

## ITEM DR1

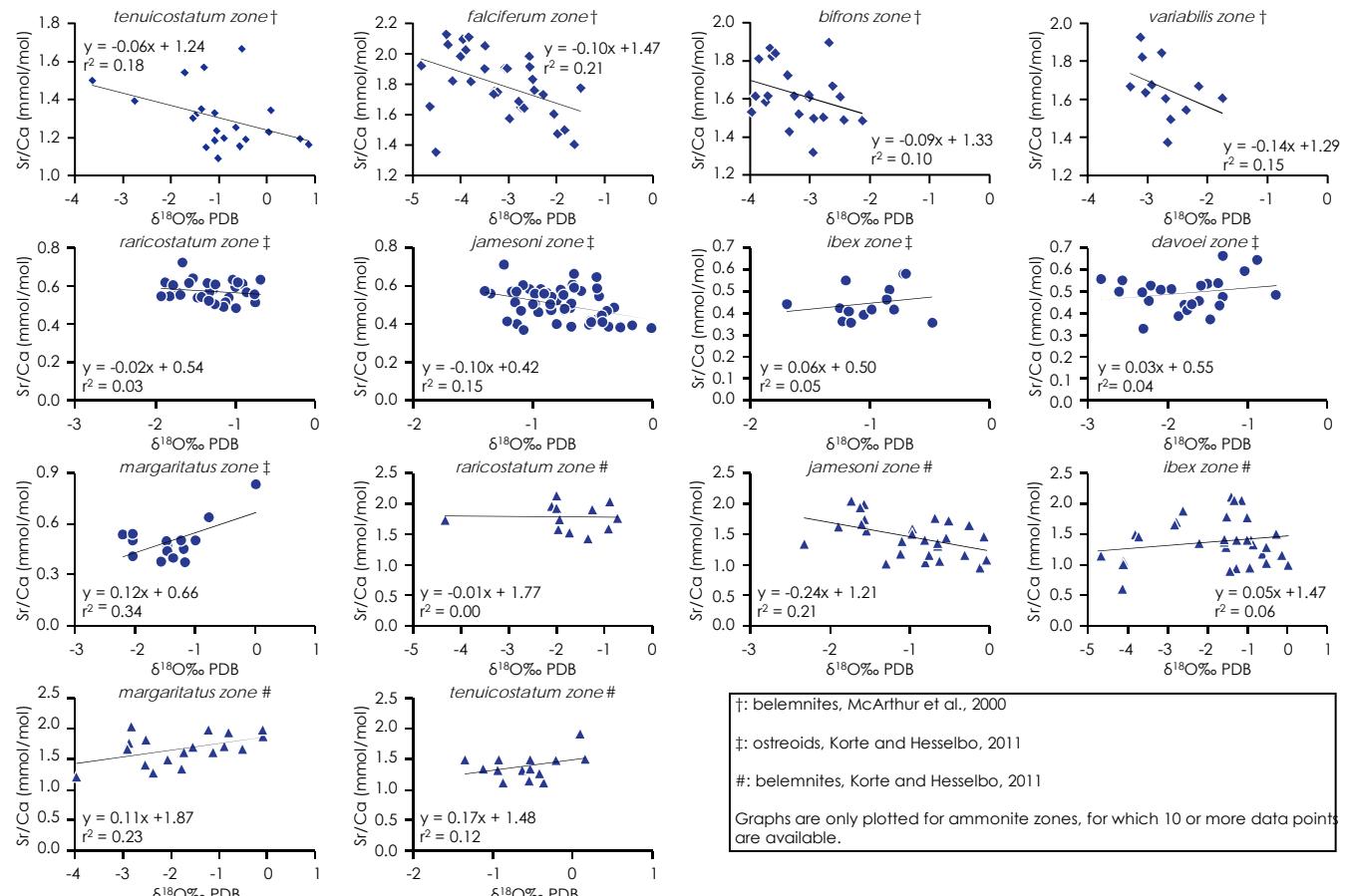


Figure DR1: cross plots of  $\delta^{18}\text{O}$  values and Sr/Ca ratios of belemnites and ostreoids from different ammonite zones. Correlations are generally weak and slopes of correlations ambiguous.

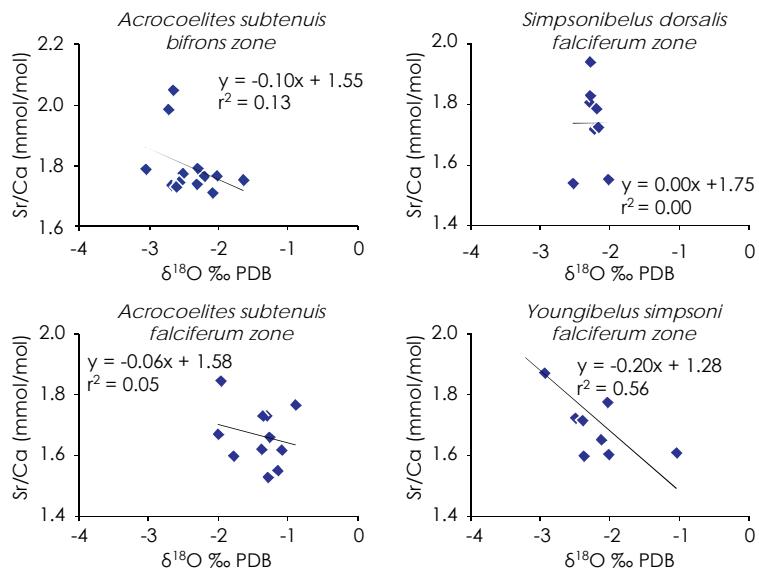


Figure DR2: Cross plots of  $\delta^{18}\text{O}$  values and Sr/Ca ratios of single species of belemnites from *bifrons* and *falciferum* ammonite zones. Apart from a single case, correlations are weak and slopes of correlation are  $\leq -0.20$  (mmol/mol)/‰. Data are from Li et al., 2012.

Table DR1: Locations of Sections used for this compilation.

