000	0.000	0.000	0.000	0
18	31.31	0.000	0.000	0.000	0.000	0	36.29	0.000	0.000	0.000	0.000	0	40.78	0.000	0.000	0.000	0.000	0
19	30.82	0.000	0.000	0.000	0.000	0	36.37	0.000	0.000	0.000	0.000	0	36.77	0.000	0.000	0.000	0.000	0
20	30.84	0.000	0.000	0.000	0.000	0	36.59	0.000	0.000	0.000	0.000	0	36.52	0.000	0.000	0.000	0.000	0
21	30.88	0.000	0.000	0.000	0.000	0	37.50	0.000	0.000	0.000	0.000	0	25.68	0.000	0.000	0.000	0.000	0
22	30.01	0.000	0.000	0.000	0.000	0	37.75	0.000	0.000	0.000	0.000	0	39.26	0.000	0.000	0.000	0.000	0
23	30.01	0.000	0.000	0.000	0.000	0	38.47	0.000	0.000	0.000	0.000	0	40.99	0.000	0.000	0.000	0.000	0
24	30.15	0.000	0.000	0.000	0.000	0	37.25	0.000	0.000	0.000	0.000	0	39.57	0.000	0.000	0.000	0.000	0
25	30.05	0.000	0.000	0.000	0.000	0	37.47	0.000	0.000	0.000	0.000	0	43.90	0.000	0.000	0.000	0.000	0
26	30.64	0.000	0.000	0.000	0.000	0	37.45	0.000	0.000	0.000	0.000	0	43.93	0.000	0.000	0.000	0.000	0
27	28.83	0.000	0.000	0.000	0.000	0	37.33	0.000	0.000	0.000	0.000	0	39.31	0.000	0.000	0.000	0.000	0
28	30.53	0.000	0.000	0.000	0.000	0	37.10	0.000	0.000	0.000	0.000	0	36.80	0.000	0.000	0.000	0.000	0
29	31.22	0.000	0.000	0.000	0.000	0	36.08	0.000	0.000	0.000	0.000	0						
30	31.22	0.000	0.000	0.000	0.000	0	36.91	0.000	0.000	0.000	0.000	0						
31							37.80	0.000	0.000	0.000	0.000	0						
Ten Daily Mean																		
Ten Daily I	29.89	0.000	0.000	0.000	0.000	0	33.21	0.000	0.000	0.000	0.000	0	39.27	0.000	0.000	0.000	0.000	0
Ten Daily II	30.88	0.000	0.000	0.000	0.000	0	36.20	0.000	0.000	0.000	0.000	0	41.47	0.000	0.000	0.000	0.000	0
Ten Daily III	30.35	0.000	0.000	0.000	0.000	0	37.37	0.000	0.000	0.000	0.000	0	38.68	0.000	0.000	0.000	0.000	0
Monthly Total						0						0						0

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Garudeshwar (01 02 15 030)

Division : Tapi Division, Surat

Sub-Division : LNSD,Bharuch

Local River : Narmada

Day	Mar						Apr						May					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	36.15	0.000	0.000	0.000	0.000	0	35.34	0.000	0.000	0.000	0.000	0	22.94	0.000	0.000	0.000	0.000	0
2	36.20	0.000	0.000	0.000	0.000	0	34.77	0.000	0.000	0.000	0.000	0	22.15	0.000	0.000	0.000	0.000	0
3	36.25	0.000	0.000	0.000	0.000	0	33.01	0.000	0.000	0.000	0.000	0	21.34	0.000	0.000	0.000	0.000	0
4	36.47	0.000	0.000	0.000	0.000	0	31.05	0.000	0.000	0.000	0.000	0	21.04	0.000	0.000	0.000	0.000	0
5	36.41	0.000	0.000	0.000	0.000	0	30.04	0.000	0.000	0.000	0.000	0	20.00	0.000	0.000	0.000	0.000	0
6	41.47	0.000	0.000	0.000	0.000	0	27.42	0.000	0.000	0.000	0.000	0	21.45	0.000	0.000	0.000	0.000	0
7	39.13	0.000	0.000	0.000	0.000	0	29.35	0.000	0.000	0.000	0.000	0	20.53	0.000	0.000	0.000	0.000	0
8	38.45	0.000	0.000	0.000	0.000	0	28.90	0.000	0.000	0.000	0.000	0	20.57	0.000	0.000	0.000	0.000	0
9	38.53	0.000	0.000	0.000	0.000	0	26.94	0.000	0.000	0.000	0.000	0	20.04	0.000	0.000	0.000	0.000	0
10	35.40	0.000	0.000	0.000	0.000	0	28.82	0.000	0.000	0.000	0.000	0	20.13	0.000	0.000	0.000	0.000	0
11	37.00	0.000	0.000	0.000	0.000	0	25.81	0.000	0.000	0.000	0.000	0	19.58	0.000	0.000	0.000	0.000	0
12	38.64	0.000	0.000	0.000	0.000	0	27.59	0.000	0.000	0.000	0.000	0	19.51	0.000	0.000	0.000	0.000	0
13	35.28	0.000	0.000	0.000	0.000	0	27.90	0.000	0.000	0.000	0.000	0	19.50	0.000	0.000	0.000	0.000	0
14	32.78	0.000	0.000	0.000	0.000	0	27.95	0.000	0.000	0.000	0.000	0	19.23	0.000	0.000	0.000	0.000	0
15	37.43	0.000	0.000	0.000	0.000	0	26.85	0.000	0.000	0.000	0.000	0	19.07	0.000	0.000	0.000	0.000	0
16	37.03	0.000	0.000	0.000	0.000	0	26.12	0.000	0.000	0.000	0.000	0	20.10	0.000	0.000	0.000	0.000	0
17	38.89	0.000	0.000	0.000	0.000	0	28.44	0.000	0.000	0.000	0.000	0	20.85	0.000	0.000	0.000	0.000	0
18	36.85	0.000	0.000	0.000	0.000	0	27.80	0.000	0.000	0.000	0.000	0	20.42	0.000	0.000	0.000	0.000	0
19	36.78	0.000	0.000	0.000	0.000	0	25.27	0.000	0.000	0.000	0.000	0	20.03	0.000	0.000	0.000	0.000	0
20	37.53	0.000	0.000	0.000	0.000	0	24.50	0.000	0.000	0.000	0.000	0	20.50	0.000	0.000	0.000	0.000	0
21	38.80	0.000	0.000	0.000	0.000	0	26.28	0.000	0.000	0.000	0.000	0	20.50	0.000	0.000	0.000	0.000	0
22	37.79	0.000	0.000	0.000	0.000	0	25.95	0.000	0.000	0.000	0.000	0	20.10	0.000	0.000	0.000	0.000	0
23	38.89	0.000	0.000	0.000	0.000	0	26.12	0.000	0.000	0.000	0.000	0	20.23	0.000	0.000	0.000	0.000	0
24	37.66	0.000	0.000	0.000	0.000	0	25.40	0.000	0.000	0.000	0.000	0	20.43	0.000	0.000	0.000	0.000	0
25	36.50	0.000	0.000	0.000	0.000	0	25.43	0.000	0.000	0.000	0.000	0	20.43	0.000	0.000	0.000	0.000	0
26	36.11	0.000	0.000	0.000	0.000	0	24.91	0.000	0.000	0.000	0.000	0	20.03	0.000	0.000	0.000	0.000	0
27	35.09	0.000	0.000	0.000	0.000	0	25.27	0.000	0.000	0.000	0.000	0	19.50	0.000	0.000	0.000	0.000	0
28	35.81	0.000	0.000	0.000	0.000	0	25.49	0.000	0.000	0.000	0.000	0	19.48	0.000	0.000	0.000	0.000	0
29	13.36	0.000	0.000	0.000	0.000	0	25.50	0.000	0.000	0.000	0.000	0	19.54	0.000	0.000	0.000	0.000	0
30	36.45	0.000	0.000	0.000	0.000	0	25.47	0.000	0.000	0.000	0.000	0	20.37	0.000	0.000	0.000	0.000	0
31	36.45	0.000	0.000	0.000	0.000	0							20.13	0.000	0.000	0.000	0.000	0
Ten Daily Mean																		
Ten Daily I	37.45	0.000	0.000	0.000	0.000	0	30.56	0.000	0.000	0.000	0.000	0	21.02	0.000	0.000	0.000	0.000	0
Ten Daily II	36.82	0.000	0.000	0.000	0.000	0	26.82	0.000	0.000	0.000	0.000	0	19.88	0.000	0.000	0.000	0.000	0
Ten Daily III	34.81	0.000	0.000	0.000	0.000	0	25.58	0.000	0.000	0.000	0.000	0	20.07	0.000	0.000	0.000	0.000	0
Monthly Total					0							0						0

Sediment Data Year Book 2017-18

Annual Sediment Load for period : 1987-2018

Station Name : Narmada at Garudeshwar (01 02 15 030) Division : Tapi Division, Surat
Local River : Narmada Sub-Division : LNSD,Bharuch

Year	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1987-1988	23596920	0	23596920	15058
1988-1989	44968910	0	44968910	33262
1989-1990	29277169	0	29277169	23454
1990-1991	51824968	0	51824968	51213
1991-1992	30082897	0	30082897	26138
1992-1993	15587484	0	15587484	20886
1993-1994	17225635	0	17225635	35989
1994-1995	36751681	0	36751681	74061
1995-1996	2218095	0	2218095	23290
1996-1997	9122661	0	9122661	27246
1997-1998	7607284	0	7607284	33802
1998-1999	4610413	0	4610413	23109
1999-2000	15376745	0	15376745	49029
2000-2001	588472	0	588472	11486
2001-2002	3084144	0	3084144	23284
2002-2003	3720112	0	3720112	21023
2003-2004	4835297	0	4835297	30308
2004-2005	2602520	0	2602520	17505
2005-2006	2678060	85099	2763159	25676
2006-2007	6639002	60256	6699258	32524
2007-2008	3310012	43520	3353532	18427
2008-2009	75144	3083	78227	4492
2009-2010	737914	7828	745742	6744
2010-2011	311630	205	311835	8295
2011-2012	84072	423	84495	21732
2012-2013	28164	451	28615	21901
2013-2014	2767532	0	2767532	49130
2014-2015	104139	0	104139	8980
2015-2016	58431	0	58431	6284
2016-2017	340982	58	341040	16018
2017-2018	1444	0	1444	1440

Sediment Data Year Book 2017-18

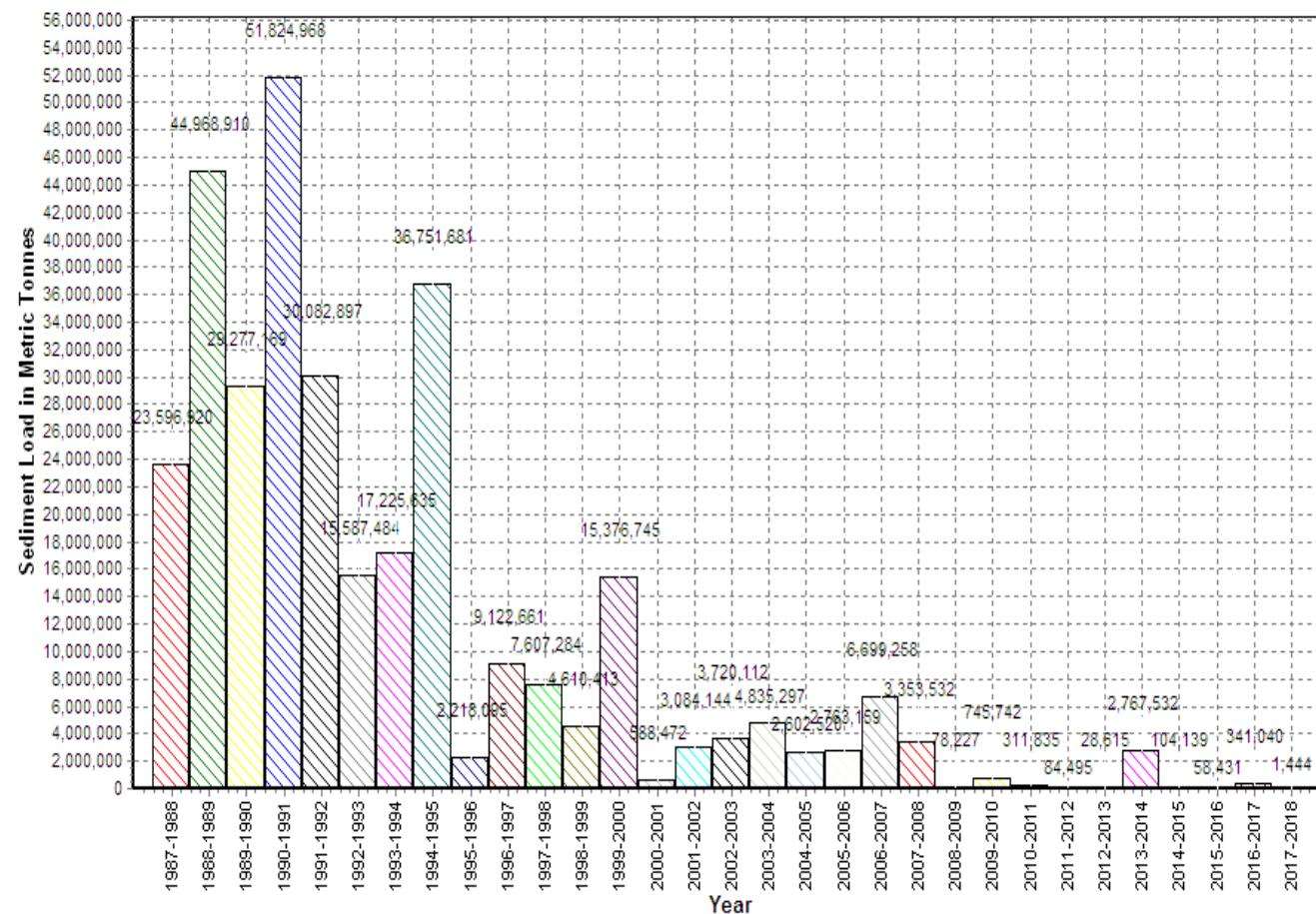
Annual Sediment Load for period : 1987-2018

Station Name : Narmada at Garudeshwar (01 02 15 030)

Division : Tapi Division, Surat

Local River : Narmada

Sub-Division : LNSD,Bharuch



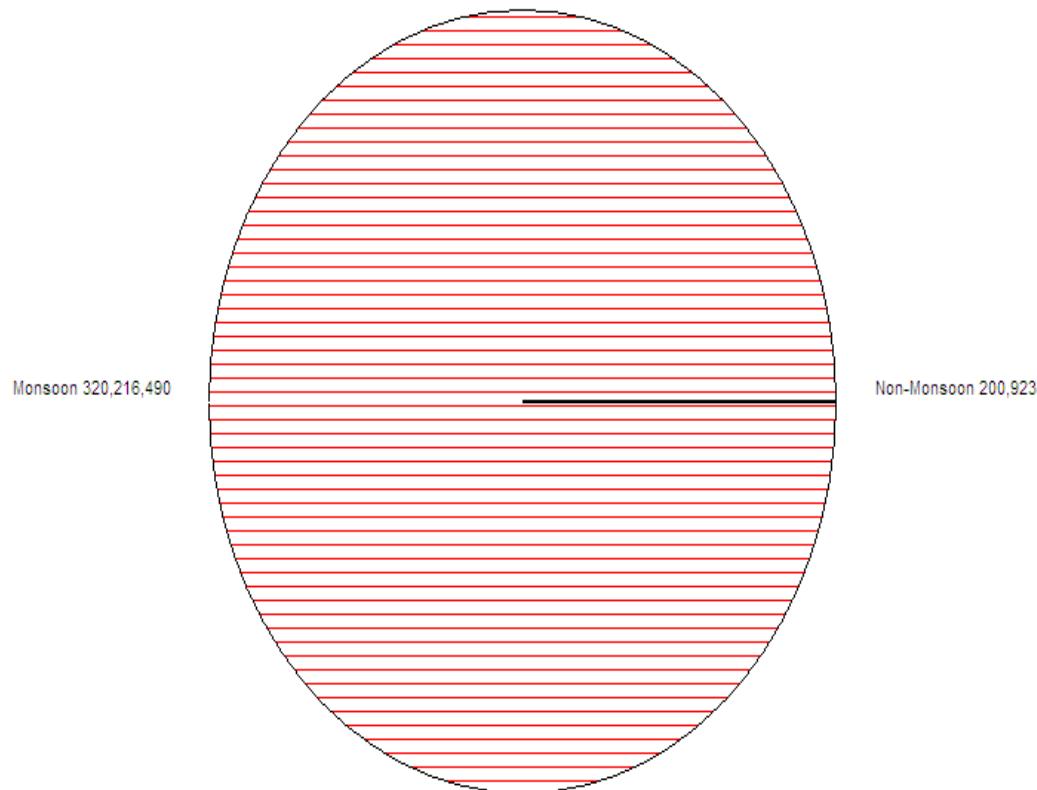
Seasonal Sediment Load for the period : 1987-2018

Station Name : Narmada at Garudeshwar (01 02 15 030)

Division : Tapi Division, Surat

Local River : Narmada

Sub-Division : LNSD,Bharuch



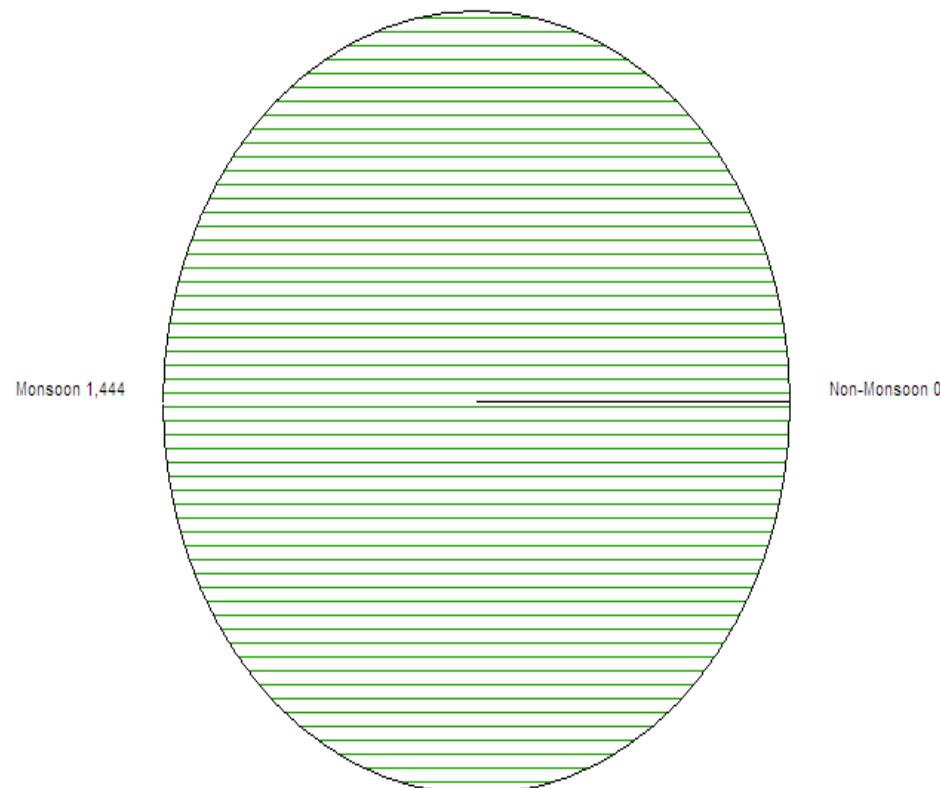
Seasonal Sediment Load for the period : 2017-2018

Station Name : Narmada at Garudeshwar (01 02 15 030)

Division : Tapi Division, Surat

Local River : Narmada

Sub-Division : LNSD,Bharuch



6.3 Narmada at Mandleshwar

History Sheet

		Water Year	:	2017-2018
Site	: Narmada at Mandleshwar	Code	:	010215026
State	: Madhya Pradesh	District	:	Khargone
Basin	: Narmada	Independent River	:	Narmada
Tributary	:	Local River	:	Narmada
Division	: Narmada Division, Bhopal	Sub-Division	:	MNSD-III, Indore
Drainage Area	: 72809 Sq. Km.	Bank	:	Right
Latitude	: 22°10'18"	Longitude	:	75°39'39"
Zero of Gauge (m)	: 138 .000(M.S.L.)	16/12/1970		
	Opening Date	Closing Date		
Gauge	: 16/12/1970			
Discharge	: 28/08/1971			
Sediment	: 14/04/1972			
Water Quality	: 18/06/1979			

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Mandleshwar (010215026)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD- III, Indore

Days	June					July					August							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	1007.34	0	0	0.01	0.01	1218.48	558.32	0	0	0.01	0.01	675.35	315.99	0	0	0.01	0.01	382.22
2	1208.3	0	0	0.01	0.01	1357.16	1315	0.000	0.000	0.024	0.024	2676	185.19	0	0	0.01	0.01	224.01
3	970.26	0	0	0.02	0.02	1257.46	713.76	0	0	0.01	0.01	863.36	165.84	0	0	0.01	0.01	200.6
4	867	0.000	0.000	0.018	0.018	1339	249.18	0	0	0.01	0.01	279.88	178.17	0	0	0.01	0.01	153.94
5	468.86	0	0	0.01	0.01	486.11	278.35	0	0	0.01	0.01	264.55	179.75	0	0	0.01	0.01	186.36
6	352.48	0	0	0.01	0.01	395.9	974.76	0	0	0.02	0.02	1263.29	172	0.000	0.000	0.010	0.010	142
7	399.4	0	0	0.01	0.01	448.6	1082.65	0	0	0.02	0.02	1590.2	241.22	0	0	0.01	0.01	270.94
8	765.84	0	0	0.01	0.01	926.36	900.26	0	0	0.01	0.01	933.39	237.42	0	0	0.01	0.01	266.67
9	999.3	0	0	0.02	0.02	1295.09	305	0.000	0.000	0.003	0.003	89	175.41	0	0	0.01	0.01	197.03
10	921	0	0	0.02	0.02	1273.18	305.8	0	0	0.01	0.01	317.06	106.54	0	0	0.01	0.01	128.88
11	1617	0.000	0.000	0.035	0.035	4906	309.55	0	0	0.01	0.01	347.69	92.45	0	0	0.02	0.02	119.82
12	858.37	0	0	0.02	0.02	1334.93	671.17	0	0	0.01	0.01	811.85	87.24	0	0	0.01	0.01	82.91
13	783.67	0	0	0.01	0.01	947.93	797.45	0	0	0.02	0.02	1584.68	71	0.000	0.000	0.008	0.008	50
14	475.15	0	0	0.02	0.02	656.84	522.83	0	0	0.02	0.02	903.45	231.6	0	0	0.01	0.01	280.14
15	990.92	0	0	0.02	0.02	1626.7	695.11	0	0	0.02	0.02	1081.04	337	0.000	0.000	0.015	0.015	424
16	705.69	0	0	0.02	0.02	914.58	215	0.000	0.000	0.006	0.006	115	259.63	0	0	0.02	0.02	336.48
17	605.72	0	0	0.02	0.02	889.68	337.88	0	0	0.02	0.02	583.87	111.12	0	0	0.01	0.01	124.81
18	653	0.000	0.000	0.022	0.022	1216	520.81	0	0	0.02	0.02	989.95	99.04	0	0	0.01	0.01	102.69
19	695.48	0	0	0.02	0.02	901.34	205.39	0	0	0.02	0.02	301.68	96.25	0	0	0.01	0.01	116.43
20	536.75	0	0	0.01	0.01	602.87	159.32	0	0	0.02	0.02	247.77	470	0.000	0.000	0.049	0.049	1983
21	679	0	0	0.01	0.01	762.66	109.38	0	0	0.02	0.02	151.2	326	0	0	0.02	0.02	422.49
22	474.73	0	0	0.01	0.01	492.2	113.56	0	0	0.02	0.02	186.41	489.14	0	0	0.02	0.02	676.18
23	1655.24	0	0	0.01	0.01	2002.18	210	0.000	0.000	0.037	0.037	671	342.98	0	0	0.02	0.02	444.5
24	1613.14	0	0	0.02	0.02	2230	413.68	0	0	0.02	0.02	607.62	179.89	0	0	0.02	0.02	264.22
25	725	0.000	0.000	0.009	0.009	563	459.11	0	0	0.02	0.02	634.68	196	0.000	0.000	0.022	0.022	369
26	176	0.000	0.000	0.002	0.002	33	326.05	0	0	0.02	0.02	422.56	650.4	0	0	0.09	0.09	4888.93
27	379.81	0	0	0.01	0.01	426.61	412.06	0	0	0.02	0.02	534.04	392	0.000	0.000	0.054	0.054	1837
28	754.33	0	0	0.01	0.01	782.09	263.89	0	0	0.02	0.02	342	309.16	0	0	0.04	0.04	1095.17
29	585.13	0	0	0.01	0.01	657.22	327.95	0	0	0.01	0.01	368.35	514.36	0	0	0.05	0.05	2133.15
30	703.86	0	0	0.02	0.02	912.21	225	0.000	0.000	0.007	0.007	133	983.73	0	0	0.12	0.12	10029.35
31						273.36	0	0	0.02	0.02	377.89	976.41	0	0	0.05	0.05	4386.8	
TenDaily I	795.98	0	0	0.01	0.01	865.84	668.31	0	0	0.01	0.01	618.71	195.75	0	0	0.01	0.01	201.07
TenDaily II	792.17	0	0	0.01	0.01	787.49	443.45	0	0	0.02	0.02	685.2	185.53	0	0	0.01	0.01	116.33
TenDaily III	774.62	0	0	0.01	0.01	826.52	284.91	0	0	0.01	0.01	329.52	487.28	0	0	0.04	0.04	2212.8
Total		June			24798.39		July			16663.8		August				27514.72		

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Mandleshwar (010215026)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-III, Indore

Days	September					October					November							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	421.99	0	0	0.02	0.02	911.5	161	0.000	0.000	0.019	0.019	264	303.55	0	0	0.01	0.01	340.95
2	237	0.000	0.000	0.011	0.011	230	164	0.000	0.000	0.019	0.019	274	295.16	0	0	0.01	0.01	306.02
3	202	0.000	0.000	0.010	0.010	167	128.75	0	0	0.02	0.02	166.86	425.15	0	0	0.02	0.02	551
4	175.28	0	0	0.02	0.02	302.88	109.49	0	0	0.01	0.01	122.98	430	0.000	0.000	0.020	0.020	752
5	159.31	0	0	0.02	0.02	220.23	103.76	0	0	0.01	0.01	107.58	419	0.000	0.000	0.020	0.020	714
6	264.8	0	0	0.02	0.02	434.7	143.45	0	0	0.01	0.01	136.33	384.5	0	0	0.02	0.02	498.32
7	430.87	0	0	0.02	0.02	818.99	178.48	0	0	0.01	0.01	185.05	153.8	0	0	0.01	0.01	159.45
8	380.58	0	0	0.02	0.02	624.77	215	0.000	0.000	0.012	0.012	224	188.53	0	0	0.01	0.01	228.05
9	416.23	0	0	0.02	0.02	611.36	202.33	0	0	0.01	0.01	227.26	296.04	0	0	0.01	0.01	281.35
10	179	0.000	0.000	0.009	0.009	133	299.25	0	0	0.01	0.01	284.4	207.38	0	0	0.01	0.01	232.93
11	172.86	0	0	0.02	0.02	238.96	296.56	0	0	0.02	0.02	384.34	223.48	0	0	0.01	0.01	173.77
12	2105.32	0	0	0.02	0.02	4365.58	376.39	0	0	0.02	0.02	552.84	145	0.000	0.000	0.006	0.006	81
13	2492.54	0	0	0.03	0.03	6245.31	275.5	0	0	0.01	0.01	285.64	134.12	0	0	0.01	0.01	127.47
14	2397.1	0	0	0.03	0.03	5384.85	228.9	0	0	0.01	0.01	217.55	206.95	0	0	0.01	0.01	232.45
15	2620.52	0	0	0.04	0.04	9056.5	247	0.000	0.000	0.011	0.011	230	228.32	0	0	0.02	0.02	295.9
16	1362.51	0	0	0.03	0.03	3884.78	182.84	0	0	0.01	0.01	189.57	284.74	0	0	0.02	0.02	393.62
17	245	0.000	0.000	0.005	0.005	114	269.29	0	0	0.01	0.01	255.93	182.4	0	0	0.01	0.01	220.63
18	190.43	0	0	0.02	0.02	279.7	328.85	0	0	0.01	0.01	397.77	141.64	0	0	0.01	0.01	146.85
19	544.94	0	0	0.02	0.02	894.57	327.55	0.000	0.000	0.010	0.010	282	342	0.000	0.000	0.024	0.024	713
20	394.96	0	0	0.02	0.02	614.25	300.22	0	0	0.01	0.01	259.39	112.92	0	0	0.01	0.01	107.32
21	429.94	0	0	0.02	0.02	594.35	228.82	0	0	0.01	0.01	237.24	101.94	0	0	0.01	0.01	105.69
22	648.92	0	0	0.03	0.03	1850.2	222.15	0.000	0.000	0.010	0.010	186	95.56	0	0	0.01	0.01	115.59
23	537.35	0	0	0.03	0.03	1207.11	170.43	0	0	0.01	0.01	147.25	84.99	0	0	0.01	0.01	73.43
24	278	0.000	0.000	0.016	0.016	373	207.62	0	0	0.01	0.01	251.14	207.26	0	0	0.01	0.01	232.79
25	233.57	0	0	0.02	0.02	484.33	270.18	0	0	0.01	0.01	256.78	264.48	0	0	0.02	0.02	342.76
26	177.68	0	0	0.02	0.02	322.38	384.17	0	0	0.01	0.01	398.31	199	0	0	0.01	0.01	240.71
27	173.06	0	0	0.02	0.02	239.24	276.71	0	0	0.01	0.01	262.99	228.11	0	0	0.01	0.01	275.92
28	167.31	0	0	0.02	0.02	216.83	256.18	0	0	0.01	0.01	309.88	195.69	0	0	0.01	0.01	202.89
29	169.81	0	0	0.02	0.02	220.07	310.65	0.000	0.000	0.012	0.012	325	322.82	0	0	0.01	0.01	390.48
30	165	0.000	0.000	0.019	0.019	277	329.23	0	0	0.01	0.01	341.35	246.57	0	0	0.01	0.01	255.64
31						336.55	0	0	0.02	0.02	436.17							
TenDaily I	286.71	0	0	0.01	0.01	392.44	170.55	0	0	0.01	0.01	123.05	310.31	0	0	0.01	0.01	259.81
TenDaily II	1252.62	0	0	0.02	0.02	3096.45	283.31	0	0	0.01	0.01	254.3	200.16	0	0	0.01	0.01	169.8
TenDaily III	298.06	0	0	0.02	0.02	513.45	272.06	0	0	0.01	0.01	240.1	194.64	0	0	0.01	0.01	223.59
Total	September				40023.44	October				6414.58	November					6531.99		

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Mandleshwar (010215026)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-III, Indore

Days	December					January					February							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	203.09	0.000	0.000	0.008	0.008	145	107.45	0	0	0.01	0.01	92.84	348.27	0.000	0.000	0.039	0.039	1179
2	190.2	0.000	0.000	0.008	0.008	127	193.3	0.000	0.000	0.018	0.018	300	199.55	0.000	0.000	0.022	0.022	387
3	178.9	0.000	0.000	0.007	0.007	112	142.81	0.000	0.000	0.013	0.013	164	209.14	0.000	0.000	0.024	0.024	425
4	176.35	0	0	0.013	0.013	198	117.2	0.000	0.000	0.011	0.011	110	138.9	0.000	0.000	0.016	0.016	188
5	166.19	0.000	0.000	0.012	0.012	176	239.81	0.000	0.000	0.022	0.022	462	132.16	0	0	0.011	0.011	126
6	127.88	0.000	0.000	0.009	0.009	104	167.92	0.000	0.000	0.016	0.016	227	173.01	0.000	0.000	0.014	0.014	215
7	106.06	0.000	0.000	0.008	0.008	72	291	0.000	0.000	0.027	0.027	681	239.35	0.000	0.000	0.020	0.020	412
8	244.37	0.000	0.000	0.018	0.018	380	194.05	0	0	0.013	0.013	2179.55	343.07	0.000	0.000	0.029	0.029	846
9	149.03	0.000	0.000	0.011	0.011	141	117.53	0.000	0.000	0.008	0.008	80	409.94	0.000	0.000	0.034	0.034	1209
10	155.8	0.000	0.000	0.011	0.011	155	79.61	0.000	0.000	0.005	0.005	37	269.07	0.000	0.000	0.022	0.022	521
11	179.99	0	0	0.012	0.012	187	160.67	0.000	0.000	0.011	0.011	149	301	0.000	0.000	0.025	0.025	652
12	120.7	0.000	0.000	0.008	0.008	84	180.15	0.000	0.000	0.012	0.012	188	306.41	0	0	0.014	0.014	371
13	5.74	0.000	0.000	0.000	0.000	0	199.13	0.000	0.000	0.013	0.013	230	306.06	0.000	0.000	0.014	0.014	370
14	174.95	0.000	0.000	0.012	0.012	176	146	0.000	0.000	0.010	0.010	123	306.1	0.000	0.000	0.014	0.014	370
15	239.64	0.000	0.000	0.016	0.016	331	323.41	0	0	0.014	0.014	3912	267.92	0.000	0.000	0.012	0.012	283
16	126.55	0.000	0.000	0.008	0.008	92	328.43	0.000	0.000	0.014	0.014	403	148.09	0.000	0.000	0.007	0.007	87
17	110.4	0.000	0.000	0.007	0.007	70	333.49	0.000	0.000	0.014	0.014	416	112.97	0.000	0.000	0.005	0.005	50
18	80.35	0	0	0.011	0.011	76	193.13	0.000	0.000	0.008	0.008	140	120.9	0.000	0.000	0.006	0.006	58
19	333.35	0.000	0.000	0.046	0.046	1314	136.03	0.000	0.000	0.006	0.006	69	123.27	0	0	0.012	0.012	128
20	279.34	0.000	0.000	0.038	0.038	923	172.46	0.000	0.000	0.007	0.007	111	83.77	0.000	0.000	0.008	0.008	59
21	140.19	0.000	0.000	0.019	0.019	232	130.15	0.000	0.000	0.006	0.006	63	81.73	0.000	0.000	0.008	0.008	56
22	114.09	0.000	0.000	0.016	0.016	154	108.96	0	0	0.011	0.011	103.55	75.61	0.000	0.000	0.007	0.007	48
23	102.3	0.000	0.000	0.014	0.014	124	381.33	0.000	0.000	0.038	0.038	1268	188.07	0.000	0.000	0.018	0.018	297
24	110	0.000	0.000	0.015	0.015	143	204.71	0.000	0.000	0.021	0.021	366	127.89	0.000	0.000	0.012	0.012	138
25	114.4	0.000	0.000	0.016	0.016	155	323.09	0.000	0.000	0.033	0.033	911	115.1	0.000	0.000	0.011	0.011	111
26	120.45	0	0	0.012	0.012	125	122.08	0.000	0.000	0.012	0.012	130	77.61	0	0	0.01	0.010	67
27	148.33	0.000	0.000	0.015	0.015	189	122.08	0.000	0.000	0.012	0.012	130	38.01	0.000	0.000	0.005	0.005	16
28	140.29	0.000	0.000	0.014	0.014	169	107	0.000	0.000	0.011	0.011	100	32.89	0.000	0.000	0.004	0.004	12
29	119.64	0.000	0.000	0.012	0.012	123	106.67	0	0	0.012	0.012	1105.98						
30	116.76	0.000	0.000	0.012	0.012	117	85.22	0.000	0.000	0.010	0.010	71						
31	116.8	0.000	0.000	0.012	0.012	117	106.48	0.000	0.000	0.012	0.012	110						
TenDaily I	117.3	0	0	0	0	0	165.07	0	0	0.01	0.01	227.24	232.36	0	0	0	0	0
TenDaily II	154.06	0	0	0	0	0	217.29	0	0	0.01	0.01	391.2	134.85	0	0	0	0	0
TenDaily III	91.1	0	0	0	0	0	163.43	0	0	0.01	0.01	109.96	77.73	0	0	0	0	0
Total	December					0	January					7393.91	February					0

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Mandleshwar (010215026)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-III, Indore

Days	March					April					May							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	40.58	0.000	0.000	0.005	0.005	18	84.92	0.000	0.000	0.008	0.008	62	249.43	0	0	0.013	0.013	280
2	55.24	0.000	0.000	0.007	0.007	34	84.92	0	0	0.012	0.012	88	117.6	0.000	0.000	0.006	0.006	62
3	89.34	0.000	0.000	0.012	0.012	89	217.34	0.000	0.000	0.031	0.031	577	166.79	0.000	0.000	0.009	0.009	125
4	91.25	0.000	0.000	0.012	0.012	93	206.23	0.000	0.000	0.029	0.029	519	185.87	0.000	0.000	0.010	0.010	156
5	91.25	0	0	0.011	0.011	87	76.18	0.000	0.000	0.011	0.011	71	156.15	0.000	0.000	0.008	0.008	110
6	111.75	0.000	0.000	0.013	0.013	130	50.42	0.000	0.000	0.007	0.007	31	140.2	0.000	0.000	0.007	0.007	89
7	96.62	0.000	0.000	0.012	0.012	97	32.18	0.000	0.000	0.005	0.005	13	135.32	0	0	0.012	0.012	140
8	71.54	0.000	0.000	0.009	0.009	53	33.58	0.000	0.000	0.005	0.005	14	161.54	0.000	0.000	0.014	0.014	200
9	48.45	0.000	0.000	0.006	0.006	24	48.11	0	0	0.01	0.010	42	185.02	0.000	0.000	0.016	0.016	262
10	81.66	0.000	0.000	0.010	0.010	69	34.7	0.000	0.000	0.007	0.007	22	272.58	0.000	0.000	0.024	0.024	569
11	100.2	0.000	0.000	0.012	0.012	105	50.49	0.000	0.000	0.010	0.010	46	619.77	0.000	0.000	0.055	0.055	2943
12	143.03	0	0	0.013	0.013	161	42.67	0.000	0.000	0.009	0.009	33	124.31	0.000	0.000	0.011	0.011	118
13	117.17	0.000	0.000	0.011	0.011	108	32.09	0.000	0.000	0.007	0.007	18	176.3	0.000	0.000	0.016	0.016	238
14	144.02	0.000	0.000	0.013	0.013	163	58	0.000	0.000	0.012	0.012	60	176.32	0	0	0.011	0.011	168
15	146.44	0.000	0.000	0.013	0.013	168	170.1	0.000	0.000	0.035	0.035	520	262.5	0.000	0.000	0.016	0.016	371
16	124.97	0.000	0.000	0.011	0.011	123	205.58	0	0	0.012	0.012	213	262.52	0.000	0.000	0.016	0.016	371
17	347.78	0.000	0.000	0.032	0.032	950	255.14	0.000	0.000	0.015	0.015	328	279.21	0.000	0.000	0.017	0.017	420
18	347.8	0.000	0.000	0.032	0.032	950	82.68	0.000	0.000	0.005	0.005	34	130.12	0.000	0.000	0.008	0.008	91
19	342.64	0	0	0.014	0.014	414	100	0.000	0.000	0.006	0.006	50	269.72	0.000	0.000	0.017	0.017	392
20	316.18	0.000	0.000	0.013	0.013	353	100.08	0.000	0.000	0.006	0.006	51	299.2	0.000	0.000	0.019	0.019	483
21	109.3	0.000	0.000	0.004	0.004	42	47.78	0.000	0.000	0.003	0.003	12	299.24	0	0	0.012	0.012	310
22	98.61	0.000	0.000	0.004	0.004	34	47.78	0.000	0.000	0.003	0.003	12	208.52	0.000	0.000	0.008	0.008	151
23	120.33	0.000	0.000	0.005	0.005	51	75.16	0	0	0.01	0.010	65	307.12	0.000	0.000	0.012	0.012	327
24	118.9	0.000	0.000	0.005	0.005	50	99.13	0.000	0.000	0.013	0.013	113	549.69	0.000	0.000	0.022	0.022	1047
25	118.9	0.000	0.000	0.005	0.005	50	123.99	0.000	0.000	0.016	0.016	177	349.19	0.000	0.000	0.014	0.014	422
26	100.73	0	0	0.01	0.010	87	122.56	0.000	0.000	0.016	0.016	173	165.97	0.000	0.000	0.007	0.007	95
27	120.65	0.000	0.000	0.012	0.012	125	142.66	0.000	0.000	0.019	0.019	234	385	0.000	0.000	0.015	0.015	514
28	166.05	0.000	0.000	0.016	0.016	237	138.56	0.000	0.000	0.018	0.018	221	422.99	0	0	0.014	0.014	512
29	140.2	0.000	0.000	0.014	0.014	169	180	0.000	0.000	0.024	0.024	372	163.23	0.000	0.000	0.005	0.005	76
30	83	0.000	0.000	0.008	0.008	59	220.9	0.000	0.000	0.029	0.029	561	436.41	0.000	0.000	0.014	0.014	545
31	82.76	0.000	0.000	0.008	0.008	59							580.47	0.000	0.000	0.019	0.019	964
TenDaily I	63.12	0	0	0	0	0	75.01	0	0	0	0	0	163.03	0	0	0	0	0
TenDaily II	168.22	0	0	0	0	0	76.87	0	0	0	0	0	186.2	0	0	0	0	0
TenDaily III	83.39	0	0	0	0	0	74.98	0	0	0	0	0	316.62	0	0	0	0	0
Total		March				0	April				0						0	

