

**Supplement of**

## **Analysis of regional changes in geodetic mass balance and thickness for all Caucasus glaciers over the past two decades**

Levan G. Tielidze<sup>1,2,3</sup>, Vincent Jomelli<sup>4</sup>, Gennady A. Nosenko<sup>5</sup>

<sup>1</sup>Antarctic Research Centre, Victoria University of Wellington, P.O. Box 600, 6140, Wellington, New Zealand

<sup>2</sup>School of Geography, Environment and Earth Sciences, Victoria University of Wellington, P.O. Box 600, 6140, Wellington, New Zealand

<sup>3</sup>Faculty of Natural Sciences and Engineering, Ilia State University, Cholokashvili Ave 3/5, 0162 Tbilisi, Georgia

<sup>4</sup>CNRS, UMR 34 Aix-Marseille University, CNRS-IRD-Coll, France

<sup>5</sup>Department of Glaciology, Institute of Geography, Russian Academy of Sciences, 29 Staromonetniy Pereulok, 119017, Moscow, Russia

**Correspondence:** Levan G. Tielidze (tielidzelevan@gmail.com)

**Table S1.** Change of specific mass (m w.e. yr<sup>-1</sup>) and thickness (m yr<sup>-1</sup>) for individual river basins of the Greater Caucasus in 2000-2010, 2010-2020, and 2000-2020. See also Figure 1 to check the location of all river basins relative to the Greater Caucasus.

Main river basin	Tributary river basin	Based on Landsat 2014 (Tielidze and Wheate, 2018)		Change of specific mass (m w.e. yr <sup>-1</sup> )			Change of thickness (m yr <sup>-1</sup> )		
		Number	Area km <sup>2</sup>	2000-2010	2010-2019	2000-2019	2000-2010	2010-2019	2000-2019
Mzimta		10	1.9±0.2	-0.37±0.79	-1.15±0.97	-0.76±0.53	-0.43±0.88	-1.35±1.03	-0.89±0.52
Kuban	Belaya	41	6.5±0.4	-0.89±1.05	-0.86±1.04	-0.88±0.67	-1.05±1.04	-1.01±1.06	-1.03±0.57
	Malaya Laba	34	7.4±0.5	-0.62±0.83	-0.96±0.97	-0.79±0.57	-0.73±0.88	-1.12±1.02	-0.93±0.52
	Bolshaya Laba	27	4.4±0.2	-1.34±1.20	-0.88±1.31	-1.11±0.84	-1.57±1.10	-1.04±1.34	-1.30±0.67
	Bolshoy Zelenchuk	59	24.6±1.3	-0.95±0.89	-0.80±1.02	-0.88±0.59	-1.12±0.94	-0.94±1.11	-1.03±0.56
	Maliy Zelenchuk	42	24.5±1.1	-0.59±0.62	-0.81±0.69	-0.70±0.40	-0.70±0.67	-0.96±0.73	-0.83±0.38
	Teberda	89	52.9±2.5	-0.40±0.53	-0.77±0.60	-0.58±0.34	-0.47±0.59	-0.90±0.64	-0.68±0.34
	Daut	23	4.8±0.4	-0.42±0.54	-0.65±0.61	-0.54±0.35	-0.49±0.59	-0.77±0.65	-0.63±0.34
	Uchkulan	68	19.1±1.4	-0.32±0.51	-0.84±0.61	-0.58±0.35	-0.38±0.58	-0.99±0.63	-0.68±0.33
	Ullukam	93	42.8±2.2	-0.32±0.50	-0.59±0.55	-0.45±0.31	-0.38±0.57	-0.69±0.59	-0.53±0.32
Malka		12	52.2±0.8	-0.33±0.44	-0.39±0.45	-0.36±0.26	-0.38±0.50	-0.45±0.50	-0.42±0.27
Baksan		147	146.2±6.0	-0.44±0.52	-0.63±0.52	-0.53±0.31	-0.51±0.57	-0.74±0.56	-0.62±0.30
Chegem	Bashil-Auzusu	30	25.3±1.0	-0.34±0.56	-0.77±0.57	-0.55±0.33	-0.39±0.64	-0.90±0.61	-0.65±0.33
	Gara-Auzusu	15	24.6±0.9	-0.26±0.48	-0.55±0.49	-0.40±0.28	-0.30±0.55	-0.65±0.55	-0.47±0.30
	Bulungu	8	2.9±0.2	0.04±0.74	-0.77±0.90	-0.37±0.48	0.04±0.82	-0.90±0.94	-0.43±0.49
Cherek	Cherek-Bezingskiy	38	72.9±2.2	-0.21±0.61	-0.43±0.71	-0.32±0.39	-0.24±0.70	-0.51±0.77	-0.37±0.41
	Cherek-Balkarskiy	80	96.5±3.5	-0.43±0.59	-0.40±0.60	-0.42±0.36	-0.51±0.65	-0.47±0.68	-0.49±0.37
	Psigansy	11	12.7±0.6	-0.48±0.66	-0.52±0.67	-0.50±0.36	-0.56±0.73	-0.61±0.75	-0.59±0.35
Uruk	Khanzidon	10	6.2±0.4	-0.28±0.66	-0.36±0.73	-0.32±0.40	-0.33±0.70	-0.42±0.74	-0.38±0.38
	Biliagikom	5	1.0±0.1	-0.75±0.67	-0.94±0.70	-0.85±0.42	-0.88±0.74	-1.11±0.76	-1.00±0.41
	Uruk headwaters	31	25.0±1.2	-0.46±0.58	-0.50±0.57	-0.48±0.32	-0.54±0.65	-0.59±0.64	-0.57±0.34
	Karaugom	29	41.7±1.4	-0.65±0.67	-0.38±0.62	-0.51±0.38	-0.76±0.72	-0.45±0.71	-0.61±0.39
	Aigamuga	20	14.7±0.8	-0.42±0.71	-0.35±0.70	-0.38±0.41	-0.49±0.79	-0.41±0.79	-0.45±0.42

