

Table S1. LIA glacier inventory of the North-Chuya ridge. Designations in the table:  $N$  - glacier number according to this inventory,  $\lambda$ , ° - longitude of the central point,  $\varphi$ , ° - latitude of the central point,  $S$ , km<sup>2</sup> - glacier area,  $Z_1$  - height of the lower point of the glacier, m,  $Z_2$  - height of the upper point glacier, m,  $a_{\max}$ , ° - maximal slope angle of the glacier,  $a_{\text{av}}$ , ° - average slope of the glacier,  $S_{3D}$ , km - 3D surface area of the glacier,  $E$  - average exposure of the glacier,  $E$ , ° - average exposure of the glacier in degrees. The numerical numbers of glaciers correspond to the numbering of modern glaciers, the L-index denotes glaciers that existed during the Little Ice Age, but disappeared by 2021.

$N$	name	$\lambda$ , °	$\varphi$ , °	$S$ , km <sup>2</sup>	Morphological type	$Z_1$	$Z_2$	$ELA$	$a_{\max}$ , °	$a_{\text{av}}$ , °	$S_{3D}$ , km	$E$ , °
Jelo river basin												
1		87.73	50.01	1.02±0.05	cirque	2768	3194	2939	53.5	21.6	1.14	E, 104
2-3-4	Jelo	87.72	50.03	10.02±0.30	valley	2512	3685	2904	66.0	18.5	11.06	E, 108
5		87.75	50.04	0.89±0.05	slope	2924	3695	3409	50.0	21.7	0.98	SE, 136
6		87.76	50.04	0.67±0.04	cirque	2969	3515	3172	62.3	28.0	0.79	SE, 118
7-8	Kupol	87.79	50.04	2.92±0.09	flat summit	3025	3552	3344	37.9	16.5	3.07	S, 169
L1		87.80	50.01	0.25±0.02	cirque	2885	3232	3011	64.5	29.7	0.30	N, E49
9		87.80	50.02	0.20±0.02	cirque-hanging	3050	3317	3223	58.9	26.5	0.23	E, 93
10		87.80	50.02	0.30±0.02	cirque-hanging	2989	3265	3071	53.8	23.2	0.34	NE, 53
L2		87.80	50.03	0.25±0.03	cirque	2926	3322	3089	56.6	32.0	0.31	E, 77
L3		87.81	50.04	0.30±0.02	cirque	2980	3357	3124	50.4	31.2	0.36	SE, 152
L4		87.83	50.05	0.26±0.02	flat summit	3150	3320	3234	31.2	12.6	0.26	NE, 46
L5		87.87	50.05	0.65±0.05	slope	3275	3450	3376	43.6	16.2	0.68	S, 186
In total, in the basin of the Jelo river 12 glaciers with total area of 17.73±0.73 km <sup>2</sup> , minimal altitude is 2512 m, maximal altitude is 3695 m, area weighted average ELA is 3050 m												
Tete river basin												
L6		87.95	50.04	0.16±0.02	cirque-hanging	2655	3057	2831	69.5	35.4	0.22	NE, 39
L7		87.95	50.05	0.09±0.01	hanging	2782	3104	2991	61.2	42.2	0.12	E, 86
L8		87.93	50.05	0.68±0.05	flat summit	3110	3218	3166	24.2	7.9	0.69	NE, 23
L9		87.94	50.05	0.11±0.02	hanging	2867	3192	3031	58.1	33.7	0.14	N, 11
L10		87.93	50.06	0.18±0.02	cirque-hanging	2822	3150	2964	58.4	31.9	0.22	N, 8
L11		87.92	50.06	0.14±0.02	cirque-hanging	2842	3189	3013	58.3	33.6	0.18	NE, 49
L12		87.91	50.05	0.40±0.03	cirque-hanging	2768	3225	2983	56.8	34.4	0.50	N, 12
L13		87.90	50.05	0.08±0.01	hanging	2845	3228	3066	50.8	37.8	0.11	NE, 66

11		87.86	50.06	0.78±0.04	flat summit	3281	3450	3376	34.7	12.3	0.80	N, 357
12-14		87.88	50.06	1.22±0.06	valley	2641	3432	3070	56.7	24.9	1.40	NE, 24
13		87.89	50.06	0.53±0.03	cirque	2893	3359	3079	58.9	24.7	0.60	N, 347
L14		87.83	50.05	0.44±0.03	slope	3141	3325	3243	35.0	13.5	0.45	NW, 332
15	Tete	87.81	50.05	1.57±0.07	valley	2653	3481	2978	65.7	28.3	1.88	NE, 38
16		87.81	50.06	1.92±0.07	cirque	2781	3551	3073	55.0	20.4	2.11	NE, 48
L15		87.82	50.08	0.62±0.03	flat summit	3190	3349	3280	32.4	14.0	0.65	W, 276
In total, in the basin of the Tete river 15 glaciers with total area of 8.92±0.53 km <sup>2</sup> have been reconstructed, minimal altitude is 2641 m, maximal altitude is 3551 m, area weighted average ELA is 3099 m												
Aktru river basin												
L16		87.84	50.08	0.38±0.04	cirque-hanging	2664	3323	2970	59.7	36.6	0.49	NE, 50
L17		87.83	50.09	0.15±0.02	hanging	2811	3308	3116	48.8	35.9	0.18	N, 6
L18		87.82	50.09	0.04±0.01	hanging	2788	3059	2934	42.4	35.9	0.06	NE, 25
17		87.79	50.06	1.92±0.07	slope	2881	3551	3187	47.3	17.1	2.02	N, 344
18-19	Malyi Aktru	87.76	50.05	4.95±0.17	valley	2189	3708	2824	66.4	22.3	5.74	N, 21
20-25	Pravyi Aktru and Levyi Aktru	87.69	50.08	13.65±0.52	valley	2300	3970	2801	72.2	25.3	18.49	E, 70
26		87.72	50.09	0.34±0.02	cirque-hanging	3196	3566	3313	40.5	24.7	0.38	E, 88
L19		87.73	50.09	0.26±0.03	cirque	2932	3329	3138	49.9	30.3	0.31	W, 261
L20		87.75	50.09	0.09±0.02	cirque	2862	3225	3033	62.2	40.3	0.12	E, 90
L21		87.75	50.09	0.06±0.01	cirque	3008	3153	3065	46.4	26.3	0.06	N, 16
27	Kysyl-Tash	87.75	50.09	1.20±0.08	cirque-valley	2699	3442	2996	61.6	27.6	1.43	NE, 49
28-30	Yan-Karasu	87.71	50.10	3.46±0.14	valley	2577	3960	2847	68.2	25.7	4.06	NE, 65
L22		87.72	50.11	0.13±0.01	cirque	2803	3113	2931	63.1	33.8	0.16	N, 21
31	Malyi Korumdu	87.71	50.11	1.31±0.09	valley	2582	3715	2818	63.6	29.5	1.57	NE, 34
32-33	Korumdu	87.68	50.12	9.22±0.47	valley	2194	3967	2755	64.7	29.7	13.28	NE, 50
L23		87.66	50.14	0.22±0.02	cirque	2900	3282	3059	55.0	30.1	0.26	NE, 47
L24		87.66	50.14	0.24±0.03	cirque	2759	3278	2953	53.3	35.0	0.31	NE, 58
34-35	Kurkurek	87.64	50.14	4.18±0.16	valley	2456	3967	2836	64.2	30.2	5.27	N, 18
36		87.61	50.15	2.33±0.15	valley	2482	3624	2826	64.0	23.9	2.72	N, 20
37		87.60	50.16	0.89±0.05	cirque-valley	2767	3495	3020	67.4	25.7	1.04	N, 16

