Supplementary File 1: A complete taxon sample of different *Capsella* species, analysed with GBS. Note that the three repetitions for internal assessment of the protocol are labelled with 'a' and 'b' following the population label, respectively. Abbreviations: Nr. number, C Central, E East, S South, SE South-East, SW South-West, W West.

Species	Voucher Nr.	Population Nr.	Individuum Nr.	Latitude	Longitude	Region
Capsella bursa-pastoris	OSBU1229	CBP1229	A160cbp1229_18	40.21	-5.60	Mediterranean
Capsella bursa-pastoris	OSBU1272	CBP1272	A159cbp1272_7	37.00	-6.33	Mediterranean
Capsella bursa-pastoris	OSBU1282	CBP1282	A158cbp1282_9	36.57	-3.20	Mediterranean
Capsella bursa-pastoris	OSBU1455	CBP1455	A153cbp1455_2	42.53	11.41	Italy
Capsella bursa-pastoris	OSBU1942	CBP1942	A154cbp1942_5	51.23	38.08	SW_Russia
Capsella bursa-pastoris	OSBU1942	CBP1942	A155cbp1942_1	51.23	38.08	SW_Russia
Capsella bursa-pastoris	OSBU2044	CBP2044	A162cbp2044_2	55.48	37.38	SW_Russia
Capsella bursa-pastoris	OSBU2046	CBP2046	A163cbp2046_1	51.50	108.52	SE_Russia
Capsella bursa-pastoris	OSBU2048	CBP2048	A164cbp2048_1	55.37	109.19	SE_Russia
Capsella bursa-pastoris	OSBU2050	CBP2050	A165cbp2050_3	54.50	83.06	Altai
Capsella bursa-pastoris	OSBU2222	CBP2222	A166cbp2222_2	51.86	85.83	Altai
Capsella bursa-pastoris	OSBU2244	CBP2244	A040cbp2244_1	27.00	-15.62	Mediterranean
Capsella bursa-pastoris	OSBU2361	CBP2361	A161cbp2361_1	46.22	24.79	Romania
Capsella bursa-pastoris	OSBU26113	CBP26113	A142cbp26113_3	47.43	101.48	Mongolia
Capsella bursa-pastoris	OSBU26113	CBP26113	A143cbp26113_8	47.43	101.48	Mongolia
Capsella bursa-pastoris	OSBU26113	CBP26113	A144cbp26113_2	47.43	101.48	Mongolia
Capsella bursa-pastoris	OSBU26113	CBP26113	A145cbp26113_5	47.43	101.48	Mongolia
Capsella bursa-pastoris	OSBU26113	CBP26113	A146cbp26113_7	47.43	101.48	Mongolia
Capsella bursa-pastoris	OSBU27014	CBP27014	A157cbp27014_1	51.54	36.31	SW_Russia
Capsella bursa-pastoris	OSBU27100	CBP27100	A152cbp27100_1	50.68	37.81	SW_Russia
Capsella bursa-pastoris	OSBU27136	CBP27136	A167cbp27136_1	51.50	37.30	SW_Russia
Capsella bursa-pastoris	OSBU27189	CBP27189	A151cbp27189_2	51.42	83.55	Altai
Capsella bursa-pastoris	OSBU27493	CBP27493	A156cbp27493_3	51.83	85.79	Altai
Capsella grandiflora	OSBU1840	CG1840	A019cg1840_4	39.46	19.52	Greece
Capsella grandiflora	OSBU1857	CG1857	A021cg1857_2	39.23	20.03	Greece
Capsella grandiflora	OSBU1861	CG1861	A015cg1861_11	39.28	19.53	Greece
Capsella grandiflora	OSBU2015	CG2015	A001cg2015_1	45.30	9.52	Italy
Capsella grandiflora	OSBU2016	CG2016	A004cg2016_1	45.34	9.51	Italy
Capsella grandiflora	OSBU2019	CG2019	A008cg2019_2	45.39	10.04	Italy
Capsella grandiflora	OSBU2037	CG2037	A011cg2037_2	45.46	10.06	Italy
Capsella orientalis	OSBU1933	CO1933	A069co1933_3	50.33	91.26	Mongolia
Capsella orientalis	OSBU1933	CO1933	A070co1933_6	50.33	91.26	Mongolia
Capsella orientalis	OSBU1933	CO1933	A071co1933_4	50.33	91.26	Mongolia
Capsella orientalis	OSBU1933	CO1933	A072co1933_2	50.33	91.26	Mongolia
Capsella orientalis	OSBU1933	CO1933	A073co1933_5	50.33	91.26	Mongolia
Capsella orientalis	OSBU1939	CO1939	A189co1939_1	52.16	76.57	C_Kazakhstan
Capsella orientalis	OSBU1940	CO1940	A190co1940_2	50.47	75.41	C_Kazakhstan
Capsella orientalis	OSBU1978	CO1978	A084co1978_6	51.06	81.54	Altai
Capsella orientalis	OSBU1979	CO1979	A066co1979_6	51.07	81.48	Altai
Capsella orientalis	OSBU1979	CO1979	A067co1979_2	51.07	81.48	Altai
Capsella orientalis	OSBU1979	CO1979	A068co1979_1	51.07	81.48	Altai
Capsella orientalis	OSBU1980	CO1980	A061co1980_1	51.10	81.40	Altai
Capsella orientalis	OSBU1980	CO1980	A062co1980_4	51.10	81.40	Altai
Capsella orientalis	OSBU1980	CO1980	A063co1980_5	51.10	81.40	Altai
Capsella orientalis	OSBU1980	CO1980	A064co1980_3	51.10	81.40	Altai

Capsella orientalis	OSBU1980	CO1980	A065co1980_2	51.10	81.40	Altai
Capsella orientalis	OSBU1981	CO1981	A264co1981_5	51.08	81.36	Altai
Capsella orientalis	OSBU1981	CO1981	A265co1981_3	51.08	81.36	Altai
Capsella orientalis	OSBU1981	CO1981	A266co1981_6	51.08	81.36	Altai
Capsella orientalis	OSBU1981	CO1981	A267co1981_4	51.08	81.36	Altai
Capsella orientalis	OSBU1981	CO1981	A268co1981_1	51.08	81.36	Altai
Capsella orientalis	OSBU1982	CO1982	A269co1982_3	51.30	81.13	Altai
Capsella orientalis	OSBU1982	CO1982	A270co1982_2	51.30	81.13	Altai
Capsella orientalis	OSBU1982	CO1982	A271co1982_6	51.30	81.13	Altai
Capsella orientalis	OSBU1982	CO1982	A272co1982_1	51.30	81.13	Altai
Capsella orientalis	OSBU1982	CO1982	A273co1982_4	51.30	81.13	Altai
Capsella orientalis	OSBU1983	CO1983	A274co1983_6	51.22	82.12	Altai
Capsella orientalis	OSBU1983	CO1983	A275co1983_2	51.22	82.12	Altai
Capsella orientalis	OSBU1983	CO1983	A276co1983_1	51.22	82.12	Altai
Capsella orientalis	OSBU1983	CO1983	A277co1983_3	51.22	82.12	Altai
Capsella orientalis	OSBU1983	CO1983	A278co1983_4	51.22	82.12	Altai
Capsella orientalis	OSBU1984	CO1984	A279co1984_4	53.21	83.44	Altai
Capsella orientalis	OSBU1984	CO1984	A280co1984_2	53.21	83.44	Altai
Capsella orientalis	OSBU1984	CO1984	A281co1984_6	53.21	83.44	Altai
Capsella orientalis	OSBU1985	CO1985	A101co1985_1	53.21	83.44	Altai
Capsella orientalis	OSBU1985	CO1985	A102co1985_2	53.21	83.44	Altai
Capsella orientalis	OSBU1985	CO1985	A103co1985_3	53.21	83.44	Altai
Capsella orientalis	OSBU1985	CO1985	A104co1985_6	53.21	83.44	Altai
Capsella orientalis	OSBU1985	CO1985	A105co1985_4	53.21	83.44	Altai
Capsella orientalis	OSBU2223	CO2223	A096co2223_2	45.22	90.93	Mongolia
Capsella orientalis	OSBU2223	CO2223	A097co2223_1	45.22	90.93	Mongolia
Capsella orientalis	OSBU2223	CO2223	A098co2223_6	45.22	90.93	Mongolia
Capsella orientalis	OSBU2223	CO2223	A099co2223_5	45.22	90.93	Mongolia
Capsella orientalis	OSBU2223	CO2223	A100co2223_10	45.22	90.93	Mongolia
Capsella orientalis	OSBU2289	CO2289	A093co2289_1	51.78	81.18	Altai
Capsella orientalis	OSBU2289	CO2289	A094co2289_2	51.78	81.18	Altai
Capsella orientalis	OSBU2289	CO2289	A095co2289_7	51.78	81.18	Altai
Capsella orientalis	OSBU2291	CO2291	A183co2291_7	51.13	81.09	Altai
Capsella orientalis	OSBU2291	CO2291	A283co2291_2	53.32	57.58	Altai
Capsella orientalis	OSBU2292	CO2292	A216co2292_1	50.40	80.22	E_Kazakhstan
Capsella orientalis	OSBU2292	CO2292	A217co2292_8a	50.40	80.22	E_Kazakhstan
Capsella orientalis	OSBU2292	CO2292	A217co2292_8b	50.40	80.22	E_Kazakhstan
Capsella orientalis	OSBU2296	CO2296	A284co2296_9	45.66	80.27	E_Kazakhstan
Capsella orientalis	OSBU2296	CO2296	A285co2296_8	45.66	80.27	E_Kazakhstan
Capsella orientalis	OSBU2296	CO2296	A286co2296_5	45.66	80.27	E_Kazakhstan
Capsella orientalis	OSBU2296	CO2296	A287co2296_7	45.66	80.27	E_Kazakhstan
Capsella orientalis	OSBU2296	CO2296	A288co2296_6	45.66	80.27	E_Kazakhstan
Capsella orientalis	OSBU2300	CO2300	A289co2300_2	49.85	82.42	E_Kazakhstan
Capsella orientalis	OSBU2300	CO2300	A290co2300_1	49.85	82.42	E_Kazakhstan
Capsella orientalis	OSBU2300	CO2300	A291co2300_4	49.85	82.42	E_Kazakhstan
Capsella orientalis	OSBU2300	CO2300	A292co2300_3	49.85	82.42	E_Kazakhstan
Capsella orientalis	OSBU2300	CO2300	A293co2300_5	49.85	82.42	E_Kazakhstan
Capsella orientalis	OSBU2303	CO2303	A218co2303_4	50.09	82.40	E_Kazakhstan
Capsella orientalis	OSBU2303	CO2303	A219co2303_5	50.09	82.40	E_Kazakhstan
Capsella orientalis	OSBU2303	CO2303	A220co2303_6	50.09	82.40	E_Kazakhstan
Capsella orientalis	OSBU2303	CO2303	A221co2303_1	50.09	82.40	E_Kazakhstan

Capsella orientalis	OSBU2303	CO2303	A222co2303_3	50.09	82.40	E_Kazakhstan
Capsella orientalis	OSBU2305	CO2305	A228co2305_5	48.77	82.36	E_Kazakhstan
Capsella orientalis	OSBU2329	CO2329	A223co2329_6	49.24	73.03	C_Kazakhstan
Capsella orientalis	OSBU2329	CO2329	A224co2329_1	49.24	73.03	C_Kazakhstan
Capsella orientalis	OSBU2329	CO2329	A225co2329_2	49.24	73.03	C_Kazakhstan
Capsella orientalis	OSBU2329	CO2329	A226co2329_5	49.24	73.03	C_Kazakhstan
Capsella orientalis	OSBU2329	CO2329	A227co2329_3	49.24	73.03	C_Kazakhstan
Capsella orientalis	OSBU2343	CO2343	A127co2343_1	51.09	66.47	C_Kazakhstan
Capsella orientalis	OSBU2343	CO2343	A128co2343_3	51.09	66.47	C_Kazakhstan
Capsella orientalis	OSBU2343	CO2343	A129co2343_2	51.09	66.47	C_Kazakhstan
Capsella orientalis	OSBU2343	CO2343	A130co2343_5	51.09	66.47	C_Kazakhstan
Capsella orientalis	OSBU2343	CO2343	A131co2343_4	51.09	66.47	C_Kazakhstan
Capsella orientalis	OSBU2344	CO2344	A132co2344_8	51.82	68.36	C_Kazakhstan
Capsella orientalis	OSBU2345	CO2345	A202co2345_2	51.53	69.81	C_Kazakhstan
Capsella orientalis	OSBU2345	CO2345	A203co2345_5	51.53	69.81	C_Kazakhstan
Capsella orientalis	OSBU2345	CO2345	A204co2345_9	51.53	69.81	C_Kazakhstan
Capsella orientalis	OSBU2345	CO2345	A205co2345_7	51.53	69.81	C_Kazakhstan
Capsella orientalis	OSBU2345	CO2345	A206co2345_2	51.53	69.81	C_Kazakhstan
Capsella orientalis	OSBU2346	CO2346	A088co2346_5	52.99	78.65	Altai
Capsella orientalis	OSBU2346	CO2346	A089co2346_2	52.99	78.65	Altai
Capsella orientalis	OSBU2346	CO2346	A090co2346_3	52.99	78.65	Altai
Capsella orientalis	OSBU2346	CO2346	A091co2346_4	52.99	78.65	Altai
Capsella orientalis	OSBU2346	CO2346	A092co2346_1	52.99	78.65	Altai
Capsella orientalis	OSBU2347	CO2347	A191co2347_3	52.49	78.13	C_Kazakhstan
Capsella orientalis	OSBU2347	CO2347	A192co2347_2	52.49	78.13	C_Kazakhstan
Capsella orientalis	OSBU2347	CO2347	A193co2347_5	52.49	78.13	C_Kazakhstan
Capsella orientalis	OSBU2347	CO2347	A194co2347_4	52.49	78.13	C_Kazakhstan
Capsella orientalis	OSBU2348	CO2348	A085co2348_1	51.89	77.06	C_Kazakhstan
Capsella orientalis	OSBU2348	CO2348	A086co2348_6	51.89	77.06	C_Kazakhstan
Capsella orientalis	OSBU2348	CO2348	A087co2348_5	51.89	77.06	C_Kazakhstan
Capsella orientalis	OSBU2349	CO2349	A137co2349_6	51.76	72.41	C_Kazakhstan
Capsella orientalis	OSBU2349	CO2349	A138co2349_7	51.76	72.41	C_Kazakhstan
Capsella orientalis	OSBU2349	CO2349	A139co2349_5	51.76	72.41	C_Kazakhstan
Capsella orientalis	OSBU2349	CO2349	A140co2349_1	51.76	72.41	C_Kazakhstan
Capsella orientalis	OSBU2349	CO2349	A141co2349_3	51.76	72.41	C_Kazakhstan
Capsella orientalis	OSBU2356	CO2356	A147co2356_1	50.40	80.22	E_Kazakhstan
Capsella orientalis	OSBU2358	CO2358	A125co2358_2	47.40	80.61	E_Kazakhstan
Capsella orientalis	OSBU2358	CO2358	A126co2358_1	47.40	80.61	E_Kazakhstan
Capsella orientalis	OSBU2370	CO2370	A123co2370_3	51.83	55.71	S_Ural
Capsella orientalis	OSBU2370	CO2370	A124co2370_1	51.83	55.71	S_Ural
Capsella orientalis	OSBU2371	CO2371	A122co2371_1	51.85	56.34	S_Ural
Capsella orientalis	OSBU2372	CO2372	A120co2372_5	51.79	56.36	S_Ural
Capsella orientalis	OSBU2372	CO2372	A121co2372_2	51.79	56.36	S_Ural
Capsella orientalis	OSBU2373	CO2373	A294co2373_5	51.48	57.37	S_Ural
Capsella orientalis	OSBU2373	CO2373	A295co2373_7	51.48	57.37	S_Ural
Capsella orientalis	OSBU2373	CO2373	A296co2373_10	51.48	57.37	S_Ural
Capsella orientalis	OSBU2373	CO2373	A297co2373_8	51.48	57.37	S_Ural
Capsella orientalis	OSBU2373	CO2373	A298co2373_9	51.48	57.37	S_Ural
Capsella orientalis	OSBU2374	CO2374	A074co2374_1	51.51	57.59	S_Ural
Capsella orientalis	OSBU2374	CO2374	A075co2374_3	51.51	57.59	S_Ural
Capsella orientalis	OSBU2374	CO2374	A076co2374_2	51.51	57.59	S_Ural

