

Table T4. Stratigraphic distribution of selected nannofossil species, Site 1170. (See table notes. Continued on next five pages.)

Core, section, interval (cm)	Depth (mbsf)	Preservation	Group abundance	<i>Amaurolithus delicatus</i>	<i>Amaurolithus ninae</i>	<i>Braarudosphaera bigelowii</i>	<i>Calcidiscus leptoporus</i>	<i>Calcidiscus macintyreii</i>	<i>Calcidiscus premacintyreii</i>	<i>Ceratolithus acutus</i>	<i>Ceratolithus cristatus</i>	<i>Chiasmolithus altus</i>	<i>Chiasmolithus expansus</i>	<i>Chiasmolithus grandis</i>	<i>Chiasmolithus medius</i>	<i>Chiasmolithus solitus</i>	<i>Coccolithus pelagicus</i>	<i>Cyclargolithus abisectus</i>	<i>Cyclargolithus floridanus</i>	<i>Dictyococcites hesslandii</i>	<i>Discoaster adamanteus</i>	<i>Discoaster aulakos</i>	<i>Discoaster braarudii</i>	<i>Discoaster brouweri</i>	<i>Discoaster calcaris</i>	<i>Discoaster challengerii</i>	<i>Discoaster deflandrei</i>	<i>Discoaster formosus</i>	<i>Discoaster intercalaris</i>	<i>Discoaster loeblichii</i>	<i>Discoaster neorectus</i>	<i>Discoaster pentaradiatus</i>	<i>Discoaster surculus</i>	<i>Discoaster variabilis</i>	
189-1170A-																																			
1H-CC, 18-22	1.64	G A	A																																
2H-CC, 11-15	11.67	G A	A																																
3H-CC, 12-16	20.75	G A	A																																
4H-CC, 18-23	29.07	G A	A				A			R							A																		
5H-CC, 8-13	39.40	G A	A				A	C									A																		
6H-CC, 8-13	49.03	M A	A					C									A																		
7H-CC, 10-15	58.25	M A	A				A	C									A																		
8H-CC, 16-21	68.07	M A	A				A	F									A																		
9H-CC, 15-20	77.86	M A	A				A	C									A																		
10H-CC, 12-17	87.48	M A	A				A	C									A																		
11H-CC, 12-17	96.88	M A	A				A	C									A																		
12H-CC, 10-15	106.45	M A	A				A	C		R							A																		
13H-CC, 12-17	115.24	M A	A				A	C									A																		
14H-CC, 11-16	123.73	M A	A				A	C									A																		
15H-CC, 12-17	133.94	M A	A		R		A	C									A																		
16H-CC, 12-17	143.75	M A	A					R																											
17H-CC, 21-25	153.57	M A	A	R																															
18H-CC, 23-28	163.70	M A	A					C																											
19X-CC, 3-9	167.13	M A	A																																
20X-CC, 21-26	174.54	M A	A					C																											
21X-CC, 11-16	180.91	M A	A																																
22X-CC, 12-17	192.05	M A	A																																
23X-CC, 12-17	201.09	M A	A					C																											
24X-CC, 16-21	210.31	M A	A					C																											
25X-CC, 20-25	220.34	M A	A					C																											
26X-CC, 10-15	227.55	M A	A					C																											
27X-CC, 12-17	239.38	M A	A					C																											
28X-CC, 20-25	250.70	M A	A					C																											
29X-CC, 10-15	259.44	M A	A				C			C							A		R	A	R														
30X-CC, 9-14	270.22	M A	A				A			C							A		C	A	F														
31X-CC, 12-17	281.74	M A	A				C			C							A		A	A		F													
32X-CC, 15-20	290.89	M A	A				C			C							A		A	A															
33X-CC, 11-16	299.60	M A	A					F		C							A		A	A															
34X-CC, 21-26	310.39	M A	A				C			C							A		A	A															
35X-CC, 19-24	318.43	M A	A				C			C							A		A	A															
36X-CC, 16-21	327.52	M A	A				R										A		A	A															
37X-CC, 16-21	338.80	M A	A																																
38X-CC, 13-18	347.18	M A	A																																
39X-CC, 19-24	356.53	M A	A																																
40X-CC, 25-30	367.03	M A	A														A		C	C															
41X-CC, 29-34	376.53	M A	A														A	A	A	A															
42X-CC, 29-34	387.17	M A	A														A	A	A	A															
43X-CC, 14-19	396.63	M A	A																																
44X-CC, 31-36	405.83	M A	A																																
45X-CC, 30-35	410.05	M A	A																																
46X-CC, 20-25	421.82	M A	A																																
47X-CC, 10-15	430.95	M A	A																																
48X-CC, 26-31	435.26	P A	A																																
49X-CC, 10-15	450.25	P A	A																																
50X-CC, 22-27	456.82	P A	A																																
51X-CC, 33-38	459.33	P A	A																																
52X-CC, 47-52	464.27	P A	A																																
189-1170B-																																			
1H-CC, 13-18	4.75	G A	A																																
2H-CC, 9-14	14.65	G A	A																																
3H-CC, 13-18	24.07	G A	A																																
4H-CC, 10-15	33.59	G A	A																																
5H-CC, 13-18	42.66	G A	A				A	F																											

Table T4 (continued).

