GOVERNMENT OF INDIA
CENTRAL WATER COMMISSION
FLOOD FORECAST MONITORING DIRECTORATE

FLOOD FORECASTING AND WARNING NETWORK
PERFORMANCE APPRAISAL REPORT 2021

NEW DELHI - 110066 **November, 2022**

Member (RM)
Central Water Commission
Sewa Bhawan, R. K. Puram
New Delhi - 110 066

PREFACE

Central Water Commission started Flood Forecasting & Warning services in India in November, 1958 by setting up a forecasting station at Old Delhi Railway Bridge, for the national capital, on river Yamuna. Its network of Flood Forecasting and Warning Stations gradually extended across the country covering almost all the major inter-state flood prone river basins.

During the year 2021, the flood forecasting services were extended to 331 stations which comprised of 199 Level and 132 Inflow forecast stations in 20 major river basins. It covered 22 States besides Union Territories of NCT of Delhi, Jammu & Kashmir and Daman & Diu. The flood forecasting activities of CWC are being performed every year from May to December through its 36 field Divisions which issue flood forecasts and warnings to the Civil authorities of the states as well as to other organizations of the Central & State Governments, as and when the river water level touches or is expected to cross the warning level at the level flood forecasting stations. CWC also monitors the flood situation and uploads data in the website **http://india-water.gov.in/wims**. Flood situation is monitored through the website **http://ffs.india-water.gov.in/**. During Flood Season 2021, level forecasts were issued for 140 stations out of 199 stations. Likewise, inflow forecasts were issued for 79 reservoir/dam/barrages out of 132 inflow stations. The inflow forecasts are formulated whenever the inflow into the reservoirs exceeds the threshold value fixed by the respective project authorities for reservoir regulation as well as for flood moderation.

During 2021 flood season, 8 Flood Forecast stations flowed in Extreme Flood situation. Severe Flood situation was witnessed in 87 Flood Forecasting Stations. 42 Flood forecast stations witnessed Above Normal Flood Situation. The major flood events during the year 2021 were the Extreme Floods witnessed in the states of Bihar, Uttar Pradesh, Odisha, West Bengal and Andhra Pradesh.

10,617 forecasts were issued during the year 2021 out of which 9976 forecasts (93.96%) were found to be within the limits of accuracy. The number of level forecasts issued during the year 2021 was 6670 out of which 6456 (96.79%) were within the limit of accuracy of ± 0.15 m. 3947 nos. inflow forecasts were issued out of which 3520 (89.18%) were within the limits of accuracy of ±20%. Daily Flood Situation Reports cum Advisories (DFSITREPcA) based on 5-day rainfall warning of IMD were issued on daily basis. Advisories on Extreme floods in Odisha, Andhra Pradesh, Tamil Nadu, Karnataka, Kerala and Puducherry were issued in DFSITREPcA for taking up relief and rescue operations in advance which was well appreciated by the beneficiaries at both National and State Levels.

Rainfall-Runoff advisories based on the satellite estimates of rainfall, AWS/ARG data of IMD/CWC as well as the rainfall forecast products of Weather Research and Forecast (WRF) model at a resolution of 0.25m x 0.25m were continued in flood season 2021 and was put in Uniform Resource Locator (URL) http://aff.india-water.gov.in/. CWC wishes to place its acknowledgements for the services provided by IMD through its Hydromel & Numerical Weather Prediction and AWS Lab units at the Headquarters, Pune as well as various FMOs of IMD.

The level of performance achieved has been possible as a result of the dedicated team-work of the officers and staff manning the various activities of hydro-meteorological observations & flood forecasting and monitoring of the field offices.

Flood Forecast Monitoring (FFM) Directorate plays an important role in compiling the information received from various field offices at Headquarters and issues daily bulletins which are shared with all stakeholders. I wish to place on record my deep appreciation of the perseverance by the officers and staff of FFM, FCA - 1 and FCA - 2 Directorates in carrying out the flood forecasting work with utmost devotion & dedication. The staff of FFM Directorate, along with other supporting staff from other Directorates/Wings during flood duties in the flood season of 2021 also deserve all appreciation in keeping the control room fully functional on all the weekdays, including holidays, Saturdays & Sundays. The control room was kept operational round the clock throughout the flood season.

It is hoped that the momentum gained in expanding the flood forecasting network, improving performance of the forecast and adopting modernization methods including in the field of dissemination techniques will be further accelerated to achieve greater effectiveness of each and every forecast with the help of mathematical modelling supported by real-time data from telemetry.

Suggestions/ comments of the users of this report with a view to further enhance its usefulness are welcome.

New Delhi
November, 2022

(P Manroi Scott)
Member (RM)

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EXECUTIVE SUMMARY

0.1 METEOROLOGICAL SITUATION

During 2021, the southwest monsoon performance was as given below.

- The southwest monsoon seasonal rainfall during June to September for the country as a whole has been normal (96 -104% of LPA).
- Quantitatively the 2021 all India monsoon seasonal rainfall during 1 June to 30 September 2021 has been 87.0 cm against long period average of 88.0 cm based on data of 1961-2010 (99% of its Long Period Average (LPA)).
- The southwest monsoon seasonal (June to September) rainfall over the four homogeneous regions is Normal over Northwest India (96%) and central India (104%). Seasonal rainfall is below normal over East and Northeast India (88%) and above normal over South Peninsula India (111%).
- The southwest monsoon seasonal (June to September) rainfall over the monsoon core zone, which consists of most of the rainfed agriculture regions in the country is above normal (>106% of LPA).
- Out of the total 36 meteorological subdivisions, 20 subdivisions constituting 58% of the total area of the country received normal seasonal rainfall, 10 subdivisions received excess rainfall (25% of the total area) and 6 subdivisions (17% of the total area) received deficient season rainfall**.** These 6 Met subdivisions which got deficient rainfall are Nagaland, Manipur, Mizoram & Tripura, Assam and Meghalaya, Arunachal Pradesh, Jammu & Kashmir and Ladakh, West Uttar Pradesh and Lakshadweep. Out of these six Subdivisions, three lie in northeast India. Two Met Subdivisions which got much higher than normal rainfall in the season are Marathawada and Telangana.
- Considering month to month rainfall variation over India as a whole, the season is very uniquely placed in the historical record for its distinct and contrasting month to month variation. The rainfall over country as a whole was 109%, 93%, 76% and 135% of LPA during June, July, August and September respectively**.**
- A deep depression formed during 12-15 September and cyclonic storm "GULAB" during 24-28 September.
- The formation and movement of the cyclone TAUKTAE, over Arabian Sea (during 14-19 May) and severe Cyclonic storm "YAAS" over Bay of Bengal (during 23rd to 28th May) helped to increase cross equatorial flow and the onset of monsoon.
- Southwest monsoon current reached south Andaman Sea and Nicobar Islands on 21st May 2021 (1 day ahead of its normal date), but further advance was sluggish. It set in over Kerala on 3rd June; Monsoon covered the entire country on 13th July 2021; 5 days after its normal date (8th July).
- Monsoon started withdrawing from western parts of northwest India on 06th October 2021 against the normal date of 17th September with a delay of around 20 days. The Southwest Monsoon withdrew from the entire country on 25th October 2021.

0.2 FLOOD SITUATION

Extreme flood situation was witnessed in 8 Flood Forecasting stations, Severe Flood situation was witnessed in 87 Flood Forecasting Stations and 42 Flood forecast stations witnessed Above Normal Flood Situation. No flood forecast were issued for 112 flood forecasting stations which include 59 level forecasting stations and 53 inflow forecasting stations. Out of the 132 reservoirs in the network, inflow forecasts were issued at 79 reservoirs and in 53 reservoirs the inflows did not exceed the criteria for issuing inflow forecasts. The significant flood event of this

year was the Extreme Floods witnessed in Bihar, Uttar Pradesh, West Bengal, Odisha and Andhra Pradesh state.

0.3 FLOOD FORECASTING PERFORMANCE

During the year 2021, 10617 forecasts were issued out of which 9976 forecasts (93.96%) were found to be within the limits of accuracy. The number of level forecasts issued during the year 2021 were 6670 out of which 6456 (96.79%) was within the limit of accuracy of ±0.15 m. The number of inflow forecasts issued was 3947 out of which 3520 (89.18%) were within limits of accuracy of ±20%. CWC issued Daily Flood Situation Report cum Advisories (DFSITREPcA) during the monsoon season. This contains the usual daily rainfall situation, rainfall forecast for the next 5 days, daily flood bulletin for the day and the flood situation and advisories for the next few days, GIS based Map indicating the districts alerted/affected by flood and reservoirs having inflow forecasts. Further, the report was sent to all beneficiaries including State Governments through e-mail on a daily basis.

SALIENT FEATURES OF FLOOD FORECASTING SYSTEM

The 'Salient Features' of Flood Forecasting and Warning System of the Central Water Commission are given in the table shown below:

1.	Establishment of 'First Scientific Flood Forecasting Unit' (F.F.U.) at Delhi in India	November, 1958
2.	Date of issue of first scientific flood forecast	25th July, 1959
3.	Name of first forecasting site and river	Delhi Railway Bridge (old) on River Yamuna
4.	Year of commencement of flood forecasting system on the inter-state rivers i.e. first national level expansion	1969
5.	No. of Chief Engineer's offices including one CE (Flood Management) at CWC' headquarters	15
6.	No. of Superintending Engineer's offices including one Flood Forecast Monitoring Directorate at CWC headquarter	20
7.	No. of present Flood Forecasting Divisions	36
8.	No. of states including union territories covered under Flood Forecasting Programme	25
9.	No. of forecasting sites	331
10.	No. of gauge and gauge & discharge sites	1569
11.	No. of Telemetry Stations installed	1014
13.	No. of forecasts issued in flood season 2017	6297
14.	No. of forecasts issued in flood season 2018	6851
15.	No. of forecasts issued in flood season 2019	9754
16.	No. of forecasts issued in flood season 2020	11721
17.	No. of forecasts issued in flood season 2021	10617

CHAPTER - 1

NATIONAL FLOOD FORECASTING NETWORK

1.1 FLOOD FORECASTING SERVICES

Flood causes considerable damage to human lives and property almost every year. Since the adoption of National Flood Policy by Government of India in 1954, it was realized that a total protection against flood by structural means alone is not possible and that optimum solution would consist of a mixture of structural and non-structural measures. Therefore, stress has been laid on non-structural measures like flood forecasting and warning, which is most important among such means to minimize the damage potential from floods. Accurate and timely flood forecasts and advance warning have, therefore, to be aimed for providing valuable time to the people and to civil authorities in taking preventive measures like evacuation, relief and rehabilitation measures, preparedness for flood fighting by engineering authorities, etc. and thus mitigating such loses from floods.

1.2 FLOOD FORECASTING NETWORK IN THE COUNTRY

Flood Forecasting has been recognized as the most important and cost effective non-structural measure for flood management. Recognizing the great importance of this measure, flood forecasting of river Yamuna at Delhi was suggested by Reddy Committee set up by the then Hon'ble Prime Minister, Govt. of India to manage flooding of Delhi. Accordingly in the year 1958, CWC commenced the flood forecasting services in a small way by establishing flood forecasting unit for issuing water level forecasts of the Yamuna for the National Capital, Delhi. On the recommendation of various committees/panels, a "Flood Forecast & Warning Organisation" was set up in CWC in 1969 to establish forecasting sites on inter-state rivers at various flood prone places in the country. 41 forecasting sites were added in 1969, making total number of forecasting sites to 43. Extension of the services followed from time to time. The year-wise positions of the number of flood forecasting sites till the flood season 2021 in the network of Central Water Commission are shown in the **Table - 1.1.** The details of year wise expansion of Flood Forecasting Stations are shown in **Annex - I** and **Fig 1.1**.

Table - 1.1: Year-wise expansion of forecasting sites in CWC

Year	Cumulative No. of Flood Forecasting Sites	Year	Cumulative No. of Flood Forecasting Sites
1958	01	2004	172
1965	02	2005	173
1969	43	2006	175
1977	77	2015	176
1980	84	2016	199
1985	145	2017	226
1987	147	2018	249
1990	157	2019	325
2001	159	2020	328
2002	161	2021	331
2003	166		

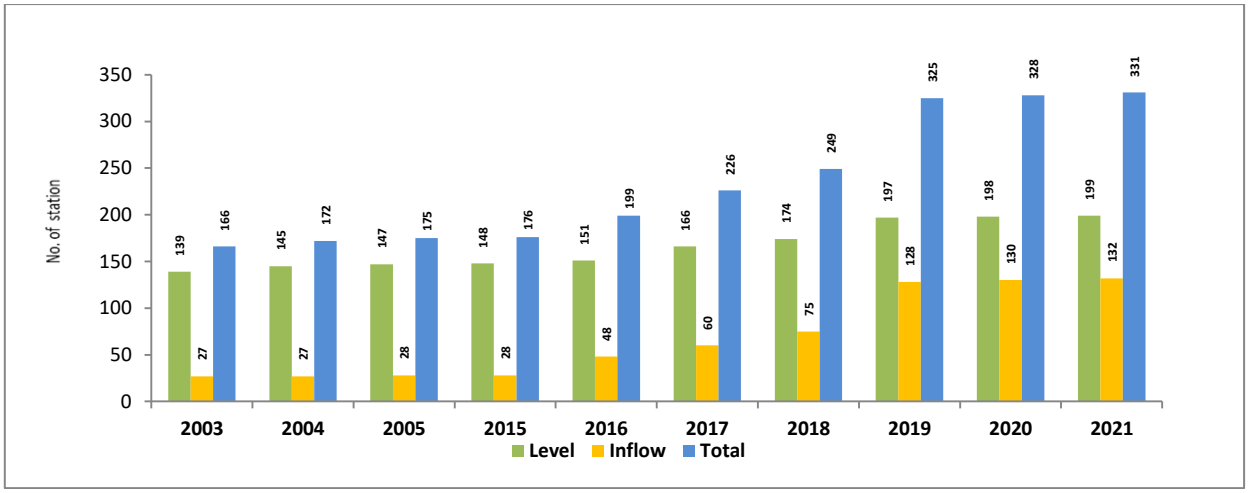


Fig 1.1: Year wise expansion of Flood Forecasting stations

The 'National Flood Forecasting and Warning Network' of Central Water Commission, which comprised of 331 flood forecasting sites including 132 inflow forecasting sites in flood season 2021 is shown in **Map - 1.** The number of flood forecasting sites on each of the major inter-state river systems is in the **Table - 1.2**. Basinwise Flood Forecasting network in India are shown in **Fig 1.2**.

Map - 1: Flood Forecasting Network in India

Table - 1.2: Number of flood forecasting sites in inter-state river systems

Sr. No.	Major Interstate River Systems	No. of FF stations		
		Level	Inflow	Total
1	Indus and its tributaries	3	0	**3**
2	Ganga & its tributaries	96	39	**135**
3	Brahmaputra & its tributaries	39	5	**44**
4	Barak System	6	0	**6**
5	Subarnarekha (i/c Burhabalang)	4	3	**7**
6	Brahmani & Baitarni	3	2	**5**
7	East Flowing (Mahanadi to Pennar)	4	4	**8**
8	Narmada	4	6	**10**
9	Tapi	1	2	**3**
10	Mahi	1	4	**5**
11	Sabarmati	1	1	**2**
12	Mahanadi	3	3	**6**
13	Godavari	18	24	**42**
14	Krishna	5	19	**24**
15	West Flowing Rivers (Kutch & Saurashtra)	1	1	**2**
16	West Flowing Rivers (Tapi to Tadri)	2	1	**3**
17	Cauvery and its tributaries	3	9	**12**
18	Pennar	1	1	**2**
19	East Flowing Rivers (Pennar to Kanyakumari)	1	6	**7**
20	West Flowing River (Tadri to Kanyakumari)	3	2	5
Total		**199**	**132**	**331**

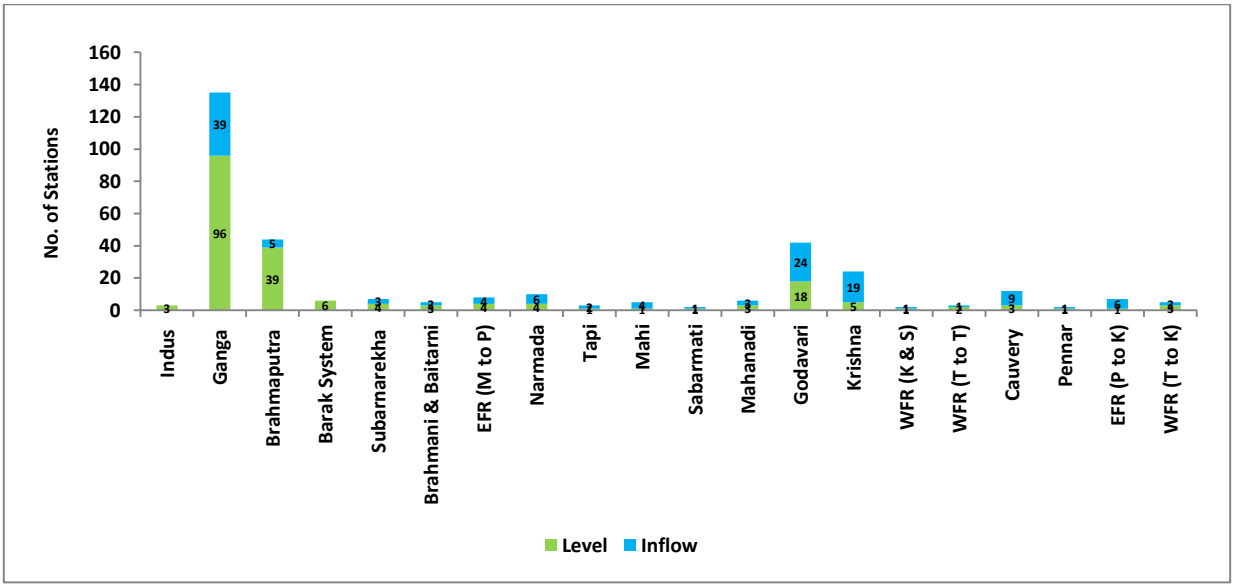


Fig 1.2: Basin-wise Flood Forecasting Network

The above flood forecasting network covers the following 22 states & 3 Union Territories (UTs). State/ UT wise distribution of flood forecasting stations is shown in **Table - 1.3.** State-wise Flood Forecasting network in India are shown in **Fig. 1.3.**

Table - 1.3: State/ UT wise Flood Forecasting Network in CWC

Sl. No.	Name of State/UT	Number of flood Forecasting Stations		
		Level	Inflow	Total
1	Andhra Pradesh	10	10	20
2	Arunachal Pradesh	3	0	3
3	Assam	30	0	30
4	Bihar	40	3	43
5	Chhattisgarh	1	2	3
6	Gujarat	6	7	13
7	Haryana	1	1	2
8	Himachal Pradesh	1	0	1
9	Jharkhand	2	15	17
10	Karnataka	1	14	15
11	Kerela	3	2	5
12	Madhya Pradesh	2	12	14
13	Maharashtra	8	14	22
14	Odisha	12	7	19
15	Rajasthan	4	10	14
16	Sikkim	3	5	8
17	Tamil Nadu	4	11	15
18	Telangana	5	8	13
19	Tripura	2	0	2
20	Uttar Pradesh	39	5	44
21	Uttarakhand	4	2	6
22	West Bengal	12	4	16
23	Daman & Diu	1	0	1
24	NCT of Delhi	2	0	2
25	Jammu & Kashmir	3	0	3
Total		**199**	**132**	**331**

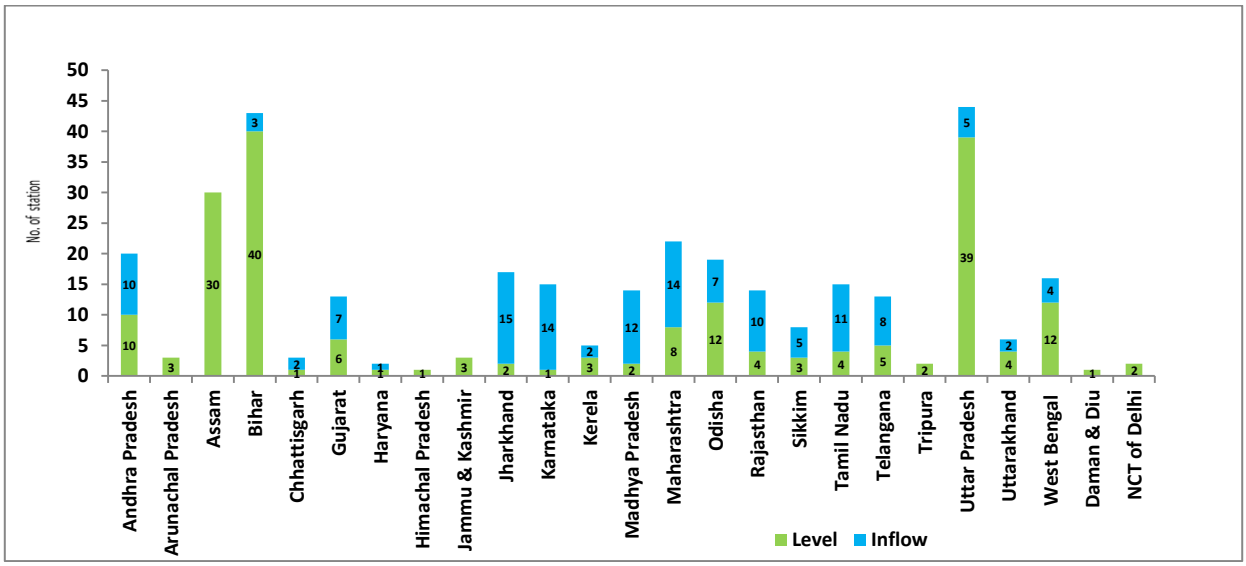


Fig. 1.3: State wise Flood Forecasting Network

Central Water Commission through its twenty nine flood forecasting divisions issued forecasts to the various user agencies, which includes various civil/ engineering agencies of the States/Central Governments such as Irrigation/ Revenue/ Railways/public undertakings and Dam/Barrage Authorities/District Magistrates/Sub Divisional Officers besides the Defence Authorities involved in the flood loss mitigation work. During the flood season, the Hon'ble Minister of Jal Shakti, Government of India, the Chairman and the Member (River Management) of Central Water Commission were also being apprised of the latest flood situations in the above river basins in the country.

1.3 CLASSIFICATIONS OF VARIOUS FLOOD SITUATIONS

The Central Water Commission has categorized various flood situations, for monitoring the floods in the country through its level flood forecasting network, into the following three different categories, depending upon the severity of floods i.e. based on floods magnitudes.

(i) ABOVE NORMAL FLOOD

The river is said to be in **'ABOVE NORMAL'** situation at any water level stations when the water level of the river touches or crosses the warning level, but remains below the danger level of the forecasting site.

(ii) SEVERE FLOOD

If the water level of the river touches or crosses its danger level, but remains below the Highest Flood Level of the site (commonly known as 'HFL') then the flood situation is called the '**SEVERE FLOOD'** situation.

(iii) EXTREME FLOOD

The flood situation is said to be **'EXTREME FLOOD'** when the water level of the river touches or crosses the '**HIGHEST FLOOD LEVEL'** recorded at any water level station so far.

1.4 STANDARD OPERATING PROCEDURE (SOP) FOR FLOOD FORECASTING & WARNING

The basic activity of data collection, its transmission and dissemination of flood forecasts to the local administration is carried out by the field divisions of CWC. The modelling centres and Divisional Flood Control Rooms (DFCR) are located in the premises of the field divisions. The field divisions perform these activities as per existing Manual on Flood Forecasting which contains the following critical activities as the general SOPs:

1. Nomination of Nodal Officers of CWC for interaction with the Nodal Officers of concerned State Governments before monsoon every year.
2. Gearing up of flood forecasting network before monsoon every year.
3. Operation of Divisional Flood Control Room (DFCR) during monsoon every year.
4. Operation of Central Flood Control Room (CFCR) during monsoon every year.
5. Issue of flood forecasts to designated officers of concerned State and transmission thereof through FAX/ Telephone/ E-mail/ Special Messengers during monsoon every year.
6. Sending flood alerts through SMS on Mobile Phones to the concerned officers of State/ Central Government during severe (6 hourly updates) and extreme (3 hourly updates) flood situations and uploading of Flood Forecasts and hourly water level data in CWC's Flood Forecasting Website as per Standard Operating procedure (SOP) for issuing alerts and

electronic messaging in the event of disaster situations issued by Ministry of Home Affairs from time to time.

For the purpose of dissemination of alerts to PMO/Cabinet Secretariat, a uniform system has been devised by categorizing each type of alert in stages- Yellow, Orange and Red.

Categories of alerts for flood in respect of level forecasts is as indicated below.

Category	Description	Stage
III	Above Normal Flood (Water level between Warning level and Danger level)	Yellow
II	Severe Flood (Water level below HFL and above Danger Level)	Orange
I	Extreme Flood (Water Level equal and above Highest Flood Level - HFL)	Red

1.5 INFLOW FORECAST

Inflow Forecasts are issued for dams/reservoirs/barrages in various river basins in the country. The project authorities have identified the threshold inflow limits for issue of forecast considering various factors such as safety of the dam, status of reservoir, downstream channel/ canal requirements. The inflow in volume during the given duration indirectly indicates the possibility of accommodating the given volume or otherwise in the reservoir. The outflow pattern is decided keeping in view of the safety measures at the reservoir and the likely impact of the outflow from the reservoir to cause damages/ difficulties in the downstream areas giving due attention to the Emergency Action Plan (EAP) of the project. There is need for EAP for all reservoirs covering normal operational releases and high releases during floods.

The salient features of all Flood Forecasting Sites, the details of all the sites basin-wise as well as State-wise during the flood season 2021, is shown at **Annex - II, Annex – III (A & B)** and **Annex – IV (A & B)** respectively.

1.6 DATA COMMUNICATION SYSTEM

Central Water Commission maintains Wireless Stations for near real–time data communication. These wireless sets work on pre-fixed schedules for receiving the vital hydro-meteorological data immediately after its observation. In addition, telephone/ mobile phone, fax and internet are also used for dissemination of flood forecasts to user agencies.

Now under modernization program, satellite based Telemetry System has been installed at various stations for sensor based automatic data collection and satellite based communication.

The installation of Telemetry System for automatic sensor based data collection and satellite based data communication was initiated during IX Plan. At present, 1014 telemetry stations have been installed.

In order to receive and analyse data collected by the telemetry stations, Earth Receiving Stations and Modelling Centres have been installed in various parts of the country during different Plan periods. There were 3 Earth Receiving Stations (ERS) in the country at New Delhi, Jaipur and Burla. A total of 27 Modelling centres have been installed in the country. These Modelling Centres are located at Agra, Asansol, Bengaluru, Bhubaneshwar, Burla, Bhopal, Bhusawal, Chennai, Haridwar, Dibrugarh, Gandhinagar, Gangtok, Guwahati, Hyderabad (2 Nos.- one each for Krishna and Godavari basins), Jaipur, Jalpaiguri, Nagpur, Lucknow (2 Nos.), Maithon, New Delhi (2 Nos.-

one each at headquarter and Yamuna basin), Patna, Shimla, Surat and Varanasi. The data reception from stations all over India is being monitored from Central Flood Control Room at CWC Headquarter, New Delhi.

The data received was used mainly by the divisions issuing forecast by MIKE-11. Also, it is planned to transfer data observed through telemetry to WIMS software for flood forecasting activities. Expansion of Telemetry Network are shown in **Fig 1.4** and **Table - 1.4.**

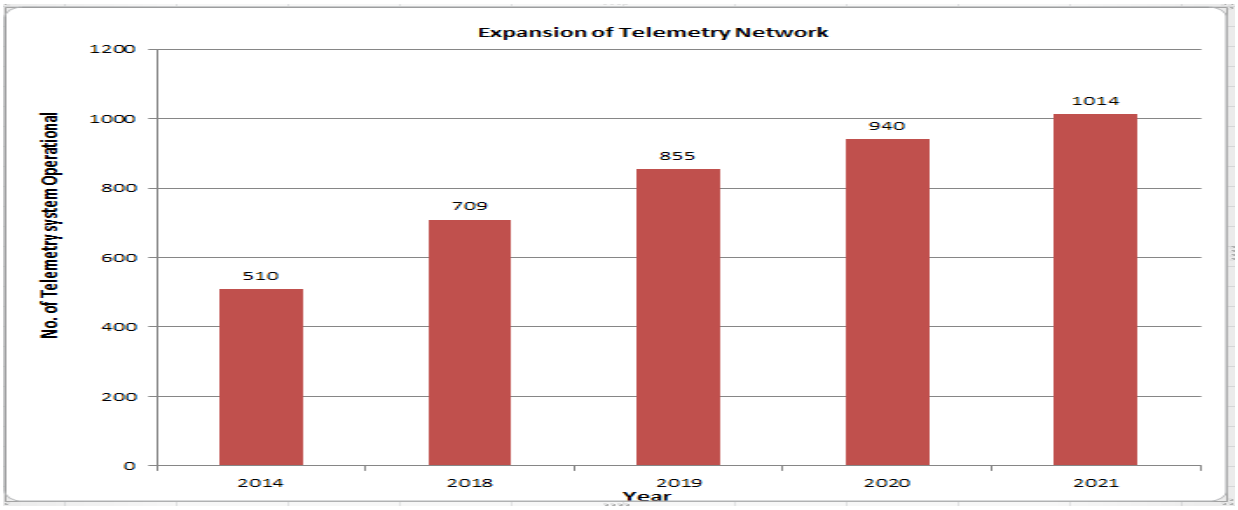


Fig. 1.4: Expansion of Telemetry Network

Table 1.4: TELEMETRY STATUS

Plan	No. of Station installed	Basins	No.
IX	55	Chambal	
		Upper Mahanadi Basin	
X	168	Godavari	63
		Krishna	41
		Brahmaputra	21
		Damodar	20
		Yamuna	15
		Mahanadi	8
XI	222	Indus	4
		Ganga	63
		Yamuna	25
		Narmada & Tapi	76
		Mahanadi	36
		Brahmaputra	14
		Godavari	4
XII	515	Brahmaputra	67
		Yamuna	51
		Godavari	25
		Pennar	5
		Krishna	15
		Eastern River	30
		Teesta	50

		Narmada	12
		Ganga	153
		Chenab	4
		Mahi Tapi	24
		Southern River	38
		Cauvery	32
		Wainganga	9
XIV	54 (Under 125)	Ganga	42
		Krishna	12
Earth Receiving Centre		: **3** (New Delhi, Jaipur, Burla)	
Modelling Centre		: **27** (Agra, Asansol, Bengaluru, Bhubaneshwar, Burla, Bhopal, Chennai, Haridwar, Dibrugarh, Gandhinagar, Gangtok, Guwahati, Hyderabad (2 Nos.- one each for Krishna and Godavari basins), Jaipur, Jalpaiguri, Nagpur, Two at Lucknow, Bhusawal, Maithon, New Delhi (2 Nos.- One each at headquarter and Yamuna basin), Patna, Shimla, Surat and Varanasi.	

1.7 DAMAGE DUE TO FLOODS/ HEAVY RAINS BETWEEN 1953 TO 2021

The damage due to floods for the entire country was Rs. 21189.166 Crore during the flood season 2020. The average annual damages to crops, houses and public utilities from the year 1953 to 2020 as reported by the States/ UTs are of the order of Rs. 6428.672 Crore. The maximum annual damage reported is Rs. 57291.098 Crore during 2018.

A comparative details showing the details of damages occurred during the flood season 2019 to 2021 on different accounts, received from the revenue authorities of the State Governments is given in the **Table - 1.5**.

Table 1.5: Damages occurred during flood season 2019 to 2021

Sl. No.	Items	Flood Damages				Flood Damages (1953 - 2020)	
		2019	2020	2021*	Average (1953-2020)	Maximum	
						Year	Damage
1	Area affected (mha)	11.60	6.90	4.52	7.24	1978	17.50
2	Population affected (millions)	46.35	27.43	23.52	32.34	1978	70.45
3	Damage to Crops (mha)	10.69	6.55	34.20	4.10	2005	12.30
4	Damage to crops (Rs. Crore)	10902.35	5626.02	13472.80	1933.27	2015	17043.95

5	Damage to houses (numbers)	656595	237196	324919	1213606	2015	3959191
6	Damage to houses (Rs. Crore)	462.79	272.10	3636.42	838.50	2009	10809.80
7	Cattle lost (number)	25852	47463	5671	90926	1979	618248
8	Human lives lost (numbers)	2754	1815	1045	1676	1977	11316
9	Damage to public Utilities (Rs. Crores)	4498.39	5458.01	8781.10	3443.37	2013	38937.84
10	Total damages to crops, houses & public utilities (Rs. crores)	15863.53	21189.17	28959.83	6428.67	2015	57291.10

***** Tentative

1.8 ANALYSIS OF PERFORMANCE OF FLOOD FORECASTING NETWORK

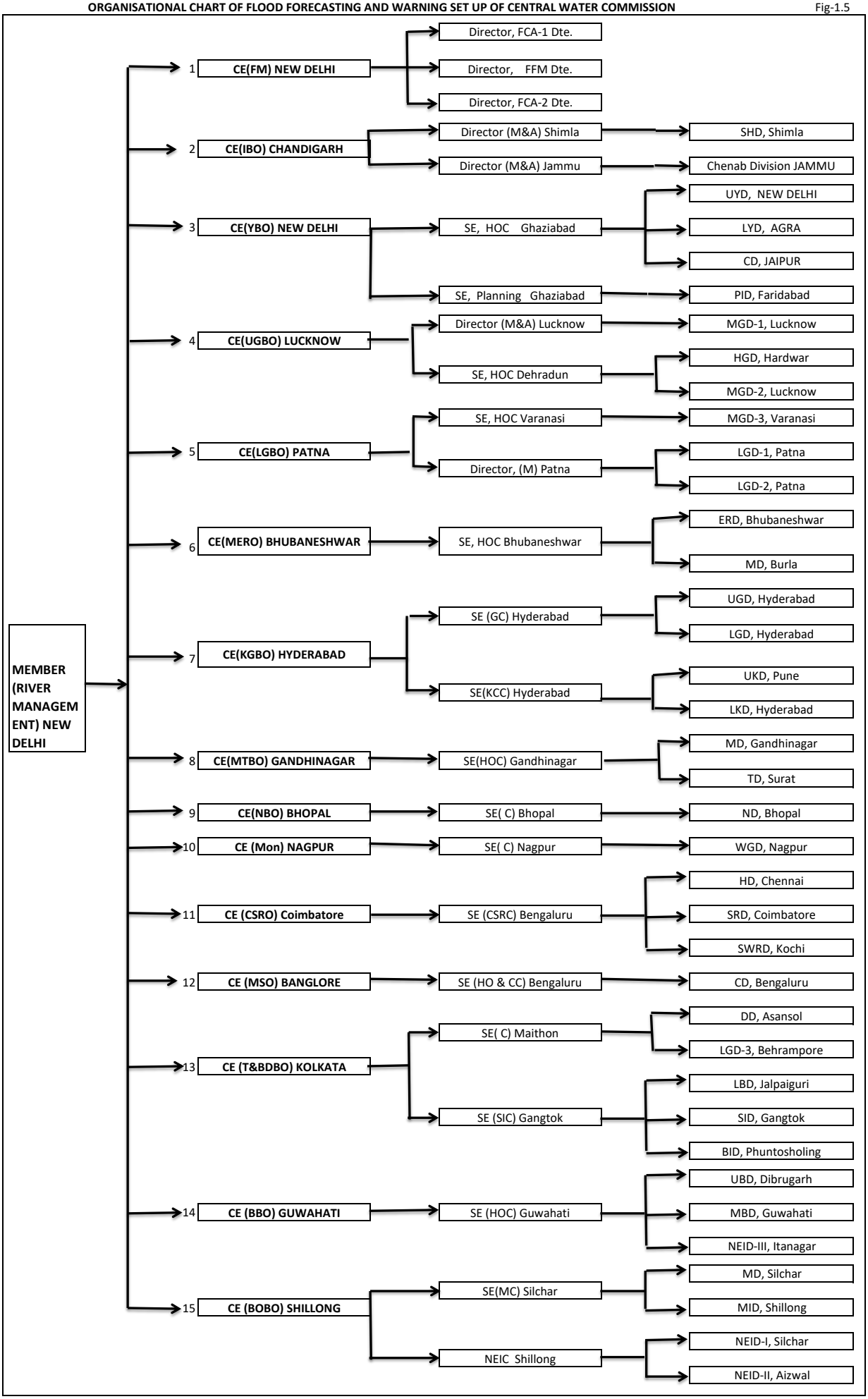
CWC carried out analysis and appraisal of the forecasting work, at the end of monsoon season. Based on this, measures for improvements, if necessary, are identified. A summary of the performance of the work carried out by the field Divisions during the flood season 2021 has been presented in **Chapter - 4**. While the performance of the flood forecasting system is satisfactory, yet there is constant endeavor for improving the performance; especially for additional warning time as new technology and more data are becoming available.

1.9 ORGANISATIONAL SET-UP OF FLOOD FORECASTING NETWORK

The present organizational set up of Flood-forecasting & Warning Establishment of Central Water Commission under the Member (River Management) is spread over regional offices of CWC each headed by a Chief Engineer. Twenty Circle Offices and thirty six Divisions in its field formations carry out flood forecasting activities. Chief Engineer (Flood Management) and Flood Forecast Monitoring Directorate monitor the Flood Forecasting activities in the headquarters. It also issues flood bulletins at national level.

The organizational chart of Flood Forecasting and Warning set up of the Central Water Commission is given at **Fig. 1.5.** List of flood forecasting stations are in **Table - 1.6.**

ORGANISATIONAL CHART OF FLOOD FORECASTING AND WARNING SET UP OF CENTRAL WATER COMMISSION Fig-1.5



NOTE:- Chief Office-15, Directorate-3, Circle Office-20, Division Office-38(36 involved in Flood Forecasting & Monitoring)

Table 1.6: List of Flood Forecast Stations											
1	Sangam	57	Lucknow (Hanuman Setu)	113	Jhanjarpur	169	NH 31 (Jaldhaka)	225	Barna Dam	281	Atreyapuram
2	Rammunshibagh	58	Rae Bareilly	114	Sonebarsa	170	Hasimara	226	Bargi Dam	282	Koyna Dam
3	Safapora	59	Jaunpur	115	Baltara	171	Ghugumari	227	Tawa Dam	283	Warna Dam
4	Srinagar	60	Ghazipur	116	Kursela	172	Mathabanga	228	Hoshangabad	284	Arjunwad
5	Ganganagar	61	Buxar	117	Sahibganj	173	Teesta III HEP	229	Indira Sagar Dam	285	Hippargi Barrage
6	Rishikesh	62	Ballia	118	Taibpur	174	Rangit-III HEP Dam	230	Omkareswar Dam	286	Hidkal Dam
7	Haridwar	63	Banbasa Barrage	119	Dhengraghat	175	Teesta V HEP	231	Sardar Sarovar Dam	287	Almatti Dam
8	Dharmanagari Barrage	64	Katarniaghat Barrage	120	Jhawa	176	Singtam	232	Garudeswar	288	Malaprabha Dam
9	Garhmukhteshwar	65	Elginbridge	121	Araria	177	Rongpo Dam	233	Bharuch	289	Narayanpur Dam
10	Narora Barrage	66	Ayodhya	122	Farakka	178	Rongli Dam	234	Hathnur Dam	290	Vir Dam
11	Kachlabridge	67	Kakardhari	123	Massanjore Dam	179	Melli Bazar	235	Ukai Dam	291	Ujni Dam
12	Fatehgarh	68	Balrampur	124	Tilpara Barrage	180	Jorethang	236	Surat	292	Deongaon Bridge
13	Kalagarh Dam	69	Bansi	125	Narayanpur	181	Domohani Bridge	237	Madhuban Dam	293	PD Jurala Project
14	Moradabad	70	Birdghat (Gorakhpur)	126	Sikatia Barrage	182	Mekhliganj	238	Vapi	294	Upper Tunga
15	Bareilly	71	Turtipar	127	Gheropara	183	AP Ghat (Silchar)	239	Daman	295	Bhadra Dam
16	Dabri	72	Darauli	128	Tenughat Dam	184	Matizuri	240	Nasik	296	Tungabhadra Dam
17	Kannauj	73	Gangpur Siswan	129	Tilaiya Dam	185	Badarpurghat	241	N M D Weir	297	Singatlur Barrage
18	Ankinghat	74	Chhappra	130	Konar Dam	186	Karimganj	242	Kopergaon	298	Mantralayam
19	Kanpur	75	Bansagar Dam	131	Panchet Dam	187	Kailashahar	243	Mula Dam	299	Sunkesula Barrage
20	Dalmau	76	Rihand Dam	132	Maithon Dam	188	Sonamura	244	Jaikwadi Dam	300	Kurnool
21	Phaphamau	77	Annaraj Dam	133	Durgapur Barrage	189	Getlasud Dam	245	Manjlegaon Dam	301	Srisailam Dam
22	Paonta Sahib	78	Bhirawa Dam	134	Sundar Dam	190	Chandil Dam	246	Gangakhed	302	Musi Dam
23	Hathnikund Barrage	79	Inderpuri Barrage	135	Harinkhola	191	Galudih Barrage	247	Yeldari Barrage	303	Dr KLRS Pulichintala Dam
24	Karnal Bridge	80	Inderpuri	136	Hinglow Dam	192	Jamshedpur	248	Nanded	304	Prakasam Barrage
25	Mawi	81	Koelwar	137	Kangsabati Dam	193	Rajghat	249	Karanja Dam	305	Avanigadda
26	Dhansa	82	Maner	138	Mohanpur	194	Mathani Rd Bridge	250	Singur Dam	306	Somasila Dam
27	Delhi Railway Bridge	83	Patna (Dighaghat)	139	Yingkiang	195	Govindpur NH5RdBridge)	251	Nizamsagar Dam	307	Nellore
28	Mathura	84	Gandak Barrage	140	Passighat	196	Salandi Dam	252	Sriramsagar Dam	308	Poondi Reservoir
29	Agra	85	Khadda	141	Dholla Bazar	197	Anandpur	253	Kaddam Project	309	Chembarampakkam Lake

30	Etawah	86	Chatia	142	Dibrugarh	198	Akhuapada	254	Sripada Yellampally Project	310	Sathanur Dam
31	Gandhisagar Dam	87	Dumariaghat	143	Namsai	199	Rengali Dam	255	U Wainganga Project	311	Gomukhi Dam
32	Rana Pratap Sagar Dam	88	Rewaghat	144	Naharkatia	200	Jenapur	256	Chaurai/Machchagora Rsvr	312	Wellington Dam
33	Kota Barrage	89	Hajipur	145	Chenimari (Khowang)	201	Ravi Shankar Dam	257	Bawanthadi Reservoir	313	Harangi Dam
34	Kota City	90	Patna Gandhighat	146	Nanglamoraghat	202	Bango Dam	258	Totladoh Project	314	Hemavathy Dam
35	Bisalpur Dam	91	Amanat Dam	147	Sibsagar	203	Hirakud Dam	259	Bhandara	315	Kabini Dam
36	Kalisindh Dam	92	Batane Dam	148	Neamatighat	204	Naraj	260	Gosikhurd Dam	316	K R Sagar Dam
37	Parwan Dam	93	Sripalpur	149	Chouldhuaghat	205	Alipingal	261	Pauni	317	Mettur Dam
38	Gambhiri Dam	94	Hathidah	150	NH Xing Ranganadi	206	Nimapara	262	U Wardha Prjoject	318	Bhavanisagar Dam
39	Panchana Dam	95	Munger	151	Badatighat	207	Purushottampur	263	Issapur/Upper Penganga	319	Savandapur
40	Gudha Dam	96	Lalbeghiaghat	152	Golaghat	208	Gunupur	264	Balharsha	320	Kodumudi
41	Parwati Dam	97	Ahirwalia	153	Numaligarh	209	Kashinagar	265	Sirpur Town	321	Kodaganar Dam
42	Dholpur	98	Sikandarpur (Muzzafarpur)	154	Jiabharali NT Road Crossing	210	Gotta Barrage	266	Kaleswaram	322	Musiri
43	Manderial	99	Samastipur	155	Tezpur	211	Thottapalli reservoir	267	Laxmi Barrage	323	Upper Anicut
44	Auraiya	100	Rosera	156	Kampur	212	Madduvalasa Rsvr	268	U Indravati Project	324	Grand Anicut
45	Kalpi	101	Khagaria	157	Dharamtul	213	Narayanpuram Anicut	269	Jagdalpur	325	Vaigai Dam
46	Hamirpur	102	Bhagalpur	158	Guwahati	214	Srikakulam	270	Eturunagaram	326	Madurai
47	Rajghat Dam	103	Kahalgaon	159	Puthimari NH Crossing	215	Dantiwada Dam	271	Dummagudem	327	Kumbidi
48	Matatila Dam	104	Kosi Barrage	160	Pagladiya NT RdCrossi	216	Abu Road	272	Bhadrachalam	328	Idduki Dam
49	Mohana	105	Basua	161	Mathanguri	217	Dharoi Dam	273	Kolab Project	329	Idamalayar Dam
50	Shahjina	106	Dheng Bridge	162	Beki Road Bridge	218	Shubhash Bridge (Ahmedabad)	274	Machkund Project	330	Neeleswaram
51	Banda	107	Runisaidpur	163	Manas NH Crossing	219	Mahi Bajajsagar Dam	275	Balimela Project	331	Malakkara
52	Chillaghat	108	Benibad	164	Goalpara	220	Som Kamla Amba Dam	276	Chinturu		
53	Naini	109	Kamtaul	165	Kokrajhar	221	Kadana Dam	277	Kunavaram		
54	Chhatnag (Allahabad)	110	Ekmighat	166	Dhubri	222	Panam Dam	278	Indirasagar		
55	Mirzapur	111	Hayaghat	167	Golokganj	223	Wanakbori Weir	279	Rajahmundry (Rly Bridge)		
56	Varanasi	112	Jainagar	168	Tufanganj	224	Mandla	280	Dowlaiswaram Barrage		

CHAPTER – 2

ROLE OF INDIA METEOROLOGICAL DEPARTMENT IN FLOOD FORECAST ACTIVITIES

2.1 ROLE OF INDIA METEOROLOGICAL DEPARTMENT

India Meteorological Department (IMD) is the nodal agency for issuing river sub-basin-wise Quantitative Precipitation Forecast (QPF). Central Water Commission (CWC) is the nodal agency for issuing Flood Forecast in the country. Flood forecasting, therefore, is the joint responsibility of IMD & CWC and there is a close coordination between the two departments in this activity (**Fig. 2.1**). Flood Meteorological Offices (FMOs) of IMD provide hydro-meteorological support mainly in terms of river sub-basin-wise 'Quantitative Precipitation Forecast (QPF)' through QPF & Hydro-met Bulletins. QPF bulletins and Hydro-met Bulletins are issued at 0930hrs IST and at 1230hrs IST respectively. This special river sub-basin-wise forecast for a lead time of 7-days (forecast for 5 days and outlook for subsequent 2 days) are issued daily during flood season. QPF bulletins are further modified in the evening, if situation demands. These Bulletins are also issued by concerned FMOs during cyclone period or when there is a chance of heavy rainfall which may lead to flood in non-flood season.

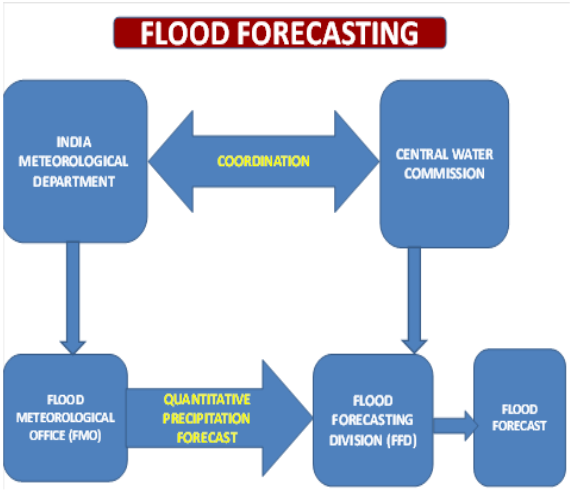


Fig. 2.1: Coordination in Flood Forecast

The input of Hydro-met Bulletin are as follows:

a. Prevailing synoptic situations
b. River sub-basin wise QPF and probabilistic QPF for day-1, day-2, day-3, day-4 and day-5 for the categories as follows:
   i) 0 mm (ii) 0.1-10mm (iii) 11-25mm (iv) 26-50mm (vi) 51-100mm (viii) >100mm
c. River sub-basin-wise outlook for the subsequent two days
d. River sub-basin-wise Heavy rainfall warnings
e. River sub-basin-wise Intensity and Spatial distribution of rainfall
f. Station-wise recorded significant rainfall
g. River sub-basin-wise past 24hrs realized rainfall

IMD has established 15 Flood Meteorological Offices (FMOs) at different parts of flood prone areas of the country which are located at Agra, Ahmedabad, Asansol, Bhubaneswar, DVC, Guwahati, Hyderabad, Jalpaiguri, Lucknow, New Delhi, Srinagar, Chennai, Bengaluru, Patna and Thiruvananthapuram (**Fig. 2.2**). They cater to the river catchments of Yamuna, Narmada, Tapi, Ajoy, Mayuraksi and Kangasbati, Mahanandi, Brahmani and Subernarekha, Brahmaputra, Dhansiri and Barak, Godavari and Krishna, Cauvery, Teesta, Ganga and Sharada, and Sahibi, Kosi, Baghmati, Gandak, etc. IMD also provides similar support to Damodar Valley Corporation (DVC) for the river basins viz., Barakar and Damodar. Flood Meteorological Offices of IMD provide hydro-meteorological support to Flood Forecasting Divisions (FFDs) of Central Water Commission (CWC) to help them issue 'Flood warnings/Flood alerts'.

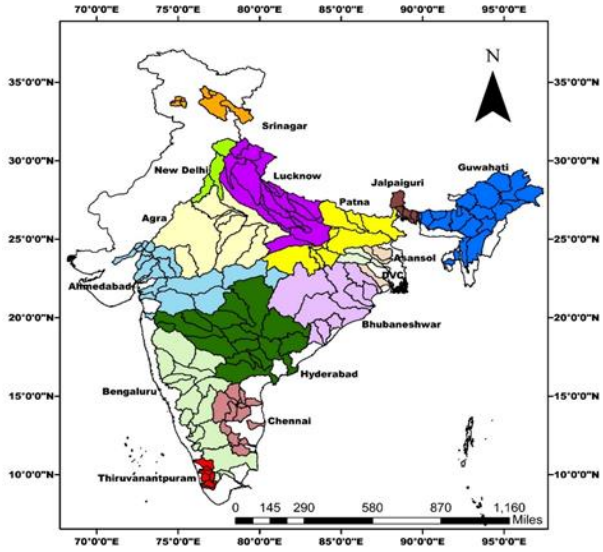


Fig. 2.2: Flood Meteorological Offices

2.2 MODEL BASED QUANTITATIVE PRECIPITATION FORECAST

a. Deterministic Forecast

River sub-basin-wise Quantitative Precipitation Forecast (QPF) using deterministic dynamical models viz., WRF ARW (3kmx3 km) & NCUM-R (4kmx4km) based on 00 utc for day-1 to day-3, GFS (12kmx12km) & NCUM-G (12kmx12km) based on 00 utc for day-1 to day-7 are uploaded on the IMD's website at http://hydro.imd.gov.in/hydrometweb/(S(kkxivq454pfjnzmak3d4q55))/PRODUCTS/QPF/ index.html for 153 flood prone river sub-basins. Maps are shown in **Fig. 2.3** below.