Capsella orientalis	OSBU2374	CO2374	A077co2374_4	51.51	57.59	S_Ural
Capsella orientalis	OSBU2374	CO2374	A078co2374_6	51.51	57.59	S_Ural
Capsella orientalis	OSBU2379	CO2379	A229co2379_4	51.49	53.37	W_Kazakhstan
Capsella orientalis	OSBU2379	CO2379	A230co2379_5	51.49	53.37	W_Kazakhstan
Capsella orientalis	OSBU2379	CO2379	A231co2379_6	51.49	53.37	W_Kazakhstan
Capsella orientalis	OSBU2379	CO2379	A232co2379_1	51.49	53.37	W_Kazakhstan
Capsella orientalis	OSBU2379	CO2379	A233co2379_2	51.49	53.37	W_Kazakhstan
Capsella orientalis	OSBU2380	CO2380	A041co2380_2	51.37	53.15	W_Kazakhstan
Capsella orientalis	OSBU2380	CO2380	A042co2380_4	51.37	53.15	W_Kazakhstan
Capsella orientalis	OSBU2380	CO2380	A043co2380_1	51.37	53.15	W_Kazakhstan
Capsella orientalis	OSBU2380	CO2380	A044co2380_5	51.37	53.15	W_Kazakhstan
Capsella orientalis	OSBU2380	CO2380	A045co2380_3	51.37	53.15	W_Kazakhstan
Capsella orientalis	OSBU2381	CO2381	A079co2381_6	50.86	53.17	W_Kazakhstan
Capsella orientalis	OSBU2381	CO2381	A080co2381_4	50.86	53.17	W_Kazakhstan
Capsella orientalis	OSBU2381	CO2381	A081co2381_5	50.86	53.17	W_Kazakhstan
Capsella orientalis	OSBU2381	CO2381	A082co2381_2	50.86	53.17	W_Kazakhstan
Capsella orientalis	OSBU2381	CO2381	A083co2381_1	50.86	53.17	W_Kazakhstan
Capsella orientalis	OSBU2381	CO2381	A150co2381_8	50.86	53.17	W_Kazakhstan
Capsella orientalis	OSBU2382	CO2382	A234co2382_5	50.26	52.61	W_Kazakhstan
Capsella orientalis	OSBU2382	CO2382	A235co2382_3	50.26	52.61	W_Kazakhstan
Capsella orientalis	OSBU2382	CO2382	A236co2382_6	50.26	52.61	W_Kazakhstan
Capsella orientalis	OSBU2382	CO2382	A237co2382_1	50.26	52.61	W_Kazakhstan
Capsella orientalis	OSBU2382	CO2382	A238co2382_2	50.26	52.61	W_Kazakhstan
Capsella orientalis	OSBU2383	CO2383	A207co2383_3	50.24	57.25	W_Kazakhstan
Capsella orientalis	OSBU2383	CO2383	A208co2383_1	50.24	57.25	W_Kazakhstan
Capsella orientalis	OSBU2383	CO2383	A209co2383_4	50.24	57.25	W_Kazakhstan
Capsella orientalis	OSBU2383	CO2383	A210co2383_6	50.24	57.25	W_Kazakhstan
Capsella orientalis	OSBU2383	CO2383	A211co2383_2	50.24	57.25	W_Kazakhstan
Capsella orientalis	OSBU2384	CO2384	A212co2384_5	48.83	58.13	W_Kazakhstan
Capsella orientalis	OSBU2384	CO2384	A213co2384_3	48.83	58.13	W_Kazakhstan
Capsella orientalis	OSBU2384	CO2384	A214co2384_2	48.83	58.13	W_Kazakhstan
Capsella orientalis	OSBU2384	CO2384	A215co2384_4	48.83	58.13	W_Kazakhstan
Capsella orientalis	OSBU2385	CO2385	A239co2385_3	48.76	58.54	W_Kazakhstan
Capsella orientalis	OSBU2385	CO2385	A240co2385_5	48.76	58.54	W_Kazakhstan
Capsella orientalis	OSBU2385	CO2385	A241co2385_4	48.76	58.54	W_Kazakhstan
Capsella orientalis	OSBU2385	CO2385	A242co2385_6	48.76	58.54	W_Kazakhstan
Capsella orientalis	OSBU2385	CO2385	A243co2385_1	48.76	58.54	W_Kazakhstan
Capsella orientalis	OSBU2386	CO2386	A046co2386_2	48.93	59.11	W_Kazakhstan
Capsella orientalis	OSBU2386	CO2386	A047co2386_3	48.93	59.11	W_Kazakhstan
Capsella orientalis	OSBU2386	CO2386	A048co2386_4	48.93	59.11	W_Kazakhstan
Capsella orientalis	OSBU2386	CO2386	A049co2386_5	48.93	59.11	W_Kazakhstan
Capsella orientalis	OSBU2386	CO2386	A050co2386_1	48.93	59.11	W_Kazakhstan
Capsella orientalis	OSBU2387	CO2387	A115co2387_4a	49.97	60.06	W_Kazakhstan
Capsella orientalis	OSBU2387	CO2387	A115co2387_4b	49.97	60.06	W_Kazakhstan
Capsella orientalis	OSBU2387	CO2387	A116co2387_3	49.97	60.06	W_Kazakhstan
Capsella orientalis	OSBU2387	CO2387	A117co2387_6	49.97	60.06	W_Kazakhstan
Capsella orientalis	OSBU2387	CO2387	A118co2387_2	49.97	60.06	W_Kazakhstan
Capsella orientalis	OSBU2387	CO2387	A119co2387_5	49.97	60.06	W_Kazakhstan
Capsella orientalis	OSBU2388	CO2388	A244co2388_1	50.98	61.66	C_Kazakhstan
Capsella orientalis	OSBU2388	CO2388	A245co2388_2	50.98	61.66	C_Kazakhstan
Capsella orientalis	OSBU2388	CO2388	A246co2388_5	50.98	61.66	C_Kazakhstan

Capsella orientalis	OSBU2388	CO2388	A247co2388_6	50.98	61.66	C_Kazakhstan
Capsella orientalis	OSBU2388	CO2388	A248co2388_3	50.98	61.66	C_Kazakhstan
Capsella orientalis	OSBU2389	CO2389	A249co2389_9	51.69	61.57	C_Kazakhstan
Capsella orientalis	OSBU2389	CO2389	A250co2389_4	51.69	61.57	C_Kazakhstan
Capsella orientalis	OSBU2389	CO2389	A251co2389_3	51.69	61.57	C_Kazakhstan
Capsella orientalis	OSBU2389	CO2389	A252co2389_2	51.69	61.57	C_Kazakhstan
Capsella orientalis	OSBU2389	CO2389	A253co2389_5	51.69	61.57	C_Kazakhstan
Capsella orientalis	OSBU2390	CO2390	A184co2390_2	53.23	63.60	C_Kazakhstan
Capsella orientalis	OSBU2390	CO2390	A185co2390_5	53.23	63.60	C_Kazakhstan
Capsella orientalis	OSBU2390	CO2390	A186co2390_4	53.23	63.60	C_Kazakhstan
Capsella orientalis	OSBU2390	CO2390	A187co2390_3	53.23	63.60	C_Kazakhstan
Capsella orientalis	OSBU2390	CO2390	A188co2390_7	53.23	63.60	C_Kazakhstan
Capsella orientalis	OSBU2391	CO2391	A148co2391_12	53.30	57.52	S_Ural
Capsella orientalis	OSBU2391	CO2391	A149co2391_13	53.30	57.52	S_Ural
Capsella orientalis	OSBU2391	CO2391	A168co2391_8	53.30	57.52	S_Ural
Capsella orientalis	OSBU2391	CO2391	A179co2391_7	53.32	57.59	S_Ural
Capsella orientalis	OSBU2391	CO2391	A180co2391_2	53.32	57.59	S_Ural
Capsella orientalis	OSBU2391	CO2391	A181co2391_5	53.32	57.59	S_Ural
Capsella orientalis	OSBU2391	CO2391	A182co2391_4	53.32	57.59	S_Ural
Capsella orientalis	OSBU2391	CO2391	A282co2391_1	53.30	57.52	S_Ural
Capsella orientalis	OSBU2391	CO2391	A299co2391_14	53.30	57.52	S_Ural
Capsella orientalis	OSBU2392	CO2392	A254co2392_2	53.00	67.17	C_Kazakhstan
Capsella orientalis	OSBU2392	CO2392	A255co2392_5	53.00	67.17	C_Kazakhstan
Capsella orientalis	OSBU2392	CO2392	A256co2392_1	53.00	67.17	C_Kazakhstan
Capsella orientalis	OSBU2392	CO2392	A257co2392_3	53.00	67.17	C_Kazakhstan
Capsella orientalis	OSBU2392	CO2392	A258co2392_4	53.00	67.17	C_Kazakhstan
Capsella orientalis	OSBU2393	CO2393	A169co2393_3	53.27	68.07	C_Kazakhstan
Capsella orientalis	OSBU2393	CO2393	A170co2393_1	53.27	68.07	C_Kazakhstan
Capsella orientalis	OSBU2393	CO2393	A171co2393_5	53.27	68.07	C_Kazakhstan
Capsella orientalis	OSBU2393	CO2393	A172co2393_4	53.27	68.07	C_Kazakhstan
Capsella orientalis	OSBU2393	CO2393	A173co2393_2	53.27	68.07	C_Kazakhstan
Capsella orientalis	OSBU2394	CO2394	A259co2394_1	52.69	70.29	C_Kazakhstan
Capsella orientalis	OSBU2394	CO2394	A260co2394_6	52.69	70.29	C_Kazakhstan
Capsella orientalis	OSBU2394	CO2394	A261co2394_5	52.69	70.29	C_Kazakhstan
Capsella orientalis	OSBU2394	CO2394	A262co2394_4	52.69	70.29	C_Kazakhstan
Capsella orientalis	OSBU2394	CO2394	A263co2394_2	52.69	70.29	C_Kazakhstan
Capsella orientalis	OSBU2395	CO2395	A174co2395_4	51.69	74.57	C_Kazakhstan
Capsella orientalis	OSBU2395	CO2395	A175co2395_2	51.69	74.57	C_Kazakhstan
Capsella orientalis	OSBU2395	CO2395	A176co2395_5	51.69	74.57	C_Kazakhstan
Capsella orientalis	OSBU2395	CO2395	A177co2395_3	51.69	74.57	C_Kazakhstan
Capsella orientalis	OSBU2395	CO2395	A178co2395_1	51.69	74.57	C_Kazakhstan
Capsella orientalis	OSBU2396	CO2396	A110co2396_5	51.82	79.66	Altai
Capsella orientalis	OSBU2396	CO2396	A111co2396_4	51.82	79.66	Altai
Capsella orientalis	OSBU2396	CO2396	A112co2396_2	51.82	79.66	Altai
Capsella orientalis	OSBU2396	CO2396	A113co2396_1	51.82	79.66	Altai
Capsella orientalis	OSBU2396	CO2396	A114co2396_3	51.82	79.66	Altai
Capsella orientalis	OSBU2397	CO2397	A051co2397_2	52.02	80.37	Altai
Capsella orientalis	OSBU2397	CO2397	A052co2397_1	52.02	80.37	Altai
Capsella orientalis	OSBU2397	CO2397	A053co2397_5	52.02	80.37	Altai
Capsella orientalis	OSBU2397	CO2397	A054co2397_4	52.02	80.37	Altai
Capsella orientalis	OSBU2397	CO2397	A055co2397_6	52.02	80.37	Altai