Ardon	Tseyadon	20	16.8±0.6	-0.42±0.81	-0.36±0.77	-0.39±0.44	-0.49±0.92	-0.43±0.88	-0.46±0.48
	Sidan	1	0.03±0.004	-0.06±1.28	-0.63±1.31	-0.35±0.71	-0.07±1.50	-0.74±1.47	-0.41±0.80
	Vilsa	4	0.9±0.08	-0.67±0.71	-0.61±0.68	-0.64±0.44	-0.79±0.76	-0.71±0.72	-0.75±0.40
	Adaikom	7	4.6±0.2	-0.28±0.56	-0.67±0.56	-0.47±0.32	-0.33±0.64	-0.79±0.60	-0.56±0.33
	Mamikhdon	15	3.7±0.2	-0.70±0.67	-0.67±0.60	-0.69±0.38	-0.82±0.68	-0.79±0.66	-0.81±0.36
	Nar	10	1.5±0.07	-0.20±0.61	-0.57±0.59	-0.38±0.36	-0.24±0.66	-0.67±0.62	-0.45±0.34
	Kasaidon	2	0.2±0.02	-0.60±0.81	-0.33±0.76	-0.47±0.44	-0.71±0.91	-0.39±0.87	-0.55±0.47
	Labagkomdon	1	0.06±0.008	0.43±0.87	-0.41±0.81	0.01±0.44	0.51±1.01	-0.48±0.93	0.02±0.52
	Baddon	8	2.6±0.2	-0.56±0.63	-0.38±0.61	-0.47±0.36	-0.66±0.71	-0.45±0.68	-0.55±0.37
Arkhondon	4	3.5±0.2	-0.81±0.49	-0.54±0.46	-0.67±0.28	-0.95±0.54	-0.63±0.52	-0.79±0.29	
Fiagdnon		25	6.2±0.6	-0.20±0.59	-0.42±0.59	-0.31±0.34	-0.23±0.66	-0.50±0.65	-0.36±0.35
Gizeldon		24	25.2±1.0	-0.39±0.50	-0.36±0.50	-0.38±0.28	-0.46±0.56	-0.43±0.55	-0.44±0.30
Tergi (Terek) headwaters		94	42.7±3.0	-0.03±0.60	-0.54±0.65	-0.29±0.36	-0.04±0.68	-0.64±0.70	-0.34±0.37
Sunja right tributaries	Assa	10	2.1±0.2	-0.11±0.56	-0.30±0.59	-0.20±0.31	-0.13±0.64	-0.35±0.68	-0.24±0.36
	Arghuni	18	5.2±0.4	-0.08±0.58	-0.47±0.60	-0.28±0.33	-0.10±0.66	-0.55±0.67	-0.33±0.36
	Sharo Argun	31	15.7±0.8	-0.49±0.75	-0.54±0.73	-0.52±0.41	-0.57±0.83	-0.64±0.82	-0.61±0.43
Sulak	Andiyskoye Koysu	35	11.8±0.6	-0.60±0.70	-0.58±0.60	-0.59±0.39	-0.70±0.68	-0.68±0.66	-0.69±0.35
	Avarskoye Koysu	34	5.9±0.4	-0.45±0.69	-0.46±0.72	-0.45±0.41	-0.53±0.76	-0.54±0.79	-0.53±0.42
Samur		13	2.4±0.2	-0.16±0.47	-0.60±0.51	-0.38±0.28	-0.19±0.54	-0.71±0.55	-0.45±0.30
Kusarchai		14	0.8±0.1	-0.18±0.54	-0.29±0.55	-0.24±0.30	-0.21±0.62	-0.34±0.59	-0.28±0.32
Bzipi		16	3.1±0.3	-0.91±0.73	-0.19±0.81	-0.55±0.45	-1.07±0.73	-0.22±0.86	-0.65±0.44
Kelasuri		2	0.9±0.06	-0.89±0.62	-0.94±0.85	-0.91±0.47	-1.04±0.69	-1.11±0.90	-1.07±0.45
Kodori		154	42.0±2.6	-0.39±0.54	-0.81±0.67	-0.60±0.37	-0.46±0.60	-0.96±0.68	-0.71±0.36
Enguri		289	223.6±8.8	-0.26±0.53	-0.71±0.58	-0.49±0.33	-0.31±0.60	-0.84±0.60	-0.57±0.32
Khobistkali		11	0.6±0.08	-0.92±0.97	-0.60±0.89	-0.76±0.57	-1.08±0.97	-0.71±0.97	-0.89±0.52
Rioni		117	50.6±2.3	-0.54±0.67	-0.52±0.66	-0.53±0.39	-0.64±0.71	-0.61±0.73	-0.62±0.39
Liakhvi		12	2.0±0.2	-0.18±0.62	-0.65±0.65	-0.42±0.37	-0.22±0.72	-0.76±0.69	-0.49±0.38
Aragvi		1	0.3±0.04	0.05±0.40	-0.47±0.43	-0.21±0.23	0.06±0.47	-0.56±0.49	-0.25±0.26
<b>Total, Greater Caucasus</b>		<b>1861</b>	<b>1186.1±53.3</b>	<b>-0.42±0.61</b>	<b>-0.64±0.66</b>	<b>-0.53±0.38</b>	<b>-0.50±0.67</b>	<b>-0.75±0.70</b>	<b>-0.62±0.37</b>

