



རྒྱུ་ཕྱེད་རྒྱུ་ལ་དང་རྒྱུ་ལི་ཐོན་སྐྱེད་ཞབས་ཏུ་གྲུ་ཚན།
 རྒྱུ་ལོངས་རྒྱུ་ཕྱེད་དང་གནམ་གཤིས་རྒྱུ་ལི་ཐོན་སྐྱེད།
HYDROLOGY & WATER RESOURCES SERVICES DIVISION
NATIONAL CENTER FOR HYDROLOGY & METEOROLOGY
THIMPHU: BHUTAN



Status and River Level Trends:
Glacier Lake Outburst Flood (GLOF) Early Warning System

Sunday, November 3, 2019

Issued at: 10:00 AM

1. Punatshang Chhu Sub Basin

| Sl No. | River Basin Number | Basin Name | Name of River | Station Name | Highest Water Level Recorded | Alert Water Level | Alarm Water Level | Water Level (m) recorded at 9:00 AM Yesterday | Water Level (m) recorded at 9:00 AM Today | Water Level Rise (+)/Fall (-) in meters during last 24 Hrs ending at 9 AM Today | Downstream Settlement |
|--------|--------------------|-----------------|---------------|----------------|------------------------------|-------------------|-------------------|---|---|---|--|
| 1 | Basin II | Punatshang Chhu | Pho Chhu | Luggay Tsho | | 7.80 | 10.00 | 6.31 | 6.31 | 0.00 | Thanza, Tenchey, Lhedi and Lunana area and Downstream of Pho Chhu and Puna-Wangdue Valley |
| 2 | | | | Thorhormi Tsho | | 7.50 | 5.00 | 5.07 | 5.57 | 0.00 | |
| 3 | | | | Rapstreng Tsho | | 7.40 | 5.00 | 6.03 | 6.03 | 0.00 | |
| 4 | | | | Bay Tsho | | 7.40 | 5.00 | 6.20 | 6.20 | 0.00 | |
| 5 | | | | Thanza | | 7.70 | 8.70 | 6.30 | 6.30 | 0.00 | |
| 6 | | | | Tarina Wachey | | 8.50 | 10.50 | NR | NR | #VALUE! | |
| 7 | | | Mo Chhu | Dangsa | | 5.50 | 7.00 | 3.77 | 3.76 | 0.01 | Pho Chhu Valley (Tamdamchu, Wolathang, Samdingkha, Khawajara, Shengana, Khuruthang) Puna-Wangdue Valley and Downstream |
| 8 | | | | Taksemerkhang | | 7.50 | 8.50 | 5.33 | 5.32 | 0.01 | |
| 9 | | | | Tashithang | | 9.00 | 10.50 | NR | 5.31 | #VALUE! | |
| 10 | | | | Yebesa | | 5.00 | 7.00 | 1.47 | 1.44 | 0.03 | |

| Approximate Lead Time for Evacuation after the detection of flood at Four lake Sensor | | | | | | Approximate Lead Time for Evacuation after the detection of flood at Dangsa Sensor | | | | | |
|---|---------------|---------|---------|------------------|--------------|--|---------------|----------------|------------------|---------------------------------------|--------------------|
| Sl Nos | Name of Place | Approx. | Approx. | Approx. Distance | Approx. Time | Sl Nos | Name of Place | Approx. | Approx. Time for | Approx. Time available for Evacuation | |
| 1 | Thanza | 1.5 km | 2.8 km | 3.3 km | 6.7 km | 20-60 minutes | 1 | Wolathang | 5.8 km | 30 minutes | 30 minutes |
| 2 | Tenchey | 2.9 km | 4.1 km | 4.6 km | 8.2 km | | 2 | Samdingkha | 12.0 km | 55 minutes | 55 minutes |
| 3 | Tshojo | 8.1 km | 10.0 km | 10.5 km | 13.8 km | | 3 | Punakha Dzong | 20 km | 90 minutes | 1 hours 30 minutes |
| 4 | Lhedi | 16.7 km | 17.6 km | 18.5 km | 21.8 km | | 4 | Khuruthang | 24 km | 120 minutes | 2 hours |
| 5 | Puna-Wangdue | 100 km | 100 km | 100 km | 100 km | 5-7 hours | 5 | Bajo Town | 30.5 km | 145 minutes | 2 hours 25 minutes |
| | | | | | | | 6 | Wangdue Bridge | 33 km | 150 minutes | 2 hours 30 minutes |

NOTE: The above distance were Calculated from basic tools in the Google Earth Map, thus distance were approximate only