In total, in the basin of the Aktru river 20 glaciers with total area of 45.02±2.25 km<sup>2</sup> are reconstructed, minimal altitude is 2189 m, maximal altitude is 3970 m, area weighted average ELA is 2840

Maashei river basin												
38		87.61	50.14	0.67±0.06	flat summit	3355	3629	3526	39.2	14.5	0.70	SW, 236
39		87.63	50.13	2.73±0.16	valley	2402	3909	3062	63.8	28.7	3.68	W, 292
40-43	Pravyi Maashei	87.64	50.11	6.51±0.29	valley	2413	3965	3045	74.8	30.0	8.54	W, 254
L25		87.63	50.10	0.23±0.03	hanging	2901	3494	3245	70.1	44.2	0.34	W, 280
44-45		87.66	50.09	0.83±0.05	slope	2903	3963	3387	76.7	40.3	1.28	S, 202
46-48	Bolshoi Maashei	87.63	50.08	17.49±0.52	valley	2196	4107	2711	69.8	22.7	21.77	N, 349
49-55	Levyi Maashei	87.55	50.08	10.10±0.34	cirque-valley	2446	4110	3041	64.5	25.5	12.27	NE, 35
56		87.56	50.10	0.27±0.02	cirque	2864	3338	3142	64.8	32.2	0.34	E, 69
57-59		87.53	50.10	1.99±0.13	cirque-valley	2634	3496	3014	65.9	30.3	2.44	NE, 48
60-63		87.51	50.12	2.77±0.19	cirque-valley	2576	3571	3012	66.1	26.7	3.41	NE, 56
64		87.53	50.14	0.91±0.08	cirque-valley	2715	3412	2957	55.8	29.9	1.10	E, 80
65-67		87.52	50.15	1.59±0.12	cirque-valley	2583	3529	2971	65.3	31.7	2.10	N, 19
68		87.51	50.16	0.65±0.05	valley	2619	3313	2898	59.5	26.7	0.76	NE, 28
69-72		87.49	50.14	6.41±0.35	valley	2409	3661	2742	61.2	26.2	8.05	N, 347
73		87.47	50.15	0.38±0.04	cirque-valley	2669	3204	2872	74.4	30.2	0.47	N, 16
L26		87.46	50.16	0.11±0.01	hanging	2939	3249	3114	48.9	36.3	0.13	E, 101
L27		87.46	50.17	0.19±0.02	cirque	2827	3230	2963	64.0	32.1	0.24	E, 71
L28		87.48	50.18	0.81±0.08	cirque	2565	3166	2795	61.3	26.3	0.97	NE, 44
L29		87.47	50.18	0.19±0.02	cirque	2711	2939	2811	52.5	26.3	0.21	NE, 29

In total, in the basin of the Maashei 19 glaciers with total area of 54.83±2.56 km<sup>2</sup> are reconstructed, minimal altitude 2196 m, maximal altitude 4110 m, area weighted average ELA is 2902 m.

Shavly river basin												
74		87.46	50.18	0.70±0.04	cirque	2897	3152	3000	43.2	16.0	0.74	NW, 329
75		87.45	50.17	0.72±0.06	cirque-valley	2553	3247	2813	67.6	27.0	0.85	N, 348
76-82		87.45	50.15	3.53±0.24	valley	2461	3404	2810	60.6	26.7	4.37	N, 349
L30		87.42	50.15	0.06±0.01	hanging	2859	3226	3060	48.1	37.4	0.08	N, 341
L31		87.42	50.15	0.05±0.01	hanging	2798	3140	2996	44.8	35.1	0.07	N, 341
L32		87.45	50.14	0.06±0.01	hanging	3134	3374	3327	56.5	22.6	0.07	SW, 216