Annual Sediment Load for period : 1972-2018

Station Name : Narmada at Mandleshwar (010215026) Division : Narmada Division, Bhopal
 Local River : Narmada Sub-Division : MNSD-III, Indore

	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1972-1973	8401739983392.96	0	8401739983392.96	6132.31
1987-1988	25830845.3	0	25830845.3	14409.67
1988-1989	33706126.67	0	33706126.67	30075.84
1989-1990	16590010.63	0	16590010.63	17493.47
1990-1991	43573304.92	0	43573304.92	44940.12
1991-1992	17919771.22	0	17919771.22	23174.76
1992-1993	10212180.66	0	10212180.66	16597.46
1993-1994	54775380.25	0	54775380.25	30818.43
1994-1995	107300432.62	0	107300432.62	67156.44
1995-1996	33242247.07	0	33242247.07	21176.67
1996-1997	20710748.4	0	20710748.4	20291.08
1997-1998	33307096.55	0	33307096.55	25333.12
1998-1999	19597534.78	0	19597534.78	24211.83
1999-2000	71022743.42	0	71022743.42	52394.48
2000-2001	5140065.31	0	5140065.31	11173.53
2001-2002	18046536.41	0	18046536.41	19604.46
2002-2003	23246401.98	0	23246401.98	19314.77
2003-2004	12526667.96	0	12526667.96	31450.66
2004-2005	5791853.65	0	5791853.65	16428.18
2005-2006	3756112.88	18213.48	3774326.36	33882.83
2006-2007	23348119.18	70019.42	23418138.61	33299.23
2007-2008	3619870.62	61874.01	3681744.63	24539.35
2008-2009	357341.28	257631.93	614973.21	16209.55
2009-2010	1250505.76	382714.59	1633220.35	28066.07
2010-2011	2824844.03	386277.46	3211121.49	28697.37
2012-2013	3053619	256864.56	3310483.56	45507.08
2016-2017	2294790.88	148062.88	2442853.76	33674.57
2017-2018	121946.92	7393.91	129340.83	5954.39

Sediment Data Year Book 2017-18

Annual Sediment Load for period : 2008-2018

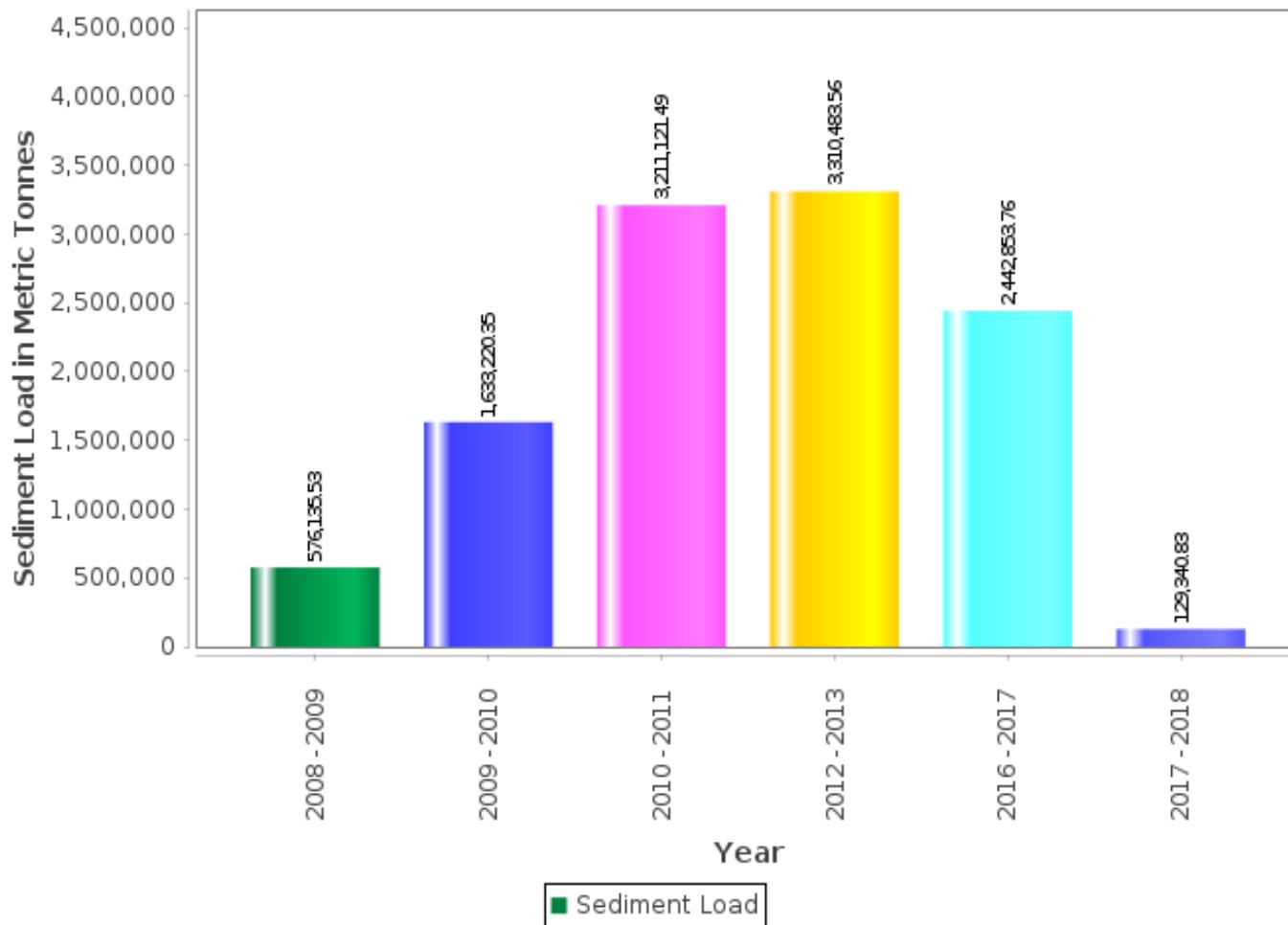
Station Name : Narmada at Mandleshwar (010215026)

Local River : Narmada

Division : Narmada Division, Bhopal

Sub-Division : MNSD-III, Indore

Sediment Annual Summary



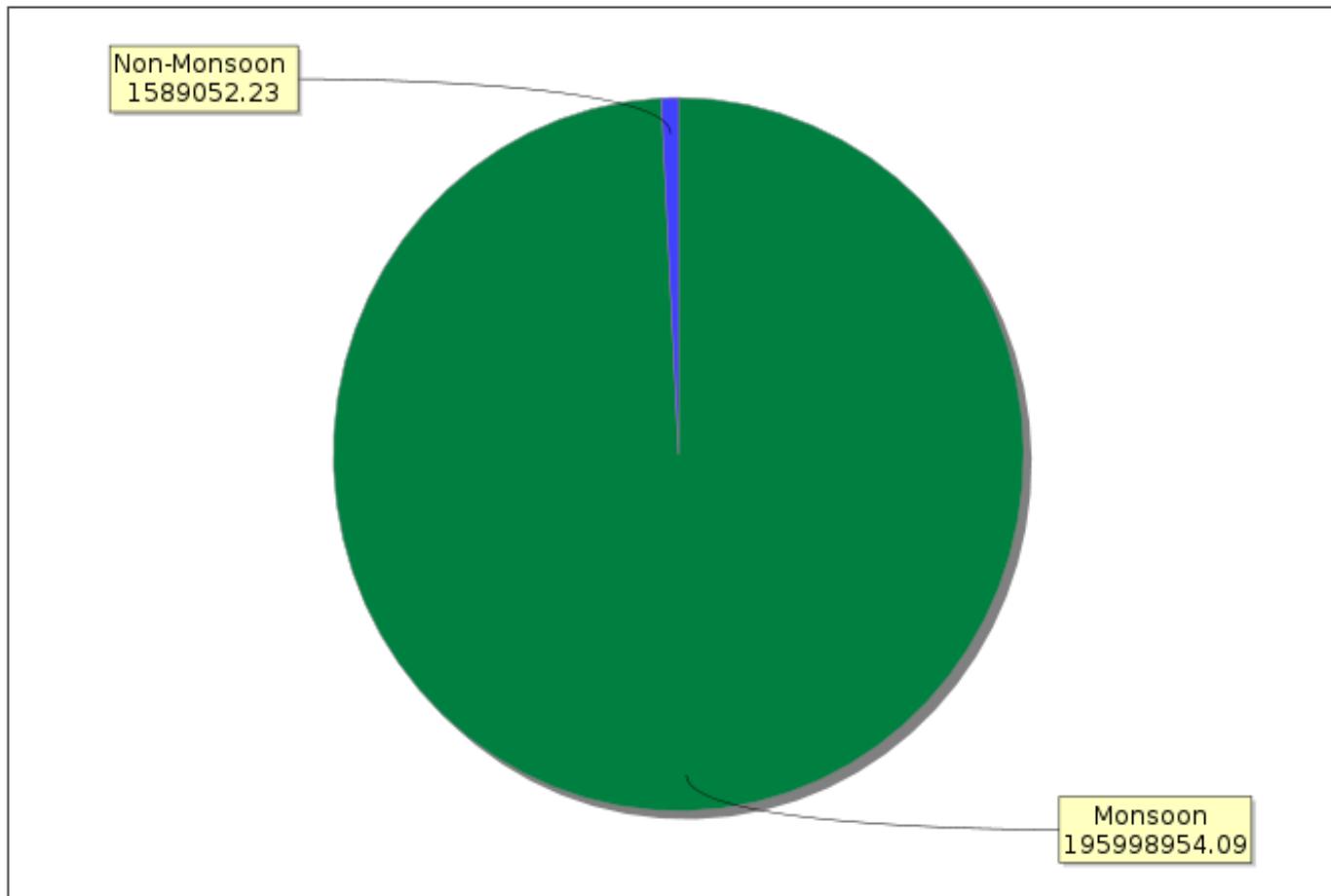
Seasonal Sediment Load for the period : 2008-2018

Station Name : Narmada at Mandleshwar (010215026)

Division : Narmada Division, Bhopal

Local River : Narmada

Sediment Historical Data



● Monsoon 195998954.09 ● Non-Monsoon 1589052.23

Sub-Division : MNSD-III, Indore

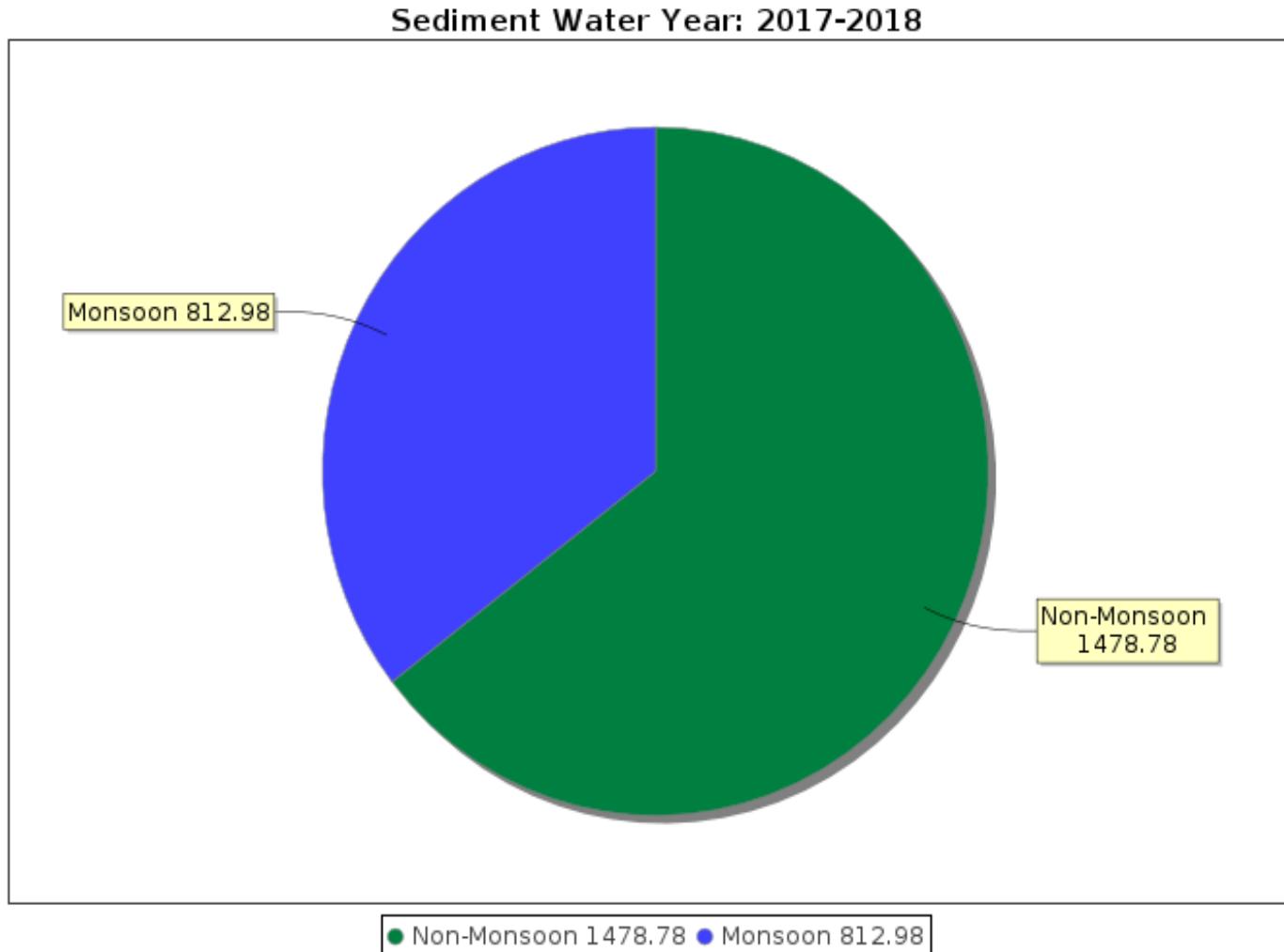
Seasonal Sediment Load for the period : 2017-2018

Station Name : Narmada at Mandleshwar (010215026)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-III, Indore



6.4 Narmada at Handia**History Sheet**

		Water Year	: 2017-2018
Site	: Narmada at Handia	Code	: 010215022
State	: Madhya Pradesh	District	Harda
Basin	: Narmada	Independent River	: Narmada
Tributary	: -	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Narmada
Division	: Narmada Division,Bhopal	Sub-Division	: MNSD-II, Bhopal
Drainage Area	: 54027 Sq. Km.	Bank	: Left
Latitude	: 22°29'25"	Longitude	: 76°59'37"
Zero of Gauge (m)	: 258 .000(M.S.L.)	09/02/1977	
	Opening Date	Closing Date	
Gauge	: 09/02/1977		
Discharge	: 26/04/1977		
Sediment	: 11/12/1977		
Water Quality	: 01/08/1979		

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Handia (010215022)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-II, Bhopal

Days	June						July						August						
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	
1	124	0	0	0.01	0.01	80.35	240	0	0	0.04	0.04	906.16	524	0	0	0.44	0.44	20047.15	
2	120	0	0	0.01	0.01	103.68	210	0	0	0.04	0.04	635.04	433	0	0	0.04	0.05	1825.67	
3	115	0	0	0.01	0.01	86.44	218	0	0	0.04	0.04	776.01	346	0	0	0.04	0.05	1425.96	
4	116	0	0	0.01	0.01	100.22	252	0	0	0.04	0.04	925.34	313	0	0	0.29	0.29	7964.22	
5	112	0	0	0.01	0.01	72.58	308	0	0	0.05	0.05	1397.09	304	0	0	0.29	0.29	7677.43	
6	115	0	0	0.01	0.01	86.44	302	0	0	0.05	0.05	1335.95	285	0	0	0.27	0.27	6697.73	
7	100	0	0	0.01	0.01	64.8	270	0	0	0.05	0.05	1166.4	251.6	0	0	0.28	0.29	6286.7	
8	101	0	0	0.01	0.01	65.45	240	0	0	0.05	0.05	984.96	250	0	0	0.28	0.29	6212.16	
9	104	0	0	0.01	0.01	67.39	250	0	0	0.05	0.05	1123.2	242.4	0	0	0.28	0.29	5973.05	
10	98	0	0	0.01	0.01	63.5	202	0	0	0.04	0.04	785.38	250	0	0	0.28	0.28	6076.08	
11	96	0	0	0.01	0.01	82.94	180	0	0	0.04	0.04	640.74	252	0	0	0.28	0.29	6335.88	
12	95	0	0	0.01	0.01	82.08	178	0	0	0.04	0.04	633.62	338	0	0	0.29	0.3	8620.78	
13	92	0	0	0.01	0.01	59.62	177	0	0	0.03	0.03	497.02	310	0	0	0.27	0.27	7124.54	
14	90	0	0	0.01	0.01	58.32	220	0	0	0.03	0.03	617.76	241	0	0	0.28	0.29	6086.39	
15	95	0	0	0.01	0.01	82.08	265	0	0	0.04	0.04	1000.56	240	0	0	0.28	0.28	5785.34	
16	96	0	0	0.05	0.05	414.72	440	0	0	0.07	0.07	2509.06	191	0	0	0.29	0.29	4851.71	
17	98	0	0	0.02	0.02	127.01	263	0	0	0.02	0.02	472.64	177	0	0	0.28	0.29	4402.8	
18	99	0	0	0.02	0.02	171.07	200	0	0	0.02	0.03	490.75	145	0	0	0.28	0.28	3565.47	
19	98	0	0	0.02	0.02	127.01	216	0	0	0.02	0.03	559.87	326	0	0	0.28	0.29	8109.11	
20	100	0	0	0.02	0.02	129.6	536	0	0	0.42	0.43	19950.52	430	0	0	0.37	0.37	13709.09	
21	100	0	0	0.01	0.01	108	3059.3	0.09	0.05	0.05	0.19	49428.5	420	0	0	0.29	0.29	10679.56	
22	98	0	0	0.01	0.01	94.83	2319.7	0.08	0.07	0.46	0.61	122157.26	331	0	0	0.28	0.29	8339.29	
23	95	0	0	0.01	0.01	82.08	2300	0	0	0.46	0.46	90616.32	307	0	0	0.28	0.29	7713.41	
24	96	0	0	0.01	0.01	82.94	1755.6	0.07	0.06	0.46	0.59	89296.28	257	0	0	0.28	0.29	6432.73	
25	98	0	0	0.01	0.01	84.67	1454.8	0.08	0.06	0.46	0.59	74612.39	289	0	0	0.28	0.29	7183.75	
26	100	0	0	0.01	0.01	86.4	991.2	0.08	0.06	0.46	0.6	51769.19	313	0	0	0.28	0.29	7847.94	
27	118	0	0	0.02	0.02	152.93	732.1	0.08	0.06	0.34	0.48	30551.41	330	1	0	0.3	1.3	36923.04	
28	117	0	0	0.02	0.02	151.63	730.3	0.08	0.06	0.45	0.59	37417.07	369	0	0	0.28	0.29	9271.17	
29	118	0	0	0.02	0.02	152.93	742.3	0.08	0.06	0.45	0.59	38096.02	662	0	0	0.45	0.46	26138.94	
30	140	0	0	0.04	0.04	483.84	1800	0	0	1.09	1.09	169672.32	1587.8	0.07	0.08	0.46	0.61	83683.41	
31							713	0.08	0.01	0.45	0.54	33000.83	978.8	0.08	0.06	0.46	0.6	51163.83	
TenDaily I	110.5	0	0	0.01	0.01	79.09	249.2	0	0	0.05	0.05	1003.55	319.9	0	0	0.25	0.25	7018.62	
TenDaily II	95.9	0	0	0.02	0.02	133.44	267.5	0	0	0.07	0.08	2737.25	265	0	0	0.29	0.29	6859.11	
TenDaily III	108	0	0	0.01	0.01	148.03	1508.94	0.07	0.04	0.46	0.58	71510.69	531.33	0.11	0.02	0.33	0.45	23216.1	
Total	June						3605.57	July						August					
	394154.34																		

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Handia (010215022)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-II, Bhopal

Days	September						October						November						
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	
1	957.9	0.09	0.06	0.46	0.61	50361.02	340	0	0	0.26	0.26	7696.51	254.3	0	0	0.46	0.46	10019.01	
2	680	0	0	0.33	0.33	19211.9	330	0	0	0.26	0.26	7270.56	247.9	0	0	0.44	0.44	9531.26	
3	480	0	0	0.23	0.23	9580.03	334	0	0	0.28	0.29	8308.1	221	0	0	0.4	0.4	7580.48	
4	358	0	0.01	0.28	0.29	9081.4	199	0	0	0.28	0.29	4934.56	215	0	0	0.39	0.39	7170.34	
5	338	0	0	0.28	0.29	8460.17	188	0	0	0.28	0.28	4619.57	217.1	0	0	0.39	0.39	7315.4	
6	294	0	0	0.28	0.29	7353.76	177	0	0	0.28	0.28	4307.98	210.5	0	0	0.21	0.21	3737.47	
7	250	0	0	0.28	0.29	6212.16	160	0	0	0.27	0.28	3825.1	205	0	0	0.2	0.2	3630.96	
8	214	0	0	0.28	0.29	5273.23	150	0	0	0.25	0.25	3278.88	218.3	0	0	0.22	0.22	4111.72	
9	167	0	0	0.28	0.28	4102.11	142	0	0	0.26	0.27	3299.08	218.4	0	0	0.22	0.22	4113.61	
10	160	0	0	0.27	0.27	3704.83	152	0	0	0.25	0.26	3363.31	210	0	0	0.21	0.21	3810.24	
11	201	0	0	0.28	0.29	4966.79	146	0	0	0.25	0.26	3236.86	200	0	0	0.2	0.2	3456	
12	223	0	0	0.28	0.28	5456.47	152	0	0	0.25	0.26	3388.26	166.4	0	0	0.17	0.17	2386.58	
13	348	0	0	0.28	0.29	8641.31	152	0	0	0.25	0.26	3398.77	160.4	0	0	0.21	0.21	2875.65	
14	348	0	0	0.28	0.29	8662.36	154	0	0	0.25	0.26	3399.58	155.3	0	0	0.2	0.2	2723.84	
15	450	0	0	0.28	0.29	11329.63	155	0	0	0.25	0.25	3374.78	153.4	0	0	0.2	0.2	2664.01	
16	643	0	0	0.44	0.44	24627.62	147	0	0	0.25	0.25	3232.35	152.4	0	0	0.2	0.2	2633.47	
17	470	0	0	0.32	0.32	13075.78	141	0	0	0.22	0.23	2795.86	151.7	0	0	0.2	0.2	2608.27	
18	415	0	0	0.28	0.29	10409	140	0	0	0.22	0.23	2771.19	155	0	0	0.2	0.2	2718.58	
19	445	0	0	0.28	0.29	11188.37	135	0	0	0.21	0.21	2472.77	156.4	0	0	0.2	0.2	2770.16	
20	476	0	0	0.29	0.29	12025.36	137	0	0	0.23	0.23	2722.46	158.9	0	0	0.2	0.2	2814.44	
21	533	0	0	0.29	0.29	13497.61	130	0	0	0.22	0.23	2542.92	160	0	0	0.2	0.2	2778.62	
22	683.3	0	0	0.45	0.45	26855.99	130	0	0	0.22	0.22	2471.04	156.3	0	0	0.2	0.2	2660.35	
23	711.1	0	0	0.46	0.47	28593.73	117	0	0	0.21	0.22	2183.5	152	0	0	0.19	0.19	2508.36	
24	1300	0	0	0.84	0.84	94461.12	123	0	0	0.21	0.22	2299.73	151.4	0	0	0.19	0.19	2498.46	
25	862.9	0	0	0.46	0.47	34794.61	119	0	0	0.21	0.21	2186.9	155	0	0	0.2	0.2	2611.44	
26	692	0	0	0.45	0.46	27233.8	117	0	0	0.21	0.21	2152.16	153.9	0	0	0.19	0.19	2579.61	
27	519.2	0	0	0.46	0.46	20751.72	106	0	0	0.19	0.19	1740.1	160.8	0	0	0.2	0.2	2813.36	
28	444	0	0	0.28	0.29	11082.67	109	0	0	0.2	0.2	1845.85	200	0	0	0.25	0.25	4302.72	
29	363	0	0	0.28	0.29	9035.74	110	0	0	0.2	0.2	1872.29	221.7	0	0	0.28	0.28	5286.75	
30	350			0.27		0	112	0	0	0.2	0.2	1945.04	210	0	0	0.26	0.26	4735.58	
31						109	0	0	0.2	0.2	1845.85								
TenDaily I	389.89	0.01	0.01	0.3	0.32	12334.06	217.2	0	0	0.27	0.27	5090.37	221.75	0	0	0.31	0.31	6102.05	
TenDaily II	401.9	0	0	0.3	0.31	11038.27	145.9	0	0	0.24	0.24	3079.29	160.99	0	0	0.2	0.2	2765.1	
TenDaily III	645.85	0	0	0.42	0.4	26630.7	116.55	0	0	0.21	0.21	2098.67	172.11	0	0	0.22	0.22	3277.53	
Total	September						500030.28	October						November					

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Handia (010215022)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-II, Bhopal

Days	December						January						February					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	104.9	0	0	0.13	0.13	1178.24	107.4	0	0	0.22	0.22	2078.58	119.6	0	0	0.23	0.23	2418.02
2	105	0	0	0.13	0.13	1188.43	111.5	0	0	0.23	0.23	2244.63	118.9	0	0	0.23	0.23	2393.6
3	105	0	0	0.13	0.13	1188.43	112.5	0	0	0.24	0.24	2284.2	114	0	0	0.22	0.22	2196.46
4	111.96	0	0	0.2	0.2	1934.67	112.1	0	0	0.23	0.23	2266.39	112	0	0	0.22	0.22	2119.22
5	113.4	0	0	0.2	0.2	1988.95	108.9	0	0	0.23	0.23	2135.83	110	0	0	0.22	0.22	2067.12
6	117.6	0	0	0.21	0.21	2133.73	109.5	0	0	0.23	0.23	2157.06	95	0	0	0.19	0.19	1559.52
7	120.2	0	0	0.22	0.22	2232.84	110	0	0	0.23	0.23	2176.42	83.1	0	0	0.17	0.17	1191.85
8	119	0	0	0.21	0.21	2189.98	110.4	0	0	0.22	0.22	2098.48	76.8	0	0	0.15	0.15	1021.87
9	116.3	0	0	0.21	0.21	2090.05	78.9	0	0	0.22	0.22	1516.77	78.3	0	0	0.16	0.16	1062.12
10	115	0	0	0.2	0.2	2036.88	78.2	0	0	0.22	0.22	1472.91	84.9	0	0	0.17	0.17	1247.01
11	115.4	0	0	0.2	0.2	1994.11	77.6	0	0	0.22	0.22	1448.2	72	0	0	0.14	0.14	895.8
12	113.3	0	0	0.2	0.2	1918.67	80	0	0	0.22	0.22	1541.38	71.4	0	0	0.2	0.2	1264.64
13	111.2	0	0	0.19	0.19	1854.28	85	0	0	0.24	0.24	1740.53	66	0	0	0.18	0.18	1054.94
14	112.7	0	0	0.2	0.2	1898.77	90	0	0	0.25	0.25	1951.78	65	0	0	0.18	0.18	1022.11
15	113.3	0	0	0.2	0.2	1918.67	87.9	0	0	0.22	0.22	1699.66	60.5	0	0	0.17	0.17	883.4
16	110.3	0	0	0.19	0.19	1820.21	88.2	0	0	0.22	0.22	1684.13	45.5	0	0	0.13	0.13	499.26
17	120	0	0	0.21	0.21	2156.54	87.9	0	0	0.22	0.22	1670.8	45	0	0	0.13	0.13	489.89
18	123	0	0	0.22	0.22	2391.12	87.9	0	0	0.22	0.22	1670.8	45	0	0	0.13	0.13	489.89
19	200	0	0	0.36	0.36	6186.24	87.1	0	0	0.22	0.22	1640.55	48.2	0	0	0.22	0.22	895.36
20	205.3	0	0	0.37	0.37	6509.82	90.6	0	0	0.23	0.23	1776.92	45.3	0	0	0.21	0.21	810.18
21	117.8	0	0	0.21	0.21	2147.54	110	0	0	0.22	0.22	2114.64	47	0	0	0.22	0.22	873.07
22	113.3	0	0	0.2	0.2	1987.19	113.2	0	0	0.23	0.23	2210.39	59.4	0	0	0.27	0.27	1390.82
23	110.3	0	0	0.2	0.2	1877.39	111.7	0	0	0.22	0.22	2152.15	60.3	0	0	0.28	0.28	1432.73
24	112	0	0	0.2	0.2	1935.36	106.2	0	0	0.21	0.21	1945.24	48.2	0	0	0.22	0.22	916.19
25	115	0	0	0.21	0.21	2046.82	117.2	0	0	0.23	0.23	2369.5	47	0	0	0.22	0.22	873.07
26	110.3	0	0	0.22	0.22	2144.23	120	0	0	0.24	0.24	2488.32	47.2	0	0	0.19	0.19	774.84
27	112.8	0	0	0.22	0.22	2192.83	121	0	0	0.24	0.24	2529.96	40.7	0	0	0.16	0.16	576.7
28	112.8	0	0	0.22	0.22	2192.83	114	0	0	0.23	0.23	2245.71	40	0	0	0.16	0.16	556.42
29	115.8	0	0	0.23	0.23	2311.18	112.4	0	0	0.22	0.22	2148.15						
30	111.7	0	0	0.22	0.22	2152.15	112.9	0	0	0.22	0.22	2155.76						
31	110	0	0	0.22	0.22	2081.38	116.1	0	0	0.23	0.23	2277.05						
TenDaily I	112.84	0	0	0.18	0.18	1816.22	103.94	0	0	0.23	0.23	2043.13	99.26	0	0	0.2	0.2	1727.68
TenDaily II	132.45	0	0	0.23	0.23	2864.84	86.22	0	0	0.23	0.23	1682.47	56.39	0	0	0.17	0.17	830.55
TenDaily III	112.89	0	0	0.22	0.22	2097.17	114.06	0	0	0.23	0.23	2239.72	48.72	0	0	0.21	0.21	924.23
Total	December					69879.53	January					61892.89	February					32976.1

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Handia (010215022)
 Bhopal Local River : Narmada

Division : Narmada Division,
 Sub-Division : MNSD-II, Bhopal

Days	March					April					May							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	41	0	0	0.16	0.16	584.5	22	0	0	0.14	0.14	258.51	22.9	0	0	0.2	0.2	385.82
2	42	0	0	0.17	0.17	613.27	23	0	0	0.2	0.2	397.44	23.7	0	0	0.21	0.21	423.87
3	42	0	0	0.17	0.17	613.27	23.4	0	0	0.2	0.2	410.42	44.8	0	0	0.39	0.39	1513.45
4	42	0	0	0.17	0.17	613.27	20	0	0	0.17	0.17	300.67	47	0	0	0.41	0.41	1664.93
5	42.2	0	0	0.21	0.21	761.3	26	0	0	0.23	0.23	507.69	60	0	0	0.52	0.52	2716.42
6	41.9	0	0	0.21	0.21	756.61	28.5	0	0	0.25	0.25	610.68	40	0	0	0.35	0.35	1206.14
7	42.2	0	0	0.21	0.21	765.68	32.4	0	0	0.28	0.28	789.42	34.6	0	0	0.2	0.2	590.41
8	40	0	0	0.2	0.2	687.74	35	0	0	0.3	0.3	919.3	25	0	0	0.14	0.14	313.2
9	38	0	0	0.19	0.19	620.52	36	0	0	0.31	0.31	973.56	26	0	0	0.15	0.15	336.96
10	37	0	0	0.18	0.18	588.21	37	0	0	0.32	0.32	1029.37	24.6	0	0	0.14	0.14	301.81
11	35	0	0	0.17	0.17	526.18	40	0	0	0.35	0.35	1202.69	24.2	0	0	0.14	0.14	292.72
12	33.9	0	0	0.21	0.21	607.76	53.9	0	0	0.47	0.47	2184.11	28	0	0	0.16	0.16	391.91
13	38.9	0	0	0.24	0.24	809.99	42.1	0	0	0.37	0.37	1331.3	28	0	0	0.16	0.16	391.91
14	39.6	0	0	0.24	0.24	838.25	40	0	0	0.35	0.35	1202.69	24.1	0	0	0.19	0.19	400.83
15	39.6	0	0	0.24	0.24	838.25	35	0	0	0.3	0.3	919.3	25	0	0	0.2	0.2	425.52
16	39.5	0	0	0.24	0.24	836.14	28.1	0	0	0.2	0.2	485.57	81.3	0	0	0.64	0.64	4502.59
17	39.7	0	0	0.25	0.25	843.8	24.3	0	0	0.17	0.17	363.22	85	0	0	0.67	0.67	4920.48
18	38	0	0	0.24	0.24	771.55	27.1	0	0	0.19	0.19	451.9	82.6	0	0	0.65	0.65	4645.95
19	35	0	0	0.22	0.22	656.21	26.7	0	0	0.19	0.19	438.31	91	0	0	0.72	0.72	5637.34
20	33	0	0	0.2	0.2	581.64	25.1	0	0	0.17	0.17	366.5	95	0	0	0.75	0.75	6147.79
21	32	0	0	0.2	0.2	547.43	20.9	0	0	0.15	0.15	269.06	95	0	0	0.75	0.75	6147.79
22	25.2	0	0	0.16	0.16	339.66	20	0	0	0.14	0.14	245.38	95	0	0	0.75	0.75	6147.79
23	26.4	0	0	0.16	0.16	374.08	22.5	0	0	0.2	0.2	379.08	97	0	0	0.76	0.76	6411.31
24	21.4	0	0	0.13	0.13	245.91	25.6	0	0	0.23	0.23	504.3	88	0	0	0.7	0.7	5284.22
25	25	0	0	0.16	0.16	334.8	20.6	0	0	0.18	0.18	325.71	83	0	0	0.65	0.65	4689.96
26	23	0	0	0.14	0.14	282.18	21.5	0	0	0.19	0.19	354.8	82.5	0	0	0.65	0.65	4633.2
27	22	0	0	0.14	0.14	258.51	22	0	0	0.2	0.2	372.56	98	0	0	0.77	0.77	6545.15
28	23	0	0	0.14	0.14	282.18	21.9	0	0	0.2	0.2	368.97	104	0	0	0.16	0.16	1415.23
29	22	0	0	0.14	0.14	258.51	22	0	0	0.2	0.2	372.56	101	0	0	0.16	0.16	1352.59
30	22	0	0	0.14	0.14	258.51	22	0	0	0.2	0.2	372.56	97.2	0	0	0.15	0.15	1259.71
31	22.5	0	0	0.14	0.14	270.22						98	0	0	0.15	0.15	1278.55	
TenDaily I	40.83	0	0	0.19	0.19	660.44	28.33	0	0	0.24	0.24	619.7	34.86	0	0	0.27	0.27	945.3
TenDaily II	37.22	0	0	0.23	0.23	730.98	34.23	0	0	0.28	0.28	894.56	56.42	0	0	0.43	0.43	2775.7
TenDaily III	24.05	0	0	0.15	0.15	313.82	21.9	0	0	0.19	0.19	356.5	94.43	0	0	0.51	0.51	4105.96
Total	March				17366.12	April				18707.59					82375.58			

Sediment Data Year Book 2017-18

Annual Sediment Load for period : 1987-2018

Station Name : Narmada at Handia (010215022) Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-II, Bhopal

Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1987-1988	19027611.41	0	19027611.41
1988-1989	22044739.41	0	22044739.41
1989-1990	16984378.34	0	16984378.34
1990-1991	36819507.23	0	36819507.23
1991-1992	21786214.04	0	21786214.04
1992-1993	30379689.36	0	30379689.36
1993-1994	32853670.17	0	32853670.17
1994-1995	101606688.46	0	101606688.46
1995-1996	26951346.79	0	26951346.79
1996-1997	10000361.42	0	10000361.42
1997-1998	17324970.73	0	17324970.73
1998-1999	8688916.91	0	8688916.91
1999-2000	55929197.65	0	55929197.65
2000-2001	4949972.04	0	4949972.04
2001-2002	23651115.7	0	23651115.7
2002-2003	42984926.55	0	42984926.55
2003-2004	91149988.2	0	91149988.2
2004-2005	20421994.13	0	20421994.13
2005-2006	41467075.14	98453.37	41565528.51
2006-2007	45194539.9	292973.12	45487513.02
2007-2008	8965974.34	385963.73	9351938.06
2008-2009	5445970.33	127525.09	5573495.42
2009-2010	20454333.84	148157.52	20602491.36
2010-2011	8459170.23	184097.28	8643267.51
2012-2013	25035666.95	32777.43	25068444.38
2016-2017	20463864.06	53209.22	20517073.29
2017-2018	1948044.49	283197.82	2231242.31
			6370.2

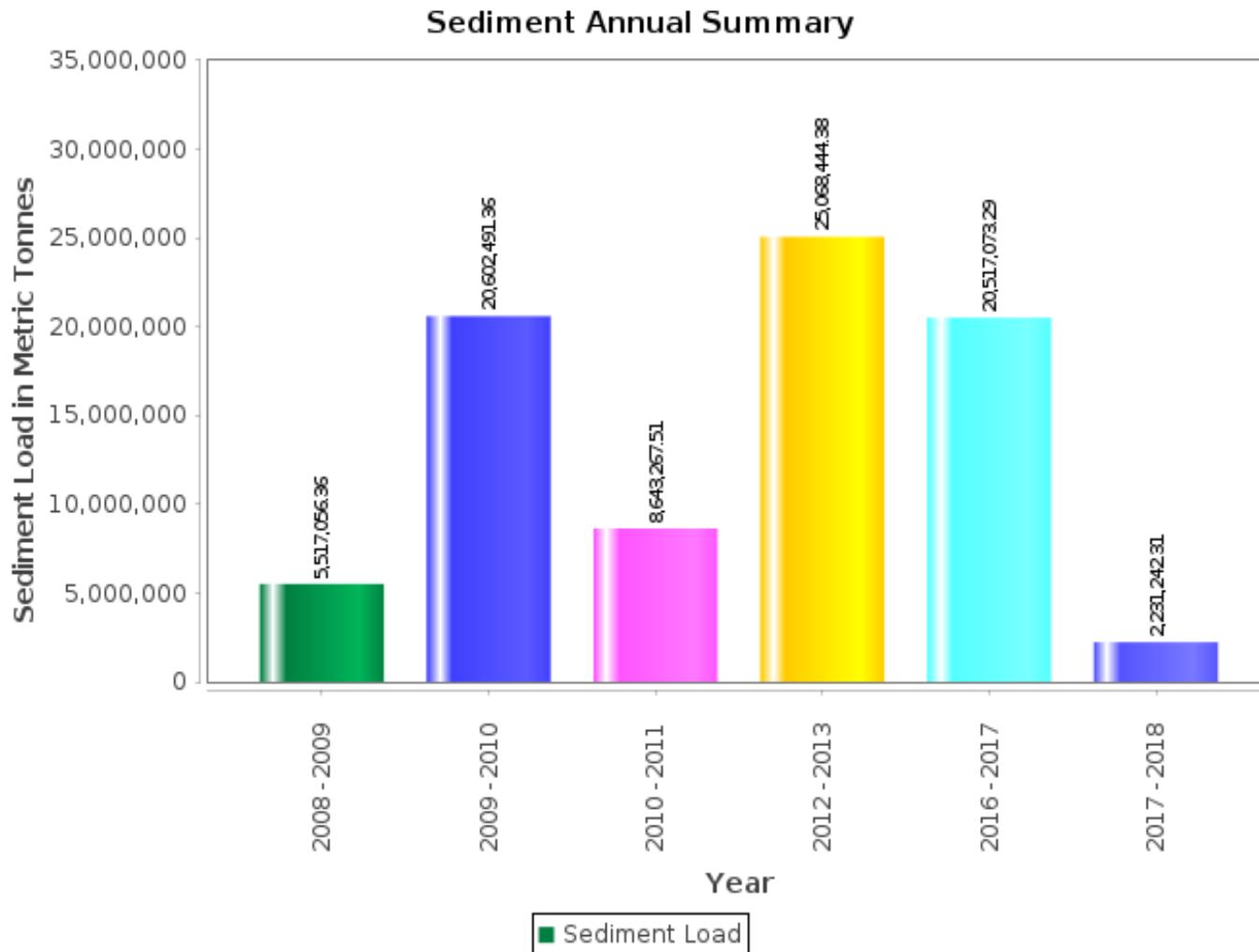
Annual Sediment Load for period : 2008-2018

Station Name : Narmada at Handia (010215022)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD II, Bhopal