Core, section, interval (cm)	Depth (mbsf)	Preservation	Group abundance	Gephyrocapsa >4.5 mm [μm ?] <i>Emiliania huxleyi</i> <i>Gephyrocapsa caribbeanica</i> <i>Gephyrocapsa</i> spp. (small) <i>Helicosphaera ampliaperta</i> <i>Helicosphaera kamptneri</i> <i>Helicosphaera mediterranea</i> <i>Helicosphaera selii</i> <i>Neococcolithes dubius</i> <i>Pontosphaera</i> spp. <i>Pseudoemiliania lacunosa</i> <i>Reticulofenestra bisecta</i> <i>Reticulofenestra daviesii</i> <i>Reticulofenestra gelida</i> <i>Reticulofenestra minuta</i> <i>Reticulofenestra perplexa</i> <i>Reticulofenestra pseudoumbilica</i> <i>Reticulofenestra reticulata</i> <i>Reticulofenestra samodurovii</i> <i>Reticulofenestra</i> spp. <i>Reticulofenestra umbilicus</i> <i>Rhabdosphaera tenuis</i> <i>Sphenolithus moriformis</i> <i>Transversopontis pulchroides</i> <i>Transversopontis rectipons</i> <i>Triquetrorhabdulus rugosus</i> <i>Zygrhabdulus bijugatus</i>	Comment
189-1170A-					
1H-CC, 18-22	1.64	G	A	C	A
2H-CC, 11-15	11.67	G	A		A
3H-CC, 12-16	20.75	G	A	F	C
4H-CC, 18-23	29.07	G	A	F	
5H-CC, 8-13	39.40	G	A		F
6H-CC, 8-13	49.03	M	A		F
7H-CC, 10-15	58.25	M	A		F
8H-CC, 16-21	68.07	M	A		F
9H-CC, 15-20	77.86	M	A		F
10H-CC, 12-17	87.48	M	A	F	R
11H-CC, 12-17	96.88	M	A		R
12H-CC, 10-15	106.45	M	A	R	F
13H-CC, 12-17	115.24	M	A	F	C
14H-CC, 11-16	123.73	M	A		C
15H-CC, 12-17	133.94	M	A		A
16H-CC, 12-17	143.75	M	A		
17H-CC, 21-25	153.57	M	A		
18H-CC, 23-28	163.70	M	A		
19X-CC, 3-9	167.13	M	A		
20X-CC, 21-26	174.54	M	A		
21X-CC, 11-16	180.91	M	A		
22X-CC, 12-17	192.05	M	A		
23X-CC, 12-17	201.09	M	A		
24X-CC, 16-21	210.31	M	A		
25X-CC, 20-25	220.34	M	A		
26X-CC, 10-15	227.55	M	A		
27X-CC, 12-17	239.38	M	A		
28X-CC, 20-25	250.70	M	A		
29X-CC, 10-15	259.44	M	A		
30X-CC, 9-14	270.22	M	A	F	
31X-CC, 12-17	281.74	M	A	R	
32X-CC, 15-20	290.89	M	A	R	
33X-CC, 11-16	299.60	M	A		
34X-CC, 21-26	310.39	M	A		
35X-CC, 19-24	318.43	M	A		
36X-CC, 16-21	327.52	M	A		
37X-CC, 16-21	338.80	M	A		
38X-CC, 13-18	347.18	M	A		
39X-CC, 19-24	356.53	M	A		
40X-CC, 25-30	367.03	M	A		
41X-CC, 29-34	376.53	M	A		
42X-CC, 29-34	387.17	M	A		
43X-CC, 14-19	396.63	M	A		
44X-CC, 31-36	405.83	M	A		
45X-CC, 30-35	410.05	M	A		
46X-CC, 20-25	421.82	M	A		
47X-CC, 10-15	430.95	M	A		
48X-CC, 26-31	435.26	P	A		
49X-CC, 10-15	450.25	P	A		
50X-CC, 22-27	456.82	P	A		
51X-CC, 33-38	459.33	P	A		
52X-CC, 47-52	464.27	P	A		
189-1170B-					
1H-CC, 13-18	4.75	G	A	C	A
2H-CC, 9-14	14.65	G	A		A
3H-CC, 13-18	24.07	G	A		A
4H-CC, 10-15	33.59	G	A		A
5H-CC, 13-18	42.66	G	A		A

Table T4 (continued).