L33		87.45	50.13	0.04±0.01	hanging	2900	3119	3035	47.2	34.6	0.04	NW, 311
L34		87.44	50.13	0.04±0.01	hanging	2897	3139	3057	42.6	33.7	0.05	NW, 317
L35		87.46	50.13	0.10±0.01	cirque-hanging	2869	3241	3072	51.4	36.4	0.13	SW, 245
L36		87.47	50.13	0.13±0.01	cirque-hanging	2961	3259	3111	45.1	33.6	0.15	SE, 149
83-84		87.48	50.13	0.60±0.08	cirque-valley	2758	3667	3128	67.2	36.0	0.77	W, 270
85		87.48	50.12	0.10±0.02	hanging	3267	3664	3487	49.3	39.2	0.13	SW, 203
L37		87.49	50.12	0.08±0.01	hanging	3268	3664	3513	52.7	36.1	0.10	SW, 208
L38		87.49	50.12	0.10±0.01	hanging	3306	3576	3439	41.1	32.8	0.12	S, 180
L39		87.49	50.12	0.02±0.01	hanging	3146	3299	3225	37.0	32.4	0.02	SW, 207
L40		87.49	50.12	0.03±0.01	hanging	3127	3265	3189	38.4	30.8	0.03	SE, 135
86-90		87.48	50.11	5.30±0.36	cirque-valley	2431	3716	3006	76.8	30.7	8.21	N, 350
91		87.47	50.10	0.10±0.02	hanging	3539	3721	3630	54.3	27.8	0.12	S, 171
L41		87.46	50.10	0.02±0.01	hanging	3271	3665	3482	69.5	57.5	0.04	SW, 243
L42		87.46	50.10	0.04±0.01	hanging	3275	3524	3524	61.0	40.9	0.06	W, 248
L43		87.47	50.09	0.33±0.03	cirque	2680	3214	2905	49.6	34.2	0.40	S, 175
L44		87.49	50.09	0.20±0.03	hanging	2967	3671	3302	51.7	36.2	0.25	S; 196
L45		87.50	50.09	0.06±0.01	hanging	3006	3224	3105	49.7	35.0	0.08	E, 86
92		87.52	50.09	0.03±<0.01	slope	3362	3447	3404	41.8	23.7	0.03	SW, 242
93-98		87.51	50.08	3.95±0.23	valley	2624	3795	2898	68.2	29.8	5.54	NW, 305
99		87.49	50.08	0.33±0.04	hanging	2542	3530	2998	59.8	34.9	0.43	N, 355
100		87.50	50.06	0.28±0.04	cirque-hanging	2978	3800	3475	56.9	39.4	0.37	SW, 247
101		87.50	50.06	0.06±0.01	hanging	3060	3513	3350	48.4	41.5	0.08	W, 261
102		87.48	50.05	3.25±0.19	valley	2529	3489	2798	58.9	22.5	3.72	NW, 337
103		87.46	50.05	2.50±0.11	cirque-valley	2365	3699	2812	69.2	27.8	3.10	N, 358
104-106		87.43	50.06	5.36±0.28	valley	2211	3674	2639	67.1	26.8	6.70	NE, 34
107		87.41	50.06	0.03±0.01	hanging	3173	3254	3215	33.4	18.8	0.03	S, 168
L46		87.43	50.07	0.03±0.01	hanging	2694	3139	2958	61.0	45.2	0.05	N, 0
L47		87.43	50.07	0.04±0.01	hanging	2736	3160	2997	55.8	41.9	0.05	NE, 41
L48		87.43	50.08	0.05±0.01	hanging	2741	3102	2928	51.8	44.4	0.07	NE, 58
108-110		87.42	50.07	1.56±0.10	valley	2344	3251	2799	63.7	23.9	1.78	N, 352
111-112		87.39	50.07	4.26±0.22	valley	2157	3642	2559	63.7	26.5	5.39	NE, 25

113		87.39	50.08	0.40±0.06	valley	2376	3350	2675	61.3	32.1	0.50	NE, 53
114		87.38	50.09	0.08±0.02	hanging	2775	3290	3105	62.0	37.1	0.11	N, 22
115		87.38	50.07	0.69±0.05	valley	2755	3322	2957	50.6	25.6	0.78	NW, 319
116-117		87.36	50.08	2.80±0.14	valley	2475	3597	2794	64.0	26.2	3.25	N, 17
L49		87.34	50.08	0.06±0.01	cirque-hanging	2922	3183	3096	49.5	35.1	0.08	E, 68
L50		87.35	50.09	0.06±0.01	hanging	2647	3110	2893	52.0	38.9	0.07	NE,44
In total, in the basin of the Shavly river 43 glaciers are reconstructed with the total area of 38.23±2.56 km <sup>2</sup> , minimal altitude 2157 m, maximal altitude 3800 m, area weighted average ELA 2823 m												
Yungur river basin												
L51		87.34	50.08	0.58±0.06	valley	2603	3323	2915	60.9	32.9	0.72	NW, 310
L52		87.32	50.07	0.01±0.01	hanging	2973	3177	3120	46.2	39.3	0.01	N, 17
L53		87.32	50.07	0.03±0.01	cirque-hanging	2917	3185	3086	62.8	40.1	0.04	N, 12
L54		87.29	50.07	1.04±0.13	cirque-valley	2312	3175	2693	57.3	34.3	1.30	N, 338
L55		87.29	50.06	0.05±0.01	hanging	3026	3267	3179	51.1	37.7	0.06	NW, 335
L56		87.28	50.06	0.03±0.01	hanging	3003	3231	3158	51.0	37.3	0.04	NW, 317
L57		87.28	50.05	0.03±0.01	hanging	2982	3216	3129	46.4	34.9	0.04	W, 279
L58		87.29	50.05	0.10±0.01	cirque-valley	2904	3224	3063	47.7	33.7	0.12	E, 109
L59		87.30	50.06	0.07±0.01	cirque	3009	3314	3178	51.2	41.2	0.09	E, 91
118-121		87.36	50.06	2.00±0.14	cirque-valley	2614	3638	2992	68.1	28.7	2.47	NW, 312
L60		87.36	50.05	0.38±0.03	cirque-valley	2763	3233	3007	55.7	31.4	0.46	SW, 229
L61		87.36	50.04	0.04±0.01	hanging	2951	3276	3198	52.8	34.3	0.05	N, 8
L62		87.35	50.04	0.05±0.01	hanging	2906	3271	3201	56.2	31.5	0.07	NW, 334
L63		87.35	50.04	0.06±0.01	hanging	2908	3268	3204	54.4	29.3	0.07	N, 21
L64		87.33	50.03	0.02±0.01	hanging	2950	3113	3022	54.2	35.9	0.02	NW, 325
L65		87.33	50.03	0.03±0.01	cirque-hanging	2918	3096	3025	45.7	35.8	0.03	N, 360
L66		87.32	50.03	0.03±0.01	hanging	2981	3208	3097	58.5	42.7	0.04	NE, 24
L67		87.32	50.03	0.02±0.01	hanging	2963	3186	3087	63.9	41.8	0.03	NW, 332
L68		87.32	50.03	0.02±0.00	cirque-hanging	3055	3171	3123	38.8	30.3	0.02	SW, 231
L69		87.35	50.04	0.03±0.01	cirque	3088	3144	3122	31.7	18.2	0.03	SE, 144
L70		87.35	50.03	0.10±0.01	cirque-hanging	2807	3190	3001	58.3	35.8	0.13	NW, 296
L71		87.35	50.03	0.08±0.01	hanging	2995	3283	3168	50.7	31.4	0.10	NW, 328

