

Supplementary Information

Age Model and Fluxes

Depth (cm)	Age (ka)	%CaCO ₃	Ex. 230Th ^o (dpm/g)	DBD (g/cm ³)	Carb Flux (g/cm ² /kyr)	Clay Flux (g/cm ² /kyr)
4280	114.00	29.05	7.00	0.793	0.50	1.22
4282	114.23	29.3	6.46	0.784	0.55	1.32
4284	114.45	31.1	6.42	0.816	0.58	1.29
4286	114.69	31.7	6.39	0.832	0.60	1.29
4288	114.94	32.4	6.48	0.813	0.60	1.26
4290	115.19	30.9	6.17	0.854	0.60	1.35
4292	115.43	30.8	6.40	0.832	0.58	1.30
4294	115.67	30.6	5.96	0.836	0.62	1.40
4296	115.89	30.6	5.70	0.905	0.65	1.47
4298	116.13	28.8	5.77	0.911	0.60	1.49
4300	116.35	27.7	6.09	0.921	0.55	1.43
4302	116.57	27.2	5.52	0.931	0.59	1.59
4304	116.77	24.5	5.26	0.871	0.56	1.73
4308	117.10	23.5	4.71	0.947	0.60	1.96
4310	117.26	23.4	4.45	0.927	0.63	2.08
4312	117.40	23	4.22	0.888	0.66	2.20
4314	117.53	14.7	3.32	0.917	0.53	3.10
4316	117.62	16.25	3.30	1.054	0.59	3.06
4318	117.72	28.2	4.37	0.937	0.78	1.98
4320	117.89	19.55	3.10	0.753	0.76	3.13
4322	117.96	40	7.21	0.754	0.67	1.00
4324	118.35	40.9	7.13	0.755	0.69	1.00
4326	118.75	41.3	7.07	0.735	0.70	1.00
4328	119.15	44.3	7.18	0.798	0.74	0.93
4330	119.71	44.7	7.20	0.866	0.75	0.93
4332	120.34	44.3	7.13	0.830	0.75	0.94
4334	120.91	44.6	7.34	0.828	0.73	0.91
4336	121.52	46.9	7.19	0.837	0.79	0.89
4338	122.27	46.4	6.90	0.872	0.81	0.94
4340	122.98	48.1	7.20	0.858	0.81	0.87
4342	123.86	48.1	6.94	0.858	0.84	0.90
4344	124.71	47.1	7.16	0.892	0.79	0.89
4346	125.52	47.7	7.26	0.778	0.79	0.87
4348	126.29	48.75	6.66	0.729	0.88	0.93
4350	127.04	47	5.49	0.877	1.03	1.16
4352	127.64	47.3	6.81	0.835	0.84	0.93
4354	128.37	41.4	6.37	0.856	0.78	1.11
4356	128.79	39.4	6.39	0.793	0.74	1.14
4358	129.13	32.2	6.81	0.783	0.57	1.20
4360	129.38	32.05	7.50	0.717	0.51	1.09
4362	129.63	31.3	8.10	0.720	0.47	1.02
4364	129.90	31.1	7.95	0.679	0.47	1.05
4366	130.14	27.9	7.77	0.658	0.43	1.12
4368	130.34	23.5	6.48	0.615	0.44	1.42
4370	130.48	22.9	6.53	0.618	0.42	1.42

4372	130.62	23.1	6.20	0.627	0.45	1.49
4374	130.75	22.3	5.56	0.653	0.48	1.68
4376	130.87	21.4	4.88	0.728	0.53	1.94
4378	130.98	14.6	3.96	0.782	0.44	2.60
4380	131.07	15.2	4.07	0.927	0.45	2.51
4382	131.17	16.2	3.67	0.971	0.53	2.75
4384	131.27	15.2	2.53	1.001	0.72	4.03
4386	131.34	12.4	2.50	0.875	0.60	4.23
4388	131.40	14.1	3.42	0.724	0.50	3.02
4390	131.46	17.2	3.41	0.547	0.61	2.93
4394	131.57	18.2	3.71	0.513	0.59	2.66
4396	131.62	18.9	3.90	0.501	0.58	2.50
4398	131.68	18.7	3.70	0.527	0.61	2.65