<b>name</b>	<b>Latitude</b>	<b>Longitude</b>
Hawsker Bottoms	54°27'24" N	0°32'20" W
Kettleness	54°32'03" N	0°42'58" W
Peak	54°24'23" N	0°29'25" W
Port Mulgrave	54°32'50" N	0°46'01" W
Ravenscar	54°24'23" N	0°29'25" W
Robin Hood's Bay	54°24'53" N	0°30'58" W
Runswick Bay	54°32'03" N	0°44'54" W
Saltwick Nab	54°29'21" N	0°35'18" W
Staithes	54°33'29" N	0°46'47" W
Ardnish	57°15'13" N	5°50'39" W
Borreraig	57°10'30" N	5°56'15" W
Bearreraig	57°29'49" N	6°08'40" W
Hallaig Waterfall	57°22'30" N	6°00'13" W
Lochaline	56°32'36" N	5°45'13" W
Alina	50°47'03" N	19°02'04" E
Sowa–Gliński	50°47'05" N	19°03'00" E
Gnaszyn	50°48'03" N	19°02'41" E
Kawodrza	50°48'09" N	19°03'50" E
Faustianka	51°02'35" N	18°32'39" E
Pacanów	50°54'25" N	18°43'27" E
Młynka	50°06'31" N	19°41'17" E
Wieluń	51°12'43" N	18°34'22" E
Stare Gliny	50°21'00" N	19°35'18" E
Ogrodzieniec	50°27'34" N	19°30'31" E

## References

- Korte, C., and Hesselbo, S.P., 2011, Shallow marine carbon and oxygen isotope and elemental records indicate icehouse-greenhouse cycles during the Early Jurassic: *Paleoceanography*, v. 26, PA4219, doi:10.1029/2011PA002160.
- McArthur, J.M., Doyle, P., Leng, M.J., Reeves, K., Williams, C.T., Garcia-Sanchez, R., Howarth, R.J., 2007. Testing palaeo-environmental proxies in Jurassic belemnites: Mg/Ca, Sr/Ca, Na/Ca,  $\delta^{18}\text{O}$  and  $\delta^{13}\text{C}$ . *Palaeogeography, Palaeoclimatology, Palaeoecology* 252, 464-480.
- Li, Q., McArthur, J.M., Atkinson, T.C., 2012. Lower Jurassic belemnites as indicators of palaeo-temperature. *Palaeogeography, Palaeoclimatology, Palaeoecology* 315-316, 38-45.

## ITEM DR2

### Belemnite Data

section	sample No	Zone No.	Sr/Ca mmol/mol	Mn/Ca mmol/mol	source
	230	47.75	1.24	0.03	Wierzbowski et al., 2012
	232	47.75	1.23	0.02	Wierzbowski et al., 2012
	233	47.75	1.21	0.04	Wierzbowski et al., 2012
	285	47.75	1.27	0.05	Wierzbowski et al., 2012
	286	47.75	1.18	0.05	Wierzbowski et al., 2012
	266	47.25	1.17	0.02	Wierzbowski et al., 2012
	267	47.25	1.25	0.02	Wierzbowski et al., 2012
	268	47.25	1.16	0.01	Wierzbowski et al., 2012
	269	47.25	1.22	0.01	Wierzbowski et al., 2012
	225	46.75	1.16	0.05	Wierzbowski et al., 2012
	226	46.75	1.13	0.02	Wierzbowski et al., 2012
	236	46.75	1.32	0.02	Wierzbowski et al., 2012
	237	46.75	1.18	0.01	Wierzbowski et al., 2012
	297	46.25	1.56	0.02	Wierzbowski et al., 2012
	298	46.25	1.48	0.01	Wierzbowski et al., 2012
	305	46.25	1.18	0.01	Wierzbowski et al., 2012
	307	46.25	1.31	0.02	Wierzbowski et al., 2012
	308	46.25	1.26	0.02	Wierzbowski et al., 2012
	260	45.75	1.34	d.l.	Wierzbowski et al., 2012
	261	45.75	1.36	0.01	Wierzbowski et al., 2012
	262	45.75	1.13	0.02	Wierzbowski et al., 2012
	264	45.75	1.25	0.01	Wierzbowski et al., 2012
	252	44.75	1.22	0.02	Wierzbowski et al., 2012
	253	44.75	1.27	0.02	Wierzbowski et al., 2012
	254	44.75	1.27	d.l.	Wierzbowski et al., 2012
	279	44.75	1.37	0.01	Wierzbowski et al., 2012
	256	44.25	1.35	0.04	Wierzbowski et al., 2012
	257	44.25	1.34	0.01	Wierzbowski et al., 2012
	272	44.25	1.26	0.04	Wierzbowski et al., 2012
	273	44.25	1.16	0.02	Wierzbowski et al., 2012
	238	42.17	1.30	0.08	Wierzbowski et al., 2012
	249	42.17	1.57	0.04	Wierzbowski et al., 2012
	251	42.17	1.31	0.07	Wierzbowski et al., 2012
	282	42.17	1.36	0.02	Wierzbowski et al., 2012
	283	42.17	1.32	d.l.	Wierzbowski et al., 2012
	243	41.50	1.28	0.02	Wierzbowski et al., 2012
	245	41.50	1.30	0.02	Wierzbowski et al., 2012
	246	41.50	1.32	0.03	Wierzbowski et al., 2012
	287	41.50	1.26	0.04	Wierzbowski et al., 2012
	BB45	38.89	1.51	d.l.	Wierzbowski et al., 2012
	BB43	38.89	1.48	d.l.	Wierzbowski et al., 2012
	BB42	38.89	1.57	d.l.	Wierzbowski et al., 2012
	BB59	38.89	1.40	d.l.	Wierzbowski et al., 2012