L72		87.35	50.02	0.19±0.02	cirque-valley	2943	3388	3125	55.9	31.4	0.23	E, 76
L73		87.35	50.03	0.15±0.02	cirque	2889	3178	3031	49.5	31.4	0.18	E, 80
L74		87.35	50.04	0.09±0.01	cirque	2951	3232	3048	56.8	32.1	0.11	SE, 131
L75		87.37	50.03	0.05±0.01	hanging	2796	3136	3017	66.5	44.4	0.08	NE, 44
L76		87.36	50.03	0.07±0.01	cirque-hanging	2824	3223	3049	64.1	45.1	0.11	NE, 44
L77		87.36	50.04	0.03±0.01	cirque	2990	3165	3057	44.8	35.1	0.03	NE, 45
L78		87.37	50.04	0.03±0.01	cirque	2820	2974	2899	54.8	31.2	0.04	E, 74
L79		87.37	50.05	0.29±0.03	cirque-valley	2824	3364	3004	59.9	22.1	0.32	SE, 137
122-123		87.38	50.05	1.59±0.07	cirque	2804	3426	3030	51.8	23.2	1.77	S, 179
124		87.40	50.05	1.48±0.07	cirque-valley	2713	3421	3043	57.7	23.0	1.67	W, 256
125-126		87.42	50.04	3.10±0.18	cirque-valley	2542	3454	3016	69.9	26.0	3.62	W, 270
L80		87.41	50.02	0.58±0.05	cirque-valley	2763	3408	3129	63.7	32.6	0.74	W, 290
L81		87.40	50.01	0.05±0.01	hanging	2651	3106	2929	50.6	40.6	0.07	W, 268
L82		87.41	50.01	0.14±0.02	cirque	3002	3299	3162	43.5	25.8	0.15	SW, 217
L83		87.41	50.00	0.05±0.01	hanging	2983	3254	3152	56.3	34.2	0.07	NW, 308
L84		87.41	50.00	0.03±0.01	hanging	3061	3258	3170	59.3	38.2	0.04	SW, 234
127		87.40	49.98	0.81±0.07	cirque-valley	2560	3220	2857	63.1	28.4	0.98	N, 340
L85		87.40	49.99	0.05±0.01	hanging	2787	3095	2956	69.5	38.0	0.07	N, 348
128		87.39	49.99	0.12±0.02	hanging	2639	3181	3009	64.9	33.5	0.15	N, 357
129-131		87.37	49.98	2.23±0.17	cirque-valley	2362	3356	2855	61.5	30.5	2.74	N, 4
L86		87.36	49.98	0.04±0.01	hanging	2770	3105	2963	47.7	37.7	0.05	NE, 34
L87		87.35	49.98	0.40±0.03	valley	2654	3286	2929	68.4	34.0	0.51	NE, 42
L88		87.36	49.99	0.05±0.01	hanging	2657	2884	2787	56.7	33.4	0.06	N, 18
L89		87.35	49.99	0.02±0.01	hanging	2809	3008	2938	45.9	36.1	0.02	N, 16
L90		87.35	49.99	0.02±0.01	hanging	2795	2969	2915	51.5	35.7	0.02	N, 8
L91		87.35	49.99	0.02±0.01	hanging	2726	2931	2878	52.4	32.2	0.02	N, 344
L92		87.34	49.99	0.04±0.01	hanging	2564	2863	2739	63.1	44.3	0.05	N, 353
L93		87.35	49.98	0.15±0.02	valley	2663	3196	2902	59.8	35.9	0.19	NW, 334
132-134		87.33	49.97	2.49±0.21	cirque	2431	3447	2877	65.4	32.3	3.17	N, 354
L94		87.32	49.98	0.21±0.03	cirque	2544	3027	2790	61.2	36.5	0.27	N, 22
L95		87.32	49.99	0.04±0.01	hanging	2653	2946	2799	57.6	43.2	0.05	NE, 64

L96		87.32	49.99	0.44±0.06	cirque-valley	2307	3001	2664	62.2	34.5	0.55	N, 354
L97		87.32	50.00	0.02±0.01	cirque-hanging	2219	2417	2341	62.0	40.1	0.03	N, 9
L98		87.31	50.00	0.03±0.01	cirque-hanging	2393	2625	2539	56.5	36.9	0.04	N, 6
L99		87.31	50.00	0.04±0.01	hanging	2471	2785	2640	56.3	40.7	0.05	N, 347
135		87.31	49.98	0.82±0.09	cirque-valley	2538	3272	2838	65.0	27.1	0.98	N, 352
L100		87.30	49.98	0.07±0.01	hanging	2736	3121	2920	65.3	36.6	0.09	N, 356
136		87.29	49.97	0.75±0.07	cirque-valley	2669	3273	2972	58.6	22.8	0.83	N, 348
L99		87.28	49.98	0.56±0.07	valley	2643	3183	2884	70.0	31.0	0.72	NE, 49
L102		87.29	49.99	0.26±0.03	cirque	2621	3152	2884	60.8	37.7	0.33	NE, 44
L103		87.29	50.00	0.03±0.01	hanging	2863	3061	2983	43.5	34.2	0.04	E, 91
L104		87.29	50.00	0.05±0.01	hanging	2661	2941	2815	48.7	35.6	0.06	NE, 49
L105		87.28	50.00	0.17±0.02	hanging	2670	3119	2900	51.2	34.2	0.21	NE, 40
L106		87.28	50.01	0.03±0.01	hanging	2543	2873	2746	58.9	41.8	0.04	NE, 38
L107		87.27	49.99	0.02±0.01	hanging	2853	3048	2972	48.0	28.8	0.03	N, 8
L108		87.26	49.99	0.20±0.02	hanging	2684	3109	2878	62.4	39.7	0.26	N, 8
L109		87.26	50.00	0.14±0.02	cirque	2607	3127	2857	66.8	39.6	0.19	NE, 45
L110		87.25	50.00	0.05±0.01	hanging	2821	3118	2989	52.2	37.5	0.07	N,1
L111		87.24	50.01	0.04±0.01	hanging	2927	3151	3056	47.6	36.2	0.05	N, 349
L112		87.23	50.01	0.18±0.02	hanging	2671	3033	2872	51.9	31.5	0.22	NE, 27
L113		87.23	50.01	0.04±0.01	hanging	2750	2979	2887	49.1	35.6	0.05	N, 342
L114		87.28	49.97	0.12±0.02	cirque	2810	3107	2933	49.5	32.3	0.14	N, 342
L115		87.28	49.97	0.06±0.01	cirque	2741	2948	2834	49.8	31.2	0.08	N, 358
137-138		87.27	49.97	0.99±0.07	cirque	2657	3209	2874	68.0	28.1	1.18	N, 354
139-140		87.25	49.96	1.17±0.09	valley	2471	3404	2720	64.1	27.2	1.43	NW, 337
140-142		87.24	49.96	1.22±0.08	cirque-valley	2511	3378	2874	64.4	32.3	1.57	N, 350
143		87.22	49.96	1.53±0.09	valley	2525	3346	2801	67.2	23.8	1.76	N, 15
144-145		87.21	49.96	1.04±0.08	valley	2546	3290	2789	79.0	29.6	1.29	NE, 32
L116		87.20	49.97	0.14±0.01	hanging	2799	3220	3059	62.1	37.6	0.19	E, 94
146		87.20	49.98	0.41±0.03	cirque-valley	2623	3239	2915	68.3	36.1	0.53	N, 19
L117		87.19	49.99	0.05±0.01	hanging	2895	3167	3063	48.5	36.3	0.06	N, 346
147-148		87.18	49.96	1.30±0.08	cirque-valley	2598	3332	2957	64.7	28.7	1.56	N, 359