Benthic Chemistry

Depth (cm)	Cd/Ca (μ mole/mole)	Depth (cm)	% Frag.
4241.5	0.106	4222.5	61.03
4242.5	0.114	4231.5	52.41
4245.5	0.084	4240.5	40.03
4246.5	0.145	4245.5	24.30
4247.5	0.107	4252.5	22.62
4248.5	0.071	4256.5	37.96
4249.5	0.092	4261.5	25.11
4250.5	0.114	4266.5	10.77
4251.5	0.081	4271.5	29.59
4252.5	0.092	4272.5	41.28
4253.5	0.127	4273.5	58.99
4254.5	0.156	4274.5	42.04
4256.5	0.101	4275.5	45.36
4258.5	0.098	4278.5	33.83
4259.5	0.046	4280.5	34.82
4260.5	0.101	4282.5	23.88
4261.5	0.111	4284.5	28.62
4262.5	0.102	4286.5	25.90
4263.5	0.094	4288.5	23.86
4264.5	0.12	4290.5	20.18
4265.5	0.091	4292.5	16.58
4266.5	0.108	4294.5	15.77
4267.5	0.109	4296.5	15.62
4268.5	0.097	4298.5	15.10
4269.5	0.101	4300.5	22.86
4270.5	0.098	4301.5	17.85
4271.5	0.086	4302.5	22.71
4272.5	0.091	4303.5	21.36
4273.5	0.094	4304.5	23.54
4274.5	0.104	4305.5	20.16
4275.5	0.113	4306.5	20.67
4278.5	0.09	4307.5	21.90
4279.5	0.107	4308.5	21.73
4280.5	0.157	4309.5	26.62
4281.5	0.157	4310.5	15.84
4282	0.112	4311.5	13.94
4283.5	0.095	4312.5	16.00
4284	0.095	4313.5	18.39
4284.5	0.096	4314.5	30.92
4285.5	0.137	4315.5	38.51
4286.5	0.087	4316.5	22.37
4287.5	0.106	4317.5	16.53
4288.5	0.089	4318.5	14.46
4289.5	0.085	4319.5	15.67
4290.5	0.083	4320.5	23.06

4291.5	0.091	4321.5	17.43
4292.5	0.127	4322.5	10.93
4293.5	0.091	4323.5	7.73
4295	0.083	4324.5	10.12
4297.5	0.085	4325.5	11.81
4299	0.094	4326.5	9.12
4301	0.096	4327.5	5.81
4302.5	0.094	4328.5	9.20
4303.5	0.087	4329.5	6.04
4304.5	0.086	4330.5	5.78
4306	0.077	4331.5	7.22
4307.5	0.084	4332.5	5.08
4308.5	0.098	4333.5	7.04
4309.5	0.074	4334.5	5.49
4310	0.076	4335.5	3.07
4310.5	0.075	4336.5	8.56
4312	0.088	4337.5	3.83
4313.5	0.072	4338.5	5.41
4315.5	0.071	4339.5	5.19
4317	0.068	4340.5	6.43
4318.5	0.108	4341.5	5.02
4320	0.091	4342.5	5.22
4321.5	0.096	4343.5	6.72
4323	0.089	4344.5	4.50
4323.5	0.069	4345.5	6.44
4326.5	0.07	4346.5	4.73
4328.5	0.064	4347.5	5.20
4329.5	0.079	4348.5	6.59
4331.5	0.063	4349.5	7.44
4332.5	0.077	4350.5	5.20
4333.5	0.067	4351.5	8.85
4334.5	0.074	4352.5	7.80
4335.5	0.07	4353.5	6.40
4336.5	0.063	4354.5	6.36
4337.5	0.07	4355.5	10.48
4338.5	0.068	4356.5	9.39
4339.5	0.067	4357.5	15.13
4341.5	0.074	4358.5	20.27
4343.5	0.083	4359.5	21.13
4344.5	0.071	4361.5	28.48
4345.5	0.052	4362.5	39.97
4346.5	0.052	4363.5	35.73
4347.5	0.094	4364.5	44.72
4350.5	0.072	4365.5	37.72
4353.5	0.08	4366.5	35.62
4354.5	0.07	4368.5	27.32
4355.5	0.055	4369.5	37.68
4356.5	0.082	4370.5	28.91
4357.5	0.087	4371.5	43.91
4358.5	0.1	4372.5	35.37

