

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



Status and River Level Trends:

Tuesday, July 23, 2019

Issued at: 10:00 AM

Glacier Lake Outbrust Flood (GLOF) Early Warning System

	Punatshang	g Chhu Sub Basi	in									
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	6.64	0			
2			Pho Chhu	Thorthormi Tsho		7.50	5.00	5.78	5.78	0	Thanza, Tenchey, Lhedi and Lunana area and Downstream of Pho Chhu and Puna-	
3				Rapstreng Tsho		7.40	5.00	6.28	6.28	0	Wangdue Valley	
4				Bay Tsho		7.40	5.00	6.42	6.30	0.12		
5	Basin II	Punatshang Chhu		Thanza		7.70	8.70	NR	NR	#VALUE!		
6	busin	Punaisnang Chnu		Tarina Wachey		8.50	10.50	6.83	6.89	-0.06	Pho Chhu Valley (Tamidamchu, Wolathang, Samidingkha, Khawajara, Shengana,	
7				Dangsa		5.50	7.00	4.64	4.83	-0.19	Khuruthang) Puna-Wangdue Valley and Downstream	
8				Taksemakhang		7.50	8.50	5.76	5.89	-0.13		
9			Mo Chhu	Tashithang		9.00	10.50	7.07	7.77	-0.70	Gasa, Mo Chhu Valley, Puna-Wangdue Valley and Downstream	
10				Yebesa		5.00	7.00	2.35	2.56	-0.21		

A	pproximate Lead	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.

Chamkł	nar Chhu and N	langdue Chhu	Sub Basin								
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				Tshampa		5.00	6.50	4.30	4.34	-0.04	
2			Chamkhar Chhu	Khagthang		5.50	6.00	4.76	4.80	-0.04	Chokortoe Pry School, Kurjey Village, Wangdicholing, Chamkhar Town, Gangrithng P School, Gyelkhar Village and Downstream settlement under Zhemgang.
3	Basin III	Manas		Kurjey	5.72	3.30	5.00	2.41	2.45	-0.04	School, of chain while card bown arean sector ment and chempany.
4			Mangdue Chhu	Jongthang		5.90	7.00	NR	5.20	#REF!	Bjizam Community, MHPA Dam, Power House and Downstream settlement of Trongsa
5				Bjizam	5.52	4.20	5.50	3.10	2.97	0.13	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									

