

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 19, 2019

Issued at: 10:00 AM

1. Punatshang Chhu Sub Basin

SI 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		Water Level Rise (+)/Fall (-) in meters during last 24 Hrs ending at 9 AM	Downstream Settlement	
1				Luggay Tsho		7.80	10.00	6.33	6.33	0.00		
2			Pho Chhu		Thorthormi Tsho		7.50	5.00	5.57	5.57	0.00	
3				Rapstreng Tsho		7.40	5.00	6.09	6.09	0.00	Thanza, Tenchey, Lhedi and Lunana area and Downstream of Pho Chhu and Puna- Wangdue Valley	
4				Pho Chhu	Bay Tsho		7.40	5.00	6.28	6.28	0.00	
5	Basin II	Punatshang			Thanza		7.70	8.70	6.33	6.33	0.00	
6	Dasin n	Chhu				Tarina Wachey		8.50	10.50	6.43	6.45	-0.02
7				Dangsa		5.50	7.00	3.67	3.67	0.00	Khuruthang) Puna-Wangdue Valley and Downstream	
8				Taksemakhang		7.50	8.50	5.28	5.29	-0.01		
9			Mo Chhu	Tashithang		9.00	10.50	5.12	5.10	0.02	Gasa,Mo Chhu Valley,Puna-Wangdue Valley and Downstream	
10		1 1		Yebesa		5.00	7.00	1.34	1.32	0.02		

1	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						
SI Nos	Name of Place Downstream	Approx. Distance from Sensor (Bay Tsho)	Approx. Distance from Sensor (Rapstreng Tsho)	Approx. Distance from Sensor (Thorthormi Tsho)	Approx. Distance from Sensor (Luggey Tsho)	Approx. Tme available for Evacuation	SI Nos	Name of Place Downstream	Approx. Distance from Sensor (Bay Tsho)	Approx. Time for Flood to reach at the Place	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	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-	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	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 Rise (+)/Fall (-) in meters during last 24 Hrs ending at 9 AM	Downstream Settlement	
1			Chamkhar Chhu Mangdue	Tshampa		5.00	6.50	3.74	3.75	0.01	Chokortoe Pry School,Kurjey Village,Wangdicholing,Chamkhar Town,Gangrith Pry School,Gvelkhar Village and Downstream settlement under Zhemgang.	
2				Khagthang		5.50	6.00	4.43	4.43	0.00		
3	Basin III	Manas Mangdu		Kurjey	5.72	3.30	5.00	1.64	1.63	-0.01	5 ,5 6 66	
4				Jongthang		5.90	7.00	3.92	NR	#VALUE!	Bjizam Community, MHPA Dam, Power House and Downstream settlement of	
5			Chhu	Bjizam	5.52	4.20	5.50	1.78	1.78	0.00	Trongsa and Zhemgang	

	Approximate Lead Time for Evacuation after the detection of Flood at the Tshampa						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 Downstream	Approx.Dista nce from the Tshampa AWLS	Approx. Cumlative Distance from Tshampa AWLS	Elevation	Approx. Lead Time	SI Nos	Name of Place Downstream	Approx.Dista nce from the Tshampa AWLS	Approx. Cumlative Distance from Tshampa AWLS	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	0.3km	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