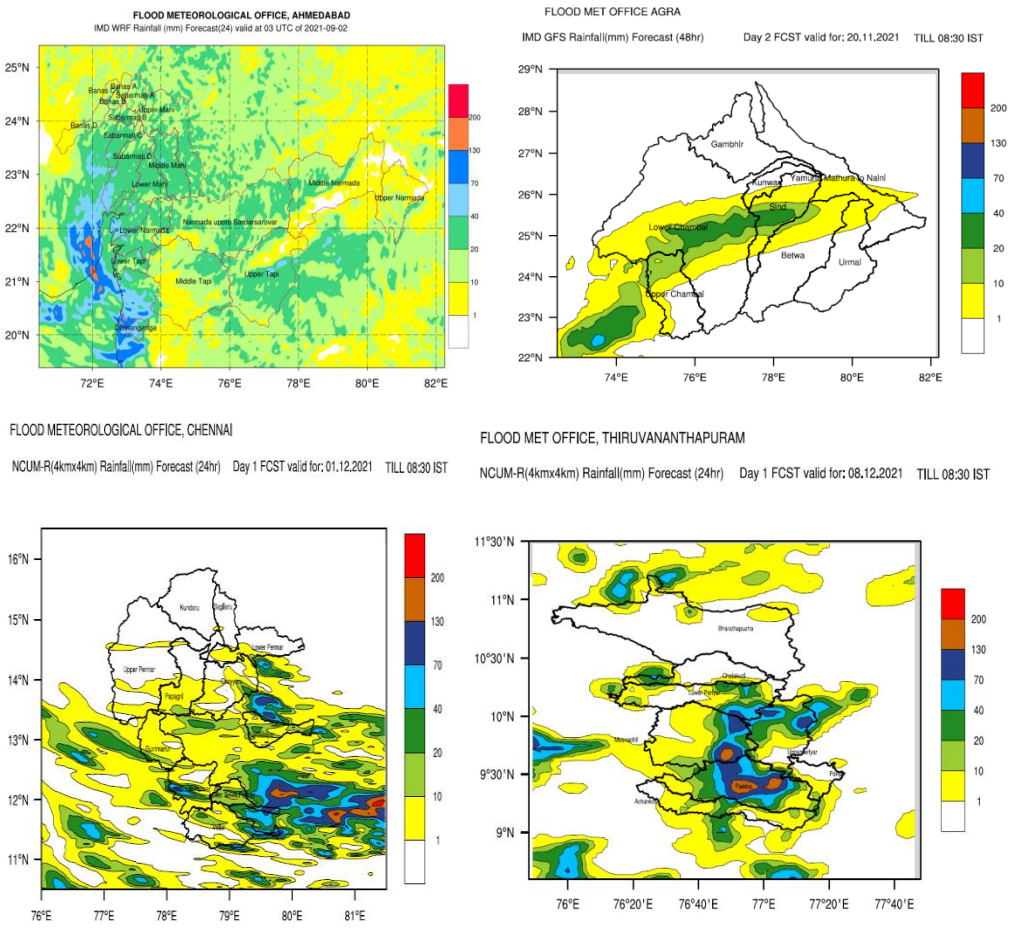


Fig. 2.3: River sub-basin-wise QPF of WRF, NCUM-R, GFS and NCUM-G

b. Probabilistic Forecast

River sub-basin-wise dynamical ensemble models viz. GEFS and NEPS based Probabilistic QPF are generated daily for day-1 to day-5 and uploaded in the IMD website, which has been found very useful in case of heavy rainfall events. An example is shown in **Figs. 2.4** given below:

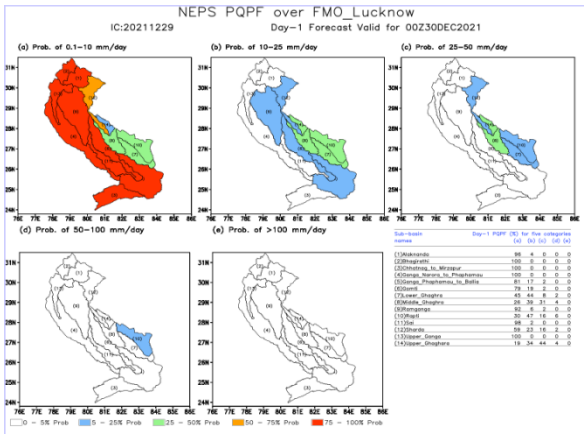


Fig. 2.4: River sub-basin-wise Probabilistic QPF of NEPS

c. Dynamical model forecast data Support to CWC

Deterministic dynamical model based gridded daily rainfall forecast (WRF & GFS) are provided operationally to CWC for use in the flood forecasting model.

2.3 District-wise Rainfall Monitoring Scheme (DRMS)

The performance of monsoon rainfall over the country is monitored by evaluating the departures of area weighted total rainfall from the normal rainfall in respect of meteorological districts, sub-divisions, State and Country as a whole. IMD has categorized the rainfall as Large excess, Excess, Normal, Deficient and Large deficient according to the following criteria along with the color codes for graphical representation:

CATEGORY	% DEPARTURES OF RAINFALL	COLOUR CODE
Large Excess (LE or L. Excess)	> = 60%	
Excess (E)	>= 20% and <= 59%	
Normal (N)	>= - 19% and <= + 19%	
Deficient (D)	>= - 59% and <= - 20%	
Large Deficient (LD or L. Deficient)	>= - 99% and <= - 60%	
No Rain (NR)	= - 100%	
No Data (*)	Data Not Available	

For Southwest Monsoon season 2021, rainfall statistics was generated for 36 States and UT's, 36 Met subdivisions by compiling data from 695 districts using 5200 DRMS stations across Indian subcontinent. These statistics are generated on near real time basis at the temporal domain from daily, weekly, monthly, seasonal to annual.

Normal monsoon seasonal rainfall is defined as the Long Period Average say of 50 years for the period from 1st June to 30th September. Presently, Long Period average for the years 1961 to 2010 is being used to define normal. For the country as a whole the normal rainfall during the period from 1st June to 30th September is 88 cm.

2.4 SOUTHWEST MONSOON

India gets about 75% of its Annual rainfall during the Southwest monsoon season from June to September except over some portions of southeastern parts of Peninsular India where the main rains occur during the period of Northeast monsoon from October to December, which overlap with the receding stage of the Southwest monsoon in October. Occasionally, cyclonic storms develop in the South Bay and move into the Peninsula producing heavy rains during Northeast monsoon season.

Southwest monsoon onsets over Kerala in the beginning of June and then advances further. During the season, spells of heavy, very heavy and extremely heavy rainfall occur across the country especially along the west coast of the Peninsula and on the southern slopes of Khasi and Jaintia hills in Northeast India.

In association with Depressions which occasionally form in the North Bay of Bengal and move west-northwestwards, heavy rains occur in the central parts of the country, Orissa, Gangatic West Bengal, Bihar, East and West Madhya Pradesh, East Rajasthan and Gujarat region.

A very important characteristic of southwest monsoon is the occurrence of "break". The break situations arise when the monsoon trough shifts to the foothills of Himalayas and are very important as these cause floods in the rivers rising from the Eastern Himalayas. Sometimes, the phenomenon of break sets in immediately after a monsoon depression and occurrence of associated intense rainfall activity takes place. These two causes occurring in succession serve to intensify the floods.

The whole India has been divided into 36 meteorological subdivisions by India Meteorological Department (IMD) for the purpose of description of rainfall/monsoon activities and for forecasting purpose.

2.5 HIGHLIGHTS OF SOUTH-WEST MONSOON 2021

- The southwest monsoon seasonal rainfall during June to September for the country as a whole has been normal (96 -104% of LPA).
- Quantitatively, the 2021 all India monsoon seasonal rainfall during 1 June to 30 September 2021 has been 87.0 cm against long period average of 88.0 cm based on data of 1961-2010 (99% of its Long Period Average (LPA)).
- The southwest monsoon seasonal (June to September) rainfall over the four homogeneous regions is Normal over Northwest India (96%) and central India (104%). Seasonal rainfall is below normal over East and Northeast India (88%) and above normal over South Peninsula India (111%).
- The southwest monsoon seasonal (June to September) rainfall over the monsoon core zone, which consists of most of the rainfed agriculture regions in the country is above normal (>106% of LPA).
- Out of the total 36 meteorological subdivisions, 20 subdivisions constituting 58% of the total area of the country received normal seasonal rainfall, 10 subdivisions received excess rainfall (25% of the total area) and 6 subdivisions (17% of the total area) received deficient season rainfall. These 6 Met subdivisions which got deficient rainfall are Nagaland, Manipur, Mizoram & Tripura, Assam and Meghalaya, Arunachal Pradesh, Jammu & Kashmir and Ladakh, West Uttar Pradesh and Lakshadweep. Out of these six Subdivisions, three lie in northeast India. Two Met Subdivisions which got much higher than normal rainfall in the season are Marathawada and Telangana.
- Considering month to month rainfall variation over India as a whole, the season is very uniquely placed in the historical record for its distinct and contrasting month to month variation. The rainfall over country as a whole was 109%, 93%, 76% and 135% of LPA during June, July, August and September respectively.
- A deep depression formed during 12-15 September and cyclonic storm "GULAB" during 24-28 September.

- The formation and movement of the cyclone TAUKTAE, over Arabian Sea (during 14-19 May) and severe Cyclonic storm "YAAS" over Bay of Bengal (during 23 to 28th May) helped to increase cross equatorial flow and the onset of monsoon.
- Southwest monsoon current reached south Andaman Sea and Nicobar Islands on 21st May 2021 (1 day ahead of its normal date), but further advance was sluggish. It set in over Kerala on 3rd June; Monsoon covered the entire country on 13th July2021; 5 days after its normal date (8th July).
- Monsoon started withdrawing from western parts of northwest India on 06th October 2021 against the normal date of 17th September with a delay of around 20 days. The Southwest Monsoon withdrew from the entire country on 25th October 2021.
- Sub divisional rainfall map (**Fig. 2.5**) for the Southwest Monsoon Season 2021 is given below.

Fig. 2.5: Sub-division wise rainfall map in South west monsoon season 2021

2.6 ONSET AND ADVANCE OF SOUTHWEST MONSOON 2021

The South West Monsoon (SWM) arrived over Andaman Sea on 21st May 2021, 1 days before its normal date of arrival, however its further advancement was hindered by the formation and intensification of cyclone TAUKTATE, over Arabian sea (during 14-19 May) and severe Cyclonic Storm 'YASS' over the Bay of Bengal (during 23-28 may). The SWM arrived over Kerala on 3rd June. Further, advancement over the country is observed to be almost close to the normal date (with deviation of ±3-4 days) for most parts of the central India. Advancement of the SWM over northwest India has taken place about 5-10 days earlier than the normal date. Monsoon covered entire country on 13th July against the normal date of 08th July. Thus, monsoon set in over the entire country 5 days after its normal date (8th July). **Fig. 2.6** shows the isochrones of advance of monsoon 2021.

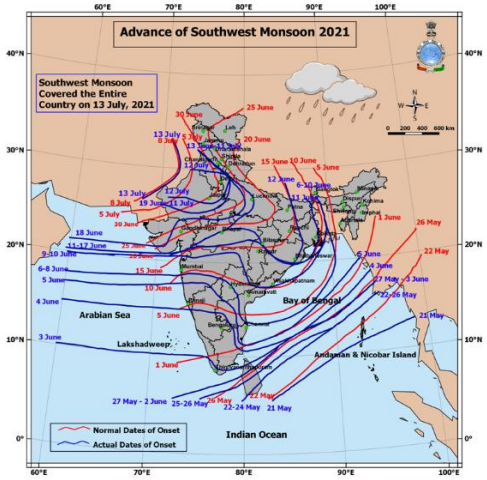


Fig. 2.6: Progress of Southwest Monsoon – 2021

2.7 CHIEF SYNOPTIC FEATURES

In all 16 Low Pressure areas formed, 2 of which intensified into Cyclonic storms viz., Cyclonic storm, 'GULAB' over Bay of Bengal during 24 – 28 September 2021, Severe Cyclonic storm, 'Shaheen' (30 September – 4 October 2021) over northeast Arabian sea adjoining Kutch which formed from the remnant of Cyclonic storm, 'GULAB', 1 as a Deep Depression over northwest Bay of Bengal during 12- 15 September and 4 into Well Marked Low pressure areas during the monsoon season.

Month/System	CS	Deep Depression	Depression	Low Pressure Area/ WML	Total
June	0	0	0	1	1
July	0	0	0	3	3
August	0	0	0	1	1
September	1	2	0	4	7

The first Low Pressure system of June formed over northwest Bay of Bengal and adjoining Odisha and Gangatic West Bengal coasts on 11 June and moved northwestwards towards East Uttar Pradesh and adjoining Bihar. Under the influence of this Low-Pressure area and its associated cyclonic circulation, tilting southwestward with height, fairly widespread to widespread rainfall/thunderstorms occurred over east India and adjoining areas of central India. Formation of this low-pressure area strengthened the westerlies and along with an off-shore trough caused widespread rainfall/ thunderstorm activity along the west coast. Another low-pressure area formed over southwest Bihar and adjoining southeast Uttar Pradesh on 18th June, the Low Pressure and its remnant cyclonic circulation over northwest Bihar and adjoining East Uttar Pradesh triggered fairly widespread to widespread rainfall/thunderstorm activity over parts of east India and over parts of east Uttar Pradesh. Movement of western disturbances and cyclonic circulations in the lower tropospheric levels supported by moisture incursion into the area caused rainfall/thunderstorm over western Himalayan Region and adjoining areas of Northwest India.

In the month of July, 3 Low Pressure and 2 Well Marked Low Pressure areas influenced the weather, with one Low Pressure system forming over land over southern parts of central Uttar Pradesh.

Two Low Pressure systems formed over Bay of Bengal in second fortnight of August. Movement of western disturbances caused rainfall/thunderstorm over Western Himalayan region, northeast India and adjoining areas of east India.

A Well-Marked Low Pressure area over west-central and adjoining northwest Bay of Bengal and north Andhra Pradesh - south Odisha coasts and its associated cyclonic circulation extending up to 7.6 km above m. s. l. tilting southwestwards with height, alignment of the monsoon trough to the south of its normal position caused fairly widespread to widespread rainfall/thunderstorm over parts of east, central, west India and over northern parts of peninsular India during the first week of September. The first Depression over the north Indian Ocean during the monsoon season of this year was the Deep Depression over northwest Bay of Bengal during 12 -15 September, 2021. It caused active to vigorous monsoon conditions leading to extremely heavy rainfall at a few places over Odisha, at isolated places over Chhattisgarh and over east Madhya Pradesh on 13 and 14 September. In conjunction with this system and a Low Pressure area over southwest Rajasthan and adjoining Gujarat, their associated cyclonic circulations extending up to mid tropospheric levels, alignment of the monsoon trough to the south of its normal position, an east-west trough between the cyclonic circulations associated with the low-pressure systems over the eastern and western parts of the country across central India led to low level convergence of wind and enhanced moisture incursion from the Bay of Bengal and caused extremely heavy rains at isolated places over Odisha for example rainfall amounts such as Astaranga and Kakatpur- 53 cm each, Balikuda- 44 cm on 13th September. Cyclonic storm, 'Gulab' formed and developed over Bay of Bengal, during active phase of monsoon over Indian sub-continent, moving westwards it crossed north Andhra Pradesh and adjoining south Odisha coasts and gradually weakened into a Well-Marked Low Pressure area over western parts of Vidarbha and neighbourhood around noon of 28th September. It caused extremely heavy rainfall over Andhra Pradesh and heavy to very rainfall over Odisha. Remnant of the Cyclonic storm, 'Gulab' emerged into Gulf of Kutch and concentrated into a Depression over northeast Arabian Sea & adjoining Kutch which intensified into a Deep Depression over northeast Arabian Sea off Gujarat coast and further intensified into a Cyclonic storm, 'Shaheen' over northeast Arabian sea and neighbourhood, it intensified into a Severe Cyclonic storm over northwest and adjoining northeast Arabian sea. This cyclone moved away from Indian coast and had no impact along Indian coast, however, in its initial stages as a Depression/Deep Depression, it caused widespread rainfall along with heavy/very heavy rainfall over Saurashtra & Kutch.

- In July, the country received slightly below normal rainfall (94% of LPA). The weak monsoon in July was mainly due to absence of any major monsoon disturbance over Bay of Bengal. Absence of such major systems in July also caused the weak monsoon trough. The monsoon trough lay to the north of the normal position or close to the foot hills of Himalayas on many days. It resulted in frequent and prolonged floods over northeastern India, Bihar and adjoining areas of East Uttar Pradesh. At the same time, major parts of central India received deficient rainfall.
- During August, many unfavorable features of monsoon appeared resulting in deficient rainfall for the country (76%). Negative Indian Ocean Dipole unfavorable for Indian monsoon prevailed during this month. Also, the absence of formation of monsoon depression and a smaller number of low pressure area (16-18 & 28-30 August) over Bay of Bengal caused this rainfall deficiency. Normally two monsoon depressions and two low pressure area forms in the month of August. Most of the days monsoon trough was located north of its normal position which cause subdued rainfall over Central Indian Region. Most of the days Madden Julian Oscillation (MJO) was in the phase 8, 1 and 2 which are unfavorable for monsoon

rainfall activity. Also, there was less West Pacific Typhoon activity. Normally remnants of westward moving typhoons help to form Low Pressure Systems (LPS) over Bay of Bengal.

- In September, the country as whole received excess rainfall due to many favourable conditions for the monsoon. The negative Indian Ocean dipole weakened during the month of August and at the same time the cold anomaly in the equatorial Pacific strengthened. There was a monsoon depression and a cyclonic storm formed in the month of September. During most of the days MJO was in the phase 3, 4 and 5which are favorable for monsoon rainfall activity and low pressure system. More West Pacific Typhoon activity and the remnants of these westward moving systems helped to form LPS over Bay of Bengal. All the LPSs followed west/northwestward track causing good rainfall activity, especially over central India and adjoining areas.

2.8 Withdrawal of southwest monsoon 2021

The normal date of commencement of withdrawal of southwest monsoon is 17th September. Southwest Monsoon has withdrawn from some parts of west Rajasthan and some parts of adjoining Gujarat on 6th October, 2021. A further change in the low level wind pattern into north westerlies, reduction in moisture content and cessation of rainfall over northwest India, led to the withdrawal of southwest monsoon from some more parts of Gujarat, most parts of Rajasthan, entire Punjab, Haryana, Chandigarh & Delhi, Jammu Kashmir & Ladakh, Himachal Pradesh and Uttarakhand and some parts of Madhya Pradesh and Uttar Pradesh on 8th; it has withdrawn from some more parts of Gujarat and Madhya Pradesh; remaining parts of Rajasthan and Uttar Pradesh and some parts of Chhattisgarh, Jharkhand and Bihar on 9th; it has further withdrawn from remaining parts of Jharkhand and Bihar; some more parts of Madhya Pradesh and Chhattisgarh and some parts of West Bengal, Odisha and Maharashtra on 11th; it has further withdrawn from remaining parts of Gujarat & Madhya Pradesh; some more parts of Maharashtra, Chhattisgarh, Odisha and West Bengal; entire North Arabian Sea, Sikkim, Arunachal Pradesh, Meghalaya, Nagaland and Manipur, most parts of Assam and some parts of Telangana, Mizoram and Tripura on 12th October 2021. It has further withdrawn from some more parts of Telangana; remaining parts of Marathwada, Madhya Maharashtra & Konkan; some parts of North Interior Karnataka and most parts of Central Arabian Sea on 14th October 2021. It has further withdrawn from remaining parts of Northeast India, West Bengal, Odisha, entire North Bay of Bengal and Goa, some parts of Andhra Pradesh; remaining parts of Telangana and some more parts of Karnataka and Central Arabian Sea on 23rd October 2021. It then withdrew from the entire country on 25th October 2021 against its normal on 15th October (**Fig. 2.7**). The date of withdrawal of southwest monsoon 2021 from the entire country is the seventh most delayed monsoon withdrawal (on or after 25th October) during 1975-2021.

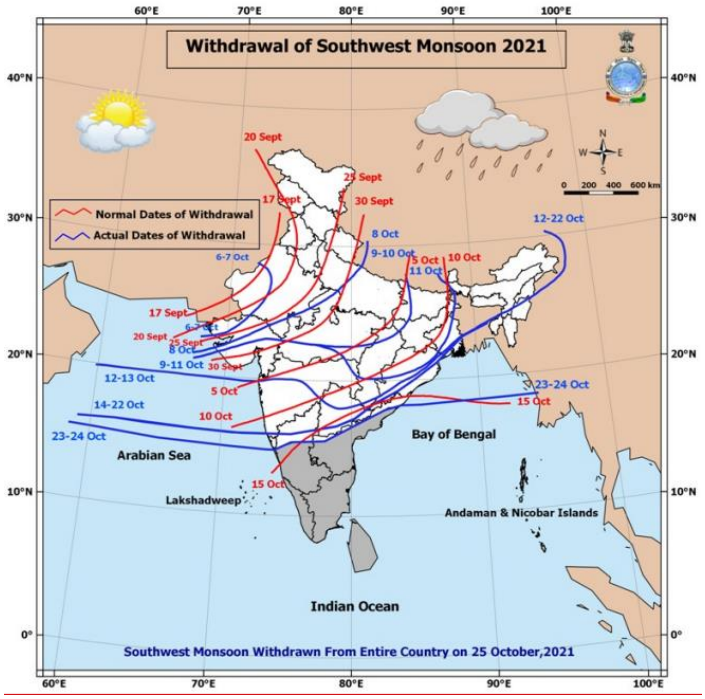


Fig. 2.7: Withdrawal of Southwest Monsoon – 2021

2.9 HIGH IMPACT WEATHER EVENTS

Fig. 2.8 depicts the meteorological Sub-divisions or parts thereof, which experienced high impact weather events like floods, landslides and Heat waves during the Southwest Monsoon season (June - September) along with the dates. It also indicates areas that experienced isolated extremely heavy rainfall (Rainfall amount ≥25 cm reported during the 24 hours ending at 0830 hrs IST) events during the season without any reference to the dates of these occurrences.

Incessant rainfall associated with the formation and movement of the monsoon low pressure systems in the presence of strong cross equatorial flow often caused flood situations over various areas during different parts of the season.

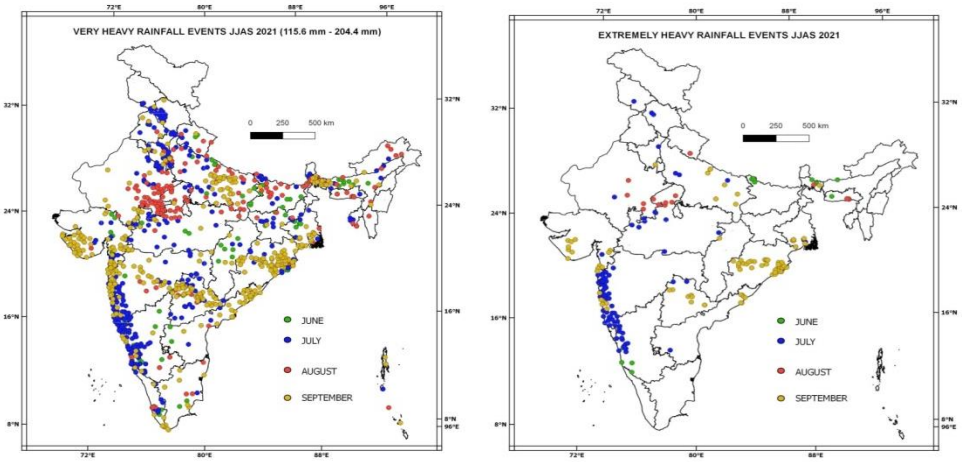


Fig. 2.8: Location of Extremely and Very Heavy Rainfall Heavy Rainfall Events occurred during Monsoon

2.10 RAINFALL DISTRIBUTION

The realized 2021 southwest monsoon season (June to September) rainfall over the country as a whole and four broad geographical regions are given in the table below along with respective long period average (LPA) values. The rainfall during the 4 monsoon months and the second half of the monsoon season (August & September) over the country as a whole are also given.

Season (June to September) rainfall			
Region	Long Period Average (LPA) (mm)	Actual Rainfall for 2021	
		Rainfall (mm)	Rainfall (% of LPA)
All India	880.6	874.5	99
Northwest India	599.5	576.2	96
Central India	976.6	1012.5	104
East & Northeast India	1410.4	1244.5	88
South Peninsula	726.2	804.5	111

Monthly & second half of monsoon season rainfall (All India)			
Month	LPA (mm)	Actual Rainfall for 2021	
		Rainfall (mm)	Rainfall (% of LPA)
June	166.9	182.4	109
July	285.3	266.2	93
August	258.2	196.3	76
September	170.2	229.6	135
August +September	428.4	425.9	99

As seen in the table above, the 2021 season rainfall over the country as a whole (99% of LPA) was less than the long period average (LPA). The 2021 seasonal rainfalls over two of the four geographical regions of the country (except Northwest India, East & Northeast India) were more than the respective LPAs. The highest rainfall (111% of LPA) was received by South Peninsula and lowest rainfall (88% of LPA) was received by East & Northeast India. Central India and Northwest India received season rainfalls of 104% of LPA and 96% of LPA respectively. The monthly rainfall over the country as a whole were more than LPA during the

months of season (109% of LPA in June, 135% of LPA in September) and were less than LPA during the months of the season (93% of LPA in July, 76% of LPA in August).

Country as a whole received rainfall of 99% of LPA during the first half (109% of LPA in June and 93% of LPA in July), which was equal than that during the second half (99% of LPA) with 76% of LPA in August and 135% of LPA in September. Thus among the four months, rainfall deficiency was highest during August and rainfall was excess in June and September.

2.11 INDIAN NORTHEAST MONSOON

The Indian southwest monsoon (SWM) season of June to September is the chief rainy season for India and about 75% of the country's annual rainfall is realised during this season. Subsequent to the withdrawal of SWM, the northeast monsoon (NEM), a small scale monsoon confined to parts of southern peninsular India comprising of the meteorological sub-divisions of Tamil Nadu (TN), Puducherry & Karaikal (TN), Kerala & Mahe (KER), Coastal Andhra Pradesh & Yanam (CAP), Rayalaseema (RYS) and South Interior Karnataka (SIK) occurs. For the subdivision of TN, the normal SWM seasonal rainfall realised is only about 36% (336.1 mm) of its annual rainfall (939.3 mm) as this subdivision comes under the rain-shadow region during the SWM. The northeast monsoon (NEM) season of October to December (OND) is the chief rainy season for this subdivision with 48% (449.7 mm) of its annual rainfall realised during this season and hence its performance is a key factor for this regional agricultural activities.

Further, the NEM season is also the primary cyclone season for the North Indian Ocean (NIO) basin comprising of the Bay of Bengal (BOB) and the Arabian Sea (AS) and cyclonic disturbances (CDs; low pressure systems (LPS) with maximum sustained surface wind speed (MSW) of 17 knots or more) forming over BOB and moving west/northwest-wards affect the coastal areas of southeastern peninsular India and also contribute significantly to NEM rainfall. As such, the NEM season assumes importance from the agricultural as well as cyclone disaster management perspectives.

Prior to the commencement of NEM rains, after the withdrawal of SWM upto 15°N, reversal of low level winds from southwesterly to northeasterly occurs. The normal date of setting in of easterlies over the southeastern peninsular India is 14th October. The normal date of onset of NEM over Coastal TN (CTN) and south CAP is 20th October.The normal rainfall received over the five NEM sub-divisions during OND is TN- 449.7 mm, KER- 491.6 mm, CAP- 338.1 mm, RYS- 223.3 mm and SIK- 204.1 mm. However, the NEM seasonal rainfall shows a high degree of variability with 27% co-efficient of variation.

The NEM rainfall is influenced by global climate parameters such as ENSO (El Nino/La Nina & Southern Oscillation Index), Indian Ocean Dipole (IOD) and Madden-Julian Oscillation (MJO). El Nino, positive IOD and MJO in phase 2-4 with amplitude greater than one are generally associated with good NEM rainfall.

2.12 ONSET PHASE

During October 2021, La Nina conditions prevailed over the equatorial Pacific Ocean and IOD was negative which were not favourable for good NEM activity. MJO was in phase- 5 during the first half of October and became insignificant during the second half of the month. Under the influence of La Nina, MJO in phase- 5 and favourable synoptic situations such as formation of a Low pressure

areas (LOPARs), cyclonic circulations over the southern peninsular region and active east-west shear zone roughly along 15°N over the Indian region on many days during the month, SWM extended up to the 25th October 2021. SWM withdrew from the entire country on 25th October and simultaneous commencement of NEM rains over the southern peninsula was declared with effect from 25th October 2021 with the setting in of northeasterly winds by 25th October 2021.

2.13 SYNOPTIC SCALE WEATHER SYSTEMS DURING THE NEM-2021 SEASON

Four among the Low pressure systems formed over North Indian Ocean (NIO) during the season, had influenced the Northeast Monsoon activity of 2021. These are the Low Pressure area over Bay of Bengal (27th October – 04th November 2021), Depression over Bay of Bengal (10th - 11th November 2021), Depression over Bay of Bengal (18th - 19th November 2021) and Cyclonic storm JAWAD (02nd - 05th December 2021). Details of these systems including their brief life history are available in the Regional Specialised Meteorological Centre (RSMC) New Delhi website (https://rsmcnewdelhi.imd.gov.in/index.php).

2.14 OTHER SYNOPTIC SCALE WEATHER SYSTEMS

In addition to the Low pressure systems mentioned above, trough in easterlies, cyclonic circulations in the lower/middle tropospheric levels etc. have also contributed towards the rainfall activity during Northeast Monsoon Season 2021.

2.15 Summary

During the year 2021, the southwest monsoon withdrew from the Indian region on 25th October and simultaneously, the Northeast monsoon of 2021 commenced over the southeastern parts of peninsular India on 25th October against the normal date of 20th October. Except Coastal Andhra Pradesh (CAP) that received normal rainfall during the season, the other four sub divisions benefitted by the NEM [Tamil Nadu (TN (including Puducherry & Karaikal), Kerala (KER), Rayalaseema (RYS) and South Interior Karnataka (SIK)] received excess to large excess rainfall during the NEM season (October - December) with KER, SIK, RYS recording large excess rainfall. There were 30 days of active to vigorous monsoon conditions over TN & KER during the season. There were 65 days of isolated heavy rainfall activity with 33 days of isolated very heavy rain including 09 days of isolated extremely heavy rainfall activity over TN. Two Depressions that formed over the North Indian Ocean during November contributed significantly to NEM rainfall over the peninsular India. Cyclonic Storm Jawad over Bay of Bengal during 02nd - 06th December tracked northwards towards West Bengal - Bangladesh coasts and did not contribute towards NEM rainfall. There were two days of extremely heavy rainfall activity over Chennai (i) night of 06th November & (ii) 30th December 2021. Recurrent heavy rainfall over the coastal and adjoining districts from last week of October to November led to filling up of water bodies and inland and riverine flooding occurred over several areas of TN and RYS. NEM 2021 extended into January 2022 and cessation of NEM 2021 rainfall over peninsular India was declared on 22.01.2022.

2. 16 South Asia Flash Flood Guidance System (SAsiaFFGS)

Flash floods are among the world's deadliest natural disasters with more than 5,000 lives lost annually and result in significant social, economic and environmental impacts. Accounting for approximately 85% of the flooding cases, flash floods also have the highest mortality rate (defined as the number of deaths per number of people affected) among different classes of flooding (e.g.

riverine, coastal). Flash floods have a different character than river floods, notably short time scales and occurring in small spatial scales, which make forecasting of flash floods quite a different challenge than traditional flood forecasting approaches. In forecasting of flash floods, we are concerned foremost with the forecast of occurrence, and herein have focused on two causative events: **1. Heavy rainfall** and **2. Rainfall on saturated soils.**

Flash floods occur throughout the world, and the time thresholds vary across regions from minutes to several hours depending on land surface, geomorphological and hydro climatological characteristics of the region. However, for the majority of these areas there exists no formal process for flash flood warnings. There is a lack of general capacity to develop effective warnings for these quick response events.

Definition of Flash Flood: Flash floods are floods of short duration with a relatively high peak discharge usually less than 6 hours between the occurrence of rainfall and the peak flood. In other words, any hydro-meteorological disasters and heavy or excessive rainfall associated hazards in a short period of time that produce immediate runoff creating a flood of short duration within minutes or few hours during or after the rainfall.

WMO defines flash flood as 'A flood of short duration with a relatively high peak discharge'. **American Meteorological Society defines flash flood** as 'A flood that rises and falls quite rapidly with little or no advance warning, usually the result of intense rainfall over a relatively small area'. In nutshell, Flash floods are defined as events that are the result of heavy or excessive amounts of rainfall within a short period of time, usually less than 6 hours, causing stream waters to rise and fall quite rapidly. **Flash floods are a hydro-meteorological hazard** unlike other weather-related events with specific geographic locations; every location where rainfall occurs has the potential to produce a deadly flash flood. As a forecaster, one is aware that flash floods are not always the result of meteorological conditions. Although, heavy rainfall is usually a factor, it is the interaction between the meteorological conditions and hydrologic characteristics of the watershed where the rain is occurring that may result in a flash flood.

Background of Flash Flood Guidance System

As part of WMO's Flood Forecasting Initiative and on the basis of a 4-party Memorandum of Understanding signed by the World Meteorological Organization (WMO); US NOAA National Weather Service (US NWS); the Hydrologic Research Center (HRC), San Diego, USA; and U.S. Agency for International 59 Development/Office of U.S. Foreign Disaster Assistance (USAID/OFDA), the signatories have established a cooperative initiative for the Flash Flood Guidance System with Global Coverage Project.

South Asia Flash Flood Guidance System (SAsiaFFGS)

The South Asia Flash Flood Guidance System (SAsiaFFGS) was fully operational in 2020, covering Bangladesh, Bhutan, India, Nepal and Sri Lanka. The India Meteorological Department (IMD) was selected as the regional center to provide forecast products and data to the participating countries, provide good IT infrastructure i.e., computation and dissemination server for smooth data

exchange and internet connection, Issue flash flood guidance bulletins for each member country on daily basis and conduct verification studies in collaboration with the NMHSs and WMO.

Flash Flood Guidance Bulletins are issued based on 00, 06, 12 and 18 UTC operationally. The Guidance is issued in terms of Flash Flood Threat for next 06 hours (**Fig. 2.9**) and Flash Flood Risk for next 12, 24 and 26 hours (**Fig. 2.10**).

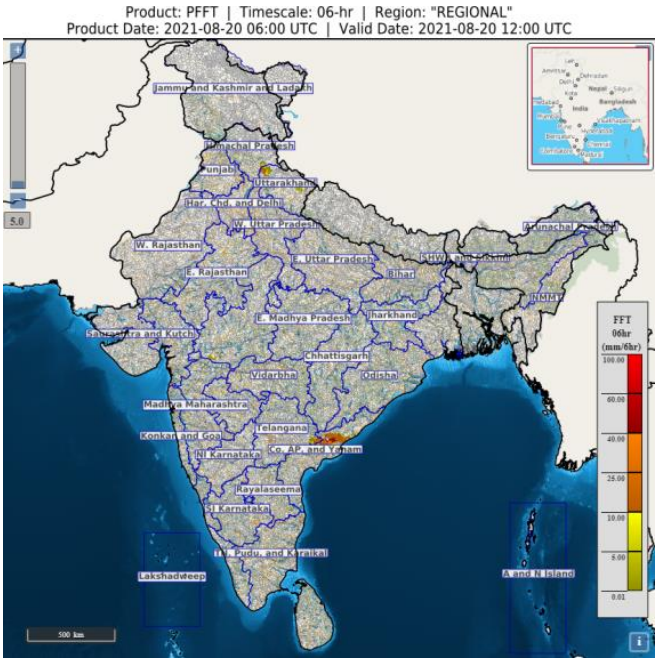


Fig 2.9: SAsiaFFGS Flash Flood Threat (FFT) product

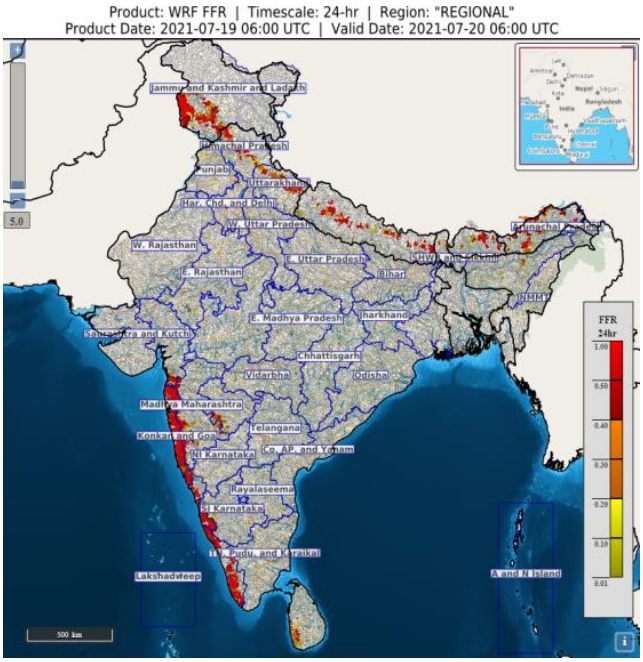


Fig 2.10: SAsiaFFGS Flash Flood Risk (FFR) product

CHAPTER – 3

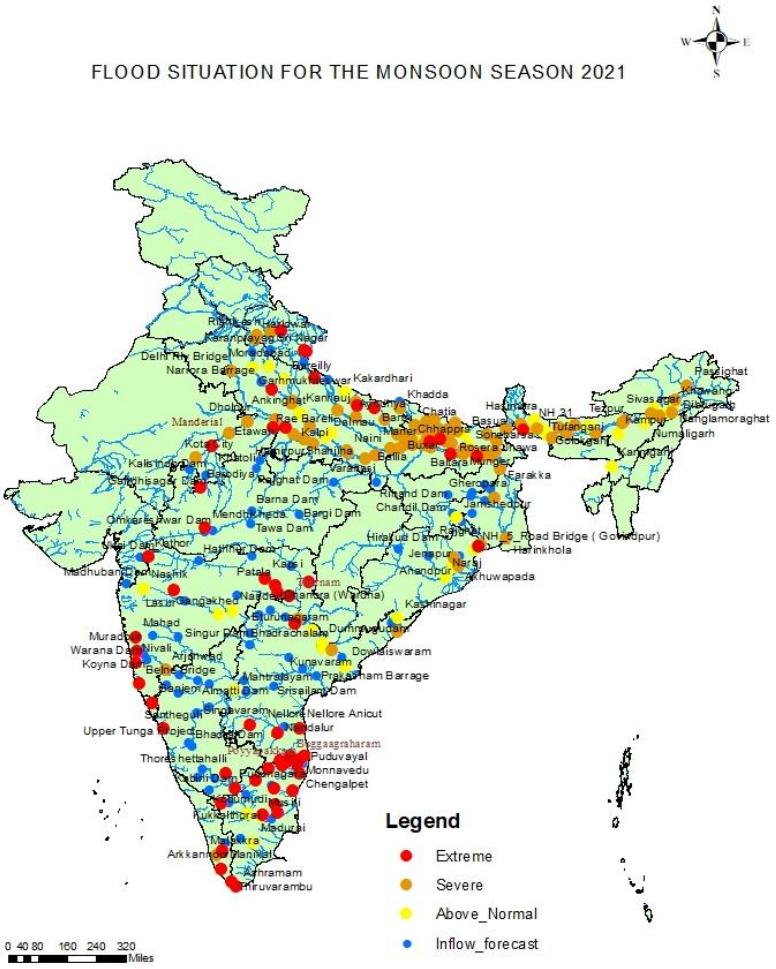
SIGNIFICANT FLOOD EVENTS

3.1 GENERAL

The Flood Forecasting Activity was expanded to 331 locations which includes 132 inflow forecasting sites. Desired hydro-meteorological data was observed/collected, during the flood season 2021 for these stations. Flood situation is monitored with respect to Warning Level (WL), Danger Level (DL) & previous Highest Flood Level (HFL).

3.2 AN OVERVIEW OF FLOOD EVENTS

Extreme flood situation (water level at or above previous HFL) were witnessed in 8 Flood Forecasting Stations in the State of Bihar, Uttar Pradesh, Odisha, Andhra Pradesh and West Bengal. Severe flood events (water level at or above DL and below HFL) were witnessed in 87 stations and above normal floods (water level at or above WL and below DL) were witnessed at 42 stations and inflow forecasts were issued in 79 Stations. **Map 2** below shows the flood situation in the country during the year 2021.



Map 2: Flood situation in India during 2021

The number of stations flowed in Extreme, Severe, Above Normal Flood situation and the inflow Forecast issued during flood season 2021 are shown in **Fig 3.1.**

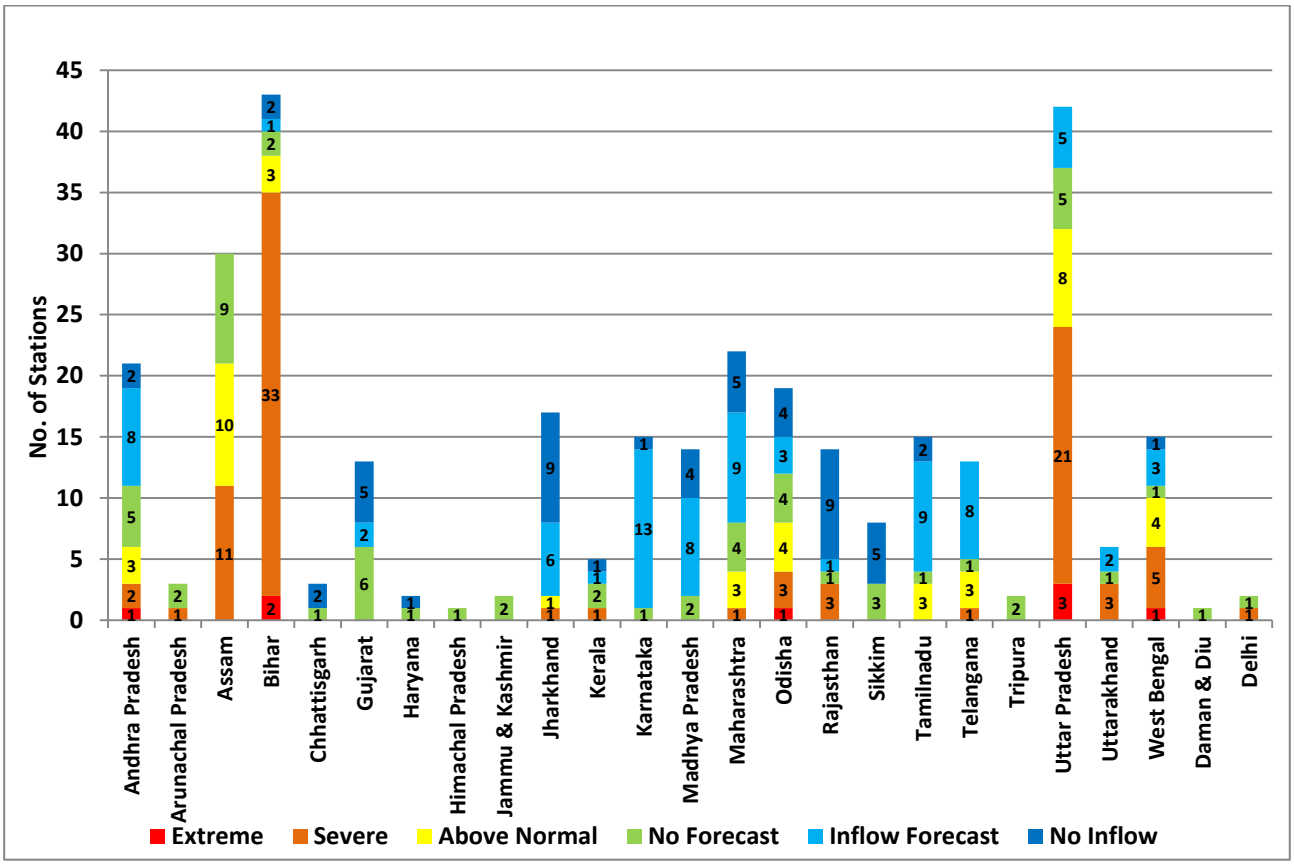


Fig 3.1 : Figure showing number of stations flowing in Extreme, Severe, Above Normal Flood situation and the inflow Forecast during flood season 2021.

State-wise flood situation, in terms of number of stations exceeding WL, DL, HFL and inflow exceeding threshold value at dams/barrages, has been tabulated in the following table:

States	Levels Exceeded				Inflow Exceeded	
	> WL	> DL	> HFL	Below (< WL) No Forecast	Dams/ Barrages	No forecast
1	2	3	4	5	6	7
Andhra Pradesh	3	2	1	5	8	2
Arunachal Pradesh	0	1	0	2	0	0
Assam	10	11	0	9	0	0
Bihar	3	33	2	2	1	2
Chhattisgarh	0	0	0	1	0	2
Gujarat	0	0	0	6	2	5
Haryana	0	0	0	1	0	1
Himachal Pradesh	0	0	0	1	0	0
Jammu & Kashmir	0	0	0	2	0	0
Jharkhand	1	1	0	0	6	9
Kerala	0	1	0	2	1	1
Karnataka	0	0	0	1	13	1

1	2	3	4	5	6	7
Madhya Pradesh	0	0	0	2	8	4
Maharashtra	3	1	0	4	9	5
Odisha	4	3	1	4	3	4
Rajasthan	0	3	0	1	1	9
Sikkim	0	0	0	3	0	5
Tamilnadu	3	0	0	1	9	2
Telangana	3	1	0	1	8	0
Tripura	0	0	0	2	0	0
Uttar Pradesh	8	21	3	5	5	0
Uttarakhand	0	3	0	1	2	0
West Bengal	4	5	1	1	3	1
Daman & Diu	0	0	0	1	0	0
Delhi	0	1	0	1	0	0
Total	**42**	**87**	**8**	**59**	**79**	**53**

Basin wise information in terms of number of stations flowed in Extreme, Severe, Above Normal Flood situation and the inflow Forecast issued during flood season 2021 are shown in **Fig. 3.2.**

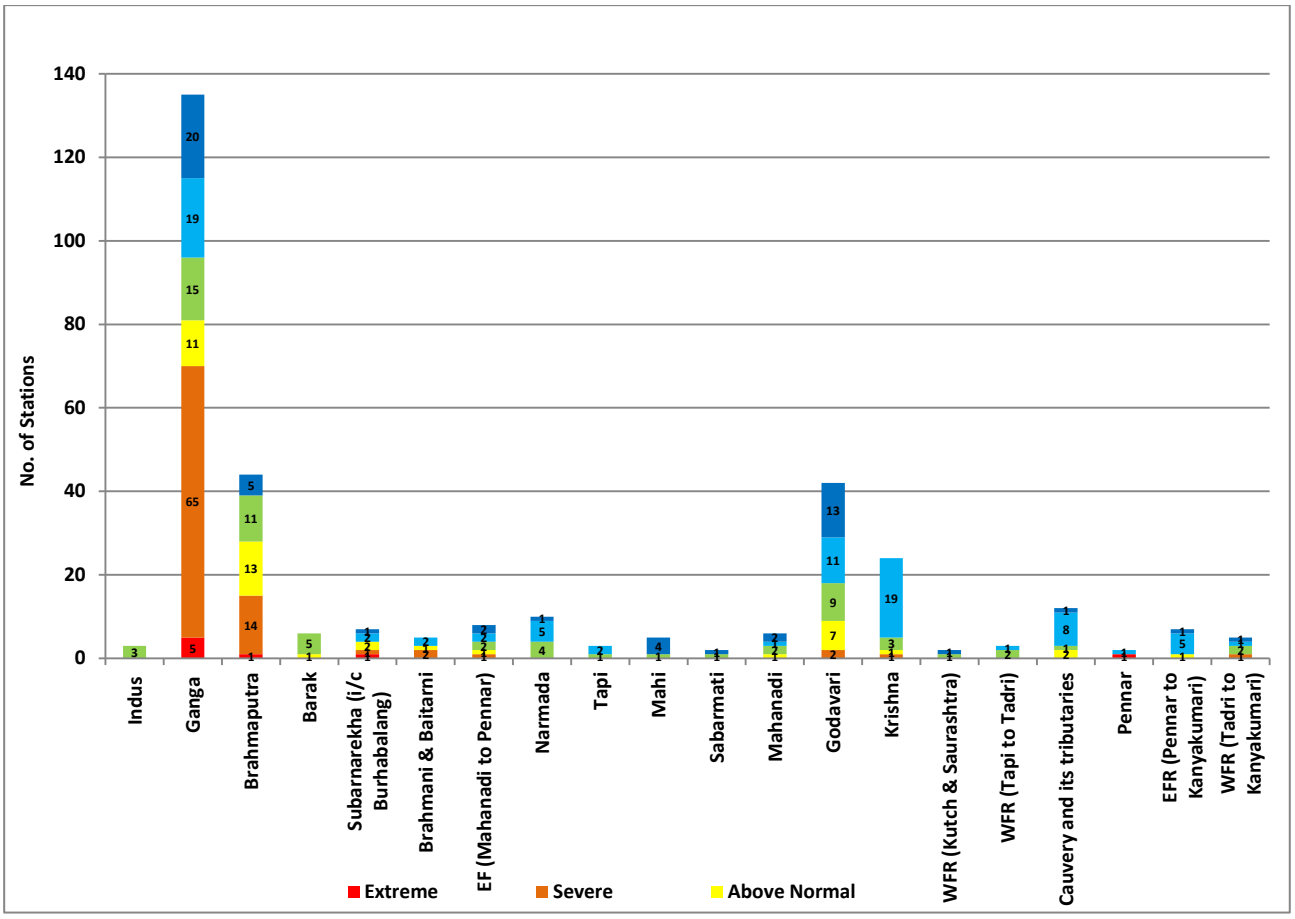


Fig 3.2 : Figure showing number of stations flowing in Extreme, Severe, Above Normal Flood situation and the inflow Forecast during flood season 2021 in different Basins

Basin-wise flood situation, in terms of number of stations in extreme, severe, above normal flood situation and inflow exceeding threshold value at dams/barrages, has been tabulated in the following table:

Basin	Level				Inflow	
	Extreme Flood	Severe Flood	Above Normal	Below WL	Inflow Forecast	No Inflow
Indus				3		
Ganga	5	65	11	15	19	20
Brahmaputra	1	14	13	11		5
Barak			1	5		
Subarnarekha (i/c Burhabalang)	1	1	2		2	1
Brahmani & Baitarni		2	1		2	
EF (Mahanadi to Pennar)		1	1	2	2	2
Narmada				4	5	1
Tapi				1	2	
Mahi				1		4
Sabarmati				1		1
Mahanadi			1	2	1	2
Godavari		2	7	9	11	13
Krishna		1	1	3	19	
WFR (Kutch & Saurashtra)				1		1
WFR (Tapi to Tadri)				2	1	
Cauvery and its tributaries			2	1	8	1
Pennar	1				1	
EFR (Pennar to Kanyakumari)			1		5	1
WFR (Tadri to Kanyakumari)		1		2	1	1
Total	8	87	41	63	79	53

Details of flooding situation indicating districts affected and duration of different category of flood at a forecasting station during 2021 can be seen at **Annex – V**.

