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



Status and River Level Trends:

Tuesday, July 30, 2019

Issued at: 10:00 AM

Glacier Lake Outbrust Flood (GLOF) Early Warning System

	Punatshang	g Chhu Sub Basi	n																				
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	6.64	6.66	0.02	Thanza,Tenchey,Lhedi and Lunana area and Downstream of Pho Chhu and Puna- Wangdue Valley												
2				Thorthormi Tsho		7.50	5.00	5.79	5.81	0.02													
3			Pho Chhu g Chhu	Rapstreng Tsho		7.40	5.00	6.29	6.32	0.03													
4		Basin II Punatshang Chhu		Pho Chhu	Bay Tsho		7.40	5.00	6.46	6.51	0.05												
5	Basin II			Thanza		7.70	8.70	NR	NR	#VALUE!													
6	busin							I									I	Tarina Wachey		8.50	10.50	6.96	6.98
7			Dangsa		5.50	7.00	4.94	4.86	-0.08	Khuruthang) Puna-Wangdue Valley and Downstream													
8			Mo Chhu	Taksemakhang		7.50	8.50	5.84	5.88	0.04													
9				Tashithang		9.00	10.50	7.19	7.06	-0.13	Gasa, Mo Chhu Valley, Puna-Wangdue Valley and Downstream												
10						Yebesa		5.00	7.00	2.39	2.29	-0.10											

A	pproximate Lead	lime for Evacuation	on after the det	ection of flood at Four la	ke Sensor		Approximate Lead Time for Evacuation after the detection of Flood at the 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 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.

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 Rise (+)/Fall (-) in meters during last 24 Hrs ending at 9 AM Today	Downstream Settlement
1			Chamkhar Chhu	Tshampa		5.00	6.50	4.46	4.50	0.04	
2				Khagthang		5.50	6.00	4.90	4.93	0.03	Chokortoe Pry School, Kurjey Village, Wangdicholing, Chamkhar Town, Gangrithr School, Gyelkhar Village and Downstream settlement under Zhemgang.
3	Basin III	Manas		Kurjey	5.72	3.30	5.00	2.53	2.52	-0.01	School, ayennar vinage and bownstream settlement ander Enerigang.
4			Mangdue Chhu	Jongthang		5.90	7.00	NR	5.17	#VALUE!	Bjizam Community, MHPA Dam, Power House and Downstream settlement of Trongsa
E				Bjizam	5.52	4.20	5.50	2.88	2.91	0.03	and Zhemgang

	Approximate Lead Time for Evacuation of Chamkhar Chhu Sub Basin						Approximate Lead Time for Evacuation of Mangdue Chhu Sub Basin							
Ap	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							
SI Nos	Name of Place Downstream	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	1								

