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Tuesday, October 15, 2019

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



10:00 AM

Issued at:

### Status and River Level Trends:

Glacier Lake Outbrust Flood (GLOF) Early Warning System 1. Punatshang Chhu Sub Basin

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	6.45	6.45	0.00	_		
2				Thorthormi Tsho		7.50	5.00	5.65	5.64	-0.01			
3				Rapstreng Tsho		7.40	5.00	6.10	6.09	-0.01	Thanza, Tenchey, Lhedi and Lunana area and Downstream of Pho Chhu and Puna-Wangdue Valley		
4			Pho Chhu	Bay Tsho		7.40	5.00	6.30	6.29	-0.01	vancy		
5	Basin ll	Punatshang	. [	Thanza		7.70	8.70	6.50	6.40	-0.10			
6	Dasin n	Chhu	Chhu		Tarina Wachey		8.50	10.50	NR	6.62	#VALUE!	Pho Chhu Valley (Tamidamchu, Wolathang, Samidingkha, Khawajara, Shengana,	
7			Mo Chhu	Dangsa		5.50	7.00	4.18	4.11	-0.07	Khuruthang) Puna-Wangdue Valley and Downstream		
8				Taksemakhang		7.50	8.50	NR	NR	#VALUE!			
9				Tashithang		9.00	10.50	NR	NR	#VALUE!	Gasa, Mo Chhu Valley, Puna-Wangdue Valley and Downstream		
10				Yebesa		5.00	7.00	1.80	1.72	-0.08	1		
								•		•			
	Approximate	Lead Time for H	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 (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		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 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

Sl 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		Basin III Manas	Chamkhar Chhu	Chamkhar Chhu	Tshampa		5.00	6.50	4.02	4.00	-0.02			
2					Chamkhar Chhu	Chamkhar Chhu	Chamkhar Chhu	Chamkhar Chhu	Khagthang		5.50	6.00	4.63	4.63
3	Basin III			Kurjey	5.72	3.30	5.00	2.00	1.97	-0.03	oction, opennia v ninge and bownsteam settement ander Estengung.			
4			Mangdue Chhu	Jongthang		5.90	7.00	NR	NR	#VALUE!	Bjizam Community, MHPA Dam, Power House and Downstream settlement of Trongsa			
5		Manguue Ciniu	Biizam	5.52	4.20	5.50	2.21	2.16	-0.05	and Zhemgang				

Арри				Chamkhar Chhu Sub Ba ction of Flood at the Tsl		Approximate Lead Time for Evacuation of Mangdue Chhu Sub Basin Approximate Lead Time for Evacuation after the detection of Flood at the Jongthang AWLS						
Sl Nos	Name of Place	Approx.Distance from the Tshampa AWLS	Approx. Cumlative Distance from Tshampa AWLS	Elevation	Approx. Lead Time	SI Nos	Name of Place Downstream	Approx.Distance 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 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							
6	Gangrithang PS	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 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	i			Dodena		1.76	1.75	-0.01	Sunny	Thimphu Valley and Downstream					
2	Principal			Thim Chhu	Lungtenphu	2.82	0.98	0.96	-0.02	Sunny						
3	Principal				Damchu	6.00	2.55	2.52	-0.03	Sunny	Chukha and Downstream					
4	Secondary	Basin l	Wang Chhu	Haa Chhu	Haa	2.60	0.83	0.81	-0.02	Sunny	Haa and Wang Chhu Downstream					
5	Principal			Pa Chhu	Bonday		1.17	1.16	-0.01	Sunny	Downstream of Paro Valley and Wang Chhu Basin					
6	Principal			Amo Chhu	Dorokha		2.95	2.90	-0.05	Sunny	Samtse, Phuntsholing and Downstream					
7	Secondary				Doyagang	7.07	2.88	2.83	-0.05	Sunny	Phunsholing and Downstream					
8	Secondary			Pho Chhu	Samdingkha	6.10	3.30	3.26	-0.04	Sunny	Puna-Wangdue Valley and Downstream					
9	Principal			Mo Chhu	Yebesa	3.94	1.77	1.68	-0.09	Sunny	Mo Chhu Valley and Downstream					
10	Secondary				Wangdue Bridge		1.75	1.70	-0.05	Sunny	PHPA I, PHPA II and Downstream					
11	Principal	Basin II	Punatshang Chhu		Wangdue Rapid	7.82	2.32	2.22	-0.10	Sunny						
12	Principal	Duan n	r unatsnang Cintu	Punatshang Chhu	Turitar Sunkosh	6.68	2.80	2.70	-0.10	Sunny	Downstream of Dagana and Lhamoizingkha					
13	Secondary				Sunkosh Bridge		2.00	1.95	-0.05	Sunny	Downstean of Dagana and Linningana					
14	Principal				Kerabari	11.90	4.84	4.78	-0.06	Sunny	Lhamoizingkha and Downstream					
15	Secondary			Mao Chhu	Sherzhong		3.85	3.85	0.00	Sunny	Gelelephu Valley and Downstream					
16	Principal			Mangdue Chhu	Bjizam	5.35	2.21	2.16	-0.05	Sunny	MHPA Dam, Power House and Downstream of Trongsa & Zhemgang					
17	Secondary				Dakpai Chhu	2.26	1.56	1.52	-0.04	Sunny	Downstream of Zhmgang and Panbang					
18	Principal				Tingtibi	7.45	3.64	3.58	-0.06							
19	Principal			Chamkhar Chhu	Kurjey	4.00	2.01	1.97	-0.04	Sunny	Chamkhar Valley, Zhemgang and Downstream					
20	Principal				Shingkhar (Bemethang)		1.82	1.78	-0.04	Sunny	Zhemgang and Downstream					
21	Principal		Manas	Kuri Chhu	Sumpa	7.65	3.97	3.63	-0.34							
22	Secondary				Khoma	5.30	1.80	1.73	-0.07	Sunny	Lhuntse Downstream,Kurizampa,KHPA and Downstream along the Kuri Chhu					
23	Secondary				Autsho	8.48	3.80	3.61	-0.19	Sunny	Kurizampa, KHPA and Downstream along the Kuri Chhu					
24	Principal	Basin III		Manas	Manas	Manas	Manas	Manas		Kurizampa	18.45	7.89	7.75	-0.14	Sunny	KHPA and Downstream along the Kuri Chhu
25	Principal						Kholong Chhu	Muktirap	6.00	2.14	2.03	-0.11	Sunny	Doksum, Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu		
26	Secondary				Doksum		3.94	3.88	-0.06	Sunny	Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu					
27	Secondary	- - - -		Drangme Chhu	Chazam		8.10	8.05	-0.05	Sunny	Downstream Settlement of Kuri-Gongri and Panbang					
28	Principal				Ozorong	6.75	2.04	1.99	-0.05	Sunny	Downstream of Kuri-Gongri and Panbang					
29	Secondary				Sheri Chhu	2.58	1.59	1.58	-0.01		Downstream of Kurt-Gongri and Panbang					
30	Principal				Panbang	12.48	5.23	4.89	-0.34	Sunny	Manas and Downstream					
31	Principal			Ngara Ama Chhu	Pangzam		5.85	5.80	-0.05	Sunny	Bangtar Settlement and Downstream					
32	Principal				Bangtar		2.12	2.08	-0.04	Sunny	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.

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

ISSUED BY: FMCR,HWRSD,NCHM