	BB4	38.89	1.53	d.l.	Wierzbowski et al., 2012
	BB31	38.41	1.47	d.l.	Wierzbowski et al., 2012
	BB17	38.29	1.53	d.l.	Wierzbowski et al., 2012
	BB19	38.20	1.51	d.l.	Wierzbowski et al., 2012
	BB54	37.79	1.60	d.l.	Wierzbowski et al., 2012
	BB8	37.79	1.58	d.l.	Wierzbowski et al., 2012
	BB46	37.71	1.50	d.l.	Wierzbowski et al., 2012
	BB32	37.71	1.56	d.l.	Wierzbowski et al., 2012
	BB29	35.63	1.87	d.l.	Wierzbowski et al., 2012
	BB15	35.39	1.48	d.l.	Wierzbowski et al., 2012
	BB52	35.32	1.90	d.l.	Wierzbowski et al., 2012
	BB13	35.32	1.67	d.l.	Wierzbowski et al., 2012
	BB38	34.29	1.48	d.l.	Wierzbowski et al., 2012
	BB35	34.29	1.79	d.l.	Wierzbowski et al., 2012
	BB6	34.29	1.53	d.l.	Wierzbowski et al., 2012
	BB10	34.27	1.39	d.l.	Wierzbowski et al., 2012
	BB125	33.80	1.46	0.02	Wierzbowski et al., 2012
	BB82	33.80	1.59	d.l.	Wierzbowski et al., 2012
	BB40	33.80	1.58	d.l.	Wierzbowski et al., 2012
	BB5	33.33	1.49	d.l.	Wierzbowski et al., 2012
	BB127	33.21	1.33	0.04	Wierzbowski et al., 2012
	BB36	33.16	1.35	d.l.	Wierzbowski et al., 2012
	BB44	33.12	1.46	0.01	Wierzbowski et al., 2012
	BB25	32.65	1.61	0.05	Wierzbowski et al., 2012
	BB47	32.65	1.43	0.01	Wierzbowski et al., 2012
	BB60	32.65	1.44	0.01	Wierzbowski et al., 2012
	BB48	32.38	1.55	d.l.	Wierzbowski et al., 2012
	BB7	32.36	1.63	d.l.	Wierzbowski et al., 2012
	BB58	32.35	1.53	0.02	Wierzbowski et al., 2012
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Bearreraig	Bea_92	19.75	1.72	0.01	present study
Peak	P3	17.94	1.55	0.01	McArthur et al., 2000
Ravenscar	Rave_115	17.90	2.17	0.02	present study
Ravenscar	Rave_115	17.90	2.44	0.10	present study
Peak	P4	17.88	1.68	0.01	McArthur et al., 2000
Peak	P5	17.79	1.67	0.01	McArthur et al., 2000
Ravenscar	Rave_112	17.78	2.02	0.02	present study
Ravenscar	Rave_112	17.78	1.65	0.02	present study
Peak	P7	17.75	1.93	0.16	McArthur et al., 2000
Ravenscar	Rave_109	17.74	2.10	0.01	present study
Ravenscar	Rave_109	17.74	2.06	0.01	present study
Ravenscar	Rave_111	17.73	1.82	0.03	present study
Ravenscar	Rave_111	17.73	2.07	0.03	present study
Peak	P8	17.72	1.61	0.02	McArthur et al., 2000
Ravenscar	Rave_108	17.70	2.40	0.02	present study
Ravenscar	Rave_108	17.70	2.36	0.04	present study
Ravenscar	Rave_105	17.68	1.73	0.01	present study
Ravenscar	Rave_105	17.68	1.99	0.02	present study
Ravenscar	Rave_106	17.68	2.12	0.04	present study
Ravenscar	Rave_104	17.64	2.20	0.01	present study
Ravenscar	Rave_104	17.64	2.05	0.01	present study
Ravenscar	Rave_103	17.64	1.86	0.01	present study
Ravenscar	Rave_103	17.64	1.66	0.01	present study
Ravenscar	Rave_100	17.56	1.78	0.01	present study
Ravenscar	Rave_100	17.56	1.65	0.01	present study
Ravenscar	Rave_101	17.55	2.06	0.01	present study

Ravenscar	Rave_101	17.55	1.79	0.02	present study
Ravenscar	Rave_114	17.51	1.82	0.01	present study
Ravenscar	Rave_114	17.51	1.74	0.02	present study
Peak	P10	17.51	1.67	0.01	McArthur et al., 2000
Ravenscar	Rave_99	17.49	1.72	0.01	present study
Ravenscar	Rave_99	17.49	1.85	0.01	present study
Peak	P11	17.46	1.85	0.02	McArthur et al., 2000
Peak	P12	17.40	1.61	0.02	McArthur et al., 2000
Peak	P14	17.39	1.50	0.01	McArthur et al., 2000
Peak	P15	17.39	1.83	0.03	McArthur et al., 2000
Ravenscar	Rave_95	17.34	1.77	0.01	present study
Ravenscar	Rave_95	17.34	1.94	0.01	present study
Ravenscar	Rave_93	17.31	2.24	0.01	present study
Ravenscar	Rave_93	17.31	1.86	0.02	present study
Ravenscar	Rave_94	17.31	2.20	0.01	present study
Ravenscar	Rave_94	17.31	1.98	0.01	present study
Ravenscar	Rave_89	17.27	2.28	0.01	present study
Ravenscar	Rave_77	17.26	1.98	0.01	present study
Ravenscar	Rave_77	17.26	1.81	0.01	present study
Ravenscar	Rave_76	17.26	1.78	0.01	present study
Ravenscar	Rave_76	17.26	1.46	0.07	present study
Ravenscar	Rave_86	17.20	2.12	0.01	present study
Ravenscar	Rave_86	17.20	1.95	0.02	present study
Peak	P17	17.19	1.38	0.01	McArthur et al., 2000
Ravenscar	Rave_78	17.18	2.05	0.02	present study
Ravenscar	Rave_78	17.18	1.87	0.02	present study
Ravenscar	Rave_79	17.18	2.35	0.01	present study
Ravenscar	Rave_79	17.18	1.95	0.01	present study
Ravenscar	Rave_74	17.16	2.15	0.01	present study
Ravenscar	Rave_74	17.16	2.14	0.02	present study
Ravenscar	Rave_80	17.15	1.94	0.01	present study
Ravenscar	Rave_80	17.15	2.05	0.01	present study
Ravenscar	Rave_81	17.13	2.15	0.01	present study
Ravenscar	Rave_81	17.13	2.04	0.01	present study
Peak	P20	17.13	1.64	0.01	McArthur et al., 2000
Ravenscar	Rave_84	17.10	2.13	0.01	present study
Ravenscar	Rave_84	17.10	2.05	0.02	present study
Peak	P23	16.92	1.63	0.00	McArthur et al., 2000
Peak	P24	16.92	1.83	0.01	McArthur et al., 2000
Ravenscar	Rave_71	16.89	1.71	0.01	present study
Ravenscar	Rave_71	16.89	1.65	0.03	present study
Ravenscar	Rave_72	16.85	1.85	0.01	present study
Ravenscar	Rave_72	16.85	1.96	0.01	present study
Ravenscar	Rave_69	16.84	1.73	0.02	present study
Ravenscar	Rave_69	16.84	1.83	0.03	present study
Ravenscar	Rave_73	16.83	2.03	0.06	present study
Ravenscar	Rave_73	16.83	1.73	0.10	present study
Ravenscar	Rave_68	16.81	2.27	0.01	present study
Ravenscar	Rave_68	16.81	2.09	0.01	present study