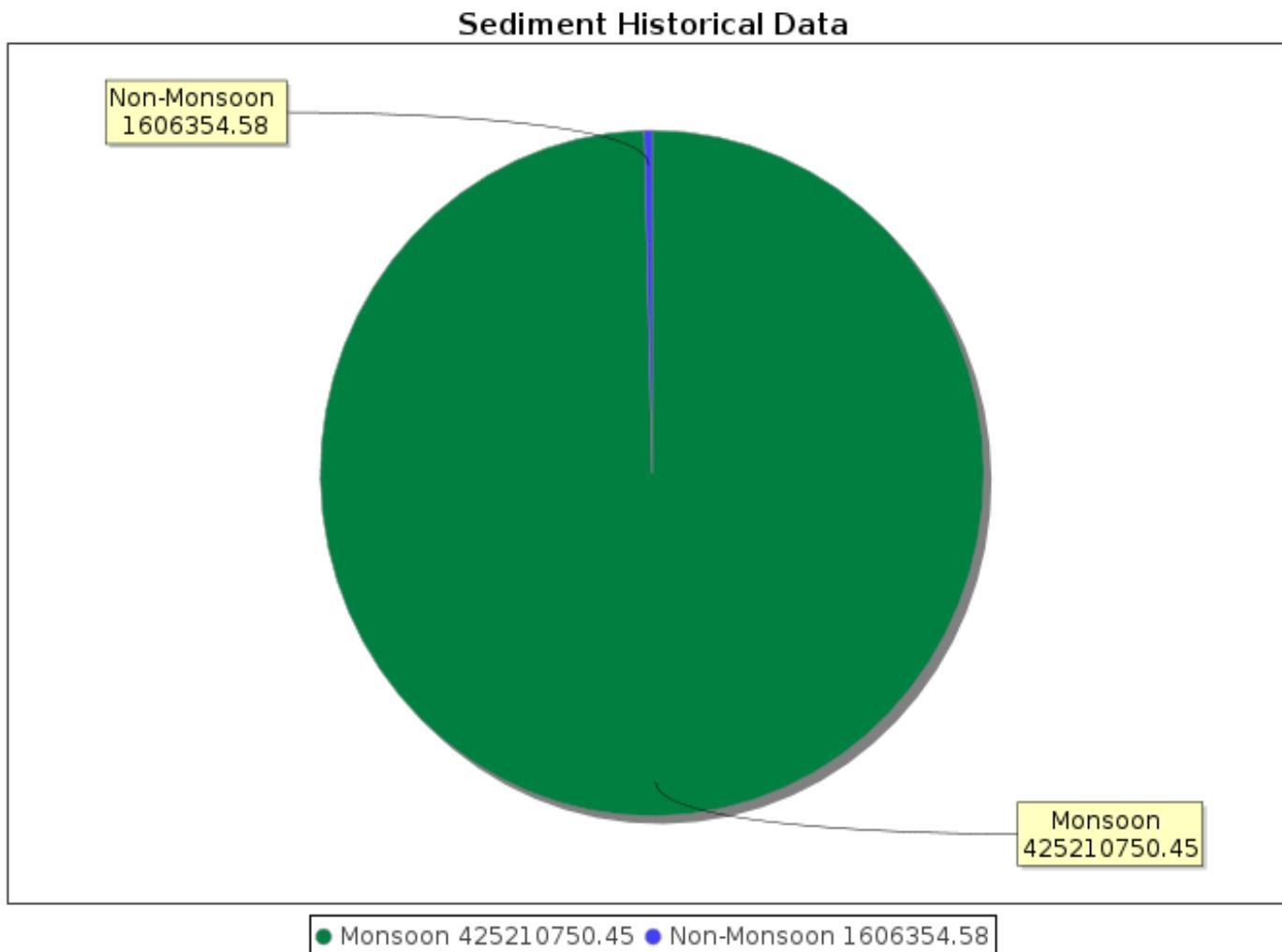
Seasonal Sediment Load for the period : 2008-2018

Station Name : Narmada at Handia (010215022)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-II, Bhopal



Seasonal Sediment Load for the period : 2017-2018

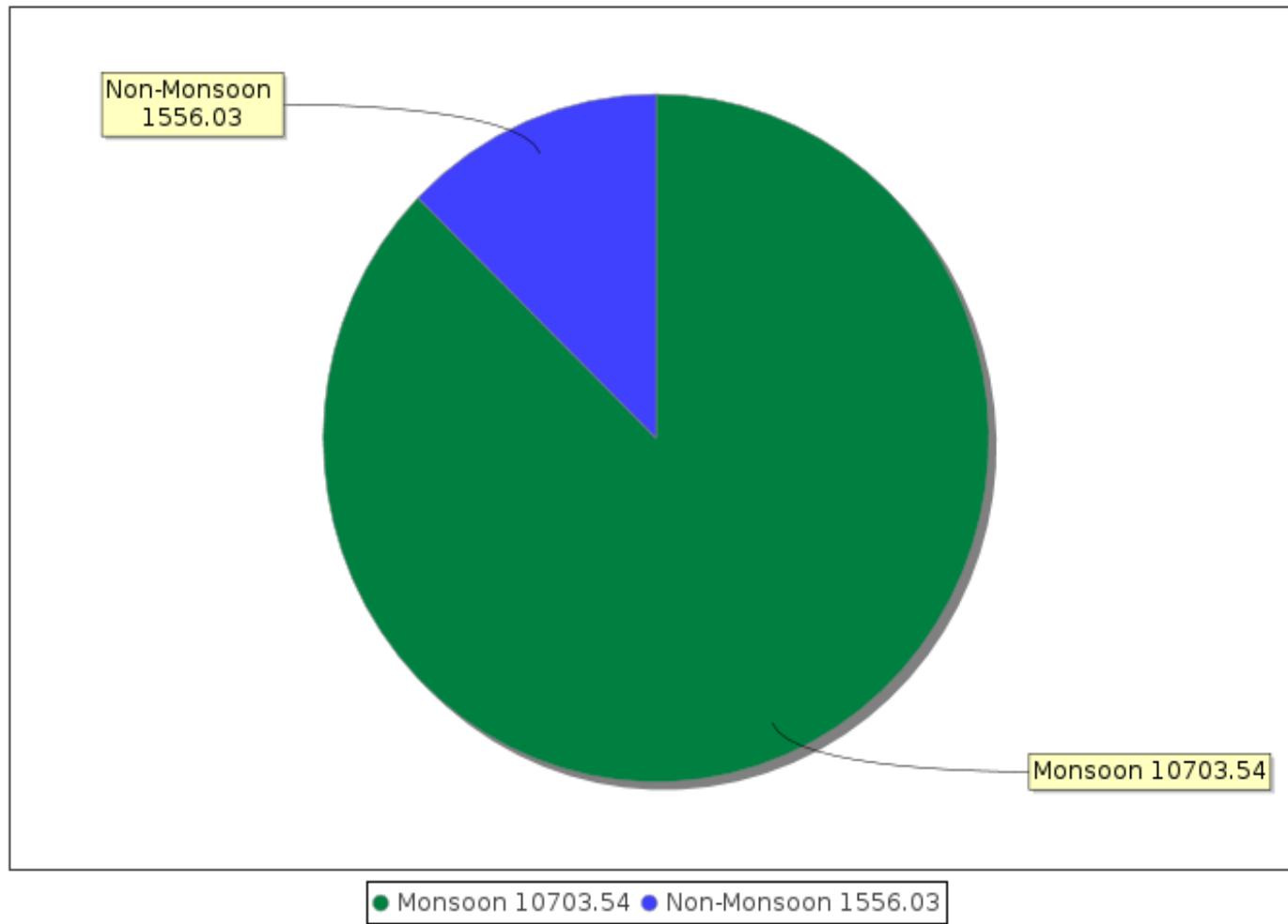
Station Name : Narmada at Handia (010215022)

Division : Narmada Division Bhopal

Local River : Narmada

Sub-Division : MNSD-II, Bhopal

Sediment Water Year: 2017-2018



6.5 Narmada at Hoshangabad

History sheet

		Water Year	: 2017-2018
Site	: Narmada at Hoshangabad	Code	: 010215019
State	: Madhya Pradesh	District	Hoshangabad
Basin	: Narmada	Independent River	: Narmada
Tributary	:	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: Narmada
Division	: Narmada Division, Bhopal	Sub-Division	: MNSD-I, Hoshangabad
Drainage Area	: 44548 Sq. Km.	Bank	: Left
Latitude	: 22°45'21"	Longitude	: 77°43'58"
Zero of Gauge (m)	: 282 .000(M.S.L.)	21/05/1972	
	Opening Date	Closing Date	
Gauge	: 21/05/1972		
Discharge	: 16/09/1972		
Sediment	: 29/12/1972		
Water Quality	: 15/07/1979		

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Hoshangabad (010215019)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Days	June					July					August							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	119.2	0	0	0.02	0.02	226.58	395.7	0	0	0.01	0.01	470.09	436.1	0	0	0.02	0.02	631.12
2	109.3	0	0	0.02	0.02	226.64	397.1	0	0	0.01	0.01	343.09	405.2	0	0	0.02	0.02	568.9
3	118	0	0	0.02	0.02	244.68	449.4	0	0	0.01	0.01	543.59	381.3	0	0	0.02	0.02	527.11
4	103	0	0	0.02	0.02	151.29	451.4	0	0	0.03	0.03	1111.53	363.1	0	0	0.02	0.02	494.11
5	129.1	0	0	0.02	0.02	267.7	432.5	0	0	0.28	0.28	10369.62	263.2	0	0	0.02	0.02	352.48
6	129.8	0	0	0.02	0.02	280.37	380.7	0	0	0.26	0.26	8634.28	257	0	0	0.02	0.02	444.1
7	144.4	0	0	0.02	0.02	299.43	377.1	0	0	0.17	0.17	5620.3	225.4	0	0	0.01	0.01	287.25
8	148.1	0	0	0.02	0.02	307.1	371.1	0	0	0.02	0.02	545.07	210.3	0	0	0.01	0.01	190.78
9	135.7	0	0	0.02	0.02	293.11	370	0	0	0.02	0.02	639.36	211.5	0	0	0.01	0.01	201.01
10	123.2	0	0	0.02	0.02	266.11	280.8	0	0	0.02	0.02	382.11	368.7	0	0	0.01	0.01	382.27
11	120	0	0	0.02	0.02	196.99	270	0	0	0.02	0.02	414.07	419.5	0	0	0.01	0.01	462.12
12	118	0	0	0.02	0.02	254.88	268	0	0	0.02	0.02	370.48	381.5	0	0	0.01	0.01	403.78
13	109.3	0	0	0.02	0.02	236.09	263.7	0	0	0.02	0.02	353.15	368	0	0	0.01	0.01	317.95
14	115.2	0	0	0.02	0.02	238.88	291.3	0	0	0.02	0.02	396.4	260	0	0	0.01	0.01	286.42
15	123.2	0	0	0.02	0.02	255.47	286	0	0	0.02	0.02	401.54	239	0	0	0.01	0.01	185.85
16	120.8	0	0	0.02	0.02	260.93	285.2	0	0	0.02	0.02	492.83	207	0	0	0.01	0.01	210.15
17	126.4	0	0	0.02	0.02	262.1	291	0	0	0.02	0.02	414.85	175.5	0	0	0.01	0.01	174.38
18	131	0	0	0.02	0.02	237.69	378.9	0	0	0.02	0.02	523.79	153.8	0	0	0.01	0.01	149.49
19	131.1	0	0	0.02	0.02	283.18	398.5	0	0	0.02	0.02	576.71	182	0	0	0.01	0.01	184.77
20	135.7	0	0	0.02	0.02	293.11	809.8	0	0	0.04	0.04	2868.64	388	0	0	0.02	0.02	703.99
21	129.1	0	0	0.02	0.02	267.7	1244	0	0	0.06	0.06	6663.86	389.1	0	0	0.01	0.01	411.82
22	148.1	0	0	0.02	0.02	319.9	1450	0	0	0.07	0.07	9145.44	390	0	0	0.01	0.01	404.35
23	155.7	0	0	0.02	0.02	336.31	1330	0	0	0.07	0.07	7699.1	274.7	0	0	0.01	0.01	302.61
24	158	0	0	0.02	0.02	341.28	1244	0	0	0.06	0.06	6663.86	249.9	0	0	0.01	0.01	264.49
25	178	0	0	0.02	0.02	353.72	810	0	0	0.04	0.04	2869.34	218	0	0	0.01	0.01	169.52
26	143	0	0	0.02	0.02	222.39	600	0	0	0.03	0.03	1555.2	215.8	0	0	0.01	0.01	214.42
27	153.2	0	0	0.02	0.02	330.91	495	0	0	0.02	0.02	1069.2	246	0	0	0.01	0.01	233.8
28	245.2	0	0	0.02	0.02	529.63	455	0	0	0.02	0.02	904.18	425.9	0	0	0.02	0.02	625.56
29	400.1	0	0	0.03	0.03	898.78	1325	0	0	0.07	0.07	7555.68	744	0	0	0.02	0.02	1141
30	38.28	0	0	0.03	0.03	85.99	650	0	0	0.03	0.03	1853.28	660	0	0	0.02	0.02	1026.43
31						495.2	0	0	0.02	0.02	705.96	678	0	0	0.02	0.02	1054.43	
TenDaily I	125.98	0	0	0.02	0.02	256.3	390.58	0	0	0.08	0.08	2865.9	312.18	0	0	0.01	0.01	407.91
TenDaily II	123.07	0	0	0.02	0.02	251.93	354.24	0	0	0.02	0.02	681.25	277.43	0	0	0.01	0.01	307.89
TenDaily III	174.87	0	0	0.02	0.02	368.66	918.02	0	0	0.05	0.05	4244.1	408.31	0	0	0.01	0.01	531.68
Total		June				8768.95		July				82156.6		August				13006.44

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Hoshangabad (010215019)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Days	September					October					November							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	502.7	0	0	0.02	0.02	673.22	304	0	0	0.01	0.01	262.66	223.3	0	0	0.01	0.01	192.93
2	452	0	0	0.02	0.02	702.95	272	0	0	0.01	0.01	211.51	226.7	0	0	0.01	0.01	195.87
3	418	0	0	0.02	0.02	613.96	254.2	0	0	0.01	0.01	175.7	214.7	0	0	0.01	0.01	185.5
4	412.7	0	0	0.01	0.01	427.89	245.7	0	0	0.01	0.01	169.83	218.4	0	0	0.01	0.01	188.7
5	416.4	0	0	0.01	0.01	476.69	238.7	0	0	0.01	0.01	164.99	218.2	0	0	0.01	0.01	188.52
6	277	0	0	0.01	0.01	311.13	227	0	0	0.01	0.01	137.29	174.4	0	0	0.01	0.01	120.55
7	254.6	0	0	0.01	0.01	241.97	222.4	0	0	0.01	0.01	134.51	120	0	0	0.01	0.01	82.94
8	245.6	0	0	0.01	0.01	228.11	219	0	0	0.01	0.01	189.22	110	0	0	0.01	0.01	85.54
9	221.7	0	0	0.01	0.01	201.13	225.9	0	0	0.01	0.01	209.43	93.2	0	0	0.01	0.01	64.42
10	218	0	0	0.01	0.01	188.35	228.2	0	0	0.01	0.01	216.88	80.1	0	0	0.01	0.01	48.44
11	251.2	0	0	0.01	0.01	271.3	231.8	0	0	0.01	0.01	215.3	135	0	0	0.01	0.01	128.3
12	325.8	0	0	0.01	0.01	408.16	234.3	0	0	0.01	0.01	222.68	143	0	0	0.01	0.01	148.26
13	321.2	0	0	0.01	0.01	388.52	104	0	0	0.01	0.01	105.58	220	0	0	0.02	0.02	342.14
14	381.5	0	0	0.01	0.01	436.74	235.5	0	0	0.01	0.01	228.91	170	0	0	0.01	0.01	205.63
15	437.3	0	0	0.02	0.02	585.63	236	0	0	0.01	0.01	203.9	93.3	0	0	0.01	0.01	72.55
16	404.5	0	0	0.01	0.01	489.28	229.7	0	0	0.01	0.01	213.35	81.2	0	0	0.01	0.01	63.14
17	465	0	0	0.01	0.01	441.94	237.9	0	0	0.01	0.01	241.52	78.2	0	0	0.01	0.01	54.05
18	306.7	0	0	0.01	0.01	304.74	242.9	0	0	0.01	0.01	251.84	68.3	0	0	0.01	0.01	41.31
19	315.7	0	0	0.01	0.01	381.87	230	0	0	0.01	0.01	178.85	76	0	0	0.01	0.01	52.53
20	389.6	0	0	0.01	0.01	462.84	222.5	0	0	0.01	0.01	211.46	77.1	0	0	0.01	0.01	74.94
21	484.6	0	0	0.02	0.02	669.91	228.4	0	0	0.01	0.01	226.94	77.7	0	0	0.01	0.01	67.13
22	514.2	0	0	0.02	0.02	744.15	232	0	0	0.01	0.01	200.45	77.7	0	0	0.01	0.01	67.13
23	1304	0	0	0.05	0.05	5745.95	225.6	0	0	0.01	0.01	229.03	76.8	0	0	0.01	0.01	66.36
24	540	0	0	0.02	0.02	979.78	144	0	0	0.01	0.01	133.75	77.11	0	0	0.01	0.01	66.62
25	540	0	0	0.02	0.02	804.82	112	0	0	0.01	0.01	104.03	75	0	0	0.01	0.01	64.8
26	412	0	0	0.02	0.02	533.95	222.2	0	0	0.01	0.01	206.38	71	0	0	0.01	0.01	55.21
27	346	0	0	0.01	0.01	381.15	216.8	0	0	0.01	0.01	192	68.4	0	0	0.01	0.01	63.53
28	362	0	0	0.01	0.01	461.33	219.7	0	0	0.01	0.01	199.31	65.2	0	0	0.01	0.01	61.97
29	316	0	0	0.01	0.01	375.41	224	0	0	0.01	0.01	193.54	63.5	0	0	0.01	0.01	54.86
30	308	0	0	0.01	0.01	266.11	228	0	0	0.01	0.01	226.54	65.2	0	0	0.01	0.01	56.33
31						224.5		0	0	0.01	0.01	223.06						
TenDaily I	341.87	0	0	0.01	0.01	406.54	243.71	0	0	0.01	0.01	187.2	167.9	0	0	0.01	0.01	135.34
TenDaily II	359.85	0	0	0.01	0.01	417.1	220.46	0	0	0.01	0.01	207.34	114.21	0	0	0.01	0.01	118.29
TenDaily III	512.68	0	0	0.02	0.02	1096.26	207.02	0	0	0.01	0.01	194.09	71.76	0	0	0.01	0.01	62.39
Total		September				19198.98		October				6080.4		November				3160.22

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Hoshangabad (010215019)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Days	December					January					February							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	62.2	0	0	0.01	0.01	53.74	70.6	0	0	0.01	0.01	70.15	100.1	0	0	0.01	0.01	86.49
2	59	0	0	0.01	0.01	45.88	72	0	0	0.01	0.01	62.21	99.6	0	0	0.01	0.01	86.05
3	59	0	0	0.01	0.01	45.88	73.7	0	0	0.01	0.01	63.68	93.1	0	0	0.01	0.01	72.39
4	65	0	0	0.01	0.01	63.18	73	0	0	0.01	0.01	63.07	83	0	0	0.01	0.01	57.37
5	75.6	0	0	0.01	0.01	78.38	71	0	0	0.01	0.01	61.34	66.2	0	0	0.01	0.01	65.78
6	74.3	0	0	0.01	0.01	70.61	74.3	0	0	0.01	0.01	70.61	62.2	0	0	0.01	0.01	48.37
7	71.7	0	0	0.01	0.01	68.14	79	0	0	0.01	0.01	75.08	60.1	0	0	0.01	0.01	46.73
8	69.9	0	0	0.01	0.01	66.43	81.1	0	0	0.01	0.01	84.08	37.4	0	0	0.01	0.01	19.39
9	73.8	0	0	0.01	0.01	70.14	79.2	0	0	0.01	0.01	68.43	39.2	0	0	0.01	0.01	20.32
10	67	0	0	0.01	0.01	57.89	93.7	0	0	0.01	0.01	97.15	55.4	0	0	0.01	0.01	38.29
11	64.4	0	0	0.01	0.01	61.21	96.5	0	0	0.01	0.01	100.05	55	0	0	0.01	0.01	38.02
12	58.1	0	0	0.01	0.01	45.18	102.5	0	0	0.01	0.01	115.13	54.4	0	0	0.01	0.01	51.7
13	46.8	0	0	0.01	0.01	28.3	93.3	0	0	0.01	0.01	96.73	51.7	0	0	0.01	0.01	44.67
14	34.8	0	0	0.01	0.01	15.03	91	0	0	0.01	0.01	86.49	51.2	0	0	0.01	0.01	39.81
15	73.3	0	0	0.01	0.01	69.66	87.3	0	0	0.01	0.01	92.4	47.9	0	0	0.01	0.01	37.25
16	121.1	0	0	0.02	0.02	198.8	106.8	0	0	0.01	0.01	110.73	34	0	0	0.01	0.01	17.63
17	111	0	0	0.02	0.02	163.04	102.4	0	0	0.01	0.01	106.17	35.5	0	0	0.01	0.01	21.47
18	102	0	0	0.01	0.01	101.35	105.6	0	0	0.01	0.01	109.49	26	0	0	0.01	0.01	11.23
19	68	0	0	0.01	0.01	41.13	104	0	0	0.01	0.01	107.83	65.8	0	0	0.01	0.01	63.96
20	97.5	0	0	0.01	0.01	84.24	102.4	0	0	0.01	0.01	106.17	62.1	0	0	0.01	0.01	48.29
21	93.4	0	0	0.01	0.01	72.63	103	0	0	0.01	0.01	106.79	64.2	0	0	0.01	0.01	55.47
22	76.9	0	0	0.01	0.01	53.15	104.3	0	0	0.01	0.01	108.14	63	0	0	0.01	0.01	54.43
23	73.3	0	0	0.01	0.01	44.33	103	0	0	0.01	0.01	88.99	57.2	0	0	0.01	0.01	44.48
24	71	0	0	0.01	0.01	42.94	103	0	0	0.01	0.01	88.99	57.4	0	0	0.01	0.01	44.63
25	76	0	0	0.01	0.01	45.96	89	0	0	0.01	0.01	69.21	55	0	0	0.01	0.01	38.02
26	75.7	0	0	0.01	0.01	71.95	103	0	0	0.01	0.01	88.99	54.5	0	0	0.01	0.01	52.97
27	70	0	0	0.01	0.01	54.43	99.2	0	0	0.01	0.01	85.71	51.2	0	0	0.01	0.01	39.81
28	68.1	0	0	0.01	0.01	52.95	103	0	0	0.01	0.01	88.99	50.4	0	0	0.01	0.01	39.19
29	67.7	0	0	0.01	0.01	52.64	102.9	0	0	0.01	0.01	104.46						
30	66.7	0	0	0.01	0.01	51.87	96.3	0	0	0.01	0.01	74.88						
31	66	0	0	0.01	0.01	51.32	102.1	0	0	0.01	0.01	88.21						
TenDaily I	67.75	0	0	0.01	0.01	62.03	76.76	0	0	0.01	0.01	71.58	69.63	0	0	0.01	0.01	54.12
TenDaily II	77.7	0	0	0.01	0.01	80.79	99.18	0	0	0.01	0.01	103.12	48.36	0	0	0.01	0.01	37.4
TenDaily III	73.16	0	0	0.01	0.01	54.02	100.8	0	0	0.01	0.01	90.31	56.61	0	0	0.01	0.01	46.13
Total	December				2022.4	January				2740.36	February					1284.21		

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Hoshangabad (010215019)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Days	March					April					May							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	48.6	0	0	0.01	0.01	37.79	33	0	0	0.01	0.01	25.66	61.6	0	0	0.02	0.02	95.8
2	48	0	0	0.01	0.01	37.32	34.2	0	0	0.01	0.01	30.29	77.6	0	0	0.02	0.02	154.21
3	48.6	0	0	0.01	0.01	37.79	52	0	0	0.02	0.02	67.39	81.6	0	0	0.02	0.02	169.21
4	46	0	0	0.01	0.01	31.8	49.9	0	0	0.02	0.02	64.67	84.9	0	0	0.02	0.02	183.38
5	48.1	0	0	0.01	0.01	43.64	49.1	0	0	0.01	0.01	59.39	78.5	0	0	0.02	0.02	156
6	46.6	0	0	0.01	0.01	40.26	47.7	0	0	0.01	0.01	57.7	85	0	0	0.02	0.02	183.6
7	46.3	0	0	0.01	0.01	40	36.3	0	0	0.01	0.01	34.81	84.5	0	0	0.01	0.01	85.78
8	45.8	0	0	0.01	0.01	39.57	53	0	0	0.02	0.02	68.69	81.6	0	0	0.01	0.01	70.5
9	45.4	0	0	0.01	0.01	35.3	78.9	0	0	0.01	0.01	73.28	84.9	0	0	0.01	0.01	73.35
10	43.8	0	0	0.01	0.01	34.06	51.5	0	0	0.01	0.01	31.15	83.6	0	0	0.01	0.01	72.23
11	43	0	0	0.01	0.01	33.44	65.3	0	0	0.01	0.01	45.14	103	0	0	0.01	0.01	106.79
12	43.8	0	0	0.01	0.01	41.63	43.4	0	0	0.01	0.01	22.5	106.8	0	0	0.01	0.01	119.96
13	43.4	0	0	0.01	0.01	37.5	42.8	0	0	0.01	0.01	18.49	96	0	0	0.01	0.01	91.24
14	41	0	0	0.01	0.01	31.88	40.6	0	0	0.01	0.01	17.54	104.4	0	0	0.01	0.01	115.01
15	40.5	0	0	0.01	0.01	31.49	38	0	0	0.01	0.01	16.42	98.1	0	0	0.01	0.01	76.28
16	40.1	0	0	0.01	0.01	31.18	38	0	0	0.01	0.01	35.29	97.3	0	0	0.01	0.01	75.66
17	40.1	0	0	0.01	0.01	31.18	36.9	0	0	0.01	0.01	31.88	99.1	0	0	0.01	0.01	77.06
18	40	0	0	0.01	0.01	31.1	36.7	0	0	0.01	0.01	31.71	104.4	0	0	0.01	0.01	90.2
19	38.4	0	0	0.01	0.01	35.67	42.8	0	0	0.01	0.01	40.68	87.3	0	0	0.01	0.01	60.34
20	38.1	0	0	0.01	0.01	32.92	40.6	0	0	0.01	0.01	38.59	97.3	0	0	0.01	0.01	75.66
21	37.6	0	0	0.01	0.01	32.49	38	0	0	0.01	0.01	32.83	95.3	0	0	0.01	0.01	100.87
22	35.5	0	0	0.01	0.01	27.6	38.2	0	0	0.01	0.01	33	97.3	0	0	0.01	0.01	84.07
23	35.6	0	0	0.01	0.01	27.68	33.5	0	0	0.01	0.01	29.67	104	0	0	0.01	0.01	98.84
24	35.6	0	0	0.01	0.01	27.68	33.5	0	0	0.01	0.01	28.94	110.7	0	0	0.01	0.01	114.77
25	37	0	0	0.01	0.01	31.97	32.3	0	0	0.01	0.01	27.91	107	0	0	0.01	0.01	101.69
26	34.9	0	0	0.01	0.01	31.66	32.3	0	0	0.01	0.01	27.91	114.5	0	0	0.01	0.01	118.71
27	37.6	0	0	0.01	0.01	35.74	36.7	0	0	0.01	0.01	34.88	110	0	0	0.01	0.01	114.05
28	34.9	0	0	0.01	0.01	30.15	47.7	0	0	0.01	0.01	57.7	111.6	0	0	0.01	0.01	125.35
29	34	0	0	0.01	0.01	29.38	69	0	0	0.02	0.02	125.19	104.4	0	0	0.01	0.01	81.18
30	34	0	0	0.01	0.01	29.38	65	0	0	0.02	0.02	106.7	101.9	0	0	0.01	0.01	79.24
31	33.5	0	0	0.01	0.01	28.94						106.8	0	0	0.01	0.01	92.28	
TenDaily I	46.72	0	0	0.01	0.01	37.75	48.56	0	0	0.01	0.01	51.3	80.38	0	0	0.02	0.02	124.41
TenDaily II	40.84	0	0	0.01	0.01	33.8	42.51	0	0	0.01	0.01	29.82	99.37	0	0	0.01	0.01	88.82
TenDaily III	35.47	0	0	0.01	0.01	30.24	42.62	0	0	0.01	0.01	50.47	105.77	0	0	0.01	0.01	101
Total	March					1048.2	April					1316						3243.31

Sediment Data Year Book 2017-18

Annual Sediment Load for period : 1972-2018

Station Name : Narmada at Hoshangabad (010215019) Division : Narmada Division, Bhopal
 Local River : Narmada SubDivision :MNSD-I, Hoshangabad

Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1972-1973	0	1245032.64	24.87
1987-1988	13696732.18	0	11561.86
1988-1989	21927042.52	0	19316.57
1989-1990	12260502.83	0	10573.59
1990-1991	28921420.73	0	29218.27
1991-1992	17163195.9	0	19324.19
1992-1993	22273545.69	0	14560.38
1993-1994	24945904.79	0	17995.51
1994-1995	41396876.18	0	49621.55
1995-1996	13478551.68	0	15540.35
1996-1997	1864008.25	0	7541.49
1997-1998	14386693.7	0	16226.7
1998-1999	6442728.38	0	13430.35
1999-2000	27754796.99	0	40494.91
2000-2001	5418045.97	0	9462.58
2001-2002	11518072	0	13981.29
2002-2003	12492177.07	0	13759.02
2003-2004	24976309.71	0	25704.97
2004-2005	11095494.45	0	12307.41
2005-2006	41754968.22	112665.92	29700.15
2006-2007	21223787.14	63622.41	20517.11
2007-2008	3245231.01	48195.04	12584.91
2008-2009	8450880.75	43281.39	12343.45
2009-2010	14345893.18	12601.91	13831.1
2010-2011	2677514.25	84382.13	12858.8
2011-2012	6143300	19536.58	15668.8
2012-2013	32740070.13	122953.65	21076.02
2016-2017	9466715.49	76137.97	19521.88
2017-2018	132371.6	11654.47	5797.33

Annual Sediment Load for period : 2008-2018

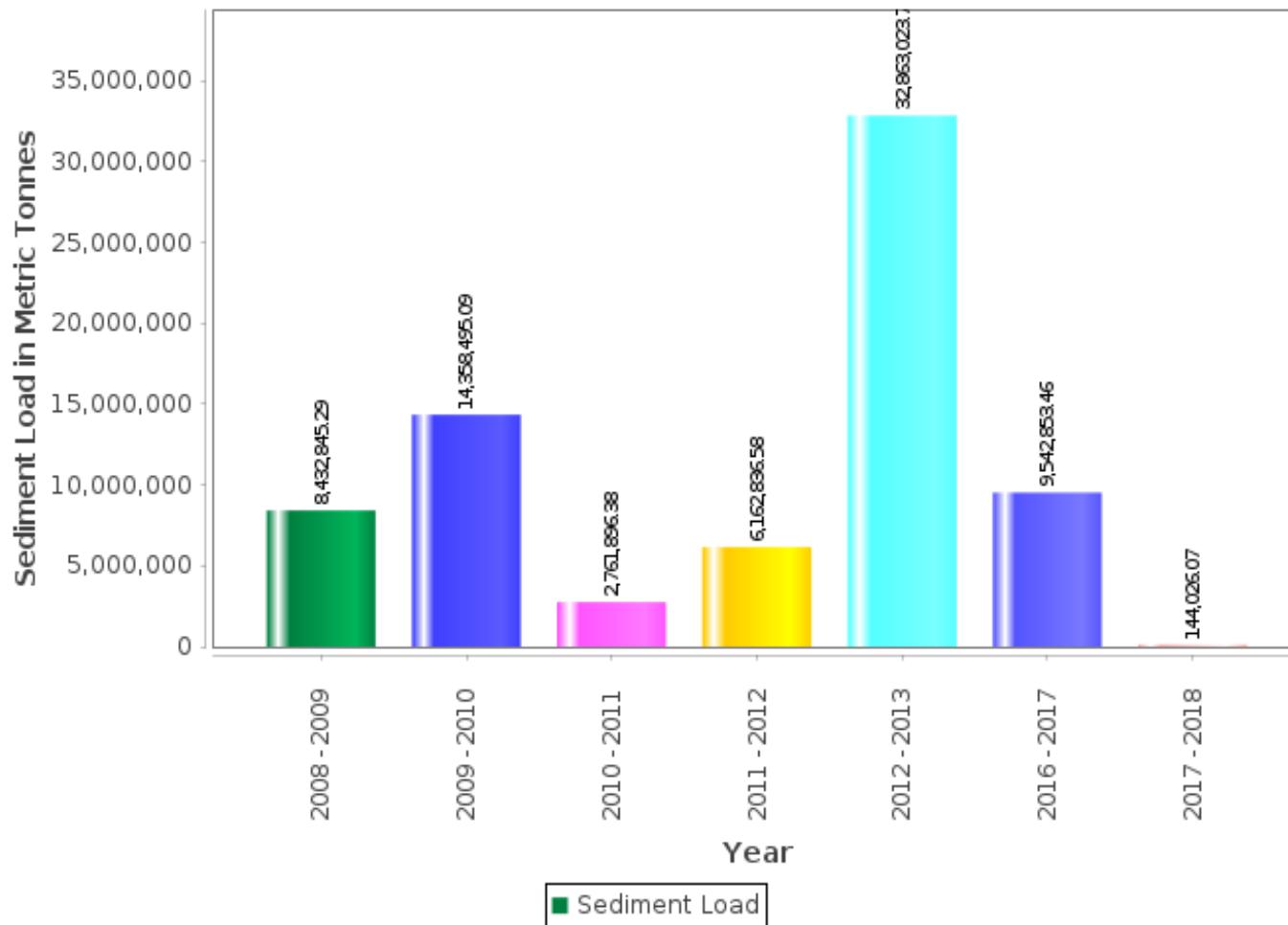
Station Name : Narmada at Hoshangabad (010215019)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Sediment Annual Summary



Seasonal Sediment Load for the period : 2008-2018

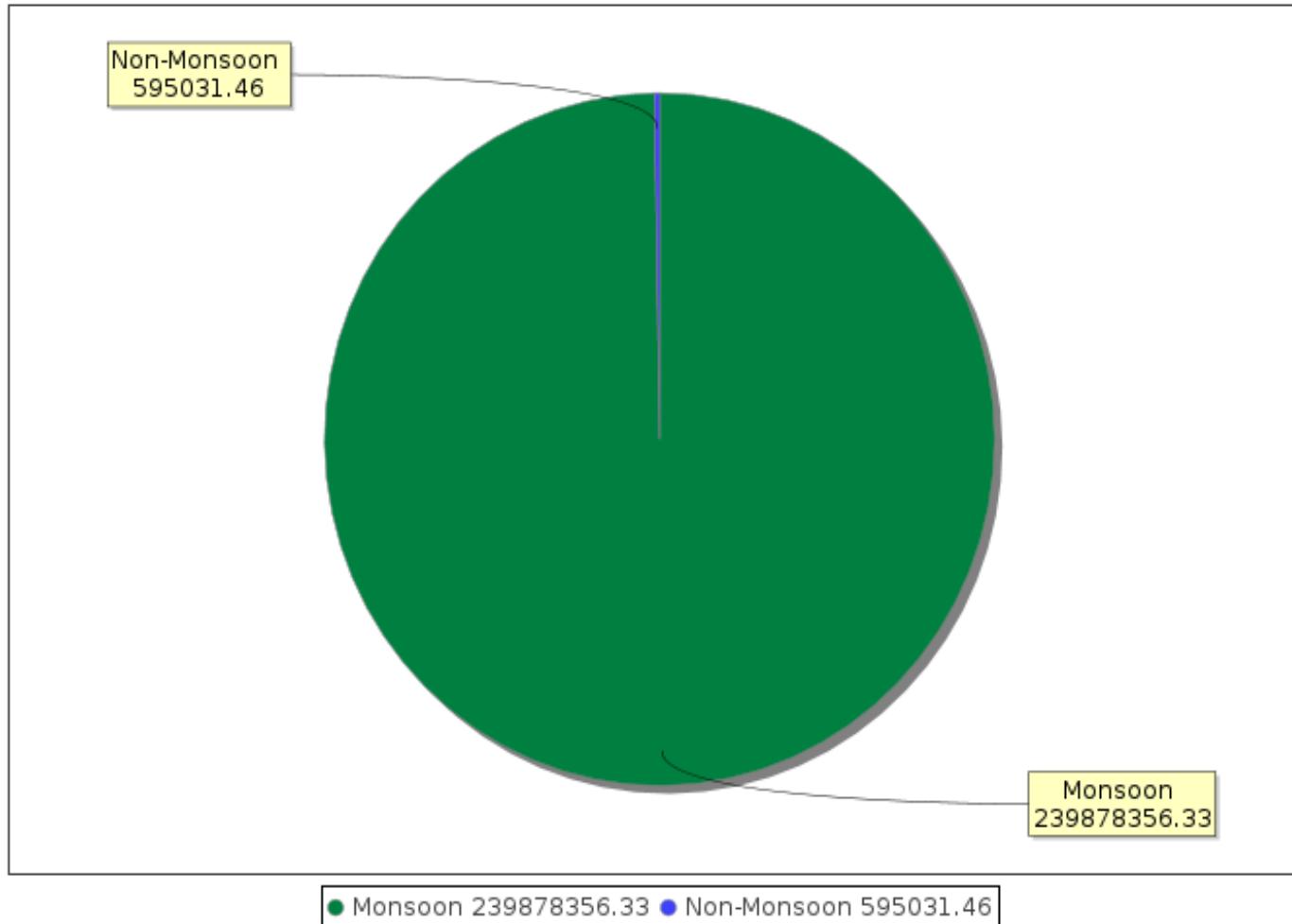
Station Name : Narmada at Hoshangabad (010215019)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Sediment Historical Data



Seasonal Sediment Load for the period : 2017-2018

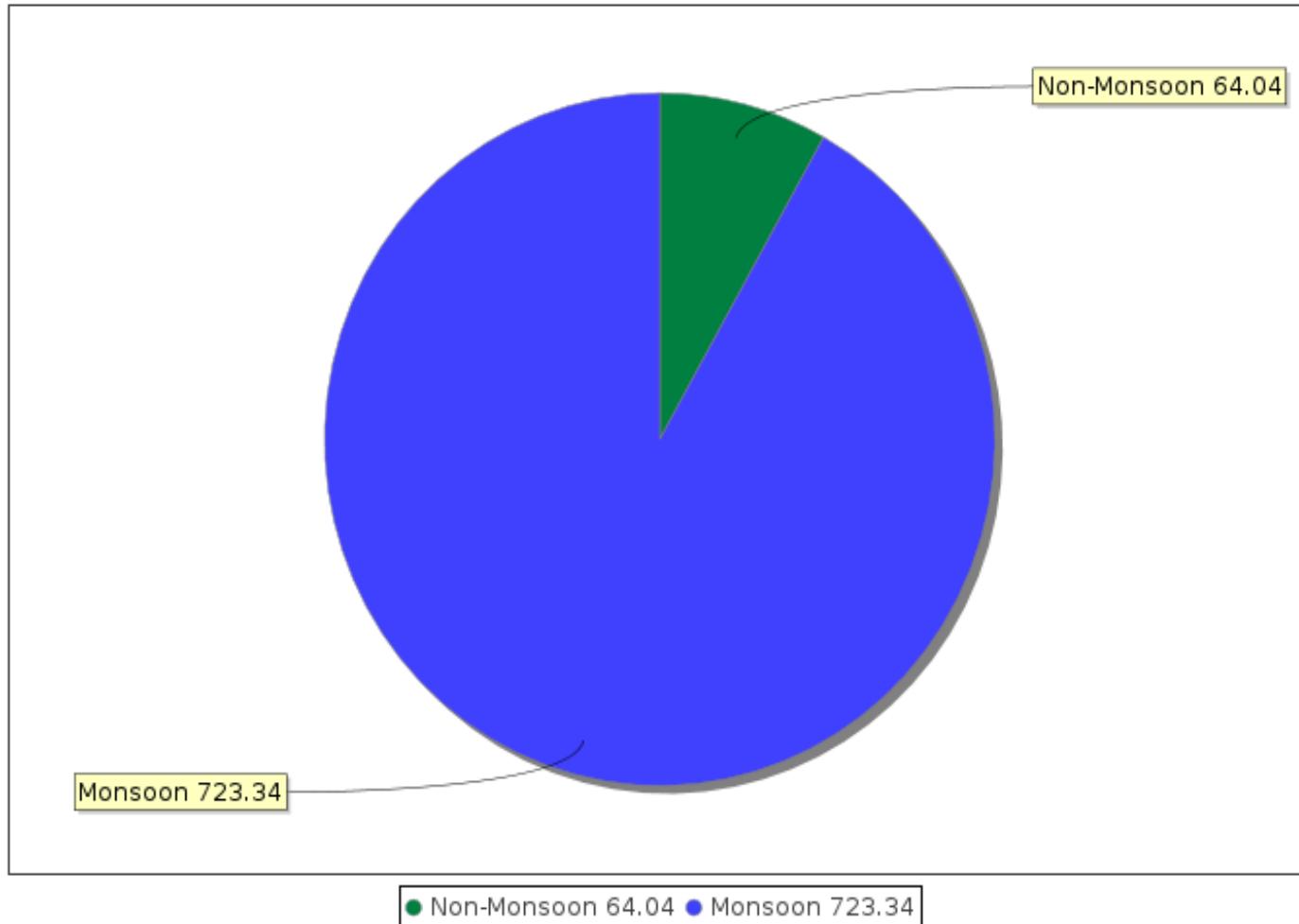
Station Name : Narmada at Hoshangabad (010215019)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Sediment Water Year: 2017-2018