149-151		87.17	49.96	0.60±0.05	cirque	2602	3525	3036	75.5	41.3	0.92	NE, 49
152		87.17	49.97	0.18±0.02	cirque-valley	2720	3313	2951	70.3	36.8	0.24	E, 78
L118		87.17	49.97	0.03±0.01	hanging	2684	3057	2876	59.6	43.3	0.04	N, 3
L119		87.17	49.97	0.05±0.01	hanging	2764	3267	2980	65.2	47.8	0.08	N, 4
L120		87.16	49.97	0.04±0.01	hanging	2773	3046	2889	60.9	36.0	0.05	N, 343
L121		87.16	49.97	0.05±0.01	hanging	2736	2890	2827	32.7	21.1	0.06	N, 14
L122		87.16	49.97	0.27±0.03	cirque-valley	2661	3183	2871	59.3	30.1	0.32	E, 81
L123		87.17	49.98	0.03±0.01	hanging	2653	2742	2716	38.1	19.4	0.03	NW, 297
L124		87.16	49.98	0.20±0.02	cirque-valley	2638	3048	2861	57.9	30.7	0.23	NE, 56
153-156		87.15	49.98	0.68±0.05	cirque-valley	2528	3262	2903	54.9	30.1	0.81	N, 10
L125		87.14	49.99	0.07±0.01	cirque	2912	3171	3064	54.4	33.6	0.09	NE, 32
L126		87.14	50.00	0.12±0.01	cirque	2621	3130	2900	62.8	42.1	0.17	N, 358
L127		87.13	49.98	0.64±0.05	valley	2460	3268	2786	61.8	36.9	0.83	N, 360
L128		87.12	49.98	0.24±0.03	cirque-valley	2466	3256	2907	71.2	42.5	0.34	N, 6
L129		87.12	49.98	0.09±0.01	cirque	2736	3099	2974	53.6	37.7	0.12	NE, 61
L130		87.11	49.99	0.14±0.02	cirque-valley	2598	3046	2787	67.5	36.7	0.19	N, 4
L131		87.14	49.97	0.44±0.05	cirque-valley	2685	3252	2995	73.5	38.2	0.59	NW, 313
L132		87.16	49.96	0.24±0.02	cirque	2841	3432	3102	68.7	35.5	0.31	W, 285
L133		87.19	49.95	0.16±0.02	cirque	2795	3098	2944	54.4	34.1	0.19	SE, 150
L134		87.18	49.94	0.17±0.02	cirque-hanging	2745	3125	2966	60.6	33.8	0.21	NW, 317
L135		87.17	49.94	0.11±0.01	cirque	2799	3182	3034	58.4	39.5	0.15	N, 10
157		87.17	49.94	0.18±0.02	cirque-hanging	2665	3239	3036	53.1	34.1	0.23	N, 359
L136		87.16	49.94	0.07±0.01	hanging	2778	3196	3044	52.2	39.8	0.09	N, 10
L137		87.16	49.94	0.07±0.01	hanging	2676	3122	2925	62.7	41.9	0.09	N, 5
L138		87.15	49.94	0.08±0.01	hanging	2709	3210	3030	60.5	46.2	0.12	N, 1
L139		87.15	49.95	0.06±0.01	hanging	2710	3149	2924	64.1	45.4	0.09	N, 359
L140		87.15	49.95	0.10±0.02	hanging	2647	3203	2978	62.8	38.4	0.14	N, 1
L141		87.16	49.93	0.13±0.02	cirque-hanging	2850	3144	2991	57.6	35.3	0.16	NW, 320
L142		87.17	49.93	0.43±0.04	cirque-valley	2723	3202	2927	67.8	29.4	0.52	W, 285
L143		87.14	49.92	0.06±0.01	hanging	2815	3061	2948	56.2	36.9	0.07	N, 350
L144		87.14	49.92	0.05±0.01	hanging	2807	3050	2958	54.0	35.3	0.07	N, 346