**Table S2.** Change of specific mass (m w.e. yr<sup>-1</sup>) and thickness (m yr<sup>-1</sup>) for Caucasus countries (Russia, Georgia, Azerbaijan) in 2000-2010, 2010-2020, and 2000-2020.

Countries	Based on Landsat 2014 (Tielidze an Wheate, 2018)		Change of specific mass (m w.e. yr <sup>-1</sup> )			Change of thickness (m yr <sup>-1</sup> )		
	Number	Area km <sup>2</sup>	2000-2010	2010-2019	2000-2019	2000-2010	2010-2019	2000-2019
Russia	1161	817.8±35.1	-0.47±0.63	-0.63±0.67	-0.55±0.39	-0.55±0.70	-0.74±0.73	-0.65±0.38
Georgia	683	367.1±16.8	-0.35±0.58	-0.66±0.64	-0.51±0.36	-0.41±0.64	-0.77±0.67	-0.60±0.36
Azerbaijan	17	1.2±0.2	-0.14±0.53	-0.31±0.53	-0.23±0.29	-0.17±0.61	-0.37±0.58	-0.27±0.31

**Table S3.** Change of specific mass (m w.e. yr<sup>-1</sup>) and thickness (m yr<sup>-1</sup>) for individual glaciers >2.0 km<sup>2</sup> of the Greater Caucasus in 2000-2010, 2010-2020, and 2000-2020.

