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**FORAMINIFERAL EVIDENCE OF HOLOCENE FAULT DISPLACEMENTS IN COASTAL SOUTH OTAGO, NEW ZEALAND**

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APPENDIX 2

Census counts of dead foraminifera in samples from modern transects and cores from Akatore Estuary and Catlins Lake, South Otago.

## Akatore Transect Ak census counts as %

	Ak11	Ak12	Ak13	Ak14	Ak15	Ak16	Ak17	Ak18	Ak19	Ak20	Ak21	Ak1	Ak2	Ak3
AU number	18314	18315	18316	18317	18318	18319	18320	18321	18322	18323	Ak4,0-2	Ak1,0-2	Ak2,0-2	Ak3,0-2
Elevation	-0.3	0	0.3	0.6	0.78	1.09	1.2	1.2	1.16	1.4	1.19			
Standardised elevation	-0.3	0	0.21	0.42	0.56	0.78	0.84	0.84	0.83	1	0.83	0.83	0.83	0.83
Chord cluster assoc	H	H	H	H	F	F	E	E	E	A	A	A	A	A
Vegetation	subtidal	pebbly san	sand flat	sand flat	sand flat	Samolus m	meadow	rush	Plagianthu:	grass/reed:	meadow	meadow	meadow	meadow
Sand weight (g)	33.96	31.4	24.59	25.94	14.51	17.09	2.75	2.27	1.66	5.85	16.39			
Total sed weight (g)	48.97	45.52	43.73	48.36	48.31	41.52	44.44	39.44	36.53	14.58	2.11			
Sand %	69.35%	68.98%	56.23%	53.64%	30.04%	41.16%	6.19%	5.76%	4.54%	40.12%	87.1263			
Floated?	y	y	y	y	y	y	no	no	no	y				
Split size	1/4	1/4	1/32	1/16	1/8	1/8	1/32	1/16	1/64	1.00	0.002			
Picked and id	ATS	ATS	ATS	ATS	ATS	ATS	ATS	ATS	ATS	ATS	ATS	ATS	ATS	ATS
Total benthics counted	156	140	141	123	111	114	174	142	149	9	97	0.0	0.0	0.0
<i>Ammobaculites exiguus</i>	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ammonia spp.</i>	32.7	35.0	22.7	40.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Bolivina spp.</i>	3.8	2.1	12.8	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Bulimina spp</i>	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cassidulina carinata</i>	8.3	1.4	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cibicides dispars</i>	0.6	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Discorbinella bertheloti</i>	2.6	0.7	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Discorbinella complanata</i>	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Eilohedra vitrea</i>	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Elphidium advenum</i>	2.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Elphidium excavatum s.l.</i>	7.7	11.4	17.7	27.6	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Fissurina spp.</i>	1.9	0.7	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Haplophragmoides wilberti</i>	0.0	0.7	0.0	2.4	6.3	4.4	8.6	0.7	18.1	0.0	5.2	0.0	0.0	0.0
<i>Haynesina depressula</i>	3.2	0.7	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Heronallenia pulvinulinoides</i>	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Jadammina macrescens</i>	0.0	0.0	0.0	0.0	51.4	70.2	6.3	22.5	1.3	0.0	11.3	0.0	0.0	0.0
<i>Miliammina fusca</i>	30.8	45.0	14.2	24.4	0.9	0.0	0.0	1.4	2.0	0.0	6.2	0.0	0.0	0.0
<i>Nonionellina flemingi</i>	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Patellina corrugata</i>	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Portatrochammina sorosa</i>	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosalina irregularis</i>	2.6	1.4	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Trifarina angulosa</i>	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Trochammina inflata</i>	0.0	0.0	0.0	0.8	35.1	25.4	85.1	75.4	77.9	0.0	10.3	0.0	0.0	0.0
<i>Trochamminita salsa</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	100.0	67.0	100.0	100.0	100.0
<i>Virgulopsis turris</i>	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Agglutinated %



Catlins Lake Transect CL census counts as %

	CL21	CL22	CL23	CL24	CL25	CL26	CL27	CL28	CL29	CL30	CL31
Elevation	1.58	1.42	1.3	1.17	1.01	0.88	0.7	0.53	0.39	0.25	-0.25
Standardised elevation											
Chord cluster analysis	A	B	B	C	D	D	C	D	D	D	G
Total Benthics	117	99	108	118	238	112	125	118	119	182	103
<i>Ammonia spp.</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.2
<i>Bolivina spp.</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
<i>Bulimina spp.</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
<i>Cassidulina carinata</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9
<i>Cibicides dispars</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9
<i>Discorbinella bertheloti</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9
<i>Discorbinella subcomplanata</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
<i>Elphidium charlottense</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9
<i>Elphidium excavatum s.l.</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	3.4	1.1	6.8
<i>Elphidium advenum s.l.</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9
<i>Elphidium novozealandicum</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9
<i>Fissurina spp.</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
<i>Gavelinopsis praegeri</i>	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Haplophragmoides wilberti</i>	0.0	69.7	30.6	64.4	22.3	17.9	61.6	16.9	5.0	8.2	0.0
<i>Haynesina depressula</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.6
<i>Jadammina macrescens</i>	12.0	0.0	0.0	4.2	0.8	0.0	0.0	0.8	0.0	0.0	0.0
<i>Miliammina fusca</i>	0.0	0.0	0.0	19.5	75.2	78.6	36.8	77.1	91.6	90.7	20.4
<i>Miliolinella subrotundata</i>	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0
<i>Notorotalia spp./finlayi</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
<i>Oolina borealis</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
<i>Patellinella inconspicua</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
<i>Portotrochammina sorosa</i>	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rotaliammina sigmoidea</i>	0.0	0.0	0.0	0.0	0.4	1.8	0.0	0.0	0.0	0.0	0.0
<i>Trochammina inflata</i>	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Trochamminita salsa</i>	88.0	30.3	68.5	11.0	0.4	1.8	0.0	1.7	0.0	0.0	0.0