SI No.	Station Type	River Basin Number	Basin Name	Name of River	Station Name	Highest Water Level Recorded (m)	Water Level (m) recorded at 9:00 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		1.48	1.51	0.03	Sunny	Thimphu Valley and Downstream
2	Principal			Thim Chhu	Lungtenphu	2.82	0.52	0.51	-0.01	Sunny	
3	Principal				Damchu	6.00	2.14	2.14	0.00	Sunny	Chukha and Downstream
4	Secondary	Basin l	Wang Chhu	Haa Chhu	Haa	2.60	0.58	0.60	0.02	Cloudy	Haa and Wang Chhu Downstream
5	Secondary			Pa Chhu	Bonday		0.88	0.88	0.00	Sunny	Downstream of Paro Valley and Wang Chhu Basin
6	Principal			Amo Chhu	Dorokha		2.50	2.50	0.00	Sunny	Samtse, Phuntsholing and Downstream
7	Principal				Doyagang	7.07	2.35	2.36	0.01	Cloudy	Phunsholing and Downstream
8	Secondary			Pho Chhu	Samdingkha	6.10	2.71	2.73	0.02	Cloudy	Puna-Wangdue Valley and Downstream
9	Principal			Mo Chhu	Yebesa	3.94	1.31	1.31	0.00	Sunny	Mo Chhu Valley and Downstream
10	Secondary				Wangdue Bridge		0.85	0.85	0.00	Sunny	PHPA I,PHPA II and Downstream
11	Principal	Basin II	Punatshang		Wangdue Rapid	7.82	1.38	1.37	-0.01	Sunny	THE A LETTE A II and Downstream
12	Principal	Dasin n	Chhu	Punatshang Chhu	Turitar Sunkosh	6.68	1.95	1.95	0.00	Cloudy	Downstream of Dagana and Lhamoizingkha
13	Secondary				Sunkosh Bridge		1.20	1.20	0.00	Cloudy	Downstream of Dagana and Lhamoizingkha
14	Principal				Kerabari	11.90	3.81	3.79	-0.02	Cloudy	Lhamoizingkha and Downstream
15	Secondary			Mao Chhu	Sherzhong		3.60	3.60	0.00	Cloudy	Gelelephu Valley and Downstream
16	Principal			Mangdue Chhu Chamkhar Chhu	Bjizam	5.35	1.79	1.78	-0.01	Cloudy	MHPA Dam,Power House and Downstream of Trongsa & Zhemgang
17	Secondary				Dakpai Chhu	2.26	1.24	1.23	-0.01	<i>a</i> . 1	D
18	Principal				Tingtibi	7.45	2.86	2.85	-0.01	Cloudy	Downstream of Zhmgang and Panbang
19	Principal				Kurjey	4.00	1.64	1.63	-0.01		Chamkhar Valley, Zhemgang and Downstream
20	Principal				Shingkhar		1.44	1.44	0.00	Cloudy	Zhemgang and Downstream
21	Principal				Sumpa	7.65	3.11	3.10	-0.01		
22	Secondary				Khoma	5.30	1.39	1.36	-0.03	Cloudy	Lhuntse Downstream,Kurizampa,KHPA and Downstream along the Kuri Chhu
23	Secondary			Kuri Chhu	Autsho	8.48	2.98	2.97	-0.01	Cloudy/Sunny	Kurizampa,KHPA and Downstream along the Kuri Chhu
24	Principal	Basin III	Manas		Kurizampa	18.45	6.94	6.93	-0.01	Cloudy	KHPA and Downstream along the Kuri Chhu
25	Principal			Kholong Chhu	Muktirap	6.00	1.60	1.60	0.00	Cloudy	Doksum, Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu
26	Principal				Doksum		3.13	3.12	-0.01	Sunny	Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu
27	Secondary				Chazam		7.30	7.30	0.00	Cloudy	Downstream Settlement of Kuri-Gongri and Panbang
28	Principal			Drangme Chhu	Ozorong	6.75	1.18	1.18	0.00		
29	Secondary				Sheri Chhu	2.58	1.36	1.35	-0.01	Cloudy	Downstream of Kuri-Gongri and Panbang
30	Principal				Panbang	12.48	4.20	4.21	0.01	Cloudy	Manas and Downstream
31	Principal			Ngara Ama	Pangzam		5.55	5.55	0.00	Sunny	Bangtar Settlement and Downstream
32	Principal			Chhu	Bangtar		1.89	1.90	0.01	Cloudy	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 INTROPORTING TO A DEPARTMENT OF THE ACTUAL OF THE ACTUAL

ISSUED BY: FMCR, HWRSD, NCHM