

## 1. Introduction

Hydrology and Water Resources Services Division (HWRSD) is one of the four Divisions of the Centre, responsible for generating and disseminating information and services related to hydrology and water resources.

The Division collects and archives daily data from river gauging stations located across the country, to keep updated on the status of the flow, the Division is coming up with Monthly Flow Monitoring Report in selected hydrological stations located in different river basins. Currently, following stations (figure 1) are selected for monthly monitoring of the flow;

1. Lungtenphu station in Wangchhu,
2. Kerabari station in Punatsangchhu basin
3. Wangdirapids station in Punatsangchhu basin
- 4. Kurjey station in Chamkharchhu basin**
5. Kurizampa station in Kurichhu, Manas basin
6. Sumpa station in Kurichhu, Manas basin
7. Panbang station in Dangmechhu, Manas basin

The main objective of the report is to understand and keep updated flow status of the river and further provide information on the abnormal data observation while comparing with the historical flow data.



*Figure 1 Map showing the selected stations for Flow monitoring*

## 2. Methodology

The flow of September 2022 is compared to the flow of historical September months. The historical flow data is available from 1991 to 2021. The measures of dispersion such as mean, maximum and minimum flows are computed to make comparison.

## 3. Observation

The mean flow recorded for the month of September 2022 was  $99.92 \text{ m}^3/\text{s}$  which is higher than the mean Historical September months (i.e.,  $99.13 \text{ m}^3/\text{s}$ ). Maximum flow of September 2022 (i.e.,  $183.74 \text{ m}^3/\text{s}$ ) was observed to be lower than the maximum flow observed in the past September months (i.e.,  $290.34 \text{ m}^3/\text{s}$ ). Meanwhile Minimum flow of September 2022 (i.e.,  $77.58 \text{ m}^3/\text{s}$ ) was observed to be higher than the past September months ( $48.75 \text{ m}^3/\text{s}$ ).

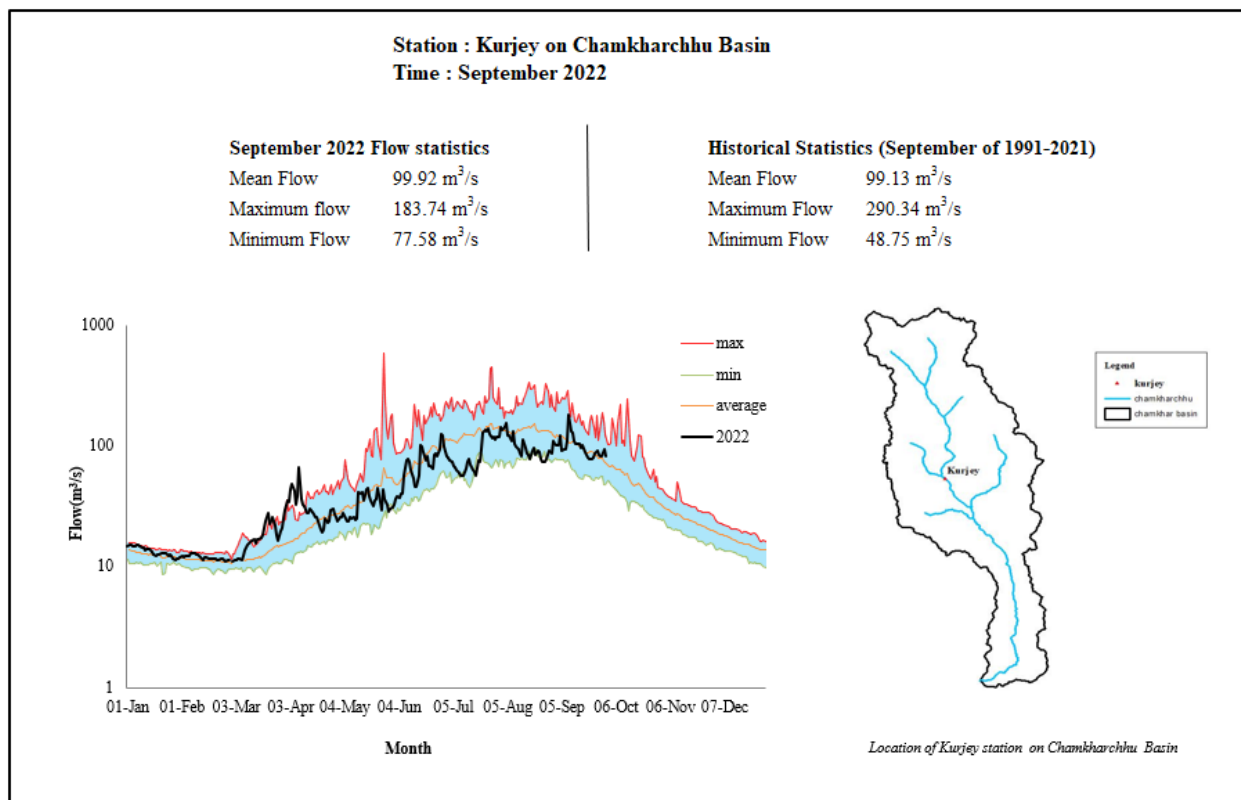


Figure 2 Daily flow status of September 2022 as compared to historical daily flow data of September months

Table 1 Table of flow statistics comparison September of 2022 and historical September months (1991-2021).

Statistics	September 2022 ( $\text{m}^3/\text{s}$ )	Historical September (1991-2021) $\text{m}^3/\text{s}$
Mean flow	99.92	99.13
Max flow	183.74	290.34
Min flow	77.58	48.75

#### **4. Summary**

1. The mean flow of September 2022 is observed to be  $0.79\text{m}^3/\text{s}$  higher than the mean of Normal flow (Historical September).
2. The Maximum flow for September 2022 is observed to lower by  $106.6\text{m}^3/\text{s}$  compared to the Maximum flow observed in the past September months.
3. The Minimum flow of September 2022 was higher by  $28.83\text{m}^3/\text{s}$  from the past September months.