Ravenscar	Rave_66	16.79	1.73	0.01	present study
Ravenscar	Rave_66	16.79	2.00	0.02	present study
Ravenscar	Rave_65	16.75	2.00	0.01	present study
Ravenscar	Rave_65	16.75	2.19	0.01	present study
Saltwick Bay	S424	16.75	1.43	0.02	McArthur et al., 2000
Ravenscar	Rave_64	16.73	1.97	0.01	present study
Ravenscar	Rave_64	16.73	1.84	0.05	present study
Saltwick Bay	S437A	16.71	1.32	0.03	McArthur et al., 2000
Saltwick Bay	S437B	16.71	1.61	0.00	McArthur et al., 2000
Ravenscar	Rave_62	16.69	2.13	0.01	present study
Ravenscar	Rave_62	16.69	2.13	0.01	present study
Ravenscar	Rave_63	16.69	2.05	0.02	present study
Ravenscar	Rave_63	16.69	2.10	0.02	present study
Saltwick Bay	S436	16.67	1.87	0.01	McArthur et al., 2000
Peak	P25	16.64	1.73	0.03	McArthur et al., 2000
Ravenscar	Rave_61	16.64	1.97	0.01	present study
Ravenscar	Rave_61	16.64	1.89	0.01	present study
Ravenscar	Rave_60	16.60	1.63	0.00	present study
Ravenscar	Rave_60	16.60	1.64	0.01	present study
Ravenscar	Rave_58	16.55	2.03	0.01	present study
Ravenscar	Rave_58	16.55	1.97	0.01	present study
Peak	P28	16.55	1.84	0.01	McArthur et al., 2000
Ravenscar	Rave_59	16.53	2.03	0.00	present study
Ravenscar	Rave_59	16.53	1.86	0.01	present study
Ravenscar	Rave_57	16.53	1.96	0.01	present study
Ravenscar	Rave_57	16.53	1.96	0.01	present study
Peak	P29	16.52	1.52	0.01	McArthur et al., 2000
Ravenscar	Rave_56	16.49	1.96	0.01	present study
Ravenscar	Rave_56	16.49	1.91	0.01	present study
Saltwick Bay	S435A	16.48	1.53	0.01	McArthur et al., 2000
Saltwick Bay	S432A	16.45	1.59	0.00	McArthur et al., 2000
Ravenscar	Rave_54	16.45	2.10	0.01	present study
Ravenscar	Rave_54	16.45	2.39	0.01	present study
Ravenscar	Rave_52	16.44	2.51	0.01	present study
Ravenscar	Rave_52	16.44	2.33	0.01	present study
Ravenscar	Rave_48	16.43	1.40	0.05	present study
Saltwick Bay	S428	16.41	1.49	0.01	McArthur et al., 2000
Ravenscar	Rave_49	16.40	1.81	0.02	present study
Ravenscar	Rave_49	16.40	1.35	0.02	present study
Ravenscar	Rave_51	16.39	2.32	0.01	present study
Ravenscar	Rave_51	16.39	1.90	0.01	present study
Saltwick Bay	S423A	16.36	1.62	0.01	McArthur et al., 2000
Ravenscar	Rave_44	16.34	1.90	0.01	present study
Ravenscar	Rave_44	16.34	1.96	0.01	present study
Saltwick Bay	S422B	16.33	1.49	0.01	McArthur et al., 2000
Saltwick Bay	S421A	16.32	1.63	0.00	McArthur et al., 2000
Ravenscar	Rave_47	16.32	2.24	0.01	present study
Ravenscar	Rave_47	16.32	2.06	0.02	present study
Ravenscar	Rave_43	16.31	1.75	0.02	present study

Ravenscar	Rave_43	16.31	1.79	0.02	present study
Ravenscar	Rave_42	16.31	1.76	0.01	present study
Ravenscar	Rave_42	16.31	1.87	0.02	present study
Ravenscar	Rave_38	16.30	1.92	0.01	present study
Ravenscar	Rave_38	16.30	2.13	0.01	present study
Ravenscar	Rave_40	16.30	2.23	0.01	present study
Ravenscar	Rave_40	16.30	1.92	0.02	present study
Ravenscar	Rave_41	16.30	1.78	0.01	present study
Ravenscar	Rave_41	16.30	1.73	0.01	present study
Ravenscar	Rave_37	16.29	1.97	0.01	present study
Ravenscar	Rave_37	16.29	2.10	0.01	present study
Ravenscar	Rave_35	16.29	1.94	0.01	present study
Ravenscar	Rave_35	16.29	1.98	0.01	present study
Ravenscar	Rave_36	16.29	1.73	0.01	present study
Ravenscar	Rave_36	16.29	1.81	0.01	present study
Saltwick Bay	S418C	16.28	1.90	0.00	McArthur et al., 2000
Ravenscar	Rave_32	16.26	2.04	0.01	present study
Ravenscar	Rave_32	16.26	1.84	0.01	present study
Ravenscar	Rave_29	16.25	2.01	0.01	present study
Ravenscar	Rave_29	16.25	2.09	0.02	present study
Ravenscar	Rave_34	16.25	1.99	0.01	present study
Ravenscar	Rave_34	16.25	2.28	0.01	present study
Saltwick Bay	S414B	16.25	1.62	0.01	McArthur et al., 2000
Ravenscar	Rave_25	16.24	2.24	0.01	present study
Ravenscar	Rave_25	16.24	2.09	0.01	present study
Ravenscar	Rave_23	16.23	2.07	0.01	present study
Ravenscar	Rave_23	16.23	2.13	0.01	present study
Ravenscar	Rave_28	16.22	2.06	0.01	present study
Ravenscar	Rave_28	16.22	2.09	0.02	present study
Ravenscar	Rave_19	16.22	2.12	0.01	present study
Ravenscar	Rave_19	16.22	2.11	0.01	present study
Saltwick Bay	S413A	16.21	1.51	0.00	McArthur et al., 2000
Ravenscar	Rave_18	16.21	1.91	0.01	present study
Ravenscar	Rave_18	16.21	1.77	0.02	present study
Ravenscar	Rave_16	16.18	1.72	0.01	present study
Ravenscar	Rave_16	16.18	2.06	0.02	present study
Ravenscar	Rave_15	16.18	1.72	0.02	present study
Ravenscar	Rave_15	16.18	1.90	0.02	present study
Ravenscar	Rave_14	16.18	2.10	0.02	present study
Ravenscar	Rave_14	16.18	1.90	0.03	present study
Saltwick Bay	S406	16.17	1.62	0.01	McArthur et al., 2000
Saltwick Bay	Y06 51/110	16.13	1.77	0.00	Li et al., 2012
Saltwick Bay	Y06 51/78	16.13	1.75	0.00	Li et al., 2012
Saltwick Bay	Y06A 51/75	16.13	1.85	0.00	Li et al., 2012
Saltwick Bay	Y06B 51/75	16.13	1.86	0.00	Li et al., 2012
Saltwick Bay	S401	16.13	1.62	0.00	McArthur et al., 2000
Saltwick Bay	Y06 51/60	16.13	1.90	0.00	Li et al., 2012
Saltwick Bay	Y06A 51 base	16.11	1.79	0.00	Li et al., 2012
Saltwick Bay	Y06B 51 base	16.11	1.74	0.00	Li et al., 2012