Akatore Core A1 census counts

AU

Depth in cm	0-2	8-10	25-27	30-32	36-38	50-52	54-56	70-72
Float	no	no	no	no	no	no	no	yes, 1/2
Total sed weight (g)	24.61	39.29	29.51	28.78	22.84	22.19	22.27	30.7
Sand weight(g)	2.06	3.41	0.39	1.04	0.68	0.4	0.53	10.83
Mud percent	91.629419	91.320947	98.6784141	96.38637943	97.022767	98.197386	97.620117	64.723127
Float								1/8
Picked fraction (float or total)	1/32	1/8	1	1	1	1	1	3/32
Picked and id	Rhiannon	Rhiannon	Rhiannon	Rhiannon	Rhiannon	Rhiannon	Rhiannon	Rhiannon
Forams:								
<i>Haplophragmoides wilberti</i>		7						
<i>Trochammina inflata</i>		2						
<i>Trochamminita salsa</i>	107	74	8	19	1	1		
<b>Total</b>	107	83	8	19	1	1	0	0
Other:								
Sterrasters							4	50
Ostracods								
Diatoms								1
Micromolluscs								
Sporangi		1						
Beetle Bits				many	lots	some		
Total forams per g sediment	139.13043	16.89997	0.27109	0.66018	0.04378	0.04507	0.00000	0.00000
Percentage								
<i>Haplophragmoides wilberti</i>	0.0	8.4	0.0	0.0	0.0	0.0		
<i>Trochammina inflata</i>	0.0	2.4	0.0	0.0	0.0	0.0		
<i>Trochamminita salsa</i>	100	89.2	100	100	100	100		

## Akatore Core A2 census counts

AU	0-2	8-10	20-22	28-30	35-37	52-54	63-65	73-75	81-83	100-102	129-131
Depth in cm	0-2	8-10	20-22	28-30	35-37	52-54	63-65	73-75	81-83	100-102	129-131
Depth mid point	1	9		21 29	36	53	64	74	82	101	130
Float	no	no	no	no	no	yes	yes	yes	yes	yes	yes
Total sed weight (g)	27.59	42.42	48.29	37.5	34.78	36.47	48.12	50.42	46.21	43.96	51.4
Sand weight(g)	1.73	2.96	0.54	0.44	0.75	8.86	25.33	33.24	31.33	32.23	34.91
Mud percent	93.729612	93.022159	98.8817561	98.82666667	97.843588	75.70606	47.360765	34.07378	32.200822	26.683348	32.081712
Fraction floated						1	1	1	1	1	1
Picked fraction (float or total)	1/32	1/4	1/4	0.13	1/4	1	1/2	1/2	1	1	1
Picker	Rhiannon	Rhiannon	Rhiannon	BWH	BWH	BWH	BWH	BWH	BWH	BWH	BWH
<i>Ammobaculites exiguus</i>											7
<i>Haplophragmoides manilaensis</i>								1		1	
<i>Haplophragmoides wilberti</i>											2
<i>Miliammina fusca</i>											14
<i>Portotrochammina sorosa</i>											2
<i>Rotaliammina</i>											1
<i>Trochammina inflata</i>						2				1	32
<i>Trochamminita salsa</i>	120	11	30	99	2						
<b>Total</b>	120	11	30	99	4	0	0	1	0	3	50
Other:											
Planktics											
Sterrasters										lots	
Ostracods											
Diatoms											
Thecamoebians											
Micromolluscs											
Sporangiums		2									
Sponge spicules								0			
Total forams per g sediment	139.18086	1.03725	2.48499	21.12000	0.46003	0.00000	0.00000	0.03967	0.00000	0.06824	0.97276
Preservation				poor				g		g	p-g
Percentage											
<i>Ammobaculites exiguus</i>	0	0	0	0	0					0.0	14.0
<i>Haplophragmoides manilaensis</i>	0	0	0	0	0					33.3	0.0
<i>Haplophragmoides wilberti</i>	0	0	0	0	0					0.0	4.0
<i>Miliammina fusca</i>	0	0	0	0	0					0.0	28.0
<i>Portotrochammina sorosa</i>	0	0	0	0	0					0.0	4.0
<i>Rotaliammina</i>	0	0	0	0	0					33.3	0.0
<i>Trochammina inflata</i>	0	0	0	0	50					33.3	64.0
<i>Trochamminita salsa</i>	100	100	100	100	50					0.0	0.0