6.6 Narmada at Sandia

History sheet

		Water Year	:	2017-2018
Site	: Narmada at Sandia	Code	:	010215013
State	:	District	:	Hoshangabad
Basin	:	Independent River	:	Narmada
Tributary	:	Sub Tributary	:	
Sub-Sub Tributary	:	Local River	:	Narmada
Division	:	Sub-Division	:	MNSD-I, Hoshangabad
Drainage Area	:	Bank	:	Left
Latitude	:	Longitude	:	78°20'51"
Zero of Gauge (m)	: 297 .000(M.S.L.)	01/03/1978		
	Opening Date	Closing Date		
Gauge	:	01/03/1978		
Discharge	:	18/04/1978		
Sediment	:	09/08/1978		
Water Quality	:	15/09/1979		

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Sandia (010215013)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Days	June					July					August							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	77.5	0	0	0.02	0.02	133.92	185.3	0	0	0.05	0.05	864.54	226	0	0	0.02	0.02	449.11
2	73.7	0	0	0.02	0.02	146.46	275	0	0	0.07	0.07	1758.24	184.3	0	0	0.04	0.04	716.56
3	74.4	0	0	0.2	0.2	1285.63	277.2	0	0	0.05	0.05	1149.6	127.4	0	0	0.05	0.05	572.38
4	95	0	0	0.26	0.26	2093.04	251.2	0	0	0.03	0.03	694.52	116.7	0	0	0.22	0.22	2218.23
5	83.3	0	0	0.04	0.04	309.48	215.7	0	0	1.01	1.01	18841.48	91.6	0	0	0.04	0.04	300.74
6	97.8	0	0	0.02	0.02	211.25	197.2	0	0	0.02	0.02	289.65	257	0	0	0.11	0.11	2486.94
7	102.6	0	0	0.03	0.03	230.48	181.2	0	0	0.02	0.02	313.11	74.9	0	0	0.06	0.06	381.81
8	97.5	0	0	0.03	0.03	227.45	163.1	0	0	0.02	0.02	253.65	72.2	0	0	0.14	0.14	860.86
9	81.6	0	0	0.03	0.03	197.41	152	0	0	0.02	0.02	236.39	192.7	0	0	0.2	0.2	3363.15
10	78.1	0	0	0.02	0.02	148.45	153.4	0	0	0.03	0.03	344.6	301.7	0	0	0.05	0.05	1251.21
11	76	0	0	0.02	0.02	124.76	152.8	0	0	0.02	0.02	250.84	180.3	0	0	0.03	0.03	451.76
12	81.6	0	0	0.03	0.03	211.51	152	0	0	0.02	0.02	52.53	176.2	0	0	0.04	0.04	578.5
13	88	0	0	0.05	0.05	402.97	147.4	0	0	0.01	0.01	140.09	158	0	0	0.04	0.04	491.44
14	92.6	0	0	0.03	0.03	264.02	148.83	0	0	0.06	0.06	707.24	260	0	0	0.2	0.2	4402.94
15	88.7	0	0	0.05	0.05	406.18	163.5	0	0	0.07	0.07	932.34	80	0	0	0.06	0.06	428.54
16	97.1	0	0	0.07	0.07	587.26	172	0	0	0.07	0.07	1025.4	70.5	0	0	0.14	0.14	852.77
17	97.2	0	0	0.07	0.07	587.87	185.9	0	0	0.05	0.05	803.09	63.8	0	0	0.2	0.2	1091.44
18	99	0	0	0.07	0.07	607.31	206.2	0	0	0.25	0.25	4453.92	59.3	0	0	0.08	0.08	430.38
19	102.9	0	0	0.11	0.11	969.07	176.3	0	0	0.14	0.14	2132.52	97.7	0	0	0.07	0.07	590.89
20	95.4	0	0	0.03	0.03	255.52	559	0	0	0.04	0.04	1835.31	176	0	0	0.13	0.13	1916.01
21	101.4	0	0	0.11	0.11	937.42	1625.4	0	0	0.17	0.17	23873.88	178.1	0	0	0.02	0.02	230.82
22	108.7	0	0	0.14	0.14	1324.23	1095.8	0	0	0.11	0.11	10225.13	390	0	0	0.02	0.02	539.14
23	104.3	0	0	0.19	0.19	1739.22	1120	0	0	0.11	0.11	10838.02	103.1	0	0	0.02	0.02	133.62
24	96.2	0	0	0.06	0.06	498.7	706.9	0	0	0.06	0.06	3847.8	90.5	0	0	0.02	0.02	156.38
25	90	0	0	0.06	0.06	435.46	589.2	0	0	0.07	0.07	3716.2	81.3	0	0	0.02	0.02	126.44
26	94	0	0	0.06	0.06	479.17	531.73	0	0	0.04	0.04	2067.37	81.3	0	0	0.02	0.02	119.41
27	159	0	0	0.23	0.23	3214.6	430.1	0	0	0.02	0.02	929.02	246	0	0	0.06	0.06	1296.52
28	169	0	0	0.19	0.19	2832.71	411	0	0	0.06	0.06	2308.18	342.7	0	0	0.02	0.02	740.23
29	163	0	0	0.17	0.17	2351.89	437.5	0	0	0.06	0.06	2419.2	324.4	0	0	0.21	0.21	5970
30	174.2	0	0	0.5	0.5	7555.54	269	0	0	0.04	0.04	906.42	589	0	0	0.24	0.24	12417.06
31						276.5	0	0	0.03	0.03	788.36	372	0	0	0.19	0.19	6042.47	
TenDaily I	86.15	0	0	0.07	0.07	498.36	205.13	0	0	0.13	0.13	2474.58	164.45	0	0	0.09	0.09	1260.1
TenDaily II	91.85	0	0	0.05	0.05	441.65	206.39	0	0	0.07	0.07	1233.33	132.18	0	0	0.1	0.1	1123.47
TenDaily III	125.98	0	0	0.17	0.17	2136.89	681.19	0	0	0.07	0.07	5629.05	254.4	0	0	0.08	0.08	2524.74
Total		June				30768.97		July				98998.61		August				51607.75

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Sandia (010215013)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Days	September						October						November					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	307.4	0	0	0.21	0.21	5683.7	160	0	0	0.15	0.15	2018.3	96					0
2	260	0	0	0.02	0.02	399.86	150	0	0	0.14	0.14	1775.52	93					0
3	250	0	0	0.02	0.02	369.36	146.7	0	0	0.14	0.14	1749.13	90					0
4	206.6	0	0	0.17	0.17	3088.09	136.3	0	0	0.12	0.12	1472.04	96					0
5	189.1	0	0	0.16	0.16	2581.44	134.2	0	0	0.13	0.13	1507.33	90					0
6	160.8	0	0	0.15	0.15	2083.97	132.9	0	0	0.12	0.12	1377.91	90					0
7	146.4	0	0	0.16	0.16	2074.43	132.2	0	0	0.12	0.12	1313.54	80					0
8	142.5	0	0	0.2	0.2	2462.4	100	0	0	0.09	0.09	786.24	80					0
9	142.5	0	0	0.16	0.16	2006.86	98.6	0	0	0.04	0.04	315.2	75					0
10	147	0	0	0.02	0.02	209.56	97.3	0	0	0.02	0.02	193.35	70					0
11	243.6	0	0	0.2	0.2	4314.64	95.8	0	0	0.02	0.02	198.65	96					0
12	205.8	0	0	0.2	0.2	3645.13	99.9	0	0	0.04	0.04	371.15	105					0
13	347.1	0	0	0.28	0.28	8247.1	116.8	0	0	0.04	0.04	363.29	95					0
14	410	0	0	0.18	0.18	6199.2	108.9	0	0	0.04	0.04	376.36	75					0
15	342	0	0	0.13	0.13	3782.25	105	0	0	0.04	0.04	353.81	60					0
16	315	0	0	0.14	0.14	3755.81	115.9	0	0	0.06	0.06	600.83	60					0
17	220	0	0	0.1	0.1	1862.78	117.1	0	0	0.04	0.04	354.11	60					0
18	208.8	0	0	0.12	0.12	2218.96	104.6	0	0	0.02	0.02	189.79	60					0
19	332.8	0	0	0.12	0.12	3536.73	95	0	0	0.02	0.02	147.74	60					0
20	450	0	0	0.2	0.2	7970.4	101.4	0	0	0.04	0.04	332.92	60					0
21	336.1	0	0	0.13	0.13	3717	104.2	0	0	0.06	0.06	540.17	55					0
22	750	0	0	0.26	0.26	17172	98.6	0	0	0.57	0.57	4855.85	50					0
23	770	0	0	0.44	0.44	29072.74	101.5	0	0	0.19	0.19	1692.53	45					0
24	560	0	0	0.32	0.32	15482.88	103.6	0	0	0.14	0.14	1262.1	40					0
25	462	0	0	0.67	0.67	26864.01	101	0	0	0.11	0.11	933.72	40					0
26	338.9	0	0	0.3	0.3	8725.73	97.6	0	0	0.03	0.03	261.41	42					0
27	313.5	0	0	0.16	0.16	4198.39	94.1	0	0	0.11	0.11	886.2	45					0
28	199.8	0	0	0.16	0.16	2675.72	104	0	0	0.07	0.07	628.99	45					0
29	197.1	0	0	0.18	0.18	3031.24	110	0	0	0.07	0.07	703.3	40					0
30	180.4	0	0	0.16	0.16	2571.78	107.1	0	0	0.07	0.07	647.74	40					0
31							97.7	0	0	0.05	0.05	447.39						
TenDaily I	195.23	0	0	0.13	0.13	2095.97	128.82	0	0	0.11	0.11	1250.86	86	0	0	0	0	0
TenDaily II	307.51	0	0	0.17	0.17	4553.3	106.04	0	0	0.04	0.04	328.86	73.1	0	0	0	0	0
TenDaily III	410.78	0	0	0.28	0.28	11351.15	101.76	0	0	0.13	0.13	1169.04	44.2	0	0	0	0	0
Total	September				180004.15	October				28656.62	November							0

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Sandia (010215013)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Days	December					January					February						
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l
1	45					0	43					0	74				0
2	60					0	43					0	68				0
3	65					0	44					0	52				0
4	65					0	45					0	42				0
5	60					0	50					0	41				0
6	50					0	67					0	37				0
7	40					0	46					0	36				0
8	40					0	72					0	35				0
9	40					0	75					0	34				0
10	38					0	76					0	35				0
11	38					0	64					0	34				0
12	38					0	55.8					0	39				0
13	39					0	56					0	40				0
14	137					0	77					0	42				0
15	98					0	85					0	44				0
16	70					0	87					0	46				0
17	65					0	85					0	45				0
18	65					0	84					0	41				0
19	60					0	85					0	46				0
20	50					0	86					0	47				0
21	45					0	82					0	44.8				0
22	45					0	81					0	42				0
23	54					0	82					0	38				0
24	50					0	85					0	36				0
25	45					0	84					0	32				0
26	40					0	80					0	32				0
27	36					0	85					0	38				0
28	38					0	86					0	37				0
29	41					0	85					0					
30	43					0	78					0					
31	45					0	76					0					
TenDaily I	50.3	0	0	0	0	0	56.1	0	0	0	0	0	45.4	0	0	0	0
TenDaily II	66	0	0	0	0	0	76.48	0	0	0	0	0	42.4	0	0	0	0
TenDaily III	43.82	0	0	0	0	0	82.18	0	0	0	0	0	37.48	0	0	0	0
Total	December				0	January				0	February				0		

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Sandia (010215013)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Days	March						April						May					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	0					0	0				0	0	0					0
2	0					0	0				0	0	0					0
3	0					0	0				0	0	0					0
4	0					0	0				0	0	0					0
5	0					0	0				0	0	0					0
6	0					0	0				0	0	0					0
7	0					0	0				0	0	0					0
8	0					0	0				0	0	0					0
9	0					0	0				0	0	0					0
10	0					0	0				0	0	0					0
11	0					0	0				0	0	0					0
12	0					0	0				0	0	0					0
13	0					0	0				0	0	0					0
14	0					0	0				0	0	0					0
15	0					0	0				0	0	0					0
16	0					0	0				0	0	0					0
17	0					0	0				0	0	0					0
18	0					0	0				0	0	0					0
19	0					0	0				0	0	0					0
20	0					0	0				0	0	0					0
21	0					0	0				0	0	0					0
22	0					0	0				0	0	0					0
23	0					0	0				0	0	0					0
24	0					0	0				0	0	0					0
25	0					0	0				0	0	0					0
26	0					0	0				0	0	0					0
27	0					0	0				0	0	0					0
28	0					0	0				0	0	0					0
29	0					0	0				0	0	0					0
30	0					0	0				0	0	0					0
31	0					0					0							0
TenDaily I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TenDaily II	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TenDaily III	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	March					0	April					0	May					0

Sediment Data Year Book 2017-18

Annual Sediment Load for period : 1987-2018

Station Name : Narmada at Sandia (010215013) Division : Narmada Division, Bhopal
 Local River : Narmada Sub-Division: MNSD-I, Hoshangabad

Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1987-1988	7529140.18	0	7529140.18
1988-1989	16266196.89	0	16266196.89
1989-1990	4764959.28	0	4764959.28
1990-1991	16499578.83	0	16499578.83
1991-1992	31100237.29	0	31100237.29
1992-1993	7506724.17	0	7506724.17
1993-1994	11324633.03	0	11324633.03
1994-1995	43941942.28	0	43941942.28
1995-1996	11257938.33	0	11257938.33
1996-1997	2415022.75	0	2415022.75
1997-1998	7382982.42	0	7382982.42
1998-1999	5939963.36	0	5939963.36
1999-2000	34685472.31	0	34685472.31
2000-2001	10300013.96	0	10300013.96
2001-2002	18040558.08	0	18040558.08
2002-2003	13837434.36	0	13837434.36
2003-2004	36417061.91	0	36417061.91
2004-2005	11432445.12	0	11432445.12
2005-2006	26940023.78	200264.78	27140288.56
2006-2007	17843015.67	125369.91	17968385.58
2007-2008	225891.69	11152.44	237044.13
2008-2009	1249337.48	49464.41	1298801.9
2009-2010	47170094.29	42441.39	47212535.68
2010-2011	4083187.3	422459.49	4505646.79
2011-2012	28905207.84	0	28905207.84
2012-2013	15153224.05	153016.8	15306240.85
2016-2017	5051534.42	58304.64	5109839.06
2017-2018	390036.11	0	390036.11

Annual Sediment Load for period : 2008-2018

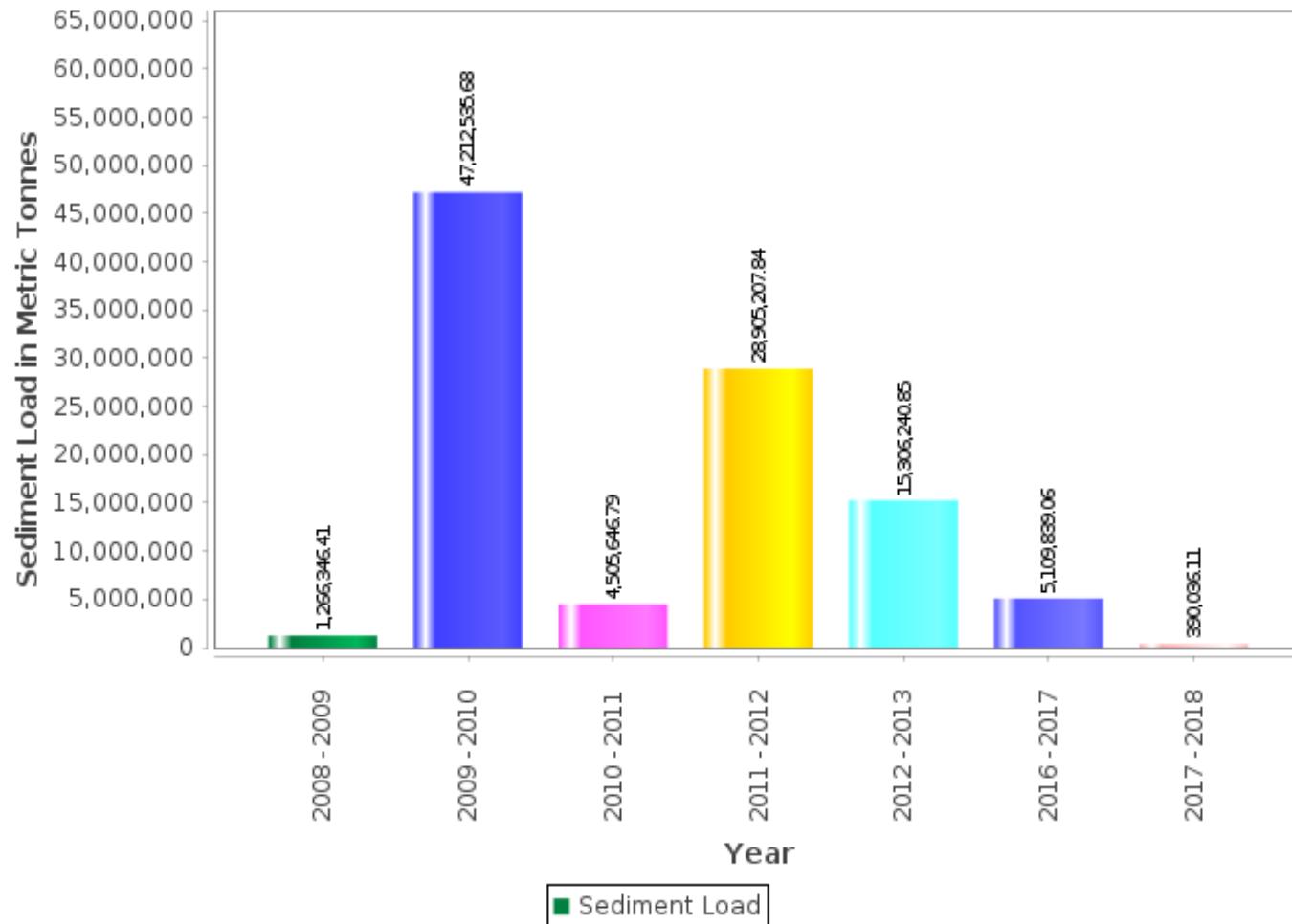
Station Name : Narmada at Sandia (010215013)

Local River : Narmada

Division : Narmada Division, Bhopal

Sub-Division : MNSD-I, Hoshangabad

Sediment Annual Summary



Seasonal Sediment Load for period : 2008-2018

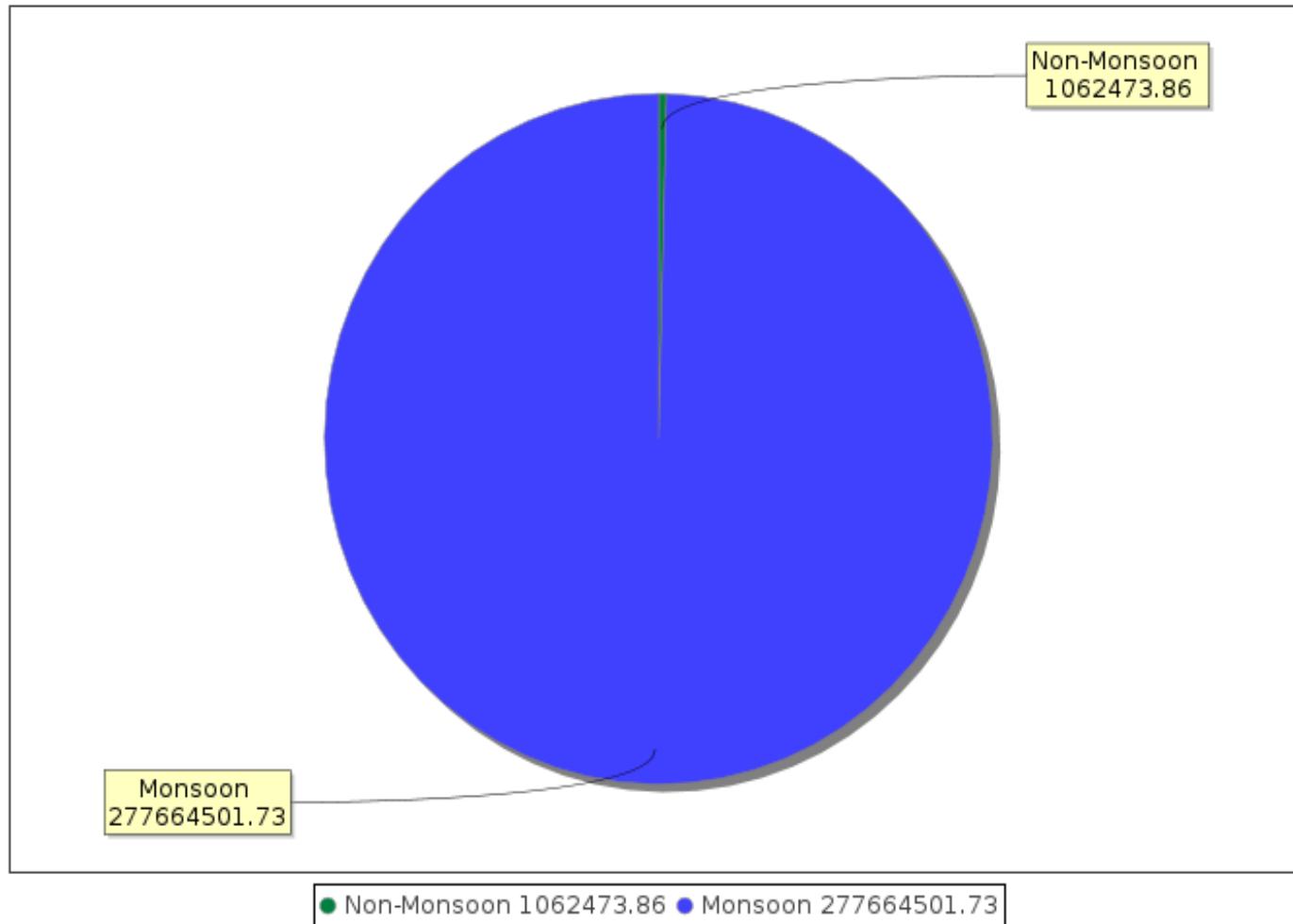
Station Name : Narmada at Sandia (010215013)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Sediment Historical Data



Seasonal Sediment Load for period : 2017-2018

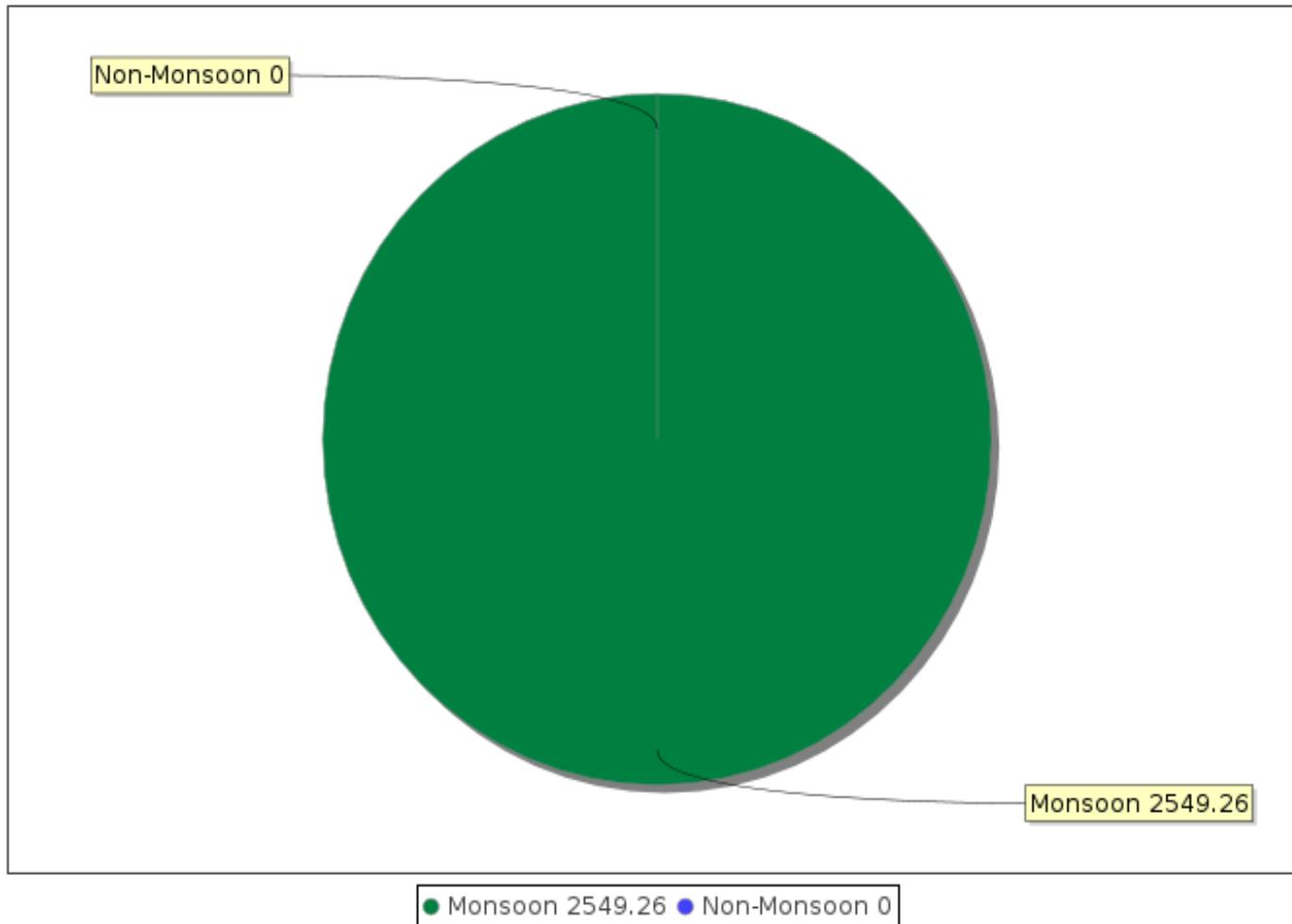
Station Name : Narmada at Sandia (010215013)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-1 Hoshangabad

Sediment Water Year: 2017-2018



6.7 Shakkar at Gadarwara

History sheet

		Water Year	: 2017-2018
Site	: Shakkar at Gadarwara	Code	: 010215012
State	: Madhya Pradesh	District	Narsinghpur
Basin	: Narmada	Independent River	: Narmada
Tributary	: Shakkar	Local River	: Shakkar
Division	: Narmada Division, Bhopal	Sub-Division	: MNSD-I, Hoshangabad
Drainage Area	: 2270 Sq. Km.	Bank	: Left
Latitude	: 22°55'26"	Longitude	: 78°47'20"
Zero of Gauge (m)	: 321 .000(M.S.L.)	01/02/1977	
	Opening Date	Closing Date	
Gauge	: 01/02/1977		
Discharge	: 01/02/1977		
Sediment	: 15/06/1978		
Water Quality	: 16/08/1979		

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Shakkar at Gadarwara (010215012)

Local River : Shakkar

Division : Narmada Division, Bhopal

Sub-Division : MNSD-I, Hoshangabad

Days	June					July					August							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	0	0	0	0	0	10.54	0	0	0.08	0.08	71.02	86.31	0	0	0.05	0.05	372.86	
2	0	0	0	0	0	10.8	0	0	0.08	0.08	76.52	96.4	0	0	0.04	0.04	291.53	
3	0	0	0	0	0	10.82	0	0	0.08	0.08	79.47	98.57	0	0	0.04	0.04	298.08	
4	0	0	0	0	0	9.84	0	0	0.08	0.08	66.33	108.01	0	0	0.04	0.04	354.62	
5	0	0	0	0	0	10.46	0	0	0.08	0.08	72.3	96.5	0	0	0.03	0.03	250.14	
6	0	0	0	0	0	10.57	0	0	0.06	0.06	54.8	76.5	0	0	0.02	0.02	158.63	
7	0	0	0	0	0	10.32	0	0	0.05	0.05	44.6	73.45	0	0	0.03	0.03	171.35	
8	0	0	0	0	0	9.89	0	0	0.04	0.04	34.19	95.92	0	0	0.04	0.04	331.5	
9	0	0	0	0	0	10.6	0	0	0.04	0.04	39.38	101.04	0	0	0.03	0.03	261.89	
10	0	0	0	0	0	10.87	0	0	0.05	0.05	49.76	115.52	0	0	0.14	0.14	1447.28	
11	0	0	0	0	0	12.35	0	0	0.06	0.06	64.01	131.21	0	0	0.17	0.17	1961.24	
12	0	0	0	0	0	11.31	0	0	0.06	0.06	56.7	108.6	0	0	0.13	0.13	1219.83	
13	0	0	0	0	0	10.57	0	0	0.05	0.05	45.66	73.45	0	0	0.09	0.09	558.46	
14	0	0	0	0	0	11.97	0	0	0.06	0.06	56.9	112.58	0	0	0.12	0.12	1215.9	
15	0	0	0	0	0	12.89	0	0	0.07	0.07	75.74	96.4	0	0	0.1	0.1	857.88	
16	0	0	0	0	0	12.4	0	0	0.07	0.07	71.78	67.08	0	0	0.06	0.06	376.74	
17	0	0	0	0	0	10.41	0	0	0.04	0.04	40.47	52.16	0	0	0.03	0.03	135.21	
18	0	0	0	0	0	10.62	0	0	0.04	0.04	41.29	59.32	0	0	0.08	0.08	384.43	
19	0	0	0	0	0	12.34	0	0	0.06	0.06	67.18	102.8	0	0	0.1	0.1	914.8	
20	0	0	0	0	0	181.54	0	0	0.7	0.7	11057.78	158.33	0	0	0.15	0.15	2106.68	
21	0	0	0	0	0	468.7	0	0.01	1.33	1.34	54223.14	103.07	0	0	0.08	0.08	667.89	
22	0	0	0	0	0	195.54	0	0	0.63	0.64	10744.89	96.58	0	0	0.18	0.18	1460.3	
23	0	0	0	0	0	186.89	0	0	0.06	0.06	972.05	74.24	0	0	0.09	0.09	596.49	
24	0	0	0	0	0	187.25	0	0	0.62	0.63	10176.16	86.38	0	0	0.13	0.13	992.67	
25	0	0	0	0	0	163.6	0	0	0.67	0.68	9541.21	70.98	0	0	0.11	0.11	656.16	
26	0	0	0	0	0	158.33	0	0	0.61	0.62	8454.17	70.98	0	0	0.08	0.08	459.92	
27	0	0	0	0	0	163.6	0	0	0.7	0.7	9922.86	98.57	0	0	0.11	0.11	945.33	
28	9.49	0	0	0.07	0.07	55.75	163.58	0	0	0.71	0.71	10076.81	50.97	0	0	0.03	0.03	145.33
29	10.23	0	0	0.08	0.08	66.28	160.29	0	0	0.61	0.62	8545.08	96.82	0	0	0.13	0.13	1087.44
30	9.81	0	0	0.07	0.07	59.34	115.5	0	0	0.44	0.44	4390.85	160.24	0	0	0.68	0.68	9483.76
31							129.2	0	0	0.42	0.42	4643.76	176.05	0	0	0.68	0.68	10419.58
TenDaily I	0	0	0	0	0	10.47	0	0	0.06	0.06	58.84	94.82	0	0	0.05	0.05	393.79	
TenDaily II	0	0	0	0	0	28.64	0	0	0.12	0.12	1157.75	96.19	0	0	0.1	0.1	973.12	
TenDaily III	2.95	0	0	0.02	0.02	18.14	190.22	0	0	0.62	0.62	11971.91	98.62	0	0	0.21	0.21	2446.81
Total	June				181.36	July				143856.85	August				40583.91			

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Shakkar at Gadarwara (010215012)

Local River : Shakkar

Division : Narmada Division, Bhopal

Sub-Division : MNSD-I, Hoshangabad

Days	September					October					November							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	362.51	0	0	1	1.01	31634.16	55.93	0	0	0.17	0.17	831.16	8.71	0	0	0.05	0.05	37.63
2	203.89	0	0	0.72	0.72	12683.65	56.5	0	0	0.17	0.17	839.64	8.71	0	0	0.05	0.05	39.88
3	156.18	0	0	0.39	0.39	5276.1	56.47	0	0	0.18	0.18	892.86	7.93	0	0	0.05	0.05	34.25
4	101	0	0	0.25	0.25	2199.05	52.77	0	0	0.21	0.21	957.5	7.98	0	0	0.06	0.06	37.93
5	79.14	0	0	0.2	0.2	1353.86	51.31	0	0	0.18	0.18	820.2	7.99	0	0	0.05	0.05	34.52
6	144.83	0	0	0.31	0.31	3879.18	156.84	0	0	0.28	0.28	3753.62	7.97	0	0	0.05	0.05	34.43
7	97.97	0	0	0.35	0.35	2937.13	187.06	0	0	0.78	0.78	12671.06	7.8	0	0	0.04	0.04	30.33
8	90.87	0	0	0.19	0.19	1515.23	145.94	0	0	0.22	0.22	2811.84	7.82	0	0	0.04	0.04	30.41
9	85.71	0	0	0.18	0.18	1295.92	115.5	0	0	0.17	0.17	1736.38	7.5	0	0	0.04	0.04	27.86
10	76.38	0	0	0.16	0.16	1022.93	127.41	0	0	0.24	0.24	2697.01	7.49	0	0	0.04	0.04	27.83
11	70.23	0	0	0.15	0.15	891.98	120.5	0	0	0.23	0.23	2363.34	7.46	0	0	0.04	0.04	25.76
12	73.11	0	0	0.13	0.13	808.55	105	0	0	0.2	0.2	1796.26	7.14	0	0	0.04	0.04	24.69
13	66.8	0	0	0.12	0.12	686.81	49.24	0	0	0.18	0.18	744.49	7.15	0	0	0.04	0.04	24.71
14	67	0	0	0.16	0.16	897.24	48.36	0	0	0.15	0.15	639.21	7.15	0	0	0.04	0.04	24.71
15	70.89	0	0	0.15	0.15	912.58	19.87	0	0	0.13	0.13	228.3	7.16	0	0	0.04	0.04	23.49
16	65.96	0	0	0.13	0.13	718.05	17	0	0	0.11	0.11	163.04	6.71	0	0	0.04	0.04	22.02
17	63.85	0	0	0.13	0.13	706.13	15.06	0	0	0.12	0.12	162.64	6.72	0	0	0.04	0.04	20.32
18	71	0	0	0.14	0.14	889.49	14.79	0	0	0.12	0.12	146.94	6.54	0	0	0.04	0.04	19.77
19	71.31	0	0	0.15	0.15	899.56	13.91	0	0	0.12	0.12	144.26	6.51	0	0	0.04	0.04	21.37
20	64.43	0	0	0.13	0.13	718.16	13.47	0	0	0.12	0.12	137.32	6.35	0	0	0.04	0.04	21.4
21	74.34	0	0	0.16	0.16	995.63	13.39	0	0	0.12	0.12	133.04	6.18	0	0	0.04	0.04	18.69
22	77.48	0	0	0.17	0.17	1144.76	12.7	0	0	0.11	0.11	118.49	6.14	0	0	0.03	0.03	17.51
23	85.61	0	0	0.18	0.18	1353.63	11.5	0	0	0.1	0.1	99.36	6.12	0	0	0.03	0.03	17.44
24	78.45	0	0	0.15	0.15	1037.07	10.75	0	0	0.08	0.08	74.33	5.93	0	0	0.03	0.03	15.38
25	85.7	0	0	0.16	0.16	1214.33	10.5	0	0	0.07	0.07	63.53	5.94	0	0	0.03	0.03	15.39
26	112.08	0	0	0.03	0.03	309.89	10138	0	0	0.06	0.06	56935.01	5.94	0	0	0.03	0.03	15.39
27	182.03	0	0	0.81	0.82	12865.15	9.82	0	0	0.06	0.06	53.44	5.93	0	0	0.03	0.03	15.37
28	163.22	0	0	0.48	0.48	6797.1	9.51	0	0	0.06	0.06	49.29	5.76	0	0	0.03	0.03	13.94
29	51.44	0	0	0.17	0.17	759.92	9.3	0	0	0.06	0.06	46.58	5.78	0	0	0.03	0.03	13.98
30	49.11	0	0	0.13	0.13	551.63	8.72	0	0	0.06	0.06	42.19	5.76	0	0	0.03	0.03	14.93
31							8.72	0	0	0.06	0.06	41.42						
TenDaily I	139.85	0	0	0.37	0.38	6379.72	100.57	0	0	0.26	0.26	2801.13	7.99	0	0	0.05	0.05	33.51
TenDaily II	68.46	0	0	0.14	0.14	812.85	41.72	0	0	0.15	0.15	652.58	6.89	0	0	0.04	0.04	22.82
TenDaily III	95.95	0	0	0.25	0.25	2702.91	931.17	0	0	0.08	0.08	5241.52	5.95	0	0	0.03	0.03	15.8
Total	September					98954.87	October					92193.75	November					721.33

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Shakkar at Gadarwara (010215012)

Local River : Shakkar

Division : Narmada Division, Bhopal

Sub-Division : MNSD-I, Hoshangabad

Days	December						January						February							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day		
1	6.08					0	0.9					0	0					0		
2	5.9					0	0.9					0	0					0		
3	5.9					0	0.9					0	0					0		
4	5.9					0	0					0	0					0		
5	5.9					0	0					0	0					0		
6	5.7					0	0					0	0					0		
7	5.7					0	0					0	0					0		
8	5.3					0	0					0	0					0		
9	5.05					0	0					0	0					0		
10	4.4					0	0					0	0					0		
11	3.7					0	0					0	0					0		
12	3.2					0	0					0	0					0		
13	2.95					0	0					0	0					0		
14	2.8					0	0					0	0					0		
15	2.8					0	0					0	0					0		
16	2.7					0	0					0	0					0		
17	2.1					0	0					0	0					0		
18	1.65					0	0					0	0					0		
19	1.55					0	0					0	0					0		
20	1.55					0	0					0	0					0		
21	1.45					0	0					0	0					0		
22	1.12					0	0					0	0					0		
23	1.12					0	0					0	0					0		
24	1.05					0	0					0	0					0		
25	1.05					0	0					0	0					0		
26	1					0	0					0	0					0		
27	1					0	0					0	0					0		
28	1					0	0					0	0					0		
29	1					0	0					0								
30	0.95					0	0					0								
31	0.95					0	0					0								
TenDaily I	5.58	0	0	0	0	0	0.27	0	0	0	0	0	0	0	0	0	0	0		
TenDaily II	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
TenDaily III	1.06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	December						0	January						0	February					

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Shakkar at Gadarwara (010215012)

Division : Narmada Division, Bhopal

Local River : Shakkar

Sub-Div : MNSD-I, Hoshangabad

Days	March						April						May					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	0				0	0					0	0						0
2	0				0	0					0	0						0
3	0				0	0					0	0						0
4	0				0	0					0	0						0
5	0				0	0					0	0						0
6	0				0	0					0	0						0
7	0				0	0					0	0						0
8	0				0	0					0	0						0
9	0				0	0					0	0						0
10	0				0	0					0	0						0
11	0				0	0					0	0						0
12	0				0	0					0	0						0
13	0				0	0					0	0						0
14	0				0	0					0	0						0
15	0				0	0					0	0						0
16	0				0	0					0	0						0
17	0				0	0					0	0						0
18	0				0	0					0	0						0
19	0				0	0					0	0						0
20	0				0	0					0	0						0
21	0				0	0					0	0						0
22	0				0	0					0	0						0
23	0				0	0					0	0						0
24	0				0	0					0	0						0
25	0				0	0					0	0						0
26	0				0	0					0	0						0
27	0				0	0					0	0						0
28	0				0	0					0	0						0
29	0				0	0					0	0						0
30	0				0	0					0	0						0
31	0				0						0							0
TenDaily I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TenDaily II	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TenDaily III	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	March				0	April				0								

Annual Sediment Load for period : 1987-2018

Station Name : Shakkar at Gadarwara (010215012)