Saltwick Bay	Y06A 49/620	16.11	1.78	0.00	Li et al., 2012
Saltwick Bay	Y06B 49/620	16.11	1.88	0.00	Li et al., 2012
Saltwick Bay	Y06C 49/620	16.11	1.75	0.00	Li et al., 2012
Saltwick Bay	S327	16.11	1.50	0.01	McArthur et al., 2000
Saltwick Bay	Y06 49/592	16.11	2.05	0.00	Li et al., 2012
Saltwick Bay	Y06 49/519	16.09	1.73	0.00	Li et al., 2012
Saltwick Bay	Y06 49/475	16.09	1.99	0.00	Li et al., 2012
Saltwick Bay	S340	16.08	1.60	0.01	McArthur et al., 2000
Saltwick Bay	Y06 49/420	16.08	1.77	0.00	Li et al., 2012
Ravenscar	Rave_13	16.07	1.59	0.01	present study
Ravenscar	Rave_13	16.07	1.80	0.02	present study
Ravenscar	Rave_12	16.06	2.17	0.01	present study
Ravenscar	Rave_12	16.06	2.13	0.01	present study
Ravenscar	Rave_11	16.06	1.91	0.01	present study
Ravenscar	Rave_11	16.06	1.74	0.04	present study
Ravenscar	Rave_10	16.06	1.61	0.01	present study
Ravenscar	Rave_10	16.06	1.72	0.02	present study
Saltwick Bay	S342	16.06	1.82	0.00	McArthur et al., 2000
Saltwick Bay	S343	16.03	1.67	0.01	McArthur et al., 2000
Ravenscar	Rave_9	16.02	2.01	0.01	present study
Ravenscar	Rave_9	16.02	1.98	0.01	present study
Ravenscar	Rave_8	16.01	2.10	0.01	present study
Ravenscar	Rave_8	16.01	2.18	0.02	present study
Saltwick Bay	Y06 49/63	16.01	1.74	0.00	Li et al., 2012
Saltwick Bay	Y06 49/30	16.01	2.07	0.00	Li et al., 2012
Ravenscar	Rave_7	16.01	1.91	0.01	present study
Ravenscar	Rave_7	16.01	1.80	0.01	present study
Saltwick Bay	Y06 49/25	16.00	1.71	0.00	Li et al., 2012
Saltwick Bay	Y06 49/22	16.00	1.79	0.00	Li et al., 2012
Saltwick Bay	S313A	16.00	1.74	0.00	McArthur et al., 2000
Ravenscar	Rave_6	15.99	1.75	0.01	Li et al., 2012
Ravenscar	Rave_6	15.99	1.67	0.02	Li et al., 2012
Saltwick Bay	Y06 47/529	15.99	1.62	0.00	Li et al., 2012
Saltwick Bay	Y06 47/526	15.99	1.72	0.00	Li et al., 2012
Saltwick Bay	Y06A 47/520	15.99	1.81	0.00	Li et al., 2012
Saltwick Bay	Y06B 47/520	15.99	1.73	0.00	Li et al., 2012
Saltwick Bay	Y06 47/492	15.98	1.91	0.00	Li et al., 2012
Saltwick Bay	Y06 47/485	15.98	1.91	0.00	Li et al., 2012
Ravenscar	Rave_4	15.97	1.80	0.01	present study
Ravenscar	Rave_4	15.97	1.62	0.02	present study
Ravenscar	Rave_1	15.97	1.90	0.00	present study
Ravenscar	Rave_1	15.97	1.79	0.01	present study
Ravenscar	Rave_2	15.97	2.05	0.01	present study
Ravenscar	Rave_2	15.97	1.93	0.02	present study
Saltwick Bay	S315	15.97	1.48	0.01	McArthur et al., 2000
Saltwick Bay	Y06 47/416	15.96	1.94	0.00	Li et al., 2012
Ravenscar	Rave_3	15.96	1.82	0.01	present study
Ravenscar	Rave_3	15.96	1.71	0.01	present study
Saltwick Bay	Y06 47/379	15.96	1.85	0.00	Li et al., 2012