Core, section, interval (cm)	Depth (mbsf)	Preservation	Group abundance	<i>Amaurolithus delicatus</i>	<i>Amaurolithus ninae</i>	<i>Braarudosphaera bigelowii</i>	<i>Calcidiscus leptoporus</i>	<i>Calcidiscus macintyreii</i>	<i>Calcidiscus premacintyreii</i>	<i>Ceratolithus acutus</i>	<i>Ceratolithus cristatus</i>	<i>Chiasmolithus altus</i>	<i>Chiasmolithus expansus</i>	<i>Chiasmolithus grandis</i>	<i>Chiasmolithus medius</i>	<i>Chiasmolithus solitus</i>	<i>Coccolithus pelagicus</i>	<i>Cyclargolithus abisectus</i>	<i>Cyclargolithus floridanus</i>	<i>Dictyococcites hesslandii</i>	<i>Discoaster adamanteus</i>	<i>Discoaster aulakos</i>	<i>Discoaster braarudii</i>	<i>Discoaster brouweri</i>	<i>Discoaster calcaris</i>	<i>Discoaster challengerii</i>	<i>Discoaster deflandrei</i>	<i>Discoaster formosus</i>	<i>Discoaster intercalaris</i>	<i>Discoaster loeblichii</i>	<i>Discoaster neorectus</i>	<i>Discoaster pentaradiatus</i>	<i>Discoaster surculus</i>	<i>Discoaster variabilis</i>		
6H-CC, 0-7	52.55	G	A				A	C																												
7H-CC, 14-19	62.18	G	A				A	C																												
8H-CC, 10-15	71.78	G	A				A	C																												
9H-CC, 29-34	80.96	G	A				A	C																												
10H-CC, 18-23	90.78	G	A				A	C																												
11H-CC, 20-25	100.24	G	A				A	C																												
12H-CC, 17-22	109.71	G	A				A	C																											R	
13H-CC, 0-5	118.92	M	A				C	F									A																			
14H-CC, 13-18	128.61	M	A		F		A	C									C																			
15H-CC, 23-28	138.23	M	A		F	R	A	C									C								R	R										
16H-CC, 13-18	145.30	M	A				C	F									C																		F	
17H-CC, 13-18	156.88	M	A				C	F									A																		F	
18H-CC, 16-21	166.70	M	A														A																		F	
19H-CC, 0-7	176.02	P	A														C										R								F	
189-1170C-																																				
1H-CC, 10-15	9.02	G	A					R									A																			
2H-CC, 20-25	18.04	G	A					A																												
3H-CC, 10-15	28.51	G	A					F																												
4H-CC, 17-22	35.77	G	A																																	
5H-CC, 10-15	47.13	G	A										R																							
6H-CC, 9-14	56.82	G	A										R																							
7H-CC, 15-21	65.58	G	A										F																							
8H-CC, 9-14	76.07	G	A										F																							
9H-CC, 18-24	85.62	G	A										F																							
10H-CC, 0-6	94.76	G	A										F																							
11H-CC, 18-24	104.30	G	A										F																							
12H-CC, 22-27	113.98	G	A										F																							
13H-CC, 19-24	122.96	G	A										F																							
14H-CC, 16-21	132.59	G	A										F																							
15H-CC, 16-21	142.49	M	A			R		C					C				F																		R	
16H-CC, 16-21	150.63	M	A			R		C					F				C																		C	
17H-CC, 11-16	161.24	M	A					A					F				A																		F	
18H-CC, 7-13	170.09	M	A					F					F				F								R										F	
19H-CC, 13-18	180.44	M	A					A					A				A								R		F								C	
189-1170D-																																				
1R-CC, 11-16	427.27	M	A									A					C	F	F																	
2R-CC, 14-21	437.50	M	A									C																								
3R-CC, 15-20	444.95	M	A									C																								
4R-CC, 19-24	454.99	M	A									C																								
5R-CC, 16-21	464.21	P	A									C																								
6R-CC, 21-27	472.72	P	C									C																								
7R-CC, 17-22	479.85		B																																	
8R-CC, 0-7	488.35	P	R									R																								
9R-CC, 10-15	497.66	M	C									R																								
10R-CC, 10-15	506.41	P	F									R																								
11R-CC, 16-21	518.31	P	F																																	
12R-CC, 16-22	524.59	P	C																																	
13R-CC, 16-21	534.83	P	R																																	
14R-CC, 0-5	548.46	M	C																																	
15R-CC, 6-11	558.49	M	F																																	
16R-CC, 20-25	567.29	G	R																																	
17R-CC, 17-22	577.77	G	C																																	
18R-CC, 0-4	585.10	M	F																																	
19R-CC, 15-19	596.97	M	R																																	
20R-CC, 12-17	606.55	M	R																																	
21R-CC, 0-7	615.17	M	B																																	
22R-CC, 18-23	625.92	P	R																																	
23R-CC, 10-15	635.30		B																																	
24R-CC, 11-16	645.02		B																																	

