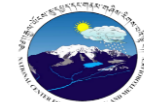




ཆུ་ཕྱིན་རྒྱུ་ལ་དང་ཆུ་འོག་ཕྱིན་རྒྱུ་ལ་འབྲེལ་བའི་ལས་ཁུངས་
 ཆུ་ལྷན་ཁང་ཆུ་ཕྱིན་དང་གནམ་གཤིས་རིག་པའི་ལྷན་ཁང་།
 HYDROLOGY & WATER RESOURCES SERVICES DIVISION
 NATIONAL CENTER FOR HYDROLOGY & METEOROLOGY
 THIMPHU: BHUTAN



Status and River Level Trends:

Sunday, July 21, 2019

Issued at: 10:00 AM

Glacier Lake Outburst Flood (GLOF) Early Warning System

Punatshang Chhu Sub Basin

Sl 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	6.63	6.63	0	Thanza, Tenchey, Lhedri and Lunana area and Downstream of Pho Chhu and Puna-Wangdue Valley
2				Thorthormi Tsho		7.50	5.00	5.78	5.77	0.01	
3				Rapstreng Tsho		7.40	5.00	6.27	6.28	-0.01	
4				Bay Tsho		7.40	5.00	6.42	6.40	0.02	
5				Thanza		7.70	8.70	NR	NR	#VALUE!	
6				Tarina Wachey		8.50	10.50	6.87	6.83	0.04	Pho Chhu Valley (Tamidamchu, Wolathang, Samidingkha, Khawajara, Shengana, Khuruthang) Puna-Wangdue Valley and Downstream
7				Dangsa		5.50	7.00	4.64	4.63	0.01	
8				Taksemakhang		7.50	8.50	5.78	5.77	0.01	
9				Tashithang		9.00	10.50	6.83	7.08	-0.25	
10				Yebsa		5.00	7.00	2.19	2.30	-0.11	

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

Sl 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	Sl 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	Lhedri	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
							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

Sl 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	4.32	4.31	0.01	Chokortoe Pry School, Kurjey Village, Wangdicholing, Chamkhar Town, Gangrithang Pry School, Gyelkhar Village and Downstream settlement under Zhemgang.	
2				Khagthang		5.50	6.00	4.74	4.74	0		
3				Kurjey		5.72	3.30	5.00	2.32	2.27		0.05
4				Jongthang			5.90	7.00	NR	4.97	#REF!	Bjizam Community, MHPA Dam, Power House and Downstream settlement of Trongsa and Zhemgang
5				Bjizam		5.52	4.20	5.50	2.64	2.61	0.03	

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					
Sl Nos	Name of Place Downstream	Approx. Distance from the Tshampa AWLS	Approx. Cumulative Distance from Tshampa AWLS	Elevation	Approx. Lead Time	Sl 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	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	0.3 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		1.97	1.92	0.05		Thimphu Valley and Downstream
2	Principal				Lungtenphu	2.82	1.18	1.10	0.08		
3	Principal				Damchu	6.00	2.75	2.70	0.05		Chukha and Downstream
4	Secondary			Haa Chhu	Haa	2.60	0.96	0.96	0		Haa and Wang Chhu Downstream
5	Principal			Pa Chhu	Bonday		1.34	1.32	0.02		Downstream of Paro Valley and Wang Chhu Basin
6	Principal			Amo Chhu	Dorokha		3.45	3.30	0.15		Samtse, Phunsholing and Downstream
7	Secondary			Droyagang	7.07	3.97	4.05	-0.08		Phunsholing and Downstream	
8	Secondary	Basin II	Punatshang Chhu	Pho Chhu	Samdingkha	6.10	3.93	3.93	0.00		Puna-Wangdue Valley and Downstream
9	Principal				Mo Chhu	Yebesa	3.94	2.15	2.28	-0.13	
10	Secondary			Punatshang Chhu	Wangdue Bridge		2.70	2.80	-0.1		PHPA I,PHPA II and Downstream
11	Principal				Wangdue Rapid	7.82	3.21	3.35	-0.14		
12	Principal				Turitar Sunkosh	6.68	3.50	3.45	0.05		Downstream of Dagana and Lhamoizingkha
13	Secondary				Sunkosh Bridge		2.65	2.60	0.05		
14	Principal			Kerabari	11.90	5.83	5.64	0.19		Lhamoizingkha and Downstream	
15	Secondary			Mao Chhu	Sherzhong		4.05	3.90	0.15		Gelelephu Valley and Downstream
16	Principal			Bizam	5.35	2.68	2.60	0.08		MHPA Dam,Power House and Downstream of Trongsa & Zhemgang	
17	Secondary			Mangdue Chhu	Dakpal Chhu	2.26	1.40	1.52	-0.12		
18	Principal				Tingtibi	7.45	3.85	3.99	-0.14		Downstream of Zhmgang and Panbang
19	Principal				Kurjey	4.00	2.32	2.27	0.05		Chamkhar Valley, Zhemgang and Downstream
20	Principal			Chamkhar Chhu	Shingkhar (Bemethana)		2.25	2.20	0.05		Zhemgang and Downstream
21	Principal				Sumpa	7.65	4.60	4.94	-0.34		Lhuntse Downstream,Kurizampa,KHPA and Downstream along the Kuri Chhu
22	Secondary			Kuri Chhu	Khoma	5.30	2.25	2.18	0.07		
23	Secondary				Autsho	8.48	4.64	4.85	-0.21		Kurizampa,KHPA and Downstream along the Kuri Chhu
24	Principal	Kurizampa	18.45		8.95	9.29	-0.34		KHPA and Downstream along the Kuri Chhu		
25	Principal	Kholong Chhu	Muktirop	6.00	2.65	2.53	0.12		Doksum,Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu		
26	Secondary		Doksum		4.45	4.40	0.05		Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu		
27	Secondary		Chazam		9.00	9.00	0.00		Downstream Settlement of Kuri-Gongri and Panbang		
28	Principal		Drangme Chhu	Ozorong	6.75	2.80	2.81	-0.01		Downstream of Kuri-Gongri and Panbang	
29	Secondary			Sheri Chhu	2.58	1.73	2.46	-0.73			
30	Principal			Panbang	12.48	6.89	6.90	-0.01		Manas and Downstream	
31	Principal			Pangzam		7.60	7.45	0.15		Bangtar Settlement and Downstream	
32	Principal		Ngara Ama Chhu	Bangtar		3.10	3.00	0.10		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