Glacier Lake Outburst Flood (GLOF) & Rainstorm Flood Early Warning System.
2. Chamkhar Chhu and Mangdue Chhu Sub Basin

| Sl No. | River Basin Number | Basin Name | Name of River | Station Name | Highest Water Level Recorded (m) | Alert Water Level (m) | Alarm Water Level (m) | Water Level (m) recorded at 9:00 AM Yesterday | Water Level (m) recorded at 9:00 AM Today | Water Level Rise (+)/Fall (-) in meters during last 24 Hrs ending at 9 AM Today | Downstream Settlement |
|--------|--------------------|------------|---------------|--------------|----------------------------------|-----------------------|-----------------------|---|---|---|--|
| 1 | Basin III | Manas | Chamkhar Chhu | Tshampa | | 5.00 | 6.50 | 3.81 | 3.82 | 0.01 | Chokortoe Pry School, Kurjey Village, Wangdicholing, Chamkhar Town, Gangrithang Pry School, Gyelkhar Village and Downstream settlement under Zhemgang. |
| 2 | | | | Khagthang | | 5.50 | 6.00 | 4.49 | 4.49 | 0.00 | |
| 3 | | | | Kurjey | | 5.72 | 3.30 | 5.00 | 1.75 | 1.74 | |
| 4 | | | Mangdue Chhu | Jongthang | | 5.90 | 7.00 | NR | NR | #VALUE! | Bjizam Community, MHPA Dam, Power House and Downstream settlement of Trongsa and Zhemgang |
| 5 | | | | Bjizam | | 5.52 | 4.20 | 5.50 | 1.88 | 1.88 | |

| Approximate Lead Time for Evacuation of Chamkhar Chhu Sub Basin | | | | | Approximate Lead Time for Evacuation of Mangdue Chhu Sub Basin | | | | | | |
|---|---------------|---------------|---------|-----------|---|--------|---------------|----------------|---------|-----------|-------------------|
| Approximate Lead Time for Evacuation after the detection of Flood at the Tshampa AWLS | | | | | Approximate Lead Time for Evacuation after the detection of Flood at the Jongthang AWLS | | | | | | |
| Sl Nos | Name of Place | Approx. Dista | Approx. | Elevation | Approx. Lead | Sl Nos | Name of Place | Approx. Distan | Approx. | Elevation | Approx. Lead Time |
| 1 | Khagthang | 20.3 km | 20.3 km | 3704 m | 27 minutes | 1 | Bjizam | 18.5 km | 18.5 km | 2223 m | 34 minutes |
| 2 | Chorkhor Toe | 4.5 km | 24.8 km | 2904 m | 34 minutes | 2 | Dam Site | 7.8 km | 26.3 km | 1848 m | 50 minutes |
| 3 | Kurjey | 12.4 km | 37.2 km | 2771 m | 60 minutes | 3 | Power Plant | 20.4 km | 46.7 km | 1024 m | 88 minutes |
| 4 | Wangdichollin | 5.7 km | 42.9 km | 2600 m | 79 minutes | | | | | | |
| 5 | Bumthang | 1 km | 43.9 km | 2562 m | 83 minutes | | | | | | |
| 6 | Gangrithang | 0.3 km | 44.2 km | 2552 m | 84 minutes | | | | | | |
| 7 | Gyelkhar | 1.7 km | 45.9 km | 2538 m | 91 minutes | | | | | | |

