

ह्:५५५-ऱ्या:य:५८-हुतै:र्वतःश्चे५:लयशःर्नेगःश्चे:र्वता क्तुत्यःर्वेदश्यः कुर्नुधुन्द्रः यात्रुवः यात्रीवः देवा यदे होः या

HYDROLOGY & WATER RESOURCES SERVICES DIVISION NATIONAL CENTER FOR HYDROLOGY & METEOROLOGY THIMPHU: BHUTAN



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

Tuesday, November 12, 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	Alerm Water Level	Water Level (m) recorded at 9:00 AM Yesterday	recorded at 9:00	Water Level Rise (+)/Fall (-) in meters during last 24 Hrs ending at 9 AM Today	Downstream Settlement		
1			Pho Chhu g Mo Chhu	Luggay Tsho		7.80	10.00	6.31	6.31	0.00			
2				Thorthormi Tsho		7.50	5.00	5.55	5.55	0.00			
3				Rapstreng Tsho		7.40	5.00	6.04	6.06	-0.02	Thanza, Tenchey, Lhedi and Lunana area and Downstream of Pho Chhu and Puna- Wangdue Valley		
4				Bay Tsho		7.40	5.00	6.23	6.25	-0.02	rangate raney		
5	Basin II	Punatshang		Thanza		7.70	8.70	6.30	6.31	-0.01			
6	Dasin II	Chhu		[!	Tarina Wachey		8.50	10.50	6.47	6.47	0.00	Pho Chhu Valley (Tamidamchu, Wolathang, Samidingkha, Khawajara, Shengana,
7				Dangsa		5.50	7.00	3.69	3.69	0.00	Khuruthang) Puna-Wangdue Valley and Downstream		
8				Taksemakhang		7.50	8.50	5.29	5.29	0.00			
9				Tashithang		9.00	10.50	5.19	5.17	0.02	Gasa,Mo Chhu Valley,Puna-Wangdue Valley and Downstream		
10				Yebesa		5.00	7.00	1.38	1.38	0.00			

	Approximate L	ead Time for E	vacuation after	the detection of fl	ood at Four lake	Sensor	Approximate Lead Time for Evacuation after the detection of flood at Dangsa Sensor						
SI Nos	Name of Place	Approx.	Approx.	Approx.	Approx.	Approx. Tme	SI Nos	Name of Place	Approx.	Approx. Time for	Approx. Tme available for Evacuation		
1	Thanza	1.5 km	2.8 km	3.3 km	6.7 km		1	Wolathang	5.8 km	30 minutes	30 minutes		
2	Tenchey	2.9 km	4.1 km	4.6 km	8.2 km	20-60	2	Samdingkha	12.0 km	55 minutes	55 minutes		
3	Tshojo	8.1 km	10.0 km	10.5 km	13.8 km	minutes	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		
								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 diastance were approximate only

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

SI No.	River Basin Number	Basin Name	Name of River	Station Name	Highest Water Level Recorded (m)	Alert Water Level (m)	Alerm Water Level (m)	Water Level (m) recorded at 9:00 AM Yesterday	Water Level (m) recorded at 9:00	Water Level Rise (+)/Fall (-) in meters during last 24 Hrs ending at 9 AM Today	
1			GL II	Tshampa		5.00	6.50	3.76	3.78	0.02	
2			Chamkhar Chhu	Khagthang		5.50	6.00	4.45	4.44	-0.01	Chokortoe Pry School, Kurjey Village, Wangdicholing, Chamkhar Town, Gangrithng Pry School, Gyelkhar Village and Downstream settlement under Zhemgang.
3	Basin III	Manas	Ciniu	Kurjey	5.72	3.30	5.00	1.67	1.67	0.00	School, Sychilla Village and Downsteam Sectioness under Esterngang.
4]		Mangdue Chhu	Jongthang		5.90	7.00	3.97	NR	#VALUE!	Bjizam Community,MHPA Dam, Power House and Downstream settlement of Trongsa
5			Mangaue Chhu	Bjizam	5.52	4.20	5.50	1.82	1.82	0.00	and Zhemgang

Approximate Lead Time for Evacuation after the detection of Flood at the Tshampa AWLS							Approximate Lead Time for Evacuation of Mangdue Chhu Sub Basin Approximate Lead Time for Evacuation after the detection of Flood at the Jongthang AWLS							
SI Nos	Name of Place	Approx.Dista	Approx.	Elevation	Approx. Lead	SI 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	1								
6	Gangrithang	0.3km	44.2 km	2552 m	84 minutes	1								
7	Gyelkhar	1.7 km	45.9 km	2538 m	91 minutes	1								