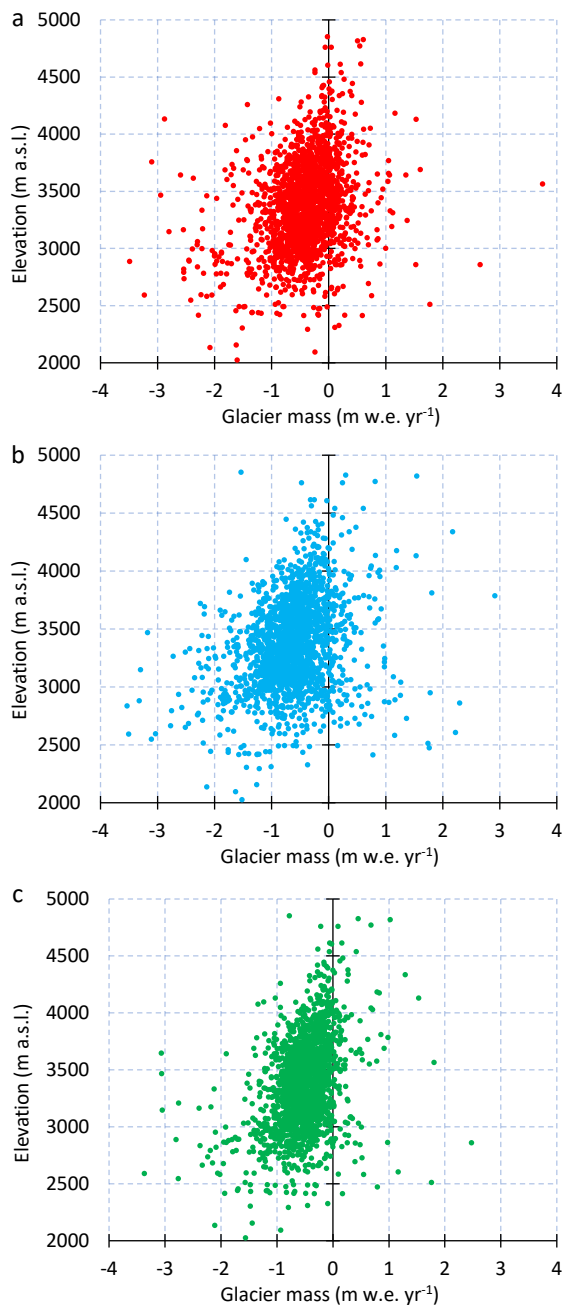
Glacier name	GLIMS_id	Area (km <sup>2</sup> )	Change of specific mass (m w.e. yr <sup>-1</sup> )			Change of thickness (m yr <sup>-1</sup> )		
			2000-2010	2010-2019	2000-2019	2000-2010	2010-2019	2000-2019
<b>Glaciers with &gt;10 km<sup>2</sup> area</b>								
Bezingi	G043100E43030N	37.49	-0.19±0.22	-0.67±0.21	-0.43±0.12	-0.22±0.26	-0.78±0.24	-0.50±0.14
Dykhsu	G043183E42984N	27.53	-0.41±0.23	-0.65±0.23	-0.53±0.14	-0.48±0.27	-0.76±0.26	-0.62±0.15
Karaugom	G043748E42782N	23.99	-0.24±0.24	-0.59±0.23	-0.41±0.14	-0.28±0.28	-0.69±0.26	-0.49±0.15
Lekhziri	G042766E43151N	23.77	-0.39±0.23	-1.22±0.23	-0.81±0.14	-0.46±0.26	-1.44±0.22	-0.95±0.13
Dzhikiugankez	G042506E43356N	21.44	-0.86±0.21	-1.23±0.21	-1.04±0.13	-1.01±0.23	-1.45±0.22	-1.23±0.12
Agashtan	G043291E42928N	18.94	-0.89±0.25	-0.86±0.28	-0.88±0.17	-1.04±0.28	-1.02±0.31	-1.03±0.18
Azay Bolshoy	G042429E43293N	17.72	-0.33±0.21	-0.59±0.21	-0.46±0.11	-0.39±0.24	-0.69±0.23	-0.54±0.13
Ulluchiran	G042432E43372N	12.79	-0.07±0.21	-0.25±0.20	-0.16±0.11	-0.08±0.25	-0.29±0.23	-0.19±0.13
Midjirgi	G043165E43066N	12.74	-0.04±0.26	-0.30±0.28	-0.17±0.15	-0.05±0.30	-0.35±0.33	-0.20±0.18
Tsaneri Southern	G042999E43050N	12.32	-0.43±0.25	-0.57±0.26	-0.50±0.15	-0.51±0.29	-0.67±0.29	-0.59±0.16
Tseya	G043844E42752N	11.87	-0.18±0.26	-0.89±0.26	-0.53±0.15	-0.21±0.31	-1.04±0.28	-0.63±0.17
Tsaneri Northern	G043005E43089N	11.28	-0.39±0.25	-0.38±0.22	-0.39±0.13	-0.46±0.29	-0.45±0.26	-0.46±0.14
Irik	G042501E43334N	10.97	-0.29±0.22	-0.63±0.22	-0.46±0.12	-0.34±0.26	-0.75±0.25	-0.54±0.13
<b>Glaciers with 5-10 km<sup>2</sup> area</b>								
Shaurty	G043051E43105N	9.89	-0.31±0.25	-0.68±0.24	-0.49±0.14	-0.37±0.29	-0.80±0.26	-0.58±0.15
Adishi	G043016E43017N	9.59	-0.06±0.29	0.27±0.28	0.10±0.15	-0.07±0.34	0.32±0.33	0.12±0.18
Kvitlodi	G042950E43105N	9.58	-0.08±0.25	-0.75±0.27	-0.42±0.15	-0.10±0.29	-0.88±0.30	-0.49±0.17
Terskol	G042488E43308N	9.48	-0.11±0.23	-0.17±0.21	-0.14±0.12	-0.12±0.26	-0.21±0.25	-0.17±0.14
Azay Maliy	G042449E43302N	9.45	0.00±0.23	-0.19±0.22	-0.09±0.12	0.00±0.27	-0.22±0.26	-0.11±0.14
Chalaati	G042713E43130N	9.24	-0.01±0.24	-0.92±0.25	-0.47±0.13	-0.01±0.28	-1.09±0.27	-0.55±0.15
Suatisi_Eastern	G044443E42706N	8.89	-0.09±0.26	-0.73±0.26	-0.41±0.14	-0.11±0.30	-0.86±0.29	-0.48±0.16
Khalde	G043043E42994N	8.59	-0.31±0.27	0.09±0.27	-0.11±0.15	-0.37±0.31	0.11±0.32	-0.13±0.17