3.2.1 EXTREME FLOOD SITUATION

Extreme floods, exceeding previous highest flood levels (HFL), were observed in eight sites namely Hathidah in Patna district, Bhagalpur in Bhagalpur district of Bihar, Mathani Road Bridge in Balasore district of Odisha, Nellore Anicut in Nellore district of Andhra Pradesh, Auraiya in Auraiya district, Kachlabridge in Buduan district, Bansi in Siddarthnagar district of Uttar Pradesh and Mekhliganj (R/B) in West Bengal during the year 2021.

50 Flood Monitoring Stations flowed in Extreme Flood Situation in Bihar, Karnataka, Telangana, Tamilnadu, Andhra Pradesh, Maharashtra, Madhya Pradesh, Uttarakhand, Rajasthan, Gujarat, Kerala, Goa, Puducherry and Uttar Pradesh state.

Month wise number of flood forecast and monitoring stations witnessed Extreme Flood is shown in **Fig. 3.3**.

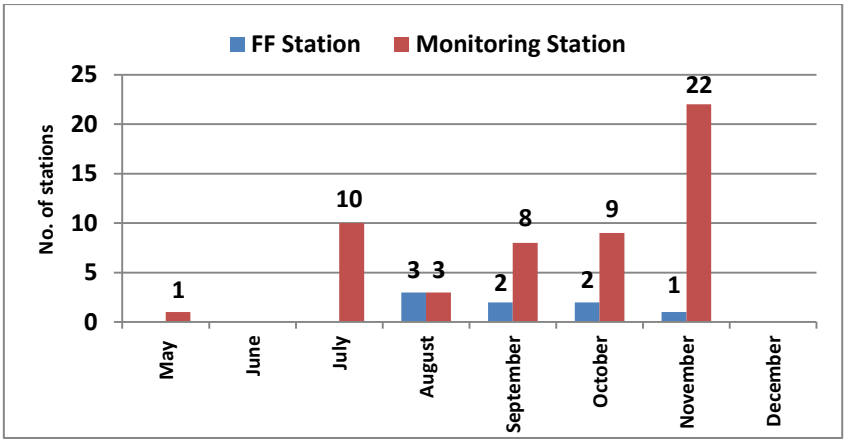


Fig. 3.3: Month wise number of flood forecasting/monitoring stations witnessed extreme floods during 2021

3.3 EXTREME FLOOD SITUATION (2018-2021)

It is observed that during the last 4 years extreme floods were witnessed in non-flood prone states such as Karnataka, Kerala, Maharashtra, Tamilnadu in addition to existing flood prone states like Assam, Bihar, Odisha and Uttar Pradesh. **Fig 3.2** shows graph showing state wise extreme flood situation during the year 2018 to 2021.

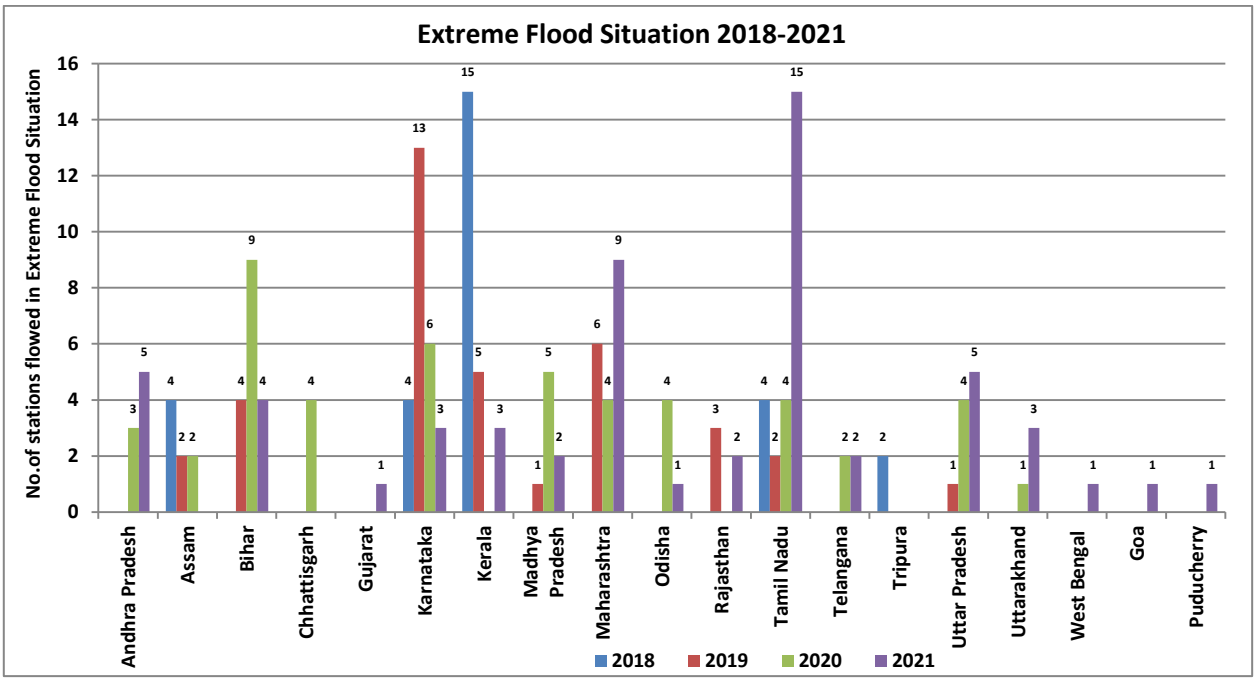


Fig. 3.4: State wise extreme flood situation during the years 2018 to 2021

CHAPTER - 4

FLOOD FORECAST PERFORMANCE

4.1 INTRODUCTION

A number of techniques are being utilised for formulation of river stage and inflow forecasts by Central Water Commission. While inflow forecast is being provided for assisting project authorities in reservoir regulation, the stage forecast is done for warning the civil and engineering authorities about the predicted water level well ahead of its occurrence. An accurate forecast is one where the forecast level and corresponding actual observed level exactly synchronize or have such a small difference that it can be taken as reasonably accurate. In an ideal situation, not only the forecast and the corresponding observed value of river stage/inflow should be the same but also the time of such occurrence should be the same as that predicted.

4.2 EVALUATION CRITERIA FOR STAGE/INFLOW FORECASTING

As per present practice, all the level and inflow forecasts are being judged by the single criteria of accuracy i.e. the actual level attained is within ±15cm of forecasted value for stage forecasts and the actual inflow/volume received in the dam/barrage is within ±20% of the forecasted value for inflow forecast.

The forecast of incoming flood gives the water level or inflow and 'time' of occurrences. It is also observed that in many cases the levels attained were found within permissible limit of accuracy but the time of occurrence was not the same.

4.3 FLOOD FORECASTING ACTIVITIES AND ITS ACCURACY

The flood forecasting activities like data collection, forecast formulation and its dissemination during 2021 covered various river basins and States. A total of 10617 forecast were issued during 2021. The performance of flood forecasting Division wise, Major Basin wise, State wise and for the period 2000 to 2021 are given from **Annex - VI to IX.**

4.3.1 RIVER BASIN-WISE DETAILS OF FLOOD FORECASTING ACTIVITES & ACCURACY OF FORECAST

4.3.1.1 INDUS BASIN

During the flood season 2021, one forecast for Jhelum basin at Rammunshibagh in Srinagar was issued out of 3 level forecasting sites in the basin.

4.3.1.2 BRAHMAPUTRA BASIN

During the flood season 2021, analysis of the flood forecasts issued reveals that 1535 forecasts (14.45% of 10617 forecast) were issued for 28 level forecast sites located on the main Brahmaputra and its tributaries. Out of these, 1521 forecasts (99.09%) were found within permissible limit of accuracy.

4.3.1.3 BARAK AND OTHER BASIN

During the flood season 2021, 40 forecasts (0.37% of 10617) were issued for 1 level forecasting site. All forecasts were found within permissible limit of accuracy.

4.3.1.4 GANGA BASIN

One new level forecasting site Manderial was added during 2021 flood season. During the flood season 2021, 5582 forecasts (52.57 % of 10617) were issued for 103 sites (84 level and 19 inflow), out of total 135 sites (96 level and 39 inflow Forecast) located on the main Ganga and its tributaries. No forecast was issued for the remaining 32 sites. Out of these, 5372 forecasts (96.24%) were found within permissible limit of accuracy.

4.3.1.5 GODAVARI BASIN

Two new inflow forecasting sites namely Bawanthadi Reservoir and Chaurai Dam were added during 2021 flood season. During the flood season 2021, 299 forecasts (2.81% of 10617) were issued for 20 (9 level and 11 inflow) of the 42 sites (18 level and 24 inflow) on Godavari Basin and 282 (94.31%) forecasts were found within permissible limit of accuracy. No forecasts were issued for remaining 22 sites.

4.3.1.6 KRISHNA BASIN

During the flood season 2021, 1421 forecasts (13.38% of 10617) were issued for 21 (2 level and 19 inflow) forecasting sites out of 24 sites (5 level and 19 inflow). Out of 1421 forecasts issued, 1319 forecasts were found to be within limit with an accuracy of 92.82%. No forecasts were issued for the remaining 3 level sites.

4.3.1.7 CAUVERY BASIN

During the flood season 2021, 871 forecasts (8.20 % of 10617) were issued for 10 (2 level and 8 inflow) forecasting sites out of 12 (3 level and 9 inflow) sites. 731 forecasts (83.93%) were found within permissible limit of accuracy.

4.3.1.8 SUBARNAREKHA BASIN INCLUDING BURHABALANG

During the flood season 2021, 387 forecasts (3.64% of 10617) were issued for 6 forecasting sites (4 level and 2 inflow) out of 7 (4 level and 3 inflow) sites. Out of 387 forecast, 314 forecasts were found to be within permissible limit of accuracy (81.14%).

4.3.1.9 BRAHMANI AND BAITARNI BASIN

During the flood season 2021, 30 forecasts (0.28% of 10617) were issued for all 5 (3 level and 2 inflow) forecasting sites in the basin. Out of 30 forecast (18 level and 12 inflow) issued, 21 (11 level and 10 inflow) forecasts were found to be within permissible limit with 70% of accuracy.

4.3.1.10 MAHANADI BASIN

During the flood season 2021, 64 forecasts (0.60% of 10617) were issued for 2 forecasting sites (1 level and 1 inflow) out of 6 (3 level and 3 inflow) sites. Out of 64 (10 level and 54 inflow) forecast issued, 63 forecasts were found to be within limit with an accuracy of 98.44%.

4.3.1.11 EAST FLOWING BETWEEN MAHANADI AND PENNAR BASIN

During the flood season 2021, 23 forecasts (0.21% of 10617) were issued for 4 forecasting site (2 level and 2 inflow) out of 8 (4 level and 4 inflow) sites. Out of 23 (13 level and 10 inflow)

forecast issued, 11 forecasts (6 level and 5 inflow) were found to be within limit with an accuracy of 47.83%.

4.3.1.12 PENNAR BASIN

During the flood season 2021, 55 forecasts (0.51% of 10617) were issued for both the forecasting sites (1 level and 1 inflow). Out of 55 (3 level and 52 inflow) forecast issued, 36 inflow forecasts were found to be within limit with an accuracy of 65.45%.

4.3.1.13 EAST FLOWING BETWEEN PENNAR AND KANYAKUMARI BASIN

During the flood season 2021, 99 forecasts (0.93% of 10617) were issued for 6 forecasting sites (1 level and 5 inflow) out of 7 (1 level and 6 inflow) sites. Out of 99 forecasts issued, 61 forecasts were found to be within limit with an accuracy of 61.62%.

4.3.1.14 MAHI BASIN

During the flood season 2021 no forecast was issued for Mahi Basin. There are 5 (1 level and 4 inflow) stations in the basin.

4.3.1.15 SABARMATI BASIN

During the flood season 2021, no forecast was issued for Sabarmati Basin. There are 2 (1 level and 1 inflow) stations in the basin.

4.3.1.16 NARMADA BASIN

During the flood season 2021, 35 forecasts (0.33% of 10617) were issued for 5 inflow forecast stations out of 10 (4 level and 6 inflow) stations. All forecasts were within permissible limit.

4.3.1.17 TAPI BASIN

During the flood season 2021, 157 forecasts (1.47% of 10617) were issued for 2 inflow forecasting sites out of 3 (1 level and 2 inflow) sites. Out of 157 forecast issued, 154 forecasts were found to be within limit with an accuracy of 98.09%. No level forecast was issued during season 2021 in the basin.

4.3.1.18 WEST FLOWING FROM TAPI TO TADRI BASIN

During the flood season 2021, 14 forecasts (0.13% of 10617) were issued for 1 inflow forecasting site out of 3 (2 level and 1 inflow) stations. All the 14 forecasts were within permissible limit. No level forecast was issued during season 2021 in the basin.

4.3.1.19 WEST FLOWING RIVERS OF KUTCH AND SAURASHTRA INCLUDING LUNI

During the flood season 2021, no forecast was issued in this Basin. There are 2 (1 level and 1 inflow) stations in the basin.

4.3.1.20 WEST FLOWING RIVERS BETWEEN TADRI TO KANYAKUMARI BASIN

During the flood season 2021, 4 forecasts (0.04% of 10617) were issued for 2 forecasting site (1 level and 1 inflow) out of 5 (3 level and 2 inflow) stations. Out of 4 forecasts (2 level and 2 inflow), 2 (1 level and 1 inflow) forecast were within the limit of accuracy with an accuracy of 50%.

Basin-wise forecast performance are shown in **Fig 4.1**.

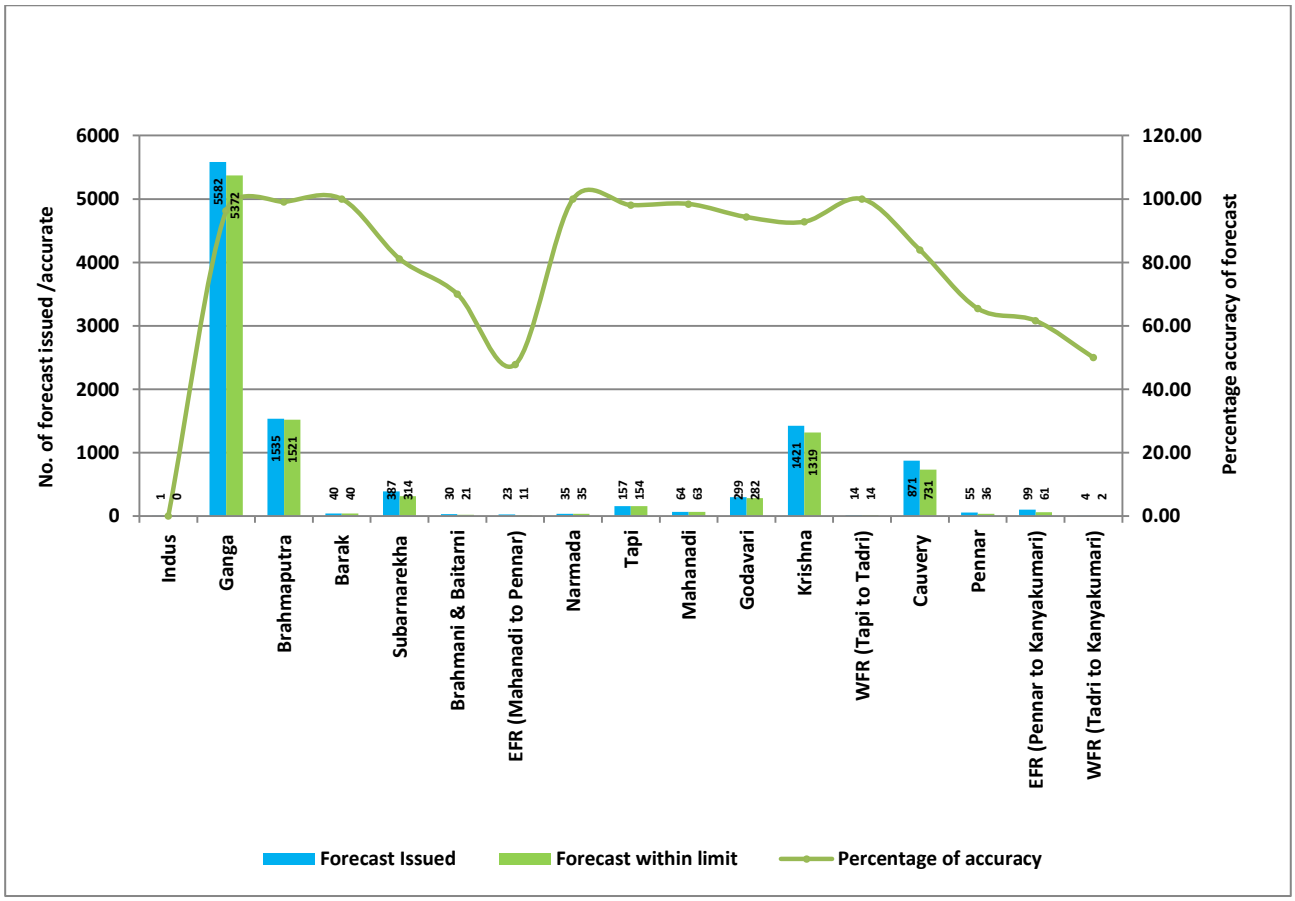


Fig 4.1: Basinwise Forecast performance during 2021

The Basin/River wise flood forecasting information in India during flood season 2021 is given in **Annex – III (A & B).**

4.3.2 STATEWISE FLOOD FORECASTING PERFORMANCE

There are 22 states and three Union Territories of the Daman and Diu, Jammu & Kashmir and National Capital Territory of Delhi so far covered under the Flood Forecast and Warning Network of the Central Water Commission. The State wise flood forecasting information in India during the flood season 2021, is given in **Annex – VI (A & B).** Their salient features are as under:

4.3.2.1 ANDHRA PRADESH

There are total 20 (10 level and 10 inflow) forecasting sites. Forecasts were issued for 13 (5 Level and 8 Inflow) forecasting sites. It is revealed that 734 forecasts (35 level and 699 inflow) were issued out of which 678 forecasts (25 level and 653 inflow) were within limits (92.37%). No forecasts were issued for 7 stations.

River Pennar at Nellore Anicut in Nellore district flowed in Extreme Flood Situation on 20th November during this monsoon period. Flood Monitoring Station on river Nagri at Buggaagraharam, river Poini at Narasingarayanipet in Chittoor district, river Chitravathi at Singavaram (Anantpur district) and river Cheyyeru at Nandalur (Cuddapah district)flowed in Extreme Flood Situation from 19th to 21st November during this monsoon period.

4.3.2.2 ARUNACHAL PRADESH

During 2021 flood season 49 level forecasts were issued for 1 level forecasting site out of 3 level forecasting sites and all forecasts are within permissible limit with 100% accuracy. No forecast was issued for 2 remaining sites.

4.3.2.3 ASSAM

In Assam, there are 30 forecasting sites and all of them are level forecasting site. Forecasts were issued for 21 sites. It is seen that during 2021 season, 1419 forecasts were issued out of which 1415 forecasts (99.72%) were found within limit of accuracy.

4.3.2.4 BIHAR

In Bihar, there are 40 level forecasting sites and 3 Inflow forecasting sites. Forecasts were issued for 39 (38 level and 1 inflow) sites during the year 2021. Out of 3317 (3315 level and 2 inflow) forecasts issued during the flood season 2021, 3248 (3247 level and 1 inflow) forecasts (97.92%) were found within limit of accuracy. No forecast was issued for 4 (2 level and 2 inflow) sites.

River Ganga at Hatidah (Patna district) and Bhagalpur in Bhagalpur district flowed in Extreme Flood Situation from 13th to 19th August during this monsoon period. Flood Monitoring Station on river Burhi Gandak at Sakra (Muzaffarpur district) flowed in Extreme flood situation from 10thJuly to 14th July and river Gandak at Lalganj (Vaishali district) flowed in Extreme flood situation from 2nd to 3rd September during flood season 2021.

4.3.2.5 CHHATTISGARH

In Chattisgarh there are 3 (1 level and 2 inflow) forecasting sites. No forecast was issued during 2021 flood season.

4.3.2.6 GUJARAT

There are 13 (6 level and 7 inflow) forecasting sites in the state of Gujarat. However, forecasts were issued for only 2 inflow sites. Out of 86 inflow forecasts issued 84 forecasts were found within limits of accuracy (97.67%) during the flood season 2021. No forecasts were issued for 11 (6 level and 5 inflow) sites.

Flood monitoring station on river Tapi at Kholwad (Kathore) in Surat district flowed in Extreme Flood Situation from 29th to 30th September 2021.

4.3.2.7 HARYANA

There are 2 (1 level and 1 inflow) forecasting sites in Haryana. No level forecast was issued during 2021. Data from Hathnikund Barrage were collected. However, no inflow forecasts were issued due to very little travel time available from base station.

4.3.2.8 HIMACHAL PRADESH

There is one level flood forecasting site Paonta Sahib in Himachal Pradesh. No forecast was issued for this site during 2021 flood season.

4.3.2.9 JAMMU AND KASHMIR

In Jammu and Kashmir, there are 3 level forecasting sites. 1 forecast was issued for the site Rammunshibagh during 2021 flood season.

4.3.2.10 JHARKHAND

In the state of Jharkhand, there are 15 inflow and 2 level flood forecasting sites. Flood forecasts were issued for 8 sites (2 level and 6 inflow). During the flood season 2021, 625 (83 level and 542 inflow) forecasts were issued out of which 565 (82 level and 483 inflow) forecasts (90.40 %) were found within limit of accuracy.

4.3.2.11 KARNATAKA

There are 15 (1 Level and 14 Inflow) forecasting sites in the state of Karnataka. During the flood season 2021, forecasts were issued for 13 inflow forecast sites. Out of 1012 inflow forecasts issued, 933 forecasts (92.19%) were found within limit of accuracy.

Flood monitoring station on river Aghanashini at Santeguli (Uttar Kanada district) flowed in Extreme Flood Situation on 23rd July. Flood monitoring station on river Shimsa at Thoreshettahalli (Mandya district) flowed in Extreme Flood Situation on 23rd October, 16th to 17th and 21st to 22nd November 2021. River Uduthorrehalla at Pudunagara (Chamarajanagar district) flowed in Extreme Flood Situation from 14th to 15th November 2021.

4.3.2.12 KERALA

There are 5 (3 level and 2 inflow) forecasting sites in the state of Kerala. Forecasts were issued for 2 (1 level and 1 inflow) sites during 2021. Out of 4 (2 level and 2 inflow) forecast issued 2 (1 level and 1 inflow) forecasts were within limit with 50% accuracy.

Flood monitoring station on river Ithikkara at Arkkannur in Kollam district and river Manimala at Pullakkayar and Manikal in Kottayam district flowed in Extreme Flood Situation from 12th to 16th October 2021.

4.3.2.13 MADHYA PRADESH

Flood forecasting activity was expanded to two additional inflow forecasting station named Chaurai Dam and Bawanthadi Reservoir during 2021. In the state of Madhya Pradesh, there are 2 level forecasting sites on the river Narmada and 12 inflow forecast sites. During the flood season 2021, forecasts were issued for 8 inflow forecast sites. Out of 55 inflow forecasts issued, 44 forecasts were found within the limit of accuracy (80%).

Flood monitoring station on river Sind at Seondha (Datia district) flowed in Extreme Flood Situation from 4th to 5th August 2021 and river Narmada at Kaner (Khargone district) flowed in Extreme Flood Situation on 24th September 2021

4.3.2.14 MAHARASHTRA

There are 22 (8 level and 14 inflow) forecasting site in the state of Maharashtra. During the flood season 2021, forecasts were issued for 4 level and 9 inflow forecast sites. Total 147 (22 level 125 inflow) forecasts were issued out of which 122 (13 level and 109 inflow) forecasts were within limit (82.99%). No forecasts were issued for remaining 9 (4 level and 5 inflow) stations.

Flood monitoring station on river Vashisti at Muradpur, river Bav at Nivali in Ratnagiri distrit, Savitri at Mahad (Raigad district), Gad at Belne Bridge (Sindhudurg district) and river Wardha at Dhanora (Chandrapur district) flowed in Extreme Flood Situation from 22nd July to 24th July 2021. Flood monitoring station on river Shivana at Lasur (Aurangabad district), river Wardha at Dhanora (Chandrapur district), Kapsi (Wardha district) and Patala (Yavatmal district) flowed in Extreme Flood Situation from 8th to 10th September 2021.

4.3.2.15 ODISHA

In the state of Odisha, there are 19 (12 level and 7 inflow) forecasting site. During the flood season 2021, 200 (134 level and 66 inflow) forecasts were issued for 11 forecast sites (8 Level and 3 Inflow), out of which 170 (107 level and 63 inflow) were found within limit of accuracy (85 %). No forecasts were issued for remaining 8 flood forecasting sites.

River Jalaka at Mathani Road Bridge (Balasore district) flowed in Extreme Flood Situation on 20th September 2021.

4.3.2.16 RAJASTHAN

Flood forecasting activity was expanded to one additional level forecasting station named Manderial during 2021. In the state of Rajasthan there are 4 level and 10 inflow forecast stations. During Flood Season 2021, 91 (52 level and 39 inflow) forecasts were issued out of which 60 (33 level and 27 inflow) forecast were within permissible limit with 65.93% accuracy. No forecast was issued for remaining 10 stations.

Flood monitoring station on river Parwati at Khatoli, river Ujjad at Barodiya in Kota district flowed in Extreme Flood Situation from 3rd to 7th August 2021.

4.3.2.17 SIKKIM

There are 8 (3 level and 5 inflow) forecasting site in Sikkim. During the flood season 2021 no Forecast was issued.

4.3.2.18 TAMILNADU

In the state of Tamilnadu there are 15 (4 level and 11 inflow) forecast stations. During flood season 2021, forecasts were issued for 12 (3 level and 9 inflow) stations. 634 (21 level and 613 inflow) forecasts were issued out of which 486 (19 level and 467 inflow) were within limit of accuracy (76.66%).

Flood monitoring stations on river Kodaiyar at Thiruvarambu (Kanyakumari district), river Kosasthalaiyar at Monnavedu (Tiruvellur district) and Ayilambedu (Vellore district), river Kallar at Poyyapakkam, river Araniar at Puduvayal in Ranipet district, river Pazhayar at Ashramam (Kanyakumari district), river Bhavani at Kukkalthurai (Nilgiri district), river Palar at Thiruvalam (Vellore district), Nariyampattu and Chengalpatu (Chengalpatta district), river Ponnaiyar at Vazhavachanur (Thiruvannamalai district) and Panneswarammadam (Krishanagiri district), river Periyadai at Venganur (Cuddalore district), river Ayyar at Thandalaiputhur (Tiruchirapalli district) and river Marudaiyar at Varanavasi (Ariyalur district) flowed in Extreme Flood Situation during November 2021.

4.3.2.19 TELANGANA

In the state of Telangana there are 13 forecast stations (5 level and 8 inflow). During Flood Season 2021, forecasts were issued for 12 (4 level and 8 inflow) sites. Total 323 Forecasts (18 level and 305 inflow) were issued in the State of Telangana during 2021. Out of which 287 (15 level and 287 inflow) forecast were within limit of accuracy (93.50%).

Flood Monitoring Stations on river Penganga at Tharnam (Adilabad district) flowed in Extreme Flood Situation on 23rd July and river Maner at Somanpally (Karimnagar district) flowed in Extreme Flood Situation from 7th to 8th September 2021.

4.3.2.20 TRIPURA

There are 2 level forecasting sites in the state of Tripura namely, Kailashahar on river Manu and Sonamura on river Gumti. No forecast was issued during 2021.

4.3.2.21 UTTARAKHAND

There were total six forecast sites (4 level and 2 inflow) in the state of Uttarakhand. Forecasts were issued for 5 stations (3 level and 2 inflow) in 2021. 35 forecasts (19 level and 16 inflow) were issued out of which 25 forecast (11 level and 14 inflow) were within limit of accuracy (71.43%).

Flood Monitoring Station on river Sarda at Ghat (Pithoragarh district) and Pancheshwar (Champawat district), river Alkananda at Karan Prayag (Chamoli district) flowed in Extreme Flood Situation from 19th to 20th October 2021.

4.3.2.22 UTTAR PRADESH

There are 44 (39 level and 5 inflow) flood forecasting sites in the state of Uttar Pradesh. During the flood season 2021, forecasts were issued for 39 stations (34 level and 5 inflow). Out of 1370 forecasts (1185 level and 185 inflow), 1308 forecasts (1146 level and 162 inflow) (95.47%) were found within limit of accuracy. No forecasts were issued for 5 sites.

Flood Monitoring Stations flowed in Extreme flood situation on river Kwano at Dumrighat (Balrampur district) from 23rd to 24th July, river Sarda at Paliakalan (Kheri district) on 10th October during 2021.

4.3.2.23 WEST BENGAL

There were 16 (12 level and 4 inflow) flood forecasting sites in West Bengal. During the flood season 2021, forecasts were issued for 14 sites (11 level and 3 inflow stations). Out of 488

forecasts (288 level and 200 inflow), 466 forecasts (274 level and 192 inflow) (95.49%) were found within limit of accuracy.

Forecasting site Mekhliganj (R/B) on river Teesta in Coochbehar district flowed in extreme flood situation on 20th October 2021.

4.3.2.24 DAMAN & DIU

In the Union Territory of Daman & Diu, there is one level flood forecasting site at Daman on river Damanganga. No forecast was issued during flood season 2021.

4.3.2.25 NCT OF DELHI

There are 2 level flood forecasting sites in the National Capital Territory of Delhi (NCT of Delhi), namely, Delhi Railway Bridge on the Yamuna River and Dhansa Regulator at Delhi and Haryana border on the Sahibi river, a tributary of Yamuna River which is commonly known by name of Najafgarh drain within Delhi town. During the flood season 2021, 27 level forecast were issued for the site Delhi Rly Bridge out of which 19 forecasts were within permissible limit (70.37%).

State-wise Flood Forecast Performance during 2021 is shown in **Fig. 4.2**.

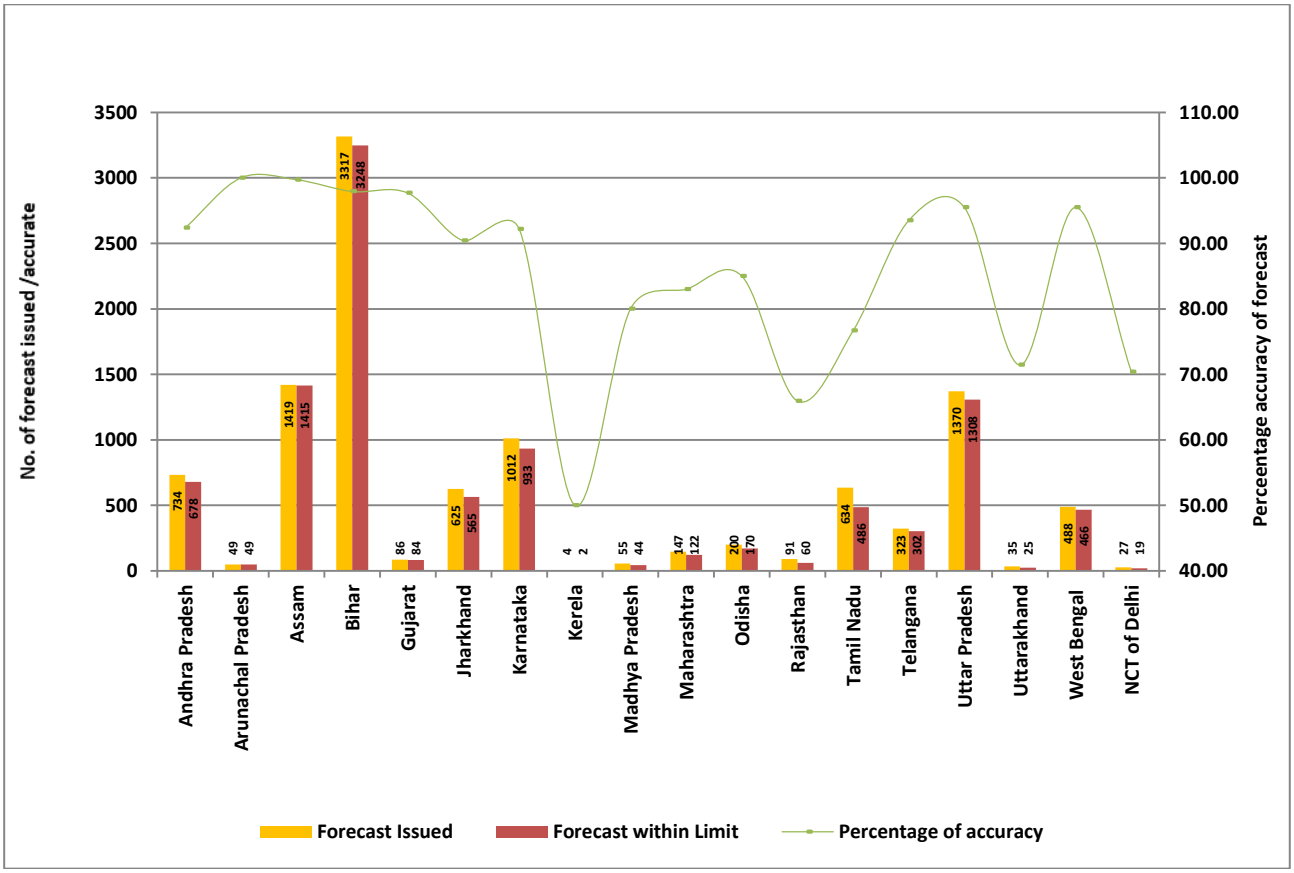


Fig. 4.2: State-wise Flood Forecast Performance during 2021

Details of Extreme flood events in the various river systems covered under the Flood Forecasting & Warning Network are given in **Annex – X** for the year 2021**.** Severe and Above Normal flood events were observed as listed at **Annex - XI to XIII,** for the year 2021.

4.4 AN OVERVIEW OF FLOOD FORECASTING PERFORMANCE

During the flood season 2021, an average number of flood forecasts issued per forecasting site were 32.07. The number of forecasting sites where the performance accuracy of the issued forecasts was found to be above 93.96% (National average for flood season 2021) was 136 sites (41.08%) which include 92 sites (27.79%) where flood forecasting stations have 100% accurate forecasts.

The flood forecasting performance of the level forecasting as well as inflow forecasting sites from 2011 to 2021 is given in **Fig. 4.3.**

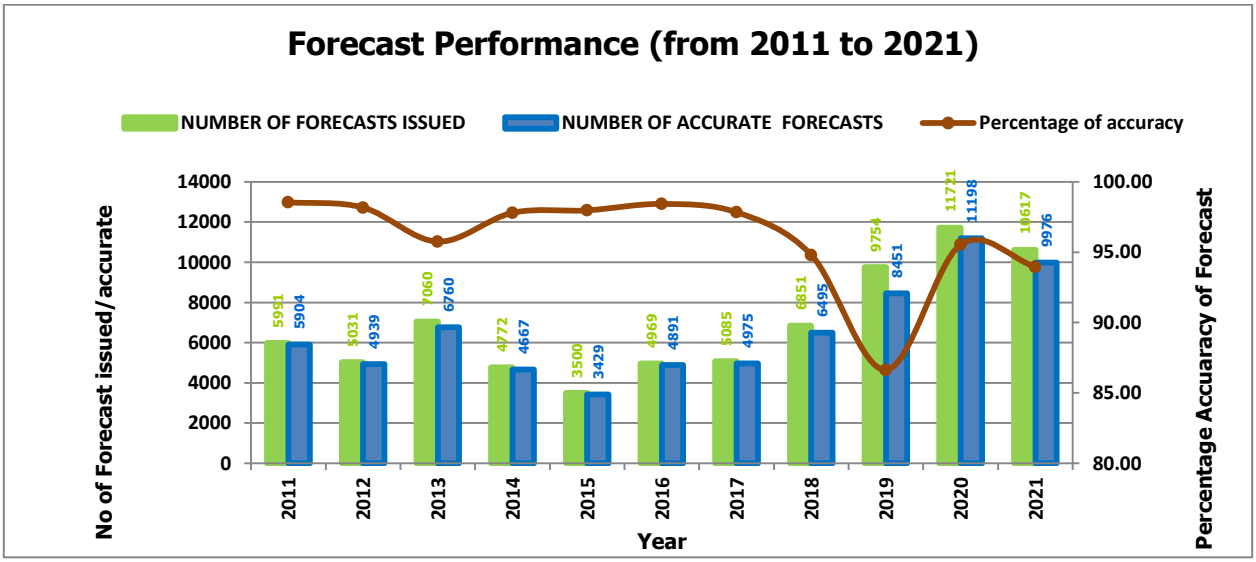


Fig. 4.3: Flood Forecast Performance from 2011 to 2021

4.4.1 OVERALL PERFORMANCE

Thus, in the twenty major river systems in the country where 'Flood Forecasting & Warning Network' of Central Water Commission exists, and floods are being monitored; the overall accuracy/performance was of the order of 93.96% for the country as a whole. Site wise 'Forecast Performance' out of 331 operational sites in flood season 2021 is shown in **Table 4.1**.

Table 4.1: Site wise 'Forecast Performance' of flood forecasting sites of CWC in Flood Season, 2021

Sl. No.	Details	No. of Sites	%
1	Sites with performance accuracy between 0.0% to 25%	9	4.11%
2	Sites with performance accuracy between 25.1% to 50%	23	10.50%
3	Sites with performance accuracy between 50.1% to 75%	15	6.85%
4	Sites with performance accuracy between 75.1% to 99.99%	80	36.53%
5	Sites with 100% performance accuracy	92	42.01%
6	Total sites where forecasts were issued	**219**	**100%**

CHAPTER - 5

RESPONSE FROM USER AGENCIES

5.1 GENERAL

Central Water Commission performs the Flood Forecasting and Warning job on flood prone interstate river basins in the country. It issues the forecast to the users such as various civil and engineering departments of the state and central governments including, railway, defense, revenues authorities, public sector undertakings besides National Disaster Management Cell in the Ministry of Home Affairs, who are responsible for taking timely flood fighting measures, rescue operations including shifting of flood affected people to safer places etc.

Though the various state government agencies in-charge of the flood management and relief operations generally do not give their views in writing on usefulness of the flood forecasting activities of CWC, yet some of them do write to the Central Water Commission conveying their views on the usefulness of the flood forecasts received by them.

5.2 APPRECIATION LETTERS RECEIVED DURING FLOOD SEASON 2021

Abstract of some of the messages received by our field unit during the flood season 2021 are given below:

5.2.1 Office of the Chief Engineer, Krishna Bhagya Jala Nigam Limited, Narayanapur

(Lr No. KBJNL/CEA/AE-4/2021-22/3122 dt 01.01.2022)

During 2021 flood season, the forecast data provided was appropriate and helpful. Therefore it is requested to issue inflow forecast in succeeding days for smooth flood regulation and also requested to install river gauge stations in between Krishna and Ghatprabha in Karnataka.

5.2.2 Office of the Executive Engineer, Krishna Bhagya Jala Nigam Limited, Narayanapur (Lr. no: KBJNL/DDN/PB-I/CWC/2021-22/1383 dt 21-12-2021)

During 2021 monsoon period flood forecast for Narayanpur dam was being received from the Central Water Commission (CWC) and same has been informed to downstream public through the district revenue authorities and also through Newspaper and Electronic media.

The flood inflow forecast during monsoon period received from the CWC was helpful in effective and safe operation of Spillway gates keeping in view of the Upstream and downstream side public safety.

Hence, the present system of flood forecasting in the Krishna river catchment may kindly be continued in future to take advance action for mitigation of flood releases.

5.2.3 Office of the Chief Engineer, Telangana State Power Generation Corporation Ltd. Hyderabad (Lr. no: CE/HPC&HP/SE(HD-II)/EME-3/F.CWC/D.No. 139/21 dt 02-12-2021)

The Inflow forecasts for various Projects/Dams come under the Krishna River Basin issued by your office during 2021 Flood season was useful to TSGENCO.

5.2.4 Office of the Superintending Engineer, Irrigation Circle, Kurnool (Lr. No. SE/IC/KNL/CWC Flood Forecast 2021-22 dt. 01.02.2022)

The utility of forecast bulletins of Mantralayam CWC, is much benefitted to Water Resources Department in advance preparation of water control and water management and in depletion of water from Reservoirs early so that, the inflow water can be accommodated in the reservoirs/barrage. The utility of forecast bulletin of Mantralayam helped a lot in gate operation of Sunkesula barrage and in storing water in Alaganur Balancing Reservoir and in pushing water to Pennar basin through KC Canal.

5.2.5 Office of the Secretary, Department of Disaster Management and Rehabilitation, Govt. of Uttarakhand.(Lr No. 1192/USDMA-693(2019) dt. March 2022)

Flood Forecasting Services provided routinely by Central Water Commission (CWC), Dehradun during the monsoon period has been very useful in disaster emergency operations and issuing advisory for the concerned authorities.

I would like to appreciate proactive assistance provided by the CWC team headed by Shri Rajesh Kumar, SE, CWC, Dehradun during excessive rainfall incidences in October 2021 and the same helped the state government in monitoring water level of Srinagar Dam and near towns situated along the downstream reaches of Alaknanda river. It is added that the CWC-team also provided the required support during post Dhauliganga flash flood incidence of February 2021.

The state government looks forward to support and cooperation from the CWC-team in future as well as.

ANNEXURES - I to XIII

Details of New Flood Forecasting Stations included in last Five Years (2017-2021)

Year	New Station	Total No. of Station	Name of Station	State	District
1	2	3	4	5	6
2017	27	199 + 27=226	Kurnool Town	Andhra Pradesh	Kurnool
			Srikakulam	Andhra Pradesh	Srikakulam
			Namsai	Arunachal Pradesh	Lohit
			Choldhowaghat	Assam	Lakhimpur
			N H Crossing Ranganadi	Assam	Lakhimpur
			Dholla Bazaar	Assam	Tinsukia
			Kokrajhar	Assam	Kokrajhar
			Dumariaghat	Bihar	Gopalganj
			Ahirwalia	Bihar	Muzzafarpur
			Sangam	Jammu & Kashmir	Anantnag
			Safapora	Jammu & Kashmir	Bandipora
			Fathegarh	Uttar Pradesh	Farukkabad
			Dabri	Uttar Pradesh	Shahjahanpur
			Garhmuktheswar	Uttar Pradesh	Ghaziabad
			Kachla Bridge	Uttar Pradesh	Badaun
			Panam Dam	Gujarat	Panchmahal
			Upper Tunga	Karnataka	Shimoga
			Bhadra Dam	Karnataka	Chikmagaluru
			Rengali Dam	Odisha	Angul
			Mahi Bajajsagar Dam	Rajasthan	Banswara
			Som Kamla Amba Dam	Rajasthan	Udaipur
			Upper Anicut	Tamilnadu	Tiruchirapalli
			Gomukhi Dam	Tamilnadu	Villupuram
			Wellington Dam	Tamilnadu	Cuddalore
			Sathanur Dam	Tamilnadu	Thiruvannamalai
			Chembarampakkam Lake	Tamilnadu	Kanchipuram
			Banbasa	Uttarakhand	Champawat
2018	23	226+ 23 =249	Atreyapuram	Andhra Pradesh	East Godavari
			Karnal Bridge	Haryana	Karnal
			Paonta Sahib	Himachal Pradesh	Sirmaur
			Musiri(Srirangam)	Tamilnadu	Tiruchirapalli
			Kodumudi (Erode)	Tamilnadu	Erode
			Savandapur(Bhavani)	Tamilnadu	Erode
			Sirpur Town	Telangana	Adilabad
			Ganganagar	Uttarakhand	Rudraprayag
			Narayanapuram Anicut	Andhra Pradesh	Srikakulam
			Madduvalasa Reservoir	Andhra Pradesh	Srikakulam
			Tilaiya Dam	Jharkhand	Koderma
			Sikatia Barrage	Jharkhand	Dumka
			Konar Dam	Jharkhand	Hazaribagh
			Kalisindh Dam	Rajasthan	Jhalawar
			Parwan Dam	Rajasthan	Baran
			Gambhiri Dam	Rajasthan	Chittorgarh
			Panchana Dam	Rajasthan	Karauli
			Gudha Dam	Rajasthan	Bundi
			Parwati Dam	Rajasthan	Dholpur
			Kota Barrage	Rajasthan	Kota
			Rangit-III HEP Dam	Sikkim	South Sikkim
			Dharmanagri Barrage	Uttar Pradesh	Bijnor

			Kalagarh Dam	Uttarakhand	Pauri Garhwal
2019	76	249+76=325	Chinturu	Andhra Pradesh	East Godavari
			Avanigadda	Andhra Pradesh	Krishna
			Yingkiang	Arunachal Pradesh	Upper Siang
			Mathanguri	Assam	Baska
			Dheng Bridge	Bihar	Sitamarhi
			Sonebarsha	Bihar	Sitamarhi
			Jainagar	Bihar	Madhubani
			Runisaidpur	Bihar	Sitamarhi
			Araria	Bihar	Araria
			Taibpur	Bihar	Kishanganj
			Neeleswaram	Kerala	Ernakulam
			Kumbidi	Kerala	Palakkad
			Malakkara	Kerala	Pathanamthitta
			Nasik	Maharashtra	Nasik
			Mathani Road Bridge	Odisha	Balasore
			Abu Road	Rajasthan	Sirohi
			Kota City	Rajasthan	Kota
			Malli Bazaar	Sikkim	South Sikkim
			Joretahang(Rothak)	Sikkim	South Sikkim
			Singtam	Sikkim	East Sikkim
			Madurai	Tamilnadu	Madurai
			Kakardhari	Uttar Pradesh	Bahraich
			Hasimara	West Bengal	Coochbehar
			Indrapuri Barrage	Bihar	Garhwa
			Gandak Barrage	Bihar	West Champaran
			Kosi Barrage	Bihar	Bhimnagar
			Ravishankar Dam	Chattisgarh	Dhamtari
			Bango Dam	Chattisgarh	Korba
			Sardar Sarovar Dam	Gujarat	Ahmedabad
			Sundar Dam	Jharkhand	Hazaribagh
			Amanat Barage	Jharkhand	Dumka
			Annaraj Dam	Jharkhand	Hazaribagh
			Bhairwa Dam	Jharkhand	Hazaribagh
			Batane Dam	Jharkhand	Giridih
			Galudih Barrage	Jharkhand	Saraikela Kharaswan
			Getlasud Dam	Jharkhand	Ranchi
			Karanja Dam	Karnataka	Bidar
			Malaprabha Dam	Karnataka	Belgaum
			Hippargi Dam	Karnataka	Bagalkot
			Hidkal Dam	Karnataka	Belagavi
			Singatalur Barrage	Karnataka	Gadag
			Idduki Dam	Kerala	Idduki
			Idamalayar	Kerala	Ernakulam
			Rajghat Dam	Madhya Pradesh	Lalitpur
			Tawa Dam	Madhya Pradesh	Hoshangabad
			Bargi Dam	Madhya Pradesh	Jabalpur
			Barna Dam	Madhya Pradesh	Raisen
			Indira Sagar Dam	Madhya Pradesh	Khandwa
			Omkareshwar Dam	Madhya Pradesh	Khandwa
			Totladoh Project	Maharashtra	Nagpur
			Upper Wainganga Project	Madhya Pradesh	Balaghat
			Upper Wardha Project	Maharashtra	Amaravati
			Mula Dam	Maharashtra	Ahmednagar
			Issapur/Upper Penganga P	Maharashtra	Hingoli

			N M D Weir	Maharashtra	Nasik
			Yeldari Dam	Maharashtra	Parbhani
			Koyna Dam	Maharashtra	Satara
			Warana Dam	Maharashtra	Kolhapur
			Ujjani Dam	Maharashtra	Solapur
			Veer Dam	Maharashtra	Satara
			Manjlegaon	Maharashtra	Beed
			Salandi Dam	Odisha	Bhadrak
			Upper Indravathi Project	Odisha	Kalahandi
			Kolab Project	Odisha	Koraput
			Machhkund Project	Odisha	Koraput
			Balimela Project	Odisha	Malkangiri
			Rana Pratap Sagar	Rajasthan	Chittorgarh
			Teesta-III HEP Dam Chung	Sikkim	North Sikkim
			Teesta V HEP Dam Singtar	Sikkim	North Sikkim
			Rongpo Dam	Sikkim	East Sikkim
			Rongli Dam	Sikkim	East Sikkim
			Kodaganar Dam	Tamilnadu	Dindugul
			Musi Project	Telangana	Nalgonda
			Matatilia Dam	Uttar Pradesh	Lalitpur
			Katerniaghat Dam	Uttar Pradesh	Bahraich
			Hinglow Dam	West Bengal	Bankura
2020	3	325+3=328	Dholpur	Rajasthan	Dholpur
			Indirasagar(Polavaram)	Andhra Pradesh	West Godavari
			Laxmi Barrage	Telangana	Bhupalpally
2021	3	328+3=331	Manderial	Rajasthan	Karauli
			Bawanthadi Reservoir	Madhya Pradesh	Balaghat
			Pench Reservoir/Chaurai/M	Madhya Pradesh	Chindwara

Salient Features of Flood Forecasting Stations maintained by Central Water Commission