3. River Level Status of Gauging Station

SI 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				Dodena		1.55	1.52	-0.03	Sunny	m: 1 1/1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
2	Principal			Thim Chhu	Lungtenphu	2.82	0.58	0.57	-0.01	Sunny	Thimphu Valley and Downstream
3	Principal				Damchu	6.00	2.19	2.18	-0.01	Sunny	Chukha and Downstream
4	Secondary	Basin 1	Wang Chhu	Haa Chhu	Haa	2.60	0.61	0.61	0.00	Sunny	Haa and Wang Chhu Downstream
5	Secondary			Pa Chhu	Bonday		0.90	0.90	0.00	Clear Weather	Downstream of Paro Valley and Wang Chhu Basin
6	Principal			Amo Chhu	Dorokha		2.50	2.50	0.00	Cloudy	Samtse, Phuntsholing and Downstream
7	Principal			Alilo Ciliu	Doyagang	7.07	2.45	2.43	-0.02	Cloudy	Phunsholing and Downstream
8	Secondary			Pho Chhu	Samdingkha	6.10	2.75	2.75	0.00	Cloudy	Puna-Wangdue Valley and Downstream
9	Principal			Mo Chhu	Yebesa	3.94	1.35	1.35	0.00	Cloudy	Mo Chhu Valley and Downstream
10	Secondary				Wangdue Bridge		1.00	1.00	0.00	Sunny	PHPA LPHPA II and Downstream
11	Principal	Basin II	Punatshang		Wangdue Rapid	7.82	1.45	1.44	-0.01	Cloudy	FREA I,FREA II and Downstream
12	Principal	Dasiii ii	Chhu	Punatshang Chhu	Turitar Sunkosh	6.68	2.05	2.05	0.00	Cloudy	Downstream of Dagana and Lhamoizingkha
13	Secondary				Sunkosh Bridge		1.30	1.30	0.00	Sunny	Downstream of Dagana and Lhamotzingkha
14	Principal				Kerabari	11.90	3.92	3.90	-0.02	Sunny	Lhamoizingkha and Downstream
15	Secondary			Mao Chhu	Sherzhong		3.65	3.65	0.00	Sunny	Gelelephu Valley and Downstream
16	Principal				Bjizam	5.35	1.82	1.82	0.00	Sunny	MHPA Dam, Power House and Downstream of Trongsa & Zhemgang
17	Secondary			Mangdue Chhu	Dakpai Chhu	2.26	1.29	1.28	-0.01	Sunny	Downstream of Zhmgang and Panbang
18	Principal				Tingtibi	7.45	2.97	2.96	-0.01		
19	Principal			Chamkhar Chhu	Kurjey	4.00	1.67	1.66	-0.01	Sunny	Chamkhar Valley, Zhemgang and Downstream
20	Principal			Chamkhar Chhu	Shingkhar		1.48	1.47	-0.01	Sunny	Zhemgang and Downstream
21	Principal				Sumpa	7.65	3.16	3.15	-0.01	Sunny	Lhuntse Downstream, Kurizampa, KHPA and Downstream along the Kuri Chhu
22	Secondary		Manas	Kuri Chhu	Khoma	5.30	1.40	1.41	0.01	Sumy	Enunese Downstream, Kurtzampa, Kiri A and Downstream along the Kuri Ciniu
23	Secondary			Kuri Ciniu	Autsho	8.48	3.03	3.04	0.01	Sunny	Kurizampa,KHPA and Downstream along the Kuri Chhu
24	Principal	Basin III			Kurizampa	18.45	7.00	7.00	0.00	Sunny	KHPA and Downstream along the Kuri Chhu
25	Principal			Kholong Chhu	Muktirap	6.00	1.65	1.65	0.00	Sunny	Doksum, Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu
26	Principal				Doksum		3.18	3.18	0.00	Sunny	Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu
27	Secondary				Chazam		7.45	7.45	0.00	Sunny	Downstream Settlement of Kuri-Gongri and Panbang
28	Principal			Drangme Chhu	Ozorong	6.75	1.39	1.39	0.00	Sunny	Downstream of Kuri-Gongri and Panbang
29	Secondary				Sheri Chhu	2.58	1.36	1.37	0.01	Julily	Downstream of Kuri-Gongri and Panbang
30	Principal				Panbang	12.48	4.30	4.29	-0.01	Clear Weather	Manas and Downstream
31	Principal			Ngara Ama Chhu	Pangzam		5.59	5.58	-0.01	Sunny	Bangtar Settlement and Downstream
32	Principal			rigara Ama Chhu	Bangtar		1.93	1.91	-0.02	Sunny	Downstream of Bangtar Settlement

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

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

NOTE

ISSUED BY: FMCR,HWRSD,NCHM