

Ice Complex formation on Bol'shoi Lyakhovsky Island (New Siberian Archipelago, East Siberian Arctic) since about 200 ka

Supplementary Table 3 Results of pollen analysis of profiles L7-01, L7-03 and L7-05 given in counts and concentrations.

Profile L7-01 Pollen counts	Yukagir sediment		Yukagir peat			Zimov'e sediment		Zyryan sediment	
	Sample number	-01 -02	-03 -04 -05	-06 -07	-08 -09	Height, m a.s.l.	1 1.4	1.8 2.2 2.6	2.8 3
Taxa									
Pinus s/g Haploxyton		2	4	1	4	1	1	9	5
Pinus s/g Diploxyton		3		2	3	2	13	2	
Pinus sp.		2							1
Abies								3	
Picea		4			1	8	7	38	34
Pinaceae spp.		4	3	1	1		1	6	2
Larix			1					1	4
Betula spp	4	6	16	4	23	16	6	16	14
Alnus subg. Alnobetula		1	4	1	1	2	1	3	6
Salix		9	14	9	27	3		3	5
Alnus		1				1			1
Ericales					1			1	4
Artemisia		3	9	4	7	2	3	2	6
Amaranthaceae			1				1		
Cyperaceae		49	36	31	71	32	3	9	13
Poaceae		234	172	35	110	62	4	21	16
Caryophyllaceae		4	1	2		2		3	1
Asteraceae subf. Asteroideae		2	1		1	7	2	4	2
Asteraceae subf. Cichorioideae		1		1		2	2	1	5
Brassicaceae		2	2	2	3	1	6		1
Saxifraga				2	17	1			
Fabaceae				1	1				
Ranunculaceae		3	2	1	20	2	2	1	
Polemonium									1
Rosaceae		1	1	1	2			1	
Valeriana			2						
Apiaceae				1					
Lamiaceae									1
Elaeagnus								1	
Rumex			1						
Herbae indet.			1	4		1	1		4
Polypodiophyta		3	3	5	1	1	1	2	4
Selaginella rupestris			1		1				4
Huperzia sp.		1						1	1
Lycopodium		3	1		1			4	2
Zygnema					1				
Sphagnum		1	4		2	1		1	2
Botryococcus		5	2		15	6	7	10	20
Pediastrum									1
Tardigrada									2
Glomus									2
Sordaria		4		2		2			1
Podospora			2						
Spores and pollen redep.		3							7
Sum of arboreal pollen	4	32	42	18	61	33	29	82	76
Sum of non-arboreal pollen	0	299	228	81	232	111	23	43	46
Pollen sum	4	334	271	103	293	145	53	125	133
Total sum	4	351	284	110	314	155	61	143	172

Profile L7-01 Pollen concentrations	Yukagir sediment		Yukagir peat			Zimov'e sediment		Zyryan sediment	
Sample number	-01	-02	-03	-04	-05	-06	-07	-08	-09
Height, m a.s.l.	1	1.4	1.8	2.2	2.6	2.8	3	3.1	3.7
Taxa									
Pinus s/g Haploxyylon		102	210	53	290	14	18	126	47
Pinus s/g Diploxyylon		153		107	217	27	233	28	
Pinus sp.		102							9
Abies								42	
Picea		204			72	110	126	534	321
Pinaceae spp.		204	158	53	72		18	84	19
Larix			53					14	38
Betula spp.	1484	306	840	213	1667	219	108	225	132
Alnus subg. Alnobetula		51	210	53	72	27	18	42	57
Salix		458	735	479	1957	41		42	47
Alnus		51				14			9
Ericales					72			14	38
Artemisia		153	473	213	507	27	54	28	57
Amaranthaceae			53				18		
Cyperaceae		2495	1891	1652	5146	438	54	126	123
Poaceae		11916	9034	1865	7973	849	72	295	151
Caryophyllaceae		204	53	107		27		42	9
Asteraceae subf. Asteroideae		102	53		72	96	36	56	19
Asteraceae subf. Cichorioideae		51		53		27	36	14	47
Brassicaceae		102	105	107	217	14	108		9
Saxifraga				107	1232	14			
Fabaceae				53	72				
Ranunculaceae		153	105	53	1450	27	36	14	
Polemonium									9
Rosaceae		51	53	53	145			14	
Valeriana			105						
Apiaceae				53					
Lamiaceae									9
Elaeagnus								14	
Rumex			53						
Herbae indet.			53	213		14	18		38
Polypodiophyta		153	158	266	72	14	18	28	38
Selaginella rupestris			53		72				38
Huperzia sp.		51						14	9
Lycopodium		153	53		72			56	19
Zygnema					72				
Sphagnum		51	210		145	14		14	19
Botryococcus		255	105		1087	82	126	140	189
Pediastrum									9
Tardigrada									19
Glomus									19
Sordaria		204		107		27			9
Podospora			105						
Spores and pollen redep.		153							66
Concentration of arboreal pollen, grains per gram	1484	1630	2206	959	4421	452	521	1151	718
Concentration of non-arboreal pollen, grains per gram	0	15227	11975	4315	16815	1520	413	604	434
Pollen concentration, grains per gram	1484	17009	14233	5487	21236	1986	951	1755	1256
Total concentration, grains per gram	1484	17875	14916	5860	22758	2123	1095	2008	1624