Akatore Core A3 census counts

AU	0-2	7-9	19-21	40-42	50-52	60-62	70-72	80-82	120-122	
Depth in cm	0-2	7-9	19-21	40-42	50-52	60-62	70-72	80-82	120-122	
Float	no	no	no	no	no	no	no	no		
Total sed weight (g)		19.6	23.36	41.68	26.87	29.31	24.42	8.84	39.98	43
Sand weight(g)		1.74	1.5	1.1	0.18	0.35	8.84	6.36	6.91	
Mud percent	91.122449	93.578767	97.3608445	99.33010793	98.805868	63.800164	28.054299	82.716358		100
Float										
Picked fraction (float or total)	1/32	1/4	1/4	1/2	1	1	1	1/4		
Picked and id	Rhiannon	Rhiannon	Rhiannon	Rhiannon	Rhiannon	Rhiannon	Rhiannon	Rhiannon	Rhiannon	Rhiannon
Forams:						0	0	0		
<i>Trochammina inflata</i>									3	
<i>Trochamminita salsa</i>	85	10	6	32						
<b>Total</b>	85	10	6	32	0	0	0	0	3	0
Other:			many seeds							
Planktics										
Sterrasters					1				256	
Ostracods										
Diatoms										
Micromolluscs										
Sporangi	1		3							
Total forams per g sediment	138.77551	1.71233	0.57582	2.38184	0.00000	0.00000	0.00000	0.30015		#DIV/0!
Percentage										
<i>Trochammina inflata</i>									100	
<i>Trochamminita salsa</i>	100	100	100	100						

## Akatore Core A4 census counts

AU

Depth in cm	0-2	10-12	20-22	29-31	41-43	64-66	66-68	71-73	80-82	100-102	130-132	149-151	160-162	190-192	240-242	
Depth midpoint	1	11	21		30 42	65	67	72	81	101	131	150	161	191	241	
Float	no	no	yes	yes	yes					yes	yes	yes	yes	yes	yes	
Total sed weight (g)	16.39	36.42	53.07	37.16	51.92	40.45	46.63	30.9	39.73	51.47	50.57	52.6	50.26	44.64	35.81	
Sand weight(g)	2.11	9.99	21.22	8.53	26.72	4.47	0.68	1.19	0.74	19.14	25.08	23.22	39.46	30.61	26.96	
Mud percent	87.13	72.57	60.02	77.05	48.54	88.95	98.54	96.15	98.14	62.81	50.41	55.86	21.49	31.43	24.71	
Float			1		17/27	17/33				31/69	37/83	1	2/7	2/5	20/51	
Picked fraction (float or total)	1/512	1/8	1		1/2	1	1/32	1/8	1/128	1/64	1	1	1	1	1/2	1/4
Picked and id	Rhiannon	Rhiannon	Bruce	Rhiannon	Rhiannon	Rhiannon	BWH	Rhiannon	Rhiannon	Rhiannon	Rhiannon	Bruce	Rhiannon	Rhiannon	Rhiannon	
Forams:																0
<i>Ammobaculites exiguus</i>																3
<i>Haplophragmoides wilberti</i>		5	4	4	3			2					3			5
<i>Jadammina macrescens</i>		11														
<i>Miliammina fusca</i>		6					65						1			
<i>Paratrochammina bartrami</i>																2
<i>Trochammina inflata</i>		10		1	6					13		11	12		5	5
<i>Trochammina salsa</i>		65	13	30	65		23	33	130	120	2		1			
Indeterminate/identified forams					2											
<b>Total</b>	97	17	35	76	0	88	35	130	133	2	11	17	0	12	5	
Other:			2													
Planktics				0	0	0										
Sterrasters											24	5		26	73	5
Thecamoebians													1			
Ostracods																
Diatoms							1									
Micromolluscs																
Sporangi			3		9	several						some				15 lots
Total forams per g sediment	3030.14033	3.73421	0.65951	4.09042	0.00000	69.61681	6.00472	538.51133	214.24616	0.03886	0.21752	0.32319	0.00000	0.53763	0.55850	

%

<i>Ammobaculites exiguus</i>	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		25.0	0.0
<i>Haplophragmoides wilberti</i>	5.2	23.5	11.4	3.9		0.0	5.7	0.0	0.0	0.0	0.0	17.6		41.7	0.0
<i>Jadammina macrescens</i>	11.3	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
<i>Miliammina fusca</i>	6.2	0.0	0.0	0.0		73.9	0.0	0.0	0.0	0.0	0.0	5.9		0.0	0.0
<i>Paratrochammina bartrami</i>	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		16.7	0.0
<i>Trochammina inflata</i>	10.3	0.0	2.9	7.9		0.0	0.0	0.0	9.8	0.0	100.0	70.6		41.7	100.0
<i>Trochammina salsa</i>	67.0	76.5	85.7	85.5		26.1	94.3	100.0	90.2	100.0	0.0	5.9		0.0	0.0



