



རྒྱུ་ལྡན་འགྲུ་ལ་དང་རྒྱུ་ལོན་སྐྱོད་ལེན་འགྲུ་ལོན་ཚན་པོ།
 རྒྱུ་ལོན་ལྡན་ལྷན་ཁག་ལྷན་ཁག་གི་འགྲུ་ལོན་ལྷན་ཁག་།
 HYDROLOGY & WATER RESOURCES SERVICES DIVISION
 NATIONAL CENTER FOR HYDROLOGY & METEOROLOGY
 THIMPHU: BHUTAN



Status and River Level Trends:

Monday, September 30, 2019

Issued at: 10:00 AM

Glacier Lake Outburst Flood (GLOF) Early Warning System

1. Punaatshang 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	Punaatshang Chhu	Pho Chhu	Luggay Tsho		7.80	10.00	6.51	6.49	-0.02	Thanza, Tenchey, Lhedri and Lunama area and Downstream of Pho Chhu and Puna-Wangdue Valley
2				Thorthormi Tsho		7.50	5.00	5.74	5.68	-0.06	
3				Rapstreg Tsho		7.40	5.00	6.19	6.17	-0.02	
4				Bay Tsho		7.40	5.00	6.22	6.21	-0.01	
5				Thanza		7.70	8.70	6.54	6.53	-0.01	
6				Tarina Wachey		8.50	10.50	6.71	6.70	-0.01	Pho Chhu Valley (Tamidanchu, Wolathang, Samdingkha, Khawajara, Shengana, Khuruthang) Puna-Wangdue Valley and Downstream
7				Dangsa		5.50	7.00	4.48	4.49	0.01	
8				Taksemakhang		7.50	8.50	5.61	5.59	-0.02	
9				Tashithang		9.00	10.50	6.51	6.55	0.04	
10				Yebesa		5.00	7.00	2.09	2.10	0.01	

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 Dangsa Sensor				
SI Nos	Name of Place Downstream	Approx. Distance from Sensor (Bay Tsho)	Approx. Distance from Sensor (Rapstreg Tsho)	Approx. Distance from Sensor (Thorthormi Tsho)	Approx. Distance from Sensor (Luggay 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	8.1 km	10.0 km	10.5 km	13.8 km		3	Punakha Dzong	20 km	90 minutes	1 hours 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.

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)	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	4.20	4.18	-0.02	Chokortoe Pry School, Kurjey Village, Wangdicholing, Chamkhar Town, Gangriting Pry School, Gyelkhar Village and Downstream settlement under Zhen gang.	
2				Khagthang		5.50	6.00	4.73	4.73	0.00		
3				Kurjey		5.72	3.30	5.00	2.26	-0.01		
4				Jongthang			5.90	7.00	4.74	4.79	0.05	Bjizam Community, MHPA Dam, Power House and Downstream settlement of Tronga and Zhen gang
5				Bjizam		5.52	4.20	5.50	2.48	2.52	0.04	

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	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	Wangdicholing	5.7 km	42.9 km	2600 m	79 minutes						
5	Bumthang	1 km	43.9 km	2562 m	83 minutes						
6	Gangriting PS	0.3 km	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

Sl 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	Thin Chhu	Dodena		1.91	NR	#VALUE!	Cloudy	Thimphu Valley and Downstream			
2	Principal				Lungtenphu	2.82	1.32	1.40	0.08	Cloudy				
3	Principal				Damchu	6.00	2.90	2.99	0.09	Cloudy				
4	Secondary					Haas Chhu	Haa	2.60	1.13	1.22	0.09	Raining	Haas and Wang Chhu Downstream	
5	Principal					Pa Chhu	Bondlay		1.43	1.49	0.06	Cloudy	Downstream of Paro Valley and Wang Chhu Basin	
6	Principal					Amo Chhu	Dorokha		3.30	3.35	0.05	Cloudy	Sanise, Phunsholing and Downstream	
7	Secondary						Droyagang		7.07	3.43	3.50	0.07	Light Rain	Phunsholing and Downstream
8	Secondary					Pho Chhu	Samdingkha		6.10	3.70	3.70	0.00	Cloudy	Puna-Wangdue Valley and Downstream
9	Principal	Basin II	Punatshang Chhu	Mo Chhu	Yebesa		3.94	2.05	2.05	0.00	Cloudy	Mo Chhu Valley and Downstream		
10	Secondary									2.70	2.75	0.05	Cloudy	PHPA I,PHPA II and Downstream
11	Principal					Punatshang Chhu	Wangdue Rapid		7.82	2.98	2.98	0.00	Cloudy	
12	Principal						Turitar Sunkosh		6.68	3.25	3.25	0.00	Light Rain	Downstream of Dagana and Lhamoizingkha
13	Secondary						Sunkosh Bridge			2.45	2.40	-0.05	Raining	
14	Principal						Kerabari		11.90	5.52	5.50	-0.02	Light Rain	Lhamoizingkha and Downstream
15	Secondary					Mao Chhu	Sherzhong		4.00	3.95	-0.05	Cloudy	Gelephu Valley and Downstream	
16	Principal					Mangdue Chhu	Bjizam		5.35	2.49	2.53	0.04	Light Rain	MHPA Dam,Power House and Downstream of Trongsa & Zhemgang
17	Secondary			Dakpai Chhu			2.26	0.65	0.62	-0.03	Light Rain	Downstream of Zhemgang and Panbang		
18	Principal			Tingtibi			7.45	3.99	3.91	-0.08				
19	Principal			Chamkhar Chhu	Kurjey		4.00	2.26	2.25	-0.01	Cloudy	Chamkhar Valley, Zhemgang and Downstream		
20	Principal				Shingkar (Benshang)			2.07	2.05	-0.02	Cloudy	Zhemgang and Downstream		
21	Principal			Kuri Chhu	Sumpa		7.65	4.30	4.25	-0.05	Light Rain	Lhuntse Downstream,Kurizampa,KHPA and Downstream along the Kuri Chhu		
22	Secondary				Khoma		5.30	1.95	1.90	-0.05				
23	Secondary				Autsho		8.48	4.33	4.21	-0.12	Light Rain	Kurizampa,KHPA and Downstream along the Kuri Chhu		
24	Principal				Kurizampa		18.45	8.48	8.34	-0.14	Raining	KHPA and Downstream along the Kuri Chhu		
25	Principal			Kholong Chhu	Muktrirap		6.00	2.45	2.36	-0.09	Light Rain	Doksum,Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu		
26	Secondary				Doksum			4.30	4.29	-0.01	Cloudy	Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu		
27	Secondary			Drangme Chhu	Chazam			8.90	8.55	-0.35	Light Rain	Downstream Settlement of Kuri-Gongri and Panbang		
28	Principal				Omzong		6.75	2.49	2.32	-0.17	Cloudy	Downstream of Kuri-Gongri and Panbang		
29	Secondary				Sheri Chhu		2.58	1.78	1.74	-0.04				
30	Principal				Panhang		12.48	5.97	6.85	0.88	Light Rain	Manas and Downstream		
31	Principal			Ngara Ama Chhu	Pangzam			6.30	6.35	0.05	Light Rain	Bangtar Settlement and Downstream		
32	Principal				Bangtar			2.38	2.30	-0.08	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

WARNING

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

ISSUED BY: FMCR,HWRSD,NCHM