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



Status and River Level Trends:

Wednesday, July 31, 2019

Issued at: 10:00 AM

Glacier Lake Outburst Flood (GLOF) Early Warning System

Punatshang Chhu Sub Basin

SI Nos.	River Basin Number	Basin Name	Name of River	Station Name	Highest Water Level Recorded	Alert Water Level	Alarm 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	Basin II	Punatshang Chhu	Pho Chhu	Luggay Tsho		7.80	10.00	6.66	6.67	0.01	Thanza, Tenchey, Lhedi and Lunana area and Downstream of Pho Chhu and Puna-Wangdue Valley
2				Thorthormi Tsho		7.50	5.00	5.81	5.82	0.01	
3				Rapstreng Tsho		7.40	5.00	6.32	6.33	0.01	
4				Bay Tsho		7.40	5.00	6.51	6.54	0.03	
5				Thanza		7.70	8.70	NR	NR	#VALUE!	Pho Chhu Valley (Tamidamchu, Wolathang, Samidingkha, Khawajara, Shengana, Khuruthang) Puna-Wangdue Valley and Downstream
6				Tarina Wachey		8.50	10.50	6.98	7.00	0.02	
7				Dangsa		5.50	7.00	4.86	4.93	0.07	
8				Taksemakhang		7.50	8.50	5.88	5.95	0.07	
9				Tashithang		9.00	10.50	7.06	7.20	0.14	
10				Yebsa		5.00	7.00	2.29	2.31	0.02	

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 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. Time 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. Time available for Evacuation
1	Thanza	1.5 km	2.8 km	3.3 km	6.7 km	20-60 minutes	1	Wolathang	5.8 km	30 minutes	30 minutes
2	Tenchey	2.9 km	4.1 km	4.6 km	8.2 km		2	Samdingkha	12.0 km	55 minutes	55 minutes
3	Tshojo	6.1 km	10.0 km	10.5 km	13.8 km		3	Punakha Dzong	20 km	90 minutes	1 hour 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 distance were approximate only.

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

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)	Alarm 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	Tshampa		5.00	6.50	4.50	4.58	0.08	Chokortoe Pry School, Kurje Village, Wangdicholing, Chamkhar Town, Gangrithang Pry School, Gyelkhar Village and Downstream settlement under Zhemgang.
2				Khagthang		5.50	6.00	4.93	5.13	0.20	
3				Kurje		5.72	3.30	5.00	2.52	2.74	
4				Jongthang		5.90	7.00	5.17	NR	#VALUE!	Bjizam Community, MHPA Dam, Power House and Downstream settlement of Trongsa and Zhemgang
5				Bjizam		5.52	4.20	5.50	2.91	3.31	

Approximate Lead Time for Evacuation of Chamkhar Chhu Sub Basin

Approximate Lead Time for Evacuation of Mangdue Chhu Sub Basin

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. Cumulative Distance from Tshampa AWLS	Elevation	Approx. Lead Time	SI Nos	Name of Place Downstream	Approx. Distance from the Tshampa AWLS	Approx. Cumulative 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	Kurje	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	0.3 km	44.2 km	2552 m	84 minutes						
7	Gyelkhar	1.7 km	45.9 km	2538 m	91 minutes						

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	Basin I	Wang Chhu	Thim Chhu	Dodena		NR	NR		Partly Sunny	Thimphu Valley and Downstream	
2	Principal				Lungtenphu	2.82	1.43	1.33	-0.10	Partly Sunny		
3	Principal				Damchu	6.00	2.97	2.91	-0.06		Chukha and Downstream	
4	Secondary			Haa Chhu	Haa	2.60	1.37	1.13	-0.24	Sunny	Haa and Wang Chhu Downstream	
5	Principal			Pa Chhu	Bonday		1.47	1.45	-0.02	Sunny	Downstream of Paro Valley and Wang Chhu Basin	
6	Principal			Amo Chhu	Dorokha		3.45	3.45	0.00	Cloudy	Samtse, Phunsholing and Downstream	
7	Secondary			Droyagang	7.07	4.05	4.01	-0.04		Phunsholing and Downstream		
8	Secondary	Basin II	Punatshang Chhu	Pho Chhu	Samdingkha	6.10	4.40	4.44	0.04	Cloudy	Puna-Wangdue Valley and Downstream	
9	Principal				Mo Chhu	Yebesa	3.94	2.26	2.28	0.02	Sunny	Mo Chhu Valley and Downstream
10	Secondary			Punatshang Chhu	Wangdue Bridge			3.25	3.15	-0.10		PHPA I,PHPA II and Downstream
11	Principal				Wangdue Rapid	7.82	3.78	3.65	-0.13			
12	Principal				Turitar Sunkosh	6.68	3.95	3.65	-0.30	Cloudy	Downstream of Dagana and Lhamoizingkha	
13	Secondary				Sunkosh Bridge			3.00	2.75	-0.25	Cloudy	
14	Principal			Kerabari	11.90	6.15	6.05	-0.1	Cloudy	Lhamoizingkha and Downstream		
15	Secondary			Sherzhong			4.45	4.45	0.00	Cloudy	Gelephu Valley and Downstream	
16	Principal			Mao Chhu	Bizam	5.35	2.94	3.32	0.38	Cloudy	MHPA Dam,Power House and Downstream of Trongsa & Zhemgang	
17	Secondary			Mangdue Chhu	Dakpal Chhu	2.26	1.50	1.56	0.06			
18	Principal				Tingtibi	7.45	4.27	4.35	0.08	Sunny	Downstream of Zhmgang and Panbang	
19	Principal				Kurjey	4.00	2.52	2.74	0.22	Sunny	Chamkhar Valley, Zhemgang and Downstream	
20	Principal			Chamkhar Chhu	Shingkhar (Bemethana)			2.30	2.56	0.26		Zhemgang and Downstream
21	Principal				Sumpa	7.65	5.05	5.74	0.69			
22	Secondary			Kuri Chhu	Khoma	5.30	2.40	2.70	0.30		Sunny	Lhuntse Downstream,Kurizampa,KHPA and Downstream along the Kuri Chhu
23	Secondary				Autsho	8.48	5.05	5.95	0.9	Cloudy and Clear	Kurizampa,KHPA and Downstream along the Kuri Chhu	
24	Principal	Kurizampa	18.45		9.35	10.50	1.15	Sunny	KHPA and Downstream along the Kuri Chhu			
25	Principal	Kholong Chhu	Muktirop		6.00	2.85	2.85	0	Sunny	Doksum,Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu		
26	Secondary	Drangme Chhu	Doksum			4.56	4.45	-0.11	Sunny	Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu		
27	Secondary		Chazam			9.80	9.70	-0.10	Cloudy	Downstream Settlement of Kuri-Gongri and Panbang		
28	Principal		Ozorong	6.75	3.22	3.36	0.14		Sunny	Downstream of Kuri-Gongri and Panbang		
29	Secondary		Sheri Chhu	2.58	1.7	1.85	0.15					
30	Principal		Panbang	12.48	7.35	7.63	0.28	Sunny	Manas and Downstream			
31	Principal	Ngara Ama Chhu	Pangzam			7.00	6.90	-0.10		Bangtar Settlement and Downstream		
32	Principal		Bangtar			3.20	3.00	-0.20	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.

ALERT

ALARM

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

ISSUED BY: FMCR,HWRSD,NCHM