

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Pollen Counts for Core CL-80-1
Clear Lake, Lake County, California

by
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Open-File Report 83-384

This report is preliminary and has not been reviewed for
conformity with U.S. Geological Survey editorial standards.

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Clear Lake is located about 120 km north of San Francisco and lies in a fault-bounded, seismically active intermontane valley north of The Geysers geothermal field (fig. 1). Core CL-80-1 is one of two cores taken in the lake in July and August 1980 (fig. 1) as part of a multi-disciplinary study of the stratigraphic, tectonic, and paleoclimatic history of the Clear Lake area (Sims and Rymer, 1981). Core CL-80-1 is 177.0 m long and has been described in detail (Sims and others, 1981). Prior to coring in 1980, eight cores ranging in length from 13.9 to 115.2 m were taken from Clear Lake, from which geological and climatic history of the past 130,000 years was determined (Sims, 1976; Sims and others, 1981; Sims and White, 1981; Adam and others, 1981; Blunt and others, 1981; Casteel and others, 1977).

Core CL-80-1 consists of dark olive-gray clayey to silty sapropelic mud with interbedded dark olive-gray clayey silt, sand, and minor gravel. The sediments are un laminated in the upper 19 m and variably laminated through the rest of the core. Coarse sand and gravel were encountered locally during coring operations which resulted in poor recovery from 152.8 to 159.3 m and below 168.3 m. Thin ash beds are a common adjunct to the sediments (Sims and others, 1981).

Samples for pollen analysis were taken every 25 cm, but for the preliminary study samples about 1 m apart were used. In some critical parts of the core a closer sample interval was later chosen (fig. 2). Sample numbers with an "M" prefix refer to samples taken for paleomagnetic investigations and later used for pollen analysis. The pollen bearing sediments were processed using standard chemical and mechanical means of separation (Faegri and Iversen, 1975; Kummel and Raup, 1965). Pollen was recovered from all samples, although in many samples preservation is poor and corroded grains are numerous. Pollen concentration varies from about 10,000 to 150,000 grains cm^{-3} raw sediment.

Preliminary pollen counts of 300 pollen grains from 172 samples are reported in Table 1 which shows the raw data of all the identifiable pollen types. The pollen sum varies between 100 and 200 pollen grains. The percentage frequency of selected pollen types is illustrated in fig. 2. The relative frequency of Isoetes spores in fig. 2 is based on the frequency of Isoetes in the total pollen and spore population. Concentration of pollen grains per cubic centimeter of wet sediment is also shown in fig. 2. The raw data for 12 selected pollen types is listed in Table 2. The pollen sum for the data in Table 2 is 200 pollen grains counted in addition to the pollen grains listed in Table 1. The pollen counts are summarized in fig. 2. Most of the pollen types listed in the table are self-explanatory. Pine pollen is not separated into haploxylon or diploxylon type for this initial study. Papillate pollen grains similar to those of modern and fossil Sequoia pollen are placed in the Taxodiaceae, Sequoia-type. Other inaperturate grains of the Cupressaceae and Taxaceae families were grouped together. Grains referable to Lithocarpus cannot be distinguished from Chrysolepis (W. Watts, oral communication, 1980); therefore, they are grouped as one unit. In the same manner, grains of Chenopodiaceae and Amaranthaceae are grouped together as one pollen type. Spores of ferns, Tycopods, Isoetes, and Sphagnum are not included in the pollen sum (Table 1). Redeposited pollen and spores,

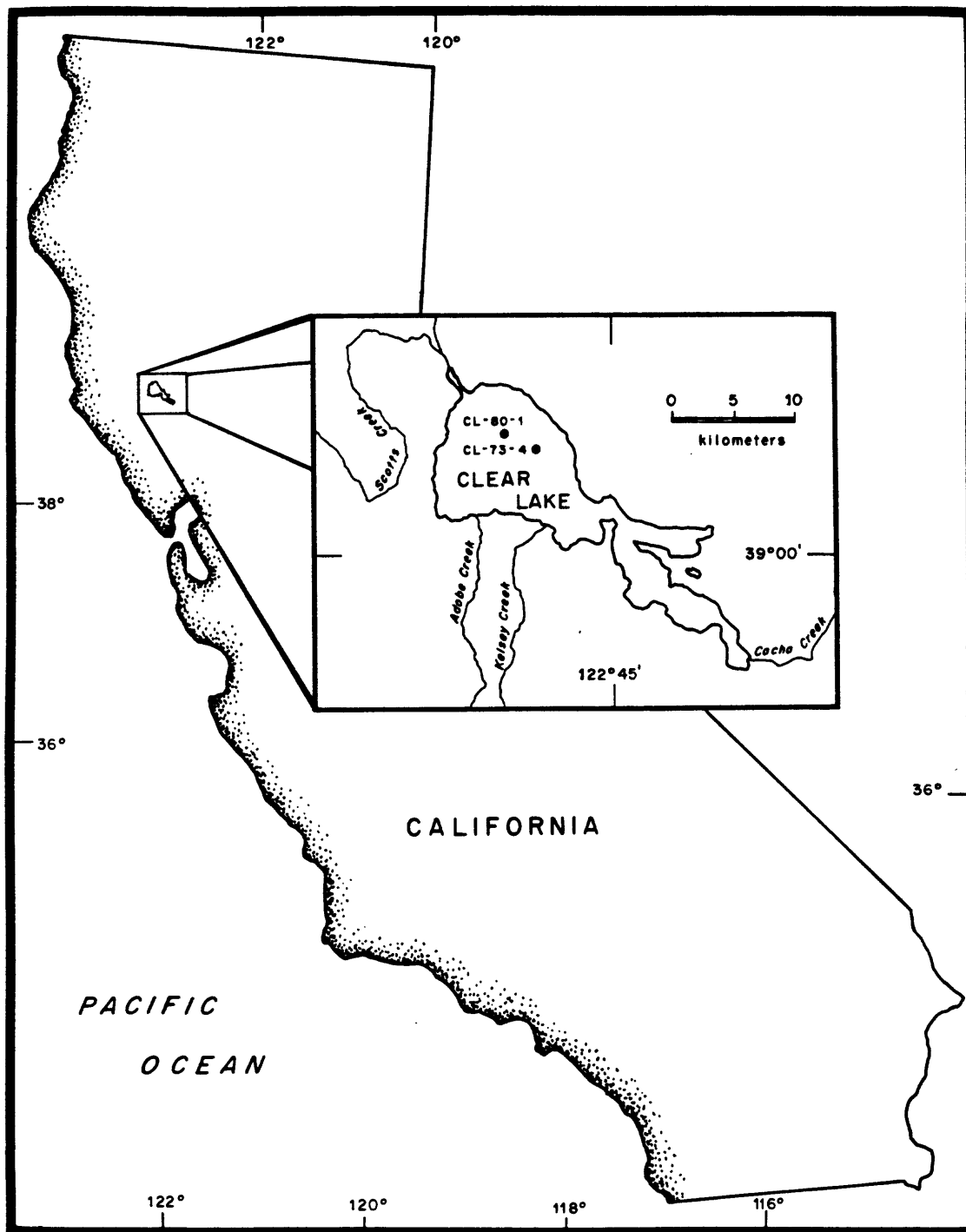


Figure 1. Location map of Clear Lake and cores CL-80-1 and CL-73-4 discussed in the text.