Division : Narmada Division, Bhopal

Local River : Shakkar

Sub-Division : MNSD-I, Hoshangabad

	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1987-1988	558684.25	0	558684.25	469.4
1988-1989	2457908.18	0	2457908.18	1489.96
1989-1990	1131617.6	0	1131617.6	1056.04
1990-1991	2403872.67	0	2403872.67	2143.98
1991-1992	869282.89	0	869282.89	694.18
1992-1993	1509931.33	0	1509931.33	1102.19
1993-1994	1449469.4	0	1449469.4	1357.02
1994-1995	6473197.33	0	6473197.33	2994.98
1995-1996	1704168.02	0	1704168.02	868.31
1996-1997	343576.43	0	343576.43	642.71
1997-1998	1511294.43	0	1511294.43	1064.63
1998-1999	310187	0	310187	768.64
1999-2000	3802365.72	0	3802365.72	3620.84
2000-2001	524430.17	0	524430.17	701.09
2001-2002	421505.35	0	421505.35	575.17
2002-2003	814769.26	0	814769.26	1193.79
2003-2004	728251.18	0	728251.18	1567.57
2004-2005	157004.08	0	157004.08	637.78
2005-2006	745497.82	160.11	745657.93	1411.11
2006-2007	2654320.91	38.34	2654359.26	2307.03
2007-2008	739549.33	12.56	739561.9	1627.42
2008-2009	115482.48	2.1	115484.58	788.83
2009-2010	5461673.61	78.74	5461752.35	2151.56
2010-2011	629850	19.05	629869.05	1314.56
2012-2013	1228999.91	45.98	1229045.89	2214.79
2015-2016	632929	0	632929	1075
2016-2017	1223466.6	405.03	1223871.63	2542.2
2017-2018	236955.83	0	236955.83	803.74

Annual Sediment Load for period : 2008-2018

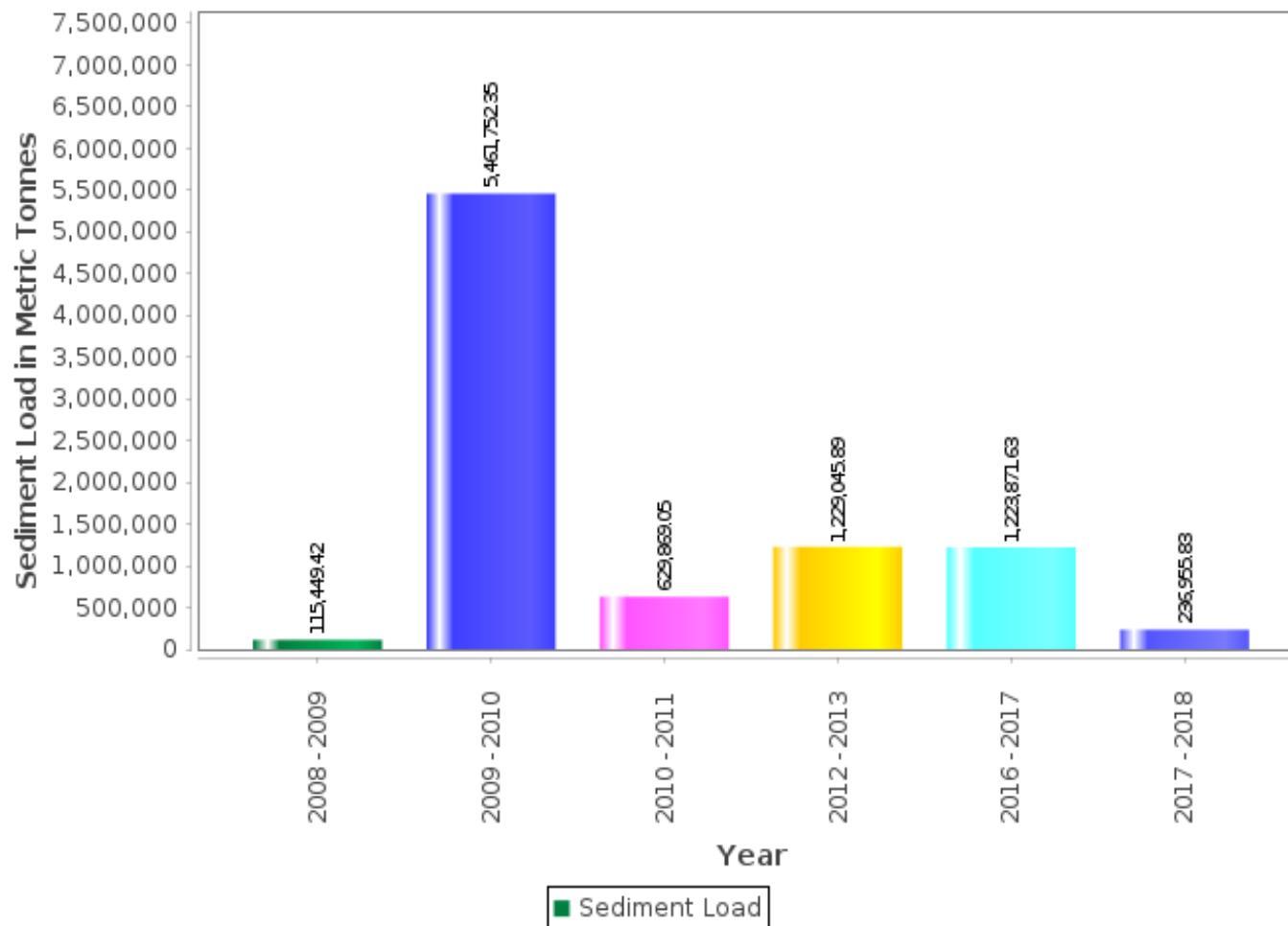
Station Name : Shakkar at Gadarwara (010215012)

Division : Narmada Division, Bhopal

Local River : Shakkar

Sub-Div : MNSD-I, Hoshangabad

Sediment Annual Summary



Seasonal Sediment Load for the period : 2008-2018

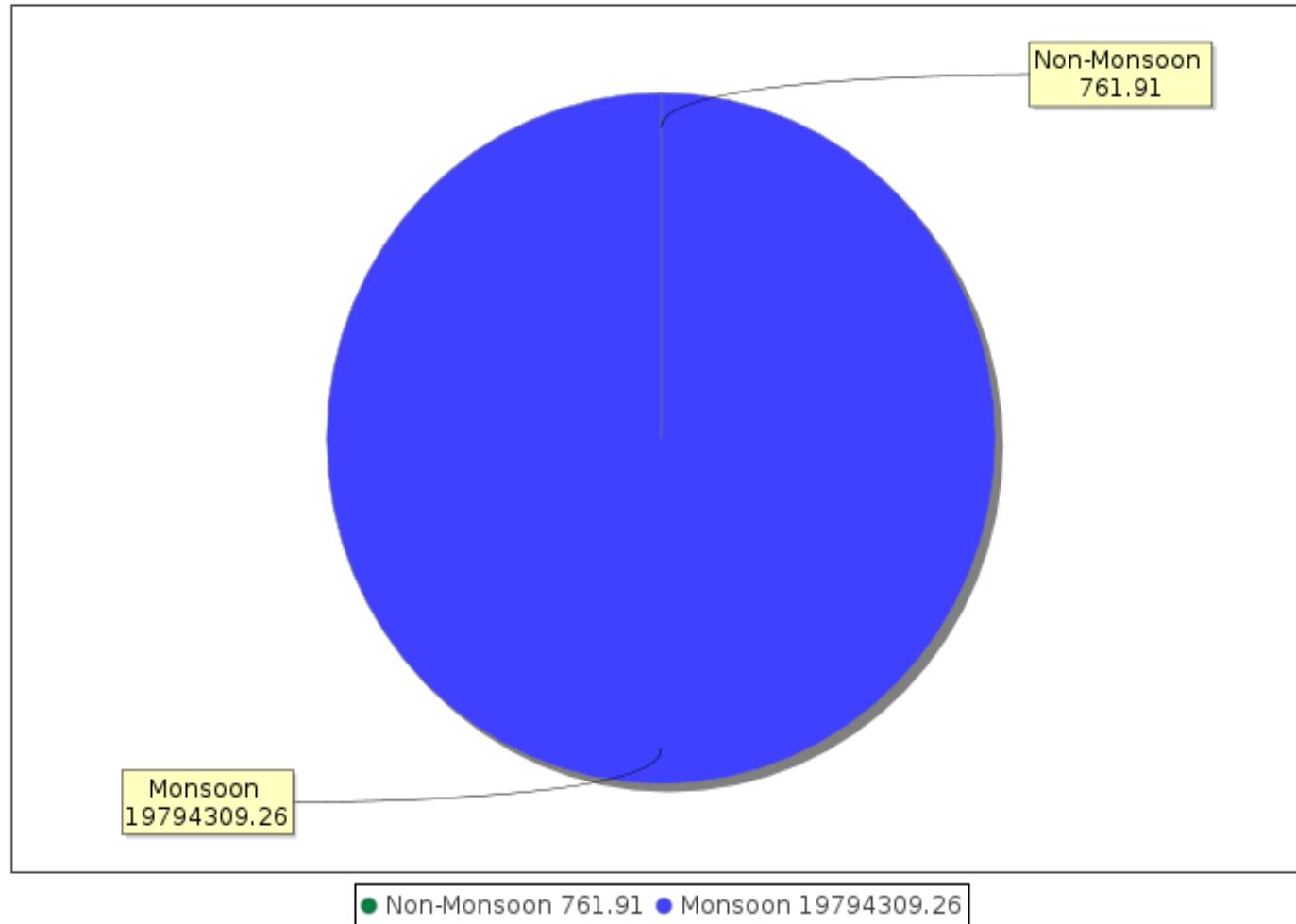
Station Name : Shakkar at Gadarwara (010215012)

Division : Narmada Division, Bhopal

Local River : Shakkar

Sub-Div : MNSD-I, Hoshangabad

Sediment Historical Data



Seasonal Sediment Load for the period : 2017-2018

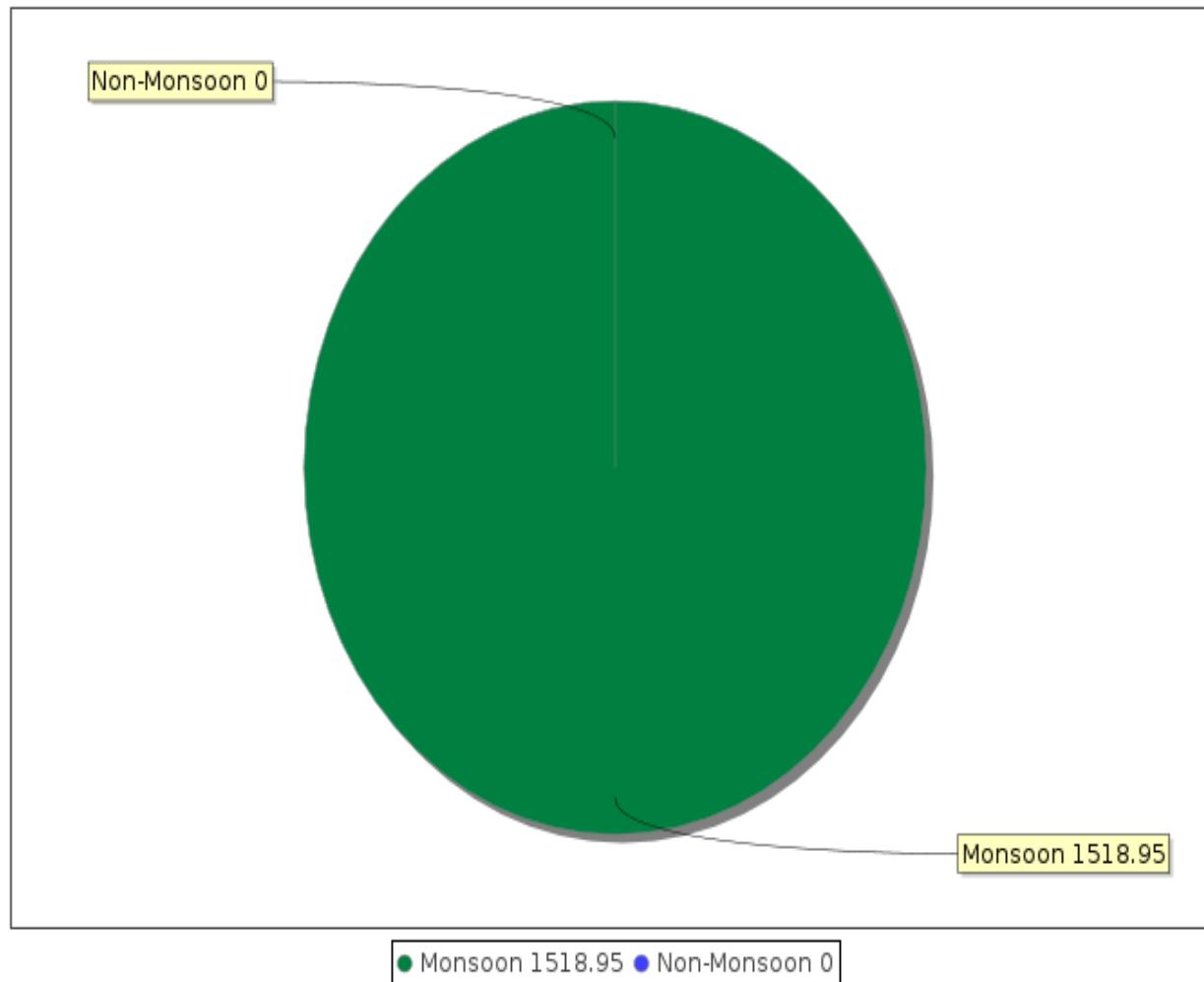
Station Name : Shakkar at Gadarwara (010215012)

Division : Narmada Division, Bhopal

Local River : Shakkar

Sub-Div : MNSD-I, Hoshangabad

Sediment Water Year: 2017-2018



6.8 Narmada at Barman

History Sheet

		Water Year	: 2017-2018
Site	: Narmada at Barman	Code	: 010215011
State	: Madhya Pradesh	District	Narsinghpur
Basin	: Narmada	Independent River	: Narmada
Tributary	:	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: Narmada
Division	: Narmada Division, Bhopal	Sub-Division	: MNSD-I, Hoshangabad
Drainage Area	: 26453 Sq. Km.	Bank	: Right
Latitude	: 23°01'52"	Longitude	: 79°00'56"
Zero of Gauge (m)	: 306 .000(M.S.L.)	09/12/1970	
	Opening Date	Closing Date	
Gauge	: 09/12/1970		
Discharge	: 20/11/1971		
Sediment	: 27/08/1972		
Water Quality	: 01/06/1979		

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Barman (010215011)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Days	June						July						August							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day		
1	34.4	0	0	0.02	0.02	56.47	273.6	0	0	0.06	0.06	1394.7	119	0	0	0.29	0.29	2961.1		
2	56.4	0	0	0.02	0.02	92.59	258	0	0	0.06	0.06	1270.6	96.3	0	0	0.15	0.15	1223.09		
3	61	0	0	0.02	0.02	100.14	245	0	0	0.55	0.55	11684.74	84.9	0	0	0.08	0.08	594.16		
4	59	0	0	0.02	0.02	96.85	186	0	0	0.3	0.3	4837.19	68.5	0	0	0.05	0.05	290		
5	72.6	0	0	0.02	0.02	125.45	166	0	0	0.14	0.14	1950.57	58.9	0	0	0.04	0.04	229		
6	72.3	0	0	0.02	0.02	118.69	141	0	0	0.1	0.1	1157.33	50	0	0	0.03	0.03	146.88		
7	64.34	0	0	0.02	0.02	100.06	135	0	0	0.11	0.11	1236.38	57.4	0	0	0.07	0.07	357.07		
8	60.6	0	0	0.02	0.02	94.25	120	0	0	0.06	0.06	580.61	99.5	0	0	0.02	0.02	140.13		
9	63.3	0	0	0.02	0.02	103.91	115	0	0	0.06	0.06	576.29	160	0	0	0.21	0.21	2889.22		
10	48.6	0	0	0.02	0.02	79.78	125	0	0	0.07	0.07	712.8	123	0	0	0.08	0.08	807.67		
11	56	0	0	0.02	0.02	111.28	120	0	0	0.11	0.11	1150.85	107	0	0	0.09	0.09	795.05		
12	58	0	0	0.02	0.02	95.21	117	0	0	0.08	0.08	808.7	88.3	0	0	0.06	0.06	488.26		
13	59.5	0	0	0.02	0.02	97.68	117	0	0	0.1	0.1	960.34	76	0	0	0.05	0.05	341.45		
14	62.3	0	0	0.02	0.02	96.89	127	0	0	0.05	0.05	592.53	54.6	0	0	0.06	0.06	278.33		
15	63.3	0	0	0.02	0.02	98.44	152	0	0	0.06	0.06	761.7	52	0	0	0.06	0.06	256.09		
16	68.7	0	0	0.02	0.02	106.84	158	0	0	0.06	0.06	846.37	47	0	0	0.07	0.07	292.38		
17	80	0	0	0.02	0.02	131.33	150	0	0	0.06	0.06	751.68	41.6	0	0	0.05	0.05	186.9		
18	60	0	0	0.02	0.02	77.76	122	0	0	0.05	0.05	569.2	74.1	0	0	0.12	0.12	749.06		
19	66.6	0	0	0.02	0.02	109.33	129	0	0	1.54	1.54	17175.37	74.2	0	0	0.16	0.16	1012.92		
20	79	0	0	0.02	0.02	136.51	632.1	0	0	0.78	0.78	42816.94	53	0	0	0.11	0.11	522.03		
21	105	0	0	0.02	0.02	190.51	1008	0	0	2.32	2.32	201703.22	60.4	0	0	0.06	0.06	339.21		
22	74.2	0	0	0.02	0.02	141.04	1017	0	0	1.01	1.01	88571.75	73.6	0	0	0.06	0.06	356.11		
23	65.2	0	0	0.02	0.02	112.67	700	0	0	0.7	0.7	42033.6	58.9	0	0	0.04	0.04	218.83		
24	48.5	0	0	0.02	0.02	83.81	409.7	0	0	0.72	0.72	25451.22	52.9	0	0	0.04	0.04	205.68		
25	74	0	0	0.03	0.03	198.2	380.5	0	0	0.41	0.41	13380.21	70.98	0	0	0.05	0.05	331.15		
26	122	0	0	0.05	0.05	527.04	296.2	0	0	0.35	0.35	9059.45	244	0	0	0.26	0.26	5417.97		
27	150	0	0	0.03	0.03	336.96	196	0	0	0.32	0.32	5385.14	320	0	0	0.34	0.34	9427.97		
28	109	0	0	0.06	0.06	602.73	156	0	0	0.26	0.26	3477.43	215	0	0	0.14	0.14	2619.22		
29	144	0	0	0.08	0.08	1032.65	242	0	0	0.38	0.38	7924.44	206	0	0	0.09	0.09	1673.05		
30	136	0	0	0.08	0.08	963.53	160	0	0	0.25	0.25	3469.82	173	0	0	0.08	0.08	1225.67		
31							156	0	0	0.21	0.21	2776.55	156	0	0	0.06	0.06	822.18		
TenDaily I	59.25	0	0	0.02	0.02	96.82	176.46	0	0	0.15	0.15	2540.12	91.75	0	0	0.1	0.1	963.83		
TenDaily II	65.34	0	0	0.02	0.02	106.13	182.41	0	0	0.29	0.29	6643.37	66.78	0	0	0.08	0.08	492.25		
TenDaily III	102.79	0	0	0.04	0.04	418.91	429.22	0	0	0.63	0.63	36657.53	148.25	0	0	0.11	0.11	2057.91		
Total	June						6218.61	July						495067.71	August					
	37197.81																			

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Barman (010215011)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Days	September					October					November							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	137	0	0	0.05	0.05	580	68	0	0	0.03	0.03	152.76	58.9	0	0	0.03	0.03	167.94
2	152	0	0	0.06	0.06	722.3	65	0	0	0.02	0.02	140.4	60.4	0	0	0.03	0.03	172.21
3	123	0	0	0.04	0.04	478.22	69.8	0	0	0.03	0.03	199.01	69.5	0	0	0.03	0.03	198.16
4	93	0	0	0.06	0.06	490.15	65.1	0	0	0.03	0.03	151.87	63	0	0	0.03	0.03	146.97
5	77.7	0	0	0.05	0.05	342.38	63.6	0	0	0.03	0.03	164.85	60	0	0	0.03	0.03	134.78
6	69.5	0	0	0.06	0.06	330.26	65.4	0	0	0.03	0.03	163.87	58.9	0	0	0.03	0.03	162.85
7	65.4	0	0	0.08	0.08	429.44	67.8	0	0	0.03	0.03	181.6	52.9	0	0	0.03	0.03	146.26
8	58.8	0	0	0.06	0.06	294.66	62	0	0	0.03	0.03	149.99	48.6	0	0	0.03	0.03	130.17
9	57.8	0	0	0.05	0.05	259.68	64.4	0	0	0.04	0.04	233.69	33.8	0	0	0.03	0.03	87.61
10	100	0	0	0.09	0.09	751.68	86.2	0	0	0.06	0.06	424.52	74	0	0	0.03	0.03	198.2
11	118	0	0	0.09	0.09	907.37	74	0	0	0.04	0.04	268.53	91.2	0	0	0.03	0.03	236.39
12	164	0	0	0.19	0.19	2720.56	77.7	0	0	0.04	0.04	241.68	100	0	0	0.03	0.03	285.12
13	201	0	0	0.12	0.12	2136.07	74.1	0	0	0.03	0.03	192.07	118	0	0	0.03	0.03	316.05
14	130	0	0	0.1	0.1	1145.66	75.3	0	0	0.05	0.05	299.27	104	0	0	0.03	0.03	278.55
15	117	0	0	0.07	0.07	687.4	97	0	0	0.05	0.05	419.04	77.7	0	0	0.03	0.03	201.4
16	108.8	0	0	0.04	0.04	413.61	83	0	0	0.05	0.05	380.07	58.9	0	0	0.03	0.03	152.67
17	115	0	0	0.04	0.04	417.31	69.5	0	0	0.06	0.06	348.28	48.7	0	0	0.03	0.03	134.65
18	86.3	0	0	0.05	0.05	372.82	73.6	0	0	0.05	0.05	337.03	40.2	0	0	0.03	0.03	107.67
19	218	0	0	0.78	0.78	14785.63	92	0	0	0.04	0.04	317.95	40	0	0	0.03	0.03	103.68
20	150	0	0	0.35	0.35	4574.88	76.1	0	0	0.04	0.04	295.88	38	0	0	0.03	0.03	98.5
21	201	0	0	0.15	0.15	2570.23	83.4	0	0	0.04	0.04	252.2	25.7	0	0	0.03	0.03	66.61
22	244	0	0	0.11	0.11	2297.89	98	0	0	0.05	0.05	397.96	19.4	0	0	0.03	0.03	50.28
23	320	0	0	0.32	0.32	8847.36	82	0	0	0.04	0.04	311.73	17.2	0	0	0.03	0.03	43.1
24	280	0	0	0.28	0.28	6773.76	68.5	0	0	0.05	0.05	278.16	26.3	0	0	0.03	0.03	68.17
25	207	0	0	0.11	0.11	2003.1	58.8	0	0	0.04	0.04	208.29	34.3	0	0	0.03	0.03	85.94
26	164	0	0	0.08	0.08	1161.91	74.2	0	0	0.04	0.04	256.44	40	0	0	0.04	0.04	120.96
27	137	0	0	0.08	0.08	887.76	98.3	0	0	0.04	0.04	339.72	21.8	0	0	0.03	0.03	54.62
28	120	0	0	0.06	0.06	622.08	93	0	0	0.04	0.04	313.37	22.7	0	0	0.03	0.03	54.92
29	105	0	0	0.04	0.04	390.1	52	0	0	0.02	0.02	98.84	27.8	0	0	0.03	0.03	64.85
30	77	0	0	0.03	0.03	192.93	92	0	0	0.04	0.04	294.11	35.5	0	0	0.03	0.03	85.88
31						72.3	0	0	0.04	0.04	231.13							
TenDaily I	93.42	0	0	0.06	0.06	467.88	67.73	0	0	0.03	0.03	196.26	58	0	0	0.03	0.03	154.51
TenDaily II	140.81	0	0	0.18	0.18	2816.13	79.23	0	0	0.05	0.05	309.98	71.67	0	0	0.03	0.03	191.47
TenDaily III	185.5	0	0	0.13	0.13	2574.71	79.32	0	0	0.04	0.04	271.09	27.07	0	0	0.03	0.03	69.53
Total	September				58587.22	October				8044.31	November				4155.16			

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Barman (010215011)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Days	December						January						February					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	150	0	0	0.13	0.13	1645.92	35.5	0	0	0.02	0.02	61.34	66.7	0	0	0.02	0.02	115.26
2	154	0	0	0.13	0.13	1729.73	31.1	0	0	0.02	0.02	48.37	49.2	0	0	0.01	0.01	59.51
3	149	0	0	0.13	0.13	1622.07	35.1	0	0	0.02	0.02	60.65	58.4	0	0	0.02	0.02	85.78
4	144	0	0	0.02	0.02	286.16	46.4	0	0	0.03	0.03	104.23	48	0	0	0.01	0.01	58.06
5	97.5	0	0	0.01	0.01	117.94	38.1	0	0	0.02	0.02	69.13	35.5	0	0	0.02	0.02	52.14
6	151	0	0	0.02	0.02	273.97	27.2	0	0	0.02	0.02	35.25	31.2	0	0	0.02	0.02	48.52
7	165	0	0	0.02	0.02	327.89	29.2	0	0	0.02	0.02	40.37	21.8	0	0	0.01	0.01	22.6
8	136	0	0	0.02	0.02	223.26	47.1	0	0	0.02	0.02	69.18	22.7	0	0	0.01	0.01	25.5
9	132	0	0	0.02	0.02	205.29	63.7	0	0	0.03	0.03	148.6	17.2	0	0	0.01	0.01	14.86
10	116	0	0	0.02	0.02	160.36	42.8	0	0	0.02	0.02	66.56	24.8	0	0	0.01	0.01	30
11	108	0	0	0.02	0.02	195.96	40.6	0	0	0.02	0.02	59.63	20	0	0	0.01	0.01	19.01
12	214	0	0	0.04	0.04	739.58	40.3	0	0	0.02	0.02	59.19	25.6	0	0	0.02	0.02	37.6
13	218	0	0	0.04	0.04	753.41	59.5	0	0	0.02	0.02	128.52	31.1	0	0	0.02	0.02	64.49
14	187	0	0	0.04	0.04	565.49	74.2	0	0	0.03	0.03	205.15	35	0	0	0.03	0.03	81.65
15	155	0	0	0.03	0.03	388.37	77.7	0	0	0.02	0.02	114.13	26.4	0	0	0.02	0.02	47.9
16	121	0	0	0.02	0.02	230	76.2	0	0	0.02	0.02	131.67	26.3	0	0	0.02	0.02	47.72
17	112	0	0	0.02	0.02	203.21	79.9	0	0	0.02	0.02	144.97	18.7	0	0	0.02	0.02	24.24
18	106	0	0	0.02	0.02	183.17	76.9	0	0	0.02	0.02	132.88	17	0	0	0.01	0.01	19.09
19	168	0	0	0.03	0.03	464.49	62.4	0	0	0.02	0.02	86.26	23.3	0	0	0.02	0.02	32.21
20	219	0	0	0.04	0.04	775.79	63.1	0	0	0.02	0.02	87.23	27.2	0	0	0.02	0.02	54.05
21	200	0	0	0.04	0.04	656.64	60	0	0	0.02	0.02	77.76	48.7	0	0	0.04	0.04	176.72
22	182	0	0	0.03	0.03	534.64	58.8	0	0	0.02	0.02	86.37	40.3	0	0	0.04	0.04	121.87
23	168	0	0	0.03	0.03	464.49	65.1	0	0	0.02	0.02	123.74	40.2	0	0	0.04	0.04	121.56
24	155	0	0	0.03	0.03	388.37	71.3	0	0	0.02	0.02	147.85	35	0	0	0.03	0.03	90.72
25	144	0	0	0.03	0.03	335.92	92	0	0	0.03	0.03	246.41	29	0	0	0.02	0.02	62.64
26	127	0	0	0.02	0.02	241.4	68	0	0	0.02	0.02	135.13	25.7	0	0	0.02	0.02	35.53
27	126	0	0	0.02	0.02	217.73	76.2	0	0	0.03	0.03	171.18	22.7	0	0	0.02	0.02	35.3
28	119	0	0	0.02	0.02	195.35	70	0	0	0.02	0.02	145.15	19.4	0	0	0.02	0.02	25.14
29	114	0	0	0.02	0.02	177.29	68.3	0	0	0.02	0.02	100.32						
30	143	0	0	0.02	0.02	284.17	67.7	0	0	0.02	0.02	116.99						
31	165	0	0	0.03	0.03	370.66	74.2	0	0	0.02	0.02	141.04						
TenDaily I	139.45	0	0	0.05	0.05	659.26	39.62	0	0	0.02	0.02	70.37	37.55	0	0	0.01	0.01	51.22
TenDaily II	160.8	0	0	0.03	0.03	449.95	65.08	0	0	0.02	0.02	114.96	25.06	0	0	0.02	0.02	42.8
TenDaily III	149.36	0	0	0.03	0.03	351.51	70.15	0	0	0.02	0.02	135.63	32.62	0	0	0.03	0.03	83.69
Total	December					14958.69	January					3345.25	February					1609.68

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Barman (010215011)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Days	March						April						May					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	23.2	0	0	0.02	0.02	36.08	23.2	0	0	0.01	0.01	28.06	58.9	0	0	0.01	0.01	66.16
2	23	0	0	0.02	0.02	35.77	23.3	0	0	0.01	0.01	28.18	60.6	0	0	0.01	0.01	52.36
3	23.9	0	0	0.02	0.02	39.23	23	0	0	0.01	0.01	19.87	62	0	0	0.01	0.01	58.92
4	23	0	0	0.02	0.02	35.77	37.2	0	0	0.02	0.02	51.43	68.7	0	0	0.01	0.01	71.23
5	24	0	0	0.02	0.02	31.1	27.8	0	0	0.01	0.01	28.82	73.2	0	0	0.01	0.01	75.89
6	27.4	0	0	0.02	0.02	54.45	40.3	0	0	0.02	0.02	59.19	65	0	0	0.01	0.01	61.78
7	26.3	0	0	0.02	0.02	49.99	44.5	0	0	0.02	0.02	73.05	82.8	0	0	0.01	0.01	93
8	26.4	0	0	0.02	0.02	50.18	21	0	0	0.01	0.01	16.33	78.7	0	0	0.01	0.01	68
9	23.3	0	0	0.02	0.02	38.25	17.2	0	0	0.01	0.01	20.81	92	0	0	0.01	0.01	87.44
10	19.4	0	0	0.02	0.02	26.82	18.7	0	0	0.01	0.01	17.77	84.6	0	0	0.01	0.01	73.09
11	19	0	0	0.02	0.02	26.27	22.7	0	0	0.01	0.01	25.5	89.9	0	0	0.01	0.01	85.44
12	35	0	0	0.02	0.02	45.36	25.6	0	0	0.02	0.02	33.18	94	0	0	0.01	0.01	89.34
13	38	0	0	0.02	0.02	72.23	29.1	0	0	0.02	0.02	42.74	100	0	0	0.01	0.01	103.68
14	31.9	0	0	0.02	0.02	49.61	29	0	0	0.02	0.02	42.6	82.4	0	0	0.01	0.01	92.55
15	48.6	0	0	0.03	0.03	117.57	30	0	0	0.02	0.02	44.06	85	0	0	0.01	0.01	73.44
16	52.9	0	0	0.03	0.03	137.12	21.2	0	0	0.01	0.01	23.81	86.3	0	0	0.01	0.01	74.56
17	57	0	0	0.03	0.03	162.52	22.7	0	0	0.01	0.01	21.57	93.1	0	0	0.01	0.01	88.48
18	60	0	0	0.03	0.03	176.26	31.2	0	0	0.02	0.02	40.44	80.2	0	0	0.01	0.01	69.29
19	61.5	0	0	0.02	0.02	85.02	35.9	0	0	0.02	0.02	52.73	83	0	0	0.01	0.01	71.71
20	59	0	0	0.02	0.02	96.85	38	0	0	0.02	0.02	59.1	100	0	0	0.01	0.01	103.68
21	49.2	0	0	0.02	0.02	68.01	20	0	0	0.01	0.01	15.55	105	0	0	0.01	0.01	117.94
22	47.2	0	0	0.02	0.02	61.17	20	0	0	0.01	0.01	15.55	99.2	0	0	0.01	0.01	77.14
23	46.4	0	0	0.02	0.02	60.13	23.4	0	0	0.01	0.01	26.28	108	0	0	0.01	0.01	93.31
24	43.5	0	0	0.01	0.01	52.62	35.9	0	0	0.02	0.02	46.53	97.9	0	0	0.01	0.01	76.13
25	36	0	0	0.01	0.01	37.32	53.7	0	0	0.02	0.02	106.71	103	0	0	0.01	0.01	88.99
26	34	0	0	0.02	0.02	47	55.5	0	0	0.02	0.02	115.08	82.9	0	0	0.01	0.01	57.3
27	30	0	0	0.02	0.02	46.66	49.9	0	0	0.02	0.02	90.54	80	0	0	0.01	0.01	55.3
28	29	0	0	0.02	0.02	42.6	48.2	0	0	0.02	0.02	87.45	93.2	0	0	0.01	0.01	104.68
29	21	0	0	0.01	0.01	21.77	40	0	0	0.02	0.02	58.75	101	0	0	0.01	0.01	95.99
30	20	0	0	0.01	0.01	20.74	38	0	0	0.02	0.02	52.53	102	0	0	0.01	0.01	96.94
31	24.8	0	0	0.02	0.02	32.14							74.3	0	0	0.01	0.01	51.36
TenDaily I	23.99	0	0	0.02	0.02	39.76	27.62	0	0	0.01	0.01	34.35	72.65	0	0	0.01	0.01	70.79
TenDaily II	46.29	0	0	0.02	0.02	96.88	28.54	0	0	0.02	0.02	38.57	89.39	0	0	0.01	0.01	85.22
TenDaily III	34.65	0	0	0.01	0.01	44.56	38.46	0	0	0.02	0.02	61.5	95.14	0	0	0.01	0.01	83.19
Total	March					1856.62	April					1344.23						2475.12

Sediment Data Year Book 2017-18

Annual Sediment Load for period : 1987-2018

Station Name : Narmada at Barman (010215011) Division : Narmada Division, Bhopal
 Local River : Narmada Sub-Division: MNSD-I, Hoshangabad

Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1987-1988	4381713.26	0	4381713.26
1988-1989	8267376.12	0	8267376.12
1989-1990	1419707.17	0	1419707.17
1990-1991	20391794.48	0	20391794.48
1991-1992	16865568.65	0	16865568.65
1992-1993	9827989.92	0	9827989.92
1993-1994	7409792.47	0	7409792.47
1994-1995	60655648.9	0	60655648.9
1995-1996	13038553.8	0	13038553.8
1996-1997	733589.54	0	733589.54
1997-1998	6005110.89	0	6005110.89
1998-1999	1253537.41	0	1253537.41
1999-2000	12801168.91	0	12801168.91
2000-2001	1591161.9	0	1591161.9
2001-2002	2438049.9	0	2438049.9
2002-2003	8769326.44	0	8769326.44
2003-2004	9592151.93	0	9592151.93
2004-2005	2583377.56	0	2583377.56
2005-2006	15179014.84	79829.98	15258844.82
2006-2007	3190311.39	40541.34	3230852.72
2007-2008	1070163.99	77034.66	1147198.65
2008-2009	2081124.18	58625.3	2139749.48
2009-2010	18820922.04	78878	18899800.04
2010-2011	1663068.17	160331.96	1823400.13
2012-2013	1576090.85	35014.79	1611105.63
2013-2014	20335632	77300	20412932
2014-2015	4226014	60963	4286977
2015-2016	748211.06	9753.75	757964.81
2016-2017	8001661.45	39094.35	8040755.8
2017-2018	609270.82	25589.58	634860.4

Annual Sediment Load for period : 2008-2018

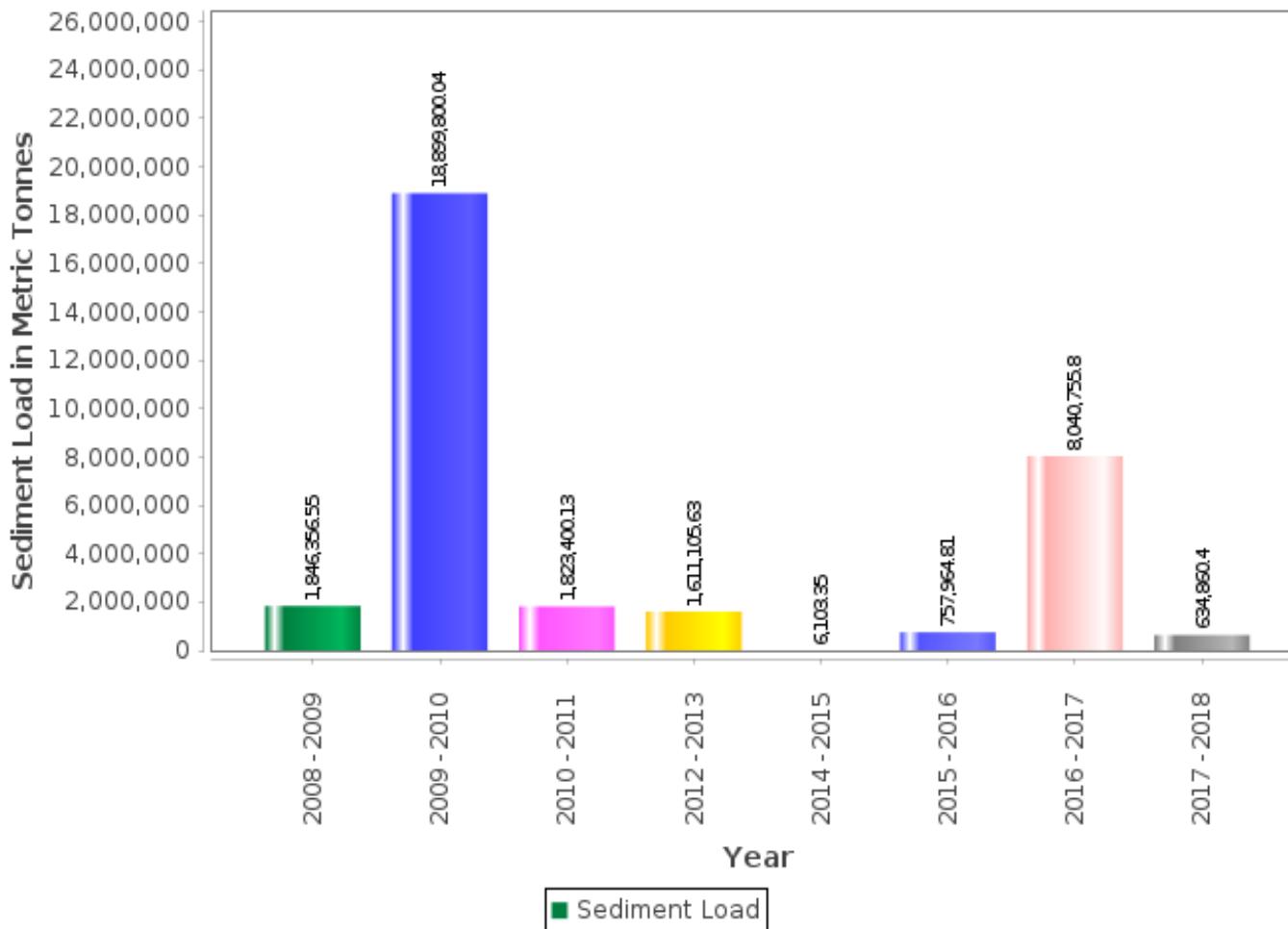
Station Name : Narmada at Barman (010215011)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad

Sediment Annual Summary



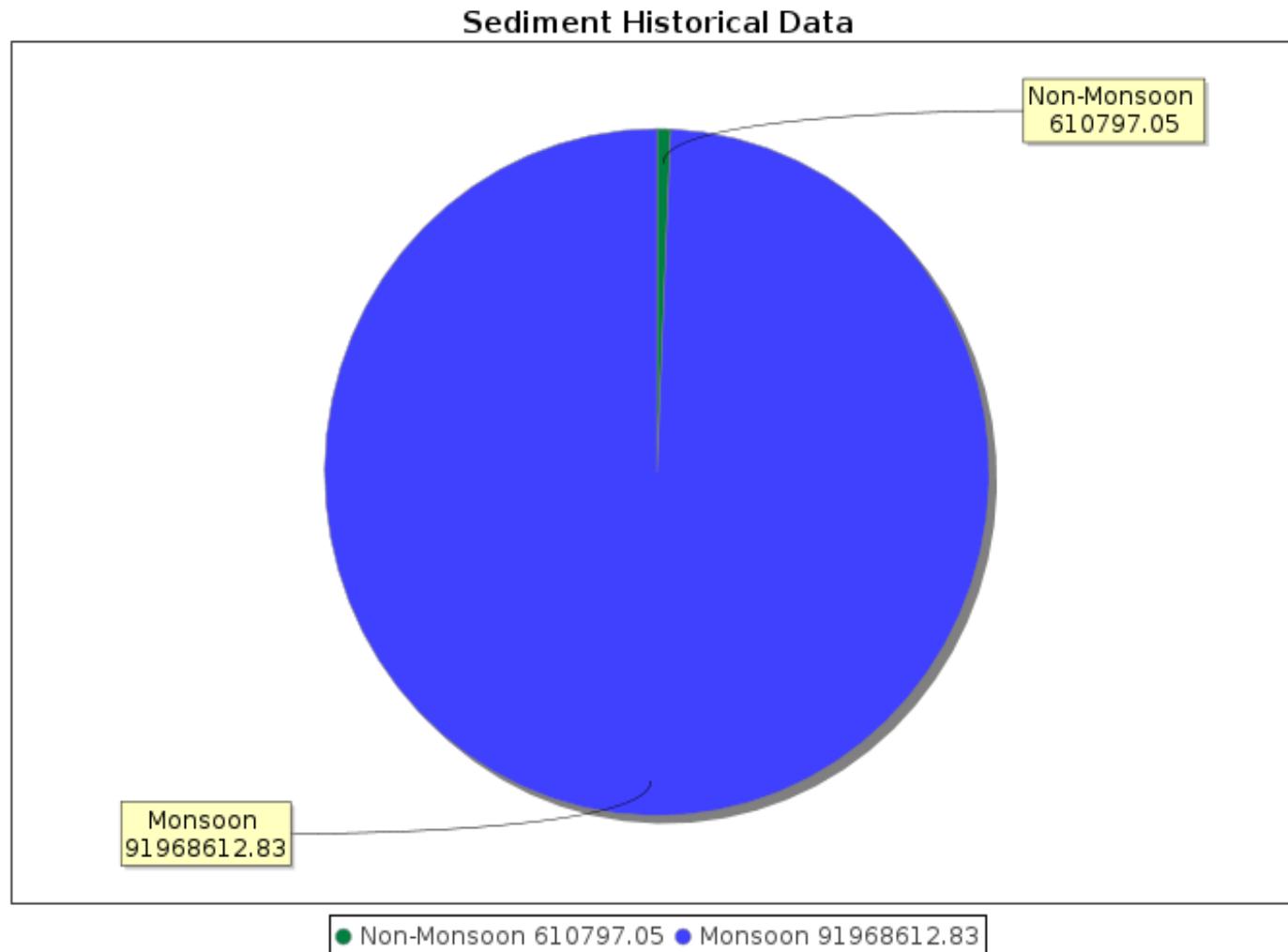
Seasonal Sediment Load for period : 2008-2018

Station Name : Narmada at Barman (010215011)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD-I, Hoshangabad



Seasonal Sediment Load for period : 2017-2018

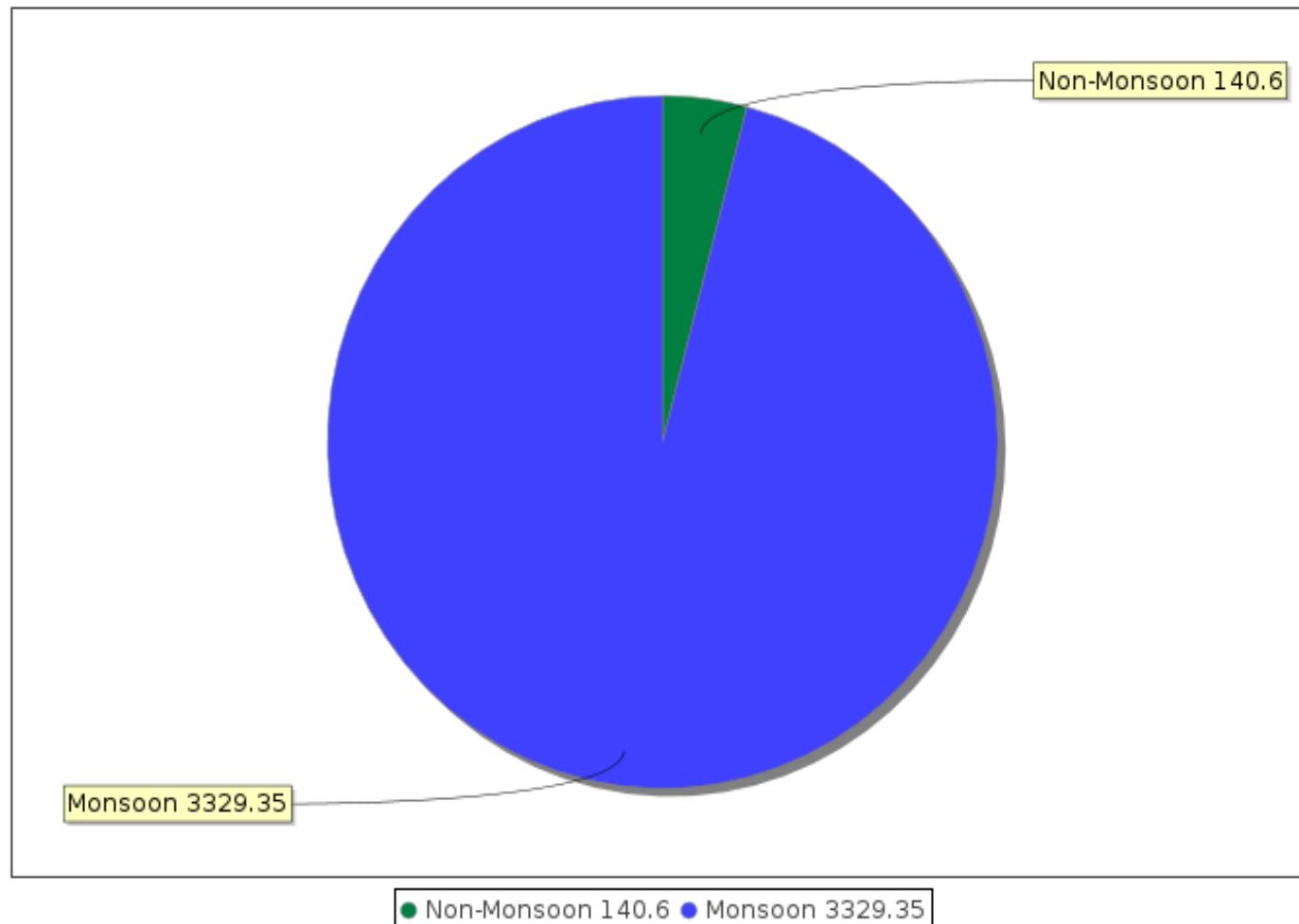
Station Name : Narmada at Barman (010215011)

Local River : Narmada

Division : Narmada Division, Bhopal

Sub-Division : MNSD-I, Hoshangabad

Sediment Water Year: 2017-2018



6.9 Banjar at Bamni**History sheet**

		Water Year : 2017-2018
Site	: Banjar at Bamni	Code : CWC SITE
State	: Madhya Pradesh	District : Mandla
Basin	: Narmada	Independent River : Narmada
Tributary	: Banjar	Sub Tributary :
Sub-Sub Tributary	:	Local River : Banjar
Division	: Narmada Division, Bhopal	Sub-Division : UNSD, Jabalpur
Drainage Area	: 1864 Sq. Km.	Bank : Left
Latitude	: 22°29'06"	Longitude : 80°22'58"
Zero of Gauge (m)	: 440 .000(M.S.L.)	20/06/1999
	Opening Date	Closing Date
Gauge	: 20/06/1999	
Discharge	: 30/11/1999	
Sediment	: 01/07/2002	
Water Quality	: 01/07/2002	

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Banjar at Bamni
Local River : Banjar

Division : Narmada Division, Bhopal
Sub-Division : UNSD, Jabalpur

Days	June						July						August					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	0	0	0	0	0	0	0	0	0	0	0	12.01	0	0	0.09	0.09	91.31	
2	0	0	0	0	0	0	0	0	0	0	0	11.62	0	0	0.08	0.08	83.33	
3	0	0	0	0	0	41.37	0	0	0.12	0.12	432.5	12.93	0	0	0.09	0.09	98.31	
4	0	0	0	0	0	29.05	0	0	0.12	0.12	288.64	8.11	0	0	0.08	0.08	58.14	
5	0	0	0	0	0	19.94	0	0	0.1	0.1	177.45	8.45	0	0	0.08	0.08	62.03	
6	0	0	0	0	0	23.66	0	0	0.1	0.1	214.64	13.61	0	1	0.13	1.13	1327.6	
7	0	0	0	0	0	19.01	0	0	0.1	0.1	160.96	13.9	0	0	0.1	0.1	114.09	
8	0	0	0	0	0	17.72	0	0	0.1	0.1	145.45	15.92	0	0	0.1	0.1	132.05	
9	0	0	0	0	0	16.7	0	0	0.09	0.09	135.63	19.37	0	0	0.11	0.11	185.77	
10	0	0	0	0	0	15.75	0	0	0.09	0.09	122.47	55.31	0	0	0.13	0.13	606.91	
11	0	0	0	0	0	24.14	0	0	0.11	0.11	229.43	66.47	0	0	0.14	0.14	786.79	
12	0	0	0	0	0	23.37	0	0	0.11	0.11	222.11	50.05	0	0	0.12	0.12	536.22	
13	0	0	0	0	0	31.18	0	0	0.12	0.12	320.58	44.1	0	0	0.11	0.11	403.89	
14	0	0	0	0	0	27.3	0	0	0.11	0.11	266.54	42.47	0	0	0.12	0.12	451.34	
15	0	0	0	0	0	23.15	0	0	0.11	0.11	220.02	40.07	0	0	0.11	0.11	391.21	
16	0	0	0	0	0	25.1	0	0	0.12	0.12	258.07	37.66	0	0	0.12	0.12	390.46	
17	0	0	0	0	0	63.81	0	0	0.14	0.14	744.28	36.71	0	0	0.12	0.12	380.61	
18	0	0	0	0	0	52.51	0	0	0.12	0.12	567.11	31.58	0	0	0.12	0.12	324.69	
19	0	0	0	0	0	44.39	0	0	0.12	0.12	467.91	32.15	0	0	0.12	0.12	330.55	
20	0	0	0	0	0	50.14	0	0	0.12	0.12	537.18	38.4	0	0	0.01	0.01	47.44	
21	0	0	0	0	0	123.9	0.02	0.02	0.15	0.19	2023.24	36.86	0	0	0.12	0.12	382.16	
22	0	0	0	0	0	66.18	0	0	0.14	0.14	777.64	32.11	0	0	0.12	0.12	330.14	
23	0	0	0	0	0	50	0	0	0.11	0.11	457.92	29.29	0	0	0.12	0.12	293.56	
24	0	0	0	0	0	45.08	0	0	0.12	0.12	479.07	25.32	0	0	0.11	0.11	249.39	
25	0	0	0	0	0	41.03	0	0	0.12	0.12	428.94	42.1	0	0	0.18	0.18	665.65	
26	0	0	0	0	0	37.85	0	0	0.12	0.12	392.43	43.17	0	0	0.12	0.12	458.78	
27	0	0	0	0	0	33.19	0	0	0.11	0.11	321.17	41.4	0	0	0.12	0.12	411.35	
28	0	0	0	0	0	31.27	0	0	0.11	0.11	302.59	47.05	0	0	0.12	0.12	500.01	
29	0	0	0	0	0	15.14	0	0	0.09	0.09	117.73	57.84	0	0	0.13	0.13	639.66	
30	0	0	0	0	0	14.06	0	0	0.08	0.08	102.04	83.41	0.02	0.02	0.14	0.18	1275.57	
31						12.98	0	0	0.09	0.09	99.81	62.7	0	0	0.14	0.14	736.75	
TenDaily I	0	0	0	0	0	18.32	0	0	0.08	0.08	167.77	17.12	0	0.1	0.1	0.2	275.95	
TenDaily II	0	0	0	0	0	36.51	0	0	0.12	0.12	383.32	41.97	0	0	0.11	0.11	404.32	
TenDaily III	0	0	0	0	0	42.79	0	0	0.11	0.12	500.24	45.57	0	0	0.13	0.13	540.28	
Total	June					0	July					11013.55	August					12745.75

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Banjar at Bamni

Division : Narmada Division, Bhopal

Local River : Banjar

Sub-Division : UNSD, Jabalpur

Days	September						October						November					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	56.01	0	0	0.13	0.13	614.59	36.8	0	0	0.12	0.12	365.64	5.78	0	0	0.03	0.03	15.49
2	55	0	0	0.11	0.11	503.71	33.3	0	0	0.1	0.1	299.22	5.71	0	0	0.03	0.03	14.81
3	49.1	0	0	0.09	0.09	398.77	32.4	0	0	0.08	0.08	221.15	5.67	0	0	0.03	0.03	14.69
4	42.19	0	0	0.12	0.12	444.72	31	0	0	0.08	0.08	208.92	5.59	0	0	0.03	0.03	14.48
5	39.25	0	0	0.12	0.12	410.34	30	0	0	0.08	0.08	196.99	5.42	0	0	0.03	0.03	13.59
6	36.9	0	0	0.12	0.12	382.58	28.8	0	0	0.07	0.07	176.67	5.34	0	0	0.03	0.03	12.92
7	50.38	0	0	0.12	0.12	539.75	26.65	0	0	0.07	0.07	161.18	5.14	0	0	0.03	0.03	11.99
8	41.96	0	0	0.12	0.12	442.29	25.4	0	0	0.07	0.07	147.04	5.08	0	0	0.03	0.03	11.84
9	39.36	0	0	0.12	0.12	411.49	24.93	0	0	0.07	0.07	150.78	4.99	0	0	0.03	0.03	11.21
10	58.1	0	0	0.18	0.18	888.51	26.05	0	0	0.07	0.07	162.05	4.95	0	0	0.03	0.03	11.12
11	44.6	0	0	0.12	0.12	473.97	23.87	0	0	0.07	0.07	140.24	4.84	0	0	0.03	0.03	10.87
12	41.21	0	0	0.12	0.12	430.83	22.22	0	0	0.07	0.07	126.71	4.6	0	0	0.02	0.02	9.54
13	39.37	0	0	0.12	0.12	411.59	19.17	0	0	0.06	0.06	106	4.3	0	0	0.02	0.02	8.54
14	37.7	0	0	0.12	0.12	390.87	18.4	0	0	0.06	0.06	100.15	3.95	0	0	0.02	0.02	7.17
15	35.77	0	0	0.12	0.12	364.68	17.05	0	0	0.06	0.06	82.49	3.55	0	0	0.02	0.02	5.83
16	32.04	0	0	0.12	0.12	326.65	15.7	0	0	0.06	0.06	82.75	3.15	0	0	0.02	0.02	4.63
17	30.99	0	0	0.12	0.12	310.59	14.08	0	0	0.06	0.06	72.99	2.75	0	0	0.02	0.02	3.56
18	29.94	0	0	0.12	0.12	300.07	13.09	0	0	0.06	0.06	67.86	2.4	0	0	0.01	0.01	2.7
19	29.15	0	0	0.12	0.12	292.15	12.46	0	0	0.06	0.06	61.36	2.2	0	0	0.01	0.01	2.28
20	37.86	0	0	0.12	0.12	392.53	11.82	0	0	0.06	0.06	59.23	2	0	0	0.01	0.01	1.9
21	53.25	0	0	0.13	0.13	579.7	11.32	0	0	0.06	0.06	56.73	1.8	0	0	0.01	0.01	1.56
22	49.56	0	0	0.12	0.12	526.68	11	0	0	0.06	0.06	55.12	1.65	0	0	0.01	0.01	1.28
23	55.2	0	0	0.13	0.13	605.7	9.6	0	0	0.05	0.05	42.32	1.65	0	0	0.01	0.01	1.28
24	51.48	0	0	0.12	0.12	538.19	7.96	0	0	0.04	0.04	28.9	1.6	0	0	0.01	0.01	1.11
25	47.75	0	0	0.12	0.12	511.57	7	0	0	0.04	0.04	22.39	1.58	0	0	0.01	0.01	1.09
26	45.24	0	0	0.12	0.12	480.77	6.79	0	0	0.04	0.04	21.12	1.57	0	0	0.01	0.01	1.09
27	42.16	0	0	0.12	0.12	444.4	6.66	0	0	0.04	0.04	20.13	1.57	0	0	0.01	0.01	1.08
28	40.27	0	0	0.12	0.12	424.48	6.57	0	0	0.04	0.04	19.88	1.54	0	0	0.01	0.01	1.06
29	38.53	0	0	0.12	0.12	399.48	6.25	0	0	0.03	0.03	17.82	1.53	0	0	0.01	0.01	1.05
30	37	0	0	0.12	0.12	367.63	5.94	0	0	0.03	0.03	15.92	1.52	0	0	0.01	0.01	1.05
31							5.94	0	0	0.03	0.03							
TenDaily I	46.82	0	0	0.12	0.12	503.67	29.53	0	0	0.08	0.08	208.96	5.37	0	0	0.03	0.03	13.21
TenDaily II	35.86	0	0	0.12	0.12	369.39	16.79	0	0	0.06	0.06	89.98	3.37	0	0	0.02	0.02	5.7
TenDaily III	46.04	0	0	0.12	0.12	487.86	7.73	0	0	0.04	0.04	28.75	1.6	0	0	0.01	0.01	1.17
Total	September					13609.3	October					3305.68	November					200.82

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Banjar at Bamni
Local River : Banjar

Division : Narmada Division, Bhopal
Sub-Division : UNSD, Jabalpur

Days	December						January						February					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	1.49					0	0.3					0	0					0
2	1.47					0	0.29					0	0					0
3	1.44					0	0.28					0	0					0
4	1.42					0	0.27					0	0					0
5	1.33					0	0.26					0	0					0
6	1.23					0	0.24					0	0					0
7	1.13					0	0					0	0					0
8	1.08					0	0					0	0					0
9	1.04					0	0					0	0					0
10	0.89					0	0					0	0					0
11	0.73					0	0					0	0					0
12	0.71					0	0					0	0					0
13	0.68					0	0					0	0					0
14	0.69					0	0					0	0					0
15	0.67					0	0					0	0					0
16	0.66					0	0					0	0					0
17	0.65					0	0					0	0					0
18	0.64					0	0					0	0					0
19	0.63					0	0					0	0					0
20	0.59					0	0					0	0					0
21	0.56					0	0					0	0					0
22	0.52					0	0					0	0					0
23	0.49					0	0					0	0					0
24	0.46					0	0					0	0					0
25	0.43					0	0					0	0					0
26	0.4					0	0					0	0					0
27	0.38					0	0					0	0					0
28	0.35					0	0					0	0					0
29	0.34					0	0					0						
30	0.33					0	0					0						
31	0.32					0	0					0						
TenDaily I	1.25	0	0	0	0	0	0.17	0	0	0	0	0	0	0	0	0	0	0
TenDaily II	0.66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TenDaily III	0.41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	December						0	January						0	February			

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Banjar at Bamni
Local River : Banjar

Division : Narmada Division, Bhopal
Sub-Division : UNSD, Jabalpur

Days	March					April					May						
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l
1	0				0	0					0	0				0	0
2	0				0	0					0	0				0	0
3	0				0	0					0	0				0	0
4	0				0	0					0	0				0	0
5	0				0	0					0	0				0	0
6	0				0	0					0	0				0	0
7	0				0	0					0	0				0	0
8	0				0	0					0	0				0	0
9	0				0	0					0	0				0	0
10	0				0	0					0	0				0	0
11	0				0	0					0	0				0	0
12	0				0	0					0	0				0	0
13	0				0	0					0	0				0	0
14	0				0	0					0	0				0	0
15	0				0	0					0	0				0	0
16	0				0	0					0	0				0	0
17	0				0	0					0	0				0	0
18	0				0	0					0	0				0	0
19	0				0	0					0	0				0	0
20	0				0	0					0	0				0	0
21	0				0	0					0	0				0	0
22	0				0	0					0	0				0	0
23	0				0	0					0	0				0	0
24	0				0	0					0	0				0	0
25	0				0	0					0	0				0	0
26	0				0	0					0	0				0	0
27	0				0	0					0	0				0	0
28	0				0	0					0	0				0	0
29	0				0	0					0	0				0	0
30	0				0	0					0	0				0	0
31	0				0						0					0	0
TenDaily I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TenDaily II	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TenDaily III	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	March				0	April				0	May				0		

Sediment Data Year Book 2017-18

Annual Sediment Load for period : 2002-2018

Station Name : Banjar at Bamni

Division : Narmada Division, Bhopal

Local River : Banjar

Sub-Division : UNSD, Jabalpur

Year	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
2002-2003	368398	0	368398	607
2003-2004	782914	0	782914	1401
2004-2005	323458	0	323458	742
2005-2006	1639533	0	1639533	1467
2006-2007	324825	0	324825	697
2007-2008	171622	133	171755	568
2008-2009	208836	0	208836	472
2009-2010	137064	103	137167	272
2010-2011	186273	0	186273	477
2011-2012	219514	1406	220919	745
2012-2013	84554	1107	85661	532
2013-2014	209201	733	209934	1376
2014-2015	131573	3093	134666	878
2015-2016	73949	821	74771	527
2016-0017	117094.36	451.582	117545.944	888.597
2017-2018	40875.1	0	40875.1	349.93

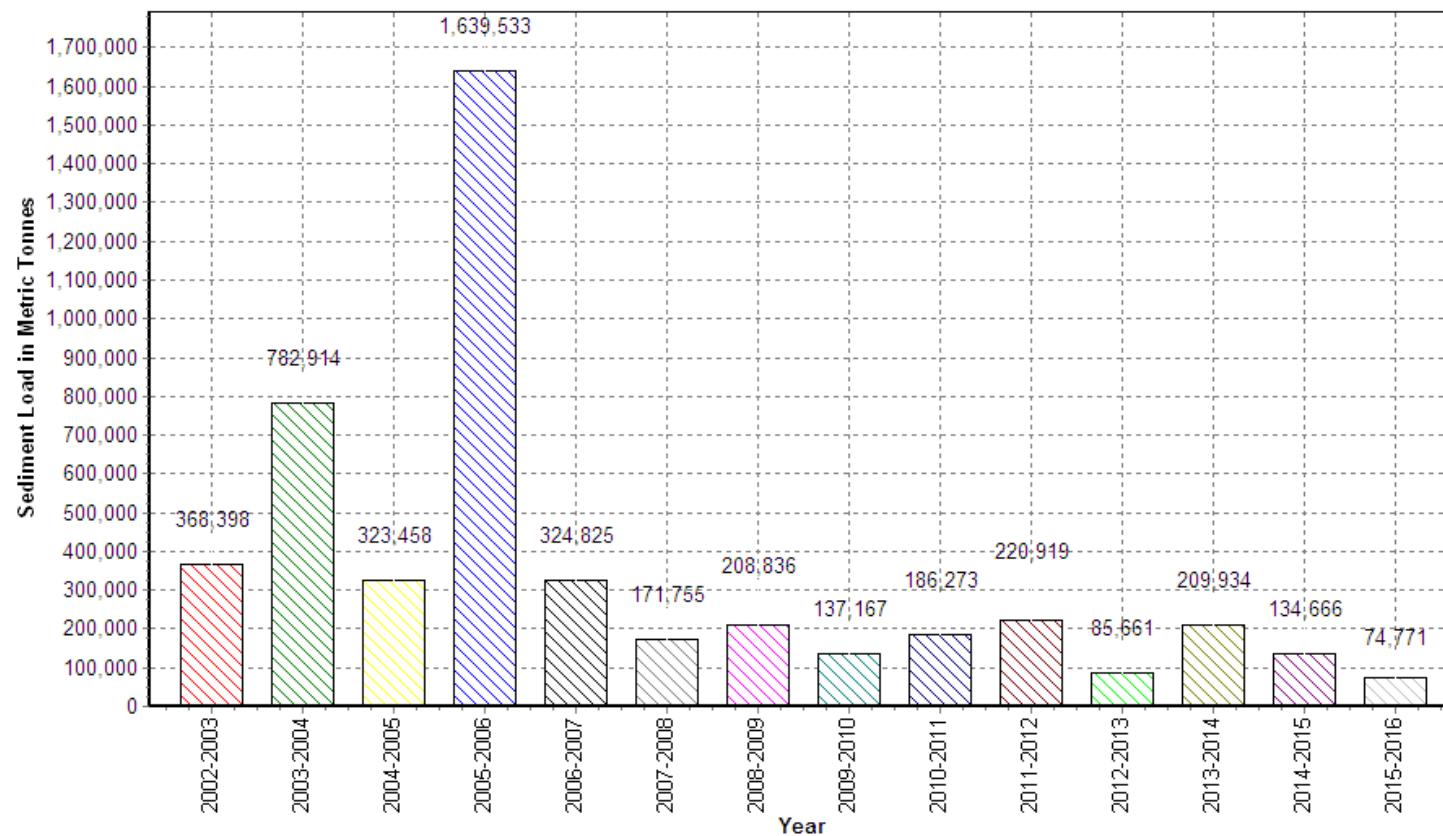
Annual Sediment Load for period : 2002-2016

Station Name : Banjar at Bamni

Division : Narmada Division, Bhopal

Local River : Banjar

Sub-Division : UNSD, Jabalpur



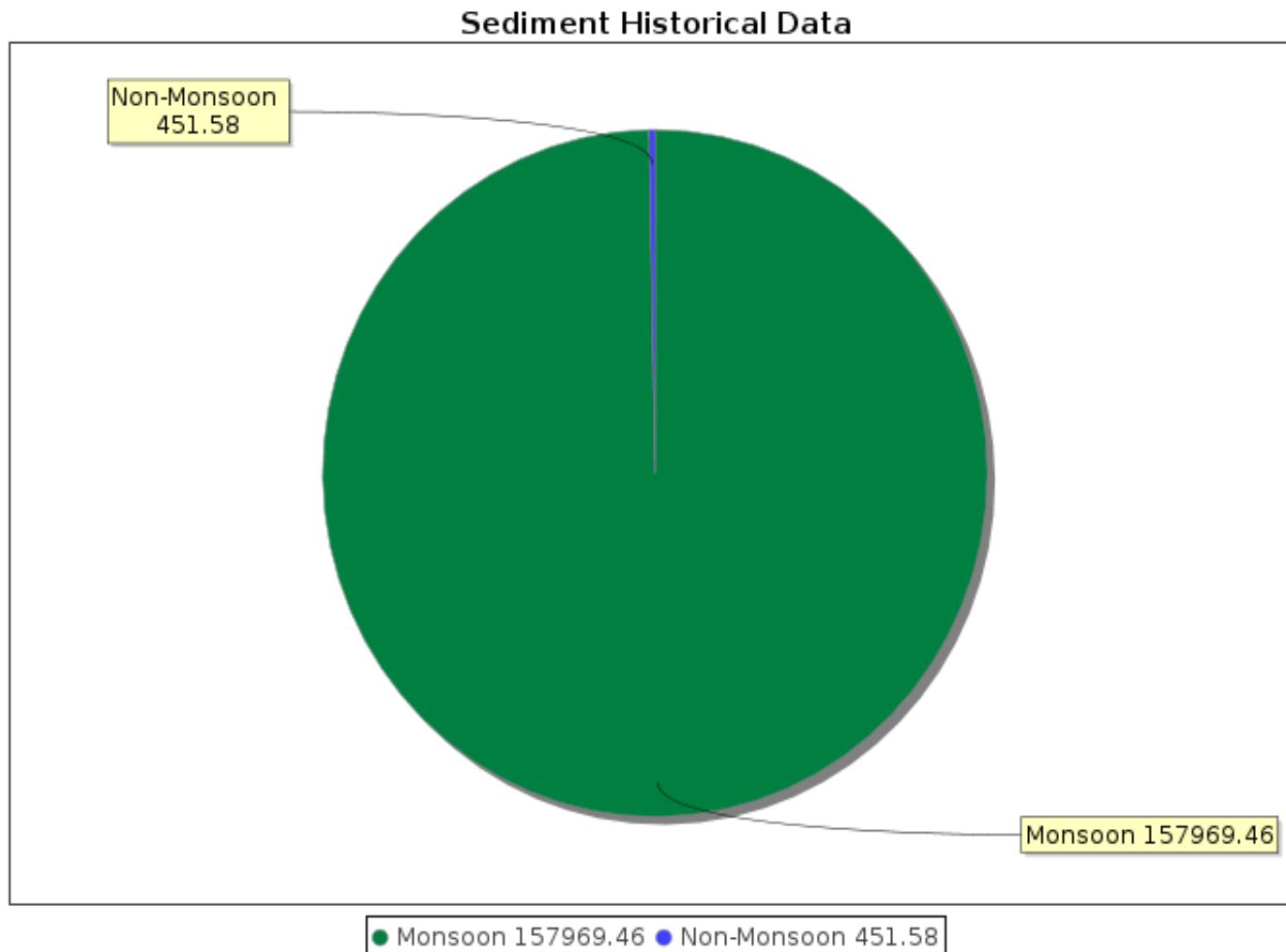
Seasonal Sediment Load for period : 2002-2018

Station Name : Banjar at Bamni

Division : Narmada Division, Bhopal

Local River : Banjar

Sub-Division : UNSD, Jabalpur



Seasonal Sediment Load for period : 2017-2018

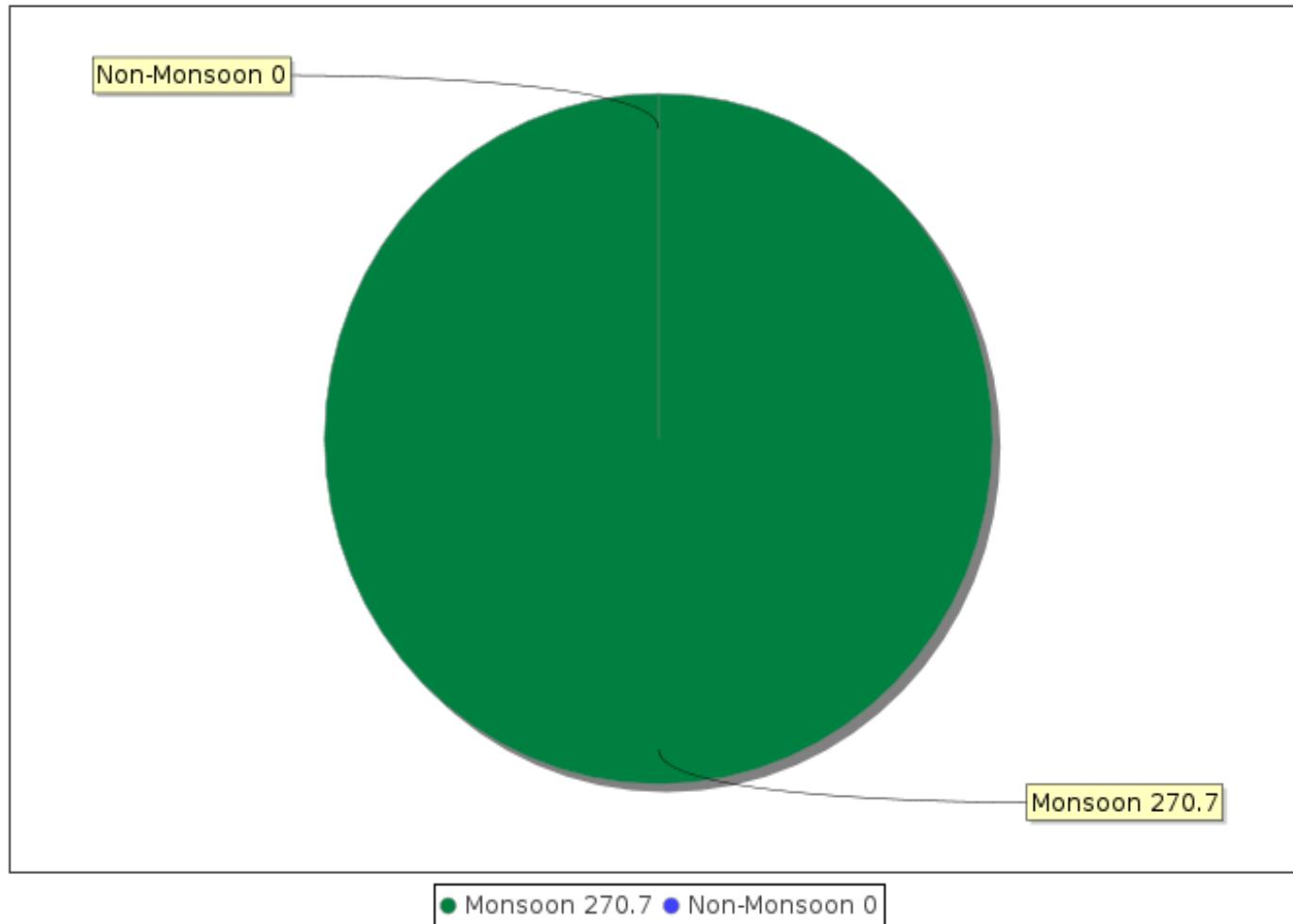
Station Name : Banjar at Bamni

Division : Narmada Division, Bhopal

Local River : Banjar

Sub-Division : UNSD, Jabalpur

Sediment Water Year: 2017-2018



6.10 Burhner at Mohgaon

History Sheet

		Water Year	: 2017-2018
Site	: Burhner at Mohgaon	Code	: 010215004
State	: Madhya Pradesh	District	Mandla
Basin	: Narmada	Independent River	: Narmada
Tributary	: Burhner	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: Burhner
Division	: Narmada Division, Bhopal	Sub-Division	: UNSD, Jabalpur
Drainage Area	: 3919 Sq. Km.	Bank	: Right
Latitude	: 22°45'57"	Longitude	: 80°37'22"
Zero of Gauge (m)	: 447 .000(M.S.L.)	13/01/1977	
	Opening Date	Closing Date	
Gauge	: 13/01/1977		
Discharge	: 13/01/1977		
Sediment	: 27/08/1992		
Water Quality	: 16/09/1986		

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Burhner at Mohgaon (010215004)

Division : Narmada Division, Bhopal

Local River : Burhner

Sub-Division : UNSD, Jabalpur

Days	June						July						August					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	0	0	0	0	0	17.85	0	0	0.23	0.23	353.17	34.13	0	0	0.12	0.12	345.01	
2	0	0	0	0	0	24	0	0	0.31	0.31	640.74	31.07	0	0	0.13	0.13	354.35	
3	0	0	0	0	0	32.55	0	0	0.16	0.16	461.22	30.18	0	0	0.13	0.13	344.2	
4	0	0	0	0	0	87.66	0	0	0.57	0.57	4301.93	27.73	0	0	0.06	0.06	131.77	
5	0	0	0	0	0	97.2	0	0	0.51	0.51	4299.82	28.22	0	0	0.06	0.06	134.1	
6	0	0	0	0	0	39.53	0	0	0.43	0.43	1478.86	27	0	0	0.06	0.06	132.97	
7	0	0	0	0	0	25.92	0	0	0.2	0.2	438.94	31.38	0	0	0.33	0.33	902.84	
8	0	0	0	0	0	22.65	0	0	0.25	0.25	489.24	318	0	0	0.7	0.7	19177.69	
9	0	0	0	0	0	16	0	0	0.18	0.18	244.68	630.7	0.01	0.1	2.11	2.22	120918.81	
10	0	0	0	0	0	18.37	0	0	0.44	0.44	699.94	661.9	0.01	0.1	1.17	1.28	73200.84	
11	0	0	0	0	0	18.05	0	0	0.11	0.11	169.99	427.7	0	0	0.66	0.66	24536.98	
12	0	0	0	0	0	84.01	0	0	0.31	0.31	2279.16	191.9	0	0	0.33	0.33	5421.71	
13	0	0	0	0	0	64.73	0	0	0.25	0.25	1375.8	125	0	0	0.22	0.22	2322	
14	0	0	0	0	0	35.77	0	0	0.3	0.3	927.16	90.25	0	0	0.2	0.2	1582.91	
15	0	0	0	0	0	33.62	0	0	0.09	0.09	273.05	85	0	0	0.19	0.19	1380.67	
16	0	0	0	0	0	1424.6	0.06	0.25	3.18	3.48	428460.42	72.22	0	0	0.09	0.09	549.1	
17	0	0	0	0	0	375.5	0	0.02	1.64	1.66	53790.83	54.51	0	0	0.07	0.07	315.55	
18	0	0	0	0	0	1010.9	0.01	0.03	2.35	2.4	209183.52	59.16	0	0	0.06	0.06	296.46	
19	0	0	0	0	0	336.6	0	0.01	1.38	1.39	40540.64	126.4	0	0	0.05	0.05	524.21	
20	0	0	0	0	0	549.6	0	0.01	1.38	1.39	66194.7	72	0	0	0.03	0.03	174.18	
21	0	0	0	0	0	570.6	0.01	1.03	1.95	2.99	147357.22	63.07	0	0	0.11	0.11	599.42	
22	0	0	0	0	0	206.8	0	0	0.93	0.93	16652.53	37.24	0	0	0.08	0.08	244.53	
23	0	0	0	0	0	120	0	0	0.54	0.54	5598.72	35.55	0	0	0.23	0.23	709.52	
24	0	0	0	0	0	127.1	0	0	0.27	0.27	2997.93	32.49	0	0	0.07	0.07	199.31	
25	0	0	0	0	0	105.2	0	0	0.25	0.25	2272.32	114	0	0	0.25	0.25	2423	
26	0	0	0	0	0	88.69	0	0	0.21	0.21	1601.53	91.78	0	0	0.3	0.3	2378.94	
27	3.32	0	0	0.09	0.09	26.39	81.19	0	0.18	0.18	1283.71	124	0	0	0.4	0.4	4339.01	
28	17.51	0	0	0.14	0.14	204.25	124.5	0	0	0.25	0.25	2667.69	113	0	0	0.32	0.32	3173.04
29	24.46	0	0	0.21	0.21	452.27	90.32	0	0	0.24	0.24	1872.88	127.5	0	0	0.34	0.34	3734.42
30	35.94	0	0	0.58	0.58	1810.59	75	0	0	0.2	0.2	1289.52	462	0	0	0.76	0.76	30177.1
31						45.13	0	0	0.23	0.23	908.52	169	0	0	0.67	0.67	9797.67	
TenDaily I	0	0	0	0	0	0	38.17	0	0.33	0.33	1340.86	182.03	0	0.02	0.49	0.51	21564.26	
TenDaily II	0	0	0	0	0	0	393.34	0.01	0.03	1.1	1.14	80319.53	130.41	0	0.19	0.19	3710.38	
TenDaily III	8.12	0	0	0.1	0.1	249.35	148.59	0	0.09	0.48	0.57	16772.96	124.51	0	0.32	0.32	5252.36	
Total	June				2493.51	July				1001106.37	August				310522.33			

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Burhner at Mohgaon (010215004)

Division : Narmada Division, Bhopal

Local River : Burhner

Sub-Division : UNSD, Jabalpur

Days	September						October						November					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	207.09	0	0	0.08	0.08	1377.73	35.5	0	0	0.03	0.03	85.88	10.2	0	0	0.04	0.04	34.37
2	196	0	0	0.08	0.08	1287.01	34.5	0	0	0.03	0.03	83.46	10.12	0	0	0.04	0.04	34.1
3	90	0	0	0.04	0.04	272.16	33.75	0	0	0.03	0.03	75.82	9.91	0	0	0.04	0.04	33.4
4	74.18	0	0	0.07	0.07	455.05	30.98	0	0	0.02	0.02	66.92	9	0	0	0.04	0.04	27.99
5	55.65	0	0	0.07	0.07	341.38	28.81	0	0	0.02	0.02	62.23	9	0	0	0.04	0.04	27.99
6	40.93	0	0	0.1	0.1	350.1	35.17	0	0	0.03	0.03	91.16	9.75	0	0	0.04	0.04	32
7	45.12	0	0	0.07	0.07	288.48	40.07	0	0	0.07	0.07	245.81	9.72	0	0	0.04	0.04	31.9
8	41.28	0	0	0.07	0.07	249.66	37	0	0	0.06	0.06	207.79	9.65	0	0	0.04	0.04	31.67
9	54.31	0	0	0.08	0.08	394.16	45.96	0	0	0.08	0.08	297.82	9.57	0	0	0.04	0.04	31.42
10	76	0	0	0.11	0.11	735.44	37.95	0	0	0.1	0.1	327.89	9.38	0	0	0.04	0.04	30.8
11	112.7	0	0	0.38	0.38	3719.64	54.05	0	0	0.12	0.12	555.72	9.3	0	0	0.04	0.04	30.55
12	85.86	0	0	0.18	0.18	1320.46	35.37	0	0	0.11	0.11	333.1	9.3	0	0	0.04	0.04	32.14
13	76.59	0	0	0.15	0.15	966.14	32.38	0	0	0.1	0.1	268.57	8.95	0	0	0.04	0.04	29.37
14	79.01	0	0	0.2	0.2	1344.81	28.99	0	0	0.08	0.08	200.38	8.82	0	0	0.04	0.04	28.97
15	74.71	0	0	0.16	0.16	1032.79	24	0	0	0.07	0.07	136.86	8.32	0	0	0.04	0.04	27.3
16	78.03	0	0	0.24	0.24	1591.06	22.55	0	0	0.07	0.07	136.38	8.25	0	0	0.04	0.04	27.1
17	89	0	0	0.27	0.27	2106.95	20.13	0	0	0.06	0.06	100.88	8.16	0	0	0.04	0.04	26.78
18	91.23	0	0	0.25	0.25	1994.21	18.24	0	0	0.05	0.05	78.8	7.7	0	0	0.04	0.04	24.61
19	205.8	0	0	0.59	0.59	10490.86	17	0	0	0.05	0.05	69.03	7.6	0	0	0.04	0.04	25.61
20	317.5	0	0	1.06	1.06	29023.06	14.6	0	0	0.04	0.04	56.76	7.39	0	0	0.04	0.04	24.27
21	537	0	0.07	1.21	1.29	59851.87	13.59	0	0	0.04	0.04	51.66	7.32	0	0	0.04	0.04	23.39
22	318.6	0	0	0.6	0.6	16598.81	12.5	0	0	0.04	0.04	39.96	7.09	0	0	0.04	0.04	23.29
23	179.7	0	0	0.18	0.18	2779.17	12.33	0	0	0.04	0.04	45.81	6.92	0	0	0.04	0.04	22.13
24	114	0	0	0.11	0.11	1122.85	11.84	0	0	0.04	0.04	42.96	6.81	0	0	0.04	0.04	21.76
25	86.7	0	0	0.06	0.06	456.94	11.59	0	0	0.04	0.04	41.06	6.75	0	0	0.04	0.04	20.98
26	77.44	0	0	0.03	0.03	180.65	11.44	0	0	0.04	0.04	40.53	6.6	0	0	0.04	0.04	22.24
27	58.81	0	0	0.03	0.03	172.76	11.2	0	0	0.04	0.04	38.71	6.6	0	0	0.04	0.04	20.53
28	45.34	0	0	0.03	0.03	121.44	10.82	0	0	0.04	0.04	37.39	6.42	0	0	0.04	0.04	19.97
29	37.54	0	0	0.03	0.03	90.82	10.8	0	0	0.04	0.04	3.73	6.4	0	0	0.04	0.04	19.36
30	36	0	0	0.03	0.03	90.2	10.68	0	0	0.04	0.04	35.99	6.18	0	0	0.04	0.04	18.68
31							10.55	0	0	0.04	0.04	35.55						
TenDaily I	88.06	0	0	0.08	0.08	575.12	35.97	0	0	0.05	0.05	154.48	9.63	0	0	0.04	0.04	31.56
TenDaily II	121.04	0	0	0.35	0.35	5359	26.73	0	0	0.07	0.07	193.65	8.38	0	0	0.04	0.04	27.67
TenDaily III	149.11	0	0.01	0.23	0.24	8146.55	11.58	0	0	0.04	0.04	37.58	6.71	0	0	0.04	0.04	21.23
Total	September					140806.67	October					3894.61	November					804.68