Akatore Cores MAT estimates of elevation

sample	value	analog 1	wtd av. 1-2	wtd av. 1-3	wtd av. 1-4	wtd av. 1-5	lo of 5	hi of 5	minus	plus	
From all harbour analogues											
A1,1	1	1.4	1.4	1.4	1.376304433	1.3804		1.3	1.4	0.0804	0.0196
A1,9	9	1.4	1.232901437	1.287981521	1.315711328	1.332436461		1.06	1.4	0.272436461	0.067563539
A1,26	26	1.4	1.4	1.4	1.376304433	1.3804		1.3	1.4	0.0804	0.0196
A1,31	31	1.4	1.4	1.4	1.376304433	1.3804		1.3	1.4	0.0804	0.0196
A1,37	37	1.4	1.4	1.4	1.376304433	1.3804		1.3	1.4	0.0804	0.0196
A1,51	51	1.4	1.4	1.4	1.376304433	1.3804		1.3	1.4	0.0804	0.0196
A2,1	1	1.4	1.4	1.4	1.376304433	1.3804		1.3	1.4	0.0804	0.0196
A2,9	9	1.4	1.4	1.4	1.376304433	1.3804		1.3	1.4	0.0804	0.0196
A2,21	21	1.4	1.4	1.4	1.376304433	1.3804		1.3	1.4	0.0804	0.0196
A2,29	29	1.4	1.4	1.4	1.376304433	1.3804		1.3	1.4	0.0804	0.0196
A2,36	36	1.218	1.313786812	1.343402818	1.322840224	1.291878139		1.15	1.4	0.141878139	0.108121861
A2,74	74	1.288	1.267058011	1.310234629	1.280813782	1.245828462		1.19	1.29	0.055828462	0.044171538
A2,101	101	1.232	1.194980085	1.183596935	1.199190386	1.262624665		1.16	1.4	0.102624665	0.137375335
A2,130	130	1.162	1.074144697	1.052764606	1.096596223	1.129967483		0.98	1.26	0.149967483	0.130032517
A3,1	1	1.4	1.4	1.4	1.376304433	1.3804		1.3	1.4	0.0804	0.0196
A3,8	8	1.4	1.4	1.4	1.376304433	1.3804		1.3	1.4	0.0804	0.0196
A3,20	20	1.4	1.4	1.4	1.376304433	1.3804		1.3	1.4	0.0804	0.0196
A3,41	41	1.4	1.4	1.4	1.376304433	1.3804		1.3	1.4	0.0804	0.0196
A3,81	81	1.26	1.26	1.26	1.26	1.254882913		1.23	1.26	0.024882913	0.005117087
A4,1	1	1.162	1.276150388	1.226221715	1.268208962	1.293680485		1.12	1.4	0.173680485	0.106319515
A4,11	11	1.064	1.197656085	1.226148241	1.272067034	1.289823256		1.06	1.38	0.229823256	0.090176744
A4,21	21	1.064	1.231406467	1.268290857	1.302051384	1.31407907		1.06	1.4	0.25407907	0.08592093
A4,30	30	1.4	1.4	1.4	1.4	1.372482948		1.26	1.4	0.112482948	0.027517052
A4,65	65	1.12	1.12	1.02298671	0.847196385	0.893274096		0.28	1.12	0.613274096	0.226725904
A4,67	67	1.4	1.4	1.4	1.318463357	1.38127907		1.32	1.4	0.06127907	0.01872093
A4,72	72	1.4	1.4	1.4	1.376304433	1.3804		1.3	1.4	0.0804	0.0196
A4,81	81	1.4	1.4	1.4	1.4	1.4		1.4	1.4	0	0
A4,101	101	1.4	1.4	1.4	1.376304433	1.3804		1.3	1.4	0.0804	0.0196
A4,131	131	1.26	1.26	1.26	1.26	1.254790698		1.23	1.26	0.024790698	0.005209302
A4,150	150	1.162	1.212714322	1.21944415	1.204641943	1.269116279		1.22	1.3	0.049116279	0.030883721
A4,191	191	1.232	1.194980085	1.183596935	1.199190386	1.263776744		1.16	1.4	0.103776744	0.136223256
A4,241	241	1.26	1.26	1.26	1.26	1.254790698		1.23	1.26	0.024790698	0.005209302
from Ak: from Akatore, Pounawea, Catlins analogues only											
A1,1	1	1.4	1.4	1.368706024	1.366671218	1.310440154					
A1,9	9	1.064	1.230883466	1.287005322	1.302356199	1.299830376					
A1,26	26	1.4	1.4	1.368706024	1.366671218	1.310440154					
A1,31	31	1.4	1.4	1.368706024	1.366671218	1.310440154					
A1,37	37	1.4	1.4	1.368706024	1.366671218	1.310440154					

A1,51	51	1.4	1.4	1.368706024	1.366671218	1.310440154
A2,1	1	1.4	1.4	1.368706024	1.366671218	1.310440154
A2,9	9	1.4	1.4	1.368706024	1.366671218	1.310440154
A2,21	21	1.4	1.4	1.368706024	1.366671218	1.310440154
A2,29	29	1.4	1.4	1.368706024	1.366671218	1.310440154
A2,36	36	1.218	1.190508561	1.213402806	1.218124678	1.220318857
A2,74	74	1.204	1.188094452	1.210447284	1.234915339	1.239646375
A2,101	101	1.232	1.244709007	1.254120349	1.258035683	1.234815725
A2,130	130	1.204	1.217393733	1.231535579	1.251534639	1.229354877
A3,1	1	1.4	1.4	1.368706024	1.366671218	1.310440154
A3,8	8	1.4	1.4	1.368706024	1.366671218	1.310440154
A3,20	20	1.4	1.4	1.368706024	1.366671218	1.310440154
A3,41	41	1.4	1.4	1.368706024	1.366671218	1.310440154
A3,81	81	1.176	1.212702691	1.21007212	1.196939745	1.192504125
A4,1	1	1.162	1.227711727	1.177488128	1.21314705	1.249510255
A4,11	11	1.064	1.197656085	1.226148241	1.21360306	1.229697848
A4,21	21	1.064	1.196409659	1.266486632	1.300674905	1.298402718
A4,30	30	1.4	1.4	1.289825527	1.258525785	1.275114319
A4,65	65	0.728	0.525932582	0.495413225	0.424471861	0.501258733
A4,67	67	1.4	1.4	1.290732742	1.305074588	1.304461491
A4,72	72	1.4	1.4	1.368706024	1.366671218	1.310440154
A4,81	81	1.4	1.4	1.368706024	1.319242771	1.272786897
A4,101	101	1.4	1.4	1.368706024	1.366671218	1.310440154
A4,131	131	1.176	1.212702691	1.21007212	1.196939745	1.192504125
A4,150	150	1.162	1.212714322	1.226627106	1.221511763	1.237852859
A4,191	191	1.232	1.244709007	1.254120349	1.258035683	1.234815725
A4,241	241	1.176	1.212702691	1.21007212	1.196939745	1.192504125