CLEAR LAKE CORE CL-80-1

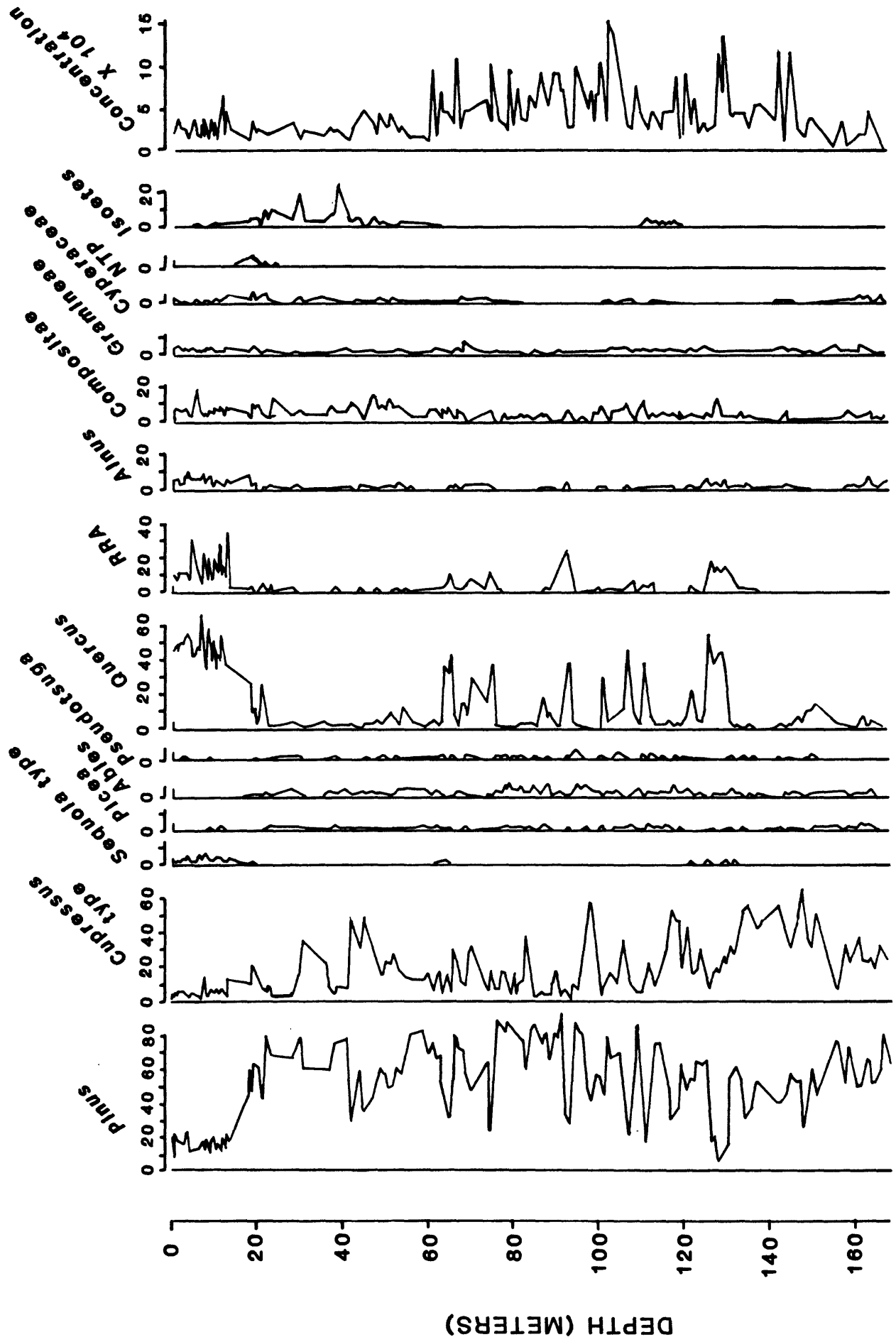


Figure 2. Pollen diagram for core CL-80-1, Clear Lake, California.

identified by morphology or staining as recycled from older deposits, are also not included in the basic pollen sum. Dinoflagellate cysts, charcoal fragments, fungal spores, and algal colonies (Pediastrum) vary in abundance throughout the core. Their occurrence in each sample is not tallied for this report.

ACKNOWLEDGMENTS

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Table 1. Raw pollen counts from Clear Lake core CL-80-1.

SAMPLE NUMBER	0001	0003	M 1	0006	M 5	0007	M 7	M 8	0010	M 10
SAMPLE DEPTH (cm)	25	75	136	150	315	325	336	388	400	415
<u>Pinus</u>	41	8	21	17	15	16	56	15	13	11
<u>Picea</u>										
<u>Pseudotsuga menziesii</u>		1	1	2	3	1	1	1		
Cupressaceae-Taxaceae	1	4	3	6	5	5	4	3	1	4
Taxodiaceae, <u>Sequoia</u> -type	3	2	1	2			3	1	1	1
<u>Quercus</u>	89	52	45	52	50	50	138	56	50	41
<u>Tsuga mertensiana</u>										
<u>Tsuga heterophylla</u>							1			
<u>Lithocarpus-Chryssolepis</u>	5	4	1	6		2			11	5
<u>Betula</u>										
<u>Myrica</u>						1	1		1	
<u>Corylus</u>						1				
<u>Alnus</u>	9	6	6	2	3	9	13	11	5	5
<u>Juglans</u>										
<u>Fraxinus</u>				1		1			2	1
<u>Salix</u>		2				1		1		1
<u>Carya</u>										
<u>Acer</u>										
<u>Fagus</u>										
Gramineae	6	4	4	5	1	1	6	3	1	3
Cyperaceae	6	2	2	1	1	1	1		1	1
Compositae	13	8	9	7	5	6	10	3	4	2
Caryophyllaceae		1								
<u>Abies</u>	1							1		
Chenopodiaceae-Amaranthaceae	1		1	1	1	1				
Ericaceae			4							
Umbelliferae			1	2						
<u>Typha cf latifolia</u>			1		2		1			
<u>Typha-Sparganium</u>		1				1		1		
Rosaceae	15	7	11	6	12	4	9	10	11	26
Rhamnaceae										
Anacardiaceae										
Cruciferae				1						
<u>Polygonum, paronychia-type</u>										
<u>Ephedra</u>										
Labiatae	1	1		1		3				
Onagraceae										
Nymphaeaceae				1						
Ranunculaceae										
Polypodiaceae	8	2	1	1		1	1	1	1	1
Lycopodiaceae										
<u>Isoetes</u>			1	1			1	1		1
<u>Sphagnum</u>										
Redeposited pollen and spores										

Table 1. Raw pollen counts from Clear Lake core CL-80-1.

SAMPLE NUMBER	M 11	0013	M 14	M 15	0017	M 17	M 18	M 19	0021	0022
SAMPLE DEPTH (cm)	617	625	684	710	725	740	765	792	825	850
<u>Pinus</u>	12	15	48	17	15	11	12	19	10	12
<u>Picea</u>										
<u>Pseudotsuga menziesii</u>	1		1	2	1	1			1	1
Cupressaceae-Taxaceae	3	2	6	4	4	6	14	7	6	2
Taxodiaceae, <u>Sequoia</u> -type	3	6	1	3	1	5	2	3	6	1
<u>Quercus</u>	48	44	179	45	55	52	36	41	60	54
<u>Tsuga mertensiana</u>										
<u>Tsuga heterophylla</u>							1			
<u>Lithocarpus-Chrysolepis</u>		1	6	2	7	2			3	2
<u>Betula</u>										
<u>Myrica</u>		2								1
<u>Corylus</u>										
<u>Alnus</u>	6	5	10	6	7	3	4	6		5
<u>Juglans</u>										
<u>Fraxinus</u>								1		1
<u>Salix</u>			1		2					-
<u>Carya</u>									1	
<u>Acer</u>										
<u>Fagus</u>										
Gramineae		1	4		4	3		2	1	2
Cyperaceae	2		1	1	1	2	1	2	1	2
Compositae	20	5	9	6	3	3	6	4	4	4
Caryophyllaceae										
<u>Abies</u>									1	
Chenopodiaceae-Amaranthaceae	1	1	1	1		2	1	1	1	
Ericaceae		1	1			1				
Umbelliferae			1					1		
<u>Typha cf latifolia</u>			2			1				
<u>Typha-Sparganium</u>										2
Rosaceae	14	12	9	9	1	15	19	13	5	7
Rhamnaceae										
Anacardiaceae										
Cruciferae									1	
<u>Polygonum, paronychia-type</u>										
<u>Ephedra</u>										
Labiatae									1	1
Onagraceae						1				
Nymphaeaceae	1									
Ranunculaceae		2								
Polypodiaceae	1	1	1	3	1	5	1	1	2	1
Lycopodiaceae				1						
<u>Isoetes</u>		1	1		1	1	1			
<u>Sphagnum</u>										
Redeposited pollen and spores										

Table 1. Raw pollen counts from Clear Lake core CL-80-1.