4359.5	0.173	4373.5	29.06
4360.5	0.128	4374.5	31.53
4361.5	0.159	4375.5	28.57
4362.5	0.204	4376.5	30.1
4363.5	0.16	4377.25	47.63
4364.5	0.146	4377.75	41.78
4365.5	0.173	4378.5	38.64
4366.5	0.16	4379.5	31.83
4368.5	0.17	4380.5	47.88
4369.5	0.174	4381.5	32.11
4370.5	0.144	4382.5	31.47
4371.5	0.136	4383.5	26.57
4372.5	0.167	4384.5	21.25
4374	0.139	4385.5	28
4375.5	0.178	4386.5	39.97
4377.3	0.086	4387.5	72.56
4378.5	0.092	4388.5	51.82
4379.5	0.067	4389.5	31.75
4380.5	0.117	4390.5	25.54
		4391.5	39.57
		4392.5	30.85
		4393.5	39.01
		4394.5	40.64
		4395.5	43.06
		4396.5	43.32
		4397.5	25.72
		4398.5	37.91
		4399.5	37.82

Benthic Stable Isotopes

Depth (cm)	Oridorsalis $\delta^{18}\text{O}$	Depth (cm)	Finigan Cibs $\delta^{18}\text{O}$	Finigan Cibs $\delta^{13}\text{C}$	Depth (cm)	VG Cibs $\delta^{18}\text{O}$	VG Cibs $\delta^{13}\text{C}$	Depth (cm)	Melonis $\delta^{18}\text{O}$
4280.5	3.198	4221.5	3.358	-0.060	4227.5	3.49	-0.77	4325.5	2.41
4282.5	3.096	4224.5	3.287	-0.059	4230.5	3.27	-0.04	4326.5	2.4
4283.5	3.226	4227.5	3.498	-0.650	4233.5	3.29	0.04	4327.5	2.13
4285.5	3.156	4230.5	3.067	0.370	4235.5	3.42	0.42	4328.5	2.5
4286.5	3.208	4233.5	3.463	-0.185	4236.5	3.41	0.54	4330.5	2.44
4288.5	2.955	4236.5	3.828	0.668	4237.5	3.39	0.52	4331.5	2.57
4289.5	3.118	4239.5	3.227	-0.108	4243.5	3.5	0.4	4332.5	2.17
4291.5	3.049	4242.5	3.377	0.445	4245.5	3.44	0.34	4333.5	2.37
4292.5	2.959	4245.5	2.797	0.323	4246.5	3.4	0.55	4334.5	1.78
4294.5	2.919	4248.5	3.188	0.453	4247.5	3.3	0.01	4335.5	2.19
4295.5	2.947	4251.5	3.056	0.480	4248.5	3.1	0.24	4336.5	2.39
4297.5	2.857	4254.5	3.197	0.472	4249.5	3.3	0.3	4337.5	1.2
4300.5	2.951	4257.5	2.844	0.448	4250.5	3.34	0.49	4339.5	2.46
4301.5	2.977	4263.5	3.264	-0.939	4251.5	3.26	-0.38		
4302.5	2.888	4278.5	3.063	0.435	4252.5	3.29	0.5		
4303.5	2.978	4281.5	3.114	0.305	4253.5	3.44	0.13		
4304.5	2.837	4284.5	2.915	0.360	4254.5	3.28	0.67		
4306.5	2.969	4287.5	2.934	0.415	4255.5	3.22	0.79		
4307.5	2.696	4296.5	2.846	0.350	4256.5	3.195	-1.11		
4308.5	2.798	4302.5	2.507	0.613	4257.5	3.04	0.32		
4309.5	2.85	4332.5	2.307	0.898	4258.5	3.22	-0.6		
4310.5	2.716	4338.5	2.137	0.786	4259.5	3.39	0.16		
4311.5	2.679	4341.5	2.364	0.755	4261.5	3.55	0.18		
4315.5	2.709	4344.5	2.414	0.878	4263.5	2.94	0.07		
4317.5	2.687	4347.5	2.289	0.650	4264.5	3.24	0.44		
4318.5	2.618	4350.5	2.378	0.926	4265.5	3.34	0.24		
4319.5	2.482	4353.5	2.46	0.924	4267.5	3.36	0.23		
4321.5	2.555	4354.5	2.328	0.589	4268.5	3.05	0.24		
4322.5	2.838	4356.5	2.438	0.592	4271.5	3.14	0.11		
4323.5	2.445	4358.5	2.673	-0.062	4277.5	3.08	-0.19		
4324.5	2.384	4359.5	2.79	-0.029	4279.5	3.09	0.08		
4325.5	2.638	4360.5	3.031	0.354	4280.5	3.02	-0.34		
4326.5	2.346	4361.5	3.47	-1.083	4281.5	3.08	0.36		
4327.5	2.371	4362.5	2.16	0.173	4282.5	3.22	-0.12		
4328.5	2.498	4363.5	2.556	0.086	4283.5	3.12	0.17		
4330.5	2.538	4365.5	3.097	-0.160	4285.5	3.01	-0.06		
4331.5	3.165				4287.5	3.05	0.63		
4332.5	2.708				4288.5	3.08	0.48		
4333.5	3.041				4289.5	3.22	0.17		
4334.5	2.386				4341.5	2.41	0.69		
4336.5	2.403				4344.5	2.31	0.74		
4337.5	2.164				4347.5	2.62	0.42		
4338.5	2.236				4350.5	2.42	0.59		
4339.5	2.42				4354.5	2.5	0.31		
4340.5	2.35				4356.5	2.6	0.65		