Shkhelda	G042663E43151N	8.28	-0.38±0.25	-0.96±0.26	-0.67±0.15	-0.44±0.29	-1.13±0.27	-0.79±0.15
Midagrabin	G044390E42722N	8.16	-0.45±0.27	-0.97±0.26	-0.71±0.15	-0.53±0.31	-1.14±0.28	-0.83±0.16
Ullauzna	G043238E43064N	7.53	-0.08±0.26	-0.23±0.30	-0.16±0.17	-0.09±0.31	-0.27±0.36	-0.18±0.19
Bashil	G042901E43169N	7.35	-0.21±0.27	-0.93±0.25	-0.57±0.14	-0.25±0.31	-1.09±0.28	-0.67±0.16
Kvishi	G042497E43168N	7.33	0.03±0.24	-0.88±0.26	-0.42±0.13	0.04±0.28	-1.03±0.28	-0.50±0.15
Hrumkol	G043202E43023N	7.01	0.03±0.26	-0.42±0.28	-0.20±0.15	0.04±0.30	-0.50±0.32	-0.23±0.18
Mikelchiran	G042487E43376N	6.85	-0.13±0.23	-0.38±0.21	-0.25±0.12	-0.15±0.27	-0.44±0.25	-0.30±0.14
Psigansu	G043482E42972N	6.76	-0.22±0.26	-0.77±0.27	-0.49±0.16	-0.26±0.31	-0.90±0.30	-0.58±0.17
Maili	G044477E42719N	6.57	-0.16±0.27	-0.38±0.25	-0.27±0.14	-0.19±0.31	-0.44±0.30	-0.31±0.16
Djalovchatskiy	G041493E43296N	6.42	-0.91±0.26	-1.71±0.30	-1.31±0.19	-1.07±0.28	-2.01±0.27	-1.54±0.14
Bartuitsete	G043638E42825N	6.30	-0.56±0.28	-0.68±0.27	-0.62±0.16	-0.65±0.32	-0.81±0.30	-0.73±0.17
Lekhziri Central	G042751E43175N	6.27	0.08±0.27	-0.74±0.26	-0.33±0.14	0.09±0.32	-0.88±0.29	-0.39±0.16
Kulakchegemchiran	G042967E43132N	6.00	-0.35±0.30	-0.95±0.30	-0.65±0.17	-0.41±0.35	-1.12±0.32	-0.77±0.18
Karachaul	G042453E43381N	5.94	-0.06±0.23	-0.26±0.22	-0.16±0.12	-0.07±0.28	-0.30±0.26	-0.19±0.14
Gergeti	G044499E42692N	5.77	-0.03±0.27	-0.55±0.26	-0.29±0.14	-0.03±0.32	-0.65±0.30	-0.34±0.16
Alibekskiy	G041523E43281N	5.73	-0.95±0.26	-1.10±0.27	-1.03±0.16	-1.12±0.28	-1.30±0.28	-1.21±0.14
Kyukyurtlyu	G042404E43354N	5.69	0.06±0.24	-0.20±0.23	-0.07±0.13	0.07±0.28	-0.24±0.27	-0.08±0.15
Songutidontsete	G043809E42798N	5.66	-0.46±0.30	-0.71±0.29	-0.59±0.17	-0.55±0.34	-0.84±0.32	-0.69±0.18
Dolra	G042522E43171N	5.36	0.02±0.25	-0.95±0.27	-0.47±0.14	0.03±0.29	-1.12±0.30	-0.55±0.16
Ullukol	G042464E43376N	5.35	-0.12±0.24	-0.32±0.22	-0.22±0.12	-0.14±0.28	-0.37±0.26	-0.26±0.14
493v	G042811E43183N	5.32	-0.35±0.29	-0.73±0.28	-0.54±0.16	-0.42±0.34	-0.86±0.31	-0.64±0.17
<b>Glaciers with 2-5 km<sup>2</sup> area</b>								
Ushba Southern	G042633E43131N	4.72	-0.36±0.28	-0.92±0.29	-0.64±0.16	-0.43±0.33	-1.09±0.32	-0.76±0.17
Seri	G042838E43120N	4.65	-0.22±0.29	-1.00±0.30	-0.61±0.17	-0.25±0.34	-1.17±0.32	-0.71±0.18
Amanauz	G041626E43230N	4.63	-0.63±0.26	-1.24±0.29	-0.94±0.17	-0.75±0.29	-1.46±0.29	-1.10±0.15
Boko	G043719E42767N	4.62	-0.03±0.29	-0.51±0.28	-0.27±0.16	-0.03±0.34	-0.60±0.33	-0.31±0.19
Nageba	G042959E43036N	4.60	-0.14±0.27	-0.21±0.28	-0.17±0.16	-0.16±0.32	-0.24±0.33	-0.20±0.18
Kirtisho	G043596E42832N	4.51	-0.60±0.29	-0.82±0.28	-0.71±0.17	-0.71±0.33	-0.97±0.31	-0.84±0.18
Devdoraki	G044517E42715N	4.41	0.02±0.28	-0.25±0.26	-0.11±0.14	0.03±0.32	-0.30±0.30	-0.13±0.16