SAMPLE NUMBER	M 22	M 23	0024	M 25	M 26	M 28	M 32	M 33	0033	0035
SAMPLE DEPTH (cm)	863	917	925	948	973	1025	1108	1131	1150	1225
<u>Pinus</u>	14	16	20	21	12	16	11	19	16	18
<u>Picea</u>										
<u>Pseudotsuga menziesii</u>		1	2	2		2				1
Cupressaceae-Taxaceae	6	3	7	5	4	4	6	4	4	8
<u>Taxodiaceae, Sequoia-type</u>	2	1	3		1	1	4	2	3	2
<u>Quercus</u>	38	53	36	53	42	45	39	51	55	52
<u>Tsuga mertensiana</u>										
<u>Tsuga heterophylla</u>					1					
<u>Lithocarpus-Chrysopsis</u>	1		6	1	4	2			1	1
<u>Betula</u>										
<u>Myrica</u>	2		1							
<u>Corylus</u>										1
<u>Alnus</u>		7	5	1	4	6	4	4	3	2
<u>Juglans</u>										1
<u>Fraxinus</u>				1						
<u>Salix</u>		1			1		1	2	1	
<u>Carya</u>										
<u>Acer</u>										1
<u>Fagus</u>										
Gramineae	2	3	3	2	2	1	1		1	1
Cyperaceae	1			1	2	3		1		2
Compositae	5	7	4	6	8	7	5	7	9	3
Caryophyllaceae										
<u>Abies</u>		1	1			1				3
<u>Chenopodiaceae-Amaranthaceae</u>		1			1	1	1	1	2	1
Ericaceae		4						4		
Umbelliferae				1			1		1	2
<u>Typha cf latifolia</u>					1				1	
<u>Typha-Sparganium</u>			1	1			1		1	
Rosaceae	22	6	5	13	16	10	30	10	15	6
Rhamnaceae										
Anacardiaceae										
Cruciferae										
<u>Polygonum, paronychia-type</u>			1							
<u>Ephedra</u>										
Labiatae			2							
Onagraceae		1			1					
Nymphaeaceae										
Ranunculaceae						2				
Polypodiaceae	3	1	3	1	3	3	1	1	1	3
Lycopodiaceae										
<u>Isoetes</u>	2		1	1	3		1	1	2	
<u>Sphagnum</u>										
Redeposited pollen and spores										

Table 1. Raw pollen counts from Clear Lake core CL-80-1. (continued)

SAMPLE NUMBER	M 38	M 40	M 41	M 43	0040	M 47	M 49	0043	M 52	0047
SAMPLE DEPTH (cm)	1248	1272	1293	1316	1840	1895	1920	1941	1976	2041
<u>Pinus</u>	11	20	22	17	43	60	45	62	34	61
<u>Picea</u>										
<u>Pseudotsuga menziesii</u>					1					
Cupressaceae-Taxaceae	4	2	5	12	10	10	7	21	8	14
Taxodiaceae, <u>Sequoia</u> -type	1	2		3	1		2	1		
<u>Quercus</u>	38	45	47	45	27	7	13	2	25	4
<u>Tsuga mertensiana</u>										
<u>Tsuga heterophylla</u>										1
<u>Lithocarpus-Chrysolepis</u>	1			1					1	
<u>Betula</u>										
<u>Myrica</u>										
<u>Corylus</u>										
<u>Alnus</u>	3	3	7	3	5	2	4			
<u>Juglans</u>							1			
<u>Fraxinus</u>			1		1	7	2			
<u>Salix</u>				1					1	
<u>Carya</u>										
<u>Acer</u>										
<u>Fagus</u>										
Gramineae	3	4	1	1	2	3	6	3	3	2
Cyperaceae	1	3	3	5		7	8		2	3
Compositae	6	9	6	9	4	1	9	7	3	10
Caryophyllaceae									1	
<u>Abies</u>	2			1	1		1			
Chenopodiaceae-Amaranthaceae		1	1	1	1	1			2	
Ericaceae						1				
Umbelliferae					3		1		2	
<u>Typha cf latifolia</u>	1	2		1	2		3			
<u>Typha-Sparganium</u>			1		1	4		2		
Rosaceae	36	15	14	3	2	4	2		8	1
Rhamnaceae										
Anacardiaceae										
Cruciferae			1							
<u>Polygonum, paronychia</u> -type			1				1	1	1	
<u>Ephedra</u>		1						1		
Labiatae					1			1		
Onagraceae										
Nymphaeaceae						1				
Ranunculaceae					1				1	
Polypodiaceae	1	2	1	2	5			1	2	
Lycopodiaceae										
<u>Isoetes</u>			2		3	4	2	5	5	1
<u>Sphagnum</u>										
Redeposited pollen and spores					1					2

Table 1. Raw pollen counts from Clear Lake core CL-80-1. (continued)

SAMPLE NUMBER	0049	M 60	M 61	M 62	0053	0056	0059	0063	0072	0077
SAMPLE DEPTH (cm)	2175	2195	2217	2248	2295	2834	3054	3154	3650	3750
<u>Pinus</u>	101	65	80	77	67	75	78	60	157	60
<u>Picea</u>	1				1		1		1	
<u>Pseudotsuga menziesii</u>	2	1				2	2		1	
Cupressaceae-Taxaceae	16	13	5	7	2	7	24	35	40	10
Taxodiaceae, <u>Sequoia</u> -type										
<u>Quercus</u>	55	2	1	1	1	4	2	1	11	2
<u>Tsuga mertensiana</u>		1		1	1					
<u>Tsuga heterophylla</u>			1		1	2	1	2		1
<u>Lithocarpus-Chrysolepis</u>										
<u>Betula</u>										
<u>Myrica</u>										
<u>Corylus</u>										
<u>Alnus</u>	5	2			1	1	3	1	2	
<u>Juglans</u>										
<u>Fraxinus</u>							1			
<u>Salix</u>		1			5				1	
<u>Carya</u>										
<u>Acer</u>	1									
<u>Fagus</u>										
Gramineae	3		3	2	2	3	1	1	3	1
Cyperaceae	15		5		1	4	4		4	3
Compositae	15	5	2	6	15	4	6	3	16	10
Caryophyllaceae			3	1	1	5	2	1	5	3
<u>Abies</u>	1	1	3	1	1	5	2	1	5	3
Chenopodiaceae-Amaranthaceae	2	1	1							1
Ericaceae										
Umbelliferae	2				1					
<u>Typha cf latifolia</u>	2		1							
<u>Typha-Sparganium</u>	2				2					1
Rosaceae	17	1			3	3	1		3	
Rhamnaceae										
Anacardiaceae										
Cruciferae										
<u>Polygonum, paronychia</u> -type					2			1	1	
<u>Ephedra</u>										
Labiatae										
Onagraceae										
Nymphaeaceae					2					
Ranunculaceae										
Polypodiaceae	1	1								1
Lycopodiaceae										1
<u>Isoetes</u>	1		10	3	3	2	20	2	2	7
<u>Sphagnum</u>										
Redeposited pollen and spores										

Table 1. Raw pollen counts from Clear Lake core CL-80-1. (continued)