Capsella orientalis	OSBU2400	CO2400	A056co2400_2	52.50	82.73	Altai
Capsella orientalis	OSBU2400	CO2400	A057co2400_5	52.50	82.73	Altai
Capsella orientalis	OSBU2400	CO2400	A058co2400_4	52.50	82.73	Altai
Capsella orientalis	OSBU2400	CO2400	A059co2400_8	52.50	82.73	Altai
Capsella orientalis	OSBU2400	CO2400	A060co2400_3	52.50	82.73	Altai
Capsella orientalis	OSBU26073	CO26073	A195co26073_3	48.08	106.84	Mongolia
Capsella orientalis	OSBU26073	CO26073	A196co26073_1	48.08	106.84	Mongolia
Capsella orientalis	OSBU26073	CO26073	A197co26073_4	48.08	106.84	Mongolia
Capsella orientalis	OSBU26073	CO26073	A198co26073_2	48.08	106.84	Mongolia
Capsella orientalis	OSBU26082	CO26082	A199co26082_2	48.12	106.90	Mongolia
Capsella orientalis	OSBU26082	CO26082	A200co26082_1	48.12	106.90	Mongolia
Capsella orientalis	OSBU26082	CO26082	A201co26082_3	48.12	106.90	Mongolia
Capsella orientalis	OSBU26144	CO26144	A106co26144_4	48.31	98.92	Mongolia
Capsella orientalis	OSBU26144	CO26144	A107co26144_5	48.31	98.92	Mongolia
Capsella orientalis	OSBU26144	CO26144	A108co26144_3	48.31	98.92	Mongolia
Capsella orientalis	OSBU26144	CO26144	A109co26144_6	48.31	98.92	Mongolia
Capsella rubella	OSBU1335	CR1335	A037cr1335_1	41.08	-8.06	Mediterranean
Capsella rubella	OSBU2010	CR2010	A039cr2010_1	36.39	32.01	Mediterranean
Capsella rubella	OSBU2207	CR2207	A038cr2207_2	43.77	11.23	Mediterranean
Capsella rubella	OSBU2230	CR2230	A036cr2230_3	41.88	12.45	Mediterranean
Capsella rubella	OSBU2239	CR2239	A035cr2239_3	36.26	27.95	Mediterranean
Capsella thracica	OSBU2086	CT2086	A024ct2086_1	42.25	27.41	Bulgaria
Capsella thracica	OSBU2086	CT2086	A025ct2086_2	42.25	27.41	Bulgaria
Capsella thracica	OSBU2086	CT2086	A026ct2086_3	42.25	27.41	Bulgaria
Capsella thracica	OSBU2090	CT2090	A027ct2090_10a	42.05	27.56	Bulgaria
Capsella thracica	OSBU2090	CT2090	A027ct2090_10b	42.05	27.56	Bulgaria
Capsella thracica	OSBU2090	CT2090	A028ct2090_8	42.05	27.56	Bulgaria
Capsella thracica	OSBU2090	CT2090	A029ct2090_9	42.05	27.56	Bulgaria
Capsella thracica	OSBU2101	CT2101	A030ct2101_1	42.12	24.40	Bulgaria
Capsella thracica	OSBU2101	CT2101	A031ct2101_2	42.12	24.40	Bulgaria
Capsella thracica	OSBU2101	CT2101	A032ct2101_3	42.12	24.40	Bulgaria
Capsella thracica	OSBU2102	CT2102	A033ct2102_3	42.40	23.22	Bulgaria
Capsella thracica	OSBU2102	CT2102	A034ct2102_2	42.40	23.22	Bulgaria

Supplementary File 2: Statistics of the ipyrad output files of different datasets under different parameters. 'ori' and 'caps' stand for '*Capsella orientalis*' and '*Capsella'* datasets, respectively. '0.85', '0.90' and '0.95' stand for the identity percentage above which the sequences are recognised as homologous. 'min50%', 'min25%' and 'min12.5%' stand for the minimal percentage of samples with known data a given locus for it to be retained in the final alignment. 'max20', 'max10' and 'max5' stand for the maximum percentage of allowed SNPs per locus retained in the final alignment. The output files depicted in red represent the final datasets based on which all subsequent analyses were carried out.

ori_0_85_min50%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	459062
filtered_by_rm_duplicates	4929	4929	454133
filtered_by_max_indels	45	45	454088
filtered_by_max_SNPs	6	5	454083
filtered_by_max_shared_het	359	357	453726
filtered_by_min_sample	448252	443809	9917
total_filtered_loci	453591	449145	9917
snps matrix size	235	10559	25.54% missing sites
sequence matrix size	235	954590	9.61% missing sites
ori_0_85_min25%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	459062
filtered_by_rm_duplicates	4929	4929	454133
filtered_by_max_indels	68	68	454065
filtered_by_max_SNPs	126	122	453943
filtered_by_max_shared_het	2206	2196	451747
filtered_by_min_sample	438595	434505	17242
total_filtered_loci	445924	441820	17242
snps matrix size	235	32291	55.67% missing sites
sequence matrix size	235	1597859	32.47% missing sites
ori_0_85_min12.5%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	459062
filtered_by_rm_duplicates	4929	4929	454133
filtered_by_max_indels	256	256	453877
filtered_by_max_SNPs	1160	1121	452756
filtered_by_max_shared_het	9146	9101	443655

filtered_by_min_sample	396554	393742	49913
total_filtered_loci	412045	409149	49913
snps matrix size	235	146361	79.30% missing sites
sequence matrix size	235	4387096	66.41% missing sites
ori_0_90_min50%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	488997
filtered_by_rm_duplicates	6534	6534	482463
filtered_by_max_indels	21	21	482442
filtered_by_max_SNPs	8	7	482435
filtered_by_max_shared_het	390	387	482048
filtered_by_min_sample	477695	471961	10087
total_filtered_loci	484648	478910	10087
snps matrix size	235	9307	27.79% missing sites
sequence matrix size	235	970069	9.28% missing sites
ori_0_90_min25%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	488997
filtered_by_rm_duplicates	6534	6534	482463
filtered_by_max_indels	30	30	482433
filtered_by_max_SNPs	31	30	482403
filtered_by_max_shared_het	2292	2285	480118
filtered_by_min_sample	467663	462414	17704
total_filtered_loci	476550	471293	17704
snps matrix size	235	31126	57.34% missing sites
sequence matrix size	235	1638302	32.52% missing sites
ori_0_90_min12.5%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	488997
filtered_by_rm_duplicates	6534	6534	482463
filtered_by_max_indels	106	106	482357
filtered_by_max_SNPs	280	273	482084
filtered_by_max_shared_het	9596	9570	472514
filtered_by_min_sample	424253	420634	51880

total_filtered_loci	440769	437117	51880
snps matrix size	235	137104	79.52% missing sites
sequence matrix size	235	4563271	66.72% missing sites
ori_0_95_min50%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	530773
filtered_by_rm_duplicates	9970	9970	520803
filtered_by_max_indels	9	9	520794
filtered_by_max_SNPs	3	1	520793
filtered_by_max_shared_het	336	336	520457
filtered_by_min_sample	519056	510374	10083
total_filtered_loci	529374	520690	10083
snps matrix size	235	5527	27.55% missing sites
sequence matrix size	235	966425	9.14% missing sites
ori_0_95_min50%_max10	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	639291
filtered_by_rm_duplicates	9055	9055	630236
filtered_by_max_indels	8	8	630228
filtered_by_max_SNPs	45	43	630185
filtered_by_max_shared_het	349	329	629856
filtered_by_min_sample	619734	619734	10122
total_filtered_loci	629191	629169	10122
snps matrix size	235	5361	26.73% missing sites
sequence matrix size	235	970507	9.10% missing sites
ori_0_95_min50%_max5	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	639291
filtered_by_rm_duplicates	9055	9055	630236
filtered_by_max_indels	8	8	630228
filtered_by_max_SNPs	232	228	630000
filtered_by_max_shared_het	349	262	629738
filtered_by_min_sample	619734	619734	10004
total_filtered_loci	629378	629287	10004

snps matrix size	235	4644	24.23% missing sites
sequence matrix size	235	959279	8.79% missing sites
ori_0_95_min25%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	530773
filtered_by_rm_duplicates	9970	9970	520803
filtered_by_max_indels	17	17	520786
filtered_by_max_SNPs	6	3	520783
filtered_by_max_shared_het	2119	2118	518665
filtered_by_min_sample	508720	500934	17731
total_filtered_loci	520832	513042	17731
snps matrix size	235	19399	57.84% missing sites
sequence matrix size	235	1634399	32.31% missing sites
ori_0_95_min12.5%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	530773
filtered_by_rm_duplicates	9970	9970	520803
filtered_by_max_indels	42	42	520761
filtered_by_max_SNPs	23	19	520742
filtered_by_max_shared_het	8802	8796	511946
filtered_by_min_sample	465607	460544	51402
total_filtered_loci	484444	479371	51402
snps matrix size	235	85391	79.99% missing sites
sequence matrix size	235	4506529	66.52% missing sites
caps_0_85_min50%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	589890
filtered_by_rm_duplicates	4899	4899	584991
filtered_by_max_indels	327	327	584664
filtered_by_max_SNPs	46	40	584624
filtered_by_max_shared_het	307	298	584326
filtered_by_min_sample	575275	575275	9051

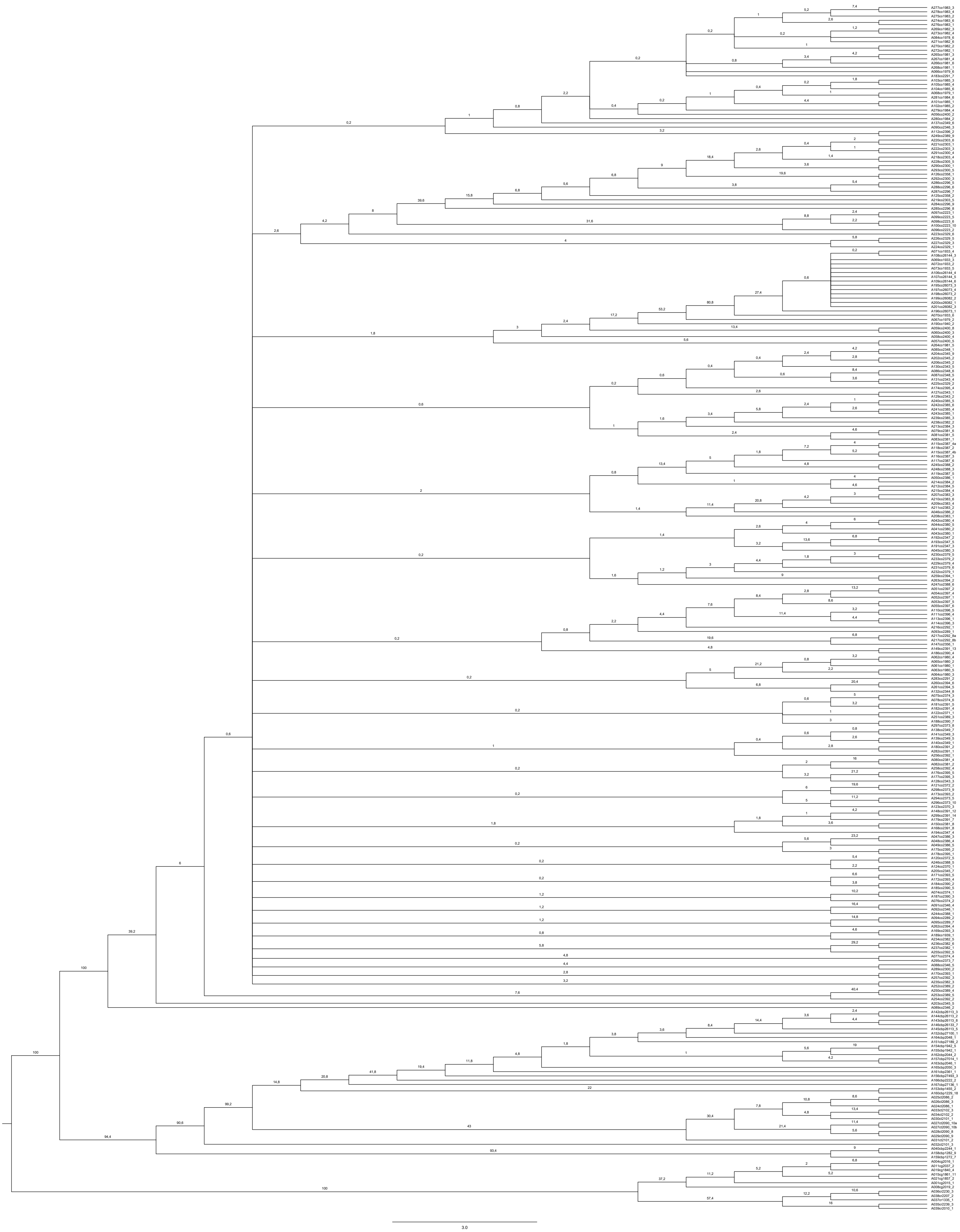
total_filtered_loci	580854	580839	9051
snps matrix size	282	48183	14.37% missing sites
sequence matrix size	282	874991	12.64% missing sites
caps_0_85_min25%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	589890
filtered_by_rm_duplicates	4899	4899	584991
filtered_by_max_indels	394	394	584597
filtered_by_max_SNPs	123	114	584483
filtered_by_max_shared_het	2139	2116	582367
filtered_by_min_sample	566344	566344	16023
total_filtered_loci	573899	573867	16023
snps matrix size	282	74024	33.52% missing sites
sequence matrix size	282	1491829	34.91% missing sites
caps_0_85_min12.5%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	589890
filtered_by_rm_duplicates	4899	4899	584991
filtered_by_max_indels	586	586	584405
filtered_by_max_SNPs	597	577	583828
filtered_by_max_shared_het	7472	7425	576403
filtered_by_min_sample	537635	537635	38768
total_filtered_loci	551189	551122	38768
snps matrix size	282	155274	60.46% missing sites
sequence matrix size	282	3472199	63.14% missing sites
caps_0_90_min50%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	630504
filtered_by_rm_duplicates	6797	6797	623707
filtered_by_max_indels	112	112	623595
filtered_by_max_SNPs	19	17	623578
filtered_by_max_shared_het	312	305	623273
filtered_by_min_sample	614146	614146	9127
total_filtered_loci	621386	621377	9127

