Supplement to:

Brief communication: Towards defining the worst-case breach scenarios and potential flood volumes for moraine-dammed lake outbursts

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Supplement I: The list of analysed events, measured and calculated characteristics.

RGI region in which the GLOF occurred	Major mountain unit/range in which the GLOF was located	Source location of the GLOF	Name of the glacier that feeds the burst glacier lake	Glacier Name of the area the derived outburst impounding lake polygon lake from RGI source	Material of the impounding dam	Reported date of GLOF	Y coordinate	X coordinate	breached channel slope	running number (regionally released)	Total volume released during outburst	Elev lake level	DEM	Reference
Low	Low-	Peru	Kogan	4,50 Jancaruris	moraine	1950-10-20	-8,86	-77,67	5,9	77	4,00	4290	ALOS	Emmer, 2017
Low	Low-	Peru	Caraz	5,94 Artesonco	moraine	1951-10-28	-8,98	-77,64	6,5	81	2,80	4288	ALOS	Emmer, 2017
Low	Low-	Peru	RGI60-	9,02 Tullparaju	moraine	1953-03	-9,42	-77,34	6,9	88	3,10	4283	ALOS	Emmer, 2017
Low	Low-	Peru	Palcaraju	6,28 Palcacoc	moraine	1941-12-13	-9,39	-77,38	7,7	43	10,00	4566	ALOS	Mergili et al., 2020
Southern	Patagoni	Chile	Engaño	2,53 Engaño	moraine	1977-03-11	-46,45	-72,97	3,2	121	12,50	699	SRTM	Anacona, et al., 2015
Southern	Patagoni	Chile	U-7	3,05 Cerro	moraine	1989-03-16	-46,96	-73,26	2,8	177	140,00	436	SRTM	Burton et al., 2022
Western	S Coast	Canada	Cumberla	2,96 Nostetuko	moraine	1983-07-19	51,21	-124,41	2,3	382	6,50	1594	CDEM	Kershaw et al., 2005
Western	S Coast	Canada	Diadem	6,19 Queen	moraine	1997-08-12	51,25	-124,52	2,8	530	6,50	1701	CDEM	Kershaw et al., 2005
Asia.	E	China	CN5O252B	8,62 Rejieco	moraine		27,97	88,89	3,4	382	4,58	5444	SRTM	Veh et al., 2019
Asia.	E	Nepal	RGI60-15,02	6,60 Nagma	moraine	1980-06-23	27,87	87,87	5,4	328	3,00	4926	SRTM	Ives et al., 2011
Asia.	E	China	CN5O201	6,49 Qunbixia	moraine	1940-07-10	27,85	88,92	4,4	117	12,40	4650	SRTM	Nie et al., 2018
Asia.	E	China	RGI60-	1,21 Damenha	moraine	1964-09-26	29,87	93,04	3,1	203	2,00	5216	SRTM	Daoming and Qinghua, 1994
Asia.	S and E	China	Amaciren	1,42 Zhangzan	moraine	1981-07-11	28,07	86,07	19,5	341	18,90	4615	SRTM	Ives et al., 2011
Asia.	E	Nepal	Langmoc	1,31 Dig Tsho	moraine	1985-08-04	27,87	86,59	4,3	358	8,00	4373	SRTM	Vuichard and Zimmermann, 1987
Asia.	Hengdua	China	Gongzo	28,82 Guangxie	moraine	1988-07-14	29,47	96,50	2,8	373	3,30	3837	SRTM	Daoming and Qinghua, 1994
Asia.	E	Nepal	Sabai	1,77 Tam	moraine	1998-09-03	27,74	86,85	7,4	425	18,00	4377	SRTM	Ives et al., 2011
Asia.	Inner Tibet	China	RGI60-	3,902 Chongba	moraine	2001-08-06	28,21	89,75	5,7	442	27,10	4915	SRTM	Veh et al., 2019
Asia.	S and E	China	Jinwu Glac	8,383 Jinwuco	moraine	2020-06-26	30,36	93,63	2,9	554	10,00	4422	Zheng et al., 202	Zheng et al., 2021
Asia.	E	India	South	11,71 South	moraine	2023-10-03	27,91	88,20	2,3	667	41,40	5166	Sattar et al., 2025	Sattar et al., 2025
Asia.	W Tien	Kazakhsta	Ortalyk	2,84 No2, No3	moraine	1973-07-15	43,07	77,08	6,5	265	3,80	3421	SRTM	Medeu et al., 2022
Low	Low-	Peru	Caraz	5,94 Artesonco	moraine	1951-07-06	-8,98	-77,64	6,9	80	1,13	4306	SRTM	Emmer, 2017
Western	S Coast	Canada	Klattesine	131,11 Klattasine	moraine	1971-	51,18	-124,88	6,5	315	1,70	1658	CDEM	Clague and Evans, 2000
Asia.	E	Bhutan	RGI60-	3,87 Kuangna	moraine	1990-1991	28,09	90,33	4,6	383	1,22	4711	SRTM	Veh et al., 2019
Asia.	C	China	CN5O195	3,31 -	moraine	1995-1996	28,66	85,48	7,5	408	1,17	5203	SRTM	Veh et al., 2019

15 **Supplement II:** Mean slope of the breached channels (A) and their relation to outburst volume (B), and elevation (C).