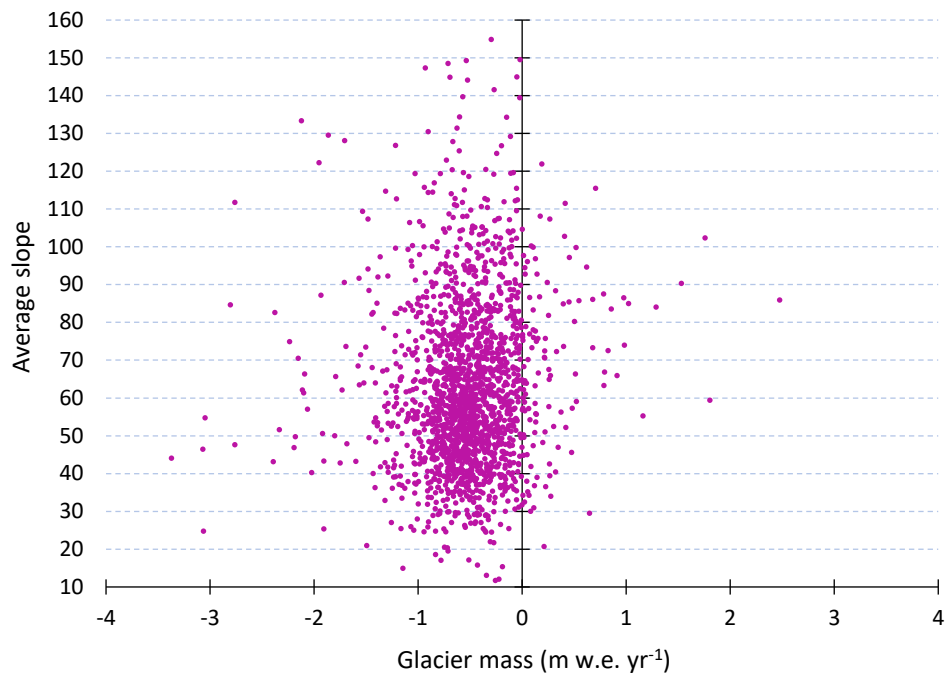
Tviberi	G042838E43099N	4.33	-0.26±0.27	-1.24±0.31	-0.75±0.18	-0.30±0.32	-1.46±0.31	-0.88±0.18
Bashkara	G042734E43194N	4.05	-0.41±0.31	-0.87±0.30	-0.64±0.18	-0.48±0.35	-1.02±0.33	-0.75±0.18
Sopruju Southern	G041572E43240N	3.96	-0.27±0.25	-0.92±0.27	-0.60±0.14	-0.32±0.29	-1.09±0.29	-0.70±0.14
Belalakaiskiy	G041561E43266N	3.88	-0.63±0.26	-1.29±0.30	-0.96±0.18	-0.74±0.30	-1.52±0.29	-1.13±0.15
Tanantsete	G043500E42888N	3.88	-0.45±0.29	-0.20±0.29	-0.32±0.16	-0.53±0.34	-0.23±0.34	-0.38±0.19
Djailik	G042922E43239N	3.86	-0.42±0.32	-0.62±0.30	-0.52±0.17	-0.49±0.38	-0.73±0.35	-0.61±0.19
Sugan	G043454E42991N	3.84	-0.36±0.29	-0.65±0.28	-0.50±0.16	-0.42±0.33	-0.76±0.32	-0.59±0.18
Tyutyun	G043249E43041N	3.79	-0.35±0.30	-0.65±0.36	-0.50±0.20	-0.41±0.35	-0.76±0.41	-0.59±0.22
Laila	G042534E42928N	3.73	-0.07±0.26	-0.95±0.27	-0.51±0.14	-0.08±0.30	-1.12±0.29	-0.60±0.16
Zaramag	G043845E42727N	3.67	-0.51±0.31	-0.68±0.29	-0.60±0.18	-0.61±0.36	-0.80±0.33	-0.70±0.19
Edena Bigger	G043380E42886N	3.66	-0.44±0.29	-0.73±0.28	-0.59±0.17	-0.52±0.33	-0.86±0.31	-0.69±0.18
Shkhara	G043106E42983N	3.61	-0.46±0.32	-0.07±0.32	-0.26±0.17	-0.54±0.37	-0.08±0.37	-0.31±0.20
Tanantsete	G043521E42874N	3.55	-0.68±0.31	-0.70±0.30	-0.69±0.18	-0.80±0.35	-0.83±0.34	-0.81±0.19
Gerti	G043276E43053N	3.50	-0.70±0.30	-0.45±0.35	-0.58±0.19	-0.83±0.34	-0.53±0.40	-0.68±0.22