snps matrix size	282	43222	13.74% missing sites
sequence matrix size	282	881075	12.28% missing sites
caps_0_90_min25%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	630504
filtered_by_rm_duplicates	6797	6797	623707
filtered_by_max_indels	140	140	623567
filtered_by_max_SNPs	44	41	623526
filtered_by_max_shared_het	2201	2188	621338
filtered_by_min_sample	605005	605005	16333
total_filtered_loci	614187	614171	16333
snps matrix size	282	68055	34.02% missing sites
sequence matrix size	282	1518922	35.00% missing sites
caps_0_90_min12.5%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	630504
filtered_by_rm_duplicates	6797	6797	623707
filtered_by_max_indels	219	219	623488
filtered_by_max_SNPs	137	132	623356
filtered_by_max_shared_het	7771	7744	615612
filtered_by_min_sample	575561	575561	40051
total_filtered_loci	590485	590453	40051
snps matrix size	282	144525	61.00% missing sites
sequence matrix size	282	3590201	63.49% missing sites
caps_0_95_min50%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	692730
filtered_by_rm_duplicates	12162	12162	680568
filtered_by_max_indels	17	17	680551
filtered_by_max_SNPs	4	4	680547
filtered_by_max_shared_het	290	289	680258
filtered_by_min_sample	671956	671956	8302
total_filtered_loci	684429	684428	8302
snps matrix size	282	26589	14.12% missing sites

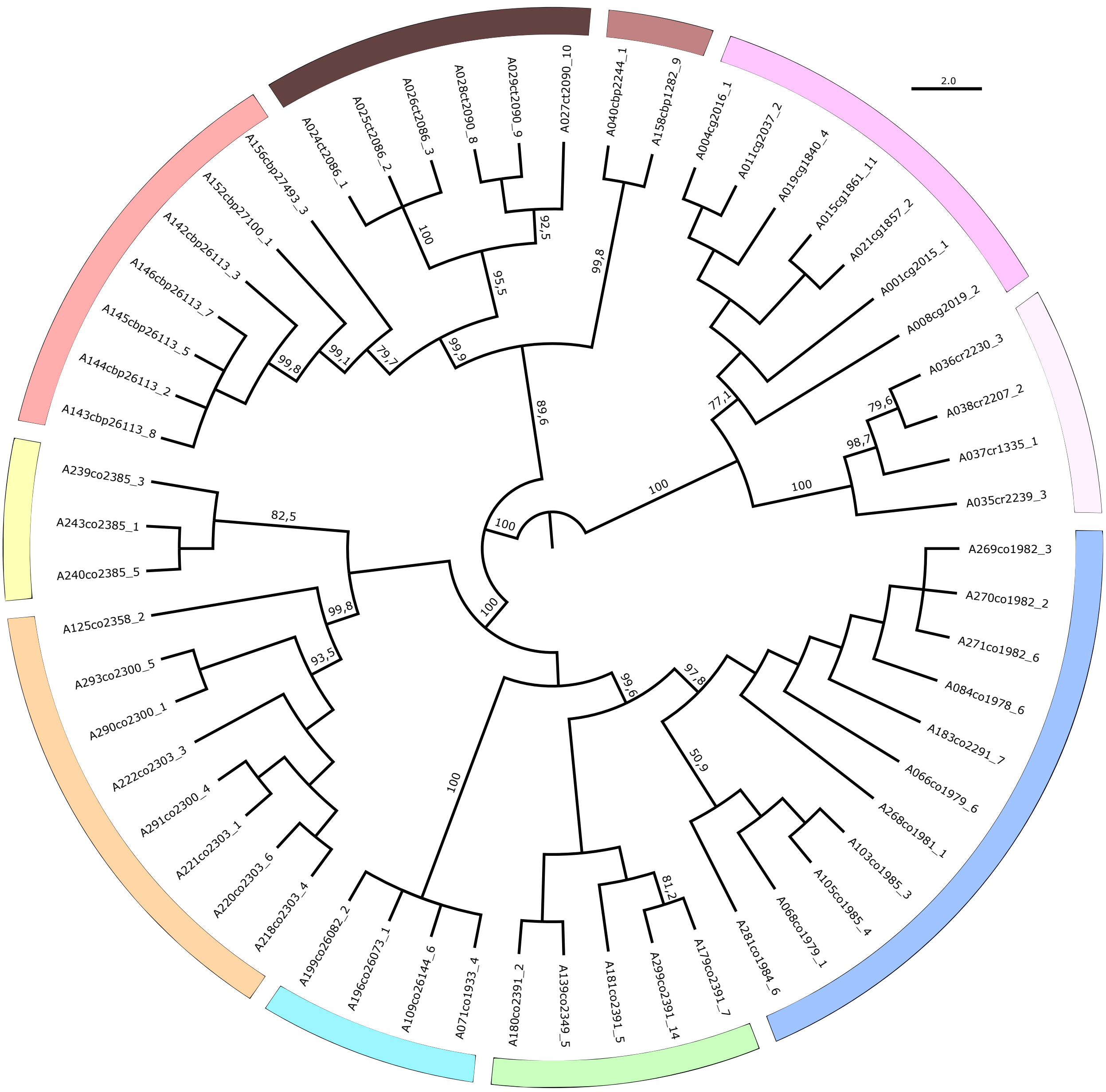
sequence matrix size	282	800204	13.06% missing sites
caps_0_95_min50%_max10	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	692730
filtered_by_rm_duplicates	12162	12162	680568
filtered_by_max_indels	17	17	680551
filtered_by_max_SNPs	207	206	680345
filtered_by_max_shared_het	290	259	680086
filtered_by_min_sample	671956	671956	8130
total_filtered_loci	684632	684600	8130
snps matrix size	282	24584	13.47% missing sites
sequence matrix size	282	783041	12.92% missing sites
caps_0_95_min50%_max5	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	692730
filtered_by_rm_duplicates	12162	12162	680568
filtered_by_max_indels	17	17	680551
filtered_by_max_SNPs	2063	2058	678493
filtered_by_max_shared_het	290	188	678305
filtered_by_min_sample	671956	671956	6349
total_filtered_loci	686488	686381	6349
snps matrix size	282	12635	13.17% missing sites
sequence matrix size	282	605569	13.01% missing sites
caps_0_95_min25%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	692730
filtered_by_rm_duplicates	12162	12162	680568
filtered_by_max_indels	24	24	680544
filtered_by_max_SNPs	12	11	680533
filtered_by_max_shared_het	2162	2159	678374
filtered_by_min_sample	662725	662725	15649
total_filtered_loci	677085	677081	15649
snps matrix size	282	44253	35.81% missing sites
sequence matrix size	282	1445668	36.65% missing sites

caps_0_95_min12.5%_max20	**total_filters**	**applied_order**	**retained_loci**
total_prefiltered_loci	0	0	692730
filtered_by_rm_duplicates	12162	12162	680568
filtered_by_max_indels	43	43	680525
filtered_by_max_SNPs	19	16	680509
filtered_by_max_shared_het	7524	7519	672990
filtered_by_min_sample	634033	634033	38957
total_filtered_loci	653781	653773	38957
snps matrix size	282	93512	61.76% missing sites
sequence matrix size	282	3474959	64.52% missing sites

Supplementary File 3: Phylogeny of all investigated *Capsella* accessions. Phylogenetic reconstruction is based on a coalescent SVDQ algorithm. The values above branches represent bootstrap support values. Coding names correspond to the names specified in the voucher list.



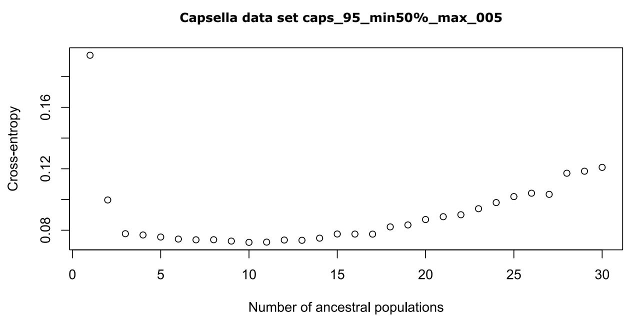
Supplementary File 4: Phylogeny of *Capsella* accessions exhibiting less than 5% of admixture. Phylogenetic reconstruction is based on a coalescent SVDQ algorithm. The values above branches represent bootstrap support values rounded to one decimal place and bootstrap support values below 75 are not shown. Coding names correspond to the names specified in the voucher list. Colour coding reflects the colour coding in the Figure 5 and Supplementary Files 7 and 9. The out-group consists of Mediterranean *C. rubella* accessions in lavender (CruMED) and Mediterranean *C. grandiflora* accessions in mauve (CgrMED). The in-group consists of Mediterranean *C. bursa-pastoris* accessions in old rose (CbpMED), Rhodopian *C. thracica* accessions in rose ebony (CthRHO), Eurasian *C. bursa-pastoris* accessions in light pink (CbpEUR), South Middle Asian *C. orientalis* accessions in lemon yellow (CorSMA), East Middle Asian *C. orientalis* accessions in deep champagne (CorEMA), Mongolian *C. orientalis* accessions in celeste (CorMNG), North Middle Asian *C. orientalis* accessions in tea green (CorNMA) and Russian Altai *C. orientalis* accessions in baby blue (CorALT).

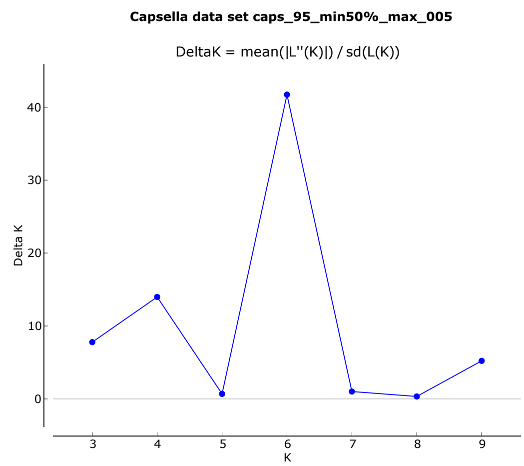


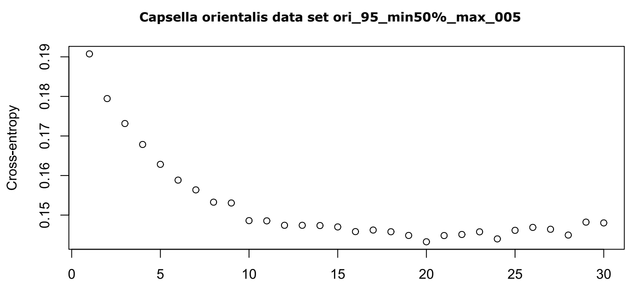
Supplementary File 5:

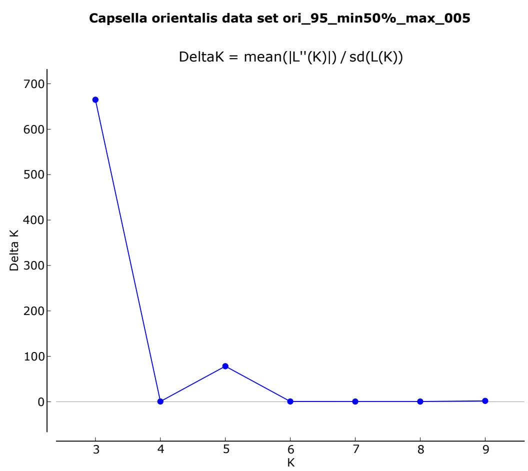
Left: Minimal cross entropy estimation implemented in the R package LEA for the *Capsella* dataset as well as for the *C. orientalis* dataset. The lowest entropy hence the most probable number of ancestral populations in the *Capsella* dataset is at K=10 and no lowest entropy point can be inferred from the *Capsella orientalis* dataset.

Right: deltaK estimation based on Evanno method implemented in Structure Harvester for the *Capsella* dataset as well as for the *C. orientalis* dataset. The highest deltaK hence the most probable number of ancestral populations in the *Capsella* dataset is at K=6 and for the *Capsella orientalis* dataset at K=3.