Saltwick Bay	Y06 47/307	15.94	1.62	0.00	Li et al., 2012
Saltwick Bay	S319B	15.93	1.74	0.01	McArthur et al., 2000
Saltwick Bay	S310	15.88	1.65	0.00	McArthur et al., 2000
Saltwick Bay	S321	15.85	1.65	0.01	McArthur et al., 2000
Saltwick Bay	S306	15.82	1.65	0.00	McArthur et al., 2000
Saltwick Bay	S302	15.80	1.43	0.01	McArthur et al., 2000
Saltwick Bay	S14A	15.80	1.99	0.02	McArthur et al., 2000
Saltwick Bay	Y06 45/0	15.80	1.54	0.02	Li et al., 2012
Saltwick Bay	S113	15.79	1.76	0.01	McArthur et al., 2000
Saltwick Bay	Y06 43/718	15.78	1.55	0.00	Li et al., 2012
Saltwick Bay	Y06 43/698	15.78	1.73	0.00	Li et al., 2012
Saltwick Bay	Y06A 43/691	15.78	1.83	0.00	Li et al., 2012
Saltwick Bay	Y06B 43/691	15.78	1.79	0.00	Li et al., 2012
Saltwick Bay	Y06 43/671	15.77	1.55	0.00	Li et al., 2012
Saltwick Bay	Y06 43/641	15.77	2.10	0.00	Li et al., 2012
Saltwick Bay	Y06B 43/580	15.75	1.66	0.00	Li et al., 2012
Saltwick Bay	S11A	15.75	1.41	0.03	McArthur et al., 2000
Saltwick Bay	Y06B 43/516	15.74	1.60	0.00	Li et al., 2012
Saltwick Bay	Y06C 43/516	15.74	1.60	0.00	Li et al., 2012
Saltwick Bay	Y06 43/515	15.74	1.67	0.00	Li et al., 2012
Saltwick Bay	Y06A 43/510	15.74	1.56	0.00	Li et al., 2012
Saltwick Bay	Y06B 43/510	15.74	1.87	0.00	Li et al., 2012
Saltwick Bay	Y06 43/392	15.71	1.72	0.00	Li et al., 2012
Saltwick Bay	S6B	15.71	1.80	0.03	McArthur et al., 2000
Saltwick Bay	Y06 43/387	15.71	1.78	0.00	Li et al., 2012
Saltwick Bay	Y06 43/362	15.71	1.61	0.00	Li et al., 2012
Saltwick Bay	Y06 43/326	15.70	1.65	0.01	Li et al., 2012
Saltwick Bay	Y06A 43/310	15.70	1.60	0.00	Li et al., 2012
Saltwick Bay	Y06B 43/310	15.70	1.70	0.00	Li et al., 2012
Saltwick Bay	Y06D 43/310	15.70	1.72	0.00	Li et al., 2012
Saltwick Bay	Y06A 43/307	15.69	1.77	0.00	Li et al., 2012
Saltwick Bay	S9B	15.69	1.51	0.02	McArthur et al., 2000
Runswick	R8	15.68	1.78	0.03	McArthur et al., 2000
Saltwick Bay	Y06 43/200	15.67	1.73	0.00	Li et al., 2012
Runswick	R6A	15.66	1.77	0.04	McArthur et al., 2000
Runswick	R7A	15.65	1.61	0.03	McArthur et al., 2000
Saltwick Bay	Y06 43/7	15.63	1.53	0.03	Li et al., 2012
Runswick	R10	15.62	1.58	0.03	McArthur et al., 2000
Runswick	R5	15.60	1.91	0.02	McArthur et al., 2000
Port Mulgrave	PM103	15.56	1.92	0.01	McArthur et al., 2000
Port Mulgrave	PM20	15.53	1.84	0.04	McArthur et al., 2000
Port Mulgrave	PM17	15.52	1.83	0.02	McArthur et al., 2000
Port Mulgrave	PM15	15.51	1.36	0.09	McArthur et al., 2000
Port Mulgrave	PM16	15.51	1.91	0.02	McArthur et al., 2000
Port Mulgrave	PM13	15.50	1.99	0.06	McArthur et al., 2000
Port Mulgrave	PM18	15.50	2.10	0.02	McArthur et al., 2000
Port Mulgrave	PM7	15.47	1.76	0.05	McArthur et al., 2000
Port Mulgrave	PM2C	15.45	2.12	0.03	McArthur et al., 2000
Runswick	R2C	15.44	1.65	0.07	McArthur et al., 2000

Port Mulgrave	PM8	15.40	1.66	0.03	McArthur et al., 2000
Saltwick Bay	S1A	15.38	2.03	0.03	McArthur et al., 2000
Runswick	R4B	15.34	1.69	0.01	McArthur et al., 2000
Saltwick Bay	S2	15.33	2.06	0.04	McArthur et al., 2000
Port Mulgrave	PM104	15.33	2.07	0.01	McArthur et al., 2000
Port Mulgrave	PM3	15.25	2.14	0.03	McArthur et al., 2000
Port Mulgrave	PM105	15.17	1.93	0.01	McArthur et al., 2000
Port Mulgrave	PM111	15.16	1.91	0.00	McArthur et al., 2000
Port Mulgrave	PM109	15.13	1.92	0.02	McArthur et al., 2000
Port Mulgrave	PM21	15.06	1.54	0.13	McArthur et al., 2000
Port Mulgrave	PM107	15.01	1.82	0.01	McArthur et al., 2000
Port Mulgrave	PM106	14.98	1.50	0.02	McArthur et al., 2000
Port Mulgrave	PM113	14.97	1.40	0.02	McArthur et al., 2000
Port Mulgrave	PM112A	14.96	1.55	0.02	McArthur et al., 2000
Port Mulgrave	PM108	14.95	1.32	0.02	McArthur et al., 2000
Kettleness	K117	14.92	1.33	0.01	McArthur et al., 2000
Kettleness	K118A	14.90	1.35	0.01	McArthur et al., 2000
Port Mulgrave	PM101	14.86	1.57	0.01	McArthur et al., 2000
Kettleness	K121	14.85	1.31	0.01	McArthur et al., 2000
Robin Hood's Bay	HOOD 442	14.84	1.49	0.03	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 441	14.81	1.35	0.02	Korte and Hesselbo, 2011
Port Mulgrave	PM102	14.81	1.20	0.03	McArthur et al., 2000
Robin Hood's Bay	HOOD 440	14.81	1.51	0.03	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 439	14.80	1.49	0.03	Korte and Hesselbo, 2011
Kettleness	K112B	14.79	1.17	0.01	McArthur et al., 2000
Kettleness	K111B	14.69	1.24	0.01	McArthur et al., 2000
Kettleness	K111C	14.69	1.26	0.01	McArthur et al., 2000
Kettleness	K108B	14.49	1.19	0.01	McArthur et al., 2000
Robin Hood's Bay	HOOD 438	14.32	1.92	0.08	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 437	14.27	1.50	0.06	Korte and Hesselbo, 2011
Kettleness	K105A	14.25	1.23	0.01	McArthur et al., 2000
Kettleness	K107	14.24	1.15	0.01	McArthur et al., 2000
Staithes	St104	14.12	1.16	0.02	McArthur et al., 2000
Hawsker Bay	HB7	14.07	1.10	0.00	McArthur et al., 2000
Robin Hood's Bay	HOOD 434	14.04	1.50	0.04	Korte and Hesselbo, 2011
Hawsker Bay	HB6	14.04	1.24	0.00	McArthur et al., 2000
Hawsker Bay	HB3	14.03	1.67	0.00	McArthur et al., 2000
Hawsker Bay	HB4	14.03	1.35	0.00	McArthur et al., 2000
Hawsker Bay	HB2	14.02	1.20	0.00	McArthur et al., 2000
Hawsker Bay	HB1	14.02	1.19	0.00	McArthur et al., 2000
Robin Hood's Bay	HOOD 435	14.01	1.35	0.07	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 435	14.01	1.32	0.11	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 435	14.01	1.33	0.06	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 434 B	14.01	1.12	0.02	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 434 B	14.01	1.27	0.05	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 436	14.01	1.12	0.07	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 436	14.01	1.15	0.02	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 433	13.98	1.18	0.06	Korte and Hesselbo, 2011
Staithes	St109	13.96	1.37	0.00	McArthur et al., 2000