L145		87.12	49.91	0.02±0.01	hanging	2828	3020	2945	49.1	36.0	0.03	N, 6
L146		87.12	49.91	0.02±0.01	hanging	2910	3066	2989	45.6	38.1	0.02	N, 10
158-161		87.11	49.92	1.08±0.07	valley	2590	3338	2834	59.7	25.7	1.28	NE, 36
L147		87.10	49.92	0.02±0.01	cirque	2921	3114	3015	60.5	39.3	0.03	N, 1
L148		87.10	49.92	0.03±0.01	hanging	2850	3116	3022	50.1	37.7	0.04	N, 354
L149		87.09	49.92	0.02±0.01	hanging	2882	3092	3026	56.3	36.6	0.02	N, 344
L150		87.09	49.92	0.03±0.01	hanging	2878	3142	3047	54.5	36.1	0.04	N, 9
162		87.07	49.92	3.09±0.09	valley	2613	3431	2837	63.6	24.9	3.61	NE, 34
L151		87.07	49.93	0.04±0.01	hanging	2624	2921	2820	61.9	37.9	0.05	N, 14
L152		87.07	49.93	0.03±0.01	hanging	2746	2987	2896	45.2	32.9	0.04	N, 20
L153		87.07	49.93	0.02±0.01	hanging	2870	3079	2991	60.5	39.6	0.03	NE, 23
L154		87.06	49.93	0.02±0.01	hanging	2899	3128	3057	50.9	36.7	0.02	NE, 25
163-165		87.06	49.93	1.25±0.08	valley	2575	3353	2812	68.0	28.3	1.52	NE, 44
166-168		87.05	49.94	1.53±0.07	valley	2564	3409	2791	67.2	25.4	1.79	NE, 52
L155		87.08	49.96	0.02±0.01	hanging	2980	3177	3107	51.3	37.4	0.02	N, 341
L156		87.07	49.95	0.13±0.02	cirque	2743	3148	2901	66.1	34.9	0.17	NW, 326
L157		87.06	49.96	0.15±0.02	cirque	2787	3075	2933	46.3	30.2	0.18	N, 359
L158		87.05	49.96	0.03±0.01	cirque	2864	3025	2948	48.1	34.0	0.04	N, 21
L159		87.05	49.96	0.06±0.01	hanging	2915	3096	3004	45.3	24.4	0.07	NW, 327
169		87.03	49.95	1.41±0.10	valley	2390	3354	2763	62.8	25.7	1.62	N, 354
170		87.02	49.95	0.35±0.03	cirque	2587	3260	2993	66.8	33.1	0.44	N, 10
171		87.01	49.95	0.05±0.01	hanging	2939	3306	3166	60.1	40.0	0.07	N, 12
172		87.01	49.95	0.11±0.01	cirque-hanging	2863	3263	3109	59.0	40.4	0.15	N, 16
In total, in the basin of the Yungur river 138 glaciers are reconstructed with the total area of 46,67±3,98 km², minimal altitude 2219 m , maximal altitude 3525 m, area weighted average ELA 2902 m.												
Argut river basin												
L160		87.01	49.94	0.16±0.02	cirque-hanging	2939	3318	3156	56.7	33.7	0.19	SW, 211
L161		87.01	49.94	0.10±0.01	hanging	2913	3268	3058	54.6	33.9	0.13	SW, 247
L162		87.03	49.93	2.35±0.12	valley	2611	3307	<b>2869</b>	67.5	26.5	2.80	SW, 203
L163		87.02	49.92	0.21±0.02	cirque	2650	3106	2851	48.2	30.6	0.25	E, 107
L164		87.05	49.92	0.33±0.03	cirque-valley	2841	3243	3064	59.5	27.4	0.39	S, 167

L165		87.05	49.92	0.35±0.04	cirque-valley	2670	3327	2983	61.6	35.3	0.45	W, 252
L166		87.05	49.91	0.34±0.03	valley	2468	3336	<b>2819</b>	61.6	34.0	0.42	SW, 247
L167		87.06	49.91	0.07±0.01	cirque	3023	3310	3161	55.4	37.3	0.09	S, 184
L168		87.07	49.91	0.84±0.09	valley	2259	3203	2670	60.4	33.2	1.03	S, 192
L169		87.08	49.91	0.34±0.02	valley	2971	3342	3088	54.2	25.9	0.39	E, 95
In total, in the basin of the Argut river 10 glaciers are reconstructed with the total area of 5.09±0.39 km², minimal altitude 2259 m, maximal altitude 3342 m, area weighted average ELA 2884 m.												
Karagem river basin												
L170		87.12	49.90	0.11±0.02	cirque-valley	2907	3189	3032	44.9	30.6	0.13	E, 69
L171		87.11	49.91	0.21±0.02	cirque-valley	2880	3296	3077	45.9	30.8	0.25	E, 79
L172		87.11	49.91	0.26±0.02	valley	2952	3321	3097	51.9	24.1	0.29	E, 99
L173		87.14	49.91	0.22±0.02	valley	2816	3061	2955	54.6	19.8	0.23	W, 251
L174		87.15	49.91	0.08±0.01	cirque-valley	2805	3044	2934	51.5	30.1	0.09	S, 168
L175		87.15	49.90	0.09±0.01	cirque-valley	2695	2954	2824	52.5	34.1	0.11	NE, 50
L176		87.15	49.90	0.03±0.01	hanging	2746	2962	2856	50.5	35.4	0.04	E, 85
L177		87.15	49.90	0.04±0.01	cirque	2731	2966	2877	53.4	33.3	0.05	NE, 48
L178		87.15	49.91	0.03±0.01	cirque	2860	3070	2980	50.1	35.9	0.03	NE, 59
L179		87.15	49.91	0.02±0.01	hanging	2908	3056	2985	52.8	35.9	0.03	E, 95
L180		87.15	49.91	0.15±0.02	cirque-valley	2761	3090	2909	46.8	26.7	0.17	E, 83
L181		87.18	49.93	0.06±0.01	hanging	2770	3176	2976	61.3	40.5	0.09	NE, 55
L182		87.20	49.95	0.34±0.02	<b>cirque</b>	2750	3211	2990	59.4	28.7	0.40	SW, 242
L183		87.20	49.94	0.67±0.06	<b>valley</b>	2683	3394	<b>2946</b>	55.9	29.9	0.80	W, 263
173		87.22	49.94	1.62±0.09	cirque-valley	2656	3344	2981	72.0	28.3	1.95	SE, 131
L184		87.23	49.94	0.02±0.01	hanging	3188	3283	3241	45.3	28.3	0.02	SW, 213
L185		87.23	49.94	0.02±0.01	hanging	3149	3300	3244	39.7	27.6	0.02	SW, 216
L186		87.23	49.94	0.02±0.01	hanging	3146	3357	3293	56.9	34.7	0.03	SW, 238
174		87.25	49.94	0.16±0.02	hanging	3005	3298	3138	54.9	30.9	0.19	S, 173
L187		87.27	49.93	0.07±0.01	cirque-hanging	2631	2979	2846	54.0	40.3	0.10	NE, 32
L188		87.27	49.93	0.18±0.02	cirque-hanging	2467	2998	2780	63.4	41.6	0.25	NE, 29
L189		87.26	49.93	0.09±0.01	cirque-hanging	2525	2983	2822	56.5	39.8	0.12	N, 5
L190		87.26	49.93	0.10±0.02	cirque-hanging	2529	3023	2890	59.8	36.3	0.13	NE, 43