 6
 Gangrithang PS
 0.3km
 44.2 km
 2552 m
 84 minute:

 7
 Gyelkhar
 1.7 km
 45.9 km
 2538 m
 91 minute:

2 Princip 3 Princip 4 Second 5 Princip 6 Princip 7 Second 8 Second 9 Princip 11 Princip 13 Second 14 Princip 15 Second 16 Princip 17 Second 18 Princip 20 Princip 21 Princip 22 Second 23 Second 24 Princip 25 Princip	AWLS rincipal rincipal ccondary rincipal ccondary ccondary rincipal ccondary rincipal rincipal rincipal rincipal ccondary rincipal ccondary	Basin I	Wang Chhu	Thim Chhu Haa Chhu Pa Chhu Amo Chhu Pho Chhu Mo Chhu	Dodena Lungtenphu Damchu Haa Bonday Dorokha Droyagang	(m) 2.82 6.00 2.60	Yesterday 1.92 1.05 2.74 0.94	NR 1.18 2.79 0.94	ending at 9 AM Todav #VALUE! -0.13 -0.05	Thimphu Valley and Downstream
2 Princip 3 Princip 4 Second 5 Princip 6 Princip 7 Second 8 Second 9 Princip 11 Princip 13 Second 14 Princip 15 Second 16 Princip 17 Second 18 Princip 20 Princip 21 Princip 22 Second 23 Second 24 Princip 25 Princip	rincipal condary rincipal rincipal condary condary rincipal condary rincipal rincipal		Wang Chhu	Haa Chhu Pa Chhu Amo Chhu Pho Chhu	Lungtenphu Damchu Haa Bonday Dorokha	6.00	1.05 2.74 0.94	1.18 2.79	-0.13	
3 Principal 4 Second 5 Principal 6 Principal 8 Second 9 Principal 10 Second 11 Principal 12 Principal 13 Second 16 Principal 15 Second 16 Principal 19 Principal 20 Principal 21 Principal 22 Second 23 Second 24 Principal 25 Principal	rincipal condary rincipal condary condary condary rincipal condary rincipal rincipal		Wang Chhu	Haa Chhu Pa Chhu Amo Chhu Pho Chhu	Damchu Haa Bonday Dorokha	6.00	2.74 0.94	2.79		
4 Second 5 Princip 6 Princip 6 Princip 9 Princip 9 Princip 10 Second 11 Princip 12 Princip 13 Second 14 Princip 15 Second 16 Princip 19 Princip 19 Princip 20 Princip 21 Princip 22 Second 23 Second 24 Princip 25 Princip	rincipal condary condary condary rincipal condary rincipal rincipal		Wang Chhu	Pa Chhu Amo Chhu Pho Chhu	Haa Bonday Dorokha		0.94		-0.05	
5 Princip 6 Princip 7 Second 8 Second 9 Princip 10 Second 11 Princip 12 Principi 13 Second 14 Principi 15 Second 16 Principi 17 Second 18 Principi 19 Principi 19 Principi 20 Principi 21 Principi 22 Second 23 Second 24 Principi 25 Principi	rincipal condary condary rincipal condary rincipal rincipal		Wang Chhu	Pa Chhu Amo Chhu Pho Chhu	Bonday Dorokha	2.60		0.94		Chukha and Downstream
6 Principal 7 Second 8 Second 9 Principal 11 Principal 12 Principal 13 Second 14 Principal 15 Second 16 Principal 17 Second 18 Principal 20 Principal 21 Principal 22 Second 23 Second 24 Principal 25 Principal	rincipal condary condary rincipal condary rincipal rincipal			Amo Chhu Pho Chhu	Dorokha			0.34	0	Haa and Wang Chhu Downstream
7 Second 8 Second 9 Principia 101 Second 102 Principia 103 Second 104 Principia 105 Second 106 Principia 107 Second 108 Principia 109 Principia 101 Principia 102 Principia 103 Second 104 Principia 105 Second 106 Principia 107 Second 108 Principia 109 Principia 100 Principia 101 Principia 102 Second 103 Second 104 Principia 105 Second 106 Second 107 Second 108 Second 109 Second	econdary econdary rincipal econdary rincipal rincipal			Pho Chhu			1.36	1.40	-0.04	Downstream of Paro Valley and Wang Chhu Basin
8 Second 9 Princip 101 Second 111 Princip 112 Princip 113 Second 114 Princip 115 Second 116 Princip 117 Second 118 Princip 119 Princip 120 Princip 20 Princip 21 Princip 22 Second 23 Second 24 Princip 25 Princip	condary rincipal condary rincipal rincipal				Droyagang		3.30	3.55	-0.25	Samtse, Phuntsholing and Downstream
9 Principion 10 Second 11 Principion 12 Principion 13 Principion 14 Principion 15 Second 16 Principion 17 Second 18 Principion 19 Principion 20 Principion 21 Principion 23 Second 24 Principion 25 Principion	rincipal condary rincipal rincipal		-			7.07	4.11	5.31	-1.2	Phunsholing and Downstream