Hawsker Bay	HB11	13.95	0.00	McArthur et al., 2000	
Robin Hood's Bay	HOOD 424	13.91	2.23	Korte and Hesselbo, 2011	
Robin Hood's Bay	HOOD 423	13.90	1.60	Korte and Hesselbo, 2011	
Hawsker Bay	HB8	13.78	1.15	McArthur et al., 2000	
Hawsker Bay	HB14	13.64	1.66	McArthur et al., 2000	
Hawsker Bay	HB12	13.63	1.85	McArthur et al., 2000	
Hawsker Bay	HB13	13.63	1.73	McArthur et al., 2000	
Hawsker Bay	HB15	13.50	1.75	McArthur et al., 2000	
Hawsker Bay	HB16	13.37	1.61	McArthur et al., 2000	
Robin Hood's Bay	HOOD 410	13.33	1.70	Korte and Hesselbo, 2011	
Hawsker Bay	HB17	13.13	1.72	McArthur et al., 2000	
Staithes	St116D	13.07	1.62	McArthur et al., 2000	
Staithes	St102A	13.06	1.29	McArthur et al., 2000	
Robin Hood's Bay	HOOD 400 B	13.02	2.00	Korte and Hesselbo, 2011	
Robin Hood's Bay	HOOD 399	12.99	1.99	Korte and Hesselbo, 2011	
Staithes	St119B	12.98	1.51	McArthur et al., 2000	
Robin Hood's Bay	HOOD 396	12.97	1.88	Korte and Hesselbo, 2011	
Staithes	St120	12.93	1.31	McArthur et al., 2000	
Staithes	St121	12.87	1.64	McArthur et al., 2000	
Staithes	St123	12.80	1.65	McArthur et al., 2000	
Staithes	St126B	12.67	1.58	McArthur et al., 2000	
Robin Hood's Bay	HOOD 383	12.63	1.72	Korte and Hesselbo, 2011	
Robin Hood's Bay	HOOD 384	12.63	1.62	Korte and Hesselbo, 2011	
Robin Hood's Bay	HOOD 381	12.59	1.22	Korte and Hesselbo, 2011	
Staithes	St127A	12.52	1.47	McArthur et al., 2000	
Staithes	St128A	12.38	1.41	McArthur et al., 2000	
Robin Hood's Bay	HOOD 378	12.38	1.95	0.35	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 377	12.34	1.71	0.03	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 370 A	12.32	1.60	0.02	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 365	12.30	1.67	0.02	Korte and Hesselbo, 2011
Staithes	St129	12.30	1.72	0.01	McArthur et al., 2000
Staithes	St130(1)	12.30	1.73	0.01	McArthur et al., 2000
Robin Hood's Bay	HOOD 364	12.28	1.41	0.02	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 363	12.28	1.67	0.15	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 356	12.27	1.50	0.05	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 354	12.25	1.77	0.06	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 348	12.22	1.99	0.10	Korte and Hesselbo, 2011
Staithes	St131	12.18	1.58	0.04	McArthur et al., 2000
Robin Hood's Bay	HOOD 342	12.10	1.62	0.06	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 339	12.07	1.83	0.11	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 334	12.06	2.04	0.29	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 303	12.00	1.28	0.03	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 304	12.00	1.35	0.03	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 259	11.86	1.78	0.05	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 277	11.41	1.39	0.02	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 281	11.31	1.75	0.01	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 283	11.26	2.03	0.43	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 284	11.25	1.52	0.04	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 285	11.21	1.04	0.20	Korte and Hesselbo, 2011

Robin Hood's Bay	HOOD 286	11.17	1.34	0.03	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 291	11.11	1.03	0.20	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 298	10.99	1.41	0.19	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 299	10.99	1.34	0.08	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 313	10.96	1.41	0.04	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 314	10.95	1.42	0.29	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 315	10.94	1.46	0.11	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 318	10.92	1.89	0.34	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 323	10.86	1.50	0.02	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 321	10.85	0.90	0.05	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 466	10.79	1.66	0.07	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 470	10.78	1.29	0.04	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 469	10.77	1.79	0.02	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 462	10.76	1.78	0.10	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 465	10.75	1.01	0.02	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 472	10.74	0.60	0.13	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 473	10.74	1.70	0.16	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 474	10.74	1.16	0.02	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 453	10.68	0.88	0.30	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 451	10.68	0.99	0.18	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 452	10.68	1.06	0.42	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 450	10.67	1.03	0.02	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 052	10.60	1.15	0.23	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 051	10.59	1.18	0.07	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 454	10.59	2.06	0.02	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 458	10.54	1.41	0.16	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 053	10.50	1.38	0.07	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 050 A	10.45	0.95	0.07	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 459	10.45	0.95	0.01	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 042 B	10.36	1.36	0.06	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 044 B	10.29	1.29	0.08	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 037 A	10.24	2.06	0.15	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 036 B	10.22	1.50	0.33	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 035 C	10.16	2.12	0.12	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 067	9.73	1.39	0.07	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 064	9.72	1.18	0.14	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 228	9.72	2.05	0.19	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 226	9.71	1.77	0.27	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 062	9.70	1.35	0.04	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 056	9.67	1.37	0.12	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 229	9.59	1.95	0.35	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 232	9.55	1.68	0.16	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 218	9.46	1.63	0.20	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 212	9.41	1.32	0.12	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 214	9.41	1.16	0.41	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 220	9.39	1.99	0.05	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 209	9.36	1.08	0.02	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 208	9.27	0.95	0.05	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 200	9.26	1.31	0.07	Korte and Hesselbo, 2011

Robin Hood's Bay	HOOD 205	9.24	1.16	0.16	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 239	9.08	1.41	0.30	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 110	9.04	1.56	0.28	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 111 C	9.02	1.73	0.09	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 106 B	9.01	1.02	0.23	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 106 B	9.01	1.51	0.13	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 106 B	9.01	1.04	0.02	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 106 B	9.01	1.74	0.18	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 106 C	9.01	1.59	0.08	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 106 C	9.01	1.44	0.03	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 106 C	9.01	1.06	0.02	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 109	9.01	1.46	0.06	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 108	9.01	1.34	0.06	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 102 C	9.00	1.65	0.07	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 101	8.99	1.76	0.08	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 100	8.98	1.91	0.11	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 097 B	8.97	1.43	0.07	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 097 C	8.97	2.04	0.08	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 093	8.78	1.74	0.40	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 089 B	8.77	1.59	0.07	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 094	8.77	1.75	0.20	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 095	8.74	1.53	0.12	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 088	8.67	1.59	0.04	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 080	8.31	1.94	0.23	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 081	8.29	2.14	0.26	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 078 A	8.26	1.97	0.35	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 029 A	7.77	1.65	0.19	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 028 A	7.73	1.53	0.22	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 021	6.95	2.17	0.07	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 020	6.85	1.88	0.03	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 019	6.79	1.80	0.19	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 014 A	6.63	1.59	0.06	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 013 H	6.54	1.67	0.15	Korte and Hesselbo, 2011
Robin Hood's Bay	HOOD 001	5.56	2.43	0.10	Korte and Hesselbo, 2011
Hallaig Waterfall	Hal_17	5.24	2.15	0.08	present study