L191		87.26	49.94	0.08±0.01	hanging	2571	3108	2859	71.6	48.6	0.12	NE, 34
L192		87.25	49.94	0.21±0.02	cirque-hanging	2697	3175	2968	70.6	35.9	0.27	NE, 41
L193		87.25	49.94	0.07±0.01	hanging	2756	3142	2997	53.7	39.4	0.10	N, 7
175		87.24	49.94	0.05±0.01	hanging	3132	3295	3189	49.5	24.2	0.05	NE, 30
176		87.23	49.95	1.61±0.10	cirque	2679	3410	3001	74.0	29.2	1.96	E, 71
L194		87.24	49.95	0.13±0.02	hanging	2858	3288	3082	64.5	41.0	0.18	SE, 157
L195		87.25	49.95	0.50±0.05	cirque	2687	3221	2939	63.1	35.4	0.65	E, 108
L196		87.28	49.96	0.09±0.01	cirque	2829	3089	2941	43.0	23.8	0.10	S, 181
L197		87.28	49.96	0.12±0.01	cirque	2787	3173	2980	59.8	34.2	0.15	SE, 139
L198		87.28	49.96	0.50±0.04	valley	2754	3224	<b>3024</b>	69.7	30.3	0.61	SE, 126
L199		87.30	49.96	0.19±0.02	cirque-valley	2785	3083	2914	61.8	30.3	0.24	SE, 125
178		87.30	49.96	1.05±0.07	cirque	2819	3344	3046	57.1	25.0	1.21	S, 177
L200		87.32	49.96	0.37±0.04	valley	2915	3469	3199	59.7	35.7	0.47	SW, 235
L201		87.32	49.96	0.05±0.01	hanging	3079	3292	3195	45.6	34.0	0.05	SW, 216
L202		87.33	49.95	0.02±0.01	hanging	3157	3311	3262	53.1	31.2	0.02	SW, 244
L203		87.33	49.95	0.02±0.01	hanging	3127	3336	3245	55.4	37.4	0.03	SW, 233
L204		87.32	49.95	0.02±0.01	hanging	2931	3086	3021	46.1	32.1	0.03	N, 351
L205		87.32	49.95	0.07±0.01	hanging	2801	3157	2997	56.3	41.6	0.09	NW, 327
L206		87.31	49.95	0.30±0.03	cirque-valley	2535	3283	2807	62.9	36.8	0.41	NW, 336
L207		87.31	49.94	0.37±0.03	hanging	2660	3428	3036	61.8	35.6	0.46	NW, 304
L208		87.30	49.94	0.04±0.01	hanging	2606	2937	2764	49.9	36.9	0.05	W, 270
L209		87.31	49.94	0.04±0.01	hanging	3035	3319	3170	56.6	36.7	0.05	SW, 239
L210		87.30	49.94	0.03±0.01	hanging	2644	2878	2803	52.5	37.8	0.04	NW, 300
L211		87.31	49.94	0.05±0.01	cirque-hanging	3003	3240	3111	57.2	39.3	0.06	S, 199
L212		87.33	49.93	0.15±0.02	cirque	2986	3189	3108	48.6	25.8	0.17	W, 270
L213		87.32	49.93	0.04±0.01	cirque-hanging	2774	2963	2891	56.2	32.4	0.05	NW, 295
L214		87.34	49.93	0.05±0.01	hanging	2887	3183	3030	51.8	31.2	0.06	E, 107
179		87.34	49.94	2.49±0.10	valley	2450	3415	2706	72.0	20.9	2.85	E, 79
L215		87.33	49.95	0.11±0.02	cirque-hanging	2950	3292	3100	63.5	36.2	0.14	E, 98
180-181		87.34	49.96	1.55±0.08	cirque-valley	2742	3438	3102	62.0	20.5	1.69	SE, 131
182		87.35	49.97	0.64±0.05	cirque-valley	2629	3256	2911	59.2	29.0	0.76	E, 107