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Burhner at Mohgaon (010215004)

Division : Narmada Division, Bhopal

Local River : Burhner

Sub-Division : UNSD, Jabalpur

Days	December					January					February							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	6.02	0	0	0.03	0.03	17.7	3.73	0	0	0.03	0.03	10.63	2.5	0	0	0.03	0.03	6.27
2	6	0	0	0.03	0.03	15.55	3.71	0	0	0.03	0.03	9.63	2.5	0	0	0.03	0.03	6.47
3	5.9	0	0	0.03	0.03	14.78	3.62	0	0	0.03	0.03	9.08	2.49	0	0	0.03	0.03	6.45
4	5.9	0	0	0.03	0.03	16.81	3.89	0	0	0.03	0.03	10.41	2.3	0	0	0.03	0.03	5.56
5	8.84	0	0	0.04	0.04	34.37	3.83	0	0	0.03	0.03	10.26	2.27	0	0	0.03	0.03	5.7
6	5.79	0	0	0.03	0.03	14.5	3.79	0	0	0.03	0.03	9.83	2.25	0	0	0.03	0.03	5.83
7	5.6	0	0	0.03	0.03	13.55	3.7	0	0	0.03	0.03	9.59	2.2	0	0	0.03	0.03	5.52
8	5.54	0	0	0.03	0.03	13.4	3.7	0	0	0.03	0.03	9.6	2.17	0	0	0.03	0.03	5.43
9	5.4	0	0	0.03	0.03	12.6	3.61	0	0	0.03	0.03	9.04	2.11	0	0	0.03	0.03	5.11
10	5.4	0	0	0.03	0.03	12.6	3.45	0	0	0.03	0.03	8.34	2	0	0	0.03	0.03	4.5
11	5.29	0	0	0.03	0.03	14.62	3.41	0	0	0.03	0.03	8.83	2	0	0	0.03	0.03	4.49
12	5.22	0	0	0.03	0.03	13.52	3.38	0	0	0.03	0.03	8.77	1.99	0	0	0.03	0.03	4.98
13	5.09	0	0	0.03	0.03	12.75	3.14	0	0	0.03	0.03	7.59	1.96	0	0	0.03	0.03	5.08
14	5.04	0	0	0.03	0.03	12.62	3.1	0	0	0.03	0.03	8.04	2.45	0	0	0.04	0.04	7.83
15	4.9	0	0	0.03	0.03	11.85	3.1	0	0	0.03	0.03	8.03	2.78	0	0	0.04	0.04	10.07
16	4.86	0	0	0.03	0.03	11.76	3.05	0	0	0.03	0.03	7.9	2.62	0	0	0.04	0.04	8.83
17	4.85	0	0	0.03	0.03	11.73	2.95	0	0	0.03	0.03	7.39	2.5	0	0	0.04	0.04	8.2
18	4.8	0	0	0.03	0.03	11.2	2.92	0	0	0.03	0.03	7.06	2.4	0	0	0.04	0.04	7.46
19	4.58	0	0	0.03	0.03	12.68	2.84	0	0	0.03	0.03	6.62	2.31	0	0	0.03	0.03	5.78
20	4.43	0	0	0.03	0.03	11.1	2.83	0	0	0.03	0.03	6.61	3.23	0	0	0.04	0.04	11.73
21	4.3	0	0	0.03	0.03	11.53	2.8	0	0	0.03	0.03	6.53	2.84	0	0	0.03	0.03	6.86
22	4.16	0	0	0.03	0.03	10.42	2.76	0	0	0.03	0.03	6.91	2.66	0	0	0.03	0.03	6.44
23	4.11	0	0	0.03	0.03	10.29	2.74	0	0	0.03	0.03	7.09	2.56	0	0	0.03	0.03	5.96
24	4.08	0	0	0.03	0.03	9.87	2.72	0	0	0.03	0.03	7.06	2.43	0	0	0.03	0.03	5.45
25	4	0	0	0.03	0.03	9.68	2.64	0	0	0.03	0.03	6.62	2.4	0	0	0.02	0.02	5.18
26	3.95	0	0	0.03	0.03	9.56	2.64	0	0	0.03	0.03	6.61	2.3	0	0	0.02	0.02	4.77
27	3.93	0	0	0.03	0.03	10.52	2.64	0	0	0.03	0.03	6.62	2.3	0	0	0.02	0.02	4.77
28	3.88	0	0	0.03	0.03	10.07	2.6	0	0	0.03	0.03	6.29	2.3	0	0	0.02	0.02	4.77
29	3.86	0	0	0.03	0.03	9.67	2.58	0	0	0.03	0.03	6.7						
30	3.8	0	0	0.03	0.03	9.52	2.56	0	0	0.03	0.03	6.65						
31	3.75	0	0	0.03	0.03	9.4	2.55	0	0	0.03	0.03	6.6						
TenDaily I	6.04	0	0	0.03	0.03	16.59	3.7	0	0	0.03	0.03	9.64	2.28	0	0	0.03	0.03	5.68
TenDaily II	4.91	0	0	0.03	0.03	12.38	3.07	0	0	0.03	0.03	7.68	2.42	0	0	0.03	0.03	7.44
TenDaily III	3.98	0	0	0.03	0.03	10.05	2.66	0	0	0.03	0.03	6.7	2.47	0	0	0.03	0.03	5.53
Total	December				400.21	January				246.92	February					175.5		

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Burhner at Mohgaon (010215004)

Division : Narmada Division, Bhopal

Local River : Burhner

Sub-Division : UNSD, Jabalpur

Days	March						April						May						
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	
1	2.25	0	0	0.02	0.02	4.67	0.93	0	0	0.02	0.02	2.01	0.6					0	
2	2.25	0	0	0.02	0.02	4.67	0.83	0	0	0.03	0.03	1.94	0.57					0	
3	2.25	0	0	0.02	0.02	4.67	0.8	0	0	0.03	0.03	2	0.51					0	
4	2.2	0	0	0.02	0.02	4.37	0.73	0	0	0.03	0.03	1.63	0.46					0	
5	2.17	0	0	0.03	0.03	5.43	0.67	0	0	0.02	0.02	1.39	0.41					0	
6	1.94	0	0	0.03	0.03	4.52	0.57	0	0	0.02	0.02	1.03	0.4					0	
7	1.88	0	0	0.03	0.03	4.22	0.46	0	0	0.02	0.02	0.67	0.37					0	
8	1.87	0	0	0.03	0.03	4.21	0.45	0	0	0.02	0.02	0.62	0.34					0	
9	1.78	0	0	0.02	0.02	3.84	0.42	0	0	0.02	0.02	0.55	0.3					0	
10	1.68	0	0	0.02	0.02	3.33	0.41	0	0	0.02	0.02	0.53	0.26					0	
11	1.55	0	0	0.02	0.02	2.81	0.4	0	0	0.01	0.01	0.49	0.23					0	
12	1.49	0	0	0.03	0.03	3.6	0.34	0	0	0.01	0.01	0.36	0.22					0	
13	1.36	0	0	0.03	0.03	3.18	0.34	0	0	0.01	0.01	0.35	0.2					0	
14	1.18	0	0	0.02	0.02	2.44	0.31	0	0	0.01	0.01	0.29	0.16					0	
15	1.09	0	0	0.02	0.02	2.08	0.3	0	0	0.01	0.01	0.29	0.13					0	
16	0.97	0	0	0.02	0.02	1.67	0.29	0	0	0.01	0.01	0.25	0.13					0	
17	0.86	0	0	0.02	0.02	1.26	0.29	0	0	0.01	0.01	0.25	0.1					0	
18	0.85	0	0	0.02	0.02	1.25	0.28	0	0	0.01	0.01	0.24	0.1					0	
19	0.83	0	0	0.03	0.03	2	0.28	0	0	0.01	0.01	0.24	0.1					0	
20	0.81	0	0	0.03	0.03	2.04	0.27	0	0	0.01	0.01	0.23	0.08					0	
21	1.41	0	0	0.03	0.03	3.4	2.14	0	0	0.08	0.08	14.22	0.08					0	
22	1.32	0	0	0.03	0.03	3.2	2.1	0	0	0.08	0.08	13.79	0.08					0	
23	1.2	0	0	0.03	0.03	2.7	2.04	0	0	0.07	0.07	13.01	0.07					0	
24	1.19	0	0	0.02	0.02	2.56	1.66	0	0	0.06	0.06	8.59	0.07					0	
25	1.1	0	0	0.02	0.02	2.19	1.31	0	0	0.05	0.05	5.32	0.06					0	
26	1.1	0	0	0.03	0.03	2.57	1.11	0	0	0.04	0.04	3.82	0.06					0	
27	1.03	0	0	0.03	0.03	2.5	1	0	0	0.04	0.04	3.1	0.06					0	
28	1.01	0	0	0.03	0.03	2.44	0.93	0	0	0.03	0.03	2.74	0.04					0	
29	1	0	0	0.03	0.03	2.33	0.8	0	0	0.03	0.03	2	0.04					0	
30	0.96	0	0	0.03	0.03	2.16	0.7	0	0	0.02	0.02	1.51	0.04					0	
31	0.95	0	0	0.03	0.03	2.14							0.02					0	
TenDaily I	2.03	0	0	0.03	0.03	4.39	0.63	0	0	0.02	0.02	1.24	0.42	0	0	0	0	0	
TenDaily II	1.1	0	0	0.02	0.02	2.23	0.31	0	0	0.01	0.01	0.3	0.15	0	0	0	0	0	
TenDaily III	1.12	0	0	0.03	0.03	2.56	1.38	0	0	0.05	0.05	6.81	0.06	0	0	0	0	0	
Total	March						94.44	April						83.48					0

Annual Sediment Load for period : 1992-2018

Station Name : Burhner at Mohgaon (010215004)
 Local River : Burhner

Division : Narmada Division Bhopal
 Sub-Division : UNSD, Jabalpur

	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1992-1993	605097.97	0	605097.97	1022.52
1993-1994	2614918.88	0	2614918.88	2015.96
1994-1995	10303377.01	0	10303377.01	4417.32
1995-1996	4828059.7	0	4828059.7	2475.42
1996-1997	1409800.54	0	1409800.54	1337.38
1997-1998	4380350.99	0	4380350.99	2072.02
1998-1999	2103433.4	0	2103433.4	2106.9
1999-2000	3021685.76	0	3021685.76	3110.3
2000-2001	1855837.04	0	1855837.04	1549.75
2001-2002	2744673.29	0	2744673.29	2798
2002-2003	949968.19	0	949968.19	1292.67
2003-2004	4909520.96	0	4909520.96	3497.51
2004-2005	3346347.46	0	3346347.46	2981.94
2005-2006	9693524.02	2164.29	9695688.3	3698.57
2006-2007	3637424.88	3056.18	3640481.06	2304.52
2007-2008	1020925.3	1009.61	1021934.91	1532.21
2008-2009	705272.35	1919.72	707192.08	1315.69
2009-2010	645909.89	118.37	646028.25	635.45
2010-2011	2985567.96	482.57	2986050.53	2013.97
2012-2013	1718997.31	903.17	1719900.48	2124.72
2016-2017	2319029.07	571.6	2319600.67	2504.24
2017-2018	1459628.16	1000.54	1460628.7	1338.53

Annual Sediment Load for period : 2008-2018

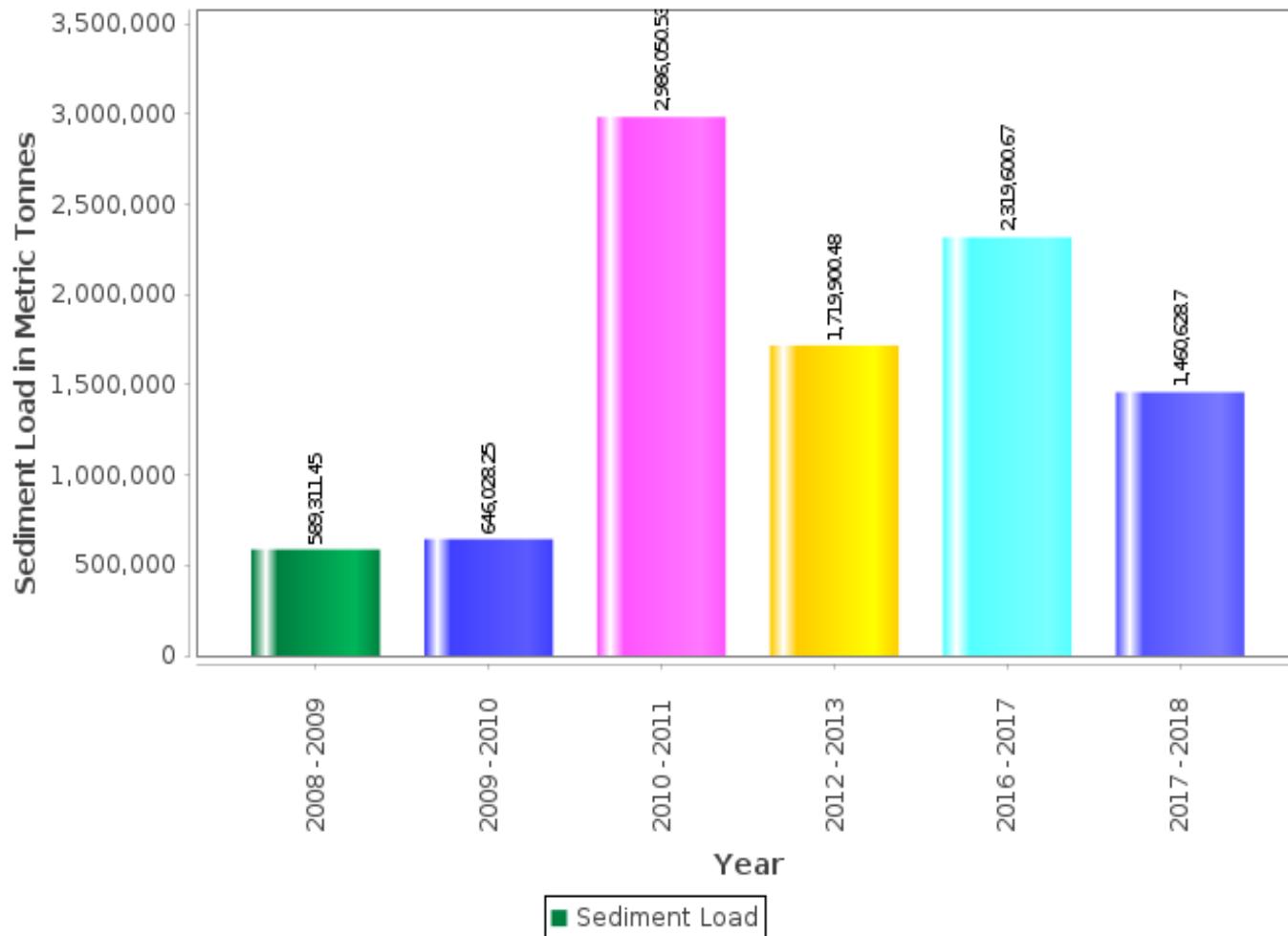
Station Name : Burhner at Mohgaon (010215004)

Local River : Burhner

Division : Narmada Division, Bhopal

Sub-Division : UNSD, Jabalpur

Sediment Annual Summary



Seasonal Sediment Load for period : 2008-2018

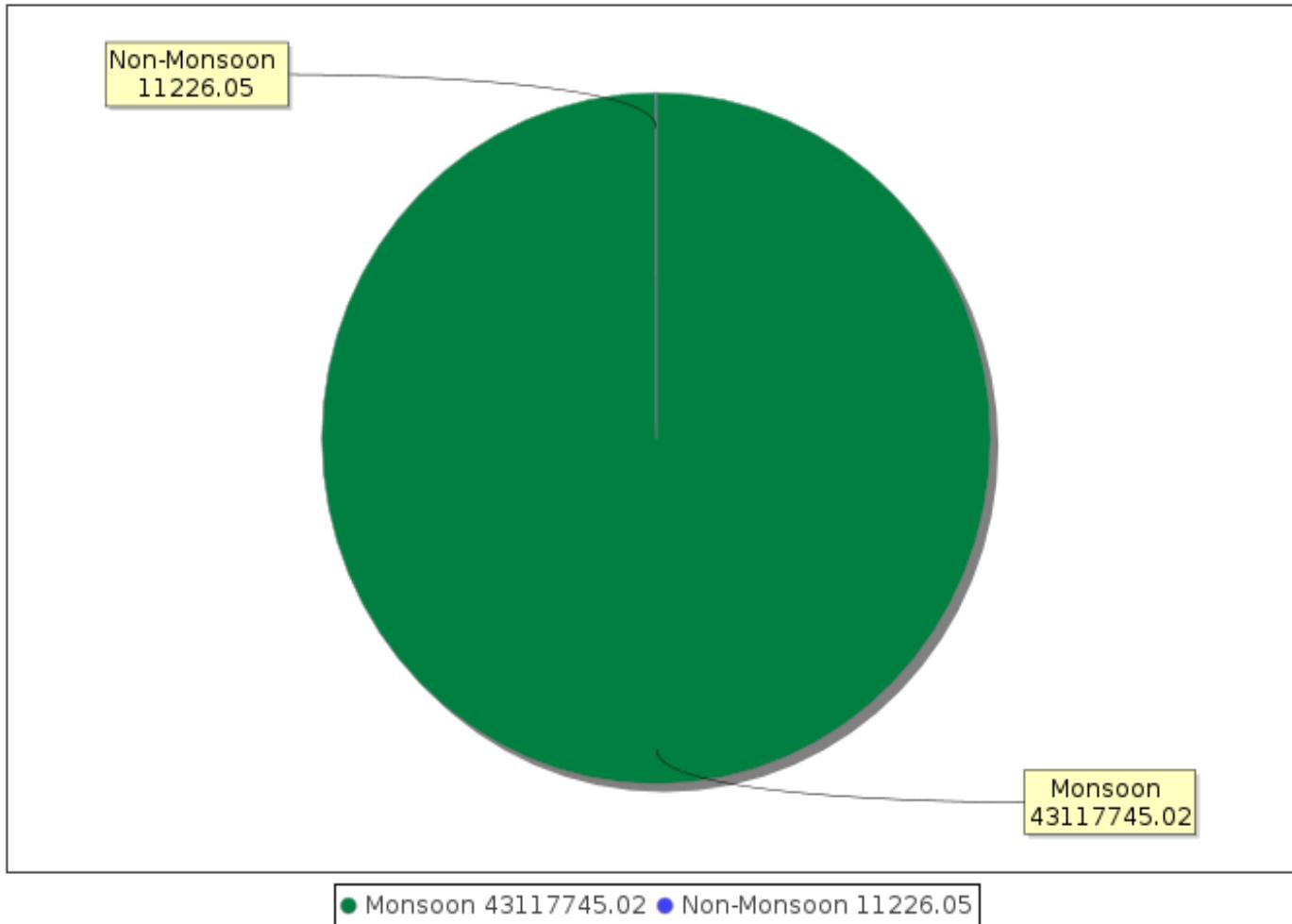
Station Name : Burhner at Mohgaon (010215004)

Division : Narmada Division, Bhopal

Local River : Burhner

Sub-Division : UNSD, Jabalpur

Sediment Historical Data



Seasonal Sediment Load for period : 2017-2018

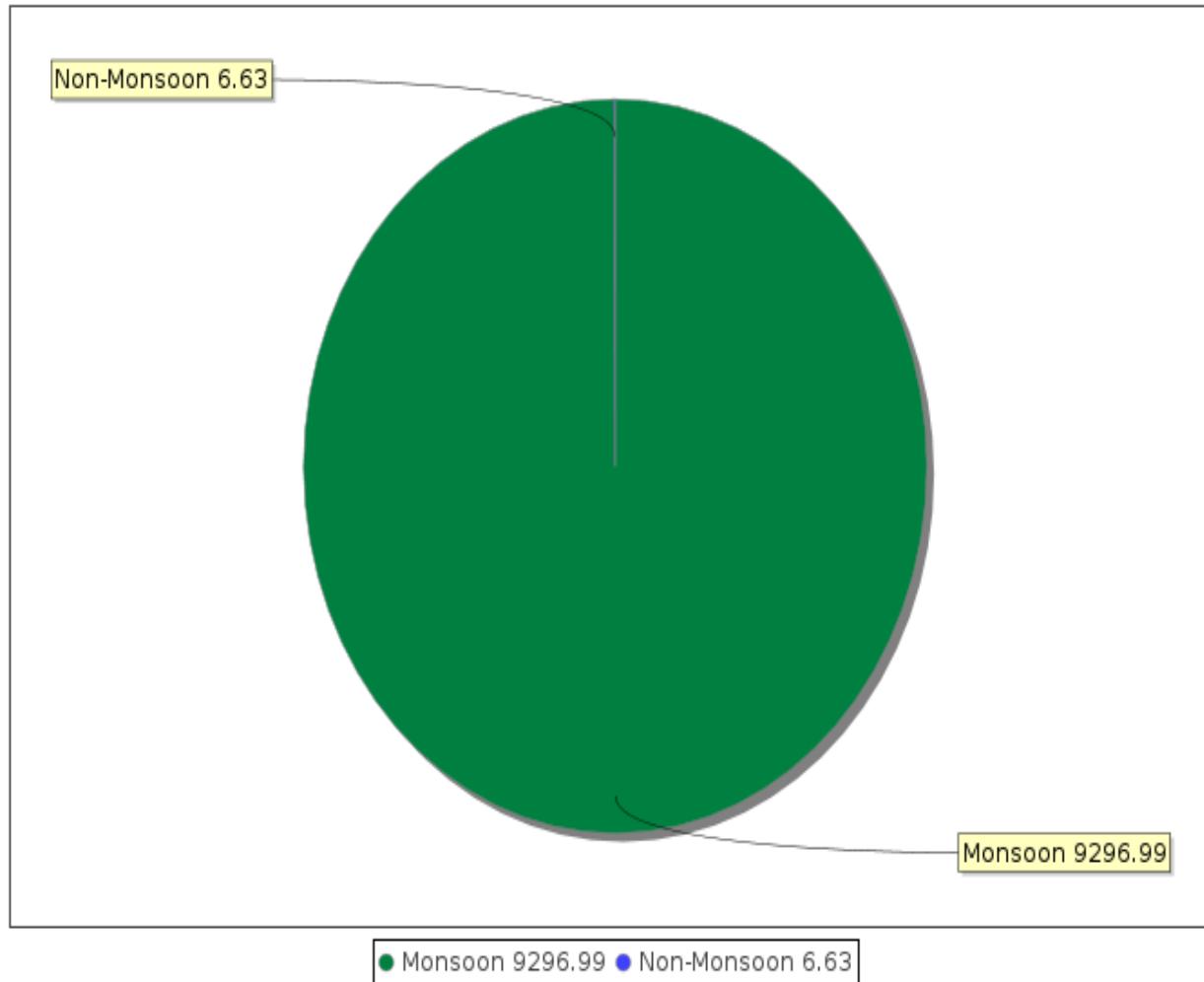
Station Name : Burhner at Mohgaon (010215004)

Division : Narmada Division, Bhopal

Local River : Burhner

Sub-Division : UNSD, Jabalpur

Sediment Water Year: 2017-2018



6.11 Narmada at Manot

History Sheet

		Water Year : 2017-2018
Site	: Narmada at Manot	Code : 010215002
State	: Madhya Pradesh	District : Mandla
Basin	: Narmada	Independent River : Narmada
Tributary	:	Sub Tributary :
Sub-Sub Tributary	:	Local River : Narmada
Division	: Narmada Division, Bhopal	Sub-Division : UNSD, Jabalpur
Drainage Area	: 4667 Sq. Km.	Bank : Right
Latitude	: 22°44'08"	Longitude : 80°30'44"
Zero of Gauge (m)	: 442 .000(M.S.L.)	16/12/1976
	Opening Date	Closing Date
Gauge	: 16/12/1976	
Discharge	: 16/12/1976	
Sediment	: 09/11/1979	
Water Quality	: 01/01/1980	

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Manot (010215002)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, Jabalpur

Days	June						July						August					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	0				0	21.16	0	0	0.02	0.02	40.77	91.27	0	0	0.05	0.05	402.17	
2	0				0	25	0	0	0.02	0.02	51.84	92.65	0	0	0.06	0.06	498.71	
3	0				0	21.04	0	0	0.02	0.02	45.44	68.35	0	0	0.07	0.07	394.48	
4	0				0	93.7	0	0	0.07	0.07	532.71	59.73	0	0	0.06	0.06	332.86	
5	0				0	50.09	0	0	0.83	0.83	3605.18	47.39	0	0	0.05	0.05	202.68	
6	0				0	24.79	0	0	0.41	0.41	880.41	44	0	0	0.05	0.05	174.87	
7	0				0	22.26	0	0	0.37	0.37	709.53	41.95	0	0	0.1	0.1	370.78	
8	0				0	20.7	0	0	0.34	0.34	613.57	106.3	0	0	0.25	0.25	2294.24	
9	0				0	18	0	0	0.3	0.3	463.45	316.9	0	0	0.99	0.99	27078.98	
10	0				0	16.52	0	0	0.11	0.11	151.74	267.5	0	0	0.34	0.34	7754.08	
11	0				0	23.98	0	0	0.16	0.16	332.58	299.8	0	0	0.96	0.96	24944.32	
12	0				0	43.89	0	0	0.12	0.12	460.72	160.2	0	0	0.21	0.21	2885.91	
13	0				0	106.18	0	0	0.16	0.16	1463.23	135	0	0	0.18	0.18	2064.53	
14	0				0	100.84	0	0	0.16	0.16	1390.49	130.2	0	0	0.18	0.18	2008	
15	0				0	92.14	0	0	0.16	0.16	1303.92	100	0	0	0.14	0.14	1192.32	
16	0				0	90	0	0	0.16	0.16	1213.06	97.25	0	0	0.18	0.18	1478.82	
17	0				0	278.73	0	0	0.45	0.45	10940.54	91.12	0	0	0.77	0.77	6095.88	
18	0				0	308.47	0	0	0.52	0.52	13853.56	87.39	0	0	0.17	0.17	1289.62	
19	0				0	259.39	0	0	0.42	0.42	9367.81	101.4	0	0	0.18	0.18	1581.35	
20	0				0	242.04	0	0	0.41	0.41	8548.97	95	0	0	0.17	0.17	1387.15	
21	0				0	272.67	0	0	1.16	1.16	27252.39	109.1	0	0	0.18	0.18	1718.4	
22	0				0	288.39	0	0	0.43	0.43	10614.45	88.23	0	0	0.18	0.18	1370.63	
23	0				0	220	0	0	0.33	0.33	6234.62	90.74	0	0	0.18	0.18	1411.19	
24	0				0	173.8	0	0	0.74	0.74	11119.58	68.37	0	0	0.18	0.18	1051.48	
25	0				0	160.56	0	0	0.35	0.35	4792.97	155	0	0	0.41	0.41	5463.94	
26	0				0	159.46	0	0	0.34	0.34	4660.88	240	0	0	0.18	0.18	3794.69	
27	0				0	133.59	0	0	0.32	0.32	3685.42	156	0	0	0.12	0.12	1576.97	
28	0				0	253.68	0	0	0.34	0.34	7484.95	154.1	0	0	0.18	0.18	2380.59	
29	0				0	159.65	0	0	0.33	0.33	4514.7	150.4	0	0	0.18	0.18	2316.93	
30	0				0	120	0	0	0.25	0.25	2571.26	134	0	0	0.18	0.18	2052.71	
31						103.72	0	0	0.32	0.32	2863.11	226.4	0	0	0.18	0.18	3605.08	
TenDaily I	0	0	0	0	0	31.33	0	0	0.25	0.25	709.46	113.6	0	0	0.2	0.2	3950.39	
TenDaily II	0	0	0	0	0	154.56	0	0	0.27	0.27	4887.49	129.74	0	0	0.31	0.31	4492.79	
TenDaily III	0	0	0	0	0	185.96	0	0	0.44	0.44	7799.49	142.94	0	0	0.2	0.2	2431.15	
Total	June					0	July					141763.85	August					111174.37

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Manot (010215002)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, Jabalpur

Days	September					October					November							
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	153.09	0	0	0.12	0.12	1613.69	50	0	0	0.1	0.1	444.96	18.43	0	0	0.02	0.02	33.44
2	151	0	0	0.12	0.12	1565.57	50	0	0	0.1	0.1	444.96	18.37	0	0	0.02	0.02	36.5
3	102.2	0	0	0.08	0.08	715.24	42.6	0	0	0.04	0.04	140.97	18.14	0	0	0.21	0.21	329.13
4	92.92	0	0	0.04	0.04	295.44	40.09	0	0	0.04	0.04	127.47	18	0	0	0.21	0.21	323.48
5	90.11	0	0	0.04	0.04	303.63	38.13	0	0	0.03	0.03	114.65	18	0	0	0.21	0.21	323.48
6	88.41	0	0	0.04	0.04	290.27	35.7	0	0	0.03	0.03	104.87	17.92	0	0	0.02	0.02	35.92
7	88.85	0	0	0.04	0.04	291.71	33.93	0	0	0.03	0.03	99.67	17.85	0	0	0.02	0.02	32.39
8	93.17	0	0	0.85	0.85	6812.62	52	0	0	0.05	0.05	206.67	17.64	0	0	0.02	0.02	31.7
9	89.98	0	0	0.83	0.83	6454.98	39.79	0	0	0.03	0.03	116.2	17.46	0	0	0.01	0.01	16.74
10	99	0	0	0.91	0.91	7809.44	48.03	0	0	0.03	0.03	136.94	17.34	0	0	0.02	0.02	28.02
11	152.3	0	0	0.09	0.09	1181.65	43.47	0	0	0.03	0.03	117.56	17.05	0	0	0.02	0.02	27.25
12	102.9	0	0	0.12	0.12	1073.98	42.28	0	0	0.03	0.03	121.64	16.9	0	0	0.02	0.02	29.2
13	155.8	0	0	0.12	0.12	1605.91	41.5	0	0	0.03	0.03	112.23	16.41	0	0	0.02	0.02	26.23
14	134.7	0	0	0.12	0.12	1394.24	36.5	0	0	0.03	0.03	93.03	16.27	0	0	0.02	0.02	26.01
15	133.8	0	0	0.12	0.12	1381.46	35	0	0	0.03	0.03	87.7	16.14	0	0	0.02	0.02	22.73
16	108.5	0	0	0.12	0.12	1137.11	34.36	0	0	0.03	0.03	86.98	15.8	0	0	0.02	0.02	27.3
17	109	0	0	0.12	0.12	1139.53	24.06	0	0	0.03	0.03	58.83	15.7	0	0	0.02	0.02	25.77
18	132	0	0	0.12	0.12	1414.2	23.71	0	0	0.03	0.03	55.31	15.6	0	0	0.02	0.02	25.61
19	101.4	0	0	0.12	0.12	1064.46	22	0	0	0.03	0.03	53.22	15.4	0	0	0.02	0.02	25.28
20	135.8	0	0	0.14	0.14	1693.09	21.09	0	0	0.03	0.03	48.29	15.14	0	0	0.02	0.02	24.2
21	157.7	0	0	0.15	0.15	1982.48	20.62	0	0	0.03	0.03	45.43	14.94	0	0	0.02	0.02	21.04
22	205.8	0	0	0.21	0.21	3650.46	20.5	0	0	0.03	0.03	53.14	14.75	0	0	0.01	0.01	17.84
23	149	0	0	0.15	0.15	1873.11	20.72	0	0	0.03	0.03	45.65	14.65	0	0	0.01	0.01	12.66
24	128	0	0	0.13	0.13	1426.64	19.95	0	0	0.02	0.02	41.37	14.55	0	0	0.01	0.01	12.57
25	100.5	0	0	0.14	0.14	1211.31	19.8	0	0	0.02	0.02	40.2	14.5	0	0	0.01	0.01	12.53
26	94.14	0	0	0.14	0.14	1102.12	19.64	0	0	0.02	0.02	39.54	14.4	0	0	0.01	0.01	12.44
27	88.75	0	0	0.13	0.13	1031.35	19.22	0	0	0.02	0.02	38.19	13.76	0	0	0.01	0.01	16.41
28	87.2	0	0	0.13	0.13	1000.53	19.09	0	0	0.02	0.02	37.61	13.5	0	0	0.01	0.01	13.41
29	62.83	0	0	0.13	0.13	699.19	18.95	0	0	0.02	0.02	32.75	13.16	0	0	0.01	0.01	13.08
30	57	0	0	0.12	0.12	581.13	18.82	0	0	0.02	0.02	34.63	13.08	0	0	0.01	0.01	15.6
31						18.69	0	0	0.02	0.02	33.59							
TenDaily I	104.87	0	0	0.31	0.31	2615.26	43.03	0	0	0.05	0.05	193.74	17.92	0	0	0.08	0.08	119.08
TenDaily II	126.62	0	0	0.12	0.12	1308.56	32.4	0	0	0.03	0.03	83.48	16.04	0	0	0.02	0.02	25.96
TenDaily III	113.09	0	0	0.14	0.14	1455.83	19.64	0	0	0.02	0.02	40.19	14.13	0	0	0.01	0.01	14.76
Total	September				53796.52	October				3214.24	November					1597.97		

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Manot (010215002)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, Jabalpur

Days	December						January						February					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	12.94	0	0	0.01	0.01	14.87	11.26	0	0	0.01	0.01	10.02	9.98	0	0	0.01	0.01	7.76
2	12.85	0	0	0.01	0.01	11.1	11.17	0	0	0.01	0.01	9.65	9.91	0	0	0.01	0.01	8.56
3	12.75	0	0	0.01	0.01	11.02	10.96	0	0	0.01	0.01	9.47	9.85	0	0	0.01	0.01	8.51
4	12.61	0	0	0.01	0.01	14.49	10.86	0	0	0.01	0.01	9.38	9.8	0	0	0.01	0.01	8.47
5	12.5	0	0	0.01	0.01	10.8	10.67	0	0	0.01	0.01	8.3	9.69	0	0	0.01	0.01	7.53
6	12.4	0	0	0.01	0.01	10.71	10.57	0	0	0.01	0.01	8.22	9.64	0	0	0.01	0.01	8.32
7	12.35	0	0	0.01	0.01	10.67	10.5	0	0	0.01	0.01	8.16	9.59	0	0	0.01	0.01	8.28
8	12.09	0	0	0.01	0.01	10.45	10.27	0	0	0.01	0.01	8.7	9.45	0	0	0.01	0.01	8.16
9	12.01	0	0	0.01	0.01	10.38	10.2	0	0	0.01	0.01	8.81	9.4	0	0	0.01	0.01	8.12
10	11.9	0	0	0.01	0.01	10.28	10.15	0	0	0.01	0.01	8.77	9.35	0	0	0.01	0.01	8.08
11	11.9	0	0	0.01	0.01	9.25	10.08	0	0	0.01	0.01	8.27	9.31	0	0	0.01	0.01	8.04
12	11.8	0	0	0.01	0.01	9.18	10.01	0	0	0.01	0.01	8.65	9.27	0	0	0.01	0.01	8.01
13	11.8	0	0	0.01	0.01	9.18	9.95	0	0	0.01	0.01	8.6	9.57	0	0	0.01	0.01	8.27
14	11.75	0	0	0.01	0.01	9.14	9.9	0	0	0.01	0.01	8.55	11.8	0	0	0.01	0.01	12.23
15	11.75	0	0	0.01	0.01	9.14	9.79	0	0	0.01	0.01	8.03	12.04	0	0	0.01	0.01	11.44
16	11.9	0	0	0.01	0.01	9.25	9.71	0	0	0.01	0.01	8.39	12.32	0	0	0.01	0.01	10.64
17	12.05	0	0	0.01	0.01	9.37	9.66	0	0	0.01	0.01	8.35	12.57	0	0	0.01	0.01	10.86
18	12.57	0	0	0.01	0.01	14.12	9.6	0	0	0.01	0.01	8.3	12.6	0	0	0.01	0.01	10.89
19	12.76	0	0	0.01	0.01	11.02	9.54	0	0	0.01	0.01	8.24	12.91	0	0	0.01	0.01	10.04
20	12.69	0	0	0.01	0.01	10.96	9.47	0	0	0.01	0.01	8.19	12.98	0	0	0.01	0.01	11.21
21	12.51	0	0	0.01	0.01	13.51	9.44	0	0	0.01	0.01	8.15	12.54	0	0	0.01	0.01	9.75
22	12.46	0	0	0.01	0.01	10.77	9.33	0	0	0.01	0.01	7.1	12.28	0	0	0.01	0.01	10.61
23	12.28	0	0	0.01	0.01	10.61	9.27	0	0	0.01	0.01	8.01	12.16	0	0	0.01	0.01	10.51
24	12.2	0	0	0.01	0.01	10.54	9.22	0	0	0.01	0.01	7.97	12.11	0	0	0.01	0.01	10.46
25	12.15	0	0	0.01	0.01	10.5	9.17	0	0	0.01	0.01	7.93	12.05	0	0	0.01	0.01	10.41
26	11.95	0	0	0.01	0.01	12.91	9.13	0	0	0.01	0.01	7.89	11.97	0	0	0.01	0.01	8.58
27	11.87	0	0	0.01	0.01	10.26	9.07	0	0	0.01	0.01	7.84	11.85	0	0	0.01	0.01	10.24
28	11.8	0	0	0.01	0.01	10.2	9.02	0	0	0.01	0.01	7.79	11.72	0	0	0.01	0.01	10.13
29	11.61	0	0	0.01	0.01	10.03	8.94	0	0	0.01	0.01	6.79						
30	11.55	0	0	0.01	0.01	9.98	8.86	0	0	0.01	0.01	7.66						
31	11.45	0	0	0.01	0.01	9.89	8.82	0	0	0.01	0.01	7.62						
TenDaily I	12.44	0	0	0.01	0.01	11.48	10.66	0	0	0.01	0.01	8.95	9.67	0	0	0.01	0.01	8.18
TenDaily II	12.1	0	0	0.01	0.01	10.06	9.77	0	0	0.01	0.01	8.36	11.54	0	0	0.01	0.01	10.16
TenDaily III	11.98	0	0	0.01	0.01	10.83	9.12	0	0	0.01	0.01	7.7	12.08	0	0	0.01	0.01	10.09
Total	December					334.56	January					257.79	February					264.15

Sediment Data Year Book 2017-18

Daily Observed Sediment Datasheet for period : 2017-2018

Station Name : Narmada at Manot (010215002)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, Jabalpur