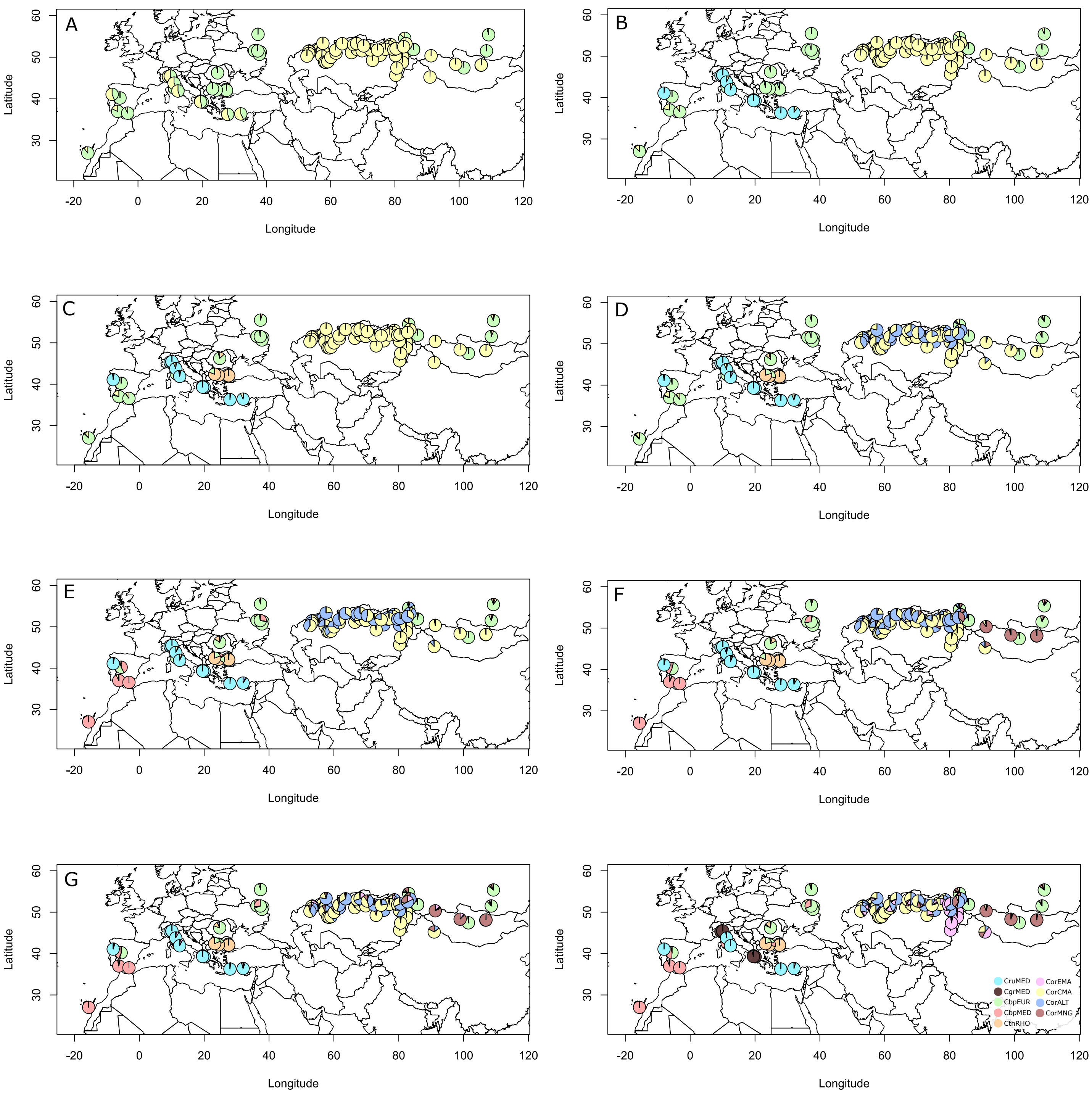








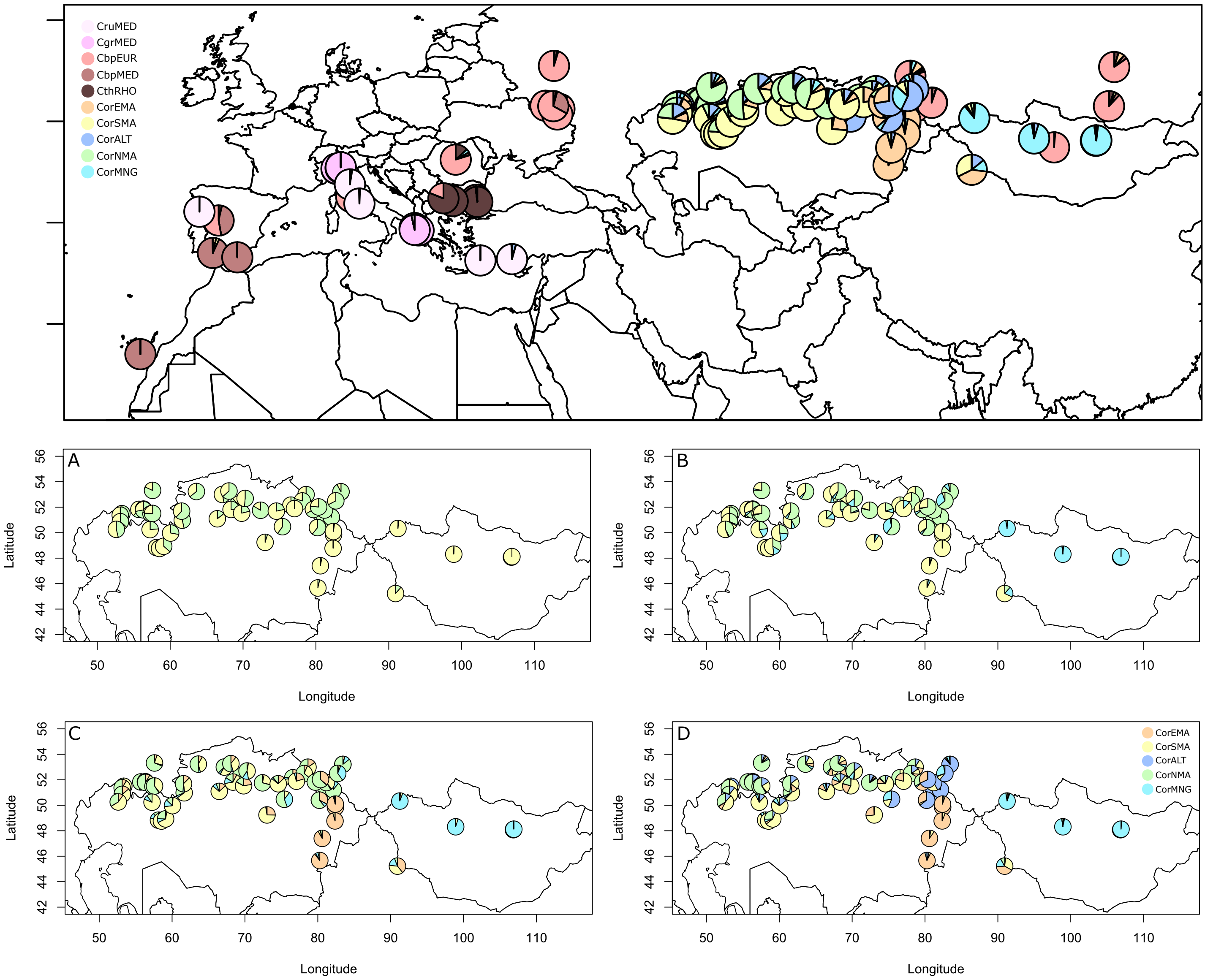
Supplementary File 6: Geographic distribution of sampled *Capsella* populations. Genetic cluster membership was inferred from LEA algorithm, showed as pie charts for K=2 (A), K=3 (B), K=4 (C), K=5 (D), K=6 (E), K=7 (F), K=8 (G) and K=9 (H). Colour coding for K=9 is as follows: Mediterranean *C. bursa-pastoris* subcluster in light pink (CbpMED), Mediterranean *C. rubella* subcluster in celeste (CruMED), Mediterranean *C. grandiflora* subcluster in rose ebony (CgrMED), Rhodopian *C. thracica* subcluster in deep champagne (CthRHO), Eurasian *C. bursa-pastoris* subcluster in tea green (CbpEUR), Central Middle Asian *C. orientalis* subcluster in lemon yellow (CorCMA), East Middle Asian *C. orientalis* subcluster in mauve (CorEMA), Russian Altai *C. orientalis* subcluster in baby blue (CorALT) and Mongolian *C. orientalis* subcluster in old rose (CorMNG).



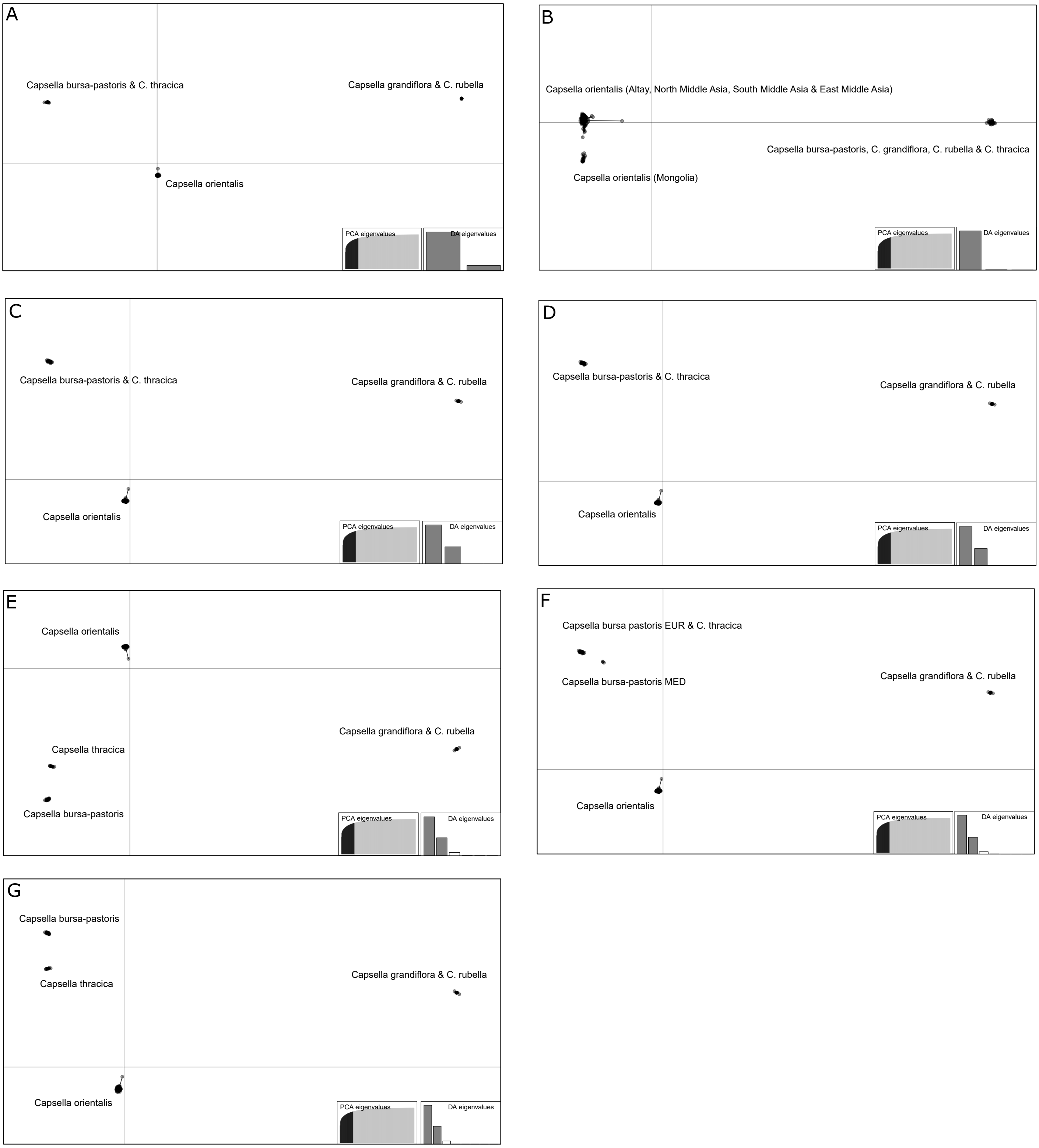
Supplementary File 7:

Above: Geographic distribution of sampled *Capsella* populations for K=10. Ten retained genetic clusters inferred from LEA algorithm are indicated by different colours and assigned to the following geographical regions: Mediterranean *C. rubella* subcluster in lavender (CruMED), Mediterranean *C. grandiflora* subcluster in mauve (CgrMED), Eurasian *C. bursa-pastoris* subcluster in light pink (CbpEUR), Mediterranean *C. bursa-pastoris* subcluster in old rose (CbpMED), Rhodopian *C. thracica* subcluster in rose ebony (CthRHO), East Middle Asian *C. orientalis* subcluster in deep champagne (CorEMA), South Middle Asian *C. orientalis* subcluster in lemon yellow (CorSMA), Russian Altai *C. orientalis* subcluster in baby blue (CorALT), North Middle Asian *C. orientalis* subcluster in tea green (CorNMA) and Mongolian *C. orientalis* subcluster in celeste (CorMNG). The coordinates mirror the ones from Figure 4.

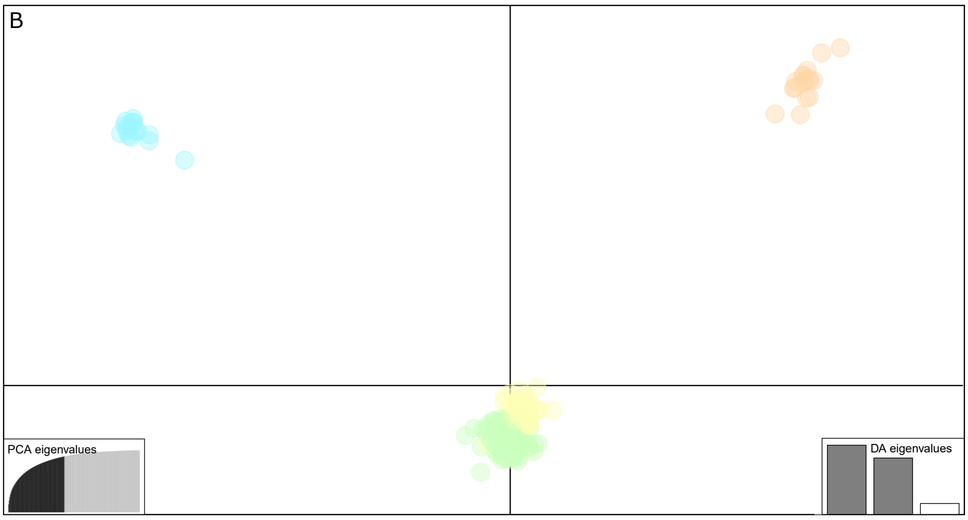
Below: Geographic distribution of sampled *Capsella orientalis* populations. Genetic cluster membership was inferred from LEA algorithm, showed as pie charts for K=2 (A), K=3 (B), K=4 (C) and K=5 (D). Colour coding reflects the colour coding in the Figure 5 and Supplementary Files 4 and 9. Note that the color coding matches so that the subclustering in *Capsella orientalis* can be inferred from the *Capsella* clustering at K=10 as well.