SAMPLE NUMBER	0084	0087	0098	0103	0115	0118	0127	0131	0134	0150
SAMPLE DEPTH (cm)	3850	3925	4110	4235	4410	4485	4725	4800	4875	5050
<u>Pinus</u>	108	75	76	54	60	34	132	54	60	55
<u>Picea</u>	3	1		1		1				
<u>Pseudotsuga menziesii</u>	1	1				3	3		2	
Cupressaceae-Taxaceae	13	8	6	101	29	49	42	24	16	24
Taxodiaceae, <u>Sequoia</u> -type										
<u>Quercus</u>	2	2	3	7	1	3	3	5		6
<u>Tsuga mertensiana</u>	1		2							
<u>Tsuga heterophylla</u>				2		1				
<u>Lithocarpus-Chrysolepis</u>	1									1
<u>Betula</u>										
<u>Myrica</u>								1		
<u>Corylus</u>										1
<u>Alnus</u>			2			2	1	1		1
<u>Juglans</u>										
<u>Fraxinus</u>										
<u>Salix</u>				1	1	1	1			
<u>Carya</u>										
<u>Acer</u>										
<u>Fagus</u>										
Gramineae	1	2	3	4	1	1	8	1	2	1
Cyperaceae	2	2	1	1	2	2	5	1	3	1
Compositae	9	5	6	24	5	1	40	8	10	8
Caryophyllaceae										
<u>Abies</u>	3	2	4	6	4	1	1	3	1	2
Chenopodiaceae-Amaranthaceae			1				1			
Ericaceae										
Umbelliferae										
<u>Typha cf latifolia</u>										
<u>Typha-Sparganium</u>					1	2	1			
Rosaceae	5	1	1			3	1	2		1
Rhamnaceae										
Anacardiaceae										
Cruciferae										
<u>Polygonum, paronychia</u> -type		1				1				
<u>Ephedra</u>										
Labiatae	1									
Onagraceae										
Nymphaeaceae										
Ranunculaceae		1		1				1		
Polypodiaceae			1						2	
Lycopodiaceae									2	1
<u>Isoetes</u>	12	34	6	4	4	10	1	1	1	
<u>Sphagnum</u>										
Redeposited pollen and spores							+			

Table 1. Raw pollen counts from Clear Lake core CL-80-1. (continued)

SAMPLE NUMBER	0153	0155	0168	0171	0175	0181	0185	0189	0199	0201
SAMPLE DEPTH (cm)	5125	5175	5325	5374	5630	5935	6035	6135	6250	6310
<u>Pinus</u>	47	50	70	60	80	81	67	75	75	69
<u>Picea</u>										
<u>Pseudotsuga menziesii</u>		3	1		1		1	1	2	3
Cupressaceae-Taxaceae	21	27	22	16	12	13	16	6	17	17
Taxodiaceae, <u>Sequoia</u> -type										
<u>Quercus</u>	11	8	2	14	4	1		5	1	4
<u>Tsuga mertensiana</u>				1		1		1	2	
<u>Tsuga heterophylla</u>					1	1	1		1	
<u>Lithocarpus-Chrysolepis</u>										
<u>Betula</u>										
<u>Myrica</u>										
<u>Corylus</u>			1							
<u>Alnus</u>	1	2	1	4	1		1			
<u>Juglans</u>									1	
<u>Fraxinus</u>		1	2	1						
<u>Salix</u>		1			1			1		
<u>Carya</u>										
<u>Acer</u>										
<u>Fagus</u>										
Gramineae	1	2	3	2	1	1	2	2	4	2
Cyperaceae	1	1	1							
Compositae	13	8	9	7	2	3	6	7	8	1
Caryophyllaceae										
<u>Abies</u>	1	5	1		5	2	3	1	4	2
Chenopodiaceae-Amaranthaceae		1			1	1	1	1		1
Ericaceae	1		1				1			
Umbelliferae	1									3
<u>Typha cf latifolia</u>							1			
<u>Typha-Sparganium</u>	1									
Rosaceae	1	2	1				1	1		1
Rhamnaceae										
Anacardiaceae										
Cruciferae										
<u>Polygonum, paronychia-type</u>	1	3	1					1		1
<u>Ephedra</u>							1			1
Labiatae										
Onagraceae										
Nymphaeaceae										
Ranunculaceae										
Polypodiaceae							1		1	
Lycopodiaceae										1
<u>Isoetes</u>		2					1			
<u>Sphagnum</u>										
Redeposited pollen and spores		1							+	++

Table 1. Raw pollen counts from Clear Lake core CL-80-1. (continued)

SAMPLE NUMBER	0203	M 158	0208	0210	0212	M 165	0215	0230	M 169	0231
SAMPLE DEPTH (cm)	6350	6543	6550	6600	6650	6680	6725	6855	6859	6995
<u>Pinus</u>	64	31	30	60	166	80	155	71	56	43
<u>Picea</u>					1	1	1			
<u>Pseudotsuga menziesii</u>	2	1	2	1	1		1	1	3	2
Cupressaceae-Taxaceae	4	16	4	33	36	16	18	8	27	24
Taxodiaceae, <u>Sequoia</u> -type			1	1						
<u>Quercus</u>	29	33	44	6	4	1	13	15	8	42
<u>Tsuga mertensiana</u>					2	2	2	1	1	
<u>Tsuga heterophylla</u>	1		2	1	1		1	2	1	2
<u>Lithocarpus-Chrysolepis</u>										1
<u>Betula</u>										
<u>Myrica</u>										
<u>Corylus</u>										
<u>Alnus</u>		1	2				1		2	1
<u>Juglans</u>										
<u>Fraxinus</u>	1		1							1
<u>Salix</u>									1	1
<u>Carya</u>					1					
<u>Acer</u>										
<u>Fagus</u>										
Gramineae	1				2		4			4
Cyperaceae	1	1		1	1		3		4	1
Compositae	3	4	9	2	7		4	5	3	1
Caryophyllaceae										
<u>Abies</u>	1			1	4	5	4	2	2	1
Chenopodiaceae-Amaranthaceae					1	1	1		1	
Ericaceae			2							
Umbelliferae					1					
<u>Typha cf latifolia</u>			1							
<u>Typha-Sparganium</u>										2
Rosaceae		10	10	1		1	2	2	1	8
Rhamnaceae										
Anacardiaceae										
Cruciferae										
<u>Polygonum, paronychia</u> -type					1					
<u>Ephedra</u>										
Labiatae										
Onagraceae										
Nymphaeaceae										
Ranunculaceae										
Polypodiaceae		1							1	
Lycopodiaceae										
<u>Isoetes</u>										
<u>Sphagnum</u>										
Redeposited pollen and spores										

Table 1. Raw pollen counts from Clear Lake core CL-80-1. (continued)

SAMPLE NUMBER	0232	M 170	0236	M 177	0242	0246	0249	0252	0251	0258
SAMPLE DEPTH (cm)	7460	7513	7560	7652	7710	7810	7885	7960	8075	8175
<u>Pinus</u>	69	25	43	89	85	162	88	75	100	90
<u>Picea</u>						1		1		1
<u>Pseudotsuga menziesii</u>			2		2	3	1	1	3	2
Cupressaceae-Taxaceae	5	20	7	6	16	23	4	16	2	9
Taxodiaceae, <u>Sequoia</u> -type	1		1							
<u>Quercus</u>	16	40	38	1	1	3		1	1	3
<u>Tsuga mertensiana</u>				1			2	1		
<u>Tsuga heterophylla</u>		1					1		1	1
<u>Lithocarpus-Chrysolepis</u>		1								
<u>Betula</u>										
<u>Myrica</u>	1	1								1
<u>Corylus</u>										
<u>Alnus</u>	2		1			1				
<u>Juglans</u>	2		1							
<u>Fraxinus</u>										
<u>Salix</u>						1				
<u>Carya</u>										
<u>Acer</u>										
<u>Fagus</u>										
Gramineae		1		2	1	1		1	1	2
Cyperaceae	3	2	3	1		2	1		1	
Compositae	6	9	2			8	1	1	2	3
Caryophyllaceae										
<u>Abies</u>	1	1	2	3	3	16	4	8	4	4
Chenopodiaceae-Amaranthaceae		1	1						1	2
Ericaceae	1									
Umbelliferae		1								
<u>Typha cf latifolia</u>										
<u>Typha-Sparganium</u>		1							2	
Rosaceae	2	13	6	1	1			1		
Rhamnaceae										
Anacardiaceae										
Cruciferae										
<u>Polygonum, paronychia</u> -type						1	1	1		
<u>Ephedra</u>										
Labiatae										
Onagraceae										
Nymphaeaceae										
Ranunculaceae										
Polypodiaceae		2	2							1
Lycopodiaceae										
<u>Isoetes</u>			1	1	1			1	1	
<u>Sphagnum</u>										
Redeposited pollen and spores										