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4342.5	2.34	4358.5	2.91	0.16
4343.5	2.42	4361.5	2.92	-0.01
4344.5	2.45	4362.5	2.93	0.12
4345.5	2.33	4363.5	2.85	0.06
4346.5	2.32	4365.5	3.08	-0.61
4347.5	2.35			
4348.5	2.29			
4349.5	2.16			
4350.5	2.46			
4351.5	2.29			
4352.5	1.96			
4353.5	2.25			
4354.5	2.27			
4355.5	2.38			
4356.5	2.34			
4357.5	2.17			
4358.5	2.71			
4359.5	2.43			
4360.5	2.72			
4361.5	2.8			
4362.5	2.82			
4363.5	3.64			
4364.5	3.52			
4365.5	2.69			
4366.5	2.96			
4367.5	2.68			
4369.5	3.08			
4370.5	3.45			
4371.5	3.54			
4372.5	3.46			
4373.5	3.35			
4374.5	3.67			
4375.5	3.66			
4376.5	3.32			
4377.25	3.77			
4377.5	4.07			
4377.75	3.83			
4379.5	3.79			
4380.5	4.15			
4381.5	4			
4382.5	3.92			
4383.5	3.9			
4384.5	3.87			
4385.5	4.14			
4386.5	3.89			
4392.5	4.11			
4394.5	3.99			
4395.5	4.42			
4396.5	4.17			
4397.5	4.4			