Leadasthi Northern	G042479E43178N	3.46	-0.15±0.26	-0.92±0.27	-0.53±0.14	-0.17±0.30	-1.08±0.30	-0.63±0.16
Khasautskiy	G041439E43313N	3.32	-0.81±0.35	-1.25±0.35	-1.03±0.20	-0.95±0.40	-1.47±0.39	-1.21±0.19
Shtulu Western	G043371E42899N	3.30	-0.67±0.30	-0.69±0.28	-0.68±0.18	-0.79±0.34	-0.81±0.32	-0.80±0.18
Buba	G043762E42752N	3.26	-0.61±0.32	-0.50±0.29	-0.55±0.18	-0.72±0.36	-0.59±0.33	-0.65±0.19
Mostotsete	G043421E42899N	3.24	-0.93±0.31	-0.91±0.30	-0.92±0.20	-1.09±0.34	-1.07±0.33	-1.08±0.19
Morde-auzh	G042112E43216N	3.07	-0.43±0.25	-0.84±0.28	-0.63±0.16	-0.50±0.29	-0.98±0.31	-0.74±0.16
Sopruju Northern	G041588E43250N	3.06	-0.37±0.27	-0.81±0.28	-0.59±0.15	-0.44±0.31	-0.95±0.31	-0.70±0.16
Kashkatash	G042693E43189N	3.05	-0.15±0.29	-0.67±0.29	-0.41±0.16	-0.18±0.34	-0.79±0.32	-0.48±0.17
Donguz_Orun	G042509E43213N	3.01	-0.15±0.32	-0.63±0.32	-0.39±0.17	-0.18±0.38	-0.74±0.37	-0.46±0.19
Gvandra	G042078E43218N	2.95	-0.43±0.26	-0.85±0.31	-0.64±0.17	-0.50±0.29	-1.00±0.34	-0.75±0.18
Ushba Northern	G042613E43151N	2.89	0.05±0.27	-0.68±0.28	-0.31±0.15	0.06±0.32	-0.80±0.32	-0.37±0.17
Marukhi Northern	G041420E43362N	2.82	-0.44±0.43	-1.36±0.45	-0.90±0.23	-0.52±0.50	-1.60±0.50	-1.06±0.24
Lakra	G042468E43152N	2.69	-0.32±0.27	-1.08±0.30	-0.70±0.17	-0.38±0.32	-1.27±0.32	-0.82±0.16
Shtulu Eastern	G043395E42903N	2.67	-0.52±0.29	-0.54±0.29	-0.53±0.17	-0.61±0.34	-0.63±0.33	-0.62±0.19
Chalinginitsete	G043785E42817N	2.65	-0.86±0.32	-0.87±0.31	-0.87±0.20	-1.01±0.35	-1.03±0.34	-1.02±0.19