Table 1. Raw pollen counts from Clear Lake core CL-80-1. (continued)

SAMPLE NUMBER	0262	0265	0269	0273	0276	0279	0281	0294	0298	0302
SAMPLE DEPTH (cm)	8275	8350	8450	8850	8700	8775	8825	8980	9075	9175
<u>Pinus</u>	100	164	95	167	89	95	69	100	90	110
<u>Picea</u>				3						
<u>Pseudotsuga menziesii</u>	3	2		4	1	2	3		1	1
Cupressaceae-Taxaceae	14	67	10	4	6	5	4	10	24	2
Taxodiaceae, <u>Sequoia</u> -type					1					
<u>Quercus</u>		3	4	1	21	6	10	5		
<u>Tsuga mertensiana</u>			1		1	3		2		
<u>Tsuga heterophylla</u>		2	1		1	1				1
<u>Lithocarpus-Chrysolepis</u>					1					
<u>Betula</u>										
<u>Myrica</u>									1	
<u>Corylus</u>										
<u>Alnus</u>					2		1			
<u>Juglans</u>										
<u>Fraxinus</u>							1			
<u>Salix</u>										
<u>Carva</u>										
<u>Acer</u>										
<u>Fagus</u>										
Gramineae		1	1	8	1	1			2	2
Cyperaceae		2								
Compositae	5	4	4	1	5		5	3	1	1
Caryophyllaceae										
<u>Abies</u>	6	2	3	15	1	4	9	1	2	3
Chenopodiaceae-Amaranthaceae					1	1				
Ericaceae										
Umbelliferae										
<u>Typha cf latifolia</u>										
<u>Typha-Sparganium</u>						1	1			
Rosaceae					3	2	1			
Rhamnaceae										
Anacardiaceae										
Cruciferae										
<u>Polygonum, paronychia</u> -type							1			
<u>Ephedra</u>										
Labiatae										
Onagraceae										
Nymphaeaceae										
Ranunculaceae										
Polypodiaceae		2		1		1				
Lycopodiaceae								1		
<u>Isoetes</u>										
<u>Sphagnum</u>										
Redeposited pollen and spores										

Table 1. Raw pollen counts from Clear Lake core CL-80-1. (continued)

SAMPLE NUMBER	0306	0309	0313	0319	0323	0326	0327	0344	0348	0352
SAMPLE DEPTH (cm)	9275	9325	9425	9585	9760	8775	9775	9875	9975	10075
<u>Pinus</u>	93	38	102	100	180	191	160	188	163	54
<u>Picea</u>		1			1	2				
<u>Pseudotsuga menziesii</u>	4		7	6	1	1	1		2	
Cupressaceae-Taxaceae	18	3	12	2	29	30	120	147	55	2
Taxodiaceae, <u>Sequoia</u> -type	3									
<u>Quercus</u>	84	49	3	1	1	1				25
<u>Tsuga mertensiana</u>						1	1			
<u>Tsuga heterophylla</u>					1					1
<u>Lithocarpus-Chrysolepis</u>										
<u>Betula</u>										
<u>Myrica</u>		1								
<u>Corylus</u>										
<u>Alnus</u>	2	5								1
<u>Juglans</u>		2								
<u>Fraxinus</u>	1									
<u>Salix</u>										
<u>Carya</u>										
<u>Acer</u>										
<u>Fagus</u>			1							
Gramineae		2	1	1	1	1		1		5
Cyperaceae			1			1	1			1
Compositae		2	8	1	1	5	1	1		12
Caryophyllaceae										
<u>Abies</u>	6		1	9	11	10	16	14	14	3
Chenopodiaceae-Amaranthaceae					1			1		
Ericaceae										
Umbelliferae										
<u>Typha cf latifolia</u>										
<u>Typha-Sparganium</u>										
Rosaceae		40	40	4					1	2
Rhamnaceae										
Anacardiaceae										
Cruciferae										
<u>Polygonum, paronychia</u> -type		1					1			
<u>Ephedra</u>										
Labiatae										
Onagraceae										
Nymphaeaceae										
Ranunculaceae	2									
Polypodiaceae		1	1							
Lycopodiaceae								1		
<u>Isoetes</u>		1		1			4	3	1	
<u>Sphagnum</u>										
Redeposited pollen and spores										

Table 1. Raw pollen counts from Clear Lake core CL-80-1. (continued)

SAMPLE NUMBER	0369	0373	0377	0396	0401	0404	0408	0412	0426	0430
SAMPLE DEPTH (cm)	10175	10275	10375	10480	10600	10780	10875	10995	11075	11175
<u>Pinus</u>	50	78	65	70	111	34	66	95	50	19
<u>Picea</u>				1		1	1			1
<u>Pseudotsuga menziesii</u>	2		1	10	2		3	1	4	
Cupressaceae-Taxaceae	9	14	16	8	56	23	8	5	5	17
Taxodiaceae, <u>Sequoia</u> -type				2				1	1	
<u>Quercus</u>	31	3	5	8	40	78			30	47
<u>Tsuga mertensiana</u>			1							
<u>Tsuga heterophylla</u>	1			1	1	1	4			
<u>Lithocarpus-Chrysolepis</u>	1									1
<u>Betula</u>										
<u>Myrica</u>										
<u>Corylus</u>										
<u>Alnus</u>		1			1	3			1	
<u>Juglans</u>					2	2	2			
<u>Fraxinus</u>										
<u>Salix</u>									1	1
<u>Carva</u>										
<u>Acer</u>	1		1							
<u>Fagus</u>										
Gramineae	2	1	4	4	4	4	1	2	1	5
Cyperaceae	1		2		1	1	2		1	1
Compositae	10	2	1	5	13	12	3	1	7	13
Caryophyllaceae										
<u>Abies</u>	1	4	2	4	3	1	2	7	1	1
Chenopodiaceae-Amaranthaceae					2		1			1
Ericaceae						1			1	
Umbelliferae										
<u>Typha cf latifolia</u>										
<u>Typha-Sparganium</u>	1			1		1	2		2	
Rosaceae	3		1	2	3	7	7		2	5
Rhamnaceae										
Anacardiaceae										
Cruciferae										
<u>Polygonum, paronychia</u> -type				1						
<u>Ephedra</u>										
Labiatae										
Onagraceae										1
Nymphaeaceae										2
Ranunculaceae										
Polypodiaceae	1		1							3
Lycopodiaceae										
<u>Isoetes</u>					2					
<u>Sphagnum</u>										
Redeposited pollen and spores										

Table 1. Raw pollen counts from Clear Lake core CL-80-1. (continued)