3. River Level Status of Gauging Station

| Sl No. | Station Type | River Basin Number | Basin Name | Name of River | Station Name | Highest Water Level Recorded (m) | Water Level (m) recorded at 9 AM Yesterday | Water Level (m) recorded at 9:00 AM Today | Water Level Rise (+)/Fall (-) in meters during last 24 Hours ending at 9:00 AM Today | Weather Condition | Downstream Settlement | | | |
|--------|--------------|--------------------|-----------------|---------------|-----------------|----------------------------------|--|---|--|-------------------|--|---------------|--|---------------|
| 1 | AWLS | Basin I | Wang Chhu | Thim Chhu | Dodena | | 1.60 | 1.59 | -0.01 | Sunny | Thimphu Valley and Downstream | | | |
| 2 | Principal | | | | Lungtenphu | 2.82 | 0.66 | 0.66 | 0.00 | Sunny | | | | |
| 3 | Principal | | | | Damchu | 6.00 | 2.27 | 2.27 | 0.00 | Sunny | | | | |
| 4 | Secondary | | | | Haa Chhu | 2.60 | 0.66 | 0.68 | 0.02 | Sunny | | | | |
| 5 | Secondary | | | | Pa Chhu | | 0.96 | 0.95 | -0.01 | Sunny | | | | |
| 6 | Principal | | | | Amo Chhu | | 2.55 | 2.55 | 0.00 | Sunny | | | | |
| 7 | Principal | | | | Dorokha | | 2.55 | 2.53 | -0.01 | Sunny | | | | |
| 8 | Secondary | Basin II | Punatshang Chhu | Pho Chhu | Samdinkha | 6.10 | 2.85 | 2.83 | -0.02 | Sunny | Puna-Wangdue Valley and Downstream | | | |
| 9 | Principal | | | | Mo Chhu | 3.94 | 1.43 | 1.41 | -0.02 | | Mo Chhu Valley and Downstream | | | |
| 10 | Secondary | | | | Punatshang Chhu | Punatshang Chhu | Wangdue Bridge | | 1.15 | 1.15 | 0.00 | Sunny | Downstream of Dugana and Lhamoizinkha | |
| 11 | Principal | | | | | | Wangdue Rapid | 7.82 | 1.62 | 1.59 | -0.03 | Sunny | | |
| 12 | Principal | | | | | | Turitar Sunkosh | 6.68 | 2.15 | 2.10 | -0.05 | Sunny | | |
| 13 | Secondary | | | | | | Sunkosh Bridge | | 1.45 | 1.40 | -0.05 | Clear Weather | | |
| 14 | Principal | | | | | | Kerabari | 11.90 | 4.11 | 4.08 | -0.03 | Sunny | | |
| 15 | Secondary | Mao Chhu | Sherzhong | | 3.75 | 3.75 | 0.00 | Sunny | Lhamoizinkha and Downstream | | | | | |
| 16 | Principal | Basin III | Manas | Mangdue Chhu | Bizam | 5.35 | 1.90 | 1.89 | -0.01 | Sunny | MHPA Dam, Power House and Downstream of Trongsa & Zhengang | | | |
| 17 | Secondary | | | | Dakpai Chhu | 2.26 | 1.35 | 1.35 | 0.00 | | Downstream of Zhmgang and Panbang | | | |
| 18 | Principal | | | | Tingtibi | 7.45 | 3.09 | 3.10 | 0.01 | Sunny | | | | |
| 19 | Principal | | | | Chamkhar Chhu | Chamkhar Chhu | Kurjey | 4.00 | 1.75 | 1.74 | -0.01 | Sunny | Chamkhar Valley, Zhengang and Downstream | |
| 20 | Principal | | | | | | Shingkar | | 1.56 | 1.55 | -0.01 | Sunny | Zhengang and Downstream | |
| 21 | Principal | | | | Kuri Chhu | Kuri Chhu | Sumpa | 7.65 | 3.30 | 3.27 | -0.03 | Sunny | Lhuntse Downstream, Kurizampa, KHPA and Downstream along the Kuri Chhu | |
| 22 | Secondary | | | | | | Khoma | 5.30 | 1.48 | 1.45 | -0.03 | | | |
| 23 | Secondary | | | | | | Autsho | 8.48 | 3.17 | 3.15 | -0.02 | Clear Weather | | |
| 24 | Principal | | | | | | Kurizampa | 18.45 | 7.17 | 7.15 | -0.02 | Sunny | | |
| 25 | Principal | | | | | | Kholong Chhu | Muktirap | 6.00 | 1.75 | 1.73 | -0.02 | | Clear Weather |
| 26 | Principal | | | | | | Doksum | | 3.32 | 3.30 | -0.02 | Sunny | | |
| 27 | Secondary | | | | Drangme Chhu | Drangme Chhu | Chazam | | 7.60 | 7.55 | -0.05 | Sunny | Downstream Settlement of Kuri-Gongri and Panbang | |
| 28 | Principal | Ozorong | 6.75 | 1.41 | | | 1.42 | 0.01 | | | | | | |
| 29 | Secondary | Sheri Chhu | 2.58 | 1.40 | | | 1.40 | 0.00 | Sunny | | | | | |
| 30 | Principal | Panbang | 12.48 | 4.47 | | | 4.43 | -0.04 | Sunny | | | | | |
| 31 | Principal | Pangzam | | 5.65 | | | 5.65 | 0.00 | Sunny | | | | | |
| 32 | Principal | Ngara Ama Chhu | Bangtar | | 1.91 | 1.90 | -0.01 | Sunny | Downstream of Bangtar Settlement | | | | | |

NOTE The Water Level are relative Gauge Hight of the Observation site reference to the Site Specific and does not represent the actual water depth.

ALERT
ALARM

NR Represent that the Data has not been reported or Not Updated

ISSUED BY: FMCR,HWRSD,NCHM