10 Second 11 Princip 12 Princip 13 Second 14 Princip 15 Second 16 Princip 17 Second 18 Princip 19 Princip 20 Princip 21 Princip 22 Second 23 Second 24 Princip 25 Princip	condary rincipal rincipal		-	Ma Chhu	Samdingkha	6.10	4.00	4.30	-0.30	Puna-Wangdue Valley and Downstream
11 Principi 12 Principi 13 Second 14 Principi 15 Second 16 Principi 17 Second 18 Principi 19 Principi 11 Principi 12 Principi 20 Principi 21 Principi 22 Second 23 Second 24 Principi 25 Principi	rincipal rincipal			Mo Chhu	Yebesa	3.94	2.27	2.53	-0.26	Mo Chhu Valley and Downstream
12 Princip 13 Second 14 Princip 15 Second 16 Princip 17 Second 18 Princip 19 Princip 20 Princip 21 Princip 22 Second 23 Second 24 Princip 25 Princip	rincipal			g Punatshang Chhu	Wangdue Bridge		2.85	3.40	-0.55	PHPA I, PHPA II and Downstream
13 Second 14 Princip 15 Second 16 Princip 17 Second 18 Princip 19 Princip 20 Princip 21 Princip 22 Second 23 Second 24 Princip 25 Princip		Basin II	Punatshang Chhu		Wangdue Rapid	7.82	3.23	3.89	-0.66	THE A G HE S I AND DOWNSTICAL
14 Princip 15 Second 16 Princip 17 Second 18 Princip 19 Princip 20 Princip 21 Princip 22 Second 23 Second 24 Princip 25 Princip	condary				Turitar Sunkosh	6.68	3.50	3.90	-0.40	Downstream of Dagana and Lhamoizingkha
15 Second 16 Princip 17 Second 18 Princip 19 Princip 20 Princip 21 Princip 22 Second 23 Second 24 Princip 25 Princip					Sunkosh Bridge		2.65	2.85	-0.20	Downstream of Dagana and Enamolizingkina
16 Princip 17 Second 18 Princip 19 Princip 20 Princip 21 Princip 22 Second 23 Second 24 Princip 25 Princip	rincipal				Kerabari	11.90	5.67	6.38	-0.71	Lhamoizingkha and Downstream
17 Second 18 Princip 19 Princip 20 Princip 21 Princip 22 Second 23 Second 24 Princip 25 Princip	condary			Mao Chhu	Sherzhong		5.30	5.00	0.30	Gelelephu Valley and Downstream
18 Princij 19 Princij 20 Princij 21 Princij 22 Second 23 Second 24 Princij 25 Princij	rincipal			Mangdue Chhu Chamkhar Chhu	Bjizam	5.35	3.14	2.97	0.17	MHPA Dam, Power House and Downstream of Trongsa & Zhemgang
19 Princip 20 Princip 21 Princip 22 Second 23 Second 24 Princip 25 Princip	condary				Dakpai Chhu	2.26	1.55	1.53	0.02	Downstream of Zhmgang and Panbang
20 Princij 21 Princij 22 Second 23 Second 24 Princij 25 Princij	rincipal				Tingtibi	7.45	4.07	4.45	-0.38	Downstream of Zimigang and Pandang
21 Princip 22 Second 23 Second 24 Princip 25 Princip	rincipal				Kurjey	4.00	2.42	2.45	-0.03	Chamkhar Valley, Zhemgang and Downstream
22 Second 23 Second 24 Princip 25 Princip	rincipal				Shingkhar (Bemethang)		2.30	2.36	-0.06	Zhemgang and Downstream
23 Second 24 Princij 25 Princij	rincipal				Sumpa	7.65	5.28	5.25	0.03	Lhuntse Downstream, Kurizampa, KHPA and Downstream along the Kuri Chhu
24 Princij 25 Princij	condary			Kuri Chhu	Khoma	5.30	2.70	2.42	0.28	Enditise bowner earlykanzamps, kin wana bownstream along are kan enna
25 Princij	condary				Autsho	8.48	5.25	5.2	0.05	Kurizampa, KHPA and Downstream along the Kuri Chhu
	rincipal	Basin III	Manas		Kurizampa	18.45	9.25	9.41	-0.16	KHPA and Downstream along the Kuri Chhu
26 Second	rincipal			Kholong Chhu	Muktirap	6.00	3.75	2.95	0.8	Doksum, Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu
	condary			Drangme Chhu	Doksum		4.37	4.58	-0.21	Kholong Chhu Hydro Power Project and Downstream of Gongri Chhu
27 Second	condary				Chazam		9.60	9.55	0.05	Downstream Settlement of Kuri-Gongri and Panbang
	rincipal				Ozorong	6.75	2.86	3.18	-0.32	Downstream of Kuri-Gongri and Panbang
					Sheri Chhu	2.58	2.02	2.02	0.00	
	condary				Panbang	12.48	7.10	8.56	-1.46	Manas and Downstream
31 Princij 32 Princij	rincipal			Ngara Ama Chhu	Pangzam		7.65	8.05	-0.4	Bangtar Settlement and Downstream 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