SAMPLE NUMBER	0434	0440	0444	0447	0449	0453	0457	0461	0462	0464
SAMPLE DEPTH (cm)	11275	11375	11475	11550	11650	11750	11850	11950	11975	12020
<u>Pinus</u>	130	167	74	163	138	30	112	136	160	135
<u>Picea</u>	4	3			4		1			3
<u>Pseudotsuga menziesii</u>	8	5	5	4	3		5	3	5	
<u>Cupressaceae-Taxaceae</u>	37	19	16	35	72	53	91	90	27	83
<u>Taxodiaceae, Sequoia-type</u>								1		
<u>Quercus</u>	21	1		2	1	5	2	4	5	12
<u>Tsuga mertensiana</u>			2	2	2	1			2	
<u>Tsuga heterophylla</u>	3							2	3	
<u>Lithocarpus-Chrysolepis</u>	1									1
<u>Betula</u>										
<u>Mvrica</u>										3
<u>Corylus</u>										
<u>Alnus</u>	1						1			
<u>Juglans</u>										
<u>Fraxinus</u>										
<u>Salix</u>		1								
<u>Carya</u>										
<u>Acer</u>										
<u>Fagus</u>										
Gramineae	4	4	2	3	1	3	7	3	8	4
Cyperaceae	2	2		3	1	1	1	1	3	1
Compositae	2	10	2	10	9	4	7	7	12	13
Caryophyllaceae										
<u>Abies</u>	8	10	2	12	14	4	24	6	10	4
Chenopodiaceae-Amaranthaceae	1		1			4		1		
Ericaceae										
Umbelliferae										
<u>Typha cf latifolia</u>										
<u>Typha-Sparqanium</u>										
Rosaceae	7									
Rhamnaceae										
Anacardiaceae										3
Cruciferae										
<u>Polygonum, paronychia-type</u>						1		1		
<u>Ephedra</u>										
Labiatae										
Onagraceae										
Nymphaeaceae	1									
Ranunculaceae	2									
Polypodiaceae	4	1	2				2	1	1	
Lycopodiaceae										
<u>Isoetes</u>	6	1	2	2	2	1			4	
<u>Sphagnum</u>										
Redeposited pollen and spores			+			+			++	

Table 1. Raw pollen counts from Clear Lake core CL-80-1. (continued)

SAMPLE NUMBER	0465	0469	0480	0484	0488	0496	0498	0500	0502	0504
SAMPLE DEPTH (cm)	12177	12275	12375	12475	12595	12675	12725	12775	12875	12910
<u>Pinus</u>	149	117	143	152	140	40	43	33	30	32
<u>Picea</u>					3		3		1	
<u>Pseudotsuga menziesii</u>	2	2	3	2	1	1	2	5		
Cupressaceae-Taxaceae	51	21	31	53	27	11	30	33	26	31
Taxodiaceae, <u>Sequoia</u> -type			1		1	4	1			2
<u>Quercus</u>	15	49	17	7	36	126	100	119	117	123
<u>Tsuga mertensiana</u>										
<u>Tsuga heterophylla</u>										
<u>Lithocarpus-Chrysolepis</u>						1	1	4		2
<u>Betula</u>										
<u>Myrica</u>		1	1					1		
<u>Corylus</u>						1				1
<u>Alnus</u>	2	6		1	5	14	1	8	3	10
<u>Juglans</u>	2		3		2		1	4		6
<u>Fraxinus</u>						2	2			
<u>Salix</u>					1					
<u>Carya</u>										
<u>Acer</u>			2			1		1		1
<u>Fagus</u>										
Gramineae	4	9	2	8	7	11	4	5	3	2
Cyperaceae	1	4	2	4	2	6	4	3		1
Compositae	17	7	12	10	8	11	7	8	24	6
Caryophyllaceae										
<u>Abies</u>	10	4	3	7	3		2	1	2	
Chenopodiaceae-Amaranthaceae							1		1	
Ericaceae										
Umbelliferae										1
<u>Typha cf latifolia</u>							1			
<u>Typha-Sparganium</u>		1				1				
Rosaceae	2	4	1		2	7	30	19	32	19
Rhamnaceae										
Anacardiaceae										3
Cruciferae										
<u>Polygonum, paronychia-type</u>										
<u>Ephedra</u>										
Labiatae										
Onagraceae										
Nymphaeaceae										
Ranunculaceae										
Polypodiaceae	3				2		1	1	2	1
Lycopodiaceae										
<u>Isoetes</u>					1				2	
<u>Sphagnum</u>										
Redeposited pollen and spores		+								

Table 1. Raw pollen counts from Clear Lake core CL-80-1. (continued)

SAMPLE NUMBER	0505	0509	0513	0523	0527	0531	0535	0539	0543	0560
SAMPLE DEPTH (cm)	12925	13025	13125	13225	13300	13425	13525	13625	13725	13840
<u>Pinus</u>	43	38	167	175	67	78	70	78	99	50
<u>Picea</u>	1		1			1				
<u>Pseudotsuga menziesii</u>		1	10	1	1	3	4		2	
Cupressaceae-Taxaceae	39	43	58	48	43	83	119	96	87	46
Taxodiaceae, <u>Sequoia</u> -type	1	2		1						1
<u>Quercus</u>	113	114	6	3	22	1	1	2	1	
<u>Tsuga mertensiana</u>		1	1	1		1				
<u>Tsuga heterophylla</u>			1	1		1				1
<u>Lithocarpus-Chrysopsis</u>	6	4								
<u>Betula</u>										
<u>Myrica</u>	1									
<u>Corylus</u>										
<u>Alnus</u>	2	16	1	3	1		2	1	1	
<u>Juglans</u>	1									
<u>Fraxinus</u>	2									
<u>Salix</u>				1	1					
<u>Carya</u>										
<u>Acer</u>										
<u>Fagus</u>	1									
Gramineae	2	3	4	5	3	5	3	2	1	
Cyperaceae		1					1	2		
Compositae	8	7	6	10	2	9	1	7	5	1
Caryophyllaceae										
<u>Abies</u>	4	1	16	5	5	5	1	4	3	2
Chenopodiaceae-Amaranthaceae	1	1	1	10						
Ericaceae										
Umbelliferae										
<u>Typha cf latifolia</u>										
<u>Typha-Sparganium</u>										
Rosaceae	15	24		10		1	1			1
Rhamnaceae										
Anacardiaceae					3		1		1	
Cruciferae										
<u>Polygonum, paronychia</u> -type				1						
<u>Ephedra</u>										
Labiatae	2									
Onagraceae										
Nymphaeaceae										
Ranunculaceae		1				1				
Polypodiaceae				3	1					
Lycopodiaceae										
<u>Isoetes</u>			1							
<u>Sphagnum</u>							1	1		
Redeposited pollen and spores										

Table 1. Raw pollen counts from Clear Lake core CL-80-1. (continued)

SAMPLE NUMBER	0564	0567	0569	0578	0582	0586	0591	0595	0599	0603
SAMPLE DEPTH (cm)	14200	14325	14470	14525	14625	14725	14825	14925	15025	15125
<u>Pinus</u>	40	40	43	56	52	53	25	50	60	43
<u>Picea</u>	1		1			1				1
<u>Pseudotsuga menziesii</u>	2		1			2	1	1	3	1
Cupressaceae-Taxaceae	37	50	41	30	41	47	67	36	20	52
Taxodiaceae, <u>Sequoia</u> -type		1		1		1				
<u>Quercus</u>		2	1	2	2	7	3	10	10	14
<u>Tsuga mertensiana</u>		1		1	1					
<u>Tsuga heterophylla</u>		1					1	1		1
<u>Lithocarpus-Chrysolepis</u>										
<u>Betula</u>										
<u>Myrica</u>										
<u>Corylus</u>										
<u>Alnus</u>			1							
<u>Juglans</u>				1			2	1	1	
<u>Fraxinus</u>										
<u>Salix</u>						1				
<u>Carya</u>										
<u>Acer</u>										
<u>Fagus</u>										
Gramineae				1	3		2		2	1
Cyperaceae				1		1				
Compositae		1	4	6		1				
Caryophyllaceae										
<u>Abies</u>			4		1	2	1		1	
Chenopodiaceae-Amaranthaceae			1			2				
Ericaceae										
Umbelliferae										
<u>Typha cf. latifolia</u>										
<u>Typha-Sparganium</u>										
Rosaceae						1	1			
Rhamnaceae										
Anacardiaceae										
Cruciferae										
<u>Polygonum, paronychia</u> -type						1				
<u>Ephedra</u>										
Labiatae										
Onagraceae										
Nymphaeaceae										
Ranunculaceae										
Polypodiaceae							1	2	2	1
Lycopodiaceae										
<u>Isoetes</u>								1		1
<u>Sphagnum</u>										
Redeposited pollen and spores										