Tebulo	G045335E42577N	2.62	-0.21±0.28	-0.21±0.29	-0.21±0.16	-0.25±0.33	-0.25±0.34	-0.25±0.19
Tiutiurgy	G043081E43122N	2.62	-0.14±0.29	-0.52±0.30	-0.33±0.16	-0.16±0.34	-0.61±0.34	-0.38±0.19
Dvuyazichniy	G041519E43299N	2.62	-0.58±0.27	-0.89±0.28	-0.73±0.15	-0.68±0.31	-1.05±0.31	-0.86±0.16
Kichkinekol Boshoy	G042177E43228N	2.60	-0.59±0.29	-0.84±0.32	-0.71±0.18	-0.69±0.33	-0.99±0.34	-0.84±0.18
Ezengi	G042534E43202N	2.59	-0.02±0.27	-0.96±0.29	-0.49±0.16	-0.02±0.32	-1.13±0.30	-0.58±0.16
Tiutiu	G042879E43260N	2.56	-0.24±0.60	-0.62±0.61	-0.43±0.31	-0.29±0.71	-0.73±0.70	-0.51±0.36
Kolka	G044447E42733N	2.51	-0.71±0.34	0.45±0.30	-0.13±0.16	-0.83±0.38	0.53±0.35	-0.15±0.19
Nakhagibita	G043451E42962N	2.49	0.00±0.30	-0.78±0.30	-0.39±0.17	0.00±0.35	-0.92±0.34	-0.46±0.19
Karaugom	G043704E42797N	2.48	-0.66±0.32	-0.35±0.30	-0.50±0.18	-0.78±0.37	-0.41±0.35	-0.59±0.20
Zopkhito	G043422E42884N	2.45	-0.41±0.30	-0.72±0.30	-0.57±0.18	-0.48±0.35	-0.85±0.34	-0.67±0.20
Lailchala	G042581E42915N	2.38	-0.06±0.28	-0.79±0.29	-0.42±0.15	-0.07±0.33	-0.93±0.32	-0.50±0.17
Kharikhra	G042093E43100N	2.36	-0.36±0.26	-0.40±0.27	-0.38±0.14	-0.42±0.30	-0.47±0.31	-0.45±0.16
Garabashi	G042470E43302N	2.33	-0.38±0.27	-0.52±0.27	-0.45±0.15	-0.45±0.31	-0.61±0.31	-0.53±0.16
Mna	G044483E42698N	2.32	0.22±0.29	-0.46±0.29	-0.12±0.15	0.26±0.34	-0.54±0.34	-0.14±0.18
Namkvami	G043128E42966N	2.29	-0.45±0.30	-0.12±0.32	-0.29±0.18	-0.53±0.35	-0.15±0.38	-0.34±0.20
Koruldashi	G043157E42956N	2.29	-0.32±0.31	-0.43±0.34	-0.37±0.19	-0.38±0.36	-0.51±0.39	-0.44±0.21
Agbek	G041673E43238N	2.28	-0.61±0.30	-0.70±0.30	-0.65±0.18	-0.72±0.34	-0.82±0.33	-0.77±0.17
Shdavleri	G042337E43141N	2.28	-0.39±0.28	-0.69±0.28	-0.54±0.16	-0.46±0.32	-0.81±0.32	-0.63±0.17
Iriti	G042877E43141N	2.27	0.10±0.35	-0.79±0.35	-0.34±0.18	0.12±0.42	-0.93±0.40	-0.40±0.21
Djankuat	G042766E43192N	2.23	-0.40±0.30	-1.11±0.29	-0.76±0.17	-0.47±0.34	-1.31±0.30	-0.89±0.17
Khakel	G041843E43225N	2.22	-0.66±0.28	-1.45±0.34	-1.06±0.20	-0.77±0.30	-1.71±0.31	-1.24±0.16
Rtsivashki	G043434E42978N	2.13	-0.39±0.31	-0.46±0.30	-0.42±0.17	-0.46±0.36	-0.54±0.35	-0.50±0.19
Khasankoi-siuriulgen	G042386E43249N	2.08	-0.61±0.28	-1.02±0.29	-0.81±0.17	-0.71±0.32	-1.20±0.31	-0.96±0.16
Murkvami	G042813E43111N	2.08	-0.32±0.30	-0.43±0.28	-0.37±0.16	-0.37±0.35	-0.50±0.32	-0.44±0.18
Suatisi Central	G044416E42704N	2.07	0.35±0.31	-0.64±0.31	-0.15±0.16	0.41±0.36	-0.75±0.35	-0.17±0.19
Phastagtsete	G043655E42811N	2.06	-1.03±0.35	-1.00±0.34	-1.01±0.23	-1.21±0.37	-1.17±0.36	-1.19±0.20
Bulungy	G043105E43134N	2.02	-0.32±0.29	-0.43±0.34	-0.37±0.19	-0.38±0.34	-0.50±0.39	-0.44±0.21





**Figure S1.** Change in specific mass (m w.e. yr<sup>-1</sup>) vs glacier mean elevation for all Caucasus glaciers in 2000-2010 (a), 2010-2019 (b), and 2000-2019 (c)



**Figure S2.** Change of specific mass (m w.e. yr<sup>-1</sup>) for all Caucasus glaciers vs average slope in 2000-2019.