Catlins Lake section C7 census counts

Core	C7 (AU183E C7		C7	C7	C7	C7
Depth in cm	18-20	42-44	63-65	90-92	114-116	138-140
	19	43	64	91	115	139
Total sed weight (g)	27.56	23.9	28.48	76.71	44.63	41.64
Sand weight(g)	15.71	19.39	20.99	43.23	14.62	16.59
Mud percent	43	19	26	44	67	60
Picked fraction (float or total)	all	all nf	all nf	1/1892	1/256	3/512
Forams:						
<i>Ammonia spp.</i>	1			64	83	58
<i>Anomalinooides sphericus</i>				1		
<i>Bolivina spp.</i>					2	
<i>Cassidulina carinata</i>					2	
<i>Eilohedra vitrea</i>					4	
<i>Elphidium advenum</i>				26	22	16
<i>Elphidium excavatum</i>						1
<i>Fissurina spp.</i>					1	2
<i>Globocassidulina minuta</i>					1	
<i>Haynesina depressula</i>				7	18	15
<i>Notorotalia spp.</i>				3		
<i>Quinqueloculina spp.</i>				1	3	
<i>Rosalina irregularis.</i>				1	7	1
<b>Total</b>	1			103	143	93
Other:						
Planktics	rare		rare	1	8	2
Sterrasters	rare	some	some		2	
Ostracods				5	7	3
Diatoms				found		
Micromolluscs				1	1	1
Total forams per g sediment						
Percentage:						
<i>Ammonia spp.</i>				62.1	58.0	62.4
<i>Anomalinooides sphericus</i>				1.0	0.0	0.0
<i>Bolivina spp.</i>				0.0	1.4	0.0
<i>Cassidulina carinata</i>				0.0	1.4	0.0

<i>Eilohedra vitrea</i>	0.0	2.8	0.0
<i>Elphidium advenum</i>	25.2	15.4	17.2
<i>Elphidium excavatum</i>	0.0	0.0	1.1
<i>Fissurina spp.</i>	0.0	0.7	2.2
<i>Globocassidulina minuta</i>	0.0	0.7	0.0
<i>Haynesina depressula</i>	6.8	12.6	16.1
<i>Notorotalia spp.</i>	2.9	0.0	0.0
<i>Quinqueloculina spp.</i>	1.0	2.1	0.0
<i>Rosalina irregularis.</i>	1.0	4.9	1.1

Catlins Lake core C17 census counts

	C17,1	C17,18	C17,39	C17,53	C17,65	C17,79	C17,90	C17,101	C17,112
Actual depth in cm in core	0-2	13-15	26-28	39-41	47-49	58-60	67-69	75-77	83-85
Decompacted depth	1	18	39	53	65	79	90	101	112
ASSOC	C	C	D	D	C	D	I	I	I
Total sed weight (g)	30.4	35.37	34.31	44.18	52.07	45.5	39.19	42.1	45.6
Sand weight(g)	2.22	4.47	4.28	8.48	32.37	2.39	2.36	2.66	5.33
Mud percent	93	87	88	81	38	95	94	94	88
Float	no	no	no	yes	yes	no	no	no	no
split no.	1/32	1/64	1/4	1/2	1	3/4	3/4	1/8	1/32
Ammobaculites exiguus	1	1	37	1			90	101	98
Haplophragmoides wilberti	53	71	21	13	27	18	6	1	1
Miliammina fusca	59	42	60	87	14	46	5	2	2
Paratrochammina bartrami		1				1			
Rotaliammina ochracea							3		
Trochammina inflata	17	5	1	1	2		1		
No of forams picked	130	120	119	102	43	65	105	104	101
Diatoms	common	common		common		common			
Sterrasters				many		many			
sponge spicules						many			
Percentage									
Ammobaculites exiguus	0.8	0.8	31.1	1.0	0.0	0.0	85.7	97.1	97.0
Haplophragmoides wilberti	40.8	59.2	17.6	12.7	62.8	27.7	5.7	1.0	1.0
Miliammina fusca	45.4	35.0	50.4	85.3	32.6	70.8	4.8	1.9	2.0
Paratrochammina bartrami	0.0	0.8	0.0	0.0	0.0	1.5	0.0	0.0	0.0
Rotaliammina ochracea	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0
Trochammina inflata	13.1	4.2	0.8	1.0	4.7	0.0	1.0	0.0	0.0