S.No	Name of FF Station/Type	River/Basin	Nearest Town/Vill/District/State	Lat (N)	Long (E)	Base Station (TT in hrs)	Div/Circle/ Orgn	Met Sub Division as per IMD	WL (m)	DL (m)	HFL		Mode of Data Collection	Methodology/ Model used for FF Formulation	Remarks
											(m)	Year			
1	Sangam	Jhelum/ Indus	Anantnag/Jammu and Kashmir	33.84	75.08		CD, Jammu / Dir (M), Jammu/ IBO	Jammu & Kashmir	1590.3	1592	1595	2014			
2	Rammunshibagh (Srinagar)	Jhelum/ Indus	Srinagar/Jammu and Kashmir	34.06	74.86	Sangam Khanabal Nunwan	CD, Jammu / Dir (M), Jammu/ IBO	Jammu & Kashmir	1585.53	1586.45	1588.99	2014	Telephone /Mobile/ Telemtry	Rainfall Runoff Model	
3	Safapura	Jhelum/ Indus	Baramulla/Jammu and Kashmir	34.29	74.63		CD, Jammu / Dir (M), Jammu/ IBO	Jammu & Kashmir	1580	1580.8	1582.1	2014			
4	Srinagar	Alaknanda/Ganga	Srinagar/Pauri Garhwal/Uttrakhand	30.22	78.78	Rudrapryag(02) Joshimath(07) Nandkeshri(07) Karanparyag(04) Ganganagar(03)	HGD/HOC/UGBO	Uttarakhand	535.00	536.00	537.90	2013	Phone/Wireless/ Telemetry	Conventional	Lavel ff station
5	Ganganagar	Mandakini/Ganga	Ganganagar/Rudraparyag/Uttrakha nd	30.4	79.04	Ukhimath Gaurikund Gaundhar	HGD/HOC/UGBO	Uttarakhand	803.00	804.00	801.92	2015	Phone/Telemetry	Conventional	Rainfall based (Mathmatical Modelling)
6	Rishikesh	Ganga/Ganga	Rishikesh/Dehradun/Uttrakhand	30.11	78.31	Deoparyag(05) Marora(02)	HGD/HOC/UGBO	Uttarakhand	339.50	340.50	341.72	1995	Phone/Wireless/ Telemetry	Conventional	Lavel ff station
7	Hardwar	Ganga/Ganga	Haridwar/Uttrakhand	29.98	78.19	Deoparyag(05) Marora(03) Rishikesh(01)	HGD/HOC/UGBO	Uttarakhand	293.00	294.00	296.30	2010	Phone/Wireless/ Telemetry	Conventional	Lavel ff station
8	Dharmanagari Barrage	Ganga/Ganga	Bijnor/Uttar Pardesh	29.37	78.03	Haridwar (06)	HGD/HOC/UGBO	Uttar Pradesh	2000	3000	15855	2010	Phone/Telemetry	Conventional	Inflow FF Station
9	Garhmuktheswar	Ganga/Ganga	Gaziabad/UP	28.77	78.14	Daramnagri (36 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	198.33	199.33	199.9	2010	By Phone	-	
10	Narora Barrage	Ganga/Ganga	Narora/ Bulanshahar/ Uttar Pradesh	28.19	78.40	Haridwar (40 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	-	-	180.61	2010	Wireless/ Mobile	Correlation Graph	
11	Kachlabridge	Ganga/Ganga	Budaun/UP	27.93	78.86	Garhmukteshwar (16 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	161.00	162.00	162.79	2010	By Phone	-	
12	Fatehgarh	Ganga/Ganga	Farrukhabad/UP	27.39	79.62	Kachlabridge (24 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	136.60	137.60	138.14	2010	Wireless/ Mobile	Correlation Graph	
13	Kalagarh Dam	Ramganga/Ganga	Pauri/Garhwal/Uttarakhand	29.49	78.76	Bhikiasen Marchula	MGD2/HOCD/UGBO	IMD Lucknow	-	-	263.67	2010	Wireless/ Mobile	Correlation Graph	
14	Moradabad	Ramganga/Ganga	Moradabad/Moradabad/Uttar Pradesh	28.83	78.80	Kalagarh (36 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	189.60	190.60	192.88	2010	Wireless/ Mobile	Correlation Graph	
15	Bareilly	Ramganga/Ganga	Bareilly/Bareilly/ Uttar pradesh	28.30	79.37	Moradabad (36 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	162.07	163.07	162.88	1978	Wireless/ Mobile	Correlation Graph	
16	Dabri	Ramganga/Ganga	Jalalabar/Shahjahanpur/UP	27.49	79.69	Bareilly (24 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	136.30	137.30	139.70	1983	Wireless/ Mobile	Correlation Graph	
17	Kannauj	Ganga/Ganga	Kannauj/Kannauj/ Uttar Pradesh	27.01	79.98	Narora (D/s) (48)	MGD2/HOCD/UGBO	IMD Lucknow	124.97	125.97	126.78	2010	Wireless	Conventional	
18	Ankinghat	Ganga/Ganga	Ankinghat/Kanpur/ Uttar Pradesh	26.93	80.03	Narora (D/s) (48) Bareilly (48) Fathegarh (12) Dabri (12)	MGD2/HOCD/UGBO	IMD Lucknow	123.00	124.00	124.49	2010	Wireless/ Telemetry	Conventional	
19	Kanpur	Ganga/Ganga	Kanpur/Kanpur/ Uttar Pradesh	26.47	80.38	Fathegarh (24) Dabri (24) Ankinghat (12)	MGD2/HOCD/UGBO	IMD Lucknow	112.00	113.00	114.08	2010	Wireless/ Telemetry	Conventional	
20	Dalmau	Ganga/Ganga	Rae-barerilly/ Rae-barerilly/ Uttar Pradesh	26.06	81.03	Ankninghat (28) Kanpur (16)	MGD2/HOCD/UGBO	IMD Lucknow	98.36	99.36	99.84	1973	Wireless/ Telemetry	Conventional	
21	Phaphamau	Ganga/Ganga	Allahabad/ Allahabad/ Uttar Pradesh	25.50	81.86	Kanpur (30) Chillaghat (24)	MGD3/HOCV/UGBO	East Uttar Prasdesh	83.73	84.73	87.98	1978	Wireless/ Telemetry	Conventional	

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											(m)	Year			
22	Paonta Sahib	Yamuna/Ganga	Poanta/Sirmaur/ Himachal Pradesh	30.43	77.59	Naugaon (03-08) Jateon Barrage(giri) (03-08) Haripur(02-07) Dakpathar Barrage (1-1.5)	UYD/HOC/YBO	Himachal Pradesh	383.5	384.5	384.6	1995		3 days advisory Forecast (CWC BETA Model)	
23	Tajewala Barrage (Hathnikund Barrage)	Yamuna/Ganga	Yamunanagar/ Yamunanagar/ Haryana	30.31	77.58	Paonta (06)	UYD/HOCN/ YBO	Haryana Chandigarh& Delhi	1982.00				Wireless		Inflow Forecast Not in Operation
24	Karnal	Yamuna/Ganga	Shergarh Tapu/ Karnal/ Haryana	30.06	77.14	Kalanaur (07-28) hrs	UYD/HOC/YBO	Haryana	248.8	249.5	250.07	2013		Conventional	
25	Mawi	Yamuna/Ganga	Panipat/ Muzzafarpur/ Uttar Pradesh	29.38	77.15	Kalanur (06-36)	UYD/HOCN/ YBO	West Uttar Pradesh	231.00	231.50	232.75	2013	Wireless/ Telemetry	Conventional	
26	Dhansa Regulator	Sahibi/Yamuna/ Ganga	Delhi/Delhi/ NCT Delhi	28.53	76.87	Dadri (03-05) Masani (31-40)	UYD/HOCN/ YBO	Haryana Chandigarh& Delhi	211.44	212.44	213.58	1977	Wireless	Conventional	
27	Delhi Railway Bridge	Yamuna/Ganga	Delhi/Delhi/ NCT Delhi	28.66	77.25	Mawi (09-41)	UYD/HOCN/ YBO	Haryana Chandigarh& Delhi	204.50	205.33	207.49	1978	Wireless/ Telemetry	Conventional	
28	Mathura	Yamuna/Ganga	Mathura/Mathura/ Uttar Pradesh	27.51	77.69	Mohana (12-65)	UYD/HOCN/ YBO	West Uttar Pradesh	165.20	166.00	169.73	1978	Wireless/ Telemetry	Conventional	
29	Agra	Yamuna/Ganga	Agra/Agra/ Uttar Pradesh	27.19	78.03	Mathura (16-28)	LYD/HOCN/ YBO	West Uttar Pradesh	151.40	152.40	154.76	1978	Wireless/ Telemetry	Conventional	
30	Etawah	Yamuna/Ganga	Etawah/Etawah/ Uttar Pradesh	26.75	78.99	Agra (18-51)	LYD/HOCN/ YBO	West Uttar Pradesh	120.92	121.92	126.13	1978	Wireless/ Telemetry	Conventional	
31	Gandhisagar Dam	Chambal/Ganga	Gandhisagar Dam/Mandasur/ Madhya Pradesh	24.65	75.61	Tal (8)	CD/HOCN/ YBO	West Madhya Pradesh	399.90	399.90	399.90	2011	Telemetry	Mathematical	
32	Rana Pratap Sagar Dam	Chambal/Ganga	Chittorgarh/Rajasthan	24.91	75.58	Gandhisagar Dam (1)	CD Jaipur/HOC Noida/YBO ND							Mathematical	
33	Kota Barrage	Chambal/Ganga	Kota/Rajasthan	25.17	75.82	Rana Pratap Sagar Dam(1-1.25)	CD Jaipur/HOC Noida/YBO ND							Mathematical	
34	Kota City	Chambal/Ganga	Kota/Rajasthan	25.19	75.84	Immediate D/S of Kota Barrage	CD Jaipur/HOC Noida/YBO ND		239	242	248.68	2019		Mathematical	
35	Bisalpur Dam	Banas/Ganga	Deoli/Tonk/Rajasthan	25.92	75.45	Bigod(09-10)	CD Jaipur/HOC Noida/YBO ND	East Rajasthan	FRL-315.5					Rainfall Runoff Model	
36	Kalisindh Dam	Kalisindh/Ganga	Khanpur/Jhalawar/Rajasthan	24.48	76.22	Sarangpur(10-12)	CD Jaipur/HOC Noida/YBO ND		FRL-316						
37	Parwan Dam	Parwan/Ganga	Baran/Jhalawar//Rajasthan	24.62	76.51		CD Jaipur/HOC Noida/YBO ND		308.8						
38	Gambhiri Dam	Gambhiri/Ganga	Chittorgarh/Rajasthan	24.7	74.73		CD Jaipur/HOC Noida/YBO ND							Rainfall Runoff Model	
39	Panchana Dam	Chambal/Ganga	Mandrail/Karauli/Rajasthan	26.55	77.00		CD Jaipur/HOC Noida/YBO ND		258.62					Rainfall Runoff Model	
40	Gudha Dam	Mej/Ganga	Bundi/Rajasthan	25.48	75.46		CD Jaipur/HOC Noida/YBO ND		FRL-305.86					Rainfall Runoff Model	
41	Parwati Dam	Parwati/Ganga	Dholpur / Rajasthan	26.65	77.9		CD Jaipur/HOC Noida/YBO ND		FRL-308.15						
42	Auraiya	Yamuna/Ganga	Auraiya/Auraiya/ Uttar Pradesh	26.42	79.48	Etawah (21-24) Dhaulpur (15-36)	LYD/HOCN/ YBO	West Uttar Pradesh	112.00	113.00	118.51	2021	Wireless/ Telemetry	Conventional	
43	Kalpi	Yamuna/Ganga	Kalpi/Jalaun/ Uttar Pradesh	26.13	79.76	Etawah (21-27) Dhaulpur (15-42)	LYD/HOCN/ YBO	West Uttar Pradesh	107.00	108.00	112.98	1996	Wireless/ Telemetry	Conventional	
44	Hamirpur	Yamuna/Ganga	Hamirpur/Hamirpur/ Uttar Pradesh	25.96	80.16	Auraiya (15) Mohana (18-24)	LYD/HOCN/ YBO	East Uttar Prasdesh	102.63	103.63	108.59	1983	Wireless/ Telemetry	Conventional	
45	Rajghat Dam	Betwa/Yamuna/ Ganga	Chanderi/ Madhya Pradesh	24.76	78.23		LYD/HOCN/ YBO		FRL-371					Mathematical Model	
46	Matatila Dam	Betwa/Yamuna/ Ganga	Lalitpur/UttarPradesh	25.10	78.36		LYD/HOCN/ YBO	East Uttar Prasdesh	308.46	310.04				Mathematical Model	
47	Mohana	Betwa/Yamuna/ Ganga	Jhansi/Jhansi/ Uttar Pradesh	25.65	78.99	Garrouli (15-21) Nautghat (12-21)	LYD/HOCN/ YBO	East Uttar Prasdesh	121.66	122.66	133.35	1983	Wireless/ Telemetry	Conventional	

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48	Sahjiana	Betwa/Yamuna/ Ganga	Hamirpur/Hamirpur/ Uttar Pradesh	25.95	80.15	Mohana (18-26)	LYD/HOCN/ YBO	East Uttar Prasdesh	103.54	104.54	108.67	1983	Wireless/ Telemetry	Conventional	
49	Banda	Ken/Yamuna/ Ganga	Banda/Banda/ Uttar Pradesh	25.48	80.31	Madla (12-30) Kaimaha (9-15)	LYD/HOCN/ YBO	East Uttar Prasdesh	103.00	104.00	113.29	2005	Wireless/ Telemetry	Conventional	
50	Chillaghat	Yamuna/Ganga	Banda/Banda/ Uttar Pradesh	25.77	80.53	Hamirpur (12) Banda (12) Sahijina(12)	LYD/HOCN/ YBO	East Uttar Prasdesh	99.00	100.00	105.16	1978	Wireless/ Telemetry	Conventional	
51	Naini	Yamuna/Ganga	Allahabad/ Allahabad/ Uttar Pradesh	25.42	81.84	Chillaghat (18-24)	LYD/HOCN/ YBO	East Uttar Prasdesh	83.74	84.74	87.99	1978	Wireless/ Telemetry	Conventional	
52	Dholpur	Chambal/Ganga	Dholpur / Rajasthan	26.65	77.9	Pali (18-24) Manderial(06-12)	LYD Agra/YBO		129.79	130.79	145.54	1996	Wireless/ Telemetry	Conventional	
53	Manderial	Chambal/Ganga	Karauli/Rajasthan	26.28	77.28	Pali (08)	CD Jaipur/HOC Noida/YBO ND		164.00	165	169.96	1996			
54	Allahabad (Chatnag)	Ganga/Ganga	Allahabad/ Allahabad/ Uttar Pradesh	25.40	81.91	Kanpur (30) Chillaghat (24)	MGD3/HOCV/UG BO	East Uttar Prasdesh	83.73	84.73	88.03	1978	Wireless/ Telemetry	Conventional	
55	Mirzapur	Ganga/Ganga	Mirzapur/Mirzapur/ Uttar Pradesh	25.15	82.53	Dalmau (28) Chillaghat (34)	MGD3/HOCV/UG BO	East Uttar Prasdesh	76.72	77.72	80.34	1978	Wireless/ Telemetry	Conventional	
56	Varanasi	Ganga/Ganga	Varanasi/Varanasi/ Uttar Pradesh	25.33	83.04	Kanpur (48) Hamirpur(48)	MGD3/HOCV/UG BO	East Uttar Prasdesh	70.26	71.26	73.90	1978	Wireless/ Telemetry	Conventional	
57	Hanuman Setu	Gomti/Ganga	Lucknow/Lucknow/ Uttar Pradesh	26.86	80.95	Bhatpurwaghat (48 hrs.)	M.G.Divn.-2 Lucknow/H.O.C.Deh radun/UGBO Lucknow	IMD Lucknow	108.50	109.50	110.85	1971	Wireless/ Mobile	Correlation Graph	
58	Rae-Bareilly	Sai/Gomti/Ganga	Rae-bareilly/Rae-bareilly/Uttar Pradesh	26.20	81.25	Bani (48 hrs.)	M.G.Divn.-2 Lucknow/H.O.C.Deh radun/UGBO Lucknow	IMD Lucknow	100.00	101.00	104.81	1982	Wireless/ Mobile	Correlation Graph	
59	Jaunpur	Gomti/Ganga	Jaunpur/Jaunpur/ Uttar Pradesh	25.75	82.67	Sultanpur (24)	MGD3/HOCV/UG BO	East Uttar Prasdesh	73.06	74.06	77.74	1971	Wireless/ Telemetry	Conventional	
60	Ghazipur	Ganga/Ganga	Ghazipur/ Ghazipur/ Uttar Pradesh	25.58	83.60	Allahabad (28) Sultanpur (30)	MGD3/HOCV/UG BO	East Uttar Prasdesh	62.10	63.10	65.22	1978	Wireless/ Telemetry	Conventional	
61	Buxar	Ganga/Ganga	Buxar/Buxar/Bihar	25.58	83.97	Allahabad (30)	LGD-II/HOCP/LGBO	Bihar	59.32	60.32	62.09	1948	Wireless/ Telemetry	Conventional	
62	Ballia	Ganga/Ganga	Ballia/ Ballia/ Uttar Pradesh	25.77	84.37	Varanasi (28) Jaunpur (28)	MGD3/HOCV/UG BO	East Uttar Prasdesh	56.62	57.62	60.39	2016	Wireless/ Telemetry	Conventional	
63	Banbasa Barrage	Ghaghra/Ganga	Champawat/Uttarakhand	28..99	80.1	Pancheshwar(18-24)	MGD-I/HOC Varanasi/UGBO Lucknow	West UP	FRL 222.96		223.3	2013		3 days advisory Forecast (CWC BETA Model)	
64	Katarniaghat Barrage	Ghaghra/Ganga	Bahraich / UttarPradesh	28.27	81.09		MGD-I/HOC Varanasi/UGBO Lucknow	West UP	FRL-136.8						
65	Elgin Bridge	Ghaghra/Ganga	Barabanki/Barabanki/ Uttar Pradesh	27.09	81.49	B K Ghat (30-36) Shardanagar (30-36)	MGD1/HOCV/UG BO	East Uttar Prasdesh	105.07	106.07	107.62	2014	Wireless/ Telemetry	Conventional	
66	Ayodhya	Ghaghra/Ganga	Ayodhya/Faizbad/ Uttara Pradesh	26.81	82.21	Elgin Bridge (18-24)	MGD1/HOCV/UG BO	East Uttar Prasdesh	91.73	92.73	94.01	2009	Wireless/ Telemetry	Conventional	
67	Kakardhari	Rapti/Ghaghra/ Ganga	Bahraich / UttarPradesh	27.89	81.77		MGD1/HOCV/UG BO	East Uttar Prasdesh	130.00	131.00	132.37	2014			
68	Balrampur	Rapti/Ghaghra/ Ganga	Balrampur/ Balrampur/ Uttar Pradesh	27.44	82.23	Kakardhari (18-24)	MGD1/HOCV/UG BO	East Uttar Prasdesh	103.62	104.62	105.54	2017	Wireless/ Telemetry	Conventional	
69	Bansi	Rapti/Ghaghra/ Ganga	Bansi/ Siddarthnagar/ Uttar Pradesh	27.18	82.94	Balrampur (18-24)	MGD1/HOCV/UG BO	East Uttar Prasdesh	83.90	84.90	85.95	2021	Wireless/ Telemetry	Conventional	
70	Gorakhpur (Birdghat)	Rapti/Ghaghra/ Ganga	Gorahpur/ Gorakhpur/ Uttar Pradesh	26.73	83.35	Bansi (18-24) Kakardhari (18-24)	MGD1/HOCV/UG BO	East Uttar Prasdesh	73.98	74.98	77.54	1998	Wireless/ Telemetry	Conventional	

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71	Turtipar	Ghaghra/Ganga	Balthra/Ballia/ Uttar Pradesh	26.14	83.88	Ayodhya (30-36) Gorakhpur (Birdghat) (30-36)	MGD1/HOCV/UGBO	East Uttar Prasdesh	63.01	64.01	66.00	1998	Wireless/ Telemetry	Conventional	
72	Darauli	Ghaghra/Ganga	Darauli/Siwan/Bihar	26.07	84.13	Elgin Bridge (54) Gorakhpur (Birdghat) (28)	LGDII/HOCP/LGBO	Bihar	59.82	60.82	61.74	1998	Wireless	Conventional	
73	Gangpur Siswan	Ghaghra/Ganga	Siwan/Siwan/Bihar	25.91	84.39	Turtipar (20)	LGDII/HOCP/LGBO	Bihar	56.04	57.04	58.01	1983	Wireless	Conventional	
74	Chhapra	Ghaghra/Ganga	Chhapra/Saran/Bihar	25.76	84.79	Gangpur Siswan (16)	LGDII/HOCP/LGBO	Bihar	52.68	53.68	54.59	1982	Wireless	Conventional	
75	Bansagar Dam	Ganga/Ganga	Beohari/Shahdol/Madhya Pradesh	24.19	81.8		MGDIII/HOC Varanashi/UGBO	East Madhya Pradesh	FRL-341.65					Rainfall Runoff Model	
76	Rihand Dam	Rihand/ Ganga	Robertsganj/Sonbhadra/ Uttar Pradesh	24.21	83.02		MGDIII/HOC Varanashi/UGBO	East Uttar Pradesh	FRL-265.18					Rainfall Runoff Model	
77	Annaraj Dam	Khoranadi/Ganga	Bhadua / Hazaribagh/Jharkhand	24.06	83.8		LGDII/HOCP/LGBO		FRL-252.44						
78	Bhairawa Dam	Goda Nala /Ganga	Hazaribagh/Jharkhand	23.51	85.67		DD/HOCM/ LGBO		FRL-356.70						
79	Inderpuri Barrage	Sone/Ganga	Inderpuri/Garhwa/ Bihar	24.75	84.16		LGDII/HOCP/LGBO	Bihar	FRL-173.00						
80	Inderpuri	Sone/Ganga	Inderpuri/Rohtas/ Bihar	24.84	84.13	Chopan (12) Daltonganj (12)	LGDII/HOCP/LGBO	Bihar	107.20	108.20	108.85	1975	Wireless	Conventional	
81	Koelwar	Sone/Ganga	Koelwar/Bhojpur/ Bihar	25.57	84.79	Inderpuri (10-15) Japla	LGDII/HOCP/LGBO	Bihar	54.52	55.52	58.88	1971	Wireless	Conventional	
82	Maner	Sone/Ganga	Maner/Patna/Bihar	25.70	84.86	Gandhighat (6-8)	LGDII/HOCP/LGBO	Bihar	51.00	52.00	53.79	1976	Wireless	Conventional	
83	Patna (Dighaghat)	Ganga/Ganga	Patna/ Patna/ Bihar	25.64	85.10	Patna (Gandhighat) (04)	LGDII/HOCP/LGBO	Bihar	49.45	50.45	52.52	1975	Wireless	Conventional	
84	Gandak Barrage	Gandak/Ganga	West Champaran/Bihar	27.43	83.90		LGDI/HOCP/LGBO	Bihar	FRL-110.3						
85	Khadda	Gandak/Ganga	Deoria/Kushinagar/ Uttar Pradesh	27.23	83.87	Triveni (07)	LGD-I/MC/LGBO Patna	Bihar	95.00	96.00	97.50	2002	Wireless	Conventional	
86	Chatia	Gandak/Ganga	Ariraj West Champaran/ Motihari/ Bihar	26.50	84.54	Triveni (24)	LGD-I/MC/LGBO Patna	Bihar	68.15	69.15	70.04	2002	Wireless	Conventional	
87	Dumariaghat	Gandak/Ganga	Gopalganj/Bihar	26.35	84.76	Chatia(24)	LGD-I/MC/LGBO Patna	Bihar	61.22	62.22	64.36	2020	Wireless	Conventional	
88	Rewaghat	Gandak/Ganga	Muzzafarpur/Muzzafarpur/Bihar	25.99	85.05	Chatia (20)	LGDII/HOCP/LGBO	Bihar	53.41	54.41	55.46	2020	Wireless	Conventional	
89	Hazipur	Gandak/Ganga	Hazipur/Vaishali/ Bihar	25.69	85.20	Rewaghat (16)	LGDII/HOCP/LGBO	Bihar	49.32	50.32	50.93	1948	Wireless	Conventional	
90	Patna (Gandhighat)	Ganga/Ganga	Patna/ Patna/ Bihar	25.62	85.17	Buxar (24) Darauli (24) Rewaghat (24) Japla (24)	LGDII/HOCP/LGBO	Bihar	47.60	48.60	50.52	2016	Wireless/ Telemetry	Conventional	
91	Amanat Dam	Baranadi/Ganga	Hazaribagh/Jharkhand	24.01	84.47		LGDII/HOCP/LGBO		274.39						
92	Batane Dam	Punpun/Ganga	Chhatarpur/Palamu/Jharkhand	24.42	84.26		LGDII/HOCP/LGBO		FRL-232.85						
93	Sripalpur	Punpun/Ganga	Sripalpur/Patna/Bihar	25.50	85.11	Kinjer (24)	LGDII/HOCP/LGBO	Bihar	49.60	50.60	53.91	1976	Wireless	Conventional	

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94	Hathidah	Ganga/Ganga	Hathidah/Patna/Bihar	25.37	85.99	Gandhighat (16)	LGDII/HOCP/LGBO	Bihar	40.76	41.76	43.52	2021	Wireless/ Telemetry	Conventional	
95	Munger	Ganga/Ganga	Munger/Munger/ Bihar	25.38	86.46	Gandhighat (24)	LGDII/HOCP/LGBO	Bihar	38.33	39.33	40.99	1976	Wireless/ Telemetry	Conventional	
96	Lalbeghiaghat	Burhi Gandak/ Ganga	Dhaka/Motihari/Bihar	26.65	85.03	Chainpatia (24)	LGDI/HOCP/LGBO	Bihar	62.20	63.20	67.09	1975	Wireless	Conventional	
97	Ahirwalia	Burhi Gandak/ Ganga	Chakia/Purba Champaren/Bihar	26.41	85.14	Lalbegiaghat(24)	LGD-I/MC/LGBO Patna	Bihar	58.62	59.62	61.17	2014			
98	Muzzafarpur (Sikandarpur)	Burhi Gandak/ Ganga	Sikandarpur/Muzzafarpur/Bihar	26.14	85.39	Ahirwala(S) (24)	LGDI/HOCP/LGBO	Bihar	51.53	52.53	54.29	1987	Wireless	Conventional	
99	Samastipur	Burhi Gandak/ Ganga	Samastipur/Samastipur/Bihar	25.86	85.79	Sikandarpur (20)	LGDI/HOCP/LGBO	Bihar	45.02	46.02	49.38	1987	Wireless	Conventional	
100	Rosera	Burhi Gandak/ Ganga	Rosera/Samastipur/ Bihar	25.74	86.02	Sikandarpur (28)	LGDI/HOCP/LGBO	Bihar	41.63	42.63	46.56	2020	Wireless	Conventional	
101	Khagaria	Burhi Gandak/ Ganga	Khagaria/Khagaria/ Bihar	25.75	86.48	Sikandarpur (24) Gandhighat (24)	LGDI/HOCP/LGBO	Bihar	35.58	36.58	39.22	1976	Wireless	Conventional	
102	Bhagalpur	Ganga/Ganga	Bhagalpur/Bhagalpur/Bihar	25.27	87.02	Gandhighat (32)	LGDII/HOCP/LGBO	Bihar	32.68	33.68	34.86	2021	Wireless/ Telemetry	Conventional	
103	Colgong/Kahalgaon	Ganga/Ganga	Colgong/Bhagalpur/ Bihar	25.27	87.23	Gandhighat (38)	LGDII/HOCP/LGBO	Bihar	30.09	31.09	32.87	2003	Wireless/ Telemetry	Conventional	
104	Kosi Barrage	Kosi/Ganga	Supaul/Supaul/Bihar	26.52	86.92		LGDI/HOCP/LGBO		FRL-74.69						
105	Basua	Kosi/Ganga	Supaul/Supaul/Bihar	26.10	86.58	Birpur (16)	LGDI/HOCP/LGBO	Bihar	46.75	47.75	49.24	2017	Wireless	Conventional	
106	Dheng Bridge	Bagmati/Ganga	Sitamarhi/Bihar	26.72	85.32	Karmaiya(Nepal) (24)	LGDI/HOCP/LGBO		70.00	71.00	73.00	2017			
107	Runisaidpur	Bagmati/Ganga	Sitamarhi/Bihar	26.34	85.49	Dheng Bridge(24)	LGDI/HOCP/LGBO		54.00	55.00	58.15	2017			
108	Benibad	Bagmati/Ganga	Benibad/Muzzafarpur/ Bihar	26.20	85.67	Runisaidpur (24)	LGDI/HOCP/LGBO	Bihar	47.68	48.68	50.01	2004	Wireless/ Telemetry	Conventional	
109	Kamtaul	Adhwara Group/Ganga	Kamtaul Market/Darbhanga/ Bihar	26.33	85.80	Sonebarsa (24)	LGDI/HOCP/LGBO	Bihar	49.00	50.00	52.99	1987	Wireless/ Telemetry	Conventional	
110	Ekmighat	Adhwara Group/Ganga	Laheria Seria/Darbhanga/ Bihar	26.12	85.88	Saulighat (24) Kamtaul(24)	LGDI/HOCP/LGBO	Bihar	45.94	46.94	49.52	2004	Wireless/ Telemetry	Conventional	
111	Hayaghat	Bagmati/Ganga	Hayaghat Papermill/Darbhanga/ Bihar	26.03	85.89	Benibad (24) Ekmighat (24)	LGDI/HOCP/LGBO	Bihar	44.72	45.72	48.96	1987	Wireless/ Telemetry	Conventional	
112	Jainagar	Kamlabalan/ Ganga	Madhubani/ Bihar	26.59	86.13	Sindhuli(Nepal) (08-28)	LGDI/HOCP/LGBO	Bihar	66.75	67.75	71.35	2016			
113	Jhanjharpur	Kamlabalan/ Ganga	Jhanjharpur/Madhubani/ Bihar	26.27	86.27	Jainagar (8-28)	LGDI/HOCP/LGBO	Bihar	49.00	50.00	53.11	2019	Wireless	Conventional	
114	Sonebarsa	Adhwara Group/Ganga	Sitamarhi/Bihar	26.85	85.85	Patharkot(Nepal) (24)	LGDI/HOCP/LGBO		80.85	81.85	83.20	1999			
115	Baltara	Kosi/Ganga	Choutham/Khagaria/ Bihar	25.54	86.72	Basua (24) Hayaghat (24)	LGDI/HOCP/LGBO	Bihar	32.85	33.85	36.40	1987	Wireless	Conventional	

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											(m)	Year			
116	Kursela	Kosi/Ganga	Kusela/Katihar/Bihar	25.42	87.23	Basua (24) Hathidah (24)	LGDI/HOCP/LGBO	Bihar	29.00	30.00	32.10	1982	Wireless	Conventional	
117	Sahibganj	Ganga/Ganga	Sahibganj/Sahibganj/Jharkhand	25.25	87.64	Munger (22)	LGDII/HOCP/LGBO	Jharkhand	26.25	27.25	30.91	1998	Wireless	Conventional	
118	Taibpur	Mahananda/ Ganga	Kishanganj/Bihar	26.36	88.17	Sonapur(16)	LGDI/HOCP/LGBO	Bihar	65.00	66.00	67.22	2016			
119	Dengraghat	Mahananda/ Ganga	Bayasi/Purnes/Bihar	25.85	87.81	Taibpur (24) Chargharia (24)	LGDI/HOCP/LGBO	Bihar	34.65	35.65	38.20	2017	Wireless	Conventional	
120	Jhawa	Mahananda/ Ganga	Jhawa/Katihar/Bihar	25.61	87.76	Dhengraghat (16) Araria (16)	LGDI/HOCP/LGBO	Bihar	30.40	31.40	34.07	2017	Wireless	Conventional	
121	Arraria	Parwan/Ganga	Arraria/Bihar	26.12	87.54	Bathnaha(16)	LGDI/HOCP/LGBO	Bihar	46.00	47.00	49.40	2017			
122	Farakka	Ganga/Ganga	Farakka/Murshidabad/ West Bengal	24.80	87.92	Munger (38) Baltara (30)	LGDI/HOCP/LGBO	Gangetic West Bengal	21.25	22.25	25.14	1998	Wireless	Conventional	
123	Massanjore Dam	Mayurakshi/Ganga	Massanjore Dam/ Santhal Parganas/ Jharkhand	24.11	87.31	Maharo (12-14)	DD/HOCM/ LGBO	Jharkhand	121.31		122.87	1999	Wireless/ Telemetry	Conventional	
124	Tilpara Barrage	Mayurakshi/Ganga	Tilpara Dam/Suri/ Birbhum/ West Bengal	23.95	87.53	Massanjore Dam (10-12) Tantoloi (10-12)	DD/HOCM/ LGBO	Gangetic West Bengal	62.79		67.05	1978	Wireless/ Telemetry	Conventional	
125	Narayanpur	Mayurakshi/ Ganga	Kandi/Murshidabad/ West Bengal	23.88	87.91	Tilpara Barrage (16-21)	DD/HOCM/ LGBO	Gangetic West Bengal	26.86	27.86	29.69	1995	Wireless	Conventional	
126	Sikatia Barrage	Ajoy/Ganga	Ausgram/Deoghar/Jharkhand	24.15	86.25		DD/HOCM/ LGBO								
127	Gheropara	Ajoy/Ganga	Khairasol/ Bhirbum/ West Bengal	23.62	87.70	Sikata Barrage (16-18)	DD/HOCM/ LGBO	Gangetic West Bengal	38.42	39.42	43.94	1978	Wireless	Conventional	
128	Tenughat Dam	Damodar/Ganga	Bokaro/Jharkhand	23.72	85.84	Hendgir (12-14)	DD/HOCM/ LGBO	Jharkhand	268.83				Wireless/ Telemetry	Conventional	
129	Tilaya Dam	Barakar/ Ganga	Koderma/Jharkhand	24.32	85.52		DD/HOCM/ LGBO								
130	Konar Dam	Konar/Ganga	Hazaribag/Jharkhand	23.93	85.76		DD/HOCM/ LGBO								
131	Panchet Dam	Damodar/Ganga	Panchet Dam/ Dhanbad/ Jharkhand	23.68	86.75	Tenughat Dam (12-14)	DD/HOCM/ LGBO	Jharkhand	132.59				Wireless/ Telemetry	Conventional	
132	Maithon Dam	Barakar/ Damodar	Maithon Dam/ Dhanbad/ Jharkhand	23.78	86.81	Barkisaraia (14-18)	DD/HOCM/ LGBO	Jharkhand	150.88				Wireless/ Telemetry	Conventional	
133	Durgapur Barrage	Damodar/Ganga	Durgapur/ Burdwan/ West Bengal	23.48	87.31	Panchet Dam (18-24) Maithon Dam (18-24)	DD/HOCM/ LGBO	Gangetic West Bengal	64.47				Wireless/ Telemetry	Conventional	
134	Sundar Dam	Anjanwa/ Ganga	Godda/Jharkhand	24.93	87.38		DD/HOCM/ LGBO		110.79						
135	Harinkhola	Mundeshwari/ West Benagl	Arambagh/Hooghly/ West Bengal	22.83	87.90	Durgapur Barrage (18-24)	DD/HOCM/ LGBO	Gangetic West Bengal	11.80	12.80	14.60	2017	Wireless/ Telemetry	Conventional	
136	Hinglow Dam	Kangsabati	Bankura/West Bengal	23.82	87.18		DD/HOCM/ LGBO	Gangetic West Bengal	97.84						
137	Kangsabati Dam	Kangsabati	Kangsabati Dam/Bankura West Bengal	22.96	86.75	Simulia (14-16)	DD/HOCM/ LGBO	Gangetic West Bengal	134.11		134.71	1978	Wireless	Conventional	
138	Mohanpur	Kangsabati/ Ganga	Medhinipur/ Medhinipur/ West Bengal	22.40	87.34	Kangsabati Dam (12-14)	DD/HOCM/ LGBO	Gangetic West Bengal	24.73	25.73	29.87	1978	Wireless	Conventional	
139	Yingkiang	Siang/ Brahmaputra	Upper Siang/Arunachal Pradesh	28.62	95.03	Tuting (06)	UBD/HOCG/ BBBO	Assam and Meghalaya	303.00	304.00					
140	Passighat	Siang/ Brahmaputra	Passighat/ East Siang/ Arunachal Pradesh	28.06	95.33	Tuting (9)	UBD/HOCG/ BBBO	Assam and Meghalaya	152.96	153.96	157.54	2000	Wireless	Conventional	
141	Dhollabazar	Lohit/Brahmaputra	Tinsukia/Assam	27.75	95.6	Tezu(09)	UBD/HOC/B&BBO	Assam & Meghalaya	127.27	128.27	130.07	2012			
142	Dibrugarh	Brahmaputra/ Brahmaputra	Dibrugarh/Dibrugarh/Assam	27.49	94.85	Passighat (12) Tezu (12)	UBD/HOCG/ BBBO	Assam and Meghalaya	104.70	105.70	106.48	1998	Wireless/ Telemetry	Conventional	
143	Namsai	Nao Dehing/Brahmapu	Namsai/Lohit/Arunachal Pradesh	27.66	95.83	Miao(09) Motipur(09)	UBD/HOC/B&BBO	Arunachal Pradesh	144.8	145.8	146.6	1979			
144	Naharkatia	Buridehing/ Brahmaputra	Naharkatia/ Dibrugarh/ Assam	27.29	95.33	Margherita (12)	UBD/HOCG/ BBBO	Assam and Meghalaya	119.40	120.40	122.69	1973	Wireless	Conventional	
145	Chenimari (Khowang)	Buridehing/ Brahmaputra	Khowang/ Dibrugarh/ Assam	27.31	94.88	Naharkatia (24)	UBD/HOCG/ BBBO	Assam and Meghalaya	101.11	102.11	104.16	2015	Wireless	Conventional	

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146	Nanglamoraghat	Desang/ Brahmaputra	Sibsagar/Sibsagar/ Assam	26.99	94.78	Dillighat (18)	UBD/HOCG/ BBBO	Assam and Meghalaya	93.46	94.46	96.49	1998	Wireless	Conventional	
147	Sibsagar	Dikhow/ Brahmaputra	Sibsagar/Sibsagar/ Assam	26.98	94.58	Bihubar (09)	UBD/HOCG/ BBBO	Assam and Meghalaya	91.40	92.40	94.24	2020	Wireless	Conventional	
148	Neamatighat	Brahmaputra/ Brahmaputra	Neamatighat/ Jorhat/ Assam	26.86	94.25	Dibrugarh (24) Chenimari (24)	UBD/HOCG/ BBBO	Assam and Meghalaya	84.54	85.54	87.37	1991	Wireless/ Telemetry	Conventional	
149	Choldhowaghat	Subansiri/ Brahmaputra	Dhakuakhana/Lakhimpur/Assam	27.44	94.25	Daporizo(09)	UBD/HOC/B&BBO	Assam & Meghalaya	99.43	100.43	101.31	1972			
150	N.H.Xing Ranganadi	Ranganadi/Brahmaputra	Bihuparia/ Lakhimpur/ Assam	27.2	94.05	Yazali(09)	UBD/HOC/B&BBO	Assam & Meghalaya	93.81	94.81	95.92	1979			
151	Badatighat	Subansiri/ Brahmaputra	Bihuparia/ Lakhimpur/ Assam	26.95	93.96	Chouldhowaghat (18)	UBD/HOCG/ BBBO	Assam and Meghalaya	81.53	82.53	86.21	1972	Wireless	Conventional	
152	Golaghat	Dhansisri (S)/ Brahmaputra	Golaghat/ Golaghat Assam	26.50	93.95	Bokajan (15) Gelabil (15)	UBD/HOCG/ BBBO	Assam and Meghalaya	88.50	89.50	92.45	1986	Wireless	Conventional	
153	Numaligarh	Dhansisri (S)/ Brahmaputra	Numaligarh/ Golaghat/ Assam	26.63	93.73	Golaghat (12)	UBD/HOCG/ BBBO	Assam and Meghalaya	77.42	78.42	80.16	2018	Wireless	Conventional	
154	N T Road Crossing	Jia- Bharali/ Brahmaputra	Balipara/Sonitpur/ Assam	26.81	92.88	Seppa (9)	UBD/HOCG/ BBBO	Assam and Meghalaya	76.00	77.00	78.50	2007	Wireless	Conventional	
155	Tezpur	Brahmaputra/ Brahmaputra	Tezpur/ Sonitpur/ Assam	26.62	92.80	Neamatighat (24)	UBD/HOCG/ BBBO	Assam and Meghalaya	64.23	65.23	66.59	1988	Wireless/ Telemetry	Conventional	
156	Kampur	Kopili/ Brahmaputra	Kampur/ Nagaon/ Assam	26.15	92.65	Kheronighat (24)	UBD/HOCG/ BBBO	Assam and Meghalaya	59.50	60.50	61.79	2004	Wireless	Conventional	
157	Dharamtul	Kopili/ Brahmaputra	Dharamtul/Morigaon/Assam	26.17	92.36	Kampur (15)	UBD/HOCG/ BBBO	Assam and Meghalaya	55.00	56.00	58.09	2004	Wireless	Conventional	
158	Guwahati D C Court	Brahmaputra/ Brahmaputra	Guwahati/Kamrup/ Assam	26.19	91.74	Tezpur (24)	MBD/HOCG/ BBBO	Assam and Meghalaya	48.68	49.68	51.46	2004	Wireless/ Telemetry	Conventional	
159	N H Crossing	Puthimari/ Brahmaputra	Rangia/ kamrup/ Assam	26.33	91.65	DRF (13)	MBD/HOCG/ BBBO	Assam and Meghalaya	50.81	51.81	55.08	2008	Wireless/ Telemetry	Conventional	
160	N T Road Crossing	Pagladiya/ Brahmaputra	Nalbari/Nalbari/ Assam	26.45	91.46	Melabazar (12)	MBD/HOCG/ BBBO	Assam and Meghalaya	51.75	52.75	55.45	2004	Wireless/ Telemetry	Conventional	
161	Mathanguri	Manas/ Brahmaputra	Baska/Assam	26.78	90.95		MBD/HOCG/ BBBO	Assam and Meghalaya	98.10	99.10	100.28	1973			
162	Road Bridge	Beki/ Brahmaputra	Sorbhog/ Barpeta/ Assam	26.49	90.91	Mathanguri (6) Kurijampa (12) (Bhutan)	MBD/HOCG/ BBBO	Assam and Meghalaya	44.10	45.10	46.20	2000	Wireless	Conventional	
163	N H Crossing	Manas/ Brahmaputra	Bijni/ Bongaigaon/ Assam	26.46	90.75	Panbari (6)	MBD/HOCG/ BBBO	Assam and Meghalaya	47.81	48.42	50.08	1984	Wireless	Conventional	
164	Goalpara	Brahmaputra/ Brahmaputra	Goalpara/ Goalpara/ Assam	26.20	90.65	Guwahati (24)	MBD/HOCG/ BBBO	Assam and Meghalaya	35.27	36.27	37.43	1954	Wireless/ Telemetry	Conventional	
165	Kokrajhar	Gaurang/ Brahmaputra	Kokrajhar/ Assam	26.61	90.25		MBD/HOCG/ BBBO	Assam & Meghalaya	41.85	42.85	43.6	2015			
166	Dhubri	Brahmaputra/ Brahmaputra	Dhubri/Dhubri/ Assam	26.01	89.99	Goalpara (12)	MBD/HOCG/ BBBO	Assam and Meghalaya	27.62	28.62	30.37	2019	Wireless/ Telemetry	Conventional	
167	Golokganj	Sankosh/ Brahmaputra	Golokganj/Dhubri/ Assam	26.11	89.82	Sankosh LRP (12) Barabisa (12)	LBD/SICG/T&BDBO	Assam and Meghalaya	28.94	29.94	30.95	2007	Wireless/ Telemetry	Conventional	
168	Tufangunj	Raidak -I	Tufangunj/ Coochbehar/ west Bengal	26.31	89.68	Chepan (12)	LBD/SICG/T&BDBO	Sub Himalayan West Bengal & Sikkim	34.22	35.30	36.50	2017	Wireless	Conventional	
169	N H 31	Jaldhaka/ Brahmaputra	Dhupguri/ Jalpaiguri/ West Bengal	26.57	88.94	Nagarakata (6) Diana (6) Murti (6)	LBD/SICG/T&BDBO	Sub Himalayan West Bengal & Sikkim	80.00	80.90	81.33	1972	Wireless	Conventional	
170	Hasimara	Torsa	Hasimara/Coochbehar/West Bengal	26.72	89.32	Dorokha (06)	LBD/SICG/T&BDBO	Sub Himalayan West Bengal & Sikkim	116.30	116.90	118.50	1996			
171	Ghughumari	Torsa	Coochbehar/Coochbehar/West Bengal	26.29	89.46	Hasimara (8)	LBD/SICG/T&BDBO	Sub Himalayan West Bengal & Sikkim	39.80	40.41	41.46	2000	Wireless	Conventional	

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172	Mathabhanga	Jaldhaka/ Brahmaputra	Mathabhanga/ Coochbehar/ West Bengal	26.32	89.23	N H 31 (6)	LBD/SICG/T&BD BO	Sub Himalayan West Bengal & Sikkim	47.70	48.20	49.85	2007	Wireless	Conventional	
173	Domohani Road Bridge	Teesta/Brahmaputra	Jalpaiguri/ Jalpaiguri/ West Bengal	26.56	88.76	Khanitar (10) Majhitar (10) Coronation (6) Gazoldoba (04) Chel (06) Neora (6)	LBD/SICG/T&BD BO	Sub Himalayan West Bengal & Sikkim	85.65	85.95	89.30	1968	Wireless	Conventional	
174	Mekhligunj	Teesta/Brahmaputra	Mekhligunj/ Coochbehar/ West Bengal	26.33	88.85	Domohani Rd Brdige (6)	LBD/SICG/T&BD BO	Sub Himalayan West Bengal & Sikkim	65.45	65.95	66.45	1996	Wireless	Conventional	
175	Teesta III HEP	Teesta/Brahmaputra	North Sikkim/Sikkim	27.59	88.64	Lachen (01-02)	SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	1585.00					Rainfall Runoff Model	
176	Rangit-III HEP Dam	Teesta/Brahmaputra	Gyalshing/West Sikkim/Sikkim	27.29	88.29		SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	640					Rainfall Runoff Model	
177	Teesta V HEP	Teesta/Brahmaputra	North Sikkim/Sikkim	27.38	88.5	Sankalan(01-02)	SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	579					Rainfall Runoff Model	
178	Singtam	Teesta/Brahmaputra	East Sikkim/ Sikkim	27.23	88.49	Ranipool(1)	SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	377.07	377.57	379.17			Rainfall Runoff Model	
179	Rangpo Dam	Rongpo/Teesta/Brahmaputra	East Sikkim/ Sikkim	27.23	88.7		SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	913.8					Rainfall Runoff Model	
180	Rongli Dam	Rongli/Teesta/Brahmaputra	East Sikkim/ Sikkim	27.2	88.71		SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	913.8					Rainfall Runoff Model	
181	Melli Bazar	Teesta/Brahmaputra	South Sikkim/Sikkim	27.09	88.45	Teesta V Dam(02)	SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	223	224	225.25			Rainfall Runoff Model	
182	Rothak	Teesta/Brahmaputra	West Sikkim/Sikkim	27.17	88.29	Sagbari (01)	SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	350.6	351.6	353.2			Rainfall Runoff Model	
183	Annapurnaghat (Silchar)	Barak/ Barak	Silchar/Silchar/ Assam	24.83	92.80	Chottabekra (18) Amraghat(18) Dhalai(18)	MID/MC/ BOBO	Assam and Meghalaya	18.83	19.83	21.84	1989	Wireless	Conventional	
184	Matizuri	Katakhal/Barak	Hailakhandi/ Hailakhandi/ Assam	24.85	92.61	Gharmura (12)	MID/MC/ BOBO	Assam and Meghalaya	19.27	20.27	22.73	2007	Wireless	Conventional	
185	Badarpurghat	Barak/Barak	Silchar/Cachar/ Assam	24.86	92.52	Annapurnaghat (9)	MID/MC/ BOBO	Assam and Meghalaya	15.85	16.85	18.48	2007	Wireless	Conventional	
186	Karimgunj	Kushiyara/Barak	Karimgunj/Karimgunj/Assam	24.87	92.36	Annapurnaghat (12)	MID/MC/ BOBO	Assam and Meghalaya	13.94	14.94	16.57	2010	Wireless	Conventional	
187	Kailashshar	Manu	Kailashshar/ North Tripura Tripura	24.32	91.99	Manughat (18-24)	MD/MC/ BOBO	NMMT	24.34	25.34	25.95	2018	Wirless	Conventional	
188	Sonamura	Gumti	Sonamura/ West Tripura/ Tripura	23.47	91.27	Amarpur (15-21)	MD/MC/ BOBO	NMMT	11.50	12.50	14.42	1993	Wireless	Conventional	
189	Getlasud Dam	Subarnarekha/ Subarnarekha	Ranchi/Jharkhand	23.45	85.55	Kanke Road Bridge/Bada Ghagara	ERD/HOCB/ MERO		590.06						
190	Chandil Dam	Subarnarekha/ Subarnarekha	Musabani/Purba singbhum/ Jharkhand	22.97	86.05	Muri(10-12)	ERD/HOCB/ MERO	Jharkhand		FRL-189				Rainfall Runoff Model	

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											(m)	Year			
191	Galudih Barrage	Subarnarekha/ Subarnarekha	SaraikelaKhara/Jharkhand	22.64	86.39	Jamshedpur	ERD/HOCB/ MERO		FRL-94.50						
192	Jamshedpur	Subarnarekha/ East Flowing Rivers	Chakulia/Purba singbhum/ Jharkhand	22.82	86.21	Adtiyapur/Chandil Dam (6-8)	ERD/HOCB/ MERO	Jharkhand	122.50	123.50	129.82	1973	Wireless/ Telemetry	Conventional	
193	Rajghat	Subarnarekha/ East Flowing Rivers	Jaleswar/Balasore/ Odisha	21.77	87.16	Jamsaloghat (16-24) Fekoghat (16-24)	ERD/HOCB/ MERO	Odisha	9.45	10.36	12.69	2008	Wireless/ Telemetry	Conventional	
194	Mathani Road Bridge	Subarnarekha/ East Flowing	Baleshwar/Odisha	21.66	87.06	Jalaka Rd Bridge at Sansa (06-08)	ERD/HOCB/ MERO	Odisha	5.50	5.50	7.31	2021			
195	N H 5 Road Bridge	Burhabalang/ East Flowing	Govindpur/ Balasore/ Odisha	21.55	86.92	Baripada (13-15)	ERD/HOCB/ MERO	Odisha	7.21	8.13	9.50	1973	Wireless	Conventional	
196	Salandi Dam	Baitarani/Brahmani-Baitarani	Kendujhar/Odisha	21.28	86.30	Bhejdihi	ERD/HOCB/ MERO		82.30						
197	Anandpur	Baitrani/East Flowing Rivers	Anandpur/ Keonjargarh/ Odisha	21.22	86.11	Swampatna (6-8)	ERD/HOCB/ MERO	Odisha	37.44	38.36	41.35	2011	Wireless/ Telemetry	Conventional/ Mathematical	
198	Akhuapada	Baitrani/East Flowing Rivers	Akhuapada/ Bhadrak/ Odisha	20.92	86.28	Swampatna(12-15) Anandpur (12-15)	ERD/HOCB/ MERO	Odisha	17.83	17.83	21.95	1960	Wireless/ Telemetry	Conventional	
199	Rengali Dam	Brahmani/Brahmani-Baitarani	Angul/Odisha	21.28	85.03	Panposh (10-12)	ERD/HOC/MERO Bhubaneshwar		FRL-123.5						
200	Jenapur Expressway	Brahmani/East Flowing Rivers	Jenapur/Jajpur/ odisha	20.88	86.01	Talcher (15-16) Altuma)15-16)	ERD/HOCB/ MERO	Odisha	22.00	23.00	24.78	1975	Wireless/ Telemetry	Conventional	
201	Ravi Shankar Dam	Mahanadi/ Mahanadi	Dhamtari/Chattisgarh	20.61	81.56		MD/HOCB/MERO		FRL-348.70						
202	Bango Dam	Hasdeo/ Mahanadi	Korba/Chattisgarh	22.59	82.57		MD/HOCB/MERO		FRL-359.66						
203	Hirakud	Mahanadi/ Mahanadi	Burla/ Sambalpur/ Odisha	21.52	83.85	Basantpur (24) Kurubata (24) Sundergarh (24) Kelo (6-18)	MahanadiDiv/HOCB/MERO	Odisha	192.02				Wireless/ Telemetry	Conventional/ Mathematical	
204	Naraj	Mahanadi/ Mahanadi	Cuttack/ Cuttack/Odisha	20.47	85.77	Tikarapara (18-20)	MahanadiDiv/HOCB/MERO	Odisha	25.41	26.41	27.61	1982	Wireless	Conventional/ Mathematical	
205	Alipingal	Devi/Mahanadi	Alipingal/Jagitsinghpur/ Odisha	20.07	86.17	Naraj (12)	MahanadiDiv/HOCB/MERO	Odisha	10.85	11.76	13.11	2011	Wireless/ Telemetry	Conventional	
206	Nimapara	Kushbhadra/ Mahanadi	Nimapara/Puri/ Odisha	20.06	86.01	Naraj (12)	MahanadiDiv/HOCB/MERO	Odisha	9.85	10.76	11.60	1982	Wireless/ Telemetry	Conventional	
207	Purushottampur	Rishikulya/ East Flowing Rivers	Purushottampur/ Ganjam/ Odisha	19.50	84.87	Sorada (14-20)	ERD/HOCB/ MERO	Odisha	15.83	16.83	19.65	1990	Wireless/ Telemetry	Conventional	
208	Gunupur	Vamshadara/East Flowing Rivers	Gunupur/Koraput/ Odisha	19.08	83.81	Gudari (03-05)	ERD/HOCB/ MERO	Odisha	83.00	84.00	88.75	1980	Wireless/ Telemetry	Conventional	
209	Kashinagar	Vamshadara/East Flowing Rivers	Kashinagar/Ganjam/ Odisha	18.85	83.87	Gunupur (04-07)	ERD/HOCB/ MERO	Odisha	54.10	54.60	58.93	1980	Wireless/ Telemetry	Conventional/ Mathematical	
210	Gotta Barrage	Vamsadhara/ East Flowing Rivers	Gotta Barrage/ Srikakulam/ Andhra Pradesh	18.69	83.96	Kashinagar(06-08)	ERD/HOCB/ MERO	Coastal Andhra Pradesh	34.84				Wireless/ Telemetry	Conventional	
211	Thotapalli Resvr system	Nagavali/ East Flowing River Basin	Parvathipuram/Vizianagaram/ Andhra Pradesh	18.78	83.49	Jaggaguda/Brahmnihalua	ERD/HOCB/ MERO		FRL-105.00					Rainfall Runoff Model	
212	Madduvalasa Reservoir	Nagavali/ East Flowing River Basin	Vizianagaram/Andhra Pradesh	18.63	83.22	Seethanagaram/Paradi Rd Bridge	ERD/HOC/MERO Bhubaneshwar	Coastal Andhra Pradesh	FRL-65.00						
213	Narayanpuram Anicut	Nagavali/ East Flowing River Basin	Srikakulam/ Andhra Pradesh	18.48	83.8	Thottapalli Barrage Madduvalasa Dam	ERD/HOC/MERO Bhubaneshwar	Coastal Andhra Pradesh	FRL - 32.77						
214	Srikakulam	Nagavali/ East Flowing River Basin	Srikakulam/ Andhra Pradesh	18.31	83.88	Narayanpuram Anicut(06-08)	ERD/HOCB/ MERO	Coastal Andhra Pradesh	10.17	10.8	14.53	5/12/1990			
215	Dantiwada Dam	Banas/ West Flowing Rivers	Dantiwada dam/Palanpur/ Banaskanta/ Gujarat	24.34	72.34	Sarotry (3-5) Chitrasani (2-5)	MD/HOCG/ MTBO	Gujarat	184.10				Wireless/ Telemetry	Conventional	
216	Abu Road	Banas/West Flowing River	Sirohi/Rajasthan	24.49	72.79	Swaroopganj Moras(RF) Mount Abu(RF)	MD Gandhinagar/HOC/MTBO Gandhinagar		258.00	259.00	265.40	1973	Wireless/ Telemetry	Conventional	

