

# कु'न्धन्त्रेन्य'स'न्दक्षेत्रें क्षेत्रेन्'लचन्न'र्ट्ना'से'के्या स

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



Status and River Level Trends:

Monday, September 23, 2019

Issued at: 10:00 AM

# Glacier Lake Outbrust Flood (GLOF) Early Warning System

#### 1. Punatshang Chhu Sub Basin

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SI Nos.	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 AM Yesterday	Water Level(m) recorded at 9 AM Today	Water Level Rise (+)/Fall (-) in meters during last 24 Hrs ending at 9 AM Today	Downstream Settlement				
1				Luggay Tsho		7.80	10.00	6.55	6.54	-0.01					
2				Thorthormi Tsho		7.50	5.00	5.72	5.71	-0.01					
3				Rapstreng Tsho		7.40	5.00	6.21	6.20	-0.01	Thanza,Tenchey,Lhedi and Lunana area and Downstream of Pho Chhu and Puna-Wangdue Valley				
4				Bay Tsho		7.40	5.00	6.31	6.26	-0.05	,				
5	Basin II	Punatshang			Thanza		7.70	8.70	NR	NR	#VALUE!				
6	Duam n	Chhu		Tarina Wachey		8.50	10.50	6.74	6.75	0.01	Pho Chhu Valley (Tamidamchu, Wolathang, Samidingkha, Khawajara, Shengana,				
7								Dangsa		5.50	7.00	4.79	4.68	-0.11	Khuruthang) Puna-Wangdue Valley and Downstream
8								Ī			Taksemakhang		7.50	8.50	5.77
9			Mo Chhu	Tashithang		9.00	10.50	8.48	7.06	-1.42	Gasa,Mo Chhu Valley,Puna-Wangdue Valley and Downstream				
10								Yebesa		5.00	7.00	2.90	2.36	-0.54	1

	Approximate	Lead Time for E	vacuation after	the detection of flood at	Four lake Sensor	r	Approximate Lead Time for Evacuation after the detection of flood at Dangsa Sensor					
SI Nos		Approx. Distance from Sensor (Bay Tsho)	f C	Approx. Distance from Sensor (Thorthormi Tsho)	Approx. Distance from Sensor (Luggey Tsho)	Tme	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 Dzong	20 km	90 minutes	1 hours 30 minutes	
4	Lhedi	16.7 km	17.6 km	18.5 km	21.8 km	1	4	Khuruthang Town	24 km	120 minutes	2 hours	
5	Puna-Wangdue Valley	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 diastance were approximate only.

## Glacier Lake Outbrust Flood (GLOF) & Rainstorm Flood Early Warning System.

## 2. Chamkhar Chhu and Mangdue Chhu Sub Basin

SI Nos.	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 AM Yesterday	Water Level(m) recorded at 9 AM Today	Water Level Rise (+)/Fall (-) in meters during last 24 Hrs ending at 9 AM Today	Downstream Settlement
1				Tshampa		5.00	6.50	NR	NR	#VALUE!	
2			Chamkhar Chhu	Khagthang		5.50	6.00	NR	NR	#VALUE!	Chokortoe Pry School, Kurjey Village, Wangdicholing, Chamkhar Town, Gangrithng Pry School, Gyelkhar Village and Downstream settlement under Zhemgang.
3	Basin III	Manas		Kurjey	5.72	3.30	5.00	NR	NR	#VALUE!	School Strain Village and Downsteam School and Literagung.
4			Mangdue Chhu	Jongthang		5.90	7.00	NR	NR	#VALUE!	Bjizam Community, MHPA Dam, Power House and Downstream settlement of Trongsa
5		Mangdue Chnu	Bjizam	5.52	4.20	5.50	NR	NR	#VALUE!	and Zhemgang	

Аррі	Approximate Lead Time for Evacuation of Chamkhar Chhu Sub Basin 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	Nos Downstream Downstream Tshampa AWLS Approx. Distance from the Tshampa AWLS Approx. Lead Distance from Tshampa AWLS				SI Nos	Name of Place Downstream	Approx.Distance from the 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 PS	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	Wangdicholling	5.7 km	42.9 km	2600 m	79 minutes								
5	Bumthang	1 km	43.9 km	2562 m	83 minutes	1							
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## 3. River Level Status of Gauging Station