Catlins Lake core C18 census counts

	C18,30	C18,60	C18,72	C18,95	C18,130	C18,155	C18,161	C18,168	C18,175	C18,183	C18,236	C18,291	C18,341	C18,395	C18,447	C18,501	C18,516	C18,528	555-557	630-632	394-396
Depth in cm	29-31	59-61	71-73	94-96	129-131	154-156	160-162	167-169	174-176	182-184	235-237	290-292	340-342	394-396	446-448	500-502	515-517	527-529	555-557	630-632	394-396
mid depth	30	60	72	95	130	155	161	168	175	183	236	291	341	395	447	501	516	528	556	631	395
ASSOC	C	D	A	A	D	H	H	H	H	H	H	H	H	H	H	H	H	H	NF	NF	
Total sed weight (g)	33.36	34.51	35.35	37.06	44.95	48.94	45.34	43.42	42.59	41.27	43.31	39.58	48.12	47.88	44.88	47.77	52.05	44.1	50.42	45.63	47.88
Sand weight(g)	1.22	1.04	0.87	1.72	8.6	9.31	6.11	5.94	7.92	6.19	2.44	2.23	2.14	1.11	1.26	6.7	28.48	7.44	2.1	11.97	1.11
Mud percent	96	97	98	95	81	81	87	86	81	85	94	94	96	98	97	86	45	83	96	74	98
Float split no.	no	no	no	no	yes	yes	no	no	no	no	no	no	no	no	no	y	y	y	y	y	no forams
	1/256	3/8	1/32	1/64	1/2	1/4	1/32	1/16	1/8	1/32	1/32	1/64	1/64	1/64	1/32	1/8	1/2	1	no forams	no forams	not picked
Total benthics identified	137	117	153	131	129	95	145	115	102	99	135	179	131	132	108	116	101	50	0	0	0
Ammobaculites exiguus	0	0	0	0	7	0	5	5	2	3	16	4	6	3	5	116	101	50	0	0	0
Haplophragmoides wilberti	91	3	0	8	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Jadammina macrescens	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miliammina fusca	8	79	0	5	91	7	6	10	3	1	0	0	0	0	0	0	0	0	0	0	0
Paratrochammina bartrami	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rotalliammina sigmoidea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trochammina inflata	1	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Trochammina salsa	0	0	100	87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia	0	0	0	0	0	88	66	58	84	56	70	111	65	76	59	60	61	37	0	0	0
Bolivina cacozela	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Bolivina subexcavata	0	0	0	0	0	0	0	0	0	0	2	1	2	4	8	5	1	0	0	0	0
Bulliminella elegantissima	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Cassidulina carinata	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Cibicides dispars	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Discorbinella bertheloti	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Eilohedra vitrea	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0
Elphidium advenum	0	0	0	0	0	0	1	3	0	0	0	2	0	0	0	0	0	0	0	0	0
Elphidium excavatum	0	0	0	0	0	3	21	22	10	35	22	46	38	42	28	50	38	11	0	0	0
Fissurina spp	0	0	0	0	0	0	0	0	0	1	1	1	0	2	3	0	0	0	0	0	0
Globocassidulina minuta	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Haynesina depressula	0	0	0	0	0	0	0	0	0	2	16	11	19	1	2	1	1	0	0	0	0
Miliolinella subrotundata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Nonionellina flemingi	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Notorotalia	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Patellina corrugata	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
Quinqueloculina	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Rosalina irregularis	0	0	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	0	0	0	0
Ostracods											common	common	common			common	common				
Gastropod																	few				
Bivalve																					
Planktic											few			3							few
percentage																					
Ammobaculites exiguus	0.0	0.0	0.0	0.0	7.0	0.0	4.8	5.2	2.0	3.0	11.9	2.2	4.6	2.3	4.6	0.0	0.0	0.0	0.0	0.0	0.0
Haplophragmoides wilberti	91.2	2.6	0.0	8.4	0.0	1.1	1.4	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Jadammina macrescens	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Miliammina fusca	8.0	78.6	0.0	4.6	91.5	7.4	5.5	10.4	2.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Paratrochammina bartrami	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rotalliammina sigmoidea	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
Trochammina inflata	0.7	14.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
Trochammina salsa	0.0	0.0	100.0	87.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ammonia	0.0	0.0	0.0	0.0	0.0	88.4	66.2	58.3	82.4	56.6	51.9	62.0	49.6	57.6	54.6	51.7	60.4	74.0	0.0	0.0	0.0
Bolivina cacozela	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bolivina subexcavata	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.6	1.5	3.0	7.4	4.3	1.0	0.0	0.0	0.0	0.0
Bulliminella elegantissima	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Cassidulina carinata	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cibicides dispars	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Discorbinella bertheloti	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eilohedra vitrea	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Elphidium advenum	0.0	0.0	0.0	0.0	0.0	1.4	2.6	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Elphidium excavatum	0.0	0.0	0.0	0.0	0.0	3.2	20.7	21.7	9.8	35.4	16.3	25.7	29.0	31.8	25.9	43.1	37.6	22.0	0.0	0.0	0.0
Fissurina spp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.7	0.6	0.0	1.5	2.8	0.0	0.0	0.0	0.0	0.0	0.0
Globocassidulina minuta	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haynesina depressula	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	11.9	6.1	14.5	0.8	1.9	0.9	1.0	0.0	0.0	0.0	0.0
Miliolinella subrotundata	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nonionellina flemingi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Notorotalia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Patellina corrugata	0.0																				