Profile L7-03 Pollen counts		Yukagir sediment						
Sample number	-01	-02	-03	-04	-05	-06	-07	
Height, m a.s.l.	0.5	1	1.4	2	2.3	3	3.4	
Taxa								
Pinus s/g Haploxyton	1		1		1			
Pinus s/g Diploxyton	1			1				
Abies					1			
Picea			2	1		1		
Pinaceae spp.		3						
Betula spp.	11	11	23	17	17	5	15	
Alnus subg. Alnobetula	7	11	15	6	8	8	8	
Salix	7	9	4	6	3	4	4	
Alnus					1	1		
Ericales		1	1	5		1	1	
Artemisia	1	1	2	2	1	1		
Amaranthaceae					1			
Cyperaceae	87	107	147	116	128	124	139	
Poaceae	146	161	287	154	133	148	137	
Caryophyllaceae	5	3	14	8	6	8	9	
Asteraceae subf. Asteroideae	3	1	9	9	3	3	3	
Asteraceae subf. Cichorioideae	2		1	1		1	1	
Brassicaceae	6		4	2	4	2		
Saxifraga	4	5	4	3	2	2	1	
Ranunculaceae	8	3	6	1	1	3	5	
Polygonaceae						1		
Rosaceae			1					
Valeriana	1		2				2	
Apiaceae					1			
Lamiaceae			1					
Plantago					1			
Scabiosa			1					
Herbae indet.	4					1		
Polypodiophyta			2	3		1		
Huperzia		1						
Lycopodium		1						
Zygnema		2				3	2	
Sphagnum					3			
Botryococcus		1		3	1	6	3	
Sum of arboreal pollen	27	35	46	36	31	20	28	
Sum of non-arboreal pollen	263	281	479	296	281	293	297	
Pollen sum	294	318	527	335	315	315	325	
Total sum	294	321	527	338	316	324	330	

Profile L7-03 Pollen concentrations		Yukagir sediment						
Sample number	-01	-02	-03	-04	-05	-06	-07	
Height, m a.s.l.	0.5	1	1.4	2	2.3	3	3.4	
Taxa								
Pinus s/g Haploxyton	96		35		49			
Pinus s/g Diploxyton	96			36				
Abies					49			
Picea			69	36		64		
Pinaceae spp.		222						
Betula spp.	1050	813	794	606	830	319	881	
Alnus subg. Alnobetula	668	813	518	214	391	511	470	
Salix	668	665	138	214	147	255	235	
Alnus					49	64		
Ericales		74	35	178		64	59	
Artemisia	96	74	69	71	49	64		
Amaranthaceae					49			
Cyperaceae	8307	7910	5075	4136	6249	7913	8168	
Poaceae	13941	11902	9908	5492	6493	9444	8050	
Caryophyllaceae	477	222	483	285	293	511	529	
Asteraceae subf. Asteroideae	287	74	311	321	147	191	176	
Asteraceae subf. Cichorioideae	191		35	36		64	59	
Brassicaceae	573		138	71	195	128		
Saxifraga	382	370	138	107	98	128	59	
Ranunculaceae	764	222	207	36	49	191	294	
Polygonaceae						64		
Rosaceae			35					
Valeriana	96		69				118	
Apiaceae					49			
Lamiaceae			35					
Plantago					49			
Scabiosa			35					
Herbae indet.	382					64		
Polypodiophyta			69	107		64		
Huperzia		74						
Lycopodium		74						
Zygnema		148				191	118	
Sphagnum					147			
Botryococcus		74		107	49	383	176	
Concentration of arboreal pollen, grains per gram	2578	2587	1588	1284	1513	1276	1645	
Concentration of non-arboreal pollen, grains per gram	25112	20772	16536	10555	13718	18697	17452	
Pollen concentration, grains per gram	28072	23508	18193	11946	15378	20101	19097	
Total concentration, grains per gram	28072	23729	18193	12053	15427	20675	19391	