L216		87.39	49.96	0.04±0.01	hanging	2754	2979	2887	43.5	34.5	0.04	E, 77
L217		87.39	49.96	0.03±0.01	hanging	2848	3049	2980	47.6	33.5	0.04	NE, 44
L218		87.38	49.96	0.33±0.03	valley	2698	3246	2947	58.5	26.2	0.38	SE, 118
L219		87.44	49.94	0.11±0.01	hanging	2610	3005	2811	59.3	38.1	0.15	NE, 31
L220		87.43	49.94	0.08±0.01	hanging	2622	3018	2870	61.5	43.3	0.12	N, 14
L221		87.43	49.94	0.25±0.02	cirque-hanging	2610	3289	2988	57.5	38.6	0.33	N, 13
L222		87.42	49.95	0.50±0.04	cirque-hanging	2566	3306	2941	54.1	34.4	0.62	NE, 41
L223		87.41	49.95	0.38±0.05	hanging	2668	3191	2854	60.7	34.3	0.48	NE, 23
L224		87.38	49.97	0.82±0.06	cirque-valley	2790	3305	2959	64.2	23.1	0.93	E, 92
L225		87.47	49.95	0.52±0.06	hanging	2566	3122	2828	62.1	35.6	0.68	NE, 39
L226		87.48	49.96	0.12±0.01	hanging	2539	2992	2789	58.6	38.4	0.16	NE, 36
L227		87.46	49.96	0.84±0.08	valley	2565	3149	2818	72.0	28.0	1.04	NE, 37
L228		87.45	49.97	0.84±0.05	valley	2473	3083	2715	66.5	28.3	1.01	NE, 42
L229		87.44	49.97	0.06±0.02	hanging	2712	3109	2893	57.3	36.6	0.07	NE, 33
L230		87.43	49.97	0.07±0.01	hanging	2726	3071	2935	62.0	36.5	0.09	NE, 49
L231		87.43	49.98	0.28±0.03	valley	2574	3122	2797	68.0	31.5	0.36	NE, 33
L232		87.42	49.98	0.46±0.04	valley	2573	3185	2831	65.5	30.3	0.58	NE, 54
L233		87.42	49.99	0.17±0.02	cirque	2801	3161	2992	55.3	31.6	0.20	NE, 55
183		87.42	50.00	0.52±0.03	cirque-valley	2821	3229	3004	60.6	24.5	0.59	E, 108
184-185		87.42	50.01	1.67±0.11	cirque	2762	3401	3038	58.7	26.4	1.93	SE, 115
186		87.44	50.02	1.82±0.09	cirque-valley	2626	3458	3022	59.6	20.5	2.00	SE, 127
187-188		87.45	50.02	2.68±0.14	cirque-valley	2708	3522	3079	61.9	22.7	3.27	S, 159
L234		87.47	50.01	0.05±0.01	hanging	2859	3191	3102	60.5	31.0	0.07	W, 270
L235		87.47	50.01	0.03±0.01	hanging	2893	3133	3081	59.9	29.3	0.03	SW, 231
L236		87.48	50.01	0.36±0.04	cirque-valley	2693	3178	2908	63.3	31.9	0.43	E, 82
L237		87.48	50.02	0.54±0.05	cirque-valley	2592	3175	2855	64.6	27.0	0.64	E, 86
189-190		87.47	50.03	2.69±0.12	cirque-valley	2614	3388	2957	61.1	22.9	3.04	SE, 135
L238		87.49	50.03	0.14±0.02	hanging	2915	3345	3113	50.0	31.2	0.17	S, 168
191		87.50	50.03	1.42±0.08	valley	2695	3486	2974	55.1	23.8	1.60	SE, 127
192-193		87.51	50.02	0.40±0.04	cirque	2762	3318	2990	57.5	30.0	0.48	W, 289
L239		87.51	50.02	0.28±0.04	cirque	2817	3236	2982	57.9	33.3	0.35	NW, 293

194		87.51	49.99	0.33±0.03	cirque-valley	2799	3362	3025	52.9	30.3	0.40	NW, 336
L240		87.50	49.98	0.26±0.05	cirque	2680	3337	2975	61.9	34.6	0.32	W, 291
L241		87.53	49.97	0.03±0.01	hanging	2722	2977	2847	59.6	41.3	0.04	NE, 41
L242		87.52	49.97	0.06±0.01	hanging	2764	3155	2999	54.7	33.0	0.07	NE, 62
L243		87.52	49.97	0.04±0.01	hanging	2792	3132	3008	66.6	43.2	0.06	N, 13
L244		87.52	49.97	0.03±0.01	hanging	2793	3104	2979	69.4	46.3	0.04	N, 14
L245		87.51	49.97	0.08±0.01	cirque	2867	3087	2986	47.0	30.5	0.10	E, 70
L246		87.51	49.98	0.02±0.01	hanging	2964	3145	3053	50.5	41.7	0.03	NE, 58
L247		87.51	49.98	0.10±0.01	hanging	2825	3142	2954	52.0	32.8	0.12	NE, 25
L248		87.51	49.98	0.07±0.01	hanging	2852	3175	2981	53.8	34.7	0.08	E, 105
L249		87.54	49.98	0.10±0.01	hanging	2641	2993	2814	59.3	36.4	0.13	N, 10
L250		87.54	49.98	0.03±0.01	hanging	2693	2973	2856	53.0	41.5	0.04	NE, 31
L251		87.53	49.98	0.06±0.01	hanging	2758	2982	2889	47.7	36.0	0.07	NE, 33
L252		87.53	49.98	0.06±0.01	cirque	2753	2964	2856	69.1	34.2	0.08	N, 8
L253		87.52	49.99	0.23±0.02	cirque	2831	3296	3027	68.8	34.7	0.29	E, 96
L254		87.52	49.99	0.28±0.03	cirque-valley	2809	3183	2921	61.6	22.7	0.32	NE, 57
L255		87.52	50.00	0.03±0.01	hanging	2806	3060	2967	63.5	36.8	0.04	NE, 44
L256		87.52	50.00	0.26±0.03	cirque	2803	3253	3006	62.3	33.6	0.33	NE, 59
195		87.52	50.00	0.41±0.03	cirque	2784	3212	2947	54.4	22.8	0.46	E, 92
196		87.52	50.01	0.50±0.04	cirque	2864	3226	2978	59.8	22.7	0.56	E, 98
L257		87.56	50.00	0.35±0.03	cirque	2815	3185	2993	50.0	28.1	0.41	SW, 215
L258		87.58	49.97	0.04±0.01	slope	3068	3151	3117	27.5	13.4	0.04	SW, 245
L259		87.58	49.98	0.29±0.03	slope	3135	3272	3206	27.7	14.2	0.30	S, 199
L260		87.59	49.97	0.23±0.03	valley	2735	3160	2922	58.7	29.1	0.28	E, 80
L261		87.58	49.98	0.97±0.05	cirque-valley	2628	3270	2910	72.8	32.5	1.22	NE, 56
197		87.57	49.99	0.81±0.07	cirque-valley	2624	3250	2883	65.3	30.8	0.99	E, 72
L262		87.58	50.00	0.07±0.01	hanging	2596	3029	2845	51.0	38.6	0.09	NE, 63
L263		87.58	50.00	0.07±0.01	hanging	2699	3097	2919	56.2	38.5	0.09	NE, 35
L264		87.57	50.00	0.06±0.01	hanging	2806	3134	3003	50.2	36.5	0.07	N, 345
L265		87.55	50.00	1.40±0.10	cirque-valley	2519	3196	2826	65.4	28.6	1.68	NE, 40
L266		87.54	50.01	0.38±0.03	valley	2740	3262	2978	56.1	26.6	0.43	E, 102

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