Table T4 (continued).

Core, section, interval (cm)	Depth (mbsf)	Preservation	Group abundance	<i>Gephyrocapsa</i> > 4.5 mm? <i>Emiliania huxleyi</i>	<i>Gephyrocapsa caribbeanica</i> <i>Gephyrocapsa</i> spp. (small) <i>Helicosphaera ampliopenita</i>	<i>Helicosphaera kamphneri</i> <i>Helicosphaera mediterranea</i> <i>Helicosphaera sellii</i> <i>Neocollithes dubius</i> <i>Pontosphaera</i> spp.	<i>Pseudoemiliania lacunosa</i> <i>Reticulofenestra bisecta</i> <i>Reticulofenestra daviesii</i> <i>Reticulofenestra gelida</i> <i>Reticulofenestra minuta</i>	<i>Reticulofenestra perplexa</i> <i>Reticulofenestra pseudumbillica</i> <i>Reticulofenestra reticulata</i> <i>Reticulofenestra samodurovii</i> <i>Reticulofenestra</i> spp.	<i>Reticulofenestra umbilicus</i> <i>Rhabdosphaera tenuis</i> <i>Sphenolithus moriformis</i> <i>Transversopontis pulcheroides</i> <i>Transversopontis rectipons</i>	<i>Triquetrorhabdulus rugosus</i> <i>Zygrrhablithus bijugatus</i>	Comment
6H-CC, 0-7 7H-CC, 14-19 8H-CC, 10-15 9H-CC, 29-34 10H-CC, 18-23 11H-CC, 20-25 12H-CC, 17-22 13H-CC, 0-5 14H-CC, 13-18 15H-CC, 23-28 16H-CC, 13-18 17H-CC, 13-18 18H-CC, 16-21 19H-CC, 0-7	52.55 62.18 71.78 80.96 90.78 100.24 109.71 118.92 128.61 138.23 145.30 156.88 166.70 176.02	G A G A G A G A G A G A M A M A M A M A M A M A M A P A	A A A A A A A A A A A A A A	A F F				F A A A A C C F A A A C A F		R	latest Miocene?
189-1170C- 1H-CC, 10-15 2H-CC, 20-25 3H-CC, 10-15 4H-CC, 17-22 5H-CC, 10-15 6H-CC, 9-14 7H-CC, 15-21 8H-CC, 9-14 9H-CC, 18-24 10H-CC, 0-6 11H-CC, 18-24 12H-CC, 22-27 13H-CC, 19-24 14H-CC, 16-21 15H-CC, 16-21 16H-CC, 16-21 17H-CC, 11-16 18H-CC, 7-13 19H-CC, 13-18	9.02 18.04 28.51 35.77 47.13 56.82 65.58 76.07 85.62 94.76 104.30 113.98 122.96 132.59 142.49 150.63 161.24 170.09 180.44	G A G A G A G A G A G A G A G A G A G A G A G A G A G A M A M A M A M A M A	A F F					R R F R R R R F F F F F F F F F		C	
189-1170D- 1R-CC, 11-16 2R-CC, 14-21 3R-CC, 15-20 4R-CC, 19-24 5R-CC, 16-21 6R-CC, 21-27 7R-CC, 17-22 8R-CC, 0-7 9R-CC, 10-15 10R-CC, 10-15 11R-CC, 16-21 12R-CC, 16-22 13R-CC, 16-21 14R-CC, 0-5 15R-CC, 6-11 16R-CC, 20-25 17R-CC, 17-22 18R-CC, 0-4 19R-CC, 15-19 20R-CC, 12-17 21R-CC, 0-7 22R-CC, 18-23 23R-CC, 10-15 24R-CC, 11-16	427.27 437.50 444.95 454.99 464.21 472.72 479.85 488.35 497.66 506.41 518.31 524.59 534.83 548.46 558.49 567.29 577.77 585.10 596.97 606.55 615.17 625.92 635.30 645.02	M A M A M A M A P A P C B P R M C P F P F P C P R M C G R G C M F M R M R M B P R B B				R		R C F			

Table T4 (continued).