Table 1. Raw pollen counts from Clear Lake core CL-80-1. (continued)

SAMPLE NUMBER	0613	0614	0617	0621	0625	0629	0633	0636	0642	0650
SAMPLE DEPTH (cm)	15625	15850	15950	16150	16250	16350	16425	16450	15650	
<u>Pinus</u>	40	62	50	72	48	50	65	50	53	60
<u>Picea</u>	1	2	1		2	1	2	2	1	
<u>Pseudotsuga menziesii</u>			1		1					
Cupressaceae-Taxaceae	3	1	34	13	38	23	22	25	19	32
Taxodiaceae, <u>Sequoia</u> -type						3				
<u>Quercus</u>	2	4	3	2	1	7		2	5	3
<u>Tsuga mertensiana</u>		1				2	1	1		
<u>Tsuga heterophylla</u>	1			2		1				
<u>Lithocarpus-Chrysolepis</u>										
<u>Betula</u>										
<u>Myrica</u>										1
<u>Corylus</u>										
<u>Alnus</u>	1			1	2	1	1	7	1	
<u>Juglans</u>										
<u>Fraxinus</u>										
<u>Salix</u>										
<u>Carya</u>										
<u>Acer</u>										
<u>Fagus</u>										
Gramineae	1	5	2	1	2	6	3	1	2	
Cyperaceae	1	1	1	1	1	6		1	4	3
Compositae		1	4	7	3	1	3	5	1	4
Caryophyllaceae										
<u>Abies</u>		3	3		1	1	2	5	1	
Chenopodiaceae-Amaranthaceae	1			1					1	
Ericaceae									1	
Umbelliferae										
<u>Typha cf latifolia</u>										
<u>Typha-Sparganium</u>										
Rosaceae							1		1	
Rhamnaceae										
Anacardiaceae										
Cruciferae										
<u>Polygonum, paronychia-type</u>					2					
<u>Ephedra</u>										
Labiatae										
Onagraceae										
Nymphaeaceae										
Ranunculaceae										
Polypodiaceae		1		2	1	2	1	3	2	1
Lycopodiaceae				1						
<u>Isoetes</u>					1					
<u>Sphagnum</u>	1	1								
Redeposited pollen and spores				1	1	2	2	10	1	

Table 1. Raw pollen counts from Clear Lake core CL-80-1. (continued)

SAMPLE NUMBER	0653	0659
SAMPLE DEPTH (cm)	16725	16825
<u>Pinus</u>	80	62
<u>Picea</u>		
<u>Pseudotsuga menziesii</u>		1
Cupressaceae-Taxaceae	20	23
Taxodiaceae, <u>Sequoia</u> -type		
<u>Quercus</u>	4	4
<u>Tsuga mertensiana</u>		
<u>Tsuga heterophylla</u>		
<u>Lithocarpus-Chrysolepis</u>		
<u>Betula</u>		
<u>Myrica</u>		
<u>Corylus</u>		
<u>Alnus</u>	3	1
<u>Juglans</u>		
<u>Fraxinus</u>		
<u>Salix</u>		
<u>Carya</u>		
<u>Acer</u>		
<u>Fagus</u>		
Gramineae		2
Cyperaceae	5	
Compositae	1	4
Caryophyllaceae		
<u>Abies</u>	1	
Chenopodiaceae-Amaranthaceae		1
Ericaceae		
Umbelliferae		
<u>Typha cf latifolia</u>		
<u>Typha-Sparganium</u>		
Rosaceae		
Rhamnaceae		
Anacardiaceae		
Cruciferae		
<u>Polygonum, paronychia</u> -type		
<u>Ephedra</u>		
Labiatae		
Onagraceae		
Nymphaeaceae		
Ranunculaceae		
Polypodiaceae		2
Lycopodiaceae		
<u>Isoetes</u>		
<u>Sphagnum</u>		
Redeposited pollen and spores		2

Table 2. Clear Lake Core CL-R0-1 Pollen Counts for 12 Variables

Depth	Pinus	Picea	Tsuga heterophylla	Tsuga mertensiana	Pseudo- tsuga	Abies	Alnus	Gramineae	Cyperaceae	Compositae	Taxodiaceae- Sequoia-type	Quercus
25	68	0	0	0	1	1	2	15	10	13	5	138
75	28	0	0	0	2	0	11	11	3	13	5	97
150	41	0	0	0	2	0	6	13	2	9	4	112
325	38	0	0	0	3	0	12	1	5	7	3	113
400	36	0	0	0	0	1	17	1	4	11	2	133
625	34	0	0	0	3	0	9	6	4	11	1	130
725	27	0	0	0	1	2	20	4	1	9	4	115
825	29	0	0	0	5	1	13	2	3	11	7	120
850	27	0	0	0	2	0	10	2	4	7	2	128
925	34	0	1	0	2	1	8	4	1	10	6	111
1025	36	0	0	0	4	3	14	5	4	15	9	118
1225	41	2	0	0	3	3	5	4	4	7	2	116
1319	36	0	0	0	0	1	7	3	10	13	3	97
1840	93	0	0	0	1	0	15	3	4	4	1	43
1895	215	0	0	0	4	1	3	7	22	16	0	26
1920	220	0	0	0	5	2	14	9	16	27	2	53
1924	143	0	0	0	1	2	0	8	0	14	1	4
1976	113	0	0	0	0	2	26	3	12	23	7	87
2041	148	0	3	1	1	1	0	2	4	14	0	4
2175	85	2	0	0	4	1	6	1	12	6	0	52
2195	217	1	2	2	8	5	3	5	2	9	0	4
2217	250	0	2	0	3	13	1	4	11	11	0	1
2248	245	2	2	2	1	13	1	7	4	14	0	2
2295	153	2	0	0	1	1	1	2	1	25	0	2
2784	76	0	0	0	0	1	11	2	14	9	0	81
2884	240	0	2	1	4	9	2	1	3	15	0	9
3054	163	0	2	0	2	10	2	2	7	6	0	4
3154	154	0	2	0	0	5	1	1	0	3	0	1
3550	147	1	0	0	1	2	1	2	5	13	0	12
3750	130	0	4	1	2	6	0	4	5	21	0	6
3850	222	4	0	1	2	6	1	2	3	15	1	3
3925	159	0	1	0	1	5	0	3	3	12	0	6
4110	156	0	0	3	0	7	2	7	4	14	0	3

Table 2. Clear Lake Core CL-80-1 Pollen Counts for 12 Variables (continued)