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217	Dharoi Dam	Sabarmati/ West Flowing Rivers	Dharoi Dam/ Mehsana/ Gujarat	24.00	72.86	Kheroj (3-5) Harnav Weir (2-4)	MD/HOCG/ MTBO	Gujarat	189.59				Wireless/ Telemetry	Conventional	
218	Subash Bridge (Ahmedabad)	Sabarmati/ West Flowing Rivers	Ahmedabad/Ahmedabad/ Gujarat	23.06	72.59	Derol Bridge (04-06) Hatmati Weir (04-06)	MD/HOCG/ MTBO	Gujarat	44.09	45.34	47.45	2006	Wireless/ Telemetry	Conventional	
219	Mahi Bajajsagar Dam	Mahi/Mahi	Banswara/Rajasthan	23.62	74.54	Mataji (02-06) Borwa(03-07) Sohagpura(02-06)	MD/HOCG/ MTBO	Rajasthan	FRL-281.5				Wireless/ Telemetry	Conventional	
220	Som Kamla Amba Dam	Som/Mahi	Dungarpur/Rajasthan	23.97	74.03	Khandiovri(02-06) Amarpura(02-06)	MD/HOCG/ MTBO	Rajasthan	FRL-213.5				Wireless/ Telemetry	Conventional	
221	Kadana Dam	Mahi/ West Flowing Rivers	Kadana Dam/ Panchmahal/ Gujarat	23.31	73.83	Paderdibadi (05-06) Anas PH -II (03-06)	MD/HOCG/ MTBO	Gujarat		127.71	127.74	1989	Wireless/ Telemetry	Conventional	
222	Panam Dam	Panam/Mahi	Kalol/Panchmahal/Gujrat	23.05	73.71	Sant Road(02-06) Hadaf Dam(02-06)	MD/HOCG/ MTBO		FRL-127.41						
223	Wanakbori Weir	Mahi/ West Flowing River	Wanakbori/Kheda	22.94	73.42	Kadana Dam (04-09) Panam Dam (03-09)	MD/HOCG/ MTBO	Gujarat	71.93	74.98	76.10	2006	Wireless/ Telemetry	Conventional	
224	Mandla	Narmada/ Narmada	Mandla/Mandla/ Madhya Pradesh	22.59	80.37	Dindori (11) Mukki (12) Manot (03) Mohgaon (04)	ND/SECB/ NBO	East Madhya Pradesh	437.20	437.80	439.41	1974	Wireless	Conventional	
225	Barna Dam	Narmada/ Narmada	Raisen/Madhya Pradesh	23.05	78.06		ND/SECB/ NBO		348.55					Mathematical Model	
226	Bargi Dam	Narmada/ Narmada	Jabalpur/Madhya Pradesh	22.94	79.92	Mandla (06)	ND/SECB/ NBO		422.76					Mathematical Model	
227	Tawa Dam	Narmada/ Narmada	Hoshangabad/ Madhya Pradesh	22.56	77.97	Pachmarhi (06-08)	ND/SECB/ NBO		355.39					Mathematical Model	
228	Hoshangabad	Narmada/ Narmada	Hoshangabad/ Hoshangabad/ Madhya Pradesh	22.76	77.69	Bargi Dam (38) Barmanghat(22) Sandia (10-12) Tawa Dam (08)	ND/SECB/ NBO	West Madhya Pradesh	292.80	293.80	301.33	1972	Wireless	Conventional	
229	Indirasagar Dam	Narmada/ Narmada	Khandwa/Madhya Pradesh	22.28	76.47	Hoshangabad (12-14)	ND/SECB/ NBO		262.13					Mathematical Model	
230	Omkareshwar Dam	Narmada/ Narmada	Khandwa/Madhya Pradesh	22.24	76.16	Indirasagar Dam (06-08)	ND/SECB/ NBO		196.60					Mathematical Model	
231	Sardar Sarovar Dam	Narmada/ Narmada	Ahmedabad/ Gujarat	21.82	73.74		TD/HOCG/ MTBO		138.38						
232	Garudeshwar	Narmada/ Narmada	Garudeshwar/ Bharuch/Gujarat	21.89	73.65	Sardar sarovar dam (02)	TD/HOCG/ MTBO	Gujarat	30.48	31.09	41.65	1970	Wireless/ Telemetry	Conventional	
233	Bharuch	Narmada/ Narmada	Bharuch/Bharuch/ Gujarat	21.70	73.00	Sardar Sarovar Dam(08-12)	TD/HOCG/ MTBO	Gujarat	6.71	7.31	12.65	1970	Wireless/ Telemetry	Conventional	
234	Hathnur Dam	Tapi/ Tapi	Hathnur Dam/ Jalgaon/ Maharashtra	21.07	75.95	Burhanpur (05-06) Yerli (05-06)	TD/HOCG/ MTBO	Marathwada	212.02	214.00	214.00	1989	Wireless/ Telemetry	Conventional	
235	Ukai Dam	Tapi/ Tapi	Ukai Dam/ Surat/ Gujarat	21.25	73.59	Gidadhe (10-12) Sarangkheda (6-7)	TD/HOCG/ MTBO	Gujarat	105.16	105.16	105.51	1990	Wireless/ Telemetry	Conventional	
236	Surat	Tapi/ Tapi	Surat/Surat/Gujarat	21.20	72.82	Ukai Dam (06-08)	TD/HOCG/ MTBO	Gujarat	8.50	9.50	12.50	2006	Wireless/ Telemetry	Conventional	
237	Madhuban Dam	Damanganga/ West Flowing	Madhuban Dam/ Valsad/ Gujarat	20.19	73.06	Ozarkheda (2-3) Nanipalsan (2-3)	TD/HOCG/ MTBO	Gujarat	79.86	82.40	80.60	1993	Wireless/ Telemetry	Conventional	
238	Vapi Town	Damanganga/ West Flowing Rivers	Vapi Town/ Valsad/Gujarat	20.37	72.88	Madhuban Dam (02-03)	TD/HOCG/ MTBO	Gujarat	18.20	19.20	23.76	2004	Wireless/ Telemetry	Conventional	
239	Daman	Damanganga/ West Flowing	Daman/Daman/Diu	20.41	72.84	Madhuban Dam (03)	TD/HOCG/ MTBO	Gujarat	2.60	3.40	4.00	2004	Wireless/ Telemetry	Conventional	
240	Nasik	Godavari/ Godavari	Nasik/Maharashtra	20.00	73.80		UGD/GC/KGBO		558.10	559.60	563.51	2019			
241	NMD Weir	Godavari/ Godavari	Nasik/Maharashtra	19.45	74.33		UGD/GC/KGBO		533.50						
242	Kopergaon	Godavari/ Godavari	Kopergaon/Ahmednagar/Maharashtra	19.89	74.49	N M Weir (18)	LGD/GC/ KGBO	Marathwada	490.90	493.68	499.17	1969	Wireless/ Telemetry	Conventional	
243	Mula Dam	Mula/Godavari	Ahmadnagar/Maharashtra	19.35	74.60		UGD/GC/KGBO		552.30						
244	Jaikwadi Dam	Godavari/Godavari	Paithan/ Aurangabad/ Maharashtra	19.48	75.37	N M Weir (24) Pachegaon(24)	LGD/GC/ KGBO	Marathwada	463.91	465.58	464.69	1990	Wireless	Conventional	

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245	Manjlegaon Dam	Sindhpana/ Godavari	Beed / Maharashtra	19.15	76.18		UGD/GC/KGBO								
246	Gangakhed	Godavari/ Godavari	Gangakhed/Parbhani/Maharashtra	18.98	76.75	Dhalegaon (18)	LGD/GC/ KGBO	Marathwada	374.00	375.00	377.57	1947	Wireless/ Telemetry	Conventional	
247	Yeldari Barrage	Puma/Godavari	Patbhani/Maharashtra	19.71	76.75		UGD/GC/KGBO		461.77						
248	Nanded	Godavari/ Godavari	Nanded/Nanded/ Maharastra	19.15	77.31	Gangakhed (12) Purna (12)	LGD/GC/ KGBO	Marathwada	353.00	354.00	357.10	2006	Wireless/ Telemetry	Conventional	
249	Karanja Dam	Karanja/Godavari	Bidar/Karnataka	17.88	77.31		UGD/GC/KGBO								
250	Singur Dam	Manjira/ Godavari	Singur Dam/ Medak/ Andhra Pradesh	17.75	77.93	Saigaon (24) Karanja(24)	LGD/GC/ KGBO	Telangana	523.60				Wireless	Conventional	
251	Nizamsagar Dam	Manjira/ Godavari	Nizamsagar dam/ Nizamabad/ Andhra Pradesh	18.22	77.96	Singur Dam (24)	LGD/GC/ KGBO	Telangana	428.24				Wireless	Conventional	
252	Sriramsagar	Godavari/Godavari	Pochampad/ Nizamabad/ Andhra Pradesh	18.97	78.34	Nanded (24) Nizamsagar (24) Degloor (24) Bhainsa(24)	LGD/GC/ KGBO	Telangana	332.54	333.15	332.72	1990	Wireless	Conventional	
253	Kaddam Dam	Godavari/Godavari	Kaddam/Adilabad/Telengana	19.1	78.79		UGD/GC/KGBO		FRL-213.21					Rainfall Runoff Model	
254	Sripada Yellampalli project.	Godavari/Godavari	Karimnagar/ Telengana	18.84	79.36		UGD/GC/KGBO		FRL-148					Rainfall Runoff Model	
255	Upper Wainganga Project	Wainganga/ Godavari	Balaghat/Madhya Pradesh	22.37	79.66	Bakhari (05-30)	WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-519.38						
256	Totladoh Project	Pench	Nagpur/Madhya Pradesh	21.65	79.23	Kokiwada(06-31)	WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-490.00						
257	Bawanthadi Reservoir	Bawanthri	Balaghat/Madhya Pradesh	21.54	79.54		WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-344.4						
258	Pench Reservoir/Chaurai Dam	Pench	Chindwara	21.65	79.23		WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-625.75						
259	Bhandara	Wainganga/ Godavari	Bhandara/Bhandara/Maharashtra	21.15	79.66	Balaghat (158) Rajegaon (18)	WD Nagpur/CC Nagpur/ MCO Nagpur	Vidharbha	245.50	245.70	250.90	2005	Wireless/ Telemetry	Conventional	
260	Gosikhurd Dam	Godavari/Godavari	Pauni/Bhandara/ Maharashtra	20.87	79.6	Kumhari(22-60) Rajegaon(22-60) Satrapur(11-40)	WD Nagpur/CC Nagpur/ MCO Nagpur	Vidharbha	FRL-245.50					Rainfall Runoff Model	
261	Pauni	Wainganga/ Godavari	Pauni/Bhandara/ Maharashtra	20.79	79.65	Bhandara (03-06)	WD Nagpur/CC Nagpur/ MCO Nagpur	Vidharbha	226.73	227.73	237.12	1994	Wireless/ Telemetry	Conventional	
262	Upper Wardha Project	Wardha/Godavari	Amaravati/Maharashtra	21.27	78.05		WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-342.50					Rainfall Runoff Model	
263	Issapur/Upper Penganga/SSP	Penganga	Hingoli/Maharashtra	19.71	77.45	Kanhargaon(11-40)	WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-441.00						
264	Balharsha	Wardha/Godavari	Balharsha/Chandrapur/ Maharashtra	19.82	79.37	Ghugus (12) P G Bridge (18)	WD Nagpur/CC Nagpur/ MCO Nagpur	Vidharbha	171.50	174.00	176.45	1986	Wireless/ Telemetry	Conventional	
265	Sirpur Town	Wardha/Godavari	Chandrapur/Maharashtra	19.56	79.61	Ghugus (15) P.G.Bridge(21)	WD Nagpur/CC Nagpur/ MCO Nagpur		159.95	160.95	161.34	2018			
266	Kaleswaram	Godavari/ Godavari	Bhopalpally/Telangana	18.82	79.91	Mancherial (18) Tekra (18)	LGD/GC/ KGBO	Telangana	103.50	104.75	107.05	1986	Wireless/ Telemetry	Conventional	
267	Upper Indravati Project	Indravathi/ Godavari	Kalahandi/Odisha	19.27	82.82		LGD/GC/ KGBO		FRL-642.00						
268	Jagdalpur	Indravathi/ Godavari	Jagdalpur/ Bastar/ Chhatisgarh	19.09	82.03	Nowrangpur (15-18) Kosagumda (15-18)	LGD/GC/ KGBO	Chhatisgarh	539.50	540.80	544.68	1973	Wireless/ Telemetry	Conventional	

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269	Eturunagaram	Godavari/ Godavari	Eturunagaram/ Warangal/ Andhra Pradesh	18.32	80.46	Kaleswaram (12-18) Pathagudem (12-18)	LGD/GC/ KGBO	Telangana	73.32	75.82	77.66	1990	Wireless/ Telemetry	Conventional	
270	Dummagudem	Godavari/ Godavari	Dummagudem/ Khammam/ Andhra Pradesh	17.85	80.88	Perur (12-15)	LGD/GC/ KGBO	Telangana	53.00	55.00	60.25	1986	Wireless/ Telemetry	Conventional	
271	Bhadrachalam	Godavari/ Godavari	Bhadrachalam/ Khammam/ Andhra Pradesh	17.67	80.88	Perur (15-18)	LGD/GC/ KGBO	Telangana	45.72	48.77	55.66	1986	Wireless/ Telemetry	Conventional	
272	Kolab Project	Kolab/Godavari	Koraput/Odisha	18.78	82.60		LGD/GC/ KGBO		FRL-858.00						
273	Machkund Project	Machkund	Koraput/Odisha	18.45	82.54		LGD/GC/ KGBO		FRL-838.20						
274	Balimela Project	Balimela	Malkangiri/Odisha	18.30	82.25		LGD/GC/ KGBO		FRL-462.07						
275	Chinturu	Sabri/Godavari	East Godavari/Andhra Pradesh	17.82	81.39	Sukma(06)	LGD/GC/ KGBO		41.50	43.00	44.91	8/18/2018		3 days advisory Forecast (CWC BETA Model)	
276	Kunavaram	Godavari/ Godavari	Kunavaram/ Khammam/ Andhra Pradesh	17.57	81.25	Perur (12-18)	LGD/GC/ KGBO	Telangana	37.74	39.24	51.30	1986	Wireless	Conventional	
277	Rajahmundry GNV Railway Bridge	Godavari/ Godavari	Rajahmundry/ East Godavari/ Andhra Pradesh	17.01	81.77	Koida (15-18)	LGD/GC/ KGBO	Coastal Andhra Pradesh	17.68	19.51	20.48	1986	Wireless/ Telemetry	Conventional	
278	Dowlaiswaram	Godavari/ Godavari	Dowlaiswaram/ East Godavari/ Andhra Pradesh	16.94	81.78	Koida (15-21)	LGD/GC/ KGBO	Coastal Andhra Pradesh	14.25	16.08	18.36	1986	Wireless/ Telemetry	Conventional	
279	Atreyapuram	Godavari/Godavari	Atreyapuram/East Godavari/Andhra Pradesh	16.81	81.81	Dowlaisweram(3)	LGD Hyd/GC/KGBO	Coastal Andhra Pradesh	13.5	15	14.16	2020		3 days advisory Forecast (CWC BETA Model)	
280	Koyna Dam	Koyna	Satara/Maharashtra	17.4	73.75	Mahabaleshwar(12) Nawaja(01-05) Koyna (01-05)	UKD/KCC/KGBO		FRL-659.43				Phone	Rainfall Runoff Model/Correlation/3 day Advisory	
281	Warana Dam	Warana	Kolhapur/Maharashtra	17.13	73.85	Warana (01-05)	UKD/KCC/KGBO		FRL-626.90				Phone	Rainfall Runoff Model/Correlation/3 day Advisory	
282	Arjunwad	Krishna/Krishna	Arjunwad/ Kolhapur/ Maharashtra	16.78	74.63	Kowad (24) Samdoli (12)	UKD/KCC/ KGBO		539.20	540.70	544.35	2019	Phone	Conventional	
283	Hippargi Barrage	Krishna/Krishna	Bagalkot/Karnataka	16.55	75.16	Kurunwad(16-27) Sadalga(16-27)	UKD/KCC/KGBO		FRL-531.40				Phone	Conventional	
284	Hidkal Dam	Ghatprabha/Krishna	Belagavi/Karnataka	16.14	74.64		CD Bang/MSO		FRL-662.94						
285	Almatti Dam	Krishna/ krishna	Almatti Dam/B**agalkot**/ Karnataka	16.33	75.88	Kurundwad (33-54) Sadalga (33-54) Gokak (21-30)	LKD/KCC/ KGBO	North Interior Karnataka	519.60				Wireless	Conventional	
286	Malaprabha Dam	Malaprabha	Belgum/Karnataka	15.82	75.09		CD Bang/MSO		FRL-633.83						
287	Narayanpur Dam	Krishna/ krishna	Narayanpur Dam/ Yadgir/ Karnataka	16.20	76.36	Almatti Dam (09-18) Cholachguda(12-24)	LKD/KCC/ KGBO	North Interior Karnataka	492.25				Wireless	Conventional	
288	Veer Dam	Nira/Krishna	Satara/Maharashtra	18.12	74.09	Niradeoghar(12) Bhatgar(12)	UKD/KCC/KGBO		FRL-579.85				Phone	Rainfall Runoff Model/Correlation/3 day Advisory	
289	Ujjani Dam	Bhima/ Krishna	Solapur/Maharashtra	18.07	75.12	Phulgaon(24) Dhond(12)	UKD/KCC/KGBO		FRL-496.83				Phone	Rainfall Runoff Model/Correlation/3 day Advisory	
290	Deongaon Bridge	Bhima/ Krishna	Afzalpur/ Gulbarga/ Karnataka	17.17	76.33	Takli (12-27) Wadakbal (15-27)	LKD/KCC/ KGBO	North Interior Karnataka	402.00	404.50	409.00	2020	Wireless/ Telemetry	Conventional	
291	Priyadharshini Jurala Project	Krishna/ krishna	Mahbubnagar/ Telangana	16.33	77.70	Huvinhedgi (12-30) Yadgir (09-30) Deosugur (03-06)	LKD/KCC/ KGBO	Telangana	318.52				Wireless	Conventional	

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											(m)	Year			
292	Upper Tunga	Tungabhadra/ Krishna	Shimoga/Krishna	13.84	75.52		CD Bangluru/C&SRC/ C&SRO Coimbtore	South interior Karnataka, Shimoga	FRL-588.24						
293	Bhadra Dam	Tungabhadra/ Krishna	Tarikere/Chikmagalur/Karnataka	13.7	75.63		CD Bangluru/C&SRC/ C&SRO Coimbtore	Coastal Karnataka, Lakkavalli	FRL-657.75						
294	Tungabhadra Dam	Tungabhadra/ Krishna	Hospet/ Bellary/ Karnataka	15.26	76.34	Harlahalli (12-27) Marol (12-27)	LKD/KCC/ KGBO	South Interior Karnataka	497.74				Wireless	Conventional	
295	Singatlur Barrage	Tungabhadra/Krishna	Gadag/Karnataka	15.03	75.83	Harlahalli(10-20) Marol(02-08)	LKD/KCC/ KGBO		FRL-507.00				Phone	Conventional	
296	Mantralayam	Tungabhadra	Mantralayam/ Kurnool/ Andhra Pradesh	15.95	77.43	Ollenur (18-30) T Ramapuram (09-18)	LKD/KCC/ KGBO	Rayalaseema	310.00	312.00	318.77	2009	Wireless/ Telemetry	Conventional	
297	Sunkesula Barrage	Tungabhadra/Krishna	C.Belagal/Kurnool/ Andhra Pradesh	15.88	77.83	Mantralayam (06-09)	LKD/KCC/ KGBO	Rayalaseema	FRL-292.00					Conventional	
298	Kurnool	Tungabhadra/ Krishna	Kurnool/Kurnool/ Andhra Pradesh	15.82	78.03	Mantralayam(06-15) Sunkesula Barrage (03-12)	LKD/KCC/ KGBO	Rayalaseema	273	274	281.23	02.10.09	Wireless	Conventional	
299	Srisailam Dam	Krishna/ krishna	Srisailam/ Kurnool/ Andhra Pradesh	16.08	78.90	Mantralayam (12-30) Krishna Agraharam (09-24)	LKD/KCC/ KGBO	Coastal Andhra Pradesh	269.75				Wireless	Conventional	
300	Musi Dam	Musi/Krishna	Nalgonda/Telengana	17.23	79.52	Valigonda(10-18) Anantaram(06-12)	LKD/KCC/ KGBO		FRL-196.60				Phone	Conventional	
301	Dr KLRS Pulichintala Dam	Krishna/Krishna	Bellamkonda/Guntur/Andhra Pradesh	16.75	80.05	NS Dam Release(09-24) Halia(03-06) Dhmercherla(06-12)	LKD/KCC/ KGBO	Coastal Andhra Pradesh	FRL-53.34					Conventional	
302	Prakasam Barrage	Krishna/ krishna	Vijayawada/ Krishna/ Andhra Pradesh	16.53	80.61	Wadenapalli (09-21) Madhira (09-15) Polampally (06-18) Paleru Bridge (09-18)	LKD/KCC/ KGBO	Coastal Andhra Pradesh	17.31				Wireless	Conventional	
303	Avanigadda	Krishna/ krishna	Krishna/Andhra Pradesh	16.02	80.91	Prakasam Barrage (03-09) Vijayawada	LKD/KCC/ KGBO	Coastal Andhra Pradesh	9.00	11.00	11.57	2009	Telemetry	Conventional	
304	Somasila Dam	Pennar/Pennar	Ozili//Nellore/ Andhra Pradesh	14.48	79.3		HD/ C&SRC Bangalore/ C & SRO Coimbtore.	Coastal Andhra Pradesh	FRL-100.58					Rainfall Runoff Model	
305	Nellore Anicut	North Pennar	Nellore/ Nellore/ Andhra Pradesh	14.47	79.99	Chennur (18) Nandipally (18) Somasila Project (09)	HD/SR	Coastal Andhra Pradesh	15.91	17.28	19.57	2021	Wireless	Conventional	
306	Poondi Satyamurthy Dam	Kosasthalaiyar/ EFRB Pennar-Cauvery	Thiruvallur/ Tamilnadu	13.18	79.86		HD / C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-42.67					Rainfall Runoff Model	
307	Chembarampakkam	Adyar/EFRB Pennar Cauvery	Chenglepet/Kancheepuram/ Tamilnadu	13.01	80.08		HD Chennai/C&SRC Bangaluru/C & SRO Coimbtore	Tamilnadu & Puducherry	26.03						
308	Sathnur Dam	Ponnaiyar/ EFRB Pennar-Cauvery	Chengam/Thiruvannamalai/ Tamilnadu	12.2	78.59		HD Chennai/C&SRC Bangaluru/C & SRO Coimbtore	Tamilnadu & Puducherry	FRL-222.2						
309	Gomukhi	Vellar/EFRB Pennar Cauvery	Kallakurichi/Villupuram/Tamilnadu	11.8	78.81		HD Chennai/C&SRC Bangaluru/C & SRO Coimbtore		FRL-183.18						
310	Wellington Dam	Vellar/EFRB Pennar Cauvery	Thittakudi/Cuddalore/Tamilnadu	11.4	79.09		HD Chennai/C&SRC Bangaluru/C & SRO Coimbtore		FRL-72.54						
311	Harangi Dam	Cauvery/Cauvery	Somwarpet/ Kodagu/ Karnataka	12.49	75.9		CD Banglore / C&SRC Bangalore/ C & SRO Coimbtore.	Coastal Andhra Pradesh	FRL-871.42					Rainfall Runoff Model	

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											(m)	Year			
312	Hemavathy Dam	Cauvery/Cauvery	Channaryapatra/Hassan/Karnataka	12.82	76.05		CD Banglore / C&SRC Bangalore/ C & SRO Coimbtore.	Coastal Andhra Pradesh	FRL-890.63					Rainfall Runoff Model	
313	Kabini Dam	Cauvery/Cauvery	Heggadevanakote/Mysore/ Karnataka	11.84	76.33		CD Banglore / C&SRC Bangalore/ C & SRO Coimbtore.	South Interior Karnataka	FRL-696.16					Rainfall Runoff Model	
314	Krishnaraj sagar	Cauvery/Cauvery	Srirangapatna/Mandya/Karnataka	12.45	76.57		CD Banglore / C&SRC Bangalore/ C & SRO Coimbtore.	South Interior Karnataka	FRL-752.49					Rainfall Runoff Model	
315	Mettur Dam	Cauvery/Cauvery	Mettur/Salem/Tamilnadu	11.8	77.8		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-240.79					Rainfall Runoff Model	
316	Bhawanisagar Dam	Bhavani/Cauvery	Sathyamangalam/Erode/Tamilnadu	11.47	77.1		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-280.42					Rainfall Runoff Model	
317	Savandapur	Bhavani/Cauvery	Gobichettipalayam/Tamilnadu	11.52	77.51		SRD Coim/C&SRC Bang/C & SRO Coimb		184.5	185.5	187.75	2018			
318	Kodumudi	Cauvery/Cauvery	Erode/Erode/Tamilnadu	11.08	77.89		SRD Coim/C&SRC Bang/C & SRO Coimb	Tamilnadu and Puducherry	125.5	126.5	128.14	2018			
319	Kodaganar Dam	Kodaganar/Cauvery	Dindugul/Tamilnadu	10.59	77.97		SRD Coim/C&SRC Bang/C & SRO Coimb	Tamilnadu and Puducherry	FRL-200.25						
320	Musiri	Cauvery/Cauvery	Musiri/Tiruchirapalli/Tamilnadu	10.93	78.43		SRD Coim/C&SRC Bang/C & SRO Coimb	Tamilnadu and Puducherry	82.12	83.12	86.98	2005			
321	Upper Anicut	Cauvery/Cauvery	Thiruchirapalli/ Tamilnadu	10.88	78.57		SRD Coim/C&SRC Bang/C & SRO Coimb		FRL-74.40						
322	Grand Annicut	Cauvery/Cauvery	Thanjavur/ Tamilnadu	10.83	78.81		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-59.21					Rainfall Runoff Model	
323	Vaigai Dam	Vaigai/EFR South of Cauvery	Andipatti/ Theni/ Tamilnadu	10.5	77.33		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-279.2					Rainfall Runoff Model	
324	Madurai	Vaigai/EFR South of Cauvery	Madurai/Tamilnadu	9.93	78.11		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	131.5	132.5	134.76	1997			
325	Kumbidi	Bharathapuzha/WFR Tapi to Tadri	Palakkad/Kerala	10.85	76.02		SWRD/CSRO		8.2	9.2	11.27	2018			
326	Idduki Dam	Periyar/WFR Tadri to Kanyakumari	Idduki/Kerala	9.84	76.97		SWRD/CSRO		FRL-732.62						
327	Edamalayar Dam	Edamalayar/WFR Tadri to Kanyakumari	Ernakulam/Kerala	10.22	76.7		SWRD/CSRO		FRL-169.00						
328	Neeleswaram	Periyar/WFR Tadri to Kanyakumari	Ernakulam/Kerala	10.18	76.49		SWRD/CSRO		9	10	12.4	2018			
329	Malakkara	Pamba/WFR Tadri to Kanyakumari	Pathanamthitta	9.32	76.66		SWRD/CSRO		6	7	9.58	2018			
330	Polavaram	Godavari/Godavari	West Godavari/ Andhra Pradesh	17.29	81.64		LGD Hyd/GC/KGBO								
331	Laxmi Barrage	Godavari/Godavari	Bhupalpally/Telangana	18.7	80.08		UGD/GC/KGBO		100						

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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8	9	10	11	12	13.00
	1. Indus Basin											
1	Jhelum	Sangam	Jammu & Kashmir	1590.30	1592.00	1595.00	9/6/2014	1589.59	24/10/2021 05	0	0	-
2	Jhelum	Rammunshibagh	Jammu & Kashmir	1585.53	1586.45	1588.99	9/8/2014	1584.53	24/10/2021 12	1	0	0.00
3	Jhelum	Safapora	Jammu & Kashmir	1580.00	1580.80	1582.10	9/9/2014	1579.24	01/08/2021 00	0	0	-
	2 a. Ganga Basin											
4	Alaknanda	Srinagar	Uttarakhand	535.00	536.00	537.90	6/17/2013	536.55	19/06/2021 06	6	2	33.33
5	Mandakini	Ganganagar	Uttarakhand	803.00	804.00	801.92	6/26/2015	800.85	20/05/2021 18	0	0	-
6	Ganga	Rishikesh	Uttarakhand	339.50	340.50	341.72	9/5/1995	340.70	20/06/2021 04	6	3	50.00
7	Ganga	Haridwar	Uttarakhand	293.00	294.00	296.30	9/19/2010	294.56	19/10/2021 12	7	6	85.71
8	Ganga	Garhmuktheswar	Uttar Pradesh	198.33	199.33	199.90	9/23/2010	198.76	21/06/2021 14	52	50	96.15
9	Ganga	Kachla Bridge	Uttar Pradesh	161.00	162.00	162.79	9/24/2010	162.79	23/10/2021 01	126	125	99.21
10	Ganga	Fathegarh	Uttar Pradesh	136.60	137.60	138.14	9/26/2010	137.66	24/10/2021 16	78	78	100.00
11	Ramganga	Moradabad	Uttar Pradesh	189.60	190.60	192.88	9/21/2010	190.17	22/10/2021 09	14	14	100.00
12	Ramganga	Bareilly	Uttar Pradesh	162.70	163.70	162.88	8/6/1978	162.21	23/10/2021 05	2	2	-
13	Ganga	Dabri	Uttar Pradesh	136.30	137.30	139.70	9/28/1983	138.39	26/10/2021 04	13	13	100.00
14	Ganga	Kannauj	Uttar Pradesh	124.97	125.97	126.78	9/27/2010	125.71	26/10/2021 19	6	6	100.00
15	Ganga	Ankinghat	Uttar Pradesh	123.00	124.00	124.49	9/28/2010	123.70	26/10/2021 15	13	13	100.00
16	Ganga	Kanpur	Uttar Pradesh	112.00	113.00	114.08	9/29/2010	113.04	28/10/2021 06	8	8	100.00
17	Ganga	Dalmau	Uttar Pradesh	98.36	99.36	99.84	8/3/1973	98.91	28/10/2021 18	6	6	100.00
18	Ganga	Phphamau	Uttar Pradesh	83.73	84.73	87.98	9/8/1978	86.09	12/08/2021 04	8	8	100.00
19	Yamuna	Paonta Sahib	Himachal Pradesh	383.50	384.50	384.60	9/5/1995	381.30	28/07/2021 21	0	0	-
20	Yamuna	Karnal Bridge	Haryana	248.80	249.50	250.07	6/17/2013	247.91	29/07/2021 12	0	0	-
21	Yamuna	Mawi	Uttar Pradesh	231.00	231.50	232.75	6/18/2013	230.41	30/07/2021 05	0	0	-
22	Sahibi	Dhansa	NCT Delhi	211.44	212.44	213.58	8/6/1977	210.95	17/09/2021 06	0	0	-
23	Yamuna	Delhi Rly Bridge	NCT Delhi	204.50	205.33	207.49	9/6/1978	205.60	30/07/2021 22	27	19	70.37
24	Yamuna	Mathura	Uttar Pradesh	165.20	166.00	169.73	9/8/1978	165.12	01/08/2021 07	5	1	20.00
25	Yamuna	Agra	Uttar Pradesh	151.40	152.40	154.76	9/9/1978	149.78	28/09/2021 17	0	0	-
26	Yamuna	Etawa	Uttar Pradesh	120.92	121.92	126.13	9/11/1978	123.04	06/08/2021 14	11	8	72.73
27	Chambal	Manderial	Rajasthan	164.00	165.00	169.96	8/23/1996	169.18	04/08/2021 08	18	18	100.00
28	Chambal	Dholpur	Rajasthan	129.79	130.79	145.54	8/23/1996	144.70	04/08/2021 19	33	14	42.42
29	Chambal	Kota City	Rajasthan	239.00	242.00	248.68	9/16/2019	242.10	04/08/2021 11	1	1	100.00
30	Yamuna	Auraiya	Uttar Pradesh	112.00	113.00	118.19	8/25/1996	118.51	06/08/2021 16	13	9	69.23
31	Yamuna	Kalpi	Uttar Pradesh	107.00	108.00	112.98	8/25/1996	112.87	09/08/2021 15	13	9	69.23
32	Yamuna	Hamirpur	Uttar Pradesh	102.63	103.63	108.59	9/12/1983	107.17	09/08/2021 01	19	9	47.37
33	Betwa	Mohana	Uttar Pradesh	121.66	122.66	133.35	9/11/1983	119.28	08/08/2021 11	1	1	100.00
34	Betwa	Sahjina	Uttar Pradesh	103.54	104.54	108.67	9/12/1983	106.70	09/08/2021 01	13	10	76.92
35	Ken	Banda	Uttar Pradesh	103.00	104.00	113.29	7/7/2005	102.78	09/08/2021 19	1	1	100.00
36	Yamuna	Chilaghat	Uttar Pradesh	99.00	100.00	105.16	9/6/1978	102.47	09/08/2021 21	14	11	78.57

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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8	9	10	11	12	13.00
37	Yamuna	Naini	Uttar Pradesh	83.74	84.74	87.99	9/8/1978	85.85	12/08/2021 10	12	11	91.67
38	Ganga	Allahabad Chhatnag	Uttar Pradesh	83.73	84.73	88.03	9/8/1978	85.36	12/08/2021 07	6	6	100.00
39	Ganga	Mirzapur	Uttar Pradesh	76.72	77.72	80.34	9/9/1978	78.40	12/08/2021 07	7	7	100.00
40	Ganga	Varanasi	Uttar Pradesh	70.26	71.26	73.90	9/9/1978	72.32	12/08/2021 11	9	9	100.00
41	Gomati	Lucknow	Uttar Pradesh	108.50	109.50	110.85	9/10/1971	105.98	10/11/2021 13	0	0	-
42	SAI	Raibareli	Uttar Pradesh	100.00	101.00	104.81	9/17/1982	100.47	18/09/2021 05	5	5	100.00
43	Gomati	Jaunpur	Uttar Pradesh	73.07	74.07	77.74	9/22/1971	72.77	22/09/2021 12	0	0	-
44	Ganga	Ghazipur	Uttar Pradesh	62.10	63.10	65.22	9/9/1978	64.68	13/08/2021 07	11	11	100.00
45	Ganga	Buxar	Bihar	59.32	60.32	62.09	1948	61.19	14/08/2021 04	12	11	91.67
46	Ganga	Ballia	Uttar Pradesh	56.62	57.62	60.39	8/25/2016	60.25	14/08/2021 10	32	32	100.00
47	Ghaghra	Elgin Bridge	Uttar Pradesh	105.07	106.07	107.62	8/18/2014	106.85	22/10/2021 10	121	119	98.35
48	Ghaghra	Ayodhya	Uttar Pradesh	91.73	92.73	94.01	10/11/2009	93.30	23/10/2021 13	110	109	99.09
49	Rapti	Kakardhari	Uttar Pradesh	130.00	131.00	132.37	8/15/2014	130.01	15/08/2021 18	0	0	-
50	Rapti	Balrampur	Uttar Pradesh	103.62	104.62	105.54	8/15/2017	105.10	30/08/2021 02	43	42	97.67
51	Rapti	Bansi	Uttar Pradesh	83.90	84.90	85.88	8/20/2017	85.95	03/09/2021 08	32	32	100.00
52	Rapti	Gorakpur_Birdghat	Uttar Pradesh	73.98	74.98	77.54	8/23/1998	77.32	03/09/2021 11	63	63	100.00
53	Ghaghra	Turtipar	Uttar Pradesh	63.01	64.01	66.00	8/28/1998	65.08	03/09/2021 05	117	117	100.00
54	Ghaghra	Darauli	Bihar	59.82	60.82	61.74	8/29/1998	61.32	04/09/2021 09	113	112	99.12
55	Ghaghra	Gangpur Siswan	Bihar	56.04	57.04	58.01	9/18/1983	57.49	17/08/2021 01	74	73	98.65
56	Ghaghra	Chhapra	Bihar	52.68	53.68	54.59	9/3/1982	53.09	15/08/2021 06	6	6	100.00
57	Sone	Inderpuri	Bihar	107.20	108.20	108.85	8/23/1975	104.88	01/08/2021 08	0	0	-
58	Sone	Koelwar	Bihar	54.52	55.52	58.88	7/20/1971	53.90	14/08/2021 15	0	0	-
59	Sone	Maner	Bihar	51.00	52.00	53.79	9/10/1976	53.45	15/08/2021 03	20	20	100.00
60	Ganga	Patna Dighaghat	Bihar	49.45	50.45	52.52	8/23/1975	51.85	15/08/2021 07	30	29	96.67
61	Gandak	Khadda	Uttar Pradesh	95.00	96.00	97.50	7/23/2002	96.09	27/08/2021 15	201	201	100.00
62	Gandak	Chatia	Bihar	68.15	69.15	70.04	7/26/2002	69.37	31/08/2021 22	24	24	100.00
63	Gandak	Dumariaghat	Bihar	61.22	62.22	64.36	7/24/2020	63.83	01/09/2021 11	129	129	100.00
64	Gandak	Rewaghat	Bihar	53.41	54.41	55.46	7/24/2020	55.30	02/09/2021 13	75	75	100.00
65	Gandak	Hazipur	Bihar	49.32	50.32	50.93	1948	50.51	15/08/2021 11	18	18	100.00
66	Ganga	Patna Gandhighat	Bihar	47.60	48.60	50.52	8/20/2016	50.45	15/08/2021 07	70	69	98.57
67	PunPun	Sripalpur	Bihar	49.60	50.60	53.91	9/18/1976	52.69	04/08/2021 09	45	36	80.00
68	Ganga	Hathidah	Bihar	40.76	41.76	43.17	8/21/2016	43.52	16/08/2021 11	77	76	98.70
69	Ganga	Munger	Bihar	38.33	39.33	40.99	9/19/1976	40.15	17/08/2021 12	33	32	96.97
70	Burhi Gandak	Lalbeghiaghat	Bihar	62.20	63.20	67.09	7/30/1975	64.30	06/07/2021 00	43	43	100.00
71	Burhigandak	Ahirwalia	Bihar	58.62	59.62	61.17	6/2/2014	60.32	08/07/2021 08	22	22	100.00
72	Burhi Gandak	Muzaffarpur	Bihar	51.53	52.53	54.29	8/15/1987	53.63	11/07/2021 01	58	58	100.00
73	Burhi Gandak	Samastipur	Bihar	45.02	46.02	49.38	8/15/1987	48.31	13/07/2021 09	64	64	100.00
74	Burhi Gandak	Rosera	Bihar	41.63	42.63	46.56	8/2/2020	45.84	13/07/2021 05	94	93	98.94
75	Burhi Gandak	Khagaria	Bihar	35.58	36.58	39.22	1976	39.00	17/08/2021 08	118	117	99.15

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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8	9	10	11	12	13.00
76	Ganga	Bhagalpur	Bihar	32.68	33.68	34.72	8/26/2016	34.86	18/08/2021 06	46	44	95.65
77	Ganga	Kahalgaon	Bihar	30.09	31.09	32.87	9/17/2003	32.63	18/08/2021 12	86	85	98.84
78	Kosi	Basua	Bihar	46.75	47.75	49.24	8/13/2017	47.73	04/07/2021 22	177	176	99.44
79	Bagmati	Dheng Bridge	Bihar	70.00	71.00	73.00	8/13/2017	72.31	03/07/2021 19	60	60	100.00
80	Bagmati	Runisaidpur	Bihar	54.00	55.00	58.15	8/14/2017	57.36	04/07/2021 06	86	85	98.84
81	Bagmati	Benibad	Bihar	47.68	48.68	50.01	7/12/2004	49.99	31/08/2021 04	129	123	95.35
82	Adhwara Group	Kamtaul	Bihar	49.00	50.00	52.99	8/12/1987	51.20	08/07/2021 18	95	95	100.00
83	Adhwara Group	Ekmighat	Bihar	45.94	46.94	49.52	7/12/2004	48.09	02/09/2021 03	92	89	96.74
84	Bagmati	Hayaghat	Bihar	44.72	45.72	48.96	8/14/1987	47.18	01/09/2021 06	77	76	98.70
85	Kamla Balan	Jainagar	Bihar	66.75	67.75	71.35	9/21/2016	69.35	27/08/2021 16	459	439	95.64
86	Kamla Balan	Jhanjharpur	Bihar	49.00	50.00	53.11	7/14/2019	52.81	28/08/2021 22	312	302	96.79
87	Adhwara	Sonebarsha	Bihar	80.85	81.85	83.20	7/3/1999	81.44	30/06/2021 15	6	6	100.00
88	Kosi	Baltara	Bihar	32.85	33.85	36.40	8/15/1987	35.81	02/09/2021 05	119	118	99.16
89	Kosi	Kursela	Bihar	29.00	30.00	32.10	9/7/1982	31.83	18/08/2021 17	101	100	99.01
90	Ganga	Sahibgunj	Jharkhand	26.25	27.25	30.91	1998	28.90	18/08/2021 16	80	80	100.00
91	Mahananda	Taibpur	Bihar	65.00	66.00	67.22	7/28/2016	66.88	20/10/2021 20	31	30	96.77
92	Mahananda	Dhengraghat	Bihar	34.65	35.65	38.20	8/14/2017	36.90	30/08/2021 02	63	62	98.41
93	Mahananda	Jhawa	Bihar	30.40	31.40	34.07	8/14/2017	31.86	30/08/2021 15	75	74	98.67
94	Parwan	Araria	Bihar	46.00	47.00	49.40	8/14/2017	48.24	23/10/2021 13	176	176	100.00
95	Ganga	Farakka	West Bengal	21.25	22.25	25.14	9/7/1998	24.00	19/08/2021 13	170	166	97.65
96	Mayurakshi	Narayanpur	West Bengal	26.86	27.86	29.69	9/27/1995	25.98	01/10/2021 21	1	1	100.00
97	Ajoy	Gheropara	West Bengal	38.42	39.42	43.94	9/27/1978	42.00	01/10/2021 01	2	2	100.00
98	Mundeshwari	Harinkhola	West Bengal	11.80	12.80	14.60	7/28/2017	14.22	01/10/2021 16	8	8	100.00
99	Kangsabati	Mohanpur	West Bengal	24.73	25.73	29.87	9/2/1978	24.50	15/09/202121	0	0	-
	2 b Brahmaputra Basin											
100	Siang	Yingkiang	Arunachal Pradesh	302.00	303.00			274.48	28/08/2021 21	0	0	-
101	siang	Passighat	Arunachal Pradesh	152.96	153.96	157.54	6/11/2000	154.77	28/08/2021 23	49	49	100.00
102	Lohit	Dholla Bazaar	Assam	127.27	128.27	130.07	9/22/2012	126.00	27/08/2021 12	0	0	-
103	Brahmaputra	Dibrugrah	Assam	104.70	105.70	106.48	9/3/1998	105.71	29/08/2021 08	98	98	100.00
104	Noa-Dehing	Namsai	Arunachal Pradesh	144.80	145.80	146.60	10/7/1979	144.77	21/05/2021 16	0	0	-
105	Burhidihing	Naharkatia	Assam	119.40	120.40	122.69	6/17/1973	119.22	20/11/2021 18	0	0	-
106	Burhidihing	Khwong	Assam	101.11	102.11	104.16	9/2/2015	101.17	28/08/2021 18	2	2	100.00
107	Desang	Nanglamoraghat	Assam	93.46	94.46	96.49	9/6/1998	95.49	28/06/2021 23	25	25	100.00
108	Dikhow	Shivsagar	Assam	91.40	92.40	94.24	6/22/2020	91.97	30/08/2021 13	18	18	100.00
109	Brahmaputra	Neamatighat	Assam	84.54	85.54	87.37	7/11/1991	87.02	30/08/2021 00	111	111	100.00
110	Subansiri	Choldhowaghat	Assam	99.43	100.43	101.31	7/27/1972	97.03	29/08/2021 12	0	0	-

Basinwise -Riverwise- Flood Forecasting Information in India during Flood Season 2021												
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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12	13.00
111	Ranganadi	N H Crossing Ranganad	Assam	93.81	94.81	95.92	7/2/1979	94.38	05/06/2021 22	13	13	100.00
112	Subansiri	Badatighat	Assam	81.53	82.53	86.21	7/28/1972	83.08	30/08/2021 09	22	22	100.00
113	Dhansiri (S)	Golaghat	Assam	88.50	89.50	92.45	10/11/1986	87.82	09/09/2021 21	0	0	-
114	Dhansiri (S)	Numaligarh	Assam	77.42	78.42	80.16	8/2/2018	77.74	31/08/2021 00	2	2	100.00
115	Jiabharali	Jiabharali_NTX	Assam	76.00	77.00	78.50	7/26/2007	78.16	27/08/2021 10	509	506	99.41
116	Brahmaputra	Tezpur	Assam	64.23	65.23	66.59	8/27/1988	66.11	30/08/2021 19	48	48	100.00
117	Kopilli	Kampur	Assam	59.50	60.50	61.79	7/20/2004	59.51	17/08/2021 09	1	1	100.00
118	Kopilli	Dharmatul	Assam	55.00	56.00	58.09	7/21/2004	54.87	17/08/2021 22	0	0	-
119	Brahmaputra	Guwahati	Assam	48.68	49.68	51.46	7/21/2004	50.16	01/09/2021 05	15	15	100.00
120	Puthimari	Puthimari _NHX	Assam	50.81	51.81	55.08	8/31/2008	51.73	07/06/2021 23	26	25	96.15
121	Pagladiya	Pagladia_NTX	Assam	51.75	52.75	55.45	7/8/2004	52.65	30/06/2021 19	23	23	100.00
122	Manas	Mathanguri	Assam	98.10	99.10	100.28	10/13/1973	95.90	28/08/2021 14	0	0	-
123	Beki	Beki NHX	Assam	44.10	45.10	46.20	8/4/2000	45.79	28/08/2021 16	196	196	100.00
124	Manas	Manas NHX	Assam	47.81	48.42	50.08	9/15/1984	48.09	30/06/2021 17	9	9	100.00
125	Brahmaputra	Goalpara	Assam	35.27	36.27	37.43	7/31/1954	36.56	01/09/2021 12	30	30	100.00
126	Gaurang	Kokrajhar	Assam	41.85	42.85	43.60	8/20/2015	42.90	26/08/2021 18	36	36	100.00
127	Brahmaputra	Dhubri	Assam	27.62	28.62	30.37	7/18/2019	29.52	02/09/2021 03	112	112	100.00
128	Sankosh	Golakganj	Assam	28.94	29.94	30.95	9/8/2007	29.91	27/08/2021 09	83	83	100.00
129	Raidak-I	Tufanganj	West Bengal	34.22	35.30	36.50	8/12/2017	34.40	27/08/2021 08	3	3	100.00
130	Jaldhaka	NH-31	West Bengal	80.00	80.90	81.33	8/28/1972	80.10	20/08/2021 13	8	8	100.00
131	Torsa	Hasimara	West Bengal	116.30	116.90	118.50	7/13/1996	116.86	20/10/2021 07	3	3	100.00
132	Torsa	Ghughumari	West Bengal	39.80	40.41	41.46	8/3/2000	40.50	20/10/2021 17	34	31	91.18
133	Jaldhaka	Mathabhanga	West Bengal	47.70	48.20	49.85	9/7/2007	48.16	30/06/2021 13	9	7	77.78
134	Tista	Domohani	West Bengal	85.65	85.95	89.30	10/14/1968	86.65	20/10/2021 07	42	37	88.10
135	Tista	Mekhliganj	West Bengal	65.45	65.95	66.45	7/13/1996	66.62	20/10/2021 11	8	8	100.00
136	Teesta	Malli Bazaar	Sikkim	222.30	222.40	225.25		218.74	20/10/2021 05	0	0	-
137	Teesta	Joretahang(Rothak)	Sikkim	350.60	351.60	353.20		349.12	19/06/2021 01	0	0	-
138	Teesta	Singtam	Sikkim	377.07	377.57	379.17		375.65	20/10/2021 00	0	0	-
	2 c Barak & Others											
139	Barak	APGhat	Assam	18.83	19.83	21.84	8/1/1989	18.42	28/08/2021 11	0	0	-
140	Katakhal	Matizuri	Assam	19.27	20.27	22.73	9/10/2007	19.16	02/09/2021 08	0	0	-
141	Barak	Badarpurghat	Assam	15.85	16.85	18.48	9/11/2007	15.43	28/08/2021 19	0	0	-
142	Kushiyara	Karimganj	Assam	13.94	14.94	16.57	6/10/2010	14.70	22/07/2021 01	40	40	100.00
143	Manu	Kailashar	Tripura	24.34	25.34	25.95	6/13/2018	23.07	29/08/2021 21	0	0	-
144	Gumti	Sonamura	Tripura	11.50	12.50	14.42	7/23/1993	11.04	01/07/2021 20	0	0	-
	3. Godavari Basin											-
145	Godavari	Nasik	Maharashtra	558.10	559.60	563.51	8/4/2019	558.11	29/09/2021 13	1	0	0.00
146	Godavari	Kopergaon	Maharashtra	490.90	493.68	499.17	1969	490.55	29/09/2021 22	0	0	-
147	Godavari	Gangakhed	Maharashtra	374.00	375.00	377.57	1947	374.40	08/09/2021 22	1	1	100.00