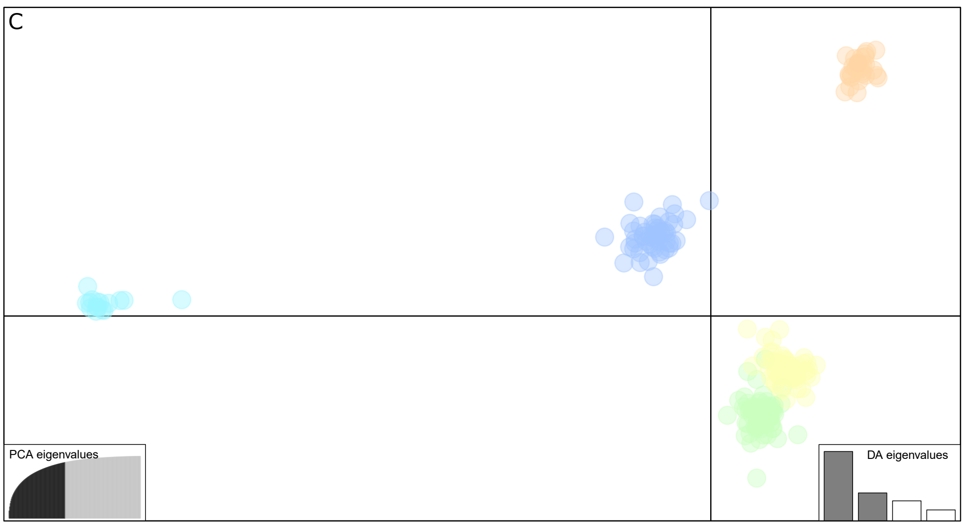


Supplementary File 8: DAPC scatter plots of investigated *Capsella* accessions for K=3 (A), K=4 (B), K=5 (C), K=6 (D), K=7 (E), K=8 (F) and K=9 (G). For easier interpretation all the clusters are in black and corresponding species' names or genetic cluster names are given.

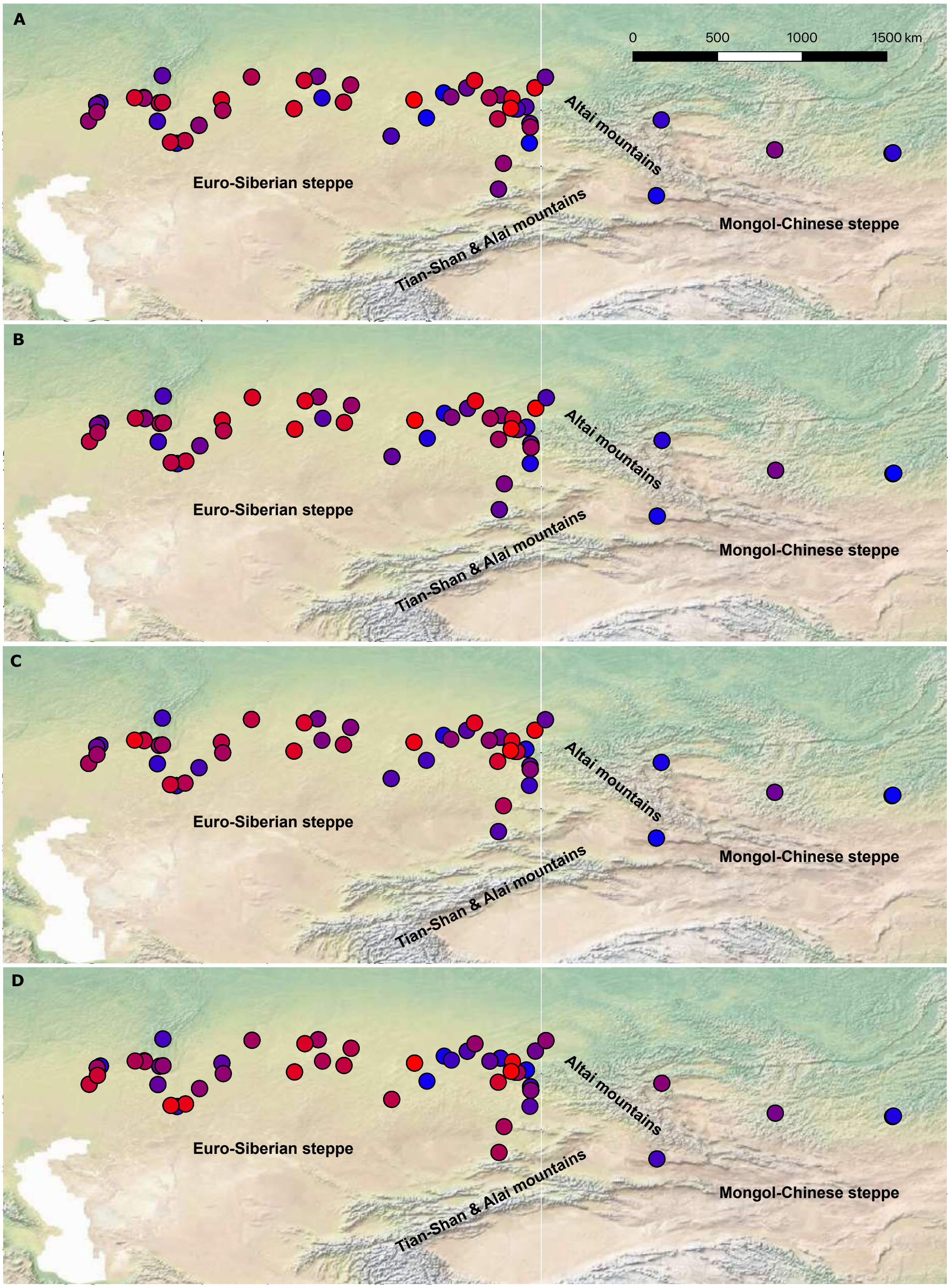


Supplementary File 9: DAPC scatter plots of investigated *Capsella orientalis* accessions for K=3 (A), K=4 (B) and K=5 (C). Colour coding reflects the colour coding in the Figure 5 and Supplementary Files 4 and 7, and is as follows: North Middle Asian *C. orientalis* subcluster in tea green (CorNMA), South Middle Asian *C. orientalis* subcluster in lemon yellow (CorSMA), Mongolian *C. orientalis* subcluster in celeste (CorMNG), East Middle Asian *C. orientalis* subcluster in deep champagne (CorEMA) and Russian Altai *C. orientalis* subcluster in baby blue (CorALT).





Supplementary File 10: Georeferenced genetic diversity estimations of *Capsella orientalis* populations. Warmer red colour indicates higher genetic diversity or number of (private) substitution sites, respectively, while the colder blue colour points towards lower genetic diversity or number of (private) substitution sites. A, Theta Pi; B, Theta S; C, number of substitution sites per gene copy; D, number of private substitution sites per gene copy.



Supplementary File 11-1: Molecular diversity indexes analysis corrected per populations size.

Statistics					**Co_2380_N_KZH**	**Co_2386_S_KZH**	**Co2397_Altai**	**Co_2400_Altai**	**Co_1980_Altai**	**Co_1979_Altai**
No.	**of**	**gene**	**copies**		10	10	10	10	10	6
No.	**of**	**loci**			4644	4644	4644	4644	4644	4644
No.	**of**	**usable**	**loci**		2319	2302	2570	2809	2585	3810
No.	**of**	**polym.**	**loci**		217	378	257	637	38	387
Molecular div ind										
Statistics					**Co_2380_N_KZH**	**Co_2386_S_KZH**	**Co2397_Altai**	**Co_2400_Altai**	**Co_1980_Altai**	**Co_1979_Altai**
	No.	**of**	**transitions**		126	220	146	353	17	232
	No.	**of**	**transversions**		91	159	111	285	22	156
	No.	**of**	**substitutions**		217	379	257	638	39	388
	No.	**of**	**indels**		97	84	76	100	90	167
	No.	**of**	**ts.**	**sites**	126	220	146	353	17	232
	No.	**of**	**tv.**	**sites**	91	159	111	285	22	156
	No.	**of**	**subst.**	**sites**	217	378	257	637	38	387
	No.	**private**	**subst.**	**sites**	27	55	10	20	6	13
	No.	**of**	**indel**	**sites**	97	84	76	100	90	167
	Pi				111,689	187,356	138,156	238,689	48,8	270,533
	Theta_S				76,70641	133,61762	90,84584	225,17043	13,43246	169,48905
	s.d.	**Theta_S**			31,17888	54,04036	36,85886	90,81655	5,75284	79,71612
	Theta_pi				111,68889	187,35556	138,15556	238,68889	48,8	270,53333
	s.d.	**Theta_pi**			59,38027	99,34913	73,36063	126,46439	26,15975	156,59612
	No	**subs**	**sites**	**gene copy**	21,70	37,80	25,70	63,70	3,80	64,50
	No	**priv subs**	**sites**	**gene copy**	2,70	5,50	1,00	2,00	0,60	2,17

Co_1933_Mongolia	**Co2374_N_KZH**	**Co_2381_S_KZH**	**Co_1978_Altai**	**Co_2348_S_KZH**	**Co_2346_N_KZH**	**Co_2289_Altai**	**Co_2223_Mongolia**	**Co_1985_Altai**
10	10	12	2	6	10	6	10	10
4644	4644	4644	4644	4644	4644	4644	4644	4644
2343	2376	2452	4283	3317	2277	2289	2021	2197
106	349	408	81	184	442	310	68	134
Co_1933_Mongolia	**Co2374_N_KZH**	**Co_2381_S_KZH**	**Co_1978_Altai**	**Co_2348_S_KZH**	**Co_2346_N_KZH**	**Co_2289_Altai**	**Co_2223_Mongolia**	**Co_1985_Altai**
49	196	240	42	103	252	154	36	74
57	153	168	39	81	191	156	32	60
106	349	408	81	184	443	310	68	134
91	157	88	0	77	132	153	64	104
49	196	240	42	103	252	154	36	74
57	153	168	39	81	191	156	32	60
106	349	408	81	184	442	310	68	134
23	25	55	6	7	26	46	12	11
91	157	88	0	77	132	153	64	104
67,8	195,467	185,303	81	135,2	220	225,2	46,556	94,222
37,46949	123,36653	135,10482	81	80,58394	156,24071	135,76642	24,03703	47,36709
15,41564	49,92252	51,97728	57,62812	38,09142	63,12797	63,92758	10,0176	19,39229
67,8	195,46667	185,30303	81	135,2	220	225,2	46,55556	94,22222
36,19665	103,63359	96,25109	81,49847	78,46086	116,59257	130,4228	24,97407	50,15387
10,60	34,90	34,00	40,50	30,67	44,20	51,67	6,80	13,40
2,30	2,50	4,58	3,00	1,17	2,60	7,67	1,20	1,10

Co_26144_Mongolia	Co_2396_Altai	Co_2387_S_KZH	Co_2372_N_KZH	Co_2371_N_KZH	Co_2370_N_KZH	Co_2358_E_KZH	Co_2343_S_KZH	Co_2344_S_KZH
8	10	12	4	2	4	4	10	2
4644	4644	4644	4644	4644	4644	4644	4644	4644
2785	2958	2410	2149	3619	3301	2793	3169	3370
204	320	199	161	57	238	145	437	60
Co_26144_Mongolia	**Co_2396_Altai**	**Co_2387_S_KZH**	**Co_2372_N_KZH**	**Co_2371_N_KZH**	**Co_2370_N_KZH**	**Co_2358_E_KZH**	**Co_2343_S_KZH**	**Co_2344_S_KZH**
108	196	110	99	32	128	82	243	28
97	124	89	62	25	111	63	195	32
205	320	199	161	57	239	145	438	60
144	164	119	91	0	72	79	107	0
108	196	110	99	32	128	82	242	28
97	124	89	62	25	111	63	195	32
204	320	199	161	57	238	145	437	60
17	18	30	12	0	14	12	53	7
144	164	119	91	0	72	79	107	0
130,393	171,667	117,424	164,833	57	203	145,167	214,978	60
78,67769	113,11544	65,89672	87,81818	57	129,81818	79,09091	154,47328	60
34,07666	45,80465	25,53926	47,50762	40,6571	70,05684	42,82201	62,418	42,7785
130,39286	171,66667	117,42424	164,83333	57	203	145,16667	214,97778	60
71,52685	91,06194	61,13188	107,99997	57,49783	132,90884	95,1648	113,93974	60,49793
25,50	32,00	16,58	40,25	28,50	59,50	36,25	43,70	30,00
2,13	1,80	2,50	3,00	0,00	3,50	3,00	5,30	3,50