 
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			Station			Highest	Water Level	Water Level(m)	Water Level Rise (+)/Fall (-)		
SI Nos.	Station Type River Basin Number	Basin Name	Name of River	Station Name	Water Level Recorded (m)	(m) recorded at 9 AM Yesterday	recorded at 9 AM Today	in meters during last 24 Hrs ending at 9 AM Today	Weather Condition	Downstream Settlement	
1	AWLS				Dodena		NR	NR	#VALUE!	Partly Sunny	Thimphu Valley and Downstream
2	Principal			Thim Chhu	Lungtenphu	2.82	1.43	1.43	0.00	Partly Sunny	miniple very and bownstream
3	Principal				Damchu	6.00	3.04	2.97	-0.07		Chukha and Downstream
4	Secondary	Basin I	Wang Chhu	Haa Chhu	Haa	2.60	1.46	1.37	-0.09	Sunny	Haa and Wang Chhu Downstream
5	Principal			Pa Chhu	Bonday		1.58	1.47	-0.11	Sunny	Downstream of Paro Valley and Wang Chhu Basin
6	Principal			Amo Chhu	Dorokha		3.55	3.45	-0.10	Cloudy	Samtse, Phuntsholing and Downstream
7	Secondary			Amo Chhu	Droyagang	7.07	3.64	4.05	0.41		Phunsholing and Downstream
8	Secondary			Pho Chhu	Samdingkha	6.10	4.56	4.40	-0.16	Cloudy	Puna-Wangdue Valley and Downstream
9	Principal			Mo Chhu	Yebesa	3.94	2.37	2.26	-0.11	Sunny	Mo Chhu Valley and Downstream
10	Secondary	Basin II		Punatshang Chhu	Wangdue Bridge		3.55	3.25	-0.30		PHPA I, PHPA II and Downstream
11	Principal		Punatshang		Wangdue Rapid	7.82	4.09	3.78	-0.31		PRPA I, PRPA II and Downstream
12	Principal		Chhu		Turitar Sunkosh	6.68	4.15	3.95	-0.20	Cloudy	Downstream of Dagana and Lhamoizingkha
13	Secondary				Sunkosh Bridge		3.25	3.00	-0.25	Cloudy	Downstream of Dagana and Enamoizingkha
14	Principal				Kerabari	11.90	6.35	6.15	-0.2	Cloudy	Lhamoizingkha and Downstream
15	Secondary			Mao Chhu	Sherzhong		4.45	4.45	0.00	Cloudy	Gelelephu Valley and Downstream
16	Principal			Mangdue Chhu Chamkhar Chhu Kuri Chhu	Bjizam	5.35	2.90	2.94	0.04	Cloudy	MHPA Dam, Power House and Downstream of Trongsa & Zhemgang
17	Secondary				Dakpai Chhu	2.26	1.52	1.50	-0.02	Sunny	Downstream of Zhmgang and Panbang
18	Principal				Tingtibi	7.45	4.57	4.27	-0.3		Downstream of Zimigang and Pandang
19	Principal				Kurjey	4.00	2.53	2.52	-0.01	Sunny	Chamkhar Valley, Zhemgang and Downstream
20	Principal				Shingkhar (Bemethang)		2.35	2.30	-0.05		Zhemgang and Downstream
21	Principal				Sumpa	7.65	5.05	5.05	0.00	Sunny	Lhuntse Downstream, Kurizampa, KHPA and Downstream along the Kuri Chhu
22	Secondary				Khoma	5.30	2.42	2.40	-0.02	Sunny	
23	Secondary				Autsho	8.48	5.07	5.05	-0.02	Cloudy and Clear	Kurizampa, KHPA and Downstream along the Kuri Chhu
24	Principal	Basin III	Manas		Kurizampa	18.45	9.40	9.35	-0.05	Sunny	KHPA and Downstream along the Kuri Chhu
25	Principal			Kholong Chhu	Muktirap	6.00	2.85	2.85	0	Sunny	Doksum, Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu
26	Secondary				Doksum		4.89	4.56	-0.33	Sunny	Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu
27	Secondary				Chazam		10.20	9.80	-0.40	Cloudy	Downstream Settlement of Kuri-Gongri and Panbang
28	Principal			Drangme Chhu	Ozorong	6.75	3.64	3.22	-0.42	Suppy	Downstroom of Kuri Gongri and Banhang
29	Secondary				Sheri Chhu	2.58	1.72	1.7	-0.02	Sunny	Downstream of Kuri-Gongri and Panbang
30	Principal				Panbang	12.48	7.53	7.35	-0.18	Sunny	Manas and Downstream
31	Principal	1		Name Area Chi	Pangzam		7.10	7.00	-0.10		Bangtar Settlement and Downstream
32	Principal	1		Ngara Ama Chhu	Bangtar		3.34	3.20	-0.14	Sunny	Downstream of Bangtar Settlement

The Water Level are relative Gauge Hight of the Observation site reference to the Site Specific and doesnot represent the actual water depth. NOTE

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

ISSUED BY: FMCR, HWRSD, NCHM