Profile L7-05 Pollen counts	Yukagir sediment		Zimov'e sediment		Zyryan sediment								
Sample number	-01	-02	-03	-04	-07	-08	-09	-10	-11	-12	-13	-14	-15
Height, m a.s.l.	1	1.5	2.1	2.5	2.7	3	3.3	3.5	3.8	4	4.2	4.5	4.8
Taxa													
Pinus s/g Haploxyton				3	1	5		4	10	8	10		19
Pinus s/g Diploxyton			2	1		2			3	1	1		3
Pinus											2		2
Abies						1			2	1	1	1	1
Picea	2			4	7	11	5	5	28	18	62		62
Pinaceae	2			4	5	4		2	13	10	11	2	13
Larix	1			4		1			3		3	1	1
Betula spp.	4	3	6	6	4	6	1		8	5	16		28
Alnus subg. Alnobetula	3		9	1						1	3		5
Salix	7	1	7	3								1	4
Alnus						2				1		2	1
Ericales				3		1			3				5
Artemisia	6	1	1	2	1				3	1			3
Amaranthaceae								1			2		
Cyperaceae	61	135	101	115	1	1	1	1	7	3	23	4	48
Poaceae	188	146	182	121	2	2	1		3	6	23	2	25
Caryophyllaceae	25	8	1	10						4	6		4
Asteraceae subf. Asteroideae	5	4	1	3		1		1	2		2		3
Asteraceae subf. Cichorioideae	5	1				1	1			1	2		1
Brassicaceae	1					3					4		
Saxifraga			1										
Ranunculaceae	3	4	2	1		2				2			1
Polygonaceae			2										
Rosaceae			1								1		1
Valeriana									2				
Lamiaceae													2
Potamogeton	1												
Herbae indet.	6	2	2	6	2	1		3	1		1		
Polypodiophyta	2	1		3	1		2		3	4	3		10
Selaginella rupestris				1		2		1	1	1	1		
Huperzia sp.	1												1
Lycopodium				1		2		1	15	1	1		1
Zygnema	2												1
Sphagnum					1				3	2	1		5
Botryococcus	3	2	1	3	3	4	2	1	4	9	7	2	7
Pediastrum										1			1
Tardigrada								1					
Glomus						2				3	1	1	1
Spores and pollen redep.	2		1				1			2		1	7
Sum of arboreal pollen	19	4	24	29	17	33	6	11	70	45	109	7	144
Sum of non-arboreal pollen	295	299	292	252	4	10	3	3	17	17	63	6	88
Pollen sum	325	306	319	292	25	48	12	19	110	72	179	14	256
Total sum	330	308	320	295	28	54	14	21	114	85	187	17	266

Profile L7-05 Pollen concentrations	Yukagir sediment		Zimov'e sediment		Zyryan sediment								
Sample number	-01	-02	-03	-04	-07	-08	-09	-10	-11	-12	-13	-14	-15
Height, m a.s.l.	1	1.5	2.1	2.5	2.7	3	3.3	3.5	3.8	4	4.2	4.5	4.8
Taxa													
Pinus s/g Haploxyton				36	35	219		143	192	241	210		187
Pinus s/g Diploxyton			210	12					58	30	21		30
Pinus											42		20
Abies						44			38	30	21	263	10
Picea	89			49	242	481	111	178	537	543	1303		609
Pinaceae	89			49	173	175		71	249	302	231	527	128
Larix	44			49		44			58		63	263	10
Betula spp.	177	318	631	73	138	262	22		153	151	336		275
Alnus subg. Alnobetula	133		946	12						30	63		49
Salix	310	106	736	36									263
Alnus						87				30		527	10
Ericales				36		44			58				49
Artemisia	266	106	105	24	35				58	30			30
Amaranthaceae								36			42		
Cyperaceae	2701	14292	10620	1395	35	44	22	36	134	91	483	1053	471
Poaceae	8323	15456	19137	1468	69	87	22		58	181	483	527	245
Caryophyllaceae	1107	847	105	121						121	126		39
Asteraceae subf. Asteroideae	221	424	105	36		44		36	38		42		30
Asteraceae subf. Cichorioideae	221	106				44	22			30	42		10
Brassicaceae	44					131					84		
Saxifraga			105										
Ranunculaceae	133	424	210	12		87				60			10
Polygonaceae			210										
Rosaceae			105								21		10
Valeriana									38				
Lamiaceae													20
Potamogeton	44												
Herbae indet.	266	212	210	73	69	44		107	19		21		
Polypodiophyta	89	106		36	35		45		58	121	63		98
Selaginella rupestris				12		87		36	19	30	21		
Huperzia sp.	44												10
Lycopodium				12		87		36	288	30	21		10
Zygnema	89												10
Sphagnum					35				58	60	21		49
Botryococcus	133	212	105	36	104	175	45	36	77	271	147	527	69
Pediastrum										30			10
Tardigrada								36					
Glomus						87				91	21	263	10
Spores and pollen redep.	89		105				22			60		263	69
Concentration of arboreal pollen, grains per gram	841	424	2524	352	587	1443	134	392	1342	1357	2290	1843	1414
Concentration of non-arboreal pollen, grains per gram	13060	31653	30703	3057	138	437	67	107	326	513	1324	1579	864
Pollen concentration, grains per gram	14388	32394	33542	3542	863	2098	267	677	2109	2171	3761	3685	2513
Total concentration, grains per gram	14609	32606	33648	3579	966	2360	312	749	2186	2563	3929	4475	2612