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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12	13.00
148	Godavari	Nanded	Maharashtra	353.00	354.00	357.10	8/6/2006	353.10	30/09/2021 05	2	1	50.00
149	Wainganga	Bhandara	Maharashtra	245.50	245.70	250.90	9/16/2005	245.27	31/12/2021 18	0	0	-
150	Wainganga	Pauni	Maharashtra	226.73	227.73	237.12	9/7/1994	225.60	21/09/2021 19	0	0	-
151	Wardha	Balharsha	Maharashtra	171.50	174.00	176.45	8/14/1986	169.86	08/09/2021 18	0	0	-
152	Wardha	Sirpur Town	Telangana	159.95	160.95	161.34	8/18/2018	159.84	09/09/2021 02	1	1	100.00
153	Godavari	Kaleswaram	Telangana	103.50	104.75	107.05	8/15/1986	105.03	23/07/2021 18	0	0	-
154	Indravati	Jagdalpur	Chhatisgarh	539.50	540.80	544.68	7/9/1973	537.93	18/08/2021 18	0	0	-
155	Godavari	Eturunagaram	Telangana	73.32	75.82	77.66	8/24/1990	74.12	24/07/2021 07	5	4	80.00
156	Godavari	Dummagudam	Telangana	53.00	55.00	60.25	8/15/1986	53.93	24/07/2021 18	3	3	100.00
157	Godavari	Bhadrachalam	Telangana	45.72	48.77	55.66	8/16/1986	47.42	24/07/2021 21	9	7	77.78
158	Sabari	Chinturu	Andhra Pradesh	41.50	43.00	44.91	8/18/2020	39.39	25/07/2021 11	0	0	-
159	Godavari	Kunavaram	Andhra Pradesh	37.74	39.24	51.30	8/16/1986	39.28	25/07/2021 10	12	12	100.00
160	Godavari	Rajamundry	Andhra Pradesh	17.68	19.51	20.48	8/16/1986	16.31	10/09/2021 20	0	0	-
161	Godavari	Dowalaiswaram	Andhra Pradesh	14.25	16.08	18.36	8/16/1986	14.33	10/09/2021 17	3	3	100.00
162	Godavari	Atreyapuram	Andhra Pradesh	14.00	15.50	18.36	8/22/2018	11.27	26/07/2021 00	0	0	-
	4. Krishna Basin											
163	Krishna	Arjunwad	Maharashtra	542.07	543.29	544.28	8/9/2019	543.96	26/07/2021 02	18	11	61.11
164	Bhima	Deongaon	Karnataka	402.00	404.50	409.00	10/18/2020	399.35	13/10/2021 08	0	0	-
165	Tungabhadra	Mantralayam	Andhra Pradesh	310.00	312.00	318.77	10/2/2009	311.75	22/11/2021 08	7	7	100.00
166	Tungabhadra	Kurnool	Andhra Pradesh	273.00	274.00	281.22	10/2/2009	273.10	22/11/2021 08	0	0	-
167	Krishna	Avanigadda	Andhra Pradesh	9.00	11.00	11.57	10/5/2009	8.72	07/08/2021 00	0	0	-
	5. Cauvery Basin											
168	Bhavani	Savandapur	Tamilnadu	184.50	185.50	187.75	8/17/2018	183.26	19/11/2021 10	0	0	-
169	Cauvery	Kodumudi	Tamilnadu	125.50	126.50	128.14	8/17/2018	125.63	19/11/2021 16	2	1	50.00
170	Cauvery	Musiri	Tamilnadu	82.11	83.11	86.98	11/25/2005	82.84	20/11/2021 07	9	8	88.89
	6. Subarnarekha											
171	Subernarekna	Jamshedpur	Jharkhand	122.50	123.50	129.82	10/12/1973	123.30	27/05/2021 19	3	2	66.67
172	Subernarekna	Rajghat	Odisha	9.45	10.36	12.69	6/19/2008	10.56	17/09/2021 15	11	4	36.36
173	Jalaka	Mathani Road Bridge	Odisha	5.50	5.50	7.05	8/27/2020	7.31	22/09/2021 10	86	77	89.53
174	Burhabalang	NH_5 _Road Bridge	Odisha	7.21	8.13	9.50	10/12/1973	8.08	16/09/2021 17	6	2	33.33
	7. Brahmani and Baitarani											
175	Baitarni	Anandpur	Odisha	37.44	38.36	41.35	9/23/2011	39.38	27/05/2021 17	3	0	0.00
176	Baitarni	Akhuapada	Odisha	17.83	17.83	21.95	8/16/1960	19.00	28/05/2021 02	13	10	76.92
177	Brahmani	Jenapur	Odisha	22.00	23.00	24.78	8/20/1975	22.64	14/09/2021 22	2	1	50.00
	8. Mahanadi Basin											
178	Mahanadi	Naraj	Odisha	25.41	26.41	27.61	8/31/1982	25.98	18/09/2021 11	10	10	100.00
179	Mahanadi	Alipingal Devi	Odisha	10.85	11.76	13.11	9/11/2011	9.47	18/09/2021 16	0	0	-
180	Mahanadi	Nimapara	Odisha	9.85	10.76	11.60	8/31/1982	7.72	19/09/2021 06	0	0	-
	9. Pennar Basin											

Basinwise -Riverwise- Flood Forecasting Information in India during Flood Season 2021												
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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12	13.00
181	Pennar	Nellore	Andhra Pradesh	15.91	17.28	18.70	11/30/1982	19.57	20/11/2021 06	3	0	0.00
	10. Mahi Basin											
182	Mahi	Wanakbori	Gujarat	71.93	74.98	76.10	8/12/2006	68.96	29/09/2021 00	0	0	-
	11. Sabarmati Basin											
183	Sabarmati	Ahmedabad	Gujarat	44.09	45.34	47.45	8/19/2006	41.88	22/11/2021 18	0	0	-
	12. Narmada Basin											
184	Naramada	Mandla	Madhya Pradesh	437.20	437.80	439.40	7/15/1974	436.42	25/07/2021 07	0	0	-
185	Naramada	Hoshangabad	Madhya Pradesh	292.80	293.80	301.33	8/27/1972	287.00	17/09/2021 07	0	0	-
186	Naramada	Garudeswar	Gujarat	30.48	31.09	41.65	9/6/1970	16.03	16/06/2021 07	0	0	-
187	Naramada	Bharuch	Gujarat	6.71	7.31	12.65	9/7/1970	5.40	06/10/2021 23	0	0	-
	13. Tapi Basin											
	Tapi	Surat	Gujarat	8.50	9.50	12.50	8/9/2006	7.50	12/10/2021 23	0	0	-
188	**14. West Flowing rivers from Tapi to Tadri**											
189	Damanganga	Vapi Town	Gujarat	18.20	19.20	23.76	8/3/2004	17.90	29/09/2021 05	0	0	-
190	Damanganga	Daman	Daman & Diu	2.60	3.40	4.00	8/3/2004	3.00	03/05/2021 13	0	0	-
	16. East flowing rivers between Mahanadi and Pennar											
191	Rushikuluya	Purushottampur	Odisha	15.83	16.83	19.65	11/4/1990	15.50	13/11/2021 23	0	0	-
192	Vamsadhara	Gunupur	Odisha	83.00	84.00	88.75	9/17/1980	82.27	14/09/2021 22	0	0	-
193	Vamsadhara	Kashinagar	Odisha	54.10	54.60	58.93	9/18/1980	54.20	15/09/2021 04	3	3	100.00
194	Nagavali	Srikakulam	Andhra Pradesh	10.17	10.80	14.53	5/12/1990	11.98	28/09/2021 11	10	3	30.00
	17 East flowing rivers between Pennar and Kanyakumari											
195	Vaigai	Madurai	Tamilnadu	131.50	132.50	134.76	11/17/1997	131.85	01/12/2021 09	10	10	100.00
	18. West flowing rivers of Kutch and Saurashtra including Luni											
196	Banas	Abu Road	Rajasthan	258.00	259.00	265.40	8/31/1973	258.20	22/09/2021 08	0	0	-
	19. West Flowing River Tadri to Kanyakumari											
197	Bharathapuzha	Kumbidi	Kerala	8.20	9.20	11.27	8/17/2018	7.63	13/10/2021 02	0	0	-
198	Periyar	Neeleswaram	Kerala	9.00	10.00	12.40	8/15/2018	4.64	12/10/2021 06	0	0	-
199	Pamba	Malakkara	Kerala	6.00	7.00	9.58	8/16/2018	7.10	17/10/2021 01	2	1	50.00
								Total Level Forecasts		***6670***	***6456***	96.79
								Total Inflow Forecasts		**3947**	**3520**	89.18
								Total Forecasts		**10617**	**9976**	93.96

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Sl.No.	Name of the river	Name of FF site	Name of State	FRL/PL (m)	Maximum Level -2021	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8	9
	1. Indus Basin							
	2 a. Ganga Basin							
1	Ganga	Dharmanagri Barrage	Uttar Pradesh	220.45	220.4	49	37	75.51
2	Ganga	Narora Barrage	Uttar Pradesh	180.61	179.07	42	40	95.24
3	Ramganga	Kalagarh Dam	Uttarakhand	365.3	398.18	2	0	-
4	Yamuna	Tajewala Weir	Haryana	334	334.32	0	0	-
5	Chambal	Gandhisagar Dam	Madhya Pradesh	399.9	399.83	3	1	33.33
6	Chambal	Rana Pratap Sagar	Rajasthan	352.81	352.64	0	0	-
7	Chambal	Kota Barrage	Rajasthan	260.3	260.06	0	0	-
8	Banas	Bisalpur Dam	Rajasthan	315.50	312.3	0	0	-
9	Kalisindh	Kalisindh Dam	Rajasthan	316	316	39	27	69.23
10	Parwan	Parwan Dam	Rajasthan	308.8	286.63	0	0	-
11	Gambhiri	Gambhiri Dam	Rajasthan	431.90	431.97	0	0	-
12	Gambhiri	Panchana Dam	Rajasthan	258.62	257.75	0	0	-
13	Mej	Gudha Dam	Rajasthan	305.87	306.05	0	0	-
14	Parwati	Parwati Dam	Rajasthan	308.15	305.87	0	0	-
15	Betwa	Rajghat Dam	Madhya Pradesh	371	371	10	5	50.00
16	Betwa	Matatilia Dam	Uttar Pradesh	308.46	308.46	8	4	50.00
17	Sharda	Banbasa	Uttarakhand	222.96	224.9	14	14	100.00
18	Ghaghra	Katerniaghat Dam	Uttar Pradesh	136.8	137.9	78	78	100.00
19	Sone	Bansagar Dam	Madhya Pradesh	341.65	340.42	7	3	42.86
20	Rihand	Rihand Dam	Uttar Pradesh	265.18	264.26	8	3	37.50
21	Khoranadi	Annaraj Dam	Jharkhand	252.44	NA	0	0	-
22	Goda Nala	Bhairwa Dam	Jharkhand	356.70	110.79	0	0	-
23	Sone	Indrapuri Barrage	Bihar	173	NA	0	0	-
24	Gandak	Gandak Barrage	Bihar	110.3	109.81	2	1	50.00

25	Baranadi	Amanat Barage	Jharkhand	274.39	NA	0	0	-
26	Jamunia	Batane Dam	Jharkhand	232.85	31.55	0	0	-
27	Kosi	Kosi Barrage	Bihar	74.69	75.74	0	0	-
28	Mayurakshi	Massanjore Dam	Jharkhand	121.31	117.93	16	15	93.75
29	Mayurakshi	Tilpara Barrage	West Bengal	62.79	61874	32	30	93.75
30	Ashra nadi	Sikatia Barrage	Jharkhand	170.10	162.78	0	0	-
31	Damodar	Tenughat Dam	Jharkhand	268.83	365.46	60	58	96.67
32	Barakar	Tilaiya Dam	Jharkhand	372.46	370.61	0	0	-
33	Konar	Konar Dam	Jharkhand	427.93	426.42	0	0	-
34	Damodar	Panchet Dam	Jharkhand	132.59	131.25	118	116	98.31
35	Barakar	Maithon Dam	Jharkhand	150.88	155.76	67	65	97.01
36	Damodar	Durgapur Barrage	West Bengal	64.47	640008	123	123	100.00
37	Anjanwa	Sundar Dam	Jharkhand	110.795	110.97	0	0	-
38	Kangsabati	Hinglow Dam	West Bengal	97.84	97.99	0	0	-
39	Kangsabati	Kangsabati Dam	West Bengal	134.11	133.24	45	39	86.67
	2 b Brahmaputra Basin							
40	Teesta	Teesta-III HEP Dam Cl	Sikkim	1585	1583.5	0	0	-
41	Teesta	Teesta V HEP Dam Sir	Sikkim	579	5750	0	0	-
42	Rongpo	Rongpo Dam	Sikkim	913.8	911.58	0	0	-
43	Rongli	Rongli Dam	Sikkim	913.8	910.86	0	0	-
44	Rangit	Rangit-III HEP Dam	Sikkim	640	639.59	0	0	-
	2 c Barak & Others							-
	3. Godavari Basin							-
45	Godavari	N M D Weir	Maharashtra	533.50	533.6	0	0	-
46	Mula	Mula Dam	Maharashtra	552.3	552.3	0	0	-
47	Godavari	Jaikwadi Dam	Maharashtra	463.91	4648.81	2	2	100.00
48	Sindhpana	Manjlegaon	Maharashtra	431.80	431.80	0	0	-
49	Puma	Yeldari Dam	Maharashtra	461.77	461.77	0	0	-
50	Karanja	Karanja Dam	Karnataka	584.15	584.15	0	0	-
51	Manjira	Singur Dam	Telangana	523.6	532.41	8	8	100.00
52	Manjira	Nizamsagar Dam	Telangana	428.24	520.88	9	9	100.00
53	Godavari	Sriram Sagar	Telangana	332.54	332.54	43	40	93.02
54	Kaddamvagu	Kaddam Dam	Telangana	213.21	213.36	4	3	75.00
55	Godavari	Sripada Yellampally Da	Telangana	148.00	148	48	46	95.83

56	Wainganga	Upper Wainganga Proj	Madhya Pradesh	519.38	519.38	0	0	-
57	Pench	Totladoh Project	Maharashtra	490	489.89	0	0	-
58	Wainganga	Goshikhurd Dam	Maharashtra	245.5	245.31	2	2	100.00
59	Wardha	Upper Wardha Project	Maharashtra	342.5	342.5	10	8	80.00
60	Penganga	Issapur/Upper Pengan	Maharashtra	441	441.02	6	6	100.00
61	Godavari	Laxmi Barrage	Telangana	100.00	99.3	64	60	93.75
62	Indravathi	Upper Indravathi Proje	Odisha	642	632.99	0	0	-
63	Kolab	Kolab Project	Odisha	858	852.09	0	0	-
64	Machhkund	Machhkund Project	Odisha	838.2	8829.57	0	0	-
65	Balimela	Balimela Project	Odisha	462.07	852.26	0	0	-
66	Godavari	Indirasagar(Polavaram	Andhra Pradesh	-	23.64	66	66	100.00
67	Koyna	Koyna Dam	Maharashtra	659.43	659.36	12	3	25.00
68	Warana	Warana Dam	Maharashtra	626.9	626.9	2	0	0.00
69	Pench	Pench Reservoir/Chau	Madhya Pradesh	625.75	625.75	0	0	-
70	Bawanthri	Bawanthadi Reservoir	Madhya Pradesh	344.4	343.9	0	0	-
	4. Krishna Basin							
71	Krishna	Hippargi Dam	Karnataka	531.4	528	37	37	100.00
72	Ghataprabha	Hidkal Dam	Karnataka	662.94	662.94	61	56	91.80
73	Krishna	Alamati Dam	Karnataka	519.6	519.6	72	67	93.06
74	Malaprabha	Malaprabha Dam	Karnataka	633.83	662.94	26	21	80.77
75	Krishna	Narayanpur Dam	Karnataka	492.25	492.25	51	48	94.12
76	Nira	Veer Dam	Maharashtra	579.85	589.54	3	2	66.67
77	Bhima	Ujjani Dam	Maharashtra	496.83	496.86	3	2	66.67
78	Krishna	Priyadarshini	Telangana	318.51	348.48	116	111	95.69
79	Tunga	Upper Tunga	Karnataka	588.24	662.94	118	107	90.68
80	Bhadra	Bhadra Dam	Karnataka	657.75	6657.31	65	57	87.69
81	Tungabhadra	Tungabhadra Dam	Karnataka	497.74	1632.65	129	117	90.70
82	Krishna	Singatalur Barrage	Karnataka	507	506.9	117	117	100.00
83	Tungabhadra	Sunkesula Barrage	Andhra Pradesh	292	291.92	73	71	97.26
84	Krishna	Srisailam Dam	Andhra Pradesh	269.75	269.75	131	126	96.18
85	Musi	Musi Project	Telangana	196.60	196.6	13	10	76.92
86	Krishna	Dr K L R S Pulichintala	Andhra Pradesh	53.34	53.1	194	179	92.27
87	Krishna	Prakasham Barrage	Andhra Pradesh	18.3	379.73	173	170	98.27
	5. Cauvery Basin							

88	Harangi	Harangi Dam	Karnataka	871.42	871.42	37	35	94.59
89	Hemavathy	Hemavathy Dam	Karnataka	890.63	890.63	58	54	93.10
90	Kabini	Kabini Dam	Karnataka	696.16	696.16	86	78	90.70
91	Cauvery	Krishnarajasagar	Karnataka	752.49	943.81	155	139	89.68
92	Cauvery	Mettur Dam	Tamilnadu	240.79	3190.65	139	129	92.81
93	Bhavani	Bhavanisagar Dam	Tamilnadu	280.42	280.37	25	12	48.00
94	Kodaganar	Kodaganar Dam	Tamilnadu	200.25	199.32	0	0	-
95	Cauvery	Grand Anicut	Tamilnadu	59.21	59.21	179	130	72.63
96	Cauvery	Upper Anicut	Tamilnadu	74.4	147.1	181	145	80.11
	6. Subarnarekha							
97	Subarnarekha	Getlasud Dam	Jharkhand	590.06	NA	0	0	-
98	Subernarekna	Chandil Dam	Jharkhand	189	182.9	29	9	31.03
99	Subarnarekha	Galudih Barrage	Jharkhand	94.5	94	252	220	87.30
	7. Brahmani and Baitarani							
100	Salandi	Salandi Dam	Odisha	82.3	78.7	1	1	100.00
101	Brahmani	Rengali Dam	Odisha	123.5	124.38	11	9	81.82
	8. Mahanadi Basin							
102	Mahanadi	Ravishankar Dam	Chattisgarh	348.7	347.3	0	0	-
103	Hasdeo	Bango Dam	Chattisgarh	359.66	359.41	0	0	-
104	Mahanadi	Hirakud Dam	Odisha	192.02	192.02	54	53	98.15
	9. Pennar Basin							
105	North Pennar	Somasila Dam	Andhra Pradesh	100.58	100.56	52	36	69.23
	10. Mahi Basin							
106	Mahi	Mahi Bajajsagar Dam	Rajasthan	281.5	281.5	0	0	-
107	Som Kamla	Som Kamla Amba Dan	Rajasthan	213.5	508.5	0	0	-
108	Mahi	Kadana Dam	Gujarat	127.71	127.71	0	0	-
109	Panam	Panam Dam	Gujarat	127.41	124.25	0	0	-
	11. Sabarmati Basin							
110	Sabarmati	Dharoi Dam	Gujarat	189.59	184.54	0	0	-
	12. Narmada Basin							
111	Narmada	Barna Dam	Madhya Pradesh	348.55	349.9	8	8	100.00
112	Narmada	Bargi Dam	Madhya Pradesh	422.76	422.8	7	7	100.00
113	Narmada	Tawa Dam	Madhya Pradesh	355.39	355.49	9	9	100.00
114	Narmada	Indira Sagar Dam	Madhya Pradesh	262.13	259.61	7	7	100.00

115	Narmada	Omkareshwar Dam	Madhya Pradesh	196.6	196.19	4	4	100.00
116	Narmada	Sardar Sarovar Dam	Gujarat	138.38	13016	0	0	-
	13. Tapi Basin							
117	Tapi	Hatnur Dam	Maharashtra	212.02	231.97	85	84	98.82
118	Tapi	Ukai Dam	Gujarat	105.16	105.31	72	70	97.22
	14. West Flowing rivers from Tapi to Tadri							
119	Damanganga	Madhuban Dam	Gujarat	79.86	79.9	14	14	100.00
	16. East flowing rivers between Mahanadi and Pennar							
120	Vamsadhara	Gotta Barrage	Andhra Pradesh	34.84	38.1	0	0	-
121	Nagavali	Thottapalli Reservoir S	Andhra Pradesh	105	104.61	0	0	-
122	Suwarnamukhi	Madduvalasa Reservoi	Andhra Pradesh	65	64.76	2	1	50.00
123	Nagavali	Narayanapuram Anicut	Andhra Pradesh	32.77	30.69	8	4	50.00
	17 East flowing rivers between Pennar and Kanyakumari							
124	Kosasthaliyar	Poondi Satyamurthy re	Tamilnadu	42.67	25.95	22	12	54.55
125	Adyar	Chembarampakkam	Tamilnadu	26.03	25.95	7	3	42.86
126	South Pennar	Sathnur Dam	Tamilnadu	222.2	282	4	3	75.00
127	Gomukhinadi	Gomukhi Dam	Tamilnadu	183.18	278.43	0	0	-
128	Periyar Odai	Wellington Dam	Tamilnadu	72.54	71.92	2	0	0.00
129	Vaigai	Vaigai Dam	Tamilnadu	279.20	279.1	54	33	61.11
	18. West flowing rivers of Kutch and Saurashtra including Luni							
130	Banas	Dantiwada Dam	Gujarat	184.1	170.7	0	0	-
	19. West Flowing River Tadri to Kanyakumari							
131	Periyar	Idduki Dam	Kerala	732.43	732	2	1	50.00
132	Edamalayar	Idamalayar	Kerala	169	1621.1	0	0	-
				Total Inflow Forecasts		***3947***	***3520***	**89.18**
				Total Level Forecasts		**6670**	**6456**	**96.79**
				Total Forecasts		**10617**	**9976**	**93.96**

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					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12
	Andhra Pradesh										
1	Sabari	Chinturu	41.50	43.00	44.91	8/18/2020	39.39	25/07/2021 11	0	0	-
2	Godavari	Kunavaram	37.74	39.24	51.30	8/16/1986	39.28	25/07/2021 10	12	12	100.00
3	Godavari	Rajahmundry	17.68	19.51	20.48	8/16/1986	16.31	10/09/2021 20	0	0	-
4	Godavari	Dowlaiswaram	14.25	16.08	18.36	8/16/1986	14.33	10/09/2021 17	3	3	100.00
5	Tungabhadra	Mantralayam	310.00	312.00	318.77	10/2/2009	311.75	22/11/2021 08	7	7	100.00
6	Pennar	Nellore Anicut	15.91	17.28	18.70	11/30/1982	19.57	20/11/2021 06	3	0	0.00
7	Godavari	Atreyapuram	14.00	15.50	18.36	8/22/2018	11.27	26/07/2021 00	0	0	-
8	Tungabhadra	Kurnool Town	273.00	274.00	281.22	10/2/2009	273.10	22/11/2021 08	0	0	-
9	Krishna	Avanigadda	9.00	11.00	11.57	10/5/2009	8.72	07/08/2021 00	0	0	-
10	Nagavali	Srikakulam	10.17	10.80	14.53	5/12/1990	11.98	28/09/2021 11	10	3	30.00
	Assam										
11	Brahmaputra	Dibrugarh	104.70	105.70	106.48	9/3/1998	105.71	29/08/2021 08	98	98	100.00
12	Brahmaputra	Neamatighat	84.54	85.54	87.37	7/11/1991	87.02	30/08/2021 00	111	111	100.00
13	Brahmaputra	Tezpur	64.23	65.23	66.59	8/27/1988	66.11	30/08/2021 19	48	48	100.00
14	Brahmaputra	Guwahati	48.68	49.68	51.46	7/21/2004	50.16	01/09/2021 05	15	15	100.00
15	Brahmaputra	Goalpara	35.27	36.27	37.43	7/31/1954	36.56	01/09/2021 12	30	30	100.00
16	Brahmaputra	Dhubri	27.62	28.62	30.37	7/18/2019	29.52	02/09/2021 03	112	112	100.00
17	Buridehing	Naharkatia	119.40	120.40	122.69	6/17/1973	119.22	20/11/2021 18	0	0	-
18	Buridehing	Khowang	101.11	102.11	104.16	9/2/2015	101.17	28/08/2021 18	2	2	100.00
19	Desang	Nanglamoraghat	93.46	94.46	96.49	9/6/1998	95.49	28/06/2021 23	25	25	100.00
20	Dikhow	Shivsagar	91.40	92.40	94.24	6/22/2020	91.97	30/08/2021 13	18	18	100.00
21	Subansiri	Badatighat	81.53	82.53	86.21	7/28/1972	83.08	30/08/2021 09	22	22	100.00
22	Dhansiri (S)	Golaghat	88.50	89.50	92.45	10/11/1986	87.82	09/09/2021 21	0	0	-
23	Dhansiri (S)	Numaligarh	77.42	78.42	80.16	8/2/2018	77.74	31/08/2021 00	2	2	100.00
24	Jiabharali	Jia-Bharali NT Road Crossing	76.00	77.00	78.50	7/26/2007	78.16	27/08/2021 10	509	506	99.41
25	Kopili	Kampur	59.50	60.50	61.79	7/20/2004	59.51	17/08/2021 09	1	1	100.00
26	Kopili	Dharamtul	55.00	56.00	58.09	7/21/2004	54.87	17/08/2021 22	0	0	-
27	Puthimari	Puthimari NH Crossing	50.81	51.81	55.08	8/31/2008	51.73	07/06/2021 23	26	25	96.15
28	Pagladiya	Pagladiya NT Road Crossing	51.75	52.75	55.45	7/8/2004	52.65	30/06/2021 19	23	23	100.00
29	Beki	Beki NH Crossing	44.10	45.10	46.20	8/4/2000	45.79	28/08/2021 16	196	196	100.00
30	Manas	Manas NH Crossing	47.81	48.42	50.08	9/15/1984	48.09	30/06/2021 17	9	9	100.00
31	Manas	Mathanguri	98.10	99.10	100.28	10/13/1973	95.90	28/08/2021 14	0	0	-
32	Sankosh	Golokganj	28.94	29.94	30.95	9/8/2007	29.91	27/08/2021 09	83	83	100.00
33	Barak	AP Ghat	18.83	19.83	21.84	8/1/1989	18.42	28/08/2021 11	0	0	-
34	Katakhal	Matizuri	19.27	20.27	22.73	9/10/2007	19.16	02/09/2021 08	0	0	-
35	Kushiyara	Karimganj	13.94	14.94	16.57	6/10/2010	14.70	22/07/2021 01	40	40	100.00
36	Barak	Badarpurghat	15.85	16.85	18.48	9/11/2007	15.43	28/08/2021 19	0	0	-
37	Subansiri	Choldhowaghat	99.43	100.43	101.31	7/27/1972	97.03	29/08/2021 12	0	0	-
38	Ranganadi	N H Crossing Ranganadi	93.81	94.81	95.92	7/2/1979	94.38	05/06/2021 22	13	13	100.00
39	Lohit	Dholla Bazaar	127.27	128.27	130.07	9/22/2012	126.00	27/08/2021 12	0	0	-

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					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12
40	Gaurang	Kokrajhar	41.85	42.85	43.60	8/20/2015	42.90	26/08/2021 18	36	36	100.00
	Arunachal Pradesh										
41	Noa-Dehing	Namsai	144.80	145.80	146.60	10/7/1979	144.77	21/05/2021 16	0	0	-
42	Siang	Yingkiang	302.00	303.00			274.48	28/08/2021 21	0	0	-
43	Siang	Passighat	152.96	153.96	157.54	6/11/2000	154.77	28/08/2021 23	49	49	100.00
	Bihar										
44	Ganga	Buxar	59.32	60.32	62.09	1948	61.19	14/08/2021 04	12	11	91.67
45	Ganga	Patna Dighaghat	49.45	50.45	52.52	8/23/1975	51.85	15/08/2021 07	30	29	96.67
46	Ganga	Patna Gandhighat	47.60	48.60	50.52	8/20/2016	50.45	15/08/2021 07	70	69	98.57
47	Ganga	Hathidah	40.76	41.76	43.17	8/21/2016	43.52	16/08/2021 11	77	76	98.70
48	Ganga	Munger	38.33	39.33	40.99	9/19/1976	40.15	17/08/2021 12	33	32	96.97
49	Ganga	Bhagalpur	32.68	33.68	34.72	8/26/2016	34.86	18/08/2021 06	46	44	95.65
50	Ganga	Kahalgaon	30.09	31.09	32.87	9/17/2003	32.63	18/08/2021 12	86	85	98.84
51	Ghaghra	Darauli	59.82	60.82	61.74	8/29/1998	61.32	04/09/2021 09	113	112	99.12
52	Ghaghra	Gangpur Siswan	56.04	57.04	58.01	9/18/1983	57.49	17/08/2021 01	74	73	98.65
53	Ghaghra	Chhappra	52.68	53.68	54.59	9/3/1982	53.09	15/08/2021 06	6	6	100.00
54	Gandak	Chatia	68.15	69.15	70.04	7/26/2002	69.37	31/08/2021 22	24	24	100.00
55	Gandak	Rewaghat	53.41	54.41	55.46	7/24/2020	55.30	02/09/2021 13	75	75	100.00
56	Gandak	Hazipur	49.32	50.32	50.93	1948	50.51	15/08/2021 11	18	18	100.00
57	Burhi Gandak	Lalbeghiaghat	62.20	63.20	67.09	7/30/1975	64.30	06/07/2021 00	43	43	100.00
58	Burhi Gandak	Muzzafarpur Sikandarpur	51.53	52.53	54.29	8/15/1987	53.63	11/07/2021 01	58	58	100.00
59	Burhi Gandak	Samastipur	45.02	46.02	49.38	8/15/1987	48.31	13/07/2021 09	64	64	100.00
60	Burhi Gandak	Rosera	41.63	42.63	46.56	8/2/2020	45.84	13/07/2021 05	94	93	98.94
61	Burhi Gandak	Khagaria	35.58	36.58	39.22	1976	39.00	17/08/2021 08	118	117	99.15
62	Bagmati	Benibad	47.68	48.68	50.01	7/12/2004	49.99	31/08/2021 04	129	123	95.35
63	Bagmati	Hayaghat	44.72	45.72	48.96	8/14/1987	47.18	01/09/2021 06	77	76	98.70
64	Bagmati	Dheng Bridge	70.00	71.00	73.00	8/13/2017	72.31	03/07/2021 19	60	60	100.00
65	Adhwara Group	Kamtaul	49.00	50.00	52.99	8/12/1987	51.20	08/07/2021 18	95	95	100.00
66	Adhwara Group	Ekmighat	45.94	46.94	49.52	7/12/2004	48.09	02/09/2021 03	92	89	96.74
67	Adhwara	Sonebarsha	80.85	81.85	83.20	7/3/1999	81.44	30/06/2021 15	6	6	100.00
68	Kamla Balan	Jainagar	66.75	67.75	71.35	9/21/2016	69.35	27/08/2021 16	459	439	95.64
69	Bagmati	Runisaidpur	54.00	55.00	58.15	8/14/2017	57.36	04/07/2021 06	86	85	98.84
70	Parwan	Araria	46.00	47.00	49.40	8/14/2017	48.24	23/10/2021 13	176	176	100.00
71	Kamla Balan	Jhanjarpur	49.00	50.00	53.11	7/14/2019	52.81	28/08/2021 22	312	302	96.79
72	Kosi	Basua	46.75	47.75	49.24	8/13/2017	47.73	04/07/2021 22	177	176	99.44
73	Kosi	Baltara	32.85	33.85	36.40	8/15/1987	35.81	02/09/2021 05	119	118	99.16
74	Kosi	Kursela	29.00	30.00	32.10	9/7/1982	31.83	18/08/2021 17	101	100	99.01
75	Mahananda	Dhengraghat	34.65	35.65	38.20	8/14/2017	36.90	30/08/2021 02	63	62	98.41
76	Mahananda	Jhawa	30.40	31.40	34.07	8/14/2017	31.86	30/08/2021 15	75	74	98.67

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					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12
77	Mahananda	Taibpur	65.00	66.00	67.22	7/28/2016	66.88	20/10/2021 20	31	30	96.77
78	Gandak	Dumariaghat	61.22	62.22	64.36	7/24/2020	63.83	01/09/2021 11	129	129	100.00
79	Burhigandak	Ahirwalia	58.62	59.62	61.17	6/2/2014	60.32	08/07/2021 08	22	22	100.00
80	Sone	Inderpuri	107.20	108.20	108.85	8/23/1975	104.88	01/08/2021 08	0	0	-
81	Sone	Koelwar	54.52	55.52	58.88	7/20/1971	53.90	14/08/2021 15	0	0	-
82	Sone	Maner	51.00	52.00	53.79	9/10/1976	53.45	15/08/2021 03	20	20	100.00
83	PunPun	Sripalpur	49.60	50.60	53.91	9/18/1976	52.69	04/08/2021 09	45	36	80.00
	Chhattisgarh										
84	Indravathi	Jagdalpur	539.50	540.80	544.68	7/9/1973	537.93	18/08/2021 18	0	0	-
	Daman & Diu										
85	Damanganga	Daman	2.60	3.40	4.00	8/3/2004	3.00	03/05/2021 13	0	0	-
	Gujarat										
86	Sabarmati	Ahmedabad Shubhash	44.09	45.34	47.45	8/19/2006	41.88	22/11/2021 18	0	0	-
87	Mahi	Wanakbori	71.93	74.98	76.10	8/12/2006	68.96	29/09/2021 00	0	0	-
88	Narmada	Garudeswar	30.48	31.09	41.65	9/6/1970	16.03	16/06/2021 07	0	0	-
89	Narmada	Bharuch	6.71	7.31	12.65	9/7/1970	5.40	06/10/2021 23	0	0	-
90	Tapi	Surat	8.50	9.50	12.50	8/9/2006	7.50	12/10/2021 23	0	0	-
91	Damanganga	Vapi Town	18.20	19.20	23.76	8/3/2004	17.90	29/09/2021 05	0	0	-
	Haryana										
92	Yamuna	Karnal Bridge	248.80	249.50	250.07	6/17/2013	247.91	29/07/2021 12	0	0	-
	Himachal Pradesh										
93	Yamuna	Paonta Sahib	383.50	384.50	384.60	9/5/1995	381.30	28/07/2021 21	0	0	-
	Jammu & Kashmir										
94	Jhelum	Rammunshibagh	1585.53	1586.45	1588.99	9/8/2014	1584.53	24/10/2021 12	1	0	0.00
95	Jhelum	Sangam	1590.30	1592.00	1595.00	9/6/2014	1589.59	24/10/2021 05	0	0	-
96	Jhelum	Safapora	1580.00	1580.80	1582.10	9/9/2014	1579.24	01/08/2021 00	0	0	-
	Jharkhand										-
97	Ganga	Sahibganj	26.25	27.25	30.91	1998	28.90	18/08/2021 16	80	80	100.00
98	Subarnarekha	Jamshedpur	122.50	123.50	129.82	10/12/1973	123.30	27/05/2021 19	3	2	66.67
	Karnataka										
99	Bhima	Deongaon	402.00	404.50	409.00	10/18/2020	399.35	13/10/2021 08	0	0	-
	Kerala										
100	Periyar	Neeleswaram	9.00	10.00	12.40	8/15/2018	4.64	12/10/2021 06	0	0	-
101	Bharathapuzha	Kumbidi	8.20	9.20	11.27	8/17/2018	7.63	13/10/2021 02	0	0	-

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Sl. No.	Name of the river	Name of FF site	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2021				
					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8	9	10	11	12
102	Pamba	Malakkara	6.00	7.00	9.58	8/16/2018	7.10	17/10/2021 01	2	1	50.00
	Madhya Pradesh										
103	Narmada	Mandla	437.20	437.80	439.40	7/15/1974	436.42	25/07/2021 07	0	0	-
104	Narmada	Hoshangabad	292.80	293.80	301.33	8/27/1972	287.00	17/09/2021 07	0	0	-
	Maharashtra										
105	Godavari	Kopergaon	490.90	493.68	499.17	1969	490.55	29/09/2021 22	0	0	-
106	Godavari	Gangakhed	374.00	375.00	377.57	1947	374.40	08/09/2021 22	1	1	100.00
107	Godavari	Nanded	353.00	354.00	357.10	8/6/2006	353.10	30/09/2021 05	2	1	50.00
108	Wainganga	Bhandara	245.50	245.70	250.90	9/16/2005	245.27	31/12/2021 18	0	0	-
109	Wainganga	Pauni	226.73	227.73	237.12	9/7/1994	225.60	21/09/2021 19	0	0	-
110	Wardha	Balharsha	171.50	174.00	176.45	8/14/1986	169.86	08/09/2021 18	0	0	-
111	Krishna	Arjunwad	542.07	543.29	544.28	8/9/2019	543.96	26/07/2021 02	18	11	61.11
112	Godavari	Nasik	558.10	559.60	563.51	8/4/2019	558.11	29/09/2021 13	1	0	0.00
	NCT Delhi										
113	Yamuna	Delhi Rly Bridge	204.50	205.33	207.49	9/6/1978	205.60	30/07/2021 22	27	19	70.37
114	Sahibi	Dhansa	211.44	212.44	213.58	8/6/1977	210.95	17/09/2021 06	0	0	-
	Odisha										
115	Subarnarekha	Rajghat	9.45	10.36	12.69	6/19/2008	10.56	17/09/2021 15	11	4	36.36
116	Burhabalang	NH_5 _Road Bridge	7.21	8.13	9.50	10/12/1973	8.08	16/09/2021 17	6	2	33.33
117	Baitarni	Anandpur	37.44	38.36	41.35	9/23/2011	39.38	27/05/2021 17	3	0	0.00
118	Baitarni	Akhuapada	17.83	17.83	21.95	8/16/1960	19.00	28/05/2021 02	13	10	76.92
119	Brahmani	Jenapur	22.00	23.00	24.78	8/20/1975	22.64	14/09/2021 22	2	1	50.00
120	Rishikulya	Purushottampur	15.83	16.83	19.65	11/4/1990	15.50	13/11/2021 23	0	0	-
121	Vamsadhara	Gunupur	83.00	84.00	88.75	9/17/1980	82.27	14/09/2021 22	0	0	-
122	Vamsadhara	Kashinagar	54.10	54.60	58.93	9/18/1980	54.20	15/09/2021 04	3	3	100.00
123	Mahanadi	Naraj	25.41	26.41	27.61	8/31/1982	25.98	18/09/2021 11	10	10	100.00
124	Mahanadi	Alipingal Devi	10.85	11.76	13.11	9/11/2011	9.47	18/09/2021 16	0	0	-
125	Mahanadi	Nimapara	9.85	10.76	11.60	8/31/1982	7.72	19/09/2021 06	0	0	-
126	Jalaka	Mathani Road Bridge	5.50	5.50	7.05	8/27/2020	7.31	22/09/2021 10	86	77	89.53
	Rajasthan										
127	Banas	Abu Road	258.00	259.00	265.40	8/31/1973	258.20	22/09/2021 08	0	0	-
128	Chambal	Dholpur	129.79	130.79	145.54	8/23/1996	144.70	04/08/2021 19	33	14	42.42
129	Chambal	Kota City	239.00	242.00	248.68	9/16/2019	242.10	04/08/2021 11	1	1	100.00
130	Chambal	Manderial	164.00	165.00	169.96	8/23/1996	169.18	04/08/2021 08	18	18	100.00
	Sikkim										
131	Teesta	Malli Bazaar	222.30	222.40	225.25		218.74	20/10/2021 05	0	0	-
132	Teesta	Joretahang(Rothak)	350.60	351.60	353.20		349.12	19/06/2021 01	0	0	-
133	Teesta	Singtam	377.07	377.57	379.17		375.65	20/10/2021 00	0	0	-

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Sl. No.	Name of the river	Name of FF site	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2021		No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12
	Tamilnadu										-
134	Cauvery	Musiri(Srirangam)	82.11	83.11	86.98	11/25/2005	82.84	20/11/2021 07	9	8	88.89
135	Cauvery	Kodumudi (Erode)	125.50	126.50	128.14	8/17/2018	125.63	19/11/2021 16	2	1	50.00
136	Bhavani	Savandapur(Bhavani)	184.50	185.50	187.75	8/17/2018	183.26	19/11/2021 10	0	0	-
137	Vaigai	Madurai	131.50	132.50	134.76	11/17/1997	131.85	01/12/2021 09	10	10	100.00
	Telangana										-
138	Godavari	Kaleswaram	103.50	104.75	107.05	8/15/1986	105.03	23/07/2021 18	0	0	-
139	Godavari	Eturunagaram	73.32	75.82	77.66	8/24/1990	74.12	24/07/2021 07	5	4	80.00
140	Godavari	Dummagudem	53.00	55.00	60.25	8/15/1986	53.93	24/07/2021 18	3	3	100.00
141	Godavari	Bhadrachalam	45.72	48.77	55.66	8/16/1986	47.42	24/07/2021 21	9	7	77.78
142	Wardha	Sirpur Town	159.95	160.95	161.34	8/18/2018	159.84	09/09/2021 02	1	1	100.00
	Tripura										-
143	Manu	Kailashahar	24.34	25.34	25.95	6/13/2018	23.07	29/08/2021 21	0	0	-
144	Gumti	Sonamura	11.50	12.50	14.42	7/23/1993	11.04	01/07/2021 20	0	0	-
	Uttar Pradesh										-
145	Ganga	Kannauj	124.97	125.97	126.78	9/27/2010	125.71	26/10/2021 19	6	6	100.00
146	Ganga	Ankinghat	123.00	124.00	124.49	9/28/2010	123.70	26/10/2021 15	13	13	100.00
147	Ganga	Kanpur	112.00	113.00	114.08	9/29/2010	113.04	28/10/2021 06	8	8	100.00
148	Ganga	Dalmau	98.36	99.36	99.84	8/3/1973	98.91	28/10/2021 18	6	6	100.00
149	Ganga	Phaphamau	83.73	84.73	87.98	9/8/1978	86.09	12/08/2021 04	8	8	100.00
150	Ganga	Allahabad Chhatnag	83.73	84.73	88.03	9/8/1978	85.36	12/08/2021 07	6	6	100.00
151	Ganga	Mirzapur	76.72	77.72	80.34	9/9/1978	78.40	12/08/2021 07	7	7	100.00
152	Ganga	Varanasi	70.26	71.26	73.90	9/9/1978	72.32	12/08/2021 11	9	9	100.00
153	Ganga	Ghazipur	62.10	63.10	65.22	9/9/1978	64.68	13/08/2021 07	11	11	100.00
154	Ganga	Ballia	56.62	57.62	60.39	8/25/2016	60.25	14/08/2021 10	32	32	100.00
155	Ramganga	Moradabad	189.60	190.60	192.88	9/21/2010	190.17	22/10/2021 09	14	14	100.00
156	Ramganga	Bareilly	162.70	163.70	162.88	8/6/1978	162.21	23/10/2021 05	2	2	100.00
157	Yamuna	Mawi	231.00	231.50	232.75	6/18/2013	230.41	30/07/2021 05	0	0	-
158	Yamuna	Mathura	165.20	166.00	169.73	9/8/1978	165.12	01/08/2021 07	5	1	20.00
159	Yamuna	Agra	151.40	152.40	154.76	9/9/1978	149.78	28/09/2021 17	0	0	-
160	Yamuna	Etawah	120.92	121.92	126.13	9/11/1978	123.04	06/08/2021 14	11	8	72.73
161	Yamuna	Auraiya	112.00	113.00	118.19	8/25/1996	118.51	06/08/2021 16	13	9	69.23
162	Yamuna	Kalpi	107.00	108.00	112.98	8/25/1996	112.87	09/08/2021 15	13	9	69.23
163	Yamuna	Hamirpur	102.63	103.63	108.59	9/12/1983	107.17	09/08/2021 01	19	9	47.37
164	Yamuna	Chillaghat	99.00	100.00	105.16	9/6/1978	102.47	09/08/2021 21	14	11	78.57
165	Yamuna	Naini	83.74	84.74	87.99	9/8/1978	85.85	12/08/2021 10	12	11	91.67
166	Betwa	Mohana	121.66	122.66	133.35	9/11/1983	119.28	08/08/2021 11	1	1	100.00
167	Ken	Banda	103.00	104.00	113.29	7/7/2005	102.78	09/08/2021 19	1	1	100.00
168	Gomati	Lucknow HanumanSetu	108.50	109.50	110.85	9/10/1971	105.98	10/11/2021 13	0	0	-
169	Gomati	Jaunpur	73.07	74.07	77.74	9/22/1971	72.77	22/09/2021 12	0	0	-
170	SAI	Rae-Bareli	100.00	101.00	104.81	9/17/1982	100.47	18/09/2021 05	5	5	100.00
171	Ghaghra	Elgin Bridge	105.07	106.07	107.62	8/18/2014	106.85	22/10/2021 10	121	119	98.35
172	Ghaghra	Ayodhya	91.73	92.73	94.01	10/11/2009	93.30	23/10/2021 13	110	109	99.09
173	Ghaghra	Turtipar	63.01	64.01	66.00	8/28/1998	65.08	03/09/2021 05	117	117	100.00
174	Rapti	Balrampur	103.62	104.62	105.54	8/15/2017	105.10	30/08/2021 02	43	42	97.67
175	Rapti	Bansi	83.90	84.90	85.88	8/20/2017	85.95	03/09/2021 08	32	32	100.00
176	Rapti	Gorakhpur Birdghat	73.98	74.98	77.54	8/23/1998	77.32	03/09/2021 11	63	63	100.00
177	Rapti	Kakardhari	130.00	131.00	132.37	8/15/2014	130.01	15/08/2021 18	0	0	-
178	Gandak	Khadda	95.00	96.00	97.50	7/23/2002	96.09	27/08/2021 15	201	201	100.00

Statewise Flood Forecasting Information In India during Flood Season 2021

Sl. No.	Name of the river	Name of FF site	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2021				
					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8	9	10	11	12
179	Ganga	Fathegarh	136.60	137.60	138.14	9/26/2010	137.66	24/10/2021 16	78	78	100.00
180	Ganga	Dabri	136.30	137.30	139.70	9/28/1983	138.39	26/10/2021 04	13	13	100.00
181	Ganga	Garhmuktheswar	198.33	199.33	199.90	9/23/2010	198.76	21/06/2021 14	52	50	96.15
182	Ganga	Kachla Bridge	161.00	162.00	162.79	9/24/2010	162.79	23/10/2021 01	126	125	99.21
183	Betwa	Shahjina	103.54	104.54	108.67	9/12/1983	106.70	09/08/2021 01	13	10	76.92
	Uttarakhand										-
184	Mandakini	Ganganagar	803.00	804.00	801.92	6/26/2015	800.85	20/05/2021 18	0	0	-
185	Alaknanda	Srinagar	535.00	536.00	537.90	6/17/2013	536.55	19/06/2021 06	6	2	33.33
186	Ganga	Rishikesh	339.50	340.50	341.72	9/5/1995	340.70	20/06/2021 04	6	3	50.00
187	Ganga	Haridwar	293.00	294.00	296.30	9/19/2010	294.56	19/10/2021 12	7	6	85.71
	West Bengal										
188	Ganga	Farakka	21.25	22.25	25.14	9/7/1998	24.00	19/08/2021 13	170	166	97.65
189	Mayurakshi	Narayanpur	26.86	27.86	29.69	9/27/1995	25.98	01/10/2021 21	1	1	100.00
190	Ajoy	Gheropara	38.42	39.42	43.94	9/27/1978	42.00	01/10/2021 01	2	2	100.00
191	Mundeswari	Harinkhola	11.80	12.80	14.60	7/28/2017	14.22	01/10/2021 16	8	8	100.00
192	Kangsabati	Mohanpur	24.73	25.73	29.87	9/2/1978	24.50	15/09/202121	0	0	-
193	Raidak-I	Tufanganj	34.22	35.30	36.50	8/12/2017	34.40	27/08/2021 08	3	3	100.00
194	Torsa	Hasimara	116.30	116.90	118.50	7/13/1996	116.86	20/10/2021 07	3	3	100.00
195	Torsa	Ghugumari	39.80	40.41	41.46	8/3/2000	40.50	20/10/2021 17	34	31	91.18
196	Jaldhaka	NH-31	80.00	80.90	81.33	8/28/1972	80.10	20/08/2021 13	8	8	100.00
197	Jaldhaka	Mathabanga	47.70	48.20	49.85	9/7/2007	48.16	30/06/2021 13	9	7	77.78
198	Tista	Domohani	85.65	85.95	89.30	10/14/1968	86.65	20/10/2021 07	42	37	88.10
199	Tista	Mekhliganj	65.45	65.95	66.45	7/13/1996	66.62	20/10/2021 11	8	8	100.00
							Total Level Forecasts		**6670**	**6456**	**96.79**
							Total Inflow Forecast		**3947**	**3520**	**89.18**
							Total Forecast		**10617**	**9976**	**93.96**

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Sl.No.	Name of the river	Name of FF site	FRL/PL (m)	Maximum Level (m)	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8
	Andhra Pradesh						
1	Godavari	Indirasagar(Polavaram)	-	23.64	66	66	100.00
2	Tungabhadra	Sunkesula Barrage	292	291.92	73	71	97.26
3	Krishna	Srisailam Dam	269.75	269.75	131	126	96.18
4	Krishna	Dr K L R S Pulichintala Dam	53.34	53.1	194	179	92.27
5	Krishna	Prakasham Barrage	18.3	379.73	173	170	98.27
6	North Pennar	Somasila Dam	100.58	100.56	52	36	69.23
7	Vamsadhara	Gotta Barrage	34.84	38.1	0	0	-
8	Nagavali	Thottapalli Reservoir Scheme	105	104.61	0	0	-
9	Suwarnamukhi	Madduvalasa Reservoir	65	64.76	2	1	50.00
10	Nagavali	Narayanapuram Anicut	32.77	30.69	8	4	50.00
	Assam						
	Arunachal Pradesh						
	Bihar						
11	Sone	Indrapuri Barrage	173	NA	0	0	-
12	Gandak	Gandak Barrage	110.3	109.81	2	1	50.00
13	Kosi	Kosi Barrage	74.69	75.74	0	0	-
	Chhattisgarh						
14	Mahanadi	Ravishankar Dam	348.7	347.3	0	0	-
15	Hasdeo	Bango Dam	359.66	359.41	0	0	-
	Daman & Diu						
	Gujarat						
16	Mahi	Kadana Dam	127.71	127.71	0	0	-
17	Panam	Panam Dam	127.41	124.25	0	0	-
18	Sabarmati	Dharoi Dam	189.59	184.54	0	0	-
19	Narmada	Sardar Sarovar Dam	138.38	13016	0	0	-
20	Tapi	Ukai Dam	105.16	105.31	72	70	97.22
21	Damanganga	Madhuban Dam	79.86	79.9	14	14	100.00