Catlins Lake core C19 census counts

Core	C19,1	C19,15	C19,27	C19,40	C19,61	C19,84	C19,103	C19,140	C19,175	C19,215
Depth in cm	0-2	14-16	26-28	39-41	60-62	83-85	102-104	139-141	174-176	214-216
Assoc.	D	D	D	D	NF	NF	NF	NF	NF	NF
Total sed weight (g)	31.79	9.29	31	20.98	39.1	28.9	38.43	37.91	38.51	35.25
Sand weight(g)	8.57	0.85	8.84	1.91	5.33	11.5	7.64	19.58	21.89	21.92
Float	yes		yes				yes			
Total benthics identified	108	112	206	47	NO Foram! NO Foram! NO Foram! NO Foram! NO Foram! NO Forams					
Haplophragmoides wilberti	25	7	32							
Miliammina fusca	83	105	173	42						
Trochammina inflata			1							
Trochamminita salsa				5						
Percentage										
Haplophragmoides wilberti	23.1	6.3	15.5	0.0						
Miliammina fusca	76.9	93.8	84.0	89.4						
Trochammina inflata	0.0	0.0	0.5	0.0						
Trochamminita salsa	0.0	0.0	0.0	10.6						

NO QUAKE STORY \_ NO MORE WORK

Catlins Lake core C20 census counts																			C20,80	C20,186	
Actual depth in cm in core	C20,18	C20,29	C20,47	C20,70	C20,91	C20,105		C20,129	C20,140	C20,152	C20,164	C20,175	C20,196	C20,207	C20,215	C20,222	C20,80	C20,186			
Decompacted depth	14-16	24-26	39-41	59-61	77-79	89-91	100-102	109-111	119-121	129-131	139-141	149-151	169-171	179-181	187-189	194-196	67-69	159-161	189-191		
	A	B	E	C	A	A	NF	C	C	D	D	D	H	H	H	A	C	NC			
Split no float	1/4	1	3/8	1/4	1	1/32	1	1	3/4	1/2	1	1	1/8	1/64	1/16	1/2	1	1	1		
Total sed weight (g)	11.34	18.34	17.99	20.06	44.24	23.08		32.67	38.69	34.16	60.6	58.86	32.82	47.35	22.8	22.11	35.66	70.52	11.5		
Sand weight (g)	3.25	0.5	0.6	0.57	0.45	0.39	nf	4.66	5.61	9.71	6.23	9.53	11.28	6.94	6.67	0.87	0.42	15.51	2.24		
% mud	71	97	97	97	99	98		86	86	72	90	84	66	85	71	96	99	78	81		
Total benthics identified	131	187	119	129	17	151	0	164	114	100	42	18	138	108	104	108	4	8	2		
Ammobaculites exigua										2	9	1									
Ammonia spp.													98	93	76			3			
Elphidium advenum														2							
Elphidium charlottense															3						
Elphidium excavatum excavatum													37	13	19						
Haplophragmoides wilberti		42	84	86				118	94	17	25	3				2	3	1			
Jadammina macrescens		5																			
Miliammina fusca		2	12	41				37	19	80	8	14	3		3	1		1	2		
Notorotalia spp.															1						
Trochammina inflata			23	1																	
Trochammina salsa	131	138		1	17	151		9	1	1					2	105	1	3			
Percentage																					
Ammobaculites exigua	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	2.0	21.4	5.6	0.0	0.0	0.0	0.0					
Ammonia spp.	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	71.0	86.1	73.1	0.0					
Elphidium advenum	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0					
Elphidium charlottense	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0					
Elphidium excavatum excavatum	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	26.8	12.0	18.3	0.0					
Haplophragmoides wilberti	0.0	22.5	70.6	66.7	0.0	0.0		72.0	82.5	17.0	59.5	16.7	0.0	0.0	0.0	1.9					
Jadammina macrescens	0.0	2.7	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
Miliammina fusca	0.0	1.1	10.1	31.8	0.0	0.0		22.6	16.7	80.0	19.0	77.8	2.2	0.0	2.9	0.9					
Notorotalia spp.	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0					
Trochammina inflata	0.0	0.0	19.3	0.8	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
Trochammina salsa	100.0	73.8	0.0	0.8	100.0	100.0		5.5	0.9	1.0	0.0	0.0	0.0	0.0	1.9	97.2					



