

Piacenzian Land Surface Temperature and Precipitation Estimates

map ID	location	latitude	longitude	age (Ma)	method	Temperature (°C)					Precipitation		authors*
						MAT	MAST	MAWT	MWMT	MCMT	MAP		
134	Lena River	72.20	125.97	5.5 - 2.45	QualEst	< 3	17 to 14	-13 to -17				Fradkina, 1991	
2	Ocean Point	70.00	-153.00	2.7 - 2.5	QualEst	1.5			14.5			Nelson and Carter, 1985	
5	Circle, Alaska	65.50	-144.08	5 - 3	QualEst	3			12	< -2	> 600	Ager, et al., 1994	
6	Lost Chicken Mine	64.06	-141.95	2.91 - 2.89	QualEst	2.5						Ager, 1994; Thompson, 1994	
135	Magadan District	59.98	150.65	5.5 - 2.45	QualEst	2	17 to 14	-13 to -17				Fradkina, 1991	
60	Berezniki	59.37	56.93	3.5 - 2	QualEst		20 to 19	0 to -4				Grichuk, 1991	
59	Rykins, Russian Plain	58.18	39.18	3.5 - 2	QualEst		20	0 to -1				Grichuk, 1991	
14	ODP 646, Labrador Sea	58.22	-48.20	3.23 - 3.17	QualEst	>1					>350	Willard, 1994	
58	Neftekamsk	56.05	54.42	3.5 - 2	QualEst		20 to 18	0 to -4				Grichuk, 1991	
131	West Siberia	56.03	70.32	5.3 - 2.6	QualEst	16			24 - 20	7 to -8	325	Volkova, 1991	
133	Lake Baikal	55.69	108.37	3.6 - 3.15	Poll-Index				24 to 13	5 to -15	700 - 1700	Demske, et al., 2002; Alexeeva and Erbajeva, 2005	
61	Kolomna	55.12	38.95	3.5 - 2	QualEst		20	0 to -1				Grichuk, 1991	
65	Osinki	52.83	49.62	3.5 - 2	QualEst		20 to 18	0 to -4				Grichuk, 1991	
73	Willershausen	51.77	10.10	3.2 - 3.4	QualEst					> 0		Mohr, 1986; Ferguson and Knobloch, 1998	
69	Garzweiler, Lower Rhine	51.03	6.53	5 - 2.3	CA	14.5			> 22	18 to -3	1150	Utescher, et al., 2000	
71	Frechen, Fortuna Garsdorf	50.95	6.57	6 - 3	QualEst	11.1					960	Mohr, 1984	
88	Raygorod	48.38	44.87	3.5 - 2	QualEst		21 to 20	0 to -8				Grichuk, 1991	
83	NW Black Sea Coast	46.36	29.97	3.4 - 2.5	QualEst				22			Svetlitskaya, 1994	
16	Oak Grove Forest	45.80	-121.60	3.05 - 2.95	CLAMP	13					680	Wolfe, 1990; Thompson, 1991	
85	Inkerman	44.60	33.68	3.5 - 2	QualEst		25 to 22	4 to 0				Grichuk, 1991	
98	Stirone	44.60	10.15	2.8 - 2.2	CAM	15.5					1000	Bertini, 1994; Fauquette and Bertini, 2003	
79	Alpes-Maritimes	43.82	7.19	3.5 - 3.2	CAM	18 - 15					1400-1200	Fauquette, et al., 1999	
97	Garraf, Catalonia	41.17	2.02	5.3 - 3.2	QualEst	19						Suc et al, 1995	
96	Tarragona	40.83	1.13	3.3 - 3	CAM	18 - 25					670	Fauquette, et al., 1999	
92	Kura Depression	40.53	49.69	5.5 - 2	QualEst	21					600	Mamedov, 1991	
93	Rio Maior	39.35	-8.93	3.5-3.1	CAM	15 - 19					900 - 1400	Fauquette, et al., 1999	
24	Sonoma	38.30	-122.45	3.45 - 3.35	QualEst	18					1000	Axelrod, 1944; Thompson, 1991	
156	Shanxi Plateau	37.00	112.00	4.4 - 2.5	QualEst	3 - 7					>500	Li, et al., 2004	
94	Andalucia G1	36.38	-4.75	3.5 - 3	CAM	19 - 23					400 - 500	Suc, et al., 1995; Fauquette, et al., 1999	
33	Yorktown, Virginia	36.59	76.38	4 - 2.9	QualEst	17 - 17.5					1500	Willard, 1994	
108	Habibas	35.73	-1.12	5.32 - 3.2	CAM	19 - 25					420	Suc, 1989; Fauquette, et al., 1999	
107	Nador	35.18	-2.93	3.5 - 3	CAM	20 - 24					400 - 570	Fauquette, et al., 1999; Fauquette, et al., 1999	
162	Central Kyushu	33.10	131.50	4 - 2.8	QuantEst	9-18						Iwauchi, 1994	
34	Pinecrest, Florida	27.36	-82.44	3.5 - 2.5	QualEst	24					1420	Willard, 1994; Thompson, 1994	
139	Longlin, Yunnan	26.03	81.77	3.3 - 2.3	CA	18.6-22.1	10 - 15	23 - 27.5			815 - 1250	Kou, et al., 2006	
203	Los Banos/Sanctorum	20.33	-98.78	5.3 - 1.8	CLAMP	12 - 22			23 - 27	7 - 9		Velasco-de Leon, Spicer and Steart, 2010	
39	Haiti	19.40	-73.70	11 - 3.4	QualEst	24.5					1300	Graham, 1990	
38	Veracruz	18.14	-94.51	4-5	QualEst	23						Graham, 1994; 1997	
117	Hadar	11.29	40.63	3.4 - 2.9	BA	16 - 25					800 - 1200	Bonnefille, et al., 2004	
39	Rio Banano, Zent	10.03	-83.28	3.6 - 2.6	QualEst	27					3500	Graham and Dilcher, 1998	
42	Funza (2500m alt)	4.72	-74.22	3.2 - 2.7	QualEst	12-17						Hooghiemstra and Ran, 1994	
122	Kanapoi, Lake Turkana	2.32	36.05	4.2 - 3.4	Paleosol						350 - 600	Wynn, 2000	
182	ODP 823, Leg 133 (b)	-16.69	145.21	7 - 2	QualEst	20					1300 - 1900	Martin & McMinn, 1993;	
183	West Butcher Creek	-17.35	145.70	5 - 1	QualEst	17-18					2500	Kershaw and Sluiter, 1982	
189	Lake George	-35.15	149.42	3 - 2.5	QualEst	12 - 16					>1255 - 2000	Macphail, 1997	
192	Linda Valley, Tasmania	-42.83	145.67	4 - 2.5	QualEst	12 - 16					>2000 - 3000	Macphail, et al., 1995	
200	Oliver Bluffs, Sirius Group	-85.12	166.58	3.1 - 2.5	QualEst	-12						Francis and Hill, 1996	

* for full literature reference see Salzmann et al. 2008, Global Ecology and Biogeography.

Abbreviations

QualEst	Qualitative estimates using modern analogues	MAT	Mean annual temperatures
CLAMP	Climate Leaf Analysis Multivariate Programme	MAST	Mean annual summer temperatures
CAM	Climate Amplitude Method	MAWT	Mean annual winter temperatures
CA	Coexistence Approach	MWMT	Mean warmest month temperatures
BA	Best Analogue Method	MCMT	Mean coldest months temperatures
Palaeosol	Palaeosol proxy	MAP	Mean annual precipitation
QuantEst	Quantitative estimates using pollen indices		