22	Banas	Dantiwada Dam	184.1	170.7	0	0	-
	Haryana						
23	Yamuna	Tajewala Weir	334	334.32	0	0	-
	Himachal Pradesh						
	Jammu & Kashmir						
	Jharkhand						
24	Khoranadi	Annaraj Dam	252.44	NA	0	0	-
25	Goda Nala	Bhairwa Dam	356.70	110.79	0	0	-
26	Baranadi	Amanat Barage	274.39	NA	0	0	-
27	Jamunia	Batane Dam	232.85	31.55	0	0	-
28	Mayurakshi	Massanjore Dam	121.31	117.93	16	15	93.75
29	Ashra nadi	Sikatia Barrage	170.10	162.78	0	0	-
30	Damodar	Tenughat Dam	268.83	365.46	60	58	96.67
31	Barakar	Tilaiya Dam	372.46	370.61	0	0	-
32	Konar	Konar Dam	427.93	426.42	0	0	-
33	Damodar	Panchet Dam	132.59	131.25	118	116	98.31
34	Barakar	Maithon Dam	150.88	155.76	67	65	97.01
35	Anjanwa	Sundar Dam	110.795	110.97	0	0	-
36	Subarnarekha	Getlasud Dam	590.06	NA	0	0	-
37	Subernarekna	Chandil Dam	189	182.9	29	9	31.03
38	Subarnarekha	Galudih Barrage	94.5	94	252	220	87.30
	Karnataka						
39	Karanja	Karanja Dam	584.15	584.15	0	0	-
40	Krishna	Hippargi Dam	531.4	528	37	37	100.00
41	Ghataprabha	Hidkal Dam	662.94	662.94	61	56	91.80
42	Krishna	Alamati Dam	519.6	519.6	72	67	93.06
43	Malaprabha	Malaprabha Dam	633.83	662.94	26	21	80.77
44	Krishna	Narayanpur Dam	492.25	492.25	51	48	94.12
45	Tunga	Upper Tunga	588.24	662.94	118	107	90.68
46	Bhadra	Bhadra Dam	657.75	6657.31	65	57	87.69
47	Tungabhadra	Tungabhadra Dam	497.74	1632.65	129	117	90.70
48	Krishna	Singatalur Barrage	507	506.9	117	117	100.00
49	Harangi	Harangi Dam	871.42	871.42	37	35	94.59
50	Hemavathy	Hemavathy Dam	890.63	890.63	58	54	93.10

51	Kabini	Kabini Dam	696.16	696.16	86	78	90.70
52	Cauvery	Krishnarajasagar	752.49	943.81	155	139	89.68
	Kerala						
53	Periyar	Idduki Dam	732.43	732	2	1	50.00
54	Edamalayar	Idamalayar	169	1621.1	0	0	-
	Madhya Pradesh						
55	Chambal	Gandhisagar Dam	399.9	399.83	3	1	33.33
56	Betwa	Rajghat Dam	371	371	10	5	50.00
57	Sone	Bansagar Dam	341.65	340.42	7	3	42.86
58	Wainganga	Upper Wainganga Project	519.38	519.38	0	0	-
59	Pench	Pench Reservoir/Chaurai/Ma	625.75	625.75	0	0	-
60	Bawanthri	Bawanthadi Reservoir	344.4	343.9	0	0	-
61	Narmada	Barna Dam	348.55	349.9	8	8	100.00
62	Narmada	Bargi Dam	422.76	422.8	7	7	100.00
63	Narmada	Tawa Dam	355.39	355.49	9	9	100.00
64	Narmada	Indira Sagar Dam	262.13	259.61	7	7	100.00
65	Narmada	Omkareshwar Dam	196.6	196.19	4	4	100.00
	Maharashtra						
66	Godavari	N M D Weir	533.50	533.6	0	0	-
67	Mula	Mula Dam	552.3	552.3	0	0	-
68	Godavari	Jaikwadi Dam	463.91	4648.81	2	2	100.00
69	Sindhpana	Manjlegaon	431.80	431.80	0	0	-
70	Puma	Yeldari Dam	461.77	461.77	0	0	-
71	Pench	Totladoh Project	490	489.89	0	0	-
72	Wainganga	Goshikhurd Dam	245.5	245.31	2	2	100.00
73	Wardha	Upper Wardha Project	342.5	342.5	10	8	80.00
74	Penganga	Issapur/Upper Penganga Pro	441	441.02	6	6	100.00
75	Koyna	Koyna Dam	659.43	659.36	12	3	25.00
76	Warana	Warana Dam	626.9	626.9	2	0	0.00
77	Nira	Veer Dam	579.85	589.54	3	2	66.67
78	Bhima	Ujjani Dam	496.83	496.86	3	2	66.67
79	Tapi	Hatnur Dam	212.02	231.97	85	84	98.82
	NCT Delhi						
	Odisha						

80	Indravathi	Upper Indravathi Project	642	632.99	0	0	-
81	Kolab	Kolab Project	858	852.09	0	0	-
82	Machhkund	Machhkund Project	838.2	8829.57	0	0	-
83	Balimela	Balimela Project	462.07	852.26	0	0	-
84	Salandi	Salandi Dam	82.3	78.7	1	1	100.00
85	Brahmani	Rengali Dam	123.5	124.38	11	9	81.82
86	Mahanadi	Hirakud Dam	192.02	192.02	54	53	98.15
	Rajasthan						
87	Chambal	Rana Pratap Sagar	352.81	352.64	0	0	-
88	Chambal	Kota Barrage	260.3	260.06	0	0	-
89	Banas	Bisalpur Dam	315.50	312.3	0	0	-
90	Kalisindh	Kalisindh Dam	316	316	39	27	69.23
91	Parwan	Parwan Dam	308.8	286.63	0	0	-
92	Gambhiri	Gambhiri Dam	431.90	431.97	0	0	-
93	Gambhiri	Panchana Dam	258.62	257.75	0	0	-
94	Mej	Gudha Dam	305.87	306.05	0	0	-
95	Parwati	Parwati Dam	308.15	305.87	0	0	-
96	Mahi	Mahi Bajajsagar Dam	281.5	281.5	0	0	-
97	Som Kamla	Som Kamla Amba Dam	213.5	508.5	0	0	-
	Sikkim						
98	Teesta	Teesta-III HEP Dam Chungta	1585	1583.5	0	0	-
99	Teesta	Teesta V HEP Dam Singtam	579	5750	0	0	-
100	Rongpo	Rongpo Dam	913.8	911.58	0	0	-
101	Rongli	Rongli Dam	913.8	910.86	0	0	-
102	Rangit	Rangit-III HEP Dam	640	639.59	0	0	-
	Tamilnadu						
103	Cauvery	Mettur Dam	240.79	3190.65	139	129	92.81
104	Bhavani	Bhavanisagar Dam	280.42	280.37	25	12	48.00
105	Kodaganar	Kodaganar Dam	200.25	199.32	0	0	-
106	Cauvery	Grand Anicut	59.21	59.21	179	130	72.63
107	Cauvery	Upper Anicut	74.4	147.1	181	145	80.11
108	Kosasthaliyar	Poondi Satyamurthy reservoi	42.67	25.95	22	12	54.55
109	Adyar	Chembarampakkam	26.03	25.95	7	3	42.86
110	South Pennar	Sathnur Dam	222.2	282	4	3	75.00

111	Gomukhinadi	Gomukhi Dam	183.18	278.43	0	0	-
112	Periyar Odai	Wellington Dam	72.54	71.92	2	0	0.00
113	Vaigai	Vaigai Dam	279.20	279.1	54	33	61.11
	Telangana						
114	Manjira	Singur Dam	523.6	532.41	8	8	100.00
115	Manjira	Nizamsagar Dam	428.24	520.88	9	9	100.00
116	Godavari	Sriram Sagar	332.54	332.54	43	40	93.02
117	Kaddamvagu	Kaddam Dam	213.21	213.36	4	3	75.00
118	Godavari	Sripada Yellampally Dam	148.00	148	48	46	95.83
119	Godavari	Laxmi Barrage	100.00	99.3	64	60	93.75
120	Krishna	Priyadarshini	318.51	348.48	116	111	95.69
121	Musi	Musi Project	196.60	196.6	13	10	76.92
	Tripura						
	Uttar Pradesh						
122	Ganga	Dharmanagri Barrage	220.45	220.4	49	37	75.51
123	Ganga	Narora Barrage	180.61	179.07	42	40	95.24
124	Betwa	Matatilia Dam	308.46	308.46	8	4	50.00
125	Ghaghra	Katerniaghat Dam	136.8	137.9	78	78	100.00
126	Rihand	Rihand Dam	265.18	264.26	8	3	37.50
	Uttarakhand						
127	Ramganga	Kalagarh Dam	365.3	398.18	2	0	0.00
128	Sharda	Banbasa	222.96	224.9	14	14	100.00
	West Bengal						
129	Mayurakshi	Tilpara Barrage	62.79	61874	32	30	93.75
130	Damodar	Durgapur Barrage	64.47	640008	123	123	100.00
131	Kangsabati	Hinglow Dam	97.84	97.99	0	0	-
132	Kangsabati	Kangsabati Dam	134.11	133.24	45	39	86.67
			Total Inflow Forecast		**3947**	**3520**	**89.18**
			Total Level Forecast		**6670**	**6456**	**96.79**
			Total Forecast		**10617**	**9976**	**93.96**

Extreme Flood

Sl. No.	State	District	River	Station	Period	
					From	To
1	Bihar	Patna	Ganga	Hatidah	13/08/2021	19/08/2021
2		Bhagalpur	Ganga	Bhagalpur	16/08/2021	19/08/2021
3	Uttar Pradesh	Auraiya	Yamuna	Auraiya	6/8/2021	7/8/2021
4		Buduan	Ganga	Kachlabridge	23/10/2021	23/10/2021
5		Siddarthnagar	Rapti	Bansi	2/9/2021	4/9/2021
6	Odisha	Balasore	Jalaka	Mathani Road Bridge	22/09/2021	22/09/2021
7	West Bengal	Coochbehar	Teesta	Mekhliganj(R/B)	20/10/2021	20/10/2021
8	Andhra Pradesh	Nellore	Pennar	Nellore Anicut	20/11/2021	20/11/2021

Severe Flood

Sl. No.	State	District	River	Station
1	Arunachal Pradesh	East Siang	Siang	Passighat
2	Assam	Sonitpur	Jia-Bharali	N T Road Crossing
3		Jorhat	Brahmaputra	Neamatighat
4		Sivasagar	Desang	Nanglamoraghat
5		Barpeta	Beki	Beki Rd Bridge
6		Goalpara	Brahmaputra	Goalpara
7		Dhubri	Brahmaputra	Dhubri
8		Sonitpur	Brahmaputra	Tezpur
9		Kamrup	Brahmaputra	Guwahati (DC Court)
10		Kokrajhar	Gaurang	Kokrajhar
11		Dibrugarh	Brahmaputra	Dibrugarh
12		Lakhimpur	Subansiri	Badatighat
13	Odisha	Keonjar	Baitarni	Anandpur
14		Bhadrak	Baitarni	Akhuapada
15		Balasore	Subarnarekha	Rajghat
16		Madhubani	Kamalabalan	Jainagar
17		Gopalganj	Gandak	Dumariaghat
18		Muzzafarpur	Gandak	Rewaghat
19		Samastipur	Burhi Gandak	Rosera
20		Sitamarhi	Bagmati	Dheng Bridge
21		Araria	Parwan	Araria
22		Darbhanga	Adhwara Group	Ekmighat
23		Muzzafarpur	Buri Gandak	Sikandarpur (Muzzafarpur)
24		Motihari	Buri Gandak	Lalbegiaghat
25		Buri Gandak	Samastipur	Samastipur
26		Khagaria	Burhi Gandak	Khagaria
27		Purnea	Mahananda	Dhengraghat
28		Darbhanga	Bagmati	Hayaghat

29	Bihar	Madhubani	Kamlabalan	Jhanjharpur
30		Khagaria	Kosi	Baltara
31		Sitamarhi	Lakhanadi	Runisaidpur
32		Muzzafarpur	Bagmati	Benibad
33		Darbhanga	Adhwara Group	Kamataul
34		Siwan	Ghagra	Darauli
35		Bhagalpur	Ganga	Kahalgaon
36		Munger	Ganga	Munger
37		Vaishali	Gandak	Hajipur
38		Siwan	Ghagra	Gangpur Siswan
39		Patna	Punpun	Sripalpur
40		Patna	Sone	Maner
41		Patna	Ganga	Gandhighat
42		Patna	Ganga	Dighaghat
43		Buxar	Ganga	Buxar
44		Katihar	Kosi	Kursela
45		Kishanganj	Mahananda	Taibpur
46		W Champaran	Gandak	Chatia
47		Katihar	Mahananda	Jhawa
48		Muzzafarpur	Burhi Gandak	Ahirwalia
49	Uttar Pradesh	Kushinagar	Gandak	Khadda
50		Ballia	Ghagra	Turtipar
51		Farukkabad	Ganga	Fatehgarh
52		Faizabad	Ghagra	Ayodhya
53		Barabanki	Ghagra	Elginbridge
54		Balrampur	Rapti	Balrampur
55		Gorakhpur	Rapti	Birdghat
56		Allahabad	Ganga	Phaphamau
57		Mirzapur	Ganga	Mirzapur
58		Ghazipur	Ganga	Ghazipur
59		Ballia	Ganga	Ballia
60		Varanasi	Ganga	Varanasi
61		Allahabad	Ganga	Allahabad
62		Etawah	Yamuna	Etawah
63		Hamirpur	Betwa	Sahjina
64		Allahabad	Yamuna	Naini
65		Hamirpur	Yamuna	Hamirpur
66		Jalaun	Yamuna	Kalpi
67		Kanpur	Ganga	Kanpur
68		Shahjahanpur	Ganga	Dabri
69		Banda	Yamuna	Chillaghat
70	Uttarakhand	Pauri Garhwal	Alakananda	Srinagar
71		Haridwar	Ganga	Haridwar
72		Dehradun	Ganga	Rishikesh
73		Jalpaiguri	Tista	Domohani
74		Hoogly	Mundeswari	Harinkhola

75	West Bengal	Birbhum	Ajoy	Gheropara
76		Coochbehar	Torsa	Ghugumari
77		Murshidabad	Ganga	Farakka
78	Maharashtra	Satara	Krishna	Arjunwad
79	Rajasthan	Dholpur	Chambal	Dholpur
80		Kota	Chambal	Kota City
81		Karauli	Chambal	Manderial
82	NCT Delhi	North Delhi	Yamuna	Delhi Rly Bridge
83	Andhra Pradesh	East Godavari	Godavari	Kunavaram
84		Srikakulam	Nagavali	Srikakulam
85	Telangana	Bhopalpalli	Godavari	Kaleswaram
86	Jharkhand	Sahibganj	Ganga	Sahibganj
87	Kerala	Pathanmitta	Pamba	Malakkara

Above Normal

Sl. No.	State	District	River	Station
1	Assam	Lakhimpur	Ranganadi	Ranganadi NT Rd Crossing
2		Sivasagar	Dikhow	Sivasagar
3		Golaghat	Dhansiri(s)	Numaligarh
4		Dibrugarh	Buridehing	Chenimari(Khowang)
5		Nalbari	Pagladiya	Pagladiya NT Rd Crossing
6		Kamrup	Puthimari	N H Crossing
7		Barpeta	Manas	Manas NH Xing
8		Dhubri	Sankosh	Golokganj
9		Nagaon	Kopili	Kampur
10		Karimganj	Kushiyara	Karimganj
11	Bihar	Sapual	Kosi	Basua
12		Adhwara	Sitamarhi	Sonebarsa
13		Chhappra	Ghaghra	Chhappra
14	Jharkhand	Purba Singhbhum	Subarnarekha	Jamshedpur
15	Uttar Pradesh	Bahraich	Rapti	Kakardhari
16		Kanpur	Ganga	Ankinghat
17		Kannauj	Ganga	Kannauj
18		Ghaziabad	Ganga	Garhmukhteshwar
19		Rae-Bareli	Ganga	Dalmau
20		Rae-Bareli	Sai	Rae-Bareli
21		Bareilly	Ramganga	Bareilly
22		Moradabad	Ramganga	Moradabad
23	West Bengal	Coochbehar	Jaldhaka	Mathabhanga
24		Alipurduar	Torsa	Hasimara
25		Jalpaiguri	Jaldhaka	NH 31
26		Coochbehar	Raidak-I	Tufanganj

27	Andhra Pradesh	Kurnool	Tungabhadra	Mantralayam
28		East Godavari	Godavari	Dowlaiswaram
29		Nellore	Pennar	Nellore Anicut
30	Telangana	Kothagudem	Godavari	Dummagudem
31		Kothagudem	Godavari	Bhadrachalam
32		Bhopalpalli	Godavari	Eturunagaram
33	Maharashtra	Nanded	Godavari	Nanded
34		Parbhani	Godavari	Gangakhed
35		Nasik	Godavari	Nasik
36	Odisha	Jajpur	Brahmani	Jenapur
37		Balasore	Burhabalang	Govindpur NH 5 Rd Bridge
38		Gajapati	Vamsadhara	Kashinagar
39		Cuttack	Mahanadi	Naraj
40	Tamilnadu	Madurai	Vaigai	Madurai
41		Tiruchirapalli	Cauvery	Musiri
42		Erode	Cauvery	Kodumudi

Inflow Forecast

Sl. No.	State	District	River	Station
1	Karnataka	Mysore	Kabini	Kabini Dam
2		Vijayapura	Krishna	Almatti Dam
3		Mandya	Cauvery	Krishnarajasagar Dam
4		Chikmagaluru	Bhadra	Bhadra Dam
5		Shivamogga	Tunga	Upper Tunga
6		Bagalkot	Krishna	Hippargi Dam
7		Belgaum	Malaprabha	Malaprabha Dam
8		Ballari	Tungabhadra	Tungabhadra Dam
9		Gadag	Krishna	Singatalur Barrage
10		Belagavi	Ghat Prabha	Hidkal Dam
11		Vijayapura	Krishna	Narayanpur Dam
12		Coorg	Harangi	Harangi Dam
13		Hassan	Hemavathy	Hemavathy Dam
14	Jharkhand	Saraikela Kharaswan	Subarnarekha	Galudih Barrage
15		Dhanbad	Damodar	Panchet Dam
16		Dhanbad	Barakar	Maithon Dam
17		Dumka	Mayurakshi	Massanjore Dam
18		Bokaro	Damodar	Tenughat Dam
19		Saraikela Kharaswan	Subarnarekha	Chandil Dam
20	Odisha	Sambalpur	Mahanadi	Hirakud Dam
21		Kendujhar	Baitarani	Salandi Dam
22		Angul	Brahmani	Rengali Dam
23		Burdwan	Damodar	Durgapur Barrage

24	West Bengal	Birbhum	Mayurakshi	Tilpara M Barrage
25		Bankura	Kangsabati	Kongsabati Dam
26	Maharashtra	Satara	Nira	Veer Dam
27		Satara	Koyna	Koyna Dam
28		Kolhapur	Warana	Warana Dam
29		Solapur	Bhima	Ujjani Dam
30		Bhandara	Wainganga	Gosikhurd Dam
31		Yavatmal	Penganga	Issapur/Upper Penganga
32		Amaravati	Wardha	Upper Wardha Project
33		Aurangabad	Godavari	Jaikwadi Dam
34		Jalgaon	Tapi	Hathnur Dam
35	Bihar	West Champaran	Gandak	Gandak Barrage
36	Uttar Pradesh	Bulandshahar	Ganga	Narora Barrage (U/S)
37		Bahraich	Ghagra	Katerniaghat Dam
38		Sonebhadra	Rihand	Rihand Dam
39		Lalitpur	Betwa	Matatila Dam
40		Bijnor	Ganga	Dharmanagri Barrage
41	Uttarakhand	Champawat	Sharda	Banbasa Barrage
42		Pauri Garhwal	Ramganga	Kalagarh Dam
43	Tamilnadu	Thanjavur	Cauvery	Grand Anicut
44		Tirichirapalli	Cauvery	Upper Anicut
45		Erode	Bhavani	Bhavanisagar Dam
46		Salem	Cauvery	Mettur Dam
47		Thiruvallur	Kosasthaliyar	Poondi Satyamurthy Reservoir
48		Theni	Vaigai	Vaigai Dam
49		Cuddalore	Periyar Odai	Wellington Dam
50		Thiruvannamalai	Ponnaiyar	Sathanur Dam
51		Tiruvallur	Adyar	Chembarampakkam Lake
52	Telangana	Wanaparthy	Krishna	Priyadarshini Jurala
53		Nizamabad	Godavari	Sriram Sagar Dam
54		Karimnagar	Godavari	Sripada Yellempally Dam
55		Nalgonda	Musi	Musi Project
56		Bhupalpally	Godavari	Laxmi Barrage
57		Sanga Reddy	Manjira	Singur Dam
58		Kama Reddy	Manjira	Nizamsagar Dam
59		Adilabad	Kaddamvagu	Kaddam Dam
60	Rajasthan	Jhalawar	Kalisindh	Kalisindh Dam
61	Gujarat	Tapi	Tapi	Ukai Dam

62	Gujarat	Valsad	Damanganga	Madhuban Dam
63	Andhra Pradesh	Kurnool	Krishna	Srisailam Dam
64		Krishna	Krishna	Prakasham Barrage
65		Kurnool	Tungabhadra	Sunkesula Barrage
66		Guntur	Krishna	Dr KLRS Pulichintala Dam
67		West Godavari	Godavari	Indirasagar (Polavaram)
68		Srikakulam	Nagavali	Narayanpuram Anicut
69		Vizianagaram	Nagavali	Madduvalasa Reservoir
70		Nellore	North Pennar	Somasila Dam
71	Madhya Pradesh	Jabalpur	Narmada	Bargi Dam
72		Raisan	Narmada	Barna Dam
73		Khandwa	Narmada	Indirasagar Dam
74		Khandwa	Narmada	Omkareshwar Dam
75		Mandsaur	Chambal	Gandhisagar Dam
76		Shahdol	Sone	Bansagar Dam
77		Lalitpur	Betwa	Rajghat Dam
78		Hoshangabad	Narmada	Tawa Dam
79	Kerala	Idukki	Periyar	Idukki Dam

Performance of Flood Forecasting Stations (Divisionwise) in India during Flood Season 2021

Sl. No	Division	Level Forecasts only					Inflow Forecasts only					Total Forecast Stations				
		Stns.	F/c issued for	Total	Within Limit	Accuracy	Stns.	F/c issued for	Total	Within Limit	Accuracy	Stns.	F/c issued for	Total	Within Limit	Accuracy
1	Himalayan Ganga Divn, Dehradun	4	3	19	11	57.89	1	1	49	37	75.51	5	4	68	48	70.59
2	Middle Ganga Division 1, Lucknow	7	6	486	482	99.18	2	2	92	92	100.00	9	8	578	574	99.31
3	Middle Ganga Division 2, Lucknow	12	11	323	320	99.07	2	2	44	40	90.91	14	13	367	360	98.09
4	Middle Ganga Division 3, Varanasi	7	6	73	73	100.00	2	2	15	6	40.00	9	8	88	79	89.77
5	Lower Ganga Division I, Patna	25	25	2811	2762	98.26	2	1	2	1	50.00	27	26	2813	2763	98.22
6	Lower Ganga Division 2, Patna	18	16	955	932	97.59	4	0	0	0	-	22	16	955	932	97.59
7	Upper Yamuna Divn, Delhi	6	2	32	20	62.50	1	0	0	0	-	7	2	32	20	62.50
8	Chambal Division, Jaipur	3	3	19	19	100.00	10	2	42	28	66.67	13	5	61	47	77.05
9	Lower Yamuna Divn, Agra	10	9	130	83	63.85	2	2	18	9	50.00	12	11	148	92	62.16
10	Damodar Divn, Asansol	4	3	11	11	100.00	13	7	461	446	96.75	17	10	472	457	96.82
11	Upper Brahmaputra Divn, Dibrugarh	19	12	898	895	99.67	0	0	0	0	-	19	12	898	895	99.67
12	Middle Brahmaputra Divn, Guwahati	9	8	447	446	99.78	0	0	0	0	-	9	8	447	446	99.78
13	Meghna Division Silchar	2	0	0	0	-	0	0	0	0	-	2	0	0	0	-
14	Meghna Investigation Divn , Shillong	4	1	40	40	100.00	0	0	0	0	-	4	1	40	40	100.00
15	Lower Brahmaputra Divn, Jalpaiguri	8	8	190	180	94.74	0	0	0	0	-	8	8	190	180	94.74
16	Eastern Rivers Divn, Bhubaneswar	11	9	137	102	74.45	9	6	303	244	80.53	20	15	440	346	78.64
17	Mahanadi Divn, Burla	3	1	10	10	100.00	3	1	54	53	98.15	6	2	64	63	98.44
18	Lower Godavari Divn, Hyderabad	10	5	32	29	90.63	5	1	66	66	100.00	15	6	98	95	96.94
19	Upper Godavari Division	4	3	4	2	50.00	12	7	178	168	94.38	16	10	182	170	93.41
20	Lower Krishna Divn, Hyderabad	4	1	7	7	100.00	11	11	1106	1053	95.21	15	12	1113	1060	95.24
21	Mahi Divn, Gandhinagar	3	0	0	0	-	6	0	0	0	-	9	0	0	0	-
22	Tapi Divn,Surat	5	0	0	0	-	4	3	171	168	98.25	9	3	171	168	98.25
23	Narmada Divn, Bhopal	2	0	0	0	-	5	5	35	35	100.00	7	5	35	35	100.00
24	Chenab Divn. Jammu	3	1	1	0	-	0	0	0	0	-	3	1	1	0	0.00
25	Southern River Divn. Coimbtr.	4	3	21	19	90.48	6	5	578	449	77.68	10	8	599	468	78.13
26	Hydrology Divn. Chennai	1	1	3	0	0.00	6	5	87	54	62.07	7	6	90	54	60.00
27	Cauvery Divn. Bangalore	0	0	0	0	-	8	8	606	547	90.26	8	8	606	547	90.26
28	UKD Pune	1	1	18	11	61.11	4	4	20	7	35.00	5	5	38	18	47.37
29	WGD Nagpur	4	1	1	1	100.00	7	3	18	16	88.89	11	4	19	17	89.47
30	SWRD, Kochi	3	1	2	1	50.00	2	1	2	1	50.00	5	2	4	2	50.00
31	SID Gangtak	3	0	0	0	-	5	0	0	0	-	8	0	0	0	-
Total		**199**	**140**	**6670**	**6456**	**96.79**	**132**	**79**	**3947**	**3520**	**89.18**	**331**	**219**	**10617**	**9976**	**93.96**

Performance of Flood Forecasting Stations (Major Basinwise) in India during Flood Season 2021

Sl. No	Name of the Major River basin	Total no.of FF sites			No.of FF sites where no forecast was issued			Level Forecasts			Inflow Forecasts			Overall Forecasts		
		Total no	Level FF sites	Inflow FF sites	Total no	Level FF sites	Inflow FF sites	Total No.	Within limits	% of Accu-racy	Total No.	Within limits	% of Accu-racy	Total No.	Within limits	% of Accu-racy
1	Indus and its tributaries	3	3	0	2	2	0	1	0	-	0	0	-	1	0	-
2	Ganga & tributaries	135	96	39	32	12	20	4859	4713	97.00	723	659	91.15	5582	5372	96.24
3	Brahmaputra	44	39	5	16	11	5	1535	1521	99.09	0	0	-	1535	1521	99.09
4	Barak and others	6	6	0	5	5	0	40	40	100.00	0	0	-	40	40	100.00
5	Godavari	42	18	24	22	9	13	37	32	86.49	262	250	95.42	299	282	94.31
6	Krishna	24	5	19	3	3	0	25	18	72.00	1396	1301	93.19	1421	1319	92.82
7	Cauvery and tributaries	12	3	9	2	1	1	11	9	81.82	860	722	83.95	871	731	83.93
8	Subarnarekha including Burhabalang	7	4	3	1	0	1	106	85	80.19	281	229	81.49	387	314	81.14
9	Brahmani and Baitarni	5	3	2	0	0	0	18	11	61.11	12	10	83.33	30	21	70.00
10	Mahanadi	6	3	3	4	2	2	10	10	100.00	54	53	98.15	64	63	98.44
11	Pennr	2	1	1	0	0	0	3	0	0.00	52	36	69.23	55	36	65.45
12	Mahi	5	1	4	5	1	4	0	0	-	0	0	-	0	0	-
13	Sabarmati	2	1	1	2	1	1	0	0	-	0	0	-	0	0	-
14	Narmada	10	4	6	5	4	1	0	0	-	35	35	100.00	35	35	100.00
15	Tapi	3	1	2	1	1	0	0	0	-	157	154	98.09	157	154	98.09
16	West Flowing rivers from Tapi to Tadri	3	2	1	2	2	0	0	0	-	14	14	100.00	14	14	100.00
17	East flowing rivers between Mahanadi and Pennar	8	4	4	4	2	2	13	6	46.15	10	5	50.00	23	11	47.83
18	East flowing rivers between Pennar and Kanyakumari	7	1	6	1	0	1	10	10	100.00	89	51	57.30	99	61	61.62
19	West flowing rivers of Kutch and saurashtra including	2	1	1	2	1	1	0	0	-	0	0	-	0	0	-
20	West Flowing river Tadri to Kanyakumari	5	3	2	3	2	1	2	1	50.00	2	1	50.00	4	2	50.00
Total		**331**	**199**	**132**	**112**	**59**	**53**	**6670**	**6456**	**96.79**	**3947**	**3520**	**89.18**	**10617**	**9976**	**93.96**

Annex VIII

Performance of Flood Forecasting Stations (Statewise) in India during Flood Season 2021

Sl. No	Name of the Major River basin	Total no.of FF sites			No.of FF sites where no forecast was issued			Level Forecasts			Inflow Forecasts			Overall Forecasts		
		Total no	Level FF sites	Inflow FF sites	Total no	Level FF sites	Inflow FF sites	Total No.	Within limits	Accuracy (%)	Total No.	Within limits	Accuracy (%)	Total No.	Within limits	Accuracy (%)
1	Andhra Pradesh	20	10	10	7	5	2	35	25	71.43	699	653	93.42	734	678	92.37
2	Arunachal Pradesh	3	3	0	2	2	0	49	49	100.00	0	0	-	49	49	100.00
3	Assam	30	30	0	9	9	0	1419	1415	99.72	**0**	**0**	-	1419	1415	99.72
4	Bihar	43	40	3	4	2	2	3315	3247	97.95	**2**	**1**	50.00	3317	3248	97.92
5	Chattisgarh	3	1	2	3	1	2	0	0	-	0	0	-	0	0	-
6	Daman n Diu	1	1	0	1	1	0	0	0	-	0	0	-	0	0	-
7	Gujarat	13	6	7	11	6	5	0	0	-	86	84	97.67	86	84	97.67
8	Haryana	2	1	1	2	1	1	0	0	-	0	0	-	0	0	-
9	Himachal Pradesh	1	1	0	1	1	0	0	0	-	0	0	-	0	0	-
10	Jammu & Kashmir	3	3	0	2	2	0	1	0	0.00	0	0	-	1	0	-
11	Jharkhand	17	2	15	9	0	9	83	82	98.80	542	483	89.11	625	565	90.40
12	Karnataka	15	1	14	2	1	1	0	0	-	1012	933	92.19	1012	933	92.19
13	Kerala	5	3	2	3	2	1	2	1	50.00	2	1	50.00	4	2	50.00
14	Madhya Pradesh	14	2	12	6	2	4	0	0	-	55	44	80.00	55	44	80.00
15	Maharashtra	22	8	14	9	4	5	22	13	59.09	125	109	87.20	147	122	82.99
16	NCT, DELHI	2	2	0	1	1	0	27	19	70.37	0	0	-	27	19	70.37
17	Odisha	19	12	7	8	4	4	134	107	79.85	66	63	95.45	200	170	85.00
18	Rajasthan	14	4	10	10	1	9	52	33	63.46	39	27	69.23	91	60	65.93
19	Sikkim	8	3	5	8	3	5	0	0	-	0	0	-	0	0	-
20	Tamilnadu	15	4	11	3	1	2	21	19	90.48	613	467	76.18	634	486	76.66
21	Telangana	13	5	8	1	1	0	18	15	83.33	305	287	94.10	323	302	93.50
22	Tripura	2	2	0	2	2	0	0	0	-	0	0	-	0	0	-
23	Uttar Pradesh	44	39	5	5	5	0	1185	1146	96.71	185	162	87.57	1370	1308	95.47
24	Uttarakhand	6	4	2	1	1	0	19	11	57.89	16	14	87.50	35	25	71.43
25	West Bengal	16	12	4	2	1	1	288	274	95.14	200	192	96.00	488	466	95.49
Total		**331**	**199**	**132**	**112**	**59**	**53**	**6670**	**6456**	**96.79**	**3947**	**3520**	**89.18**	**10617**	**9976**	**93.96**

FLOOD FORECASTING PERFORMANCE FROM 2000 TO 2021

Year	No.of Level Forecasts issued			No.of Inflow Forecasts issued			Total No.of Forecasts issued		
	Total	Within +/-15 cm of deviation from actual	Accuracy (%)	Total	Within +/- 20% cumec of deviation from actual	Accuracy (%)	Total	Within +/- 15 cm or +/- 20% cumec of deviation from actual	Accuracy (%)
2000	5622	5504	97.90	821	747	90.99	6443	6251	97.02
2001	4606	4533	98.42	857	809	94.40	5463	5342	97.79
2002	3618	3549	98.09	623	602	96.63	4241	4151	97.88
2003	5989	5789	96.66	611	586	95.91	6600	6375	96.59
2004	4184	4042	96.61	705	654	92.77	4889	4696	96.05
2005	4323	4162	96.28	1295	1261	97.37	5618	5423	96.53
2006	5070	4827	95.21	1593	1550	97.30	6663	6377	95.71
2007	6516	6339	97.28	1707	1651	96.72	8223	7990	97.17
2008	5670	5551	97.90	1021	1003	98.24	6691	6554	97.95
2009	3343	3298	98.65	667	629	94.30	4010	3927	97.93
2010	6491	6390	98.44	1028	988	96.11	7519	7378	98.12
2011	4848	4795	98.91	1143	1109	97.03	5991	5904	98.55
2012	4200	4136	98.47	831	803	96.63	5031	4939	98.17
2013	5741	5471	95.30	1319	1289	97.73	7060	6760	95.75
2014	3884	3804	97.94	888	863	97.18	4772	4667	97.80
2015	3500	3429	97.97	572	562	98.25	4072	3991	98.01
2016	4969	4891	98.43	1270	1057	83.23	6239	5948	95.34
2017	5085	4975	97.84	1212	926	76.40	6297	5901	93.71
2018	4969	4871	98.03	1882	1624	86.29	6851	6495	94.80
2019	6004	5773	96.15	3750	2678	71.41	9754	8451	86.64
2020	8243	8133	98.67	3478	3065	88.13	11721	11198	95.54
2021	6670	6456	96.79	3947	3520	89.18	10617	9976	93.96
Average	5161	5033	97.52	1419	1272	89.64	6580	6304	95.81

Extreme flood events in India under CWC FF & W Network - 2021 flood season										
Sl. No	River	Station	State	Danger level in metres	Existing Highest Flood Level (HFL)		New HFL		Duration	
					Level in metres	Date of occurrence	Level	Date and Time of Occurrence	From	To
1	Ganga	Hatidah	Bihar	41.76	43.17	8/21/2016	43.52	16/08/2021 1100	13/08/2021 03	19/08/2021 01
2	Ganga	Bhagalpur	Bihar	33.68	34.72	8/26/2016	34.86	18/08/2021 0600	16/08/2021 01	19/08/2021 18
3	Yamuna	Auraiya	Uttar Pradesh	113.00	118.19	8/25/1996	118.51	06/08/2021 1600	06/08/2021 04	07/08/2021 02
4	Ganga	Kachlabridge	Uttar Pradesh	162.00	162.79	9/24/2010	162.79	23/10/2021 0100	23/10/2021 01	23/10/2021 07
5	Rapti	Bansi	Uttar Pradesh	84.90	85.88	8/20/2017	85.95	03/09/2021 0800	02/09/2021 02	04/09/2021 18
6	Jalaka	Mathani Road Bridge	Odisha	5.50	7.05	8/27/2020	7.31	22/09/2021 1000	22/09/2021 07	22/09/2021 17
7	Teesta	Mekhliganj(R/B)	West Bengal	65.95	66.45	7/13/1996	66.62	20/10/2021 1100	20/10/2021 07	20/10/2021 15
8	Pennar	Nellore Anicut	Andhra Pradesh	17.28	18.70	11/30/1982	19.57	20/11/2021 0600	20/11/2021 06	20/11/2021 06

Above Normal and Severe flood events on main Ganga and its tributaries- 2021 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2021		Flood period above warning level			Flood period above danger level		
						Level in metres	Date/Time	From	To	No.of days	From	To	No.of days
1	Alaknanda	Srinagar	Uttarakhand	535.00	536.00	636.55	19/06/2021 06	18/06/2021 13	20/06/2021 04	3	18/06/2021 21	19/06/2021 13	2
								18/10/2021 23	19/10/2021 17	2	19/10/2021 05	19/10/2021 05	1
2	Ganga	Rishikesh	Uttarakhand	339.50	340.50	340.7	20/06/2021 04	18/06/2021 23	20/06/2021 11	3	19/06/2021 17	19/06/2021 21	1
								19/10/2021 04	20/10/2021 04	2	20/06/2021 04	20/06/2021 04	1
								-	-	-	19/10/2021 10	19/10/2021 12	1
3	Ganga	Haridwar	Uttarakhand	293.00	294.00	**294.56**	19/10/2021 12	18/06/2021 23	20/06/2021 11	3	19/06/2021 04	19/06/2021 22	1
								20/07/2021 04	20/07/2021 06	1	19/10/2021 08	19/10/2021 15	1
								28/07/2021 16	29/07/2021 00	2	-	-	-
								07/08/2021 13	07/08/2021 13	1	-	-	-
								28/08/2021 08	28/08/2021 09	1	-	-	-
								29/08/2021 01	29/08/2021 01	1	-	-	-
								19/10/2021 02	20/10/2021 04	2	-	-	-
4	Mandakini	Ganganagar	Uttarakhand	803.00	804.00	800.70	19/06/2021 08	-	-	-	-	-	-
5	Ganga	Kannauj	Uttar Pradesh	124.97	125.97	125.71	26/10/2021 19	23/10/2021 08	29/10/2021 07	7			
6	Ganga	Ankinghat	Uttar Pradesh	123.00	124.00	123.70	26/10/2021 15	04/08/2021 21	07/08/2021 07	4	-	-	-
								03/09/2021 22	05/09/2021 09	3	-	-	-
								23/10/2021 06	29/10/2021 09	7	-	-	-
7	Ganga	Kanpur	Uttar Pradesh	112.00	113.00	113.04	28/10/2021 06	24/10/2021 05	31/10/2021 09	8	27/10/2021 19	28/10/2021 20	2
8	Ganga	Dalmau	Uttar Pradesh	98.36	99.36	98.91	28/10/2021 18	26/10/2021 01	31/10/2021 04	6	-	-	-
9	Ganga	Phphamau	Uttar Pradesh	83.73	84.73	86.09	12/08/2021 04	08/08/2021 00	14/08/2021 19	7	08/08/2021 19	14/08/2021 03	7
10	Ganga	Allahabad Chhatnag	Uttar Pradesh	83.73	84.73	85.36	12/08/2021 07	08/08/2021 08	14/08/2021 02	7	10/08/2021 02	13/08/2021 05	4
11	Ganga	Mirzapur	Uttar Pradesh	76.72	77.72	78.40	12/08/2021 07	08/08/2021 01	14/08/2021 20	7	10/08/2021 02	13/08/2021 19	4
12	Ganga	Varanasi	Uttar Pradesh	70.26	71.26	72.32	12/08/2021 11	08/08/2021 00	15/08/2021 19	8	09/08/2021 02	14/08/2021 23	6
13	Ganga	Ghazipur	Uttar Pradesh	62.10	63.10	64.68	13/08/2021 07	06/08/2021 04	06/08/2021 23	1	08/08/2021 00	16/08/2021 11	9
								07/08/2021 04	17/08/2021 07	11	-	-	-
14	Ganga	Buxar	Bihar	59.32	60.32	61.19	14/08/2021 04	06/08/2021 08	17/08/2021 13	12	08/08/2021 07	16/08/2021 12	9
15	Ganga	Ballia	Uttar Pradesh	56.62	57.62	60.25	14/08/2021 10	03/08/2021 01	22/08/2021 06	20	03/08/2021 22	19/08/2021 07	17
								18/09/2021 23	01/10/2021 11	14	-	-	-
								03/10/2021 03	03/10/2021 15	1	-	-	-
16	Ganga	Patna Dighaghat	Bihar	49.45	50.45	51.85	15/08/2021 07	02/08/2021 12	24/08/2021 05	23	07/08/2021 14	19/08/2021 08	13
								29/08/2021 02	05/09/2021 21	8	-	-	-
17	Ganga	Patna Gandhighat	Bihar	47.60	48.60	50.45	15/08/2021 07	31/07/2021 08	16/09/2021 16	48	02/08/2021 21	22/08/2021 00	21
								18/09/2021 10	09/10/2021 08	22	30/08/2021 20	04/09/2021 04	6
								26/10/2021 16	27/10/2021 17	2	-	-	-
18	Ganga	Hathidah	Bihar	40.76	41.76	43.52	16/08/2021 11	01/08/2021 22	11/10/2021 18	72	03/08/2021 16	10/09/2021 02	39
								24/10/2021 09	29/10/2021 16	6	20/09/2021 08	23/09/2021 00	4
19	Ganga	Munger	Bihar	38.33	39.33	40.15	17/08/2021 12	04/08/2021 15	26/08/2021 12	23	11/08/2021 14	20/08/2021 16	10
								28/08/2021 19	08/09/2021 03	12	-	-	-
20	Ganga	Bhagalpur	Bihar	32.68	33.68	34.86	18/08/2021 06	04/08/2021 07	14/09/2021 00	42	09/08/2021 01	24/08/2021 08	16
								21/09/2021 09	24/09/2021 15	4	-	-	-
								29/09/2021 14	30/09/2021 00	2	-	-	-
								26/10/2021 22	29/10/2021 06	4	-	-	-
21	Ganga	Colgong/ Kahalgaon	Bihar	30.09	31.09	32.63	18/08/2021 12	25/07/2021 23	13/10/2021 06	81	05/08/2021 07	13/09/2021 04	40
								24/10/2021 07	29/10/2021 22	6	-	-	-
								30/10/2021 00	31/10/2021 21	2	-	-	-
22	Ganga	Sahibganj	Jharkhand	26.25	27.25	28..90	18/08/2021 16	30/07/2021 03	13/10/2021 06	76	05/08/2021 11	15/09/2021 09	11
								25/10/2021 13	29/10/2021 22	5	-	-	-
								30/10/2021 00	31/10/2021 06	2	-	-	-
23	Ganga	Farakka	West Bengal	21.25	22.25	24.00	19/08/2021 13	23/07/2021 23	12/10/2021 10	82	05/08/2021 19	14/09/2021 08	41
								23/10/2021 22	31/10/2021 21	9	-	-	-
24	Ramganga	Moradabad	Uttar Pradesh	189.60	190.60	190.17	22/10/2021 09	22/07/2021 06	24/07/2021 07	3	-	-	-
								20/10/2021 06	25/10/2021 07	6	-	-	-
25	Ramganga	Bareilly	Uttar Pradesh	162.07	163.07	162.21	23/10/2021 05	23/10/2021 01	23/10/2021 08	1	-	-	-
26	Yamuna	Mawi	Uttar Pradesh	231.00	231.50	230.41	30/07/2021 05	-	-	-	-	-	-
27	Yamuna	Delhi Rly Bridge	NCT Delhi	204.50	205.33	205.60	30/07/2021 22	30/07/2021 00	03/08/2021 13	5	30/07/2021 11	31/07/2021 04	2
								15/09/2021 23	17/09/2021 10	3	25/09/2021 15	26/09/2021 06	2
								25/09/2021 03	29/09/2021 03	5			
28	Yamuna	Mathura	Uttar Pradesh	165.20	166.00	165.12	01/08/2021 07	-	-	-	-	-	-
29	Yamuna	Agra	Uttar Pradesh	151.40	152.40	149.78	28/09/2021 17	-	-	-	-	-	-
30	Yamuna	Etawa	Uttar Pradesh	120.92	121.92	123.04	06/08/2021 14	05/08/2021 08	10/08/2021 07	6	05/08/2021 13	07/08/2021 23	3

Above Normal and Severe flood events on main Ganga and its tributaries- 2021 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2021		Flood period above warning level			Flood period above danger level		
						Level in metres	Date/Time	From	To	No.of days	From	To	No.of days
31	Yamuna	Auraiya	Uttar Pradesh	112.00	113.00	118.51	06/08/2021 16	04/08/2021 01	12/08/2021 11	9	04/08/2021 08	11/08/2021 18	8
32	Yamuna	Kalpi	Uttar Pradesh	107.00	108.00	112.87	09/08/2021 15	04/08/2021 10	12/08/2021 23	9	04/08/2021 17	12/08/2021 07	9
33	Yamuna	Hamirpur	Uttar Pradesh	102.63	103.63	107.17	09/08/2021 01	04/08/2021 22	12/08/2021 17	9	05/08/2021 09	12/08/2021 02	8
34	Yamuna	Chilaghat	Uttar Pradesh	99.00	100.00	102.47	09/08/2021 21	06/08/2021 06	12/08/2021 21	7	06/08/2021 12	12/08/2021 10	7
35	Yamuna	Naini	Uttar Pradesh	83.74	84.74	85.85	12/08/2021 10	07/08/2021 12	14/08/2021 15	8	09/08/2021 01	13/08/2021 19	5
36	Sahibi	Dhansa	NCT Delhi	211.44	212.44	210.95	17/09/2021 06	-	-	-	-	-	-
37	Betwa	Mohana	Uttar Pradesh	121.66	122.66	119.28	08/08/2021 11	-	-	-	-	-	-
38	Betwa	Sahjina	Uttar Pradesh	103.54	104.54	106.7	09/08/2021 01	05/08/2021 19	11/08/2021 22	7	06/08/2021 14	11/08/2021 08	6
39	Ken	Banda	Uttar Pradesh	103.00	104.00	102.78	09/08/2021 19	-	-	-	-	-	-
40	Gomati	Lucknow	Uttar Pradesh	108.50	109.50	105.95	10/08/2021 24	-	-	-	-	-	-
41	Gomati	Jaunpur	Uttar Pradesh	73.07	74.07	72.77	22/09/2021 12	-	-	-	-	-	-
42	SAI	Raibareli	Uttar Pradesh	100.00	101.00	100.47	18/09/2021 05	17/09/2021 01	20/09/2021 10	4			
43	Ghaghra	Elginbridge	Uttar Pradesh	105.07	106.07	106.85	22/10/2021 10	16/06/2021 00	27/06/2021 19	12	21/07/2021 05	26/07/2021 06	6
								04/07/2021 22	05/07/2021 23	2	17/08/2021 02	18/08/2021 07	2
								10/07/2021 09	12/07/2021 09	3	22/08/2021 14	25/08/2021 07	4
								12/07/2021 21	10/10/2021 12	90	25/08/2021 18	04/09/2021 07	10
								19/10/2021 23	02/11/2021 18	15	20/10/2021 09	25/10/2021 12	6
44	Ghaghra	Ayodhya	Uttar Pradesh	91.73	92.73	93.3	23/10/2021 13	17/06/2021 00	28/06/2021 02	12	23/07/2021 03	27/07/2021 07	5
								13/07/2021 16	01/10/2021 12	81	15/08/2021 06	19/08/2021 21	5
								04/10/2021 11	09/10/2021 00	6	20/08/2021 11	21/08/2021 03	2
								20/10/2021 09	01/11/2021 18	13	22/08/2021 09	05/09/2021 14	15
								-	-	-	17/09/2021 08	17/09/2021 13	1
								-	-	-	21/10/2021 12	26/10/2021 17	6
45	Ghaghra	Turtipar	Uttar Pradesh	63.01	64.01	65.08	03/09/2021 05	18/06/2021 10	30/06/2021 00	13	21/06/2021 02	25/06/2021 02	5
								13/07/2021 04	13/10/2021 21	93	22/07/2021 17	07/08/2021 00	17
								21/10/2021 06	01/11/2021 18	12	13/08/2021 21	21/09/2021 20	40
											21/10/2021 22	28/10/2021 01	8
46	Ghaghra	Darauli	Bihar	59.82	60.82	61.32	04/09/2021 09	19/06/2021 12	28/06/2021 14	10	25/07/2021 21	28/07/2021 00	4
								13/07/2021 22	15/10/2021 20	95	14/08/2021 15	08/09/2021 16	26
								21/10/2021 13	02/11/2021 18	13	13/09/2021 08	15/09/2021 00	3
								-	-	-	18/09/2021 10	20/09/2021 09	3
								-	-	-	22/10/2021 17	28/10/2021 11	7
47	Ghaghra	Gangpur Siswan	Bihar	56.04	57.04	57.49	17/08/2021 01	21/06/2021 16	26/06/2021 18	6	12/08/2021 21	22/08/2021 19	11
								23/07/2021 11	22/09/2021 15	62	26/08/2021 19	27/08/2021 12	2
								26/09/2021 05	27/09/2021 20	2	29/08/2021 08	07/09/2021 08	10
								22/10/2021 17	28/10/2021 21	7	25/10/2021 23	27/10/2021 02	3
48	Ghaghra	Chhapra	Bihar	52.68	53.68	53.09	15/08/2021 06	12/08/2021 14	17/08/2021 17	6	-	-	-
49	Rapti	Balrampur	Uttar Pradesh	103.62	104.62	105.1	30/08/2021 02	17/06/2021 05	20/06/2021 15	4	14/08/2021 14	22/08/2021 15	9
								24/06/2021 21	25/06/2021 23	2	28/08/2021 01	03/09/2021 02	7
								16/07/2021 16	17/07/2021 11	2	-	-	-
								19/07/2021 06	19/07/2021 22	1	-	-	-
								21/07/2021 22	22/07/2021 06	2	-	-	-
								22/07/2021 13	23/07/2021 20	1	-	-	-
								12/08/2021 15	11/09/2021 16	31	-	-	-
								26/09/2021 18	27/09/2021 06	2	-	-	-
								20/10/2021 09	23/10/2021 08	4	-	-	-
50	Rapti	Bansi	Uttar Pradesh	83.90	84.90	85.95	03/09/2021 08	14/08/2021 09	14/09/2021 11	32	18/08/2021 05	12/09/2021 08	26
51	Rapti	Birdghat	Uttar Pradesh	73.98	74.98	77.32	03/09/2021 11	18/06/2021 09	22/06/2021 06	5	16/08/2021 13	15/09/2021 21	31
								09/07/2021 02	11/07/2021 23	3	16/09/2021 08	16/09/2021 13	1
								12/07/2021 02	14/07/2021 22	3	-	-	-
								16/07/2021 11	16/07/2021 16	1	-	-	-