Co_2349_N_KZH	Co_2356_Altai	Co_2393_N_KZH	Co_2395_S_KZH	Co_2391_N_KZH	Co_2291_Altai	Co_2390_N_KZH	Co_1939_N_KZH	Co_1940_Altai
10	2	10	10	10	4	10	2	2
4644	4644	4644	4644	4644	4644	4644	4644	4644
774	3582	1540	2851	2328	3615	2133	3427	3525
5	20	270	559	155	318	395	25	32
Co_2349_N_KZH	**Co_2356_Altai**	**Co_2393_N_KZH**	**Co_2395_S_KZH**	**Co_2391_N_KZH**	**Co_2291_Altai**	**Co_2390_N_KZH**	**Co_1939_N_KZH**	**Co_1940_Altai**
5	10	161	255	81	169	224	12	15
0	10	110	305	75	149	171	13	17
5	20	271	560	156	318	395	25	32
14	0	43	189	98	133	67	0	0
5	10	160	254	81	169	224	12	15
0	10	110	305	75	149	171	13	17
5	20	270	559	155	318	395	25	32
0	1	28	186	12	36	28	1	1
14	0	43	189	98	133	67	0	0
7,356	20	127,178	272,2	101,422	265,5	171,978	25	32
1,76743	20	95,44116	197,59854	54,79029	173,45455	139,62688	25	32
1,0139	14,49138	38,70483	79,74115	22,37457	93,48436	56,45426	18,02776	22,97825
7,35556	20	127,17778	272,2	101,42222	265,5	171,97778	25	32
4,25352	20,4939	67,56191	144,16558	53,95713	173,69837	91,22628	25,4951	32,49615
0,50	10,00	27,00	55,90	15,50	79,50	39,50	12,50	16,00
0,00	0,50	2,80	18,60	1,20	9,00	2,80	0,50	0,50

Co_2347_N_KZH	**Co_26073_Mongolia**	**Co_26082_Mongolia**	**Co_2345_S_KZH**	**Co_2383_S_KZH**	**Co_2384_S_KZH**	**Co_2292_Altai**	**Co_2303_E_KZH**	**Co_2329_S_KZH**
8	8	6	10	10	8	6	10	10
4644	4644	4644	4644	4644	4644	4644	4644	4644
2666	3013	2898	2535	1951	2416	2197	2405	1622
165	34	29	388	143	327	254	209	204
Co_2347_N_KZH	**Co_26073_Mongolia**	**Co_26082_Mongolia**	**Co_2345_S_KZH**	**Co_2383_S_KZH**	**Co_2384_S_KZH**	**Co_2292_Altai**	**Co_2303_E_KZH**	**Co_2329_S_KZH**
88	12	9	212	80	171	154	108	115
77	22	20	177	63	156	100	102	89
165	34	29	389	143	327	254	210	204
101	85	94	108	50	117	117	104	46
88	12	9	212	80	171	154	108	115
77	22	20	177	63	156	100	102	89
165	34	29	388	143	327	254	209	204
11	3	4	38	18	57	29	13	37
101	85	94	108	50	117	117	104	46
112,929	52,464	63,6	193,244	68,978	195,536	185,667	113,289	81,756
63,63636	13,11295	12,70073	137,15248	50,54846	126,1157	111,24088	73,87852	72,1111
27,63141	5,97468	6,30088	55,4603	20,67043	54,40327	52,44493	30,04287	29,33286
112,92857	52,46429	63,6	193,24444	68,97778	195,53571	185,66667	113,28889	81,75556
61,99913	29,01175	37,12142	102,45976	36,8188	107,06555	107,59809	60,22544	43,56855
20,63	4,25	4,83	38,80	14,30	40,88	42,33	20,90	20,40
1,38	0,38	0,67	3,80	1,80	7,13	4,83	1,30	3,70

Co_2305_E_KZH	Co_2379_N_KZH	Co_2382_S_KZH	Co_2385_S_KZH	Co_2388_S_KZH	Co_2389_N_KZH	Co_2392_N_KZH	Co_2394_N_KZH	Co_1981_Altai
2	10	10	10	10	10	10	10	10
4644	4644	4644	4644	4644	4644	4644	4644	4644
3238	2342	1883	2066	2244	2382	2052	2204	2298
30	168	362	145	355	391	426	303	135
Co_2305_E_KZH	**Co_2379_N_KZH**	**Co_2382_S_KZH**	**Co_2385_S_KZH**	**Co_2388_S_KZH**	**Co_2389_N_KZH**	**Co_2392_N_KZH**	**Co_2394_N_KZH**	**Co_1981_Altai**
16	100	206	79	203	226	238	166	77
14	69	156	66	152	165	188	137	58
30	169	362	145	355	391	426	303	135
0	83	73	86	105	110	68	101	61
16	100	206	79	203	226	238	166	77
14	69	156	66	152	165	188	137	58
30	168	362	145	355	391	426	303	135
3	7	44	12	25	16	52	36	9
0	83	73	86	105	110	68	101	61
30	68,556	162,222	63,133	170,356	215,089	200,733	167,089	75,356
30	59,38561	127,96185	51,25544	125,48745	138,21293	150,58493	107,10619	47,72058
21,56386	24,22069	51,76845	20,95446	50,77449	55,88629	60,85607	43,39072	19,53431
30	68,55556	162,22222	63,13333	170,35556	215,08889	200,73333	167,08889	75,35556
30,4959	36,59577	86,07319	33,73149	90,36938	113,99843	106,41554	88,64386	40,18782
15,00	16,80	36,20	14,50	35,50	39,10	42,60	30,30	13,50
1,50	0,70	4,40	1,20	2,50	1,60	5,20	3,60	0,90

Co_1982_Altai	Co_1983_Altai	Co_1984_Altai	Co_2296_E_KZH	Co_2300_E_KZH	Co_2373_N_KZH	Mean	s.d.	
10	10	6	10	10	10	8,105	3,01	
4644	4644	4644	4644	4644	4644	4644	0	
2597	2790	2847	2681	2470	2924	2614	615,026	
97	111	127	204	304	333	225,263	147,575	
Co_1982_Altai	**Co_1983_Altai**	**Co_1984_Altai**	**Co_2296_E_KZH**	**Co_2300_E_KZH**	**Co_2373_N_KZH**	**Mean**	**s.d.**	
40	63	71	112	162	193	124,544	82,678	
58	48	56	92	143	140	101,000	66,505	
98	111	127	204	305	333	225,544	147,734	
109	106	109	93	114	131	87,211	45,390	
39	63	71	112	161	193	124,456	82,627	
58	48	56	92	143	140	101,000	66,505	
97	111	127	204	304	333	225,263	147,575	Total: 3801
19	5	15	35	22	20	23,298	26,947	
109	106	109	93	114	131	87,211	45,39	
67,133	90,244	112,533	121,067	166,867	185,111	131,50904	69,70466	
34,28812	39,23692	55,62044	72,1111	107,45967	117,71076	88,0773	51,14102	
14,13732	16,12579	26,40317	29,33286	43,53272	47,65059	39,21383	21,73832	
67,13333	90,24444	112,53333	121,06667	166,86667	185,11111	131,50904	69,70466	
35,84448	48,05267	65,37405	64,33386	88,52648	98,16357	75,03942	37,79285	
9,70	11,10	21,17	20,40	30,40	33,30			
1,90	0,50	2,50	3,50	2,20	2,00			

Supplementary File 11-2: Molecular diversity indexes analysis of five genetic clusters, each consisting of five different populations.

Statistics				**Altai**	**S_KZH**	**E_KZH**	**Mongolia**	**N_KZH**	**Mean**	**s.d.**	
No.	**of**	**gene**	**copies**	38	50	36	42	44	42.000	5.477	
No.	**of**	**loci**		4644	4644	4644	4644	4644	4.644.000	0.000	
No.	**of**	**usable**	**loci**	1579	1724	1817	1994	1921	1.807.000	163.507	
No.	**of**	**polym.**	**loci**	442	710	364	307	639	492.400	174.815	
Statistics				**Altai**	**S_KZH**	**E_KZH**	**Mongolia**	**N_KZH**	**Mean**	**s.d.**	
No.	**of**	**transitions**		242	387	190	160	360	267,80	101,30	
No.	**of**	**transversions**		201	325	174	147	280	225,40	74,64	
No.	**of**	**substitutions**		443	712	364	307	640	493,20	175,58	
No.	**of**	**indels**		71	99	66	127	125	97,60	28,82	
No.	**of**	**ts.**	**sites**	242	385	190	160	359	267,20	100,49	
No.	**of**	**tv.**	**sites**	201	325	174	147	280	225,40	74,64	
No.	**of**	**subst.**	**sites**	442	710	364	307	639	492,40	174,82	Total: 1332,00
No.	**private**	**subst.**	**sites**	89	264	78	62	150	128,60	82,70	
No.	**of**	**indel**	**sites**	71	99	66	127	125	97,60	28,82	
Pi				124,15	169,36	109,69	111,79	165,17	136,03	29,08	
Theta_S				105,20	158,51	87,78	71,35	146,90	113,95	37,58	
s.d.	**Theta_S**			30,86	43,76	26,11	20,62	41,65	32,60	9,94	
Theta_pi				124,15	169,36	109,69	111,79	165,17	136,03	29,08	
s.d.	**Theta_pi**			60,51	81,86	53,58	54,37	80,07	66,08	13,86	

Supplementary File 11-3: Pairwise F_{ST} population values of investigated *Capsella orientalis* populations. F_{ST} values greater than 0.50 are labelled in red and F_{ST} values below 0.10 are labelled in light blue.

	Co_2380_N_KZH	Co_2386_S_KZH	Co2397_Altai	Co_2400_Altai	Co_1980_Altai	Co_1933_Mongolia	Co2374_N_KZH	Co_2381_S_KZH	Co_2346_N_KZH	Co_2223_Mongolia	Co_1985_Altai	Co_26144_Mongolia	Co_2396_Altai	Co_2387_S_KZH	Co_2343_S_KZH	Co_2349_N_KZH	Co_2393_N_KZH	Co_2395_S_KZH	Co_2391_N_KZH
Co_2380_N_KZH	0,00000																		
Co_2386_S_KZH	0,13945	0,00000																	
Co2397_Altai	0,23767	0,21997	0,00000																
Co_2400_Altai	0,20106	0,16150	0,16864	0,00000															
Co_1980_Altai	0,27195	0,22933	0,36461	0,30909	0,00000														
Co_1933_Mongolia	0,22973	0,16874	0,28234	0,20017	0,28019	0,00000													
Co2374_N_KZH	0,14920	0,11911	0,18397	0,13519	0,26386	0,18488	0,00000												
Co_2381_S_KZH	0,14026	0,11808	0,22889	0,17170	0,24204	0,17866	0,12406	0,00000											
Co_2346_N_KZH	0,15024	0,12895	0,17973	0,14378	0,26908	0,17879	0,09224	0,11852	0,00000										
Co_2223_Mongolia	0,25570	0,21316	0,28447	0,26323	0,33912	0,27556	0,24785	0,25965	0,25519	0,00000									
Co_1985_Altai	0,18817	0,16834	0,18026	0,13145	0,28280	0,21707	0,13267	0,17534	0,15153	0,24996	0,00000								
Co_26144_Mongolia	0,26113	0,21179	0,26055	0,19178	0,36894	0,15245	0,19606	0,22645	0,19524	0,29670	0,22327	0,00000							
Co_2396_Altai	0,22388	0,21593	0,18627	0,20774	0,34364	0,25802	0,16740	0,20005	0,15829	0,33571	0,21397	0,27344	0,00000						
Co_2387_S_KZH	0,18383	0,13556	0,23308	0,18127	0,29618	0,20026	0,14492	0,15541	0,15273	0,24820	0,18962	0,21624	0,23124	0,00000					
Co_2343_S_KZH	0,35923	0,31710	0,50062	0,46247	0,33253	0,35738	0,35377	0,30076	0,35128	0,43741	0,41610	0,47589	0,44653	0,37952	0,00000				
Co_2349_N_KZH	0,24581	0,22024	0,31191	0,30253	0,25047	0,28219	0,24825	0,25956	0,25476	0,22693	0,25280	0,32199	0,33616	0,28558	0,28522	0,00000			
Co_2393_N_KZH	0,16693	0,13843	0,18832	0,17381	0,26076	0,21485	0,14808	0,18316	0,15756	0,15888	0,13941	0,21939	0,23703	0,18609	0,37111	0,14672	0,00000		
Co_2395_S_KZH	0,28252	0,23188	0,41024	0,35996	0,25799	0,27333	0,26755	0,22638	0,25034	0,35390	0,32924	0,37843	0,35980	0,29006	0,21541	0,26520	0,29166	0,00000	
Co_2391_N_KZH	0,17285	0,16059	0,21203	0,16881	0,30512	0,23533	0,12982	0,17265	0,14155	0,25526	0,15670	0,24930	0,22909	0,19287	0,42766	0,22970	0,13245	0,33998	0,00000
Co_2390_N_KZH	0,12781	0,09389	0,19887	0,15259	0,21475	0,16690	0,08494	0,10367	0,09132	0,21099	0,13372	0,20697	0,18199	0,14428	0,29425	0,18841	0,11721	0,20701	0,11300
Co_2347_N_KZH	0,30892	0,29499	0,43134	0,41071	0,31854	0,36682	0,32049	0,29793	0,32710	0,36718	0,35686	0,45907	0,42055	0,36180	0,33963	0,18793	0,27733	0,30645	0,33791
Co_26073_Mongolia	0,39339	0,33934	0,50716	0,45407	0,37470	0,28897	0,37951	0,33563	0,37909	0,43671	0,42100	0,41547	0,47630	0,39160	0,30533	0,28302	0,36644	0,30641	0,43980
Co_2345_S_KZH	0,20255	0,16727	0,31814	0,27337	0,23424	0,22192	0,19796	0,15848	0,19620	0,26231	0,24683	0,29545	0,28140	0,21969	0,18551	0,21330	0,20890	0,19081	0,24386
Co_2383_S_KZH	0,20563	0,15474	0,25346	0,22088	0,29626	0,22915	0,19061	0,20004	0,20363	0,20613	0,20176	0,25248	0,29055	0,18849	0,39516	0,22727	0,14093	0,30697	0,21565