Depth	Pinus	Picea	Tsuga heterophylla	Tsuga mertensiana	Pseudo- tsuga	Abies	Alnus	Gramineae	Cyperaceae	Compositae	Taxodiaceae- Sequoia-type	Quercus
4235	284	1	0	9	2	8	1	11	9	7	0	26
4410	185	0	2	0	0	4	1	5	5	19	0	2
4485	154	2	2	0	6	6	3	3	5	18	0	5
4725	132	0	2	0	4	9	1	11	4	50	0	3
4800	164	1	0	0	4	1	1	5	2	30	0	12
4875	174	0	1	2	3	6	0	7	5	25	0	6
5050	155	1	1	0	2	3	3	2	4	22	0	30
5125	152	1	1	0	1	4	1	2	2	32	0	17
5175	133	0	0	0	6	4	7	2	1	21	0	38
5325	173	0	1	0	3	12	1	3	5	31	0	12
5374	170	0	0	1	1	2	6	2	1	15	0	31
5630	216	0	2	0	4	10	1	0	2	4	0	5
5935	183	0	3	1	2	6	0	6	1	10	0	4
6035	167	0	2	0	2	11	1	4	3	14	1	6
6135	185	0	0	1	2	2	0	7	3	12	0	10
6250	175	0	8	3	2	7	2	11	0	17	0	1
6350	95	0	2	0	0	1	0	1	2	22	1	72
6550	91	0	2	0	3	1	2	0	0	20	1	94
6650	191	1	2	1	3	8	0	1	1	3	0	4
6725	184	0	0	4	0	4	1	5	0	6	0	13
6855	243	0	3	5	5	11	0	3	2	12	0	29
6995	121	0	3	0	4	4	6	7	4	11	2	72
7460	259	0	0	0	0	1	4	3	4	14	1	68
7560	128	0	1	0	2	1	4	2	2	9	0	76
7710	200	0	1	4	6	7	0	1	0	0	0	1
7810	220	2	0	4	5	15	1	2	1	7	0	0
7885	199	0	1	2	2	18	0	0	2	2	0	0
7950	222	1	3	2	6	19	1	3	0	3	0	5
8075	275	1	2	3	14	9	0	3	1	11	0	1
8175	215	1	1	0	5	15	0	4	0	10	0	5
8275	250	1	1	0	4	11	0	0	0	11	0	5
8375	238	0	1	0	1	6	0	1	0	0	0	3

Table 2. Clear Lake Core CL-80-1 Pollen Counts for 12 Variables (continued)

Depth	Pinus	Picea	Tsuga heterophylla	Tsuga mertensiana	Pseudo- tsuga	Abies	Alnus	Gramineae	Cyperaceae	Compositae	Taxodiaceae- Sequoia-type	Quercus
8450	245	1	3	1	0	8	0	0	1	6	0	6
8550	198	1	0	0	5	18	0	3	0	1	0	1
8700	189	0	3	1	3	2	2	1	0	12	1	48
8775	205	0	1	4	6	8	0	2	0	0	0	10
8825	169	1	2	0	10	12	1	0	1	9	0	22
8980	230	3	0	2	0	2	1	1	1	3	0	6
9075	215	0	1	1	3	7	0	0	0	2	0	0
9175	235	0	3	0	1	4	0	4	0	3	0	0
9275	87	1	1	4	3	2	0	2	0	12	0	106
9375	85	2	0	0	0	1	9	1	0	14	0	120
9425	211	0	0	0	11	4	0	1	1	6	0	6
9585	246	0	0	1	15	13	0	2	2	3	0	2
9685	195	1	0	0	3	10	0	2	0	5	0	3
9760	217	6	0	1	0	11	0	1	1	4	0	0
9775	200	1	0	0	1	16	0	0	1	6	0	0
9875	212	0	0	0	0	14	0	0	1	4	0	0
9975	205	0	0	1	4	14	0	3	1	12	0	0
10075	135	0	0	0	7	10	0	2	0	11	0	54
10175	115	0	2	0	3	4	2	3	1	16	0	70
10275	193	0	0	0	0	6	1	1	0	5	0	9
10375	169	0	0	1	3	5	0	6	3	4	0	10
10480	196	2	2	0	8	10	0	6	0	9	0	16
10600	121	0	1	0	4	2	0	1	3	13	0	40
10780	72	0	1	0	0	3	4	4	1	18	0	141
10875	168	2	5	1	1	4	1	1	6	4	0	23
10995	206	1	0	0	2	14	0	2	1	2	6	3
11075	176	3	5	1	3	3	3	3	1	20	6	99
11175	46	1	0	0	0	1	0	4	1	28	3	134
11275	150	14	4	1	9	8	2	4	2	2	0	26
11375	198	3	0	1	5	11	0	4	2	6	0	3
11475	199	1	1	6	6	3	0	4	0	8	0	4
11550	213	2	0	4	4	12	0	1	3	10	0	4

Table 2. Clear Lake Core CL-80-1 Pollen Counts for 12 Variables (continued)

Depth	Pinus	Picea	Tsuga heterophylla	Tsuga mertensiana	Pseudo- tsuga	Abies	Alnus	Gramineae	Cyperaceae	Compositae	Taxodiaceae- Sequoia-type	Quercus
11650	183	2	0	4	1	16	0	1	1	9	0	2
11750	160	3	1	3	1	7	1	4	1	26	0	18
11850	157	0	0	0	8	28	1	3	1	16	0	8
11950	191	0	0	0	4	6	2	0	1	7	1	3
11975	151	0	3	2	2	8	0	4	1	13	0	4
12020	155	3	0	0	2	8	0	0	0	1	0	10
12177	135	0	0	1	4	10	1	2	2	5	0	24
12275	108	0	0	0	1	3	8	5	1	6	0	59
12375	148	0	0	0	2	9	2	1	5	8	0	16
12475	172	0	0	0	0	6	0	4	0	5	0	3
12595	146	1	0	0	0	3	5	6	1	3	0	28
12675	40	0	0	0	1	0	12	9	3	17	4	132
12725	37	2	0	0	1	2	1	1	1	4	0	110
12775	52	0	0	0	3	1	4	2	0	11	0	118
12875	19	1	0	0	0	2	6	2	0	27	0	122
12910	31	0	0	0	0	0	9	0	0	5	0	123
12925	35	1	0	0	0	1	4	2	0	6	0	115
13025	45	0	0	0	1	2	7	2	0	4	3	107
13125	146	3	2	0	7	10	1	3	0	3	0	4
13225	181	0	0	1	1	1	1	1	0	4	0	1
13300	129	4	2	0	3	7	0	1	1	4	0	2
13425	105	2	0	5	1	9	0	2	0	7	0	0
13525	125	0	0	0	2	3	1	3	1	3	0	0
13625	125	0	0	1	2	6	1	3	0	7	0	3
13725	148	0	0	1	2	1	1	1	0	6	0	0
13840	145	1	1	2	1	3	0	0	0	2	1	0
14200	137	1	0	0	3	1	1	0	0	0	0	0
14375	121	3	1	4	2	3	1	1	1	6	1	3
14470	125	2	0	2	1	9	1	5	2	12	0	2
14575	142	1	1	1	2	1	1	2	1	7	1	9
14675	144	1	1	2	1	2	1	3	0	3	0	2
146725	113	5	0	0	3	4	1	2	2	3	0	29

Table 2. Clear Lake Core CL-80-1 Pollen Counts for 12 Variables (continued)

Depth	Pinus	Picea	Tsuga		Pseudo- tsuga	Abies	Alnus	Gramineae	Cyperaceae	Compositae	Taxodiaceae-	
			heterophylla	mertensiana							Sequoia-type	Quercus
14825	105	1	1	0	1	1	0	3	0	1	0	19
14925	125	0	4	0	1	1	2	0	0	0	0	24
15025	130	0	0	0	8	3	0	3	1	3	1	27
15125	118	2	2	0	4	5	0	3	0	3	0	26
15600	40	1	1	0	0	0	1	1	1	0	0	2
15625	62	2	0	1	0	3	0	5	1	1	0	4
15850	125	1	2	1	2	12	1	3	1	8	0	8
15950	164	1	2	0	0	3	1	2	2	10	0	2
16150	133	4	0	0	1	5	5	4	2	4	0	2
16250	132	2	2	3	1	2	1	9	9	2	0	10
16350	169	6	0	1	0	5	6	3	3	7	0	3
16400	150	4	0	1	0	7	13	2	2	11	0	4
16450	136	2	0	2	0	2	3	2	7	2	0	10
16650	142	3	0	0	0	0	1	0	3	7	0	11
16725	165	1	0	0	0	5	4	1	6	4	0	9
16825	138	1	0	1	2	2	2	5	1	12	0	6