

## 1. Introduction

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

The Division collects and archives daily data from the river gauging station 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. Kurjey station in Chamkharchhu basin and
4. **Wangdirapids station in Punatsangchhu 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.

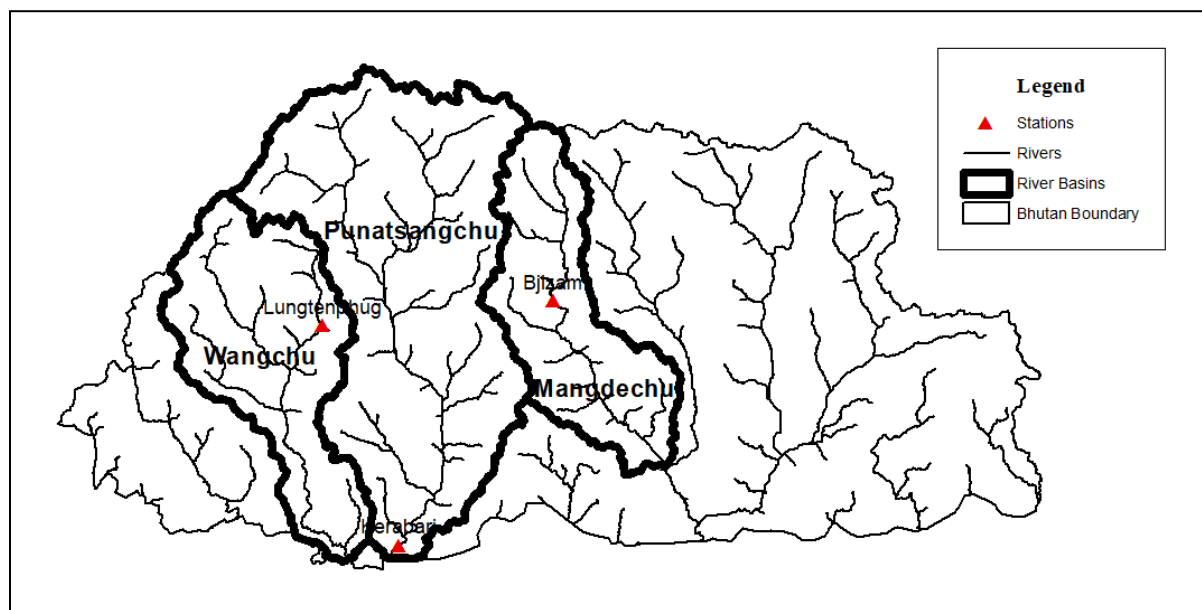


Figure 1 Map showing the selected stations for Flow monitoring

## 2. Methodology

The flow of December 2021 is compared to the flow of historical December months. The historical flow data is available from 1992 to 2020. 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 December 2021 was  $109.71\text{m}^3/\text{s}$  which is higher than the mean of Historical December months (i.e.  $97.2\text{m}^3/\text{s}$ ). Maximum flow of December 2021 (i.e.  $130.86\text{m}^3/\text{s}$ ) was observed to be lesser than the maximum flow observed in the past December months (i.e.  $136.36\text{m}^3/\text{s}$ ). Meanwhile Minimum flow of December 2021 (i.e.  $90.58\text{m}^3/\text{s}$ ) was observed to be higher than the past December months (i.e.  $72.2\text{m}^3/\text{s}$ ).

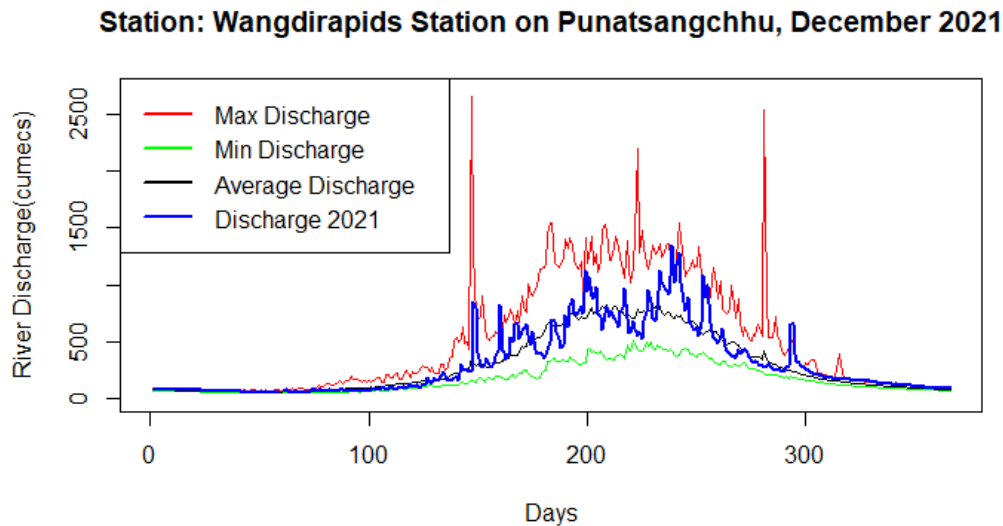


Figure 2 Daily flow status of December 2021 as compared to historical daily flow data of December months

Table 1 Table of flow statistics comparison December of 2021 and historical December months (1992-2020).

Statistics	December 2021 ( $\text{m}^3/\text{s}$ )	Historical December (1992-2020) $\text{m}^3/\text{s}$
Mean flow	109.71	97.20
Max flow	130.86	136.36
Min flow	90.58	72.20

### 4. Summary

1. The mean flow of December 2021 is observed to be  $12.5\text{m}^3/\text{s}$  higher than the mean of Historical December months.
2. The minimum flow is observed to be higher by  $18.38\text{m}^3/\text{s}$  in December 2021 compared to the minimum flow observed in the past for December months.
3. The Maximum flow of December 2021 was observed to be lower than the maximum flow observed in the past December months by  $5.5\text{m}^3/\text{s}$ .