Planktonic Stable Isotopes				Color Data		
Depth (cm)	Finigan Ruber $\delta^{18}\text{O}$	Depth (cm)	VG Ruber $\delta^{18}\text{O}$	Depth (cm)	Gray Scale	Red/Yellow
4221.5	0.57	4234.5	0.62	4202.5	44.62	1.16
4224.5	-0.16	4235.5	0.69	4205.5	48.02	1.16
4227.5	0.31	4237.5	0.57	4208.5	48.21	1.26
4230.5	0.17	4238.5	0.07	4211.5	47.9	1.29
4239.5	0.30	4241.5	0.38	4214.5	46.65	1.18
4242.5	-0.08	4243.5	-0.09	4215.5	44.7	0.39
4245.5	0.04	4246.5	0.48	4222.5	46.08	1.02
4248.5	0.07	4247.5	0.13	4225.5	46.33	1.15
4251.5	-0.14	4249.5	0.47	4227.5	47.75	2.45
4254.5	0.03	4250.5	0.21	4229.5	48.38	3.03
4257.5	0.42	4252.5	0.28	4233.5	48.93	3.03
4260.5	0.37	4253.5	0.17	4236.5	50.06	3.55
4263.5	0.02	4255.5	0.17	4238.5	49.52	3.71
4266.5	0.01	4256.5	0.26	4240.5	49.82	3.02
4269.5	0.12	4258.5	0.44	4242.5	50.46	3.06
4272.5	0.28	4259.5	0.22	4244.5	50.84	3.03
4275.5	0.22	4261.5	0.25	4246.5	51.28	3.23
4278.5	0.01	4262.5	0.20	4248.5	50.56	2.62
4281.5	0.21	4264.5	0.38	4250.5	50.23	4.14
4284.5	0.11	4265.5	0.39	4253.5	49.3	4.26
4287.5	0.04	4267.5	-0.40	4255.5	47.06	5.48
4290.5	-0.14	4267.5	-0.03	4256.5	43.77	5.44
4293.5	-0.10	4268.5	0.53	4258.5	49.69	2.96
4296.5	-0.38	4270.5	0.61	4260.5	48.88	3.54
4299.5	-0.28	4271.5	0.34	4263.5	49.8	2.94
4302.5	-0.30	4273.5	0.38	4266.5	50	2.87
4305.5	-0.19	4274.5	0.31	4267.5	47.98	2.3
4308.5	-0.31	4276.5	0.20	4270.5	50.28	2.82
4314.5	-0.23	4277.5	0.52	4272.5	48.24	2.49
4320.5	-0.63	4279.5	0.38	4274.5	49.86	2.48
4323.5	-0.75	4280.5	0.27	4277.5	49.92	2.33
4326.5	-0.81	4282.5	0.34	4280.5	49.85	2.21
4329.5	-0.69	4283.5	0.42	4282.5	49.06	2.24
4332.5	-0.68	4285.5	0.02	4284.5	50.34	2.36
4335.5	-0.90	4286.5	0.2	4286.5	50.88	2.26
4338.5	-0.96	4288.5	-0.04	4288.5	51.1	2.28
4341.5	-0.87	4289.5	0.17	4290.5	50.72	2.35
4344.5	-0.82	4291.5	0.09	4292.5	51.11	2.39
4347.5	-0.64	4292.5	0.02	4296.5	50.8	1.79
4350.5	-0.51	4294.5	0.12	4298.5	50.42	2.41
4353.5	-1.16	4295.5	-0.28	4300.5	50.26	2.46
4356.5	-1.08	4297.5	-0.09	4303.5	48.01	2.64
4359.5	-0.75	4298.5	0.05	4306.5	48.28	2.88
4362.5	-0.37	4299.5	-0.42	4309.5	48.78	2.82
4364.5	-0.10	4300.5	-0.28	4311.5	49.45	2.73