Above Normal and Severe flood events on main Ganga and its tributaries- 2021 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2021		Flood period above warning level			Flood period above danger level		
						Level in metres	Date/Time	From	To	No.of days	From	To	No.of days
								18/07/2021 10	27/07/2021 21	10	-	-	-
								14/08/2021 05	24/09/2021 18	42	-	-	-
52	Sone	Inderpuri	Bihar	107.20	108.20	104.88	01/08/2021 08	-	-	-	-	-	-
53	Sone	Koelwar	Bihar	54.52	55.52	53.9	14/08/2021 15	-	-	-	-	-	-
54	Sone	Maner	Bihar	51.00	52.00	53.45	15/08/2021 03	03/08/2021 05	22/08/2021 07	20	07/08/2021 19	18/08/2021 20	12
								02/09/2021 07	03/09/2021 06	2	-	-	-
55	PunPun	Sripalpur	Bihar	49.60	50.60	52.69	04/08/2021 09	22/06/2021 02	23/06/2021 11	2	02/08/2021 00	08/08/2021 05	7
								28/06/2021 03	30/06/2021 07	3	08/08/2021 19	18/08/2021 07	11
								01/08/2021 14	03/09/2021 01	34	21/08/2021 00	31/08/2021 20	11
								18/09/2021 23	22/09/2021 03	5	03/10/2021 21	07/10/2021 10	5
								03/10/2021 01	08/10/2021 21	6	-	-	-
56	Yamuna	Karnal Bridge	Haryana	248.80	249.50	247.91	29/07/2021 12	-	-	-	-	-	-
57	Yamuna	Paonta Sahib	Himachal Pradesh	383.50	384.50	381.3	28/07/2021 21	-	-	-	-	-	-
58	Gandak	Khadda	Uttar Pradesh	95.00	96.00	96.09	27/08/2021 15	15/06/2021 08	18/06/2021 11	4	16/06/2021 17	17/06/2021 04	2
								25/06/2021 17	26/06/2021 13	2	27/08/2021 13	27/08/2021 18	1
								30/06/2021 07	10/07/2021 14	11	30/08/2021 05	31/08/2021 01	2
								12/07/2021 08	14/07/2021 04	3	-	-	-
								14/07/2021 12	17/07/2021 07	3	-	-	-
								17/07/2021 09	19/07/2021 08	2	-	-	-
								21/07/2021 07	25/07/2021 07	5	-	-	-
								28/07/2021 15	30/07/2021 22	3	-	-	-
								31/07/2021 15	02/08/2021 06	3	-	-	-
								03/08/2021 14	04/08/2021 07	2	-	-	-
								13/08/2021 09	13/09/2021 14	32	-	-	-
								17/09/2021 14	18/09/2021 08	2	-	-	-
								21/09/2021 08	24/09/2021 07	4	-	-	-
								19/10/2021 14	22/10/2021 05	4	-	-	-
59	Ganga	Fathegarh	Uttar Pradesh	136.60	137.60	137.66	24/10/2021 16	22/06/2021 10	26/06/2021 00	5	23/10/2021 20	25/10/2021 19	3
								22/07/2021 23	18/08/2021 00	28	-	-	-
								24/08/2021 05	27/08/2021 15	4	-	-	-
								28/08/2021 12	07/09/2021 23	11	-	-	-
								11/09/2021 14	29/09/2021 12	19	-	-	-
								20/10/2021 22	02/11/2021 01	14	-	-	-
60	Ganga	Dabri	Uttar Pradesh	136.30	137.30	138.39	26/10/2021 04	21/10/2021 09	03/11/2021 07	14	23/10/2021 11	29/10/2021 20	7
61	Ganga	Garhmuktheswar	Uttar Pradesh	198.33	199.33	198.76	21/06/2021 14	19/06/2021 20	23/06/2021 08	5	-	-	-
								20/07/2021 03	25/07/2021 07	6	-	-	-
								26/07/2021 01	26/07/2021 14	1	-	-	-
								27/07/2021 18	12/08/2021 22	17	-	-	-
								14/08/2021 09	14/08/2021 11	1	-	-	-
								21/08/2021 15	22/08/2021 16	2	-	-	-
								26/08/2021 04	01/09/2021 07	7	-	-	-
								08/09/2021 17	09/09/2021 22	2	-	-	-
								11/09/2021 05	17/09/2021 21	7	-	-	-
								22/09/2021 14	23/09/2021 12	2	-	-	-
								19/10/2021 22	23/10/2021 09	5	-	-	-
62	Ganga	Kachla Bridge	Uttar Pradesh	161.00	162.00	162.790	23/10/2021 01	20/06/2021 15	30/06/2021 21	11	21/06/2021 01	24/06/2021 17	4
								15/07/2021 17	18/07/2021 02	4	21/07/2021 13	25/07/2021 18	5
								20/07/2021 15	08/11/2021 15	112	27/07/2021 06	27/07/2021 18	1
								22/11/2021 18	22/11/2021 18	1	28/07/2021 18	16/08/2021 05	20
								28/11/2021 08	28/11/2021 18	1	22/08/2021 17	25/08/2021 23	4
								-	-	-	27/08/2021 09	05/09/2021 04	10
								-	-	-	09/09/2021 23	21/09/2021 22	13
								-	-	-	22/09/2021 16	26/09/2021 02	5
								-	-	-	27/09/2021 09	27/09/2021 15	1
								-	-	-	19/10/2021 22	27/10/2021 13	9
63	Gandak	Chatia	Bihar	68.15	69.15	69.37	31/08/2021 22	17/06/2021 08	20/06/2021 16	4	30/08/2021 00	02/09/2021 15	4
								03/07/2021 09	07/07/2021 14	5	-	-	-
								09/07/2021 16	12/07/2021 12	4	-	-	-
								27/08/2021 17	06/09/2021 15	11	-	-	-
64	Gandak	Rewaghat	Bihar	53.41	54.41	55.3	02/09/2021 13	17/06/2021 06	23/06/2021 07	7	18/06/2021 22	21/06/2021 07	4
								26/06/2021 12	28/06/2021 07	3	04/07/2021 13	07/07/2021 11	4
								02/07/2021 06	27/07/2021 07	26	10/07/2021 23	12/07/2021 16	3
								31/07/2021 08	01/08/2021 11	2	29/08/2021 07	06/09/2021 20	9
								02/08/2021 14	07/08/2021 16	6	-	-	-

Above Normal and Severe flood events on main Ganga and its tributaries- 2021 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2021		Flood period above warning level			Flood period above danger level		
						Level in metres	Date/Time	From	To	No.of days	From	To	No.of days
								11/08/2021 06	12/09/2021 06	2	-	-	-
								21/10/2021 15	23/10/2021 22	3	-	-	-
65	Gandak	Hazipur	Bihar	49.32	50.32	50.51	15/08/2021 11	07/08/2021 06	20/08/2021 06	14	14/08/2021 07	17/08/2021 10	4
								30/08/2021 18	03/09/2021 20	5	-	-	-
66	Burhi Gandak	Lalbeghiaghat	Bihar	62.20	63.20	64.30	06/07/2021 00	20/06/2021 12	25/06/2021 20	6	03/07/2021 01	15/07/2021 20	13
								30/06/2021 17	18/07/2021 20	19	31/08/2021 14	05/09/2021 00	6
								19/07/2021 11	20/07/2021 06	2	-	-	-
								17/08/2021 00	21/08/2021 15	5	-	-	-
								28/08/2021 20	08/09/2021 23	12	-	-	-
67	Burhi Gandak	Muzaffarpur (Sikandarpur	Bihar	51.53	52.53	53.63	11/07/2021 01	23/06/2021 23	28/06/2021 01	6	05/07/2021 16	21/07/2021 05	17
								02/07/2021 11	27/07/2021 20	26	02/09/2021 06	08/09/2021 20	7
								16/08/2021 21	25/08/2021 23	10	-	-	-
								27/08/2021 21	12/09/2021 12	17	-	-	-
68	Burhi Gandak	Samastipur	Bihar	45.02	46.02	48.31	13/07/2021 09	26/06/2021 10	30/07/2021 15	35	06/07/2021 22	27/07/2021 08	22
								17/08/2021 01	15/09/2021 07	30	21/08/2021 07	25/08/2021 18	5
								-	-	-	31/08/2021 08	13/09/2021 20	14
69	Burhi Gandak	Rosera	Bihar	41.63	42.63	45.84	13/07/2021 05	22/06/2021 05	04/08/2021 17	44	25/06/2021 21	31/07/2021 15	38
								08/08/2021 02	19/09/2021 16	43	14/08/2021 02	16/09/2021 23	34
								08/10/2021 03	11/10/2021 15	4	-	-	-
70	Burhi Gandak	Khagaria	Bihar	35.58	36.58	39.00	17/08/2021 08	25/06/2021 21	30/06/2021 08	6	12/07/2021 10	22/07/2021 16	11
								05/07/2021 18	16/10/2021 03	104	27/07/2021 11	28/07/2021 14	2
								23/10/2021 11	31/10/2021 23	9	03/08/2021 20	17/09/2021 12	46
								-	-	-	20/09/2021 20	24/09/2021 16	5
71	Bagmati	Benibad	Bihar	47.68	48.68	49.99	31/08/2021 04	02/06/2021 19	04/06/2021 07	4	01/07/2021 10	17/09/2021 03	48
								27/06/2021 14	30/10/2021 18	126	22/09/2021 10	24/09/2021 05	3
								-	-	-	03/10/2021 16	10/10/2021 00	8
								-	-	-	21/10/2021 17	21/10/2021 23	1
72	Bagmati	Hayaghat	Bihar	44.72	45.72	47.18	01/09/2021 06	05/07/2021 04	21/09/2021 04	79	06/07/2021 20	06/08/2021 11	32
								-	-	-	16/08/2021 21	17/09/2021 00	33
73	Adhwara Group	Kamtaul	Bihar	49.00	50.00	51.20	08/07/2021 18	27/06/2021 09	13/09/2021 21	79	01/07/2021 12	17/07/2021 06	17
								04/10/2021 16	11/10/2021 12	8	19/07/2021 05	28/07/2021 23	10
								21/10/2021 12	29/10/2021 07	9	29/07/2021 20	02/08/2021 07	5
								-	-	-	13/08/2021 15	11/09/2021 06	29
								-	-	-	22/10/2021 23	24/10/2021 02	3
74	Adhwara Group	Ekmighat	Bihar	45.94	46.94	48.09	02/09/2021 03	01/07/2021 19	22/09/2021 01	84	04/07/2021 21	08/08/2021 06	36
								05/10/2021 13	12/10/2021 02	8	13/08/2021 05	17/09/2021 06	36
								25/10/2021 11	27/10/2021 03	3	-	-	-
75	Kamla Balan	Jhanjharpur	Bihar	49.00	50.00	52.81	28/08/2021 22	30/06/2021 23	18/09/2021 21	81	01/07/2021 08	10/07/2021 09	10
								20/09/2021 07	21/09/2021 21	2	14/07/2021 11	15/07/2021 06	2
								22/09/2021 13	24/09/2021 14	3	16/07/2021 22	17/07/2021 01	2
								03/10/2021 09	11/10/2021 21	9	18/07/2021 07	26/07/2021 10	9
								21/10/2021 07	11/11/2021 18	22	27/07/2021 14	29/07/2021 01	3
								-	-	-	29/07/2021 09	01/08/2021 03	3
								-	-	-	03/08/2021 10	04/08/2021 08	2
								-	-	-	08/08/2021 14	09/08/2021 19	2
								-	-	-	11/08/2021 00	11/08/2021 06	1
								-	-	-	12/08/2021 00	21/08/2021 07	10
								-	-	-	24/08/2021 02	24/08/2021 22	1
								-	-	-	25/08/2021 08	08/09/2021 06	15
								-	-	-	09/09/2021 09	09/09/2021 17	1
								-	-	-	03/10/2021 13	04/10/2021 09	2
								-	-	-	21/10/2021 12	21/10/2021 17	1
76	Kosi	Basua	Bihar	46.75	47.75	47.73	04/07/2021 22	17/06/2021 14	22/06/2021 18	6	-	-	-
								24/06/2021 20	29/06/2021 05	6	-	-	-
								01/07/2021 10	27/07/2021 03	27	-	-	-
								27/07/2021 15	14/09/2021 15	49	-	-	-
								20/10/2021 14	22/10/2021 12	3	-	-	-
77	Kosi	Baltara	Bihar	32.85	33.85	35.81	02/09/2021 05	20/06/2021 18	24/06/2021 19	5	03/07/2021 07	22/09/2021 09	82
								25/06/2021 08	02/10/2021 07	100	22/10/2021 04	24/10/2021 05	3
								04/10/2021 13	10/10/2021 16	7	-	-	-
								21/10/2021 03	28/10/2021 17	8	-	-	-
78	Kosi	Kursela	Bihar	29.00	30.00	31.83	18/08/2021 17	13/07/2021 14	17/07/2021 09	5	04/08/2021 10	14/09/2021 22	42
								20/07/2021 16	13/10/2021 12	86	-	-	-

Above Normal and Severe flood events on main Ganga and its tributaries- 2021 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2021		Flood period above warning level			Flood period above danger level		
						Level in metres	Date/Time	From	To	No.of days	From	To	No.of days
								23/10/2021 15	31/10/2021 23	9	-	-	-
79	Mahananda	Dhengraghat	Bihar	34.65	35.65	36.90	30/08/2021 02	03/07/2021 08	12/07/2021 02	10	04/07/2021 08	06/07/2021 06	3
								12/07/2021 12	14/07/2021 04	2	09/07/2021 17	10/07/2021 11	2
								15/07/2021 09	25/07/2021 04	11	13/08/2021 20	14/08/2021 11	2
								28/07/2021 12	29/07/2021 23	2	15/08/2021 17	16/08/2021 12	2
								09/08/2021 08	09/09/2021 23	32	18/08/2021 05	02/09/2021 09	16
								20/10/2021 12	28/10/2021 20	9	03/09/2021 09	06/09/2021 12	4
								-	-	-	20/10/2021 15	24/10/2021 11	5
80	Mahananda	Jhawa	Bihar	30.40	31.40	31.86	30/08/2021 15	03/07/2021 16	07/07/2021 03	5	20/08/2021 23	24/08/2021 14	5
								09/07/2021 12	11/07/2021 02	3	27/08/2021 23	31/08/2021 16	5
								13/07/2021 00	14/07/2021 03	2	-	-	-
								16/07/2021 02	16/07/2021 11	1	-	-	-
								17/07/2021 07	19/07/2021 19	3	-	-	-
								20/07/2021 15	23/07/2021 10	4	-	-	-
								14/08/2021 09	06/09/2021 12	24	-	-	-
								21/10/2021 14	23/10/2021 06	3	-	-	-
81	Gandak	Dumariaghat	Bihar	61.22	62.22	63.83	01/09/2021 11	30/05/2021 08	30/05/2021 08	1	16/06/2021 07	28/06/2021 19	13
								01/06/2021 01	01/06/2021 02	1	30/06/2021 10	09/08/2021 06	41
								15/06/2021 06	13/10/2021 04	121	10/08/2021 08	14/09/2021 10	36
								20/10/2021 08	28/10/2021 13	9	21/10/2021 12	23/10/2021 06	3
82	Burhigandak	Ahirwalia	Bihar	58.62	59.62	60.32	08/07/2021 08	04/07/2021 14	18/07/2021 22	15	06/07/2021 12	15/07/2021 01	10
								01/09/2021 04	07/09/2021 10	7	-	-	-
83	Mayurakshi	Narayanpur	West Bengal	26.86	27.86	25.98	01/10/2021 21	-	-	-	-	-	-
84	Ajoy	Gheropara	West Bengal	38.42	39.42	42.00	01/10/2021 01	30/09/2021 13	01/10/2021 17	2	30/09/2021 14	01/10/2021 14	2
85	Mundeshwari	Harinkhola	West Bengal	11.80	12.80	14.22	01/10/2021 16	31/07/2021 21	04/08/2021 07	5	02/08/2021 03	03/08/202101	2
								01/10/2021 04	04/10/2021 01	4	01/10/2021 05	03/10/2021 09	3
86	Kangsabati	Mohanpur	West Bengal	24.73	25.73	24.50	15/09/2021 21	-	-	-	-	-	-
87	Bagmati	Dheng Bridge	Bihar	70.00	71.00	72.31	03/07/2021 19	28/05/2021 18	29/05/2021 18	2	30/06/2021 15	30/06/2021 21	1
								27/06/2021 07	27/06/2021 21	1	01/07/2021 11	02/07/2021 00	2
								28/06/2021 11	28/06/2021 23	1	02/07/2021 08	04/07/2021 16	2
								30/06/2021 06	14/07/2021 15	15	15/08/2021 16	15/08/2021 20	1
								14/07/2021 19	16/07/2021 08	2	27/08/2021 11	28/08/2021 07	2
								18/07/2021 05	24/07/2021 23	7	06/09/2021 13	06/09/2021 16	1
								27/07/2021 06	27/07/2021 08	1	-	-	-
								29/07/2021 06	01/08/2021 23	4	-	-	-
								02/08/2021 07	04/08/2021 14	3	-	-	-
								09/08/2021 10	11/08/2021 09	3	-	-	-
								12/08/2021 056	21/08/2021 04	10	-	-	-
								24/08/2021 12	01/09/2021 19	9	-	-	-
								03/09/2021 06	03/09/2021 16	1	-	-	-
								05/09/2021 12	07/09/2021 21	3	-	-	-
								22/09/2021 07	22/09/2021 17	1	-	-	-
								03/10/2021 08	04/10/2021 14	2	-	-	-
								06/10/2021 13	07/10/2021 07	2	-	-	-
88	Adhwara	Sonebarsha	Bihar	80.85	81.85	81.44	30/06/2021 15	30/06/2021 13	30/06/2021 22	1	-	-	-
								03/07/2021 11	04/07/2021 01	2	-	-	-
								20/07/2021 10	20/07/2021 19	1	-	-	-
								15/08/2021 11	16/08/2021 14	2	-	-	-
								03/10/2021 11	03/10/2021 17	1	-	-	-
89	Kamla Balan	Jainagar	Bihar	66.75	67.75	69.35	27/08/2021 16	01/05/2021 08	03/12/2021 08	217	02/06/2021 11	02/06/2021 17	1
								-	-	-	30/06/2021 16	07/07/2021 03	8
								-	-	-	08/07/2021 07	09/07/2021 21	2
								-	-	-	11/07/2021 12	11/07/2021 21	1
								-	-	-	12/07/2021 09	12/07/2021 10	1
								-	-	-	14/07/2021 06	14/07/2021 19	1
								-	-	-	16/07/2021 17	17/07/2021 01	2
								-	-	-	18/07/2021 05	18/07/2021 19	1
								-	-	-	19/07/2021 07	19/07/2021 16	1
								-	-	-	20/07/2021 05	24/07/2021 18	5
								-	-	-	27/07/2021 07	28/07/2021 09	2
								-	-	-	29/07/2021 07	29/07/2021 19	1
								-	-	-	30/07/2021 07	31/07/2021 13	2
								-	-	-	03/08/2021 07	03/08/2021 14	1
								-	-	-	04/08/2021 17	06/08/2021 12	3

Above Normal and Severe flood events on main Ganga and its tributaries- 2021 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2021		Flood period above warning level			Flood period above danger level		
						Level in metres	Date/Time	From	To	No.of days	From	To	No.of days
								-	-	-	08/08/2021 07	08/08/2021 16	1
								-	-	-	09/08/2021 07	09/08/2021 10	1
								-	-	-	12/08/2021 08	12/08/2021 15	1
90	Bagmati	Runisaidpur	Bihar	54.00	55.00	57.36	04/07/2021 06	27/06/2021 13	28/06/2021 12	2	01/07/2021 10	08/07/2021 13	8
								30/06/2021 22	26/07/2021 20	27	09/07/2021 07	11/07/2021 11	3
								29/07/2021 11	09/08/2021 05	12	29/07/2021 19	30/07/2021 08	2
								09/08/2021 08	13/09/2021 03	36	10/08/2021 16	11/08/2021 11	2
								22/09/2021 08	23/09/2021 16	2	13/08/2021 13	21/08/2021 12	9
								03/10/2021 06	10/10/2021 07	8	27/08/2021 09	09/09/2021 14	14
								20/10/2021 20	21/10/2021 18	2	03/10/2021 14	05/10/2021 13	3
91	Parwan	Araria	Bihar	46.00	47.00	48.24	23/10/2021 13	29/06/2021 07	06/08/2021 18	39	02/07/2021 18	14/07/2021 08	13
								08/08/2021 13	12/08/2021 03	5	17/07/2021 11	26/07/2021 08	10
								12/08/2021 10	14/09/2021 12	2	28/07/2021 16	29/07/2021 04	2
								04/10/2021 11	05/10/2021 05	2	17/08/2021 07	08/09/2021 03	23
								06/10/2021 09	07/10/2021 15	2	20/10/2021 16	28/10/2021 06	9
								20/10/2021 08	30/10/2021 08	11	-	-	-
92	Mahananda	Taibpur	Bihar	65.00	66.00	66.88	20/10/2021 20	02/07/2021 16	04/07/2021 21	3	17/08/2021 17	17/08/2021 23	1
								08/07/2021 12	09/07/2021 08	2	19/08/2021 11	20/08/2021 03	2
								11/07/2021 15	12/07/2021 17	2	20/08/2021 17	21/08/2021 08	1
								14/07/2021 15	16/07/2021 02	3	28/08/2021 17	29/08/2021 11	2
								18/07/2021 13	18/07/2021 23	1	20/10/2021 10	21/10/2021 09	2
								20/07/2021 20	21/07/2021 08	2	-	-	-
								28/07/2021 02	28/07/2021 09	1	-	-	-
								08/08/2021 12	10/08/2021 13	3	-	-	-
								12/08/2021 10	15/08/2021 18	4	-	-	-
								17/08/2021 10	25/08/2021 02	8	-	-	-
								25/08/20212 18	25/08/2021 19	1	-	-	-
								26/08/2021 09	30/08/2021 18	5	-	-	-
								02/09/2021 15	03/09/2021 23	2	-	-	-
								04/09/2021 14	05/09/2021 11	2	-	-	-
								20/10/2021 08	22/10/2021 04	3	-	-	-
93	Chambal	Kota City	Rajasthan	239.00	240.00	242.1	04/08/2021 11	03/08/2021 12	05/08/2021 00	3	04/08/2021 07	04/08/2021 12	1
								07/08/2021 07	08/08/2021 01	2	-	-	-
								10/08/2021 11	10/08/2021 13	1	-	-	-
94	Rapti	Kakardhari	Uttar Pradesh	130.00	131.00	130.01	15/08/2021 18	15/08/2021 17	15/08/2021 22	1	-	-	-
95	Chambal	Dholpur	Rajasthan	129.79	130.79	144.7	8/4/2021	28/07/2021 07	29/07/2021 03	2	28/07/2021 10	28/07/2021 20	1
								01/08/2021 02	01/08/2021 17	1	02/08/2021 14	12/08/2021 00	11
								02/08/2021 12	12/08/2021 09	11	-	-	-
96	Chambal	Manderial	Rajasthan	164.00	165.00	169.18	04/08/2021 08	03/08/2021 01	05/08/2021 14	3	03/08/2021 06	05/08/2021 10	3
								07/08/2021 02	08/08/2021 04	2	07/08/2021 05	08/08/2021 00	2

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2021 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2021		Flood period above warning level			Flood period above danger level		
						Level in metres	From	From	To	No.of days	From	To	No.of days
1	Siang	Yingkiang	Arunachal Pradesh	303.00	304.00	-	-	-	-	-	-	-	-
2	Siang	Passighat	Arunachal Pradesh	152.96	153.96	154.77	28/08/2021 23	14/08/2021 18	15/08/2021 11	2	26/08/2021 10	27/08/2021 19	2
								15/08/2021 13	16/08/2021 13	1	28/08/2021 04	30/08/2021 14	3
								19/08/2021 06	02/09/2021 05	15	-	-	-
3	Noa-Dehing	Namsai	Arunachal Pradesh	144.80	145.80	144.77	21/05/2021 16	-	-	-	-	-	-
4	Brahmaputra	Dibrugarh	Assam	104.70	105.70	105.71	29/08/2021 08	09/06/2021 08	10/06/2021 05	2	29/08/2021 07	29/08/2021 13	1
								29/06/2021 13	07/07/2021 00	9	-	-	-
								12/08/2021 03	15/09/2021 21	4	-	-	-
								17/09/2021 06	21/09/2021 18	5	-	-	-
5	Brahmaputra	Neamatighat	Assam	84.54	85.54	87.02	30/08/2021 00	21/05/2021 17	25/05/2021 13	5	10/06/2021 05	10/06/2021 18	1
								29/05/2021 01	30/05/2021 09	2	30/06/2021 08	08/07/2021 02	9
								04/06/2021 13	08/06/2021 06	5	14/08/2021 12	18/08/2021 06	5
								09/06/2021 02	13/06/2021 05	5	19/08/2021 09	04/09/2021 09	17
								15/06/2021 21	18/06/2021 17	4	-	-	-
								20/06/2021 00	24/07/2021 05	35	-	-	-
								25/07/2021 07	06/08/2021 08	13	-	-	-
								10/08/2021 22	18/09/2021 15	40	-	-	-
								19/09/2021 16	21/09/2021 15	3	-	-	-
								23/10/2021 01	24/10/2021 16	2	-	-	-
6	Brahmaputra	Tezpur	Assam	64.23	65.23	66.11	30/08/2021 19	11/06/2021 06	11/06/2021 20	1	27/08/2021 14	03/09/2021 18	8
								01/07/2021 08	16/07/2021 11	16	-	-	-
								14/08/2021 17	12/09/2021 18	30	-	-	-
7	Brahmaputra	Guwahati	Assam	48.68	49.68	50.16	01/09/2021 05	18/08/2021 07	19/08/2021 03	2	29/08/2021 11	03/09/2021 07	6
								23/08/2021 07	05/09/2021 21	14	-	-	-
8	Brahmaputra	Goalpara	Assam	35.27	36.27	36.56	01/09/2021 12	04/07/2021 20	10/07/2021 16	7	30/08/2021 12	04/09/2021 02	6
								17/08/2021 19	09/09/2021 09	24	-	-	-
9	Brahmaputra	Dhubri	Assam	27.62	28.62	29.52	02/09/2021 03	30/06/2021 21	24/07/2021 17	25	24/08/2021 22	07/09/2021 00	15
								15/08/2021 11	16/09/2021 04	33	-	-	-
10	Buridehing	Naharkatia	Assam	119.40	120.40	119.22	20/11/2021 18	-	-	-	-	-	-
11	Buridehing	Chenimari/Khwong	Assam	101.11	102.11	101.17	28/08/2021 18	21/08/2021 10	21/08/2021 17	1	-	-	-
								28/08/2021 15	29/08/2021 01	2	-	-	-
12	Subansiri	Badatighat	Assam	81.53	82.53	83.08	30/08/2021 09	22/08/2021 00	24/08/2021 15	3	28/08/2021 00	01/09/2021 05	5
								26/08/2021 13	03/09/2021 16	9	-	-	-
13	Dikhow	Sivasagar	Assam	91.40	92.40	91.97	30/08/2021 13	23/06/2021 14	24/06/2021 06	2	-	-	-
								05/07/2021 19	06/07/2021 10	2	-	-	-
								27/08/2021 10	28/08/2021 18	2	-	-	-
								29/08/2021 09	31/08/2021 23	3	-	-	-
14	Desang	Nanglamoraghat	Assam	93.46	94.46	95.49	28/06/2021 23	21/06/2021 22	01/07/2021 07	11	23/06/2021 20	30/06/2021 16	8
								20/08/2021 02	23/08/2021 04	4	-	-	-
15	Dhansiri(S)	Golaghat	Assam	88.50	89.50	87.82	09/09/2021 21	-	-	-	-	-	-
16	Dhansiri(S)	Numaligarh	Assam	77.42	78.42	77.74	31/08/2021 00	30/08/2021 06	31/08/2021 02	2			
17	Kopili	Kampur	Assam	59.50	60.50	59.51	17/08/2021 09	17/08/2021 07	17/08/2021 13	1	-	-	-
18	Kopili	Dharamtul	Assam	55.00	56.00	54.87	17/08/2021 22	-	-	-	-	-	-

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2021 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2021		Flood period above warning level			Flood period above danger level		
						Level in metres	From	From	To	No.of days	From	To	No.of days
19	Jiabharali	NT.Rd.X-ing	Assam	76.00	77.00	78.16	27/08/2021 10	10/05/2021 11	12/05/2021 22	**3**	27/05/2021 17	28/05/2021 08	**2**
								13/05/2021 03	24/05/2021 11	**12**	03/06/2021 18	06/06/2021 21	**4**
								27/05/2021 08	16/10/2021 08	**143**	08/06/2021 06	10/06/2021 10	**3**
								18/10/2021 10	31/10/2021 23	**14**	18/06/2021 13	19/06/2021 15	**2**
								-	-	-	24/06/2021 11	24/07/2021 17	**31**
								-	-	-	26/07/2021 13	27/07/2021 22	**2**
								-	-	-	29/07/2021 09	30/07/2021 15	**2**
								-	-	-	01/08/2021 07	03/08/2021 03	**3**
								-	-	-	09/08/2021 11	11/09/2021 12	**34**
								-	-	-	18/09/2021 05	19/09/2021 14	**2**
								-	-	-	20/10/2021 09	23/10/2021 01	**4**
20	Subansiri	Choldhowaghat	Assam	99.43	100.43	97.03	29/08/2021 12	-	-	-	-	-	-
21	Ranganadi	N H Crossing Ranganadi	Assam	93.81	94.81	94.38	05/06/2021 22	27/05/2021 18	27/05/2021 18	1	-	-	-
								05/06/2021 20	06/06/2021 08	2	-	-	-
								08/06/2021 14	09/06/2021 10	2	-	-	-
								10/07/2021 08	10/07/2021 11	1	-	-	-
								14/07/2021 10	14/07/2021 17	1	-	-	-
								17/07/2021 06	17/07/2021 08	1	-	-	-
								01/08/2021 05	01/08/2021 11	1	-	-	-
								27/08/2021 08	27/08/2021 20	1	-	-	-
								28/08/2021 08	28/08/2021 17	1	-	-	-
22	Lohit	Dholla Bazaar	Assam	127.27	128.27	126	27/08/2021 12	-	-	-	-	-	
23	Puthimari	Puthimari _NHX	Assam	50.81	51.81	51.73	07/06/2021 23	07/06/2021 16	09/06/2021 17	3	-	-	-
								29/07/2021 15	29/07/2021 23	1	-	-	-
								30/07/2021 16	30/07/2021 23	1	-	-	-
								15/08/2021 07	15/08/2021 15	1	-	-	-
								26/08/2021 03	01/09/2021 06	7	-	-	-
								02/09/2021 12	03/09/2021 17	2	-	-	-
								07/09/2021 11	08/09/2021 01	2	-	-	-
24	Pagladia	Pagladia_NTX	Assam	51.75	52.75	52.65	30/06/202119	05/06/2021 12	06/06/2021 14	**2**	-	-	-
								07/06/2021 11	10/06/2021 04	**4**	-	-	-
								16/06/2021 14	16/06/2021 18	**1**	-	-	-
								30/06/2021 07	01/07/2021 16	**2**	-	-	-
								14/07/2021 18	14/07/2021 20	**1**	-	-	-
								26/08/2021 16	27/08/2021 04	**2**	-	-	-
								27/08/2021 10	28/08/2021 17	**1**	-	-	-
								02/09/2021 11	03/09/2021 02	**2**	-	-	-
								07/09/2021 10	07/09/2021 14	**1**	-	-	-
25	Barak	APGhat	Assam	18.83	19.83	18.42	28/08/2021 11	-	-	-	-	-	-
26	Katakhal	Matizuri	Assam	19.27	20.27	19.16	02/09/2021 08	-	-	-	-	-	-
27	Barak	Badarpurghat	Assam	15.85	16.85	15.43	28/08/2021 19	-	-	-	-	-	-
28	Kushiyara	Karimganj	Assam	13.94	14.94	14.70	22/07/2021 01	20/07/2021 21	23/07/2021 22	**4**	-	-	-
								03/08/2021 18	05/08/2021 23	**3**	-	-	-
								07/08/2021 18	09/08/2021 13	**3**	-	-	-
								17/08/2021 19	21/08/2021 02	**5**	-	-	-
								22/08/2021 23	23/08/2021 18	**2**	-	-	-
								24/08/2021 02	31/08/2021 18	**8**	-	-	-
								02/09/2021 22	03/09/2021 11	**2**	-	-	-
29	Manu	Kailashar	Tripura	24.34	25.34	23.07	29/08/2021 21	-	-	-	-	-	-
30	Gumti	Sonamura	Tripura	11.50	12.50	11.04	01/07/2021 20	-	-	-	-	-	-

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2021 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2021		Flood period above warning level			Flood period above danger level		
						Level in metres	From	From	To	No.of days	From	To	No.of days
31	Manas	Mathanguri	Assam	98.10	99.10	95.90	28/08/2021 14	-	-	-	-	-	-
32	Manas	Manas NH- Crossing	Assam	47.81	48.42	48.09	30/06/2021 17	29/06/2021 18	01/07/2021 04	**3**	-	-	-
								26/08/2021 21	27/08/2021 06	**2**	-	-	-
33	Beki	Beki Rd. Bridge	Assam	44.10	45.10	45.79	28/08/2021 16	27/05/2021 16	29/05/2021 05	3	11/07/2021 10	11/07/2021 11	**1**
								08/06/2021 09	10/06/2021 04	3	19/07/2021 12	19/07/2021 23	**1**
								13/06/2021 06	17/06/2021 05	5	20/07/2021 14	20/07/2021 20	**1**
								18/06/2021 12	22/06/2021 21	5	21/07/2021 12	21/07/2021 13	**1**
								23/06/2021 13	24/06/2021 03	2	27/07/2021 13	27/07/2021 23	**1**
								29/06/2021 15	22/10/2021 01	116	14/08/2021 14	14/08/2021 20	**1**
								-	-	-	20/08/2021 11	21/08/2021 16	**2**
								-	-	-	22/08/2021 08	22/08/2021 12	**1**
								-	-	-	23/08/2021 10	24/08/2021 15	**2**
								-	-	-	25/08/2021 10	31/08/2021 18	**7**
								-	-	-	02/09/2021 11	02/09/2021 15	**1**
								-	-	-	03/09/2021 02	03/09/2021 08	**1**
								-	-	-	09/09/2021 16	10/09/2021 20	**2**
											20/10/2021 11	20/10/2021 20	**1**
34	Gaurang	Kokrajhar	Assam	41.85	42.85	42.9	26/08/2021 18	29/06/2021 14	01/07/2021 04	**3**	26/08/2021 17	26/08/2021 22	1
								15/07/2021 13	16/07/2021 02	**2**	-	-	-
								11/08/2021 13	16/08/2021 01	**6**	-	-	-
								17/08/2021 11	18/08/2021 05	**2**	-	-	-
								19/08/2021 19	21/08/2021 17	**3**	-	-	-
								23/08/2021 10	24/08/2021 10	**2**	-	-	-
								26/08/2021 06	29/08/2021 17	**4**	-	-	-
								02/09/2021 14	03/09/2021 05	**2**	-	-	-
								07/09/2021 13	08/09/2021 00	**2**			
35	Sankosh	Golokganj	Assam	28.94	29.94	29.91	27/08/2021 09	04/07/2021 06	05/07/2021 08	**2**	-	-	-
								09/07/2021 15	24/07/2021 09	**16**	-	-	-
								28/07/2021 06	28/07/2021 15	**1**	-	-	-
								13/08/2021 06	06/09/2021 00	**25**	-	-	-
								20/10/2021 08	21/10/2021 14	**2**	-	-	-
								08/06/2021 18	08/06/2021 20	**1**	08/07/2021 11	08/07/2021 14	1
								19/06/2021 06	19/06/2021 07	**1**	19/10/2021 20	20/10/2021 14	2
								20/06/2021 07	20/06/2021 17	**1**	-	-	-
								30/06/2021 05	30/06/2021 09	**1**	-	-	-
								03/07/2021 17	03/07/2021 20	**1**	-	-	-
								08/07/2021 07	08/07/2021 20	**1**	-	-	-

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2021 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2021		Flood period above warning level			Flood period above danger level		
						Level in metres	From	From	To	No.of days	From	To	No.of days
36	Teesta	Domohani	W.B.	85.65	85.95	86.65	20/10/2021 07	11/07/20212 08	12/07/2021 02	**2**	-	-	-
								14/07/2021 08	15/07/2021 20	**2**	-	-	-
								19/07/2021 13	19/07/2021 21	**1**	-	-	-
								15/08/2021 11	15/08/2021 19	**1**	-	-	-
								17/08/2021 06	17/08/2021 17	**1**	-	-	-
								18/08/2021 09	18/08/2021 23	**1**	-	-	-
								19/08/2021 06	19/08/2021 18	**1**	-	-	-
								21/08/2021 17	21/08/2021 20	**1**	-	-	-
								23/08/2021 10	24/08/2021 11	**2**	-	-	-
								25/08/2021 07	25/08/2021 09	**1**	-	-	-
								26/08/2021 06	26/08/2021 16	**1**	-	-	-
								27/08/2021 03	27/08/2021 09	**1**	-	-	-
								28/08/2021 12	28/08/2021 22	**1**	-	-	-
								19/10/2021 18	20/10/2021 18	**2**	-	-	-
								22/10/2021 08	22/10/2021 09	**1**	-	-	-
37	Teesta	Mekhliganj	W.B.	65.45	65.95	66.62	20/10/2021 11	08/07/2021 19	09/07/2021 00	2	20/10/2021 05	20/10/2021 20	1
								19/08/2021 18	20/08/2021 03	2	-	-	-
								21/08/2021 09	21/08/2021 11	1	-	-	-
								20/10/2021 05	21/10/2021 02	2	-	-	-
38	Jaldhaka	N H 31	W.B.	80.00	80.90	80.10	20/08/2021 13	30/06/2021 06	30/06/2021 11	1	-	-	-
								19/08/2021 08	19/08/2021 11	1	-	-	-
								20/08/2021 08	20/08/2021 15	1	-	-	-
								28/08/2021 15	28/08/2021 21	1	-	-	-
								19/10/2021 23	20/10/2021 03	2	-	-	-
								20/10/2021 07	20/10/2021 13	1	-	-	-
39	Jaldhaka	Mathabhanga	W.B.	47.70	48.20	48.16	30/06/2021 13	30/06/2021 09	30/06/2021 20	1	-	-	-
								19/08/2021 17	20/08/2021 02	2	-	-	-
								20/08/2021 20	21/08/2021 03	1	-	-	-
								02/09/2021 19	03/09/2021 07	2	-	-	-
40	Torsa	Ghughumari	W. B.	39.80	40.41	40.50	20/10/2021 17	30/06/2021 09	30/06/2021 23	1	20/10/2021 16	20/10/2021 20	1
								19/08/2021 12	21/08/2021 23	3	-	-	-
								24/08/2021 16	30/08/2021 10	7	-	-	-
								02/09/2021 06	03/09/2021 08	2	-	-	-
								20/10/2021 04	21/10/2021 04	2	-	-	-
41	Radak-I	Tufanganj	W. B.	34.22	35.30	34.40	27/08/2021 08	07/07/2021 07	07/07/2021 09	1	-	-	-
								27/08/2021 06	28/08/2021 02	2	-	-	-
42	Teesta	Malli Bazaar	Sikkim	223.00	224.00	218.74	20/10/2021 05	-	-	-	-	-	-
43	Teesta	Joretahang(Rothak)	Sikkim	350.60	351.60	349.12	19/06/2021 01	-	-	-	-	-	-
44	Teesta	Singtam	Sikkim	377.70	377.57	375.65	20/10/2021 00	-	-	-	-	-	-
45	Torsa	Hasimara	West Bengal	116.30	116.90	116.86	20/10/2021 07	19/10/2021 21	20/10/2021 12	2	-	-	-

Above Normal and Severe flood events on various river systems (excluding Ganga and Brahmaputra basins)- 2021 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2021		Flood period above warning level			Flood period above danger level		
						Level in metres	Time	From	To	No. of days	From	To	No. of days
1	Jhelum	Rammunshibagh	Jammu & Kashmir	1585.53	1586.45	1584.53	24/10/2021 12	-	-	-	-	-	-
2	Jhelum	Sangam	Jammu & Kashmir	1590.30	1592.00	1589.59	24/10/2021 05	-	-	-	-	-	-
3	Jhelum	Safapora	Jammu & Kashmir	1580.00	1580.80	1579.24	01/08/2021 00	-	-	-	-	-	-
4	Subernarekna	Jamshedpur	Jharkhand	122.50	123.50	123.3	27/05/2021 19	27/05/2021 13	27/05/2021 23	1	-	-	-
								31/07/2021 23	01/08/2021 13	2	-	-	-
5	Subernarekna	Rajghat	Odisha	9.45	10.36	10.66	17/09/2021 15	01/08/2021 22	03/08/2021 10	3	17/09/2021 06	18/09/2021 00	2
								15/09/2021 20	18/09/2021 10	4	24/09/2021 10	24/09/2021 14	1
								22/09/2021 10	23/09/2021 07	2	-	-	-
								23/09/2021 23	25/09/2021 03	2	-	-	-
6	Burhabalang	NH_5 _Road Bridge	Odisha	7.21	8.13	8.08	16/09/2021 17	14/09/2021 17	17/09/2021 18	4	-	-	-
7	Baitarni	Anandpur	Odisha	37.44	38.36	39.38	27/05/2021 17	27/05/2021 07	28/05/2021 04	2	27/05/2021 09	28/05/2021 02	2
								16/09/2021 05	16/09/2021 08	1	-	-	-
8	Baitarni	Akhuapada	Odisha	17.83	17.83	19.00	28/05/2021 02	27/05/2021 12	28/05/2021 19	2	27/05/2021 12	28/05/2021 19	2
								24/07/2021 18	25/07/2021 06	2	24/07/2021 18	25/07/2021 06	2
								14/09/2021 09	17/09/2021 20	4	14/09/2021 09	17/09/2021 20	4
								23/09/2021 14	24/09/2021 02	2	23/09/2021 14	24/09/2021 02	2
9	Brahmani	Jenapur	Odisha	22	23	22.64	14/09/2021 22	14/09/2021 12	15/09/2021 11	2	-	-	-
10	Rushikuluya	Purushottampur	Odisha	15.83	16.83	15.5	13/11/2021 23	-	-	-	-	-	-
11	Vamsadhara	Gunupur	Odisha	83.00	84.00	82.27	14/09/2021 22	-	-	-	-	-	-
12	Vamsadhara	Kashinagar	Odisha	54.10	54.60	54.20	15/09/2021 04	14/09/2021 13	14/09/2021 18	1	-	-	-
								15/09/2021 01	15/09/2021 11	1	-	-	-
13	Jalaka	Mathani Road Bridge	Odisha	5.50	5.50	7.31	22/09/2021 10	30/07/2021 13	01/08/2021 03	3	30/07/2021 13	01/08/2021 03	3
								08/09/2021 06	09/09/2020 13	2	08/09/2021 06	09/09/2020 13	2
								12/09/2021 05	12/09/2021 21	1	12/09/2021 05	12/09/2021 21	1
								13/09/2021 09	27/09/2021 00	13	13/09/2021 09	27/09/2021 00	13
								28/09/2021 07	28/09/2021 10	1	28/09/2021 07	28/09/2021 10	1
								30/09/2021 02	02/10/2021 08	3	30/09/2021 02	02/10/2021 08	3
								17/10/2021 23	21/10/2021 18	5	17/10/2021 23	21/10/2021 18	5
14	Mahanadi	Naraj	Odisha	25.41	26.41	25.98	18/09/2021 11	15/09/2021 01	16/09/2021 14	2	-	-	-
								17/09/2021 05	19/09/2021 23	3	-	-	-
15	Mahanadi	Alipingal Devi	Odisha	10.85	11.76	9.47	18/09/2021 16	-	-	-	-	-	-
16	Mahanadi	Nimapara	Odisha	9.85	10.76	7.72	19/09/2021 06	-	-	-	-	-	-
17	Godavari	Atreyapuram	Andhra Pradesh	14.00	15.00	11.27	26/07/2021 00	-	-	-	-	-	-
18	Godavari	Kopergaon	Maharashtra	490.90	493.68	490.55	29/09/2021 22	-	-	-	-	-	-
19	Godavari	Gangakhed	Maharashtra	374.00	375.00	374.40	08/09/2021 22	08/09/2021 12	09/09/2021 05	2	-	-	-
20	Godavari	Nanded	Maharashtra	353.00	354.00	353.10	30/09/2021 13	29/09/2021 23	30/09/2021 12	2	-	-	-
21	Godavari	Kaleswaram	Telangana	103.50	104.75	105.03	23/07/2021 18	23/07/2021 10	24/07/2021 12	2	23/07/2021 15	23/07/2021 23	1
								08/09/2021 06	09/09/2021 01	2	-	-	-
								29/09/2021 00	29/09/2021 19	1	-	-	-
22	Godavari	Eturunagaram	Telangana	73.32	75.82	74.12	24/07/2021 07	23/07/2021 22	24/07/2021 21	2	-	-	-
								08/09/2021 20	09/09/2021 18	2	-	-	-
23	Godavari	Dummagudam	Telangana	53.00	55.00	53.93	24/07/2021 18	24/07/2021 07	25/07/2021 05	2	-	-	-
								09/09/2021 08	10/09/2021 00	2	-	-	-

Above Normal and Severe flood events on various river systems (excluding Ganga and Brahmaputra basins)- 2021 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2021		Flood period above warning level			Flood period above danger level		
						Level in metres	Time	From	To	No. of days	From	To	No. of days
24	Godavari	Bhadrachalam	Telangana	45.72	48.77	47.42	24/07/2021 21	24/07/2021 08	25/07/2021 14	2	-	-	-
								09/09/2021 04	10/09/2021 16	2	-	-	-
								30/09/2021 04	30/09/2021 20	1	-	-	-
25	Wardha	Sirpur Town	Telangana	159.95	160.95	159.84	09/09/2021 02	-	-	-	-	-	-
26	Godavari	Kunavaram	Andhra Pradesh	37.74	39.24	39.28	25/07/2021 10	24/07/2021 20	26/07/2021 08	3	25/07/2021 09	25/07/2021 14	1
								09/09/2021 13	11/09/2021 16	3	10/09/2021 10	10/09/2021 11	1
								30/09/2021 13	02/10/2021 06	3	-	-	-
27	Godavari	Rajamundry	Andhra Pradesh	17.68	19.51	16.31	10/09/2021 20	-	-	-	-	-	-
28	Godavari	Dowalaiswaram	Andhra Pradesh	14.25	16.08	14.33	9/10/2021	25/07/2021 19	26/07/2021 03	2	-	-	-
								10/09/2021 13	11/09/2021 05	2	-	-	-
29	Wainganga	Bhandara	Maharashtra	245.50	245.70	245.27	31/12.2021 18	-	-	-	-	-	-
30	Wainganga	Pauni	Maharashtra	226.73	227.73	225.60	21/09/2021 19	-	-	-	-	-	-
31	Wardha	Balharsha	Maharashtra	171.50	174.00	169.86	08/09/2021 18	-	-	-	-	-	-
32	Indravati	Jagdalpur	Chhatisgarh	539.50	540.80	537.93	18/08/2021 18	-	-	-	-	-	-
33	Krishna	Arjunwad	Maharashtra	542.07	543.29	543.96	26/07/2021 02	23/07/2021 16	01/08/2021 13	10	24/07/2021 04	29/07/2021 18	6
34	Bhima	Deongaon	Karnataka	402.00	404.50	399.35	13/10/202108	-	-	-	-	-	-
35	Tungabhadra	Mantralayam	Andhra Pradesh	310.00	312.00	311.75	22/11/2021 08	27/07/2021 08	28/07/2021 22	2	-	-	-
								30/07/2021 22	31/07/2021 05	2	-	-	-
								10/08/2021 05	11/08/2021 04	2	-	-	-
36	Tungabhadra	Kurnool	Andhra Pradesh	273.00	274.00	273.1	22/11/2021 08	-	-	-	-	-	-
37	Nagavali	Srikakulam	Andhra Pradesh	10.17	10.8	11.98	9/28/2021 11:00	07/09/2021 02	07/09/2021 11	1	28/09/2021 01	29/09/2021 00	2
								27/09/2021 02	27/09/2021 05	1	-	-	-
								27/09/2021 22	29/09/2021 21	2	-	-	-
38	Pennar	Nellore	Andhra Pradesh	15.91	17.28	19.57	20/11/2021 06	06/11/2021 06	07/11/2021 06	2	20/11/2021 06	21/11/2021 06	2
								14/11/2021 06	14/11/2021 06	1	-	-	-
								19/11/2021 06	05/12/2021 06		-	-	-
39	Sabarmati	Ahmedabad Shubhash Bridge	Gujarat	44.09	45.34	41.88	22/11/2021 18	-	-	-	-	-	-
40	Mahi	Wanakbori	Gujarat	71.93	74.98	68.96	29/09/2021 00	-	-	-	-	-	-
41	Naramada	Mandla	Madhya Pradesh	437.20	437.80	436.42	25/07/2021 07	-	-	-	-	-	-
42	Naramada	Hoshangabad	Madhya Pradesh	292.80	293.80	287.00	17/09/2021 07	-	-	-	-	-	-
43	Naramada	Garudeswar	Gujarat	30.48	31.09	16.03	16/06/2021 07	-	-	-	-	-	-
44	Naramada	Bharuch	Gujarat	6.71	7.31	5.4	06/10/2021 23	-	-	-	-	-	-
45	Tapi	Surat	Gujarat	8.50	9.50	7.5	12/10/2021 23	-	-	-	-	-	-

Above Normal and Severe flood events on various river systems (excluding Ganga and Brahmaputra basins)- 2021 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2021		Flood period above warning level			Flood period above danger level		
						Level in metres	Time	From	To	No. of days	From	To	No. of days
46	Damanganga	Vapi Town	Gujarat	18.20	19.20	17.9	29/09/2021 05	-	-	-	-	-	-
47	Damanganga	Daman	Dadra & Nagar Have	2.60	3.40	3	03/05/2021 13	-	-	-	-	-	-
48	Cauvery	Musiri	Tamilnadu	84.50	85.50	82.84	20/11/2021 07	10/11/2021 23	11/11/2021 04	2	-	-	-
								15/11/2021 16	23/11/2021 14	9	-	-	-
								27/11/2021 12	28/11/2021 05	2	-	-	-
49	Cauvery	Kodumudi	Tamilnadu	125.5	126.5	125.63	19/11/2021 16	19/11/2021 14	20/11/2021 17	2	-	-	-
50	Bhavani	Savandapur	Tamilnadu	184.50	185.50	183.26	19/11/2021 10	-	-	-	-	-	-
51	Sabari	Chinturu	Andhra Pradesh	41.50	43.00	39.39	25/07/2021 11	-	-	-	-	-	-
52	Krishna	Avanigadda	Andhra Pradesh	9.00	11.00	8.72	07/08/2021 00	-	-	-	-	-	-
53	Periyar	Neeleswaram	Kerala	9.00	10.00	4.64	12/10/2021 06	-	-	-	-	-	-
54	Bharathapuzha	Kumbidi	Kerala	8.20	9.20	7.63	13/10/2021 02	-	-	-	-	-	-
55	Pamba	Malakkara	Kerala	6.00	7.00	7.1	17/10/2021 01	16/10/2021 18	18/10/2021 17	3	16/10/2021 23	17/10/2021 05	2
								14/11/2021 18	14/11/2021 22	1	-	-	-
56	Godavari	Nasik	Maharashtra	558.10	559.60	558.1	9/29/2021	29/09/2021 13	29/09/2021 16	1	-	-	-
57	Banas	Abu Road	Rajasthan	258.00	259.00	258.2	22/09/2021 08	22/09/2021 08	22/09/2021 09	1	-	-	-
58	Vaigai	Madurai	Tamilnadu	131.50	132.50	131.85	01/12/2021 09	26/11/2021 18	26/11/2021 21	1	-	-	-
								27/11/2021 06	27/11/2021 17	1	-	-	-
								01/12/2021 07	02/12/2021 14	2	-	-	-

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