(A)

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(B)

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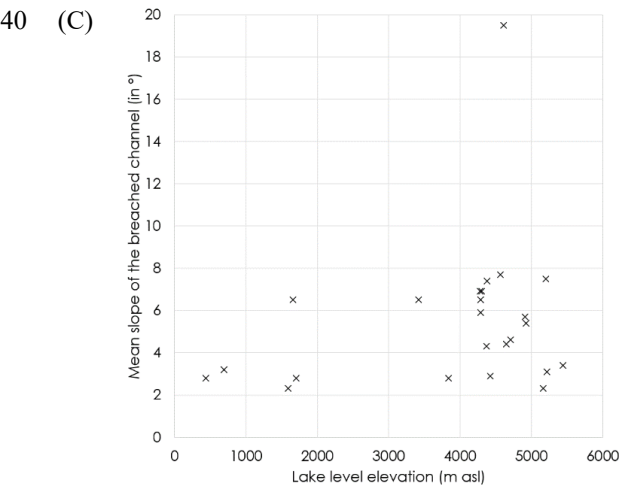
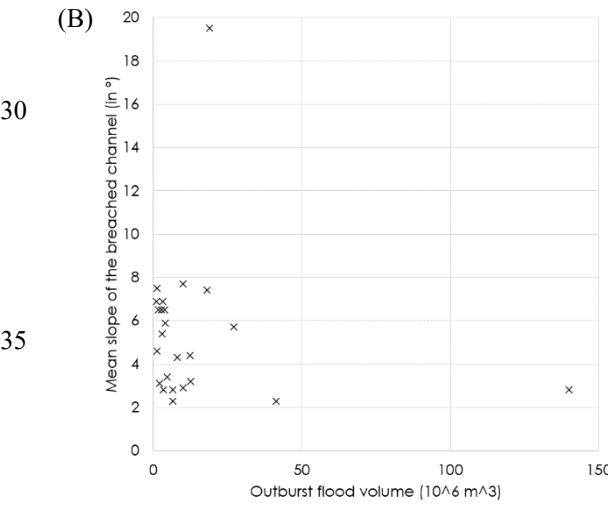
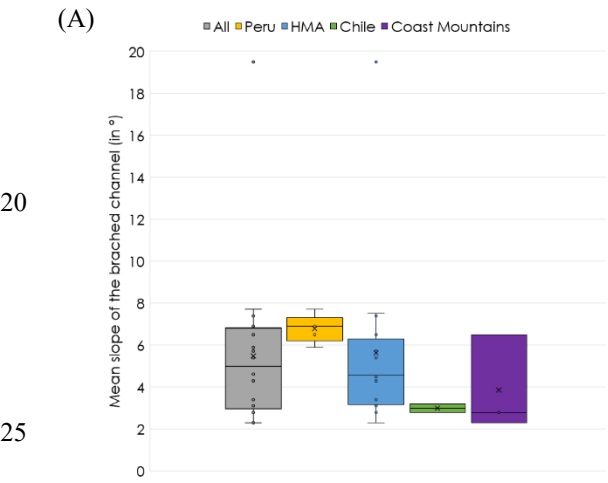
40 (C)

Supplement III: Supplementary input data for the calculations presented in Table 1.

Lake	Total flood volume (million m3)	Citation	Area (m^2)	Toe eleation (m asl)	Crest elevation (m asl)	Outflow (m)	max beach depth (m)	PFV (m^3)
Galong co	469000000	Yang et al., 2023	5630000	5023	5073	530	22,3	125334740
Gepan Gath	12600000	Worni et al., 2013	784400	4068	4095	400	6,1	4757870
	12600000		1050000	4068	4095	400	6,1	6368898
Lower Barun	179000000	Sattar at al 2021	2250000	4456	4542	878	40,0	90110318
Lumding	5200000	Fujita et al., 2013	1310000	4810	4837	451	3,4	4449394
Thorthomi	56380000	Osti et al., 2023	3350000	4410	4460	502	23,7	79486622
	56380000		1410000	4410	4460	502	23,7	33455563