4368.5	0.13	4301.5	-0.07	4313.5	48.7	2.94
4371.5	0.67	4302.5	-0.27	4315.5	46.8	2.54
4374.5	0.62	4303.5	-0.19	4316.5	46.91	3.11
4377.5	0.48	4304.5	-0.44	4317.5	47.99	3.72
4380.5	0.87	4305.5	-0.55	4318.5	49.05	5.65
4383.5	0.55	4306.5	-0.05	4319.5	47.43	6.49
4386.5	0.20	4307.5	-0.34	4320.5	46.26	7.85
4386.5	0.43	4308.5	-0.35	4322.5	54.47	2.72
4389.5	0.67	4309.5	-0.24	4325.5	54.42	1.89
4392.5	1.30	4310.5	-0.3	4327.5	54.43	2.2
		4310.5	-0.56	4330.5	55.72	2.39
		4311.5	-0.28	4333.5	55.33	2.14
		4311.5	-0.3	4336.5	56.15	1.92
		4312.5	-0.43	4338.5	54.64	2.63
		4312.5	-0.38	4341.5	56.26	2.59
		4313.5	-0.33	4344.5	55.71	3.02
		4313.5	-0.41	4347.5	55.56	3.36
		4314.5	-0.68	4349.5	55.31	3.61
		4314.5	-0.56	4351.5	54.8	4.08
		4315.5	0.02	4353.5	54.1	3.42
		4315.5	-0.32	4355.5	54.6	2.88
		4315.5	-0.43	4357.5	51.69	3
		4316.5	-0.32	4360.5	52.29	2.93
		4316.5	-0.46	4363.5	52.75	3.15
		4317.5	-0.34	4366.5	52.7	3.09
		4317.5	-0.57	4368.5	51.09	3.03
		4318.5	-0.28	4370.5	50	2.87
		4318.5	-0.78	4373.5	50.38	2.71
		4319.5	-0.22	4375.5	49.67	2.92
		4319.5	-0.38	4377.5	49.5	3.46
		4320.5	-0.61	4379.5	46.72	2.89
		4320.5	-0.44	4381.5	45.76	2.26
		4321.5	-0.32	4383.5	45.72	4.72
		4321.5	-0.45	4386.5	44.55	5.24
		4322.5	-0.76	4388.5	44.5	4.46
		4322.5	-0.62	4390.5	45.57	3.97
		4323.5	-0.87	4393.5	45.87	3.51
		4324.5	-0.6	4396.5	46.26	2.93
		4324.5	-0.49	4398.5	46.22	2.79
		4325.5	-0.45	4400.5	45.73	2.74
		4325.5	-0.57			
		4326.5	-0.64			
		4326.5	-0.87			
		4327.5	-0.44			
		4327.5	-0.91			
		4328.5	-0.04			
		4328.5	-1.02			
		4329.5	-0.87			
		4329.5	-0.92			
		4330.5	-0.75			

4330.5	-0.65
4331.5	-1.09
4331.5	-0.8
4332.5	-0.53
4332.5	-0.93
4334.5	-1.2
4335.5	-0.96
4335.5	-0.57
4336.5	-1
4336.5	-0.51
4337.5	-0.56
4337.5	-0.76
4338.5	-1.01
4338.5	-1.11
4339.5	-0.88
4340.5	-0.97
4341.5	-1.46
4341.5	-0.77
4342.5	-0.76
4343.5	-0.66
4343.5	-0.94
4344.5	-0.86
4344.5	-0.54
4345.5	-1.32
4345.5	-0.87
4346.5	-0.66
4347.5	-0.73
4347.5	-0.91
4348.5	-1.12
4348.5	-0.39
4349.5	-0.9
4349.5	-0.67
4350.5	-1.05
4350.5	-0.68
4351.5	-0.85
4351.5	-0.85
4353.5	-0.77
4353.5	-0.54
4354.5	-0.95
4354.5	-1.14
4355.5	-0.67
4356.5	-1.13
4356.5	-0.83
4357.5	-0.97
4357.5	-0.83
4358.5	-1.05
4358.5	-0.89
4360.5	-0.72
4360.5	-0.93
4361.5	-0.35

4363.5	-0.79
4364.5	-0.48
4365.5	0.01
4366.5	-0.2
4367.5	0.12
4368.5	0.34
4369.5	0.53
4370.5	0.72
4371.5	0.52
4374.5	0.47
4377.5	0.44
4380.5	1.22
4383.5	0.73
4389.5	0.93