Days	March					April					May						
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l
1	11.66	0	0	0.01	0.01	7.05	6.88				0	5.2					0
2	11.5	0	0	0.01	0.01	9.94	6.8				0	4.85					0
3	11.4	0	0	0.01	0.01	9.85	6.75				0	4.85					0
4	11.3	0	0	0.01	0.01	9.76	6.68				0	4.62					0
5	11.2	0	0	0.01	0.01	9.68	6.6				0	4.62					0
6	11.2	0	0	0.01	0.01	9.68	6.6				0	4.3					0
7	11.15	0	0	0.01	0.01	9.63	6.45				0	3.95					0
8	11.08	0	0	0.01	0.01	6.22	6.45				0	3.6					0
9	10.95	0	0	0.01	0.01	9.46	6.3				0	3.2					0
10	10.78	0	0	0.01	0.01	9.31	6.3				0	2.8					0
11	10.6	0	0	0.01	0.01	9.16	6.15				0	2.5					0
12	10.34	0	0	0.01	0.01	5.36	6.15				0	2.2					0
13	10.18	0	0	0.01	0.01	8.8	5.95				0	1.9					0
14	10.02	0	0	0.01	0.01	8.66	5.95				0	1.6					0
15	9.77	0	0	0.01	0.01	4.89	5.95				0	1.3					0
16	9.52	0	0	0.01	0.01	8.23	6.1				0	0.99					0
17	9.31	0	0	0.01	0.01	8.04	6.65				0	0.68					0
18	9.18	0	0	0.01	0.01	7.14	6.65				0	0.36					0
19	8.93	0	0	0.01	0.01	4.24	6.4				0	0					0
20	8.7	0	0	0.01	0.01	7.51	6.4				0	0					0
21	8.51	0	0	0	0	3.68	6.15				0	0					0
22	8.3	0	0	0	0	0	6.15				0	0					0
23	8.09	0	0	0	0	0	6.15				0	0					0
24	7.98	0	0	0	0	0	5.9				0	0					0
25	7.88	0	0	0	0	0	5.9				0	0					0
26	7.68	0	0	0	0	0	5.75				0	8.86					0
27	7.46	0	0	0	0	0	5.75				0	12.95					0
28	7.36	0	0	0	0	0	5.5				0	15.2					0
29	7.25	0	0	0	0	0	5.5				0	16.25					0
30	7.13	0	0	0	0	0	5.2				0	15.5					0
31	6.9	0	0	0	0	0					12.2						0
TenDaily I	11.22	0	0	0.01	0.01	9.06	6.58	0	0	0	0	4.2	0	0	0	0	0
TenDaily II	9.65	0	0	0.01	0.01	7.2	6.23	0	0	0	0	1.15	0	0	0	0	0
TenDaily III	7.69	0	0	0	0	0.33	5.8	0	0	0	0	7.36	0	0	0	0	0
Total	March					166.29	April					0					

Sediment Data Year Book 2017-18

Annual Sediment Load for period : 1987-2018

Station Name : Narmada at Manot (010215002) Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, Jabalpur

Year	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1987-1988	10725744	0	10725744	3916
1988-1989	6696569	0	6696569	3252
1989-1990	2489833	0	2489833	1423
1990-1991	6352482	0	6352482	4327
1991-1992	4774264	0	4774264	3270
1992-1993	5297060	0	5297060	2563
1993-1994	8389055	0	8389055	2849
1994-1995	9782946	0	9782946	5549
1995-1996	6064747	0	6064747	3479
1996-1997	2765903	0	2765903	2211
1997-1998	4988927	0	4988927	3859
1998-1999	994318	0	994318	2291
1999-2000	7375323	0	7375323	4115
2000-2001	2429516	0	2429516	2043
2001-2002	2766792	0	2766792	3725
2002-2003	1840581	0	1840581	2000
2003-2004	4006296	0	4006296	4442
2004-2005	9624012	0	9624012	3474
2005-2006	10701534	2767	10704300	4890
2006-2007	2398636	2313	2400949	2902
2007-2008	1844237	1764	1846001	1425
2008-2009	1966444	746	1967190	2225
2009-2010	820714	2009	822722	1223
2010-2011	876002	2005	878007	2023
2011-2012	2758553	2653	2761206	3878
2012-2013	1085095	1391	1086486	2178
2013-2014	1628948	4325	1633274	2874
2014-2015	990486	1352	991839	2158
2015-2016	617184	280	617465	1438
2016-2017	1025923.802	722.404	1026646.206	2070.746
2017-2018	311546.95	1022.79	312569.74	1217.46

Annual Sediment Load for period : 2008-2018

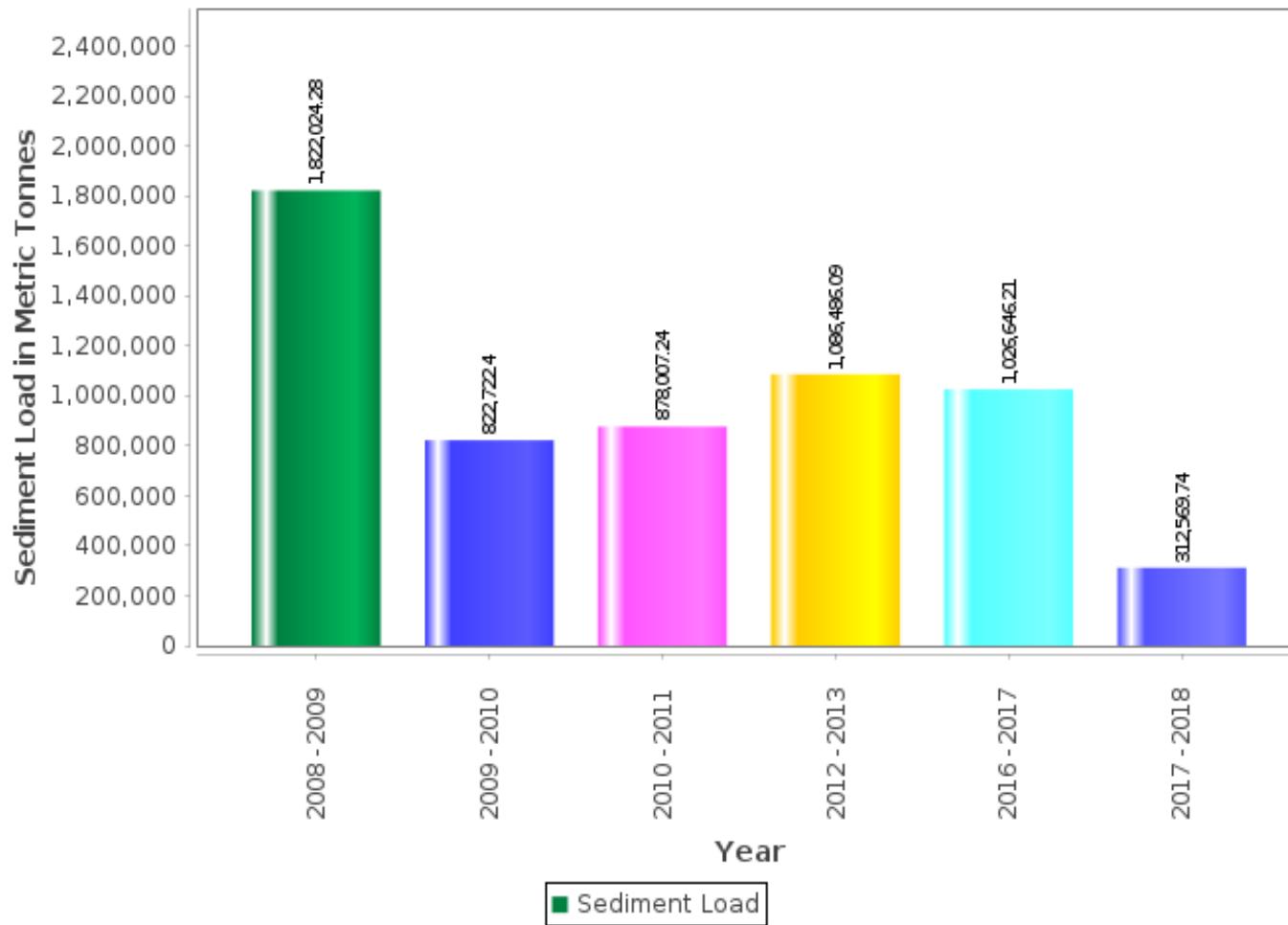
Station Name : Narmada at Manot (010215002)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, Jabalpur

Sediment Annual Summary



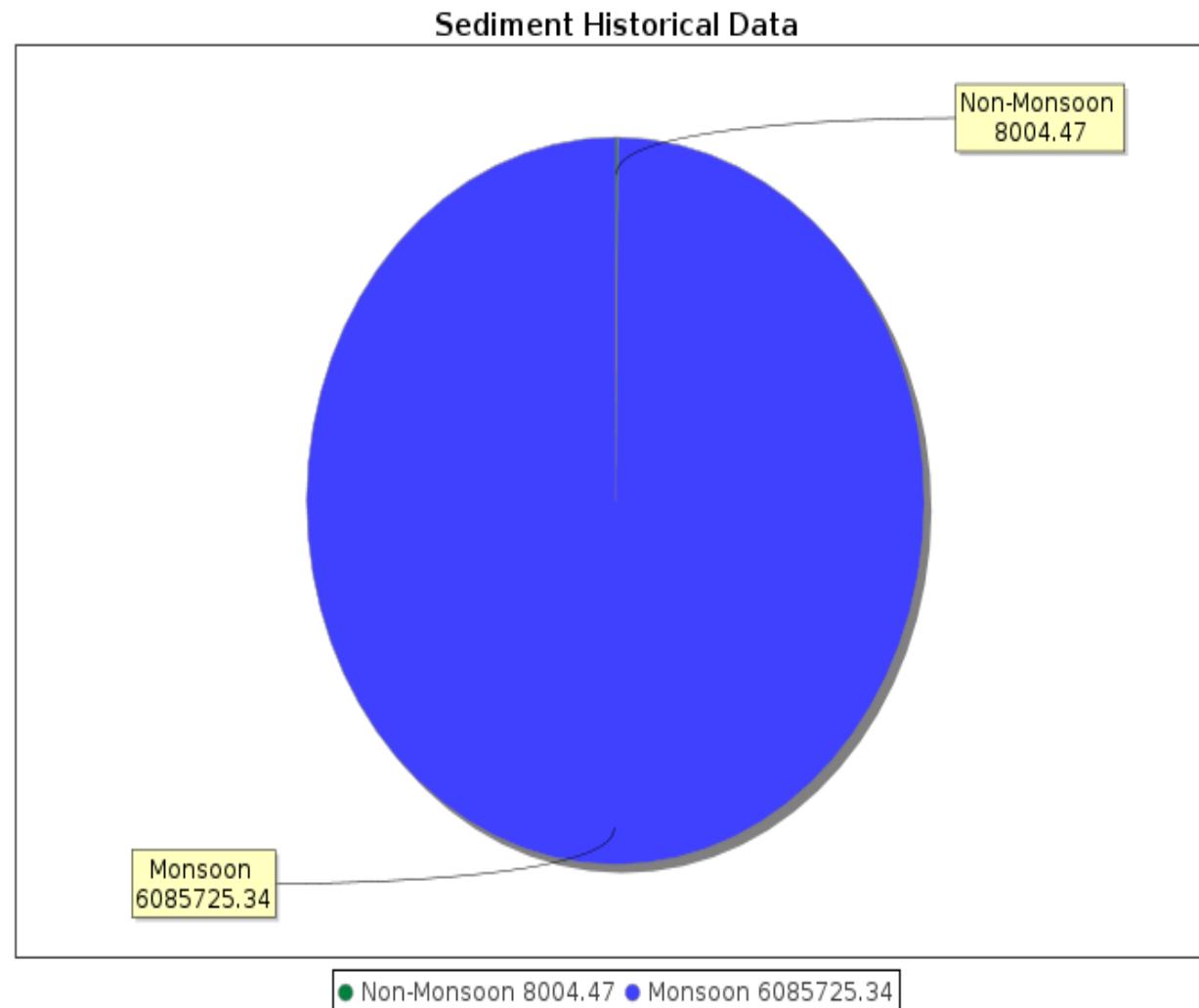
Seasonal Sediment Load for period : 2008-2018

Station Name : Narmada at Manot (010215002)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, Jabalpur



Seasonal Sediment Load for period : 2017-2018

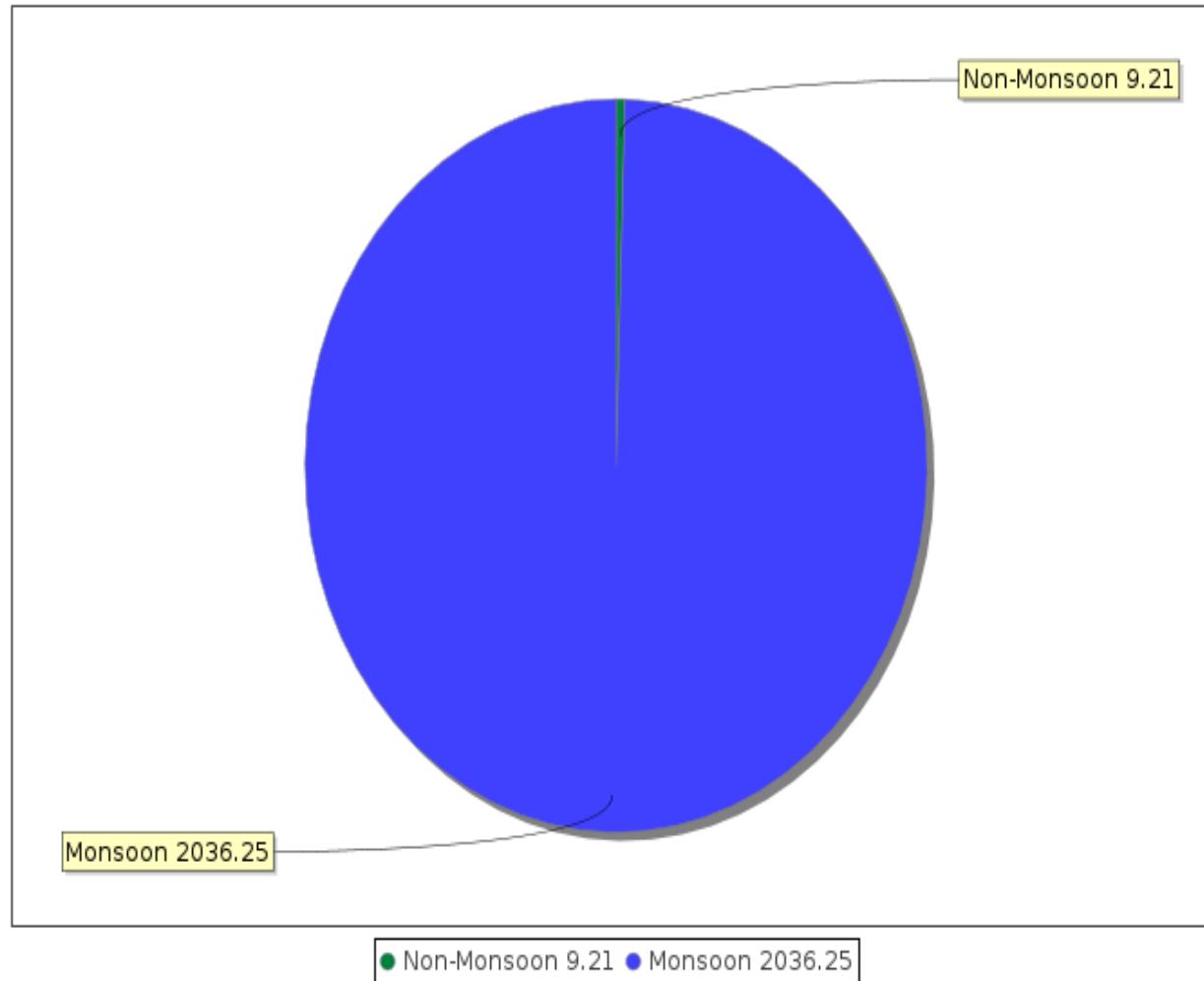
Station Name : Narmada at Manot (010215002)

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, Jabalpur

Sediment Water Year: 2017-2018



7 Part – II Bed material Data

7.1 Orsang at Chandwada

BED MATERIAL DATA FOR THE YEAR 2017-2018

SITE : ORSANG AT CHANDWADA CODE : 010215032

MEASURING AUTHORITY : TAPI DIVISION W.YEAR : 2017-18

PRE MONSOON SURVEY (DATE 27.04.2016)

Discharge 'Q' : Nil - DRY m³/sec Water edge: L.B m R.B m
 Area of Section 'A' : m² Mean Velocity' V ' : m/sec
 Wetted Perimeter 'P': m Hydraulic Mean Depth 'R' : m

Sample. No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	0	30.590	2.91	RIVER DRY
2	80	28.210	1.9	Av . Mean Dia "d"= 3.11 mm
3	165	18.285	3.47	
4	240	16.960	3.55	Av . Silt Factor " f " = 3.10
5	360	18.020	3.25	
6	420	20.425	0.99	
7	480	26.675	4.29	
8	570	30.375	4.52	

MONSOON SURVEY (DATE)

Discharge 'Q' : m³/sec Water edge: L.B m R.B m
 Area of Section 'A' : m² Mean Velocity' V ' : m/sec
 Wetted Perimeter 'P': m Hydraulic Mean Depth'R' : m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
				Av . Mean Dia "d" = mm

SURVEY NOT DONE

Av . Silt Factor " f " =

POST MONSOON SURVEY (DATE 15.12.2016)

Discharge 'Q' : NIL m³/sec Water edge: L.B.398 m, R.B.0 m
 Area of Section 'A' : 0 m² Mean Velocity' V ' : 0 m/sec
 Wetted Perimeter 'P': 0 m Hydraulic Mean Depth'R' : 0 m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	0	30.590	0.99	
2	80	28.200	0.76	Av . Mean Dia "d" = 2.55 mm
3	165	17.570	4.35	
4	240	17.430	3.50	Av . Silt Factor " f " = 2.81
5	360	18.120	4.42	
6	420	20.655	1.78	
7	480	26.535	2.31	
8	570	30.265	2.26	

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

7.2 Narmada at Garudeshwar

BED MATERIAL DATA FOR THE YEAR 2017-2018

SITE : NARMADA AT GARUDESHWAR

CODE : 010215030

MEASURING AUTHORITY : TAPI DIVISION

W.YEAR :2017-18

PRE MONSOON SURVEY (DATE 17.05.2017)

Discharge 'Q' : $56.53\text{m}^3/\text{sec}$

Water edge: L.B.:m, R.B.: m

Area of Section 'A' :##### m^2

Mean Velocity' V ' : 0.489 m/sec

Wetted Perimeter 'P' : 170.00 m

Hydraulic Mean Depth 'R' : 0.680 m

SampleNo	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	0.00	42.100	7.99	
2	240.00	30.400	9.53	Av . Mean Dia "d"=8.30 mm
3	270.00	12.890	10.22	
4	300.00	12.440	7.75	Av .Silt Factor " f " = 5.07
5	360.00	12.540	7.94	
6	390.00	12.790	10.81	
7	420.00	12.640	7.96	
8	450.00	12.190	15.03	
9	570.00	19.520	2.83	
10	650.00	39.930	2.9	

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

MONSOON SURVEY (DATE 2017-2018)

Discharge 'Q' : m^3/sec

Water edge: L.B m R.B. m

Area of Section 'A' : m^2

Mean Velocity' V ' : m/sec

Wetted Perimeter 'P': m

Hydraulic Mean Depth'R' : m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
				Av . Mean Dia "d" = 0.00mm

SURVEY NOT TAKEN

Av .Silt Factor " f " = 0.00

POST MONSOON SURVEY (DATE 20.11.2017)

Discharge 'Q' : $30.575 \text{ m}^3/\text{sec}$

Water edge: L.B.: m, R.B.: m

Area of Section 'A' : 96.700 m^2

Mean Velocity' V ' : 0.316 m/sec

Wetted Perimeter 'P': 170.02 m

Hydraulic Mean Depth'R': 0.900 m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	0.00	42.100	8.52	
2	240.00	12.010	11.59	Av . Mean Dia "d" = 10.26 mm
3	270.00	12.910	10.62	
4	300.00	12.410	10.20	Av .Silt Factor " f " = 5.64
5	360.00	12.540	11.20	
6	390.00	12.790	10.57	
7	420.00	12.660	10.61	
8	450.00	12.210	10.27	
9	570.00	19.540	9.26	
10	645.00	39.960	9.72	

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

7.3 Narmada at Mandleshwar

BED MATERIAL DATA FOR THE YEAR 2017-2018

SITE : NARMADA AT MANDLESHWER

CODE : 010215026

MEASURING AUTHORITY : NDN

W.YEAR : 2017-18

PRE MONSOON SURVEY (DATE)

Discharge 'Q' : m³/sec

Water edge: L.B.:m, R.B: m

Area of Section 'A' : m²

Mean Velocity' V ' : m/ sec

Wetted Perimeter 'P': m

Hydraulic Mean Depth'R': m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	50			
2	100			Av . Mean Dia "d"= mm
3	200			
4	300	NOT COLLECTED		Av . Silt Factor " f " =
5	400			
6	500			
7	600			
8	700			

MONSOON SURVEY (DATE)

Discharge 'Q' :

Water edge: L.B. m R.B

m³/sec

m

Area of Section 'A'

m²

Mean Velocity' V ' :

m/ sec

Wetted Perimeter 'P'

m

Hydraulic Mean Depth'R'

m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	50			
2	100			
3	200			Av . Mean Dia "d"= mm
4	300	NOT COLLECTED		
5	400			Av . Silt Factor " f " =
6	500			
7	600			
8	700			

POST MONSOON SURVEY (DATE)

Discharge 'Q' : m³/sec

Water edge: L.B. m R.B. M

Area of Section 'A' : m²

Mean Velocity' V ' : m/ sec

Wetted Perimeter 'P' : m

Hydraulic Mean Depth'R' : m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	50	146.215	3.05	
2	100	139.080	0.67	Av . Mean Dia "d"= 2.921 mm
3	200	138.590	6.09	
4	300	138.300	1.92	Av . Silt Factor " f " = 3.01
5	400	138.890	1.74	
6	500	138.380	1.60	
7	600	139.115	4.14	
8	700	141.510	4.16	

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

7.4 Narmada at Handia

BED MATERIAL DATA FOR THE YEAR 2017-2018

SITE :NARMADA AT HANDIA

CODE :010215022

MEASURING AUTHORITY :

NDN

W.YEAR :2017-18

PRE MONSOON SURVEY (DATE 21.04.2017)

Discharge 'Q' : 95.0 m³/sec

Water edge: L.B.:m, R.B: m

Area of Section 'A' : m²

Mean Velocity' V ' : 0.439m/ sec

Wetted Perimeter 'P': 201.3 m

Hydraulic Mean Depth'R' : 1.470m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	60	260.140	0.870	
2	120	260.010	1.170	Av . Mean Dia "d"= 1.182mm
3	312	260.800	1.200	
4	416	260.050	1.310	Av .Silt Factor " f " = 1.91
5	520	260.780	1.400	
6	624	262.470	1.140	

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

MONSOON SURVEY (DATE 14.08.2017)

Discharge 'Q' :241 m³/sec

Water edge: L.B.: m, R.B:m

Area of Section 'A' : m²

Mean Velocity' V ' :0.369m/ sec

Wetted Perimeter 'P':367.3m

Hydraulic Mean Depth'R' :1.779 m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	60	260.150	0.850	
2	120	260.020	1.400	Av . Mean Dia "d"=1.145 mm
3	312	260.790	1.220	
4	416	260.040	1.110	Av .Silt Factor " f " = 1.883
5	520	260.770	1.160	
6	629	262.960	1.130	

POST MONSOON SURVEY (DATE 30.11.2017)

Discharge 'Q' : m³/sec

Water edge: L.B.: m, R.B: m

Area of Section 'A' :m²

Mean Velocity' V ': m/ sec

Wetted Perimeter 'P': m

Hydraulic Mean Depth'R' : m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	104	260.450	1.16	Av . Mean Dia "d"= 1.1333
2	208	259.200	0.99mm	
3	312	261.150	1.13	
4	416	260.400	1.02Av .Silt Factor " f " = 1.8736	
5	520	260.750	1.15	
6	624	262.400	1.35	

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

7.5 Narmada at Hoshangabad

BED MATERIAL DATA FOR THE YEAR 2017-18

SITE:NARMADA AT HOSHANGABAD
MEASURING AUTHORITY : NDN

CODE : 010215019
W.YEAR :2017-18

PRE MONSOON SURVEY (DATE 13.05.2017)

Discharge 'Q' :91.8m ³ /sec	Water edge: L.B m,R.B.:m			
Area of Section 'A':m ²	Mean Velocity' V ':0.19m/sec			
Wetted Perimeter 'P':434.5m	Hydraulic Mean Depth'R' :1.10 m			
<hr/>				
Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	100	284.220	1.070	
2	200	282.220	0.900Av . Mean Dia "d" = 1.07 mm	
3	300	282.720	0.790	
4	400	284.020	0.830Av .Silt Factor " f " = 1.82	
5	500	284.580	0.830	
6	600	286.615	2.390	
7	700	286.910	0.660	

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

MONSOON SURVEY (DATE 11.10.2017)

Discharge 'Q':231.8m ³ /sec	Water edge:L.B:m,R.B:m			
Area of Section 'A':554.7m ²	Mean Velocity' V ':0.418m/sec			
Wetted Perimeter 'P':431.8m	Hydraulic Mean Depth'R':1.28 m			
<hr/>				
Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	100	283.150	1.090	
2	200	282.330	0.870Av . Mean Dia "d"= 1.00 mm	
3	300	283.730	1.150	
4	400	284.170	1.130Av .Silt Factor " f " = 1.76	
5	500	284.890	0.820	
6	600	286.620	0.780	
7	700	286.890	1.130	

POST MONSOON SURVEY (DATE 24.2.2018)

Discharge 'Q' :574m ³ /sec	Water edge:L.B.:m,R.B.:m			
Area of Section 'A':400.8m ²	Mean Velocity' V ':0.143m/sec			
Wetted Perimeter 'P' :327.1 m	Hydraulic Mean Depth'R':1.23m			
<hr/>				
Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	100	283.140	0.13	
2	200	282.160	1.75Av . Mean Dia "d"= 0.92 mm	
3	300	283.690	0.71	
4	400	284.960	0.72Av .Silt Factor " f " = 1.69	
5	500	286.580	0.82	
6	600	286.510	1.15	
7	700	286.940	1.13	

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

7.6 Narmada at Sandia

BED MATERIAL DATA FOR THE YEAR 2017-2018

SITE :NARMADA AT SANDIA

CODE : 010215013

W.YEAR :2016- 017-

MEASURING AUTHORITY : NDN

17 2018

PRE MONSOON SURVEY (DATE 11.05.2017)

Discharge 'Q' : $64.1 \text{ m}^3/\text{sec}$

Water edge: L.B.:m, R.B.:m

Area of Section 'A' : m^2 Mean Velocity' V ' : 0.683 m/sec

:184.4

Wetted Perimeter 'P': 254.6 m Hydraulic Mean Depth'R' : 0.62 m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	100	306.860	0.88	
2	200	298.010	0.78	Av Mean Dia "d"= .90mm
3	300	298.910	0.89	
4	400	300.475	1.07	Av .Silt Factor " f " =1.706
5	500	302.970	1.03	
6	600	302.770	0.97	
7	700	309.680	0.94	

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

MONSOON SURVEY (DATE 10.10.2017)

Discharge 'Q' : $260.6 \text{ m}^3/\text{sec}$ Q':97.

Water edge: L.B.:195.80m, R.B.:450.00m

Area of Section 'A' : m^2 Mean Velocity' V ' : 0.573 m/sec Wetted Perimeter 'P': 216.1 m Hydraulic Mean Depth'R' : 0.79 m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	100	306.875	0.91	
2	200	298.010	0.98	Av . Mean Dia "d"= 0.862 mm
3	300	299.130	0.85	
4	400	300.495	0.82	Av .Silt Factor " f " = 1.62 1.634
5	500	303.000	0.83	
6	600	302.795	0.78	
7	700	309.690	0.87	

POST MONSOON SURVEY (DATE 04.1.2018)

Discharge 'Q' : $0 \text{ m}^3/\text{sec}$

Water edge: L.B.: m, R.B.:m

Area of Section 'A' : m^2

Mean Velocity' V ' : m/ sec

Wetted Perimeter 'P': m

Hydraulic Mean Depth'R' : m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	100	306.620	0.71	
2	200	298.900	0.94	Av . Mean Dia "d"= 0.895 mm
3	300	296.550	0.76	
4	400	299.000	1.06	Av .Silt Factor " f " = 1.665
5	500	301.960	0.85	
6	600	301.920	0.92	
7	700	309.810	1.03	

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

7.7 Shakkar at Gadarwara

BED MATERIAL DATA FOR THE YEAR 2017-2018

SITE :SHAKKAR AT GADARWARA

CODE : 010215012

MEASURING AUTHORITY :

NDN

W.YEAR :2017-18

PRE MONSOON SURVEY (DATE 12.05.2017)

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	30	322.550	1.33	
2	60	323.340	1.48Av . Mean Dia "d"= 1.182 mm	
3	90	323.580	2.62	
4	120	323.060	1.37Av . Silt Factor " f " = 1.913	
5	150	322.605	1.02	
6	180	321.780	0.08	
7	210	322.870	0.38	

MONSOON SURVEY (DATE 23.10.2017)

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	30	322.570	1.82	Av . Mean Dia "d"= 1.781
2	60	323.345	2.99mm	
3	90	323.580	1.85	
4	120	322.970	3.3Av . Silt Factor " f " = 2.348	
5	150	322.620	1.1	
6	180	322..250	0.83	
7	210	323.110	0.58	

POST MONSOON SURVEY (DATE 06.1.2018)

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	30	322.560	3.02	
2	60	322.345	2.58Av . Mean Dia "d"= 2.545mm	
3	90	323.395	3.06	
4	120	323.070	2.46Av . Silt Factor " f " = 2.80	
5	150	322.615	2.42	
6	180	321.760	1.39	
7	210	322.880	2.89	

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

7.8 Narmada at Barman

BED MATERIAL DATA FOR THE YEAR 2017-2018

SITE :NARMADA AT BARMAN

CODE : 010215011

MEASURING AUTHORITY : NDN

W.YEAR :2017-18

PRE MONSOON SURVEY (DATE 10.05.2017)

Discharge 'Q' :48.10 m³/sec

Water edge: L.B. m R.B. m

Area of Section 'A' :m²

Mean Velocity' V ' : m/ sec

Wetted Perimeter 'P':m

Hydraulic Mean Depth'R': m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	60	312.080	1.24	
2	120	310.015	4.11	Av . Mean Dia "d" = 1.27 mm
3	180	307.640	0.36	
4	240	306.770	0.78	Av .Silt Factor " f " = 1.98
5	300	307.920	1.29	
6	360	322.420	0.32	
7	400	327.870	0.78	

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

MONSOON SURVEY (DATE- 20.10.2017)

Discharge 'Q' :76.10 m³/sec

Water edge: L.B m R.B.m

Area of Section 'A' : m²

Mean Velocity' V ' : 0.408 m/ sec

Wetted Perimeter 'P' 137.1 m

Hydraulic Mean Depth'R':1.36 m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	60	312.095	0.7	
2	120	310.000	3.82	Av . Mean Dia "d" = 2.078 mm
3	180	307.940	2.24	
4	240	306.240	2.61	Av .Silt Factor " f " =2.54
5	300	307.940	1.91	
6	360	322.450	1.49	
7	400	327.890	1.78	

POST MONSOON SURVEY (DATE 9.1.2018)

Discharge 'Q':63.70 m³/sec

Water edge: L.B. m R.B. m

Area of Section 'A' : m²

Mean Velocity' V ' : 0.438 m/ sec

Wetted Perimeter 'P': 125.9m

Hydraulic Mean Depth'R' : 1.16 m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	60.00	311.350	0.73	
2	120.00	310.315	3.15	Av . Mean Dia "d" = 1.505 mm
3	180.00	308.060	1.62	
4	240.00	306.210	2.24	Av .Silt Factor " f " = 2.159
5	300.00	307.975	0.91	
6	350.00	322.440	1.06	
7	400.00	327.890	0.83	

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

7.9 Banjar at Bamni

BED MATERIAL DATA FOR THE YEAR 2017-2018

SITE :BANJAR AT BAMNI

CODE : 010215006

MEASURING AUTHORITY :

NDN

W.YEAR :2017-18

PRE MONSOON SURVEY (DATE 1.05.2017)

Discharge 'Q' : 0.0 m³/sec

Water edge: L.B.: m , R.B : m

Area of Section 'A' : m²

Mean Velocity' V ' : 0.0 m/ sec

Wetted Perimeter 'P':0.0 m

Hydraulic Mean Depth'R' : 0.0 m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	50	439.050	1.02	
2	100	440.110	0.91	Av . Mean Dia "d"= 0.9325mm
3	150	439.060	0.85	
4	200	439.070	0.95	Av . Silt Factor " f " = 1.699

Note : River Dry

MONSOON SURVEY (DATE 15.12.2017)

Discharge 'Q' : m³/sec

Water edge: L.B.: m, R.B.: m

Area of Section 'A' : m²

Mean Velocity' V ' : m/ sec

Wetted Perimeter 'P': m

Hydraulic Mean Depth'R' : m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	50			
2	100			Av . Mean Dia "d" = mm
3	150	NOT COLLECTED		
4	200			Av . Silt Factor " f " =

POST MONSOON SURVEY (DATE 7.02.2018)

Discharge 'Q' :0 m³/sec

Water edge: L.B.: m, R.B.:m

Area of Section 'A' :m²

Mean Velocity' V ' :0. m/ sec

Wetted Perimeter 'P' : m

Hydraulic Mean Depth'R' :0 m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	50	439.340	0.85	
2	100	439.450	0.97	Av . Mean Dia "d"= 0.9625 mm
3	150	439.390	0.96	
4	200	439.380	1.07	Av . Silt Factor " f " = 1.7266

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

7.10 Burhner at Mohgaon

BED MATERIAL DATA FOR THE YEAR 2017-2018

SITE :BURHNER AT MOHGAON
MEASURING AUTHORITY : NDN

CODE : 010215004
W.YEAR :2017-18

PRE MONSOON SURVEY (DATE 24.04.2017)

Discharge 'Q' :0.4071m ³ /sec	Water edge: L.B.:m, R.B.:m			
Area of Section 'A' :m ²	Mean Velocity' V ' :0.025 m/ sec			
Wetted Perimeter'P' :20.88 m	Hydraulic Mean Depth'R' :0.71m			
<hr/>				
Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	50	450.330	6.4	
2	100	448.905	1.54	Av . Mean Dia "d"= 2.4 mm
3	150	451.820	0.88	
4	200	463.920	0.78	Av .Silt Factor " f "= 2.726

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

MONSOON SURVEY (DATE 8.11.2017)

Discharge 'Q' :9.647 m ³ /sec	Water edge: L.B.: m, R.B.:m			
Area of Section 'A' :m ²	Mean Velocity' V ' : 0.404m/ sec			
Wetted Perimeter 'P':27.71m	Hydraulic Mean Depth'R ' : 0.86m			
<hr/>				
Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	50	449.915	4.65	
2	100	448.860	1.05	Av . Mean Dia "d" =1.8725 mm
3	150	452.000	0.63	
4	200	462.080	1.16	Av .Silt Factor " f "= 2.408

POST MONSOON SURVEY (DATE 22.02.2017)

Discharge 'Q' :3.771 m ³ /sec	Water edge: L.B.:103.50 m, R.B.:124.50 m			
Area of Section 'A' :18.79 m ²	Mean Velocity' V ' :0.244 m/ sec			
Wetted Perimeter 'P ' :24.64 m	Hydraulic Mean Depth'R' :0.684 m			
<hr/>				
Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	50			
2	100			Av . Mean Dia "d" =2.52 mm
3	150	NOT COLLECTED		
4	200			Av .Silt Factor " f " = 2.80

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

7.11 Narmada at Manot**BED MATERIAL DATA FOR THE YEAR 2017-2018****SITE :NARMADA AT MANOT**

CODE : 010215002

MEASURING AUTHORITY : NDN

W.YEAR :2016-17

PRE MONSOON SURVEY (DATE 22.04.2017)Discharge 'Q' : $1.289 \text{ m}^3/\text{sec}$

Water edge: L.B.:m, R.B.:m

Area of Section 'A' : m^2 Mean Velocity' V' : 129 m/sec Wetted Perimeter 'P': 37.00 m Hydraulic Mean Depth 'R' : 27 m

Sample. No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	50	444.260	2.23	
2	100	443.720	0.87	Av . Mean Dia "d"= 1.098mm
3	150	442.420		Rocky Bed
4	200	455.750	0.87	Av . Silt Factor " f " = 1.843
5	250	459.360	0.42	

MONSOON SURVEY (DATE 16.11.2017)Discharge 'Q' : m^3/sec

Water edge: L.B.:m, R.B.:m

Area of Section 'A' : m^2 Mean Velocity' V' : m/sec Wetted Perimeter 'P': m Hydraulic Mean Depth'R' : m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	50	444.150	1.04	
2	100	443.730	0.74	Av . Mean Dia "d" = 0.795 mm
3	150	453.200	0.57	
4	200	460.250	0.83	Av . Silt Factor " f " = 1.569

POST MONSOON SURVEY (DATE 23.02.2017)Discharge 'Q' : $6.685 \text{ m}^3/\text{sec}$ Water edge: L.B.: 64.00 m , R.B.: 105.40 m Area of Section 'A' : 10.37 m^2 Mean Velocity' V' : 0.427 m/sec Wetted Perimeter 'P': 40.04 m Hydraulic Mean Depth'R' : 0.39 m

Sample No	R.D. sampling point (m)	R.L.of Bed (m)	Mean Diameter (mm)	Remarks
1	50			
2	100			Av . Mean Dia "d" = mm
3	150	NOT COLLECTED		
4	200			Av . Silt Factor " f " =
5	250			

Note ; 1) Discharge was observed at S / G section 2) Single Channel Flow

Plate 1: Line Diagram of Narmada Basin

Silt observation stations under Narmada Basin Organisation, Bhopal

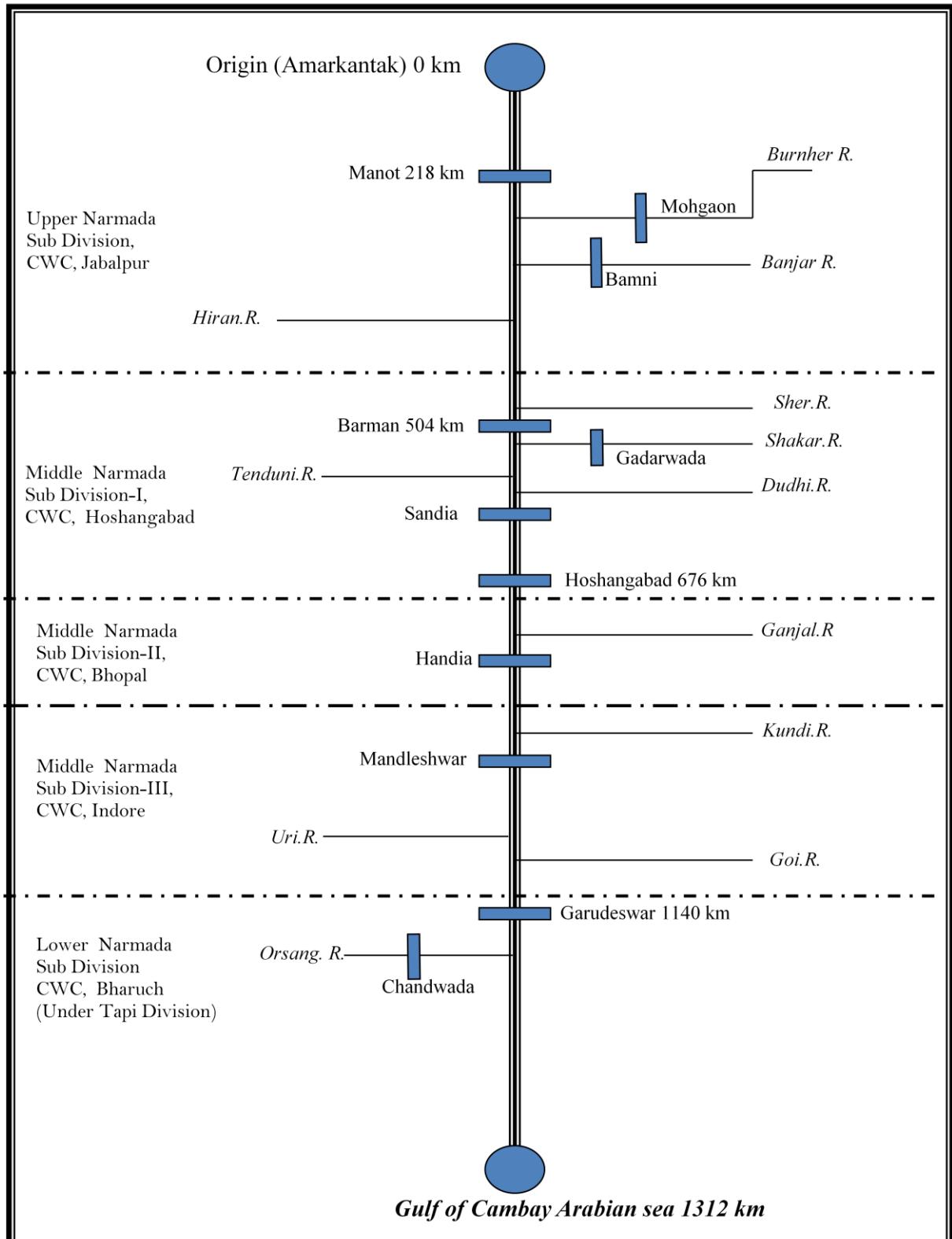


Plate 2: Index Map of Narmada Basin