Core, section, interval (cm)	Depth (mbsf)	Preservation	Group abundance	<i>Anaerolithus delicatus</i>	<i>Anaerolithus ninae</i>	<i>Braarudosphaera bigelowii</i>	<i>Calcidiscus leptoporus</i>	<i>Calcidiscus macintyreii</i>	<i>Calcidiscus premacintyreii</i>	<i>Ceratolithus acutus</i>	<i>Ceratolithus cristatus</i>	<i>Chiasmolithus altus</i>	<i>Chiasmolithus expansus</i>	<i>Chiasmolithus grandis</i>	<i>Chiasmolithus medius</i>	<i>Chiasmolithus solitus</i>	<i>Coccolithus pelagicus</i>	<i>Cyclacargolithus abisectus</i>	<i>Cyclacargolithus floridanus</i>	<i>Dictyococcites hesslandii</i>	<i>Discoaster adamanteus</i>	<i>Discoaster aulakos</i>	<i>Discoaster braarudii</i>	<i>Discoaster brouweri</i>	<i>Discoaster calcaris</i>	<i>Discoaster challengerii</i>	<i>Discoaster deflandrei</i>	<i>Discoaster formosus</i>	<i>Discoaster intercalaris</i>	<i>Discoaster loeblichii</i>	<i>Discoaster neorectus</i>	<i>Discoaster pentaradiatus</i>	<i>Discoaster surculus</i>	<i>Discoaster variabilis</i>	
25R-CC, 15-20	654.76	M	F												R	C																			
26R-CC, 8-13	664.32	M	R												R	R																			
27R-CC, 11-16	671.46	M	F																																
28R-CC, 9-14	681.96	P	F														F																		
29R-CC, 21-26	693.38	M	R														R																		
30R-CC, 17-22	701.41	M	R														F																		
31R-CC, 20-25	712.75		B																																
32R-CC, 18-23	722.15	M	R																																
33R-CC, 13-19	731.74	M	R														F																		
34R-CC, 21-26	741.48	M	C														F																		
35R-CC, 0-5	749.55	M	F														F																		
36R-CC, 19-24	760.56	M	F														F																		
37R-CC, 0-5	768.73	M	C			F								R		C																			
38R-CC, 25-30	779.69	M	R														R																		

Notes: Preservation: G = good, M = moderate, P = poor. Abundance: A = abundant, C = common, F = few, R = rare, B = barren.

Table T4 (continued).

Core, section, interval (cm)	Depth (mbsf)	Preservation	Group abundance	<i>Gephyrocapsa</i> > 4.5 mm? <i>Emiliania huxleyi</i> <i>Gephyrocapsa caribbeanica</i> <i>Gephyrocapsa</i> spp. (small) <i>Helicosphaera ampliaperta</i> <i>Helicosphaera kamptneri</i> <i>Helicosphaera mediterranea</i> <i>Helicosphaera selii</i> <i>Neococcolithes dubius</i> <i>Pontosphaera</i> spp. <i>Pseudoemiliania lacunosa</i> <i>Reticulofenestra bisecta</i> <i>Reticulofenestra daviesii</i> <i>Reticulofenestra gelida</i> <i>Reticulofenestra minuta</i> <i>Reticulofenestra perplexa</i> <i>Reticulofenestra pseudumbilica</i> <i>Reticulofenestra reticulata</i> <i>Reticulofenestra samodurovii</i> <i>Reticulofenestra</i> spp. <i>Reticulofenestra umbilicus</i> <i>Rhabdosphaera tenuis</i> <i>Sphenolithus moriformis</i> <i>Transversopontis pulchroides</i> <i>Transversopontis rectipons</i> <i>Triquetrorhabdulus rugosus</i> <i>Zygrhablithus bijugatus</i>	Comment
25R-CC, 15-20	654.76	M	F		
26R-CC, 8-13	664.32	M	R		
27R-CC, 11-16	671.46	M	F		
28R-CC, 9-14	681.96	P	F		
29R-CC, 21-26	693.38	M	R		
30R-CC, 17-22	701.41	M	R		
31R-CC, 20-25	712.75		B		
32R-CC, 18-23	722.15	M	R		
33R-CC, 13-19	731.74	M	R		
34R-CC, 21-26	741.48	M	C		
35R-CC, 0-5	749.55	M	F		
36R-CC, 19-24	760.56	M	F		
37R-CC, 0-5	768.73	M	C	R	
38R-CC, 25-30	779.69	M	R		