Co_2384_S_KZH	0,22784	0,15044	0,33322	0,28734	0,25353	0,23010	0,20431	0,19209	0,21739	0,25767	0,25815	0,30471	0,32245	0,21478	0,30007	0,21098	0,19581	0,19692	0,27101
Co_2303_E_KZH	0,22459	0,19026	0,23042	0,20652	0,33138	0,24084	0,18875	0,19845	0,18429	0,24699	0,21392	0,23948	0,25035	0,21174	0,43804	0,30476	0,19013	0,34678	0,23299
Co_2329_S_KZH	0,17093	0,13159	0,23379	0,19364	0,23387	0,17549	0,13463	0,13960	0,13252	0,21436	0,18807	0,20012	0,21796	0,16078	0,26712	0,22004	0,15679	0,19595	0,20212
Co_2379_N_KZH	0,16190	0,17588	0,26545	0,22408	0,29201	0,24531	0,16270	0,16114	0,16363	0,29884	0,19090	0,28788	0,24686	0,21832	0,37265	0,26616	0,19982	0,28656	0,20193
Co_2382_S_KZH	0,15596	0,13413	0,22109	0,19760	0,24610	0,20389	0,15339	0,15258	0,15607	0,18623	0,16161	0,22621	0,24564	0,17992	0,32823	0,18271	0,10626	0,24914	0,16663
Co_2385_S_KZH	0,21705	0,16019	0,31625	0,27892	0,27500	0,22730	0,21025	0,19198	0,21203	0,25802	0,24895	0,28427	0,31169	0,21972	0,30339	0,22901	0,18740	0,24023	0,24880
Co_2388_S_KZH	0,14253	0,11177	0,22341	0,17473	0,22700	0,17946	0,12506	0,12394	0,13033	0,20809	0,16316	0,21404	0,22145	0,13324	0,29170	0,20979	0,13691	0,22591	0,14677
Co_2389_N_KZH	0,15017	0,12186	0,21207	0,17423	0,23637	0,19098	0,11840	0,12356	0,12607	0,22652	0,15700	0,23109	0,19692	0,16282	0,32505	0,21621	0,14055	0,24374	0,14120
Co_2392_N_KZH	0,14741	0,11376	0,23872	0,20003	0,20599	0,18229	0,14341	0,13882	0,14430	0,19273	0,17591	0,24430	0,23606	0,17425	0,27699	0,16270	0,11876	0,19157	0,16209
Co_2394_N_KZH	0,16571	0,12481	0,26291	0,21002	0,19457	0,18561	0,16113	0,14636	0,16031	0,21858	0,19385	0,25570	0,25705	0,19355	0,28028	0,17373	0,14228	0,19351	0,16951
Co_1981_Altai	0,18060	0,14799	0,22565	0,15980	0,20038	0,20712	0,14088	0,15430	0,15412	0,25893	0,12554	0,26198	0,22660	0,19896	0,34453	0,20658	0,15638	0,26067	0,15673
Co_1982_Altai	0,22417	0,20256	0,24082	0,17518	0,29897	0,24807	0,15013	0,18664	0,16142	0,33829	0,14955	0,28748	0,22449	0,22846	0,41479	0,29770	0,22234	0,32806	0,19656
Co_1983_Altai	0,22530	0,19715	0,25530	0,18192	0,28994	0,23881	0,15062	0,17187	0,15473	0,36600	0,16565	0,28708	0,22755	0,23127	0,41142	0,31845	0,24533	0,32375	0,21267
Co_2296_E_KZH	0,22862	0,20331	0,30863	0,26173	0,27547	0,21502	0,20772	0,17348	0,19112	0,30591	0,26408	0,28614	0,26434	0,24067	0,31441	0,29947	0,25215	0,25267	0,26817
Co_2300_E_KZH	0,22160	0,18758	0,32300	0,28103	0,24721	0,22276	0,22530	0,18196	0,21080	0,26889	0,26247	0,30887	0,29754	0,24179	0,29043	0,24685	0,22214	0,21492	0,26442
Co_2373_N_KZH	0,19744	0,17910	0,27583	0,21407	0,29089	0,22831	0,11782	0,14419	0,12825	0,35417	0,20899	0,27968	0,20973	0,21269	0,34808	0,29707	0,23584	0,27319	0,19594

	Co_2390_N_KZH	**Co_2347_N_KZH**	**Co_26073_Mongolia**	**Co_2345_S_KZH**	**Co_2383_S_KZH**	**Co_2384_S_KZH**	**Co_2303_E_KZH**	**Co_2329_S_KZH**	**Co_2379_N_KZH**	**Co_2382_S_KZH**	**Co_2385_S_KZH**	**Co_2388_S_KZH**	**Co_2389_N_KZH**	**Co_2392_N_KZH**	**Co_2394_N_KZH**	**Co_1981_Altai**	**Co_1982_Altai**	**Co_1983_Altai**	**Co_2296_E_KZH**	**Co_2300_E_KZH**	**Co_2373_N_KZH**
Co_2390_N_KZH	0,00000																				
Co_2347_N_KZH	0,25334	0,00000																			
Co_26073_Mongolia	0,31917	0,40352	0,00000																		
Co_2345_S_KZH	0,14745	0,23816	0,26594	0,00000																	
Co_2383_S_KZH	0,16739	0,34171	0,40045	0,22942	0,00000																
Co_2384_S_KZH	0,16478	0,29405	0,33362	0,18825	0,18894	0,00000															
Co_2303_E_KZH	0,19128	0,40915	0,45483	0,25123	0,22684	0,28175	0,00000														
Co_2329_S_KZH	0,12236	0,29548	0,30588	0,13708	0,17636	0,16224	0,17495	0,00000													
Co_2379_N_KZH	0,15373	0,33179	0,40876	0,22178	0,23124	0,24366	0,25188	0,19311	0,00000												
Co_2382_S_KZH	0,12059	0,26694	0,34383	0,17196	0,13118	0,16872	0,19754	0,14783	0,16185	0,00000											

Co_2385_ S_KZH	0,17352	0,29995	0,33825	0,18287	0,17991	0,15701	0,26196	0,16905	0,22357	0,14743	0,00000										
Co_2388_ S_KZH	0,10002	0,26850	0,31944	0,14279	0,15066	0,16245	0,19643	0,13601	0,15695	0,11149	0,14336	0,00000									
Co_2389_ N_KZH	0,08515	0,27178	0,34865	0,16783	0,18184	0,19019	0,19878	0,14783	0,17146	0,13589	0,19617	0,12105	0,00000								
Co_2392_ N_KZH	0,09128	0,22580	0,30059	0,15241	0,14879	0,13736	0,21354	0,13800	0,17203	0,11252	0,14763	0,11114	0,11966	0,00000							
Co_2394_ N_KZH	0,10624	0,22975	0,29959	0,14813	0,17377	0,15331	0,23521	0,14850	0,18748	0,13515	0,16557	0,12487	0,12807	0,08852	0,00000						
Co_1981_ Altai	0,11003	0,28128	0,36086	0,20589	0,20988	0,21409	0,24338	0,18001	0,18896	0,16451	0,22956	0,14600	0,13719	0,12810	0,13255	0,00000					
Co_1982_ Altai	0,15516	0,38512	0,44724	0,26455	0,27953	0,29784	0,26828	0,21655	0,21433	0,22495	0,28912	0,19045	0,17730	0,21206	0,21661	0,14881	0,00000				
Co_1983_ Altai	0,16255	0,39942	0,44929	0,26344	0,29747	0,30782	0,28351	0,21327	0,22702	0,24503	0,30455	0,20180	0,18481	0,22029	0,22170	0,14143	0,15081	0,00000			
Co_2296_ E_KZH	0,17746	0,35748	0,35834	0,17780	0,28280	0,26316	0,19280	0,15758	0,25524	0,22594	0,25265	0,19518	0,19816	0,20153	0,21099	0,23148	0,26418	0,25965	0,00000		
Co_2300_ E_KZH	0,17553	0,30310	0,32760	0,17466	0,24073	0,20826	0,18335	0,16955	0,24136	0,19575	0,21223	0,17815	0,18999	0,15764	0,16541	0,21298	0,27686	0,28878	0,14994	0,00000	
Co_2373_ N_KZH	0,12573	0,35928	0,40737	0,21488	0,28301	0,27380	0,26300	0,18380	0,20110	0,22036	0,26856	0,17786	0,16475	0,20085	0,20437	0,18249	0,18129	0,14726	0,21084	0,24929	0,00000

Supplementary File 11-4: F_{ST} analysis of five genetic clusters, each consisting of five different populations. The values in bold represent the highest F_{ST} and the value in cursive represent the lowest F_{ST} value.

Distance	**method:**	**No.**	**of**	**different**	**alleles**	**(FST)**
		Altai	**S_KZH**	**E_KZH**	**Mongolia**	**N_KZH**
	Altai	0.00000				
	S_KZH	0.06173	0.00000			
	E_KZH	**0.11494**	0.07515	0.00000		
	Mongolia	0.09733	0.06720	**0.11331**	0.00000	
	N_KZH	0.04805	*0.03912*	0.10146	0.09187	0.00000

Supplementary File 11-5: AMOVA results of five genetic clusters, each consisting of five different populations (left) and significance test (right).

Source	**of**	**Sum**	**of**	**Variance**	**Percentage**
variation	**d.f.**	**squares**	**components**	**of**	**variation**
Among					
groups	4	14838,84	32,69	Va	3,70
Among					
populations					
within					
groups	20	44996,39	93,74	Vb	10,60
Among					
individuals					
within					
populations	80	118475,95	723,40	Vc	81,83
Within					
individuals	105	3586,50	34,16	Vd	3,86
Total	209	181897,686	883,98193		
Fixation	**Indices**				
FIS	:	0,95491			
FSC	:	0,11012			
FCT	:	0,03698			
FIT	:	0,96136			

Significance	**tests**	**(1023**	**permutations)**							

Vd	and	FIT	:	P(rand,	value	<	obs,	value)	=	0
	P(rand,	value	=	obs,	value)	=	0			
	P-value	=	0,000+-0,000							
Vc	and	FIS	:	P(rand,	value	>	obs,	value)	=	0
	P(rand,	value	=	obs,	value)	=	0			
	P-value	=	0,000+-0,000							
Vb	and	FSC	:	P(rand,	value	>	obs,	value)	=	0
	P(rand,	value	=	obs,	value)	=	0			
	P-value	=	0,000+-0,000							
Va	and	FCT	:	P(rand,	value	>	obs,	value)	=	0,00293
	P(rand,	value	=	obs,	value)	=	0			
	P-value	=	0,003+-0,002							

Supplementary File 11-6: Observed (H_O) and expected (H_E) heterozygosity values of populations consisting of more than one accession with corresponding standard deviations (s.d.). In bold are the averaged values of each parameter.

Population	Ho	s.d.	He	s.d.
CO2380	0,08158	0,17334	0,5231	0,17876
CO2386	0,07036	0,17523	0,53858	0,16838
CO2397	0,07897	0,19213	0,53064	0,16301
CO2400	0,09167	0,17822	0,51601	0,1778
CO1980	0,10548	0,27936	0,54917	0,20071
CO1979	0,13101	0,26368	0,59478	0,12431
CO1933	0,08518	0,19642	0,53322	0,17797
CO2374	0,06458	0,16259	0,51258	0,17228
CO2381	0,09193	0,17564	0,49444	0,187
CO2348	0,03215	0,13643	0,56111	0,08186
CO2346	0,06393	0,15026	0,49492	0,16416
CO2289	0,06212	0,18534	0,61948	0,11218
CO2223	0,07008	0,1941	0,5532	0,17083
CO1985	0,05615	0,16502	0,53508	0,17053
CO26144	0,07074	0,18093	0,56239	0,14855
CO2396	0,04911	0,14601	0,49696	0,17044
CO2387	0,05474	0,14845	0,5153	0,1826
CO2372	0,08419	0,257	0,68786	0,08541
CO2370	0,03232	0,14768	0,66984	0,04353
CO2358	0,0444	0,18387	0,67407	0,05771
CO2343	0,05932	0,12661	0,46531	0,14895
CO2349	0,01806	0,10443	0,52615	0,14669
CO2391	0,05106	0,14426	0,5268	0,16553
CO2391	0,07745	0,15463	0,49457	0,16666
CO2393	0,00921	0,06761	0,50988	0,10125
CO2395	0,15876	0,29825	0,68289	0,10112
CO2390	0,05717	0,16166	0,51153	0,16686
CO2347	0,01437	0,08459	0,542	0,13878
CO26073	0,03134	0,14632	0,52322	0,13272
CO26082	0,04596	0,18098	0,59814	0,10393
CO2345	0,06134	0,17272	0,5117	0,17173
CO2383	0,03899	0,1342	0,55164	0,16639
CO2384	0,03815	0,14976	0,56918	0,147
CO2292	0,06147	0,19054	0,61728	0,11174
CO2303	0,04694	0,15041	0,5354	0,17172
CO2329	0,0659	0,16069	0,50794	0,17081
CO2379	0,07136	0,16638	0,51497	0,18562
CO2382	0,06262	0,15294	0,53507	0,1711
CO2385	0,05642	0,16034	0,52625	0,18443
CO2388	0,08367	0,16681	0,52492	0,17459
CO2389	0,05796	0,15467	0,54134	0,16883
CO2392	0,04703	0,17241	0,53637	0,17164
CO2394	0,05796	0,17884	0,54601	0,16913
CO1981	0,05437	0,16448	0,53952	0,16903
CO1982	0,05644	0,15711	0,52051	0,1749
CO1983	0,05389	0,1536	0,50083	0,16417
CO1984	0,07355	0,20219	0,62382	0,11777
CO2296	0,04585	0,15019	0,50332	0,15816
CO2300	0,4994	0,17279	0,53777	0,17652
CO2373	0,07059	0,15746	0,48853	0,16143
Average	**0,071**	**0,169**	**0,546**	**0,152**