

# Flood Year Determination Based on Peak Flow Data in Reference to Danger and Extreme Danger Level

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## ➤ CLASSIFICATIONS OF VARIOUS FLOOD SITUATIONS

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

- **LOW FLOOD**

The river is said to be in “LOW FLOOD” situation at any flood forecasting sites **when the water level of the river touches or crosses the warning level**, but remains below the danger level of the forecasting site.

- **MODERATE FLOOD**

If the water level of the **river touches or crosses its danger level, but remains 0.50 m below the Highest Flood Level** of the site (commonly known as “HFL”) then the flood situation is called the “MODERATE FLOOD” situation.

- **HIGH FLOOD**

If the water level of the river at the forecasting site is **below the Highest Flood Level of the forecasting site but still within 0.50m of the HFL** then the flood situation is called “HIGH FLOOD” situation.

In “High Flood Situations” a special “Orange Bulletin” is being issued by the Central Water Commission to the users’ agencies which contains the “special flood message” related to the high flood.

- **UNPRECEDENTED FLOOD**

The flood situation is said to be “UNPRECEDENTED” when the water level of the river touches or crosses the “HIGHEST FLOOD LEVEL” recorded at any forecasting site so far. In “Unprecedented Flood Situations” a special “Red Bulletin” is being issued by the Central Water Commission to the users agencies which contains the “special flood message” related to the unprecedented flood.

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

Category	Description	Stage
IV	Low Flood (Water level between Warning level and Danger level)	Yellow
III	Moderate Flood (Water level below 0.50m less than HFL and above Danger Level)	Yellow
II	High Flood (Water Level less than Highest Flood Level but still within 0.50 m of the HFL)	Orange
I	Unprecedented Flood (Water Level equal and above Highest Flood Level-HFL)	Red

Up to 2017 Flood Appraisal Report (FAR), CWC

## CLASSIFICATIONS OF VARIOUS FLOOD SITUATIONS (2018 ONWARDS, FAR, CWC)

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-

- **ABOVE NORMAL FLOOD**

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

- **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

- **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 forecasting site so far.

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

**Prepare a flood year determination diagram from the following data**

**Annual discharge data of Mayurakshi river at Tilpara Barrage from 1978 to 2007**

<b>Year</b>	<b>Flood Level</b>	<b>Highest Flood Level</b>	<b>Nature of Flood</b>	<b>Remarks</b>
1978	31.1			
1979	26.28			
1980	26.55			
1981	26.94			
1982	25.89			
1983	27.24			
1984	26.69			
1985	26.62			
1986	27.82			
1987	28.5			
1988	26.12			
1989	26.32			
1990	26.8			
1991	27.08			
1992	27.23			
1993	27.54			
1994	27.12			
1995	26.33			
1996	27.02			
1997	27.14			
1998	26.73			
1999	29.35			
2000	29.79			
2001	25.98			
2002	27.34			
2003	26.18			
2004	28.57			
2005	26.11			
2006	27.77			
2007	27.15			

**Note:**

**Warning level (WL)-26.20, Danger Level (DL)-27.00, High Flood Level (HFL)-27.70**