MAT estimates of elevations of Catlins Lake core and section samples											
sample	core dept	value analog 1	wtd av. 1-2	wtd av. 1-3	wtd av. 1-4	wtd av. 1-5	lo	hi			
							of 5	of 5	minus	plus	
C7,91	91	-0.06	-0.11902066	-0.12915789	-0.17090891	-0.15907482	-0.3	-0.06	0.140925	0.099075	
C7,115	115	-0.11	-0.20444438	-0.15654257	-0.16235812	-0.159912027	-0.3	-0.11	0.140088	0.049912	
C7,139	139	-0.18	-0.12060579	-0.17934402	-0.17224179	-0.160118436	-0.3	-0.06	0.139882	0.100118	
C17,1	1	1.479	1.504340088	1.507210204	1.470584842	1.482414706	1.36	1.53	0.122415	0.047585	
C17,18	18	1.479	1.087442843	1.223159789	1.299285393	1.341537564	0.7	1.53	0.641538	0.188462	
C17,39	39	1.122	1.054854604	1.032810287	1.091788392	1.074587589	0.99	1.27	0.084588	0.195412	
C17,53	53	1.275	1.300416065	0.952877524	1.032917401	1.003449796	0.25	1.32	0.75345	0.31655	
C17,65	65	1.479	1.48748448	1.22485575	1.296154997	1.342748434	0.7	1.53	0.642748	0.187252	
C17,79	79	1.275	1.13997383	1.055629863	1.109847201	0.995216791	0.52	1.27	0.475217	0.274783	
C17,90	90	1.19	1.071123925	0.992445172	1.010946032	1.007622475	0.95	1.19	0.057622	0.182378	
C17,101	101	0.952	1.070928565	0.991875423	1.010292377	1.007427796	0.83	1.19	0.177428	0.182572	
C17,112	112	0.952	1.070929094	0.991873966	1.010293676	1.007420837	0.83	1.19	0.177421	0.182579	
C18,30	30	1.564	1.530231577	1.524524747	1.513243887	1.509815074	1.48	1.56	0.029815	0.050185	
C18,60	60	1.122	1.130487482	1.161585933	1.200771671	1.214965093	1.12	1.32	0.094965	0.105035	
C18,72	72	1.7	1.7	1.643333333	1.615	1.598	1.53	1.7	0.068	0.102	
C18,95	95	1.61005814	1.654861083	1.661882415	1.671266568	1.676942969	1.61	1.7	0.066943	0.023057	
C18,130	130	1.326	1.157181068	1.055450314	1.13113308	0.974575734	0.34	1.36	0.634576	0.385424	
C18,155	155	1.19	0.817151041	0.529644185	0.541585826	0.498365762	-0.05	1.19	0.548366	0.691634	
C18,161	161	0.986	0.468964457	0.409671127	0.476252595	0.523121727	-0.05	0.98	0.573122	0.456878	
C18,168	168	0.986	0.639273435	0.663758155	0.676072186	0.533197378	-0.05	0.98	0.583197	0.446803	
C18,175	175	0.85	1.019119033	0.795589493	0.708063171	0.635092551	0.34	1.19	0.295093	0.554907	
C18,183	183	0.34	0.34	0.508290431	0.352781042	0.518652597	-0.12	1.19	0.638653	0.671347	
C18,236	236	-0.11	0.114656073	0.189185642	0.112636573	-0.007422668	-0.5	0.34	0.492577	0.347423	
C18,291	291	0.289	0.483733531	0.283789463	0.352327882	0.477645762	-0.12	0.99	0.597646	0.512354	
C18,341	341	0.34	0.34	0.615790629	0.435076439	0.324620262	-0.12	1.17	0.44462	0.84538	
C18,395	395	0.68	0.488747286	0.651939436	0.667207213	0.773305865	0.29	1.2	0.483306	0.426694	
C18,447	447	-0.11	0.112898738	0.187964174	0.1111645674	0.257199864	-0.12	0.85	0.3772	0.5928	
C18,501	501	0.34	0.34	0.509702498	0.353920978	0.262271048	-0.12	0.85	0.382271	0.587729	
C18,516	516	0.34	0.34	0.509727768	0.463896631	0.349383013	-0.12	0.85	0.469383	0.500617	
C18,528	528	0.85	0.598068801	0.512828826	0.465904878	0.461197265	0.32	0.85	0.141197	0.388803	
C20,18	18	1.7	1.7	1.7	1.671226812	1.598	1.53	1.7	0.068	0.102	
C20,29	29	1.292	1.495584491	1.54078007	1.546160045	1.575109302	1.29	1.7	0.285109	0.124891	
C20,47	47	1.36	1.402433634	1.42776643	1.444730711	1.471290698	1.36	1.5	0.111291	0.028709	
C20,70	70	0.697	1.112727191	1.233248772	1.298245048	1.340094752	0.7	1.53	0.640095	0.189905	

C20,91	91	1.7	1.7	1.7	1.671226812	1.598	1.53	1.7	0.068	0.102
C20,105	105	1.7	1.7	1.7	1.671226812	1.598	1.53	1.7	0.068	0.102
C20,129	129	1.53	1.353279577	1.423040027	1.445707573	1.461446512	1.17	1.56	0.291447	0.098553
C20,140	140	1.564	1.547056958	1.530305643	1.517688043	1.355026166	0.7	1.56	0.655026	0.204974
C20,152	152	0.884	1.079349448	1.053950508	1.109253735	0.939652232	0.26	1.27	0.679652	0.330348
C20,164	164	0.697	1.125757708	1.248300278	1.318398442	1.35015008	0.7	1.53	0.65015	0.17985
C20,175	175	1.275	1.275	1.184885869	0.953580737	1.027621178	0.26	1.32	0.767621	0.292379
C20,196	196	0.85	1.018823612	0.795132324	0.682459983	0.634746755	0.34	1.19	0.294747	0.555253
C20,207	207	0.85	0.39771584	0.378708911	0.36913072	0.360023435	-0.06	0.85	0.420023	0.489977
C20,215	215	0.85	1.019322799	0.643224067	0.593483691	0.543252807	-0.12	1.19	0.663253	0.646747
C20,222	222	1.7	1.7	1.7	1.671497738	1.68	1.58	1.7	0.1	0.02