SI Nos.	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 AM Today	Water Level Rise (+)/Fall (-) in meters during last 24 Hrs ending at 9 AM Today	Weather Condition	Downstream Settlement
1	AWLS				Dodena		1.96	1.94	-0.02	Cloudy	Thimphu Valley and Downstream
2	Principal			Thim Chhu	Lungtenphu	2.82	1.36	1.32	-0.04	Cloudy	¥
3	Principal				Damchu	6.00	2.97	2.90	-0.07	Cloudy	Chukha and Downstream
4	Secondary	Basin l	Wang Chhu	Haa Chhu	Haa	2.60	1.00	1.03	0.03	Cloudy	Haa and Wang Chhu Downstream
5	Principal			Pa Chhu	Bonday		1.54	1.47	-0.07	Cloudy	Downstream of Paro Valley and Wang Chhu Basin
6	Principal			Amo Chhu	Dorokha		3.20	3.30	0.10	Cloudy	Samtse, Phuntsholing and Downstream
7	Secondary				Droyagang	7.07	3.42	3.46	0.04	Light Rain	Phunsholing and Downstream
8	Secondary			Pho Chhu	Samdingkha	6.10	4.30	3.95	-0.35	Cloudy	Puna-Wangdue Valley and Downstream
9	Principal			Mo Chhu	Yebesa	3.94	2.82	2.32	-0.50	Cloudy	Mo Chhu Valley and Downstream
10	Secondary			u Punatshang Chhu	Wangdue Bridge		3.45	3.05	-0.40	Cloudy	PHPA I,PHPA II and Downstream
11	Principal	Basin II	Punatshang Chhu		Wangdue Rapid	7.82	4.20	3.47	-0.73	Cloudy	
12	Principal	Dasiii II	runatshang Cinu		Turitar Sunkosh	6.68	3.55	3.40	-0.15	Cloudy	Downstream of Dagana and Lhamoizingkha
13	Secondary				Sunkosh Bridge		2.65	2.65	0.00	Cloudy	Downsteam of Dagma and Liamon Ingelia
14	Principal				Kerabari	11.90	5.71	5.68	-0.03	Cloudy	Lhamoizingkha and Downstream
15	Secondary			Mao Chhu	Sherzhong		3.90	4.00	0.10	Cloudy	Gelelephu Valley and Downstream
16	Principal			Mangdue Chhu  Chamkhar Chhu  Kuri Chhu	Bjizam	5.35	3.03	2.70	-0.33	Cloudy	MHPA Dam, Power House and Downstream of Trongsa & Zhemgang
17	Secondary				Dakpai Chhu	2.26	1.58	1.59	0.01	Cloudy	Downstream of Zhmgang and Panbang
18	Principal				Tingtibi	7.45	4.02	3.93	-0.09	Cloudy	Downsteam of 21mgang and 1 anothing
19	Principal				Kurjey	4.00	2.57	2.40	-0.17	Cloudy	Chamkhar Valley, Zhemgang and Downstream
20	Principal				Shingkhar (Bemethang)		2.36	2.35	-0.01	Cloudy	Zhemgang and Downstream
21	Principal				Sumpa	7.65	5.20	5.05	-0.15	Cloudy	Lhuntse Downstream,Kurizampa,KHPA and Downstream along the Kuri Chhu
22	Secondary				Khoma	5.30	2.45	2.38	-0.07	Cloudy	Litatise Downstream, Rutt Zampa, Riff A and Downstream along the Ruff Citie
23	Secondary				Autsho	8.48	5.05	4.95	-0.10	Cloudy	Kurizampa,KHPA and Downstream along the Kuri Chhu
24	Principal	Basin III	Manas		Kurizampa	18.45	9.32	9.11	-0.21	Cloudy	KHPA and Downstream along the Kuri Chhu
25	Principal			Kholong Chhu	Muktirap	6.00	3.30	2.95	-0.35	Cloudy	Doksum, Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu
26	Secondary				Doksum		4.26	4.35	0.09	Sunny	Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu
27	Secondary			Drangme Chhu	Chazam		9.55	9.45	-0.10	Sunny	Downstream Settlement of Kuri-Gongri and Panbang
28	Principal				Ozorong	6.75	3.25	2.94	-0.31	Cloudy	Downstream of Kuri-Gongri and Panbang
29	Secondary				Sheri Chhu	2.58	1.65	1.65	0.00	Cloudy	Downsteam of Kur-Gongri and Landang
30	Principal				Panbang	12.48	6.65	6.34	-0.31	Cloudy	Manas and Downstream
31	Principal			Ngara Ama Chhu	Pangzam		6.05	6.10	0.05	Cloudy	Bangtar Settlement and Downstream
32	Principal				Bangtar		2.24	2.25	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 doesnot represent the actual water depth.

ALERT

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

ISSUED BY: FMCR,HWRSD,NCHM