## Oyster Data

section	sample No	Zone No.	Sr/Ca mmol/mol	Mn/Ca mmol/mol	source
Robin Hood's Bay	HOOD 406	13.12	0.436	0.07	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 404 A	13.08	0.468	0.03	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 400 C	13.02	0.499	0.11	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 394	12.97	0.836	0.11	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 382	12.63	0.640	0.21	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 370	12.32	0.504	0.13	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 358	12.27	0.542	0.12	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 353	12.24	0.400	0.15	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 352	12.24	0.440	0.14	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 350	12.24	0.502	0.20	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 345 A	12.12	0.410	0.18	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 338	12.07	0.505	0.11	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 334	12.06	0.499	0.10	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 333	12.04	0.454	0.18	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 305	12.00	0.474	0.10	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 302	12.00	0.537	0.10	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 305	12.00	0.375	0.24	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 301	12.00	0.379	0.10	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 246	11.98	0.539	0.17	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 248	11.91	0.497	0.30	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 300	11.89	0.667	0.16	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 300	11.89	0.530	0.14	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 251	11.89	0.459	0.24	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 260	11.86	0.509	0.15	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 255	11.85	0.553	0.16	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 256	11.85	0.442	0.16	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 256	11.85	0.330	0.17	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 254	11.85	0.388	0.04	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 254	11.85	0.416	0.04	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 261	11.82	0.372	0.08	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 331 A	11.73	0.440	0.20	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 271	11.71	0.537	0.21	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 270	11.67	0.501	0.40	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 279	11.47	0.437	0.07	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 275	11.43	0.477	0.16	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 276 B	11.41	0.597	0.34	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 276 A	11.41	0.458	0.14	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 274 B	11.35	0.512	0.23	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 273	11.33	0.530	0.23	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 273	11.33	0.558	0.21	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 282	11.31	0.648	0.19	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 280	11.30	0.487	0.28	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 050 A	10.45	0.363	0.15	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 050 A	10.45	0.359	0.16	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 050 C	10.45	0.357	0.09	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 046	10.40	0.394	0.08	Korte and Hesselbo 2011

Robin Hood's Bay	HOOD 046	10.40	0.418	0.09	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 042 C	10.36	0.466	0.16	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 042 C	10.36	0.410	0.09	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 039 B	10.31	0.444	0.34	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 044 B	10.29	0.424	0.19	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 044 B	10.29	0.417	0.07	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 036 B	10.22	0.509	0.12	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 035 B	10.16	0.584	0.14	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 035 B	10.16	0.583	0.09	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 035 A	10.16	0.552	0.14	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 067	9.73	0.412	0.16	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 067	9.73	0.420	0.04	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 063 A	9.73	0.412	0.11	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 066 B	9.72	0.388	0.05	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 064	9.72	0.371	0.06	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 066	9.72	0.447	0.04	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 066	9.72	0.379	0.04	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 065	9.72	0.398	0.09	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 228	9.72	0.506	0.25	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 228	9.72	0.506	0.24	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 227	9.72	0.545	0.11	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 227	9.72	0.561	0.16	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 227	9.72	0.481	0.31	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 225	9.71	0.573	0.33	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 225	9.71	0.560	0.14	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 057	9.67	0.400	0.09	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 058	9.67	0.416	0.18	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 055 A	9.67	0.389	0.14	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 330 B	9.61	0.474	0.03	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 232	9.55	0.567	0.17	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 223	9.42	0.472	0.45	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 222	9.42	0.714	0.22	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 214	9.41	0.463	0.20	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 213	9.41	0.649	0.19	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 213	9.41	0.593	0.29	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 214	9.41	0.423	0.07	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 210	9.36	0.387	0.05	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 206	9.27	0.383	0.08	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 206	9.27	0.395	0.10	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 243	9.13	0.665	0.19	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 243	9.13	0.555	0.14	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 243	9.13	0.576	0.24	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 243	9.13	0.515	0.44	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 236	9.12	0.610	0.10	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 236	9.12	0.587	0.27	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 236	9.12	0.583	0.09	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 237	9.12	0.590	0.11	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 241	9.08	0.572	0.12	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 240	9.08	0.402	0.02	Korte and Hesselbo 2011

Robin Hood's Bay	HOOD 238	9.06	0.548	0.07	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 111 A	9.02	0.476	0.06	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 111 A	9.02	0.484	0.03	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 111	9.02	0.511	0.08	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 111	9.02	0.526	0.21	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 111	9.02	0.508	0.12	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 103 D	9.00	0.488	0.07	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 103 D	9.00	0.470	0.09	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 103 B	9.00	0.607	0.10	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 103 B	9.00	0.566	0.10	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 103 A	9.00	0.584	0.09	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 103 A	9.00	0.561	0.10	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 103 A	9.00	0.575	0.19	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 101	8.99	0.635	0.17	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 101	8.99	0.621	0.20	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 101	8.99	0.557	0.17	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 099	8.98	0.568	0.18	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 098	8.98	0.612	0.12	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 098	8.98	0.515	0.18	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 098	8.98	0.634	0.20	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 097 C	8.97	0.525	0.35	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 097 A	8.97	0.492	0.10	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 097 A	8.97	0.516	0.10	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 097 A	8.97	0.507	0.15	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 096	8.95	0.610	0.09	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 096	8.95	0.597	0.08	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 096	8.95	0.616	0.06	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 091 A	8.78	0.547	0.34	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 095	8.74	0.555	0.27	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 087 A	8.63	0.540	0.15	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 086 D	8.54	0.543	0.16	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 086 A	8.54	0.485	0.08	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 077 A	8.25	0.605	0.23	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 076 A	8.22	0.571	0.14	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 033 A	8.21	0.539	0.22	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 033 A	8.21	0.618	0.33	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 034 A	8.17	0.726	0.45	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 034 A	8.17	0.643	0.42	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 032 B	8.08	0.566	0.12	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 032 B	8.08	0.548	0.12	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 032 A	8.08	0.582	0.27	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 032 A	8.08	0.620	0.37	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 031	7.84	0.660	0.25	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 031 A	7.84	0.427	0.16	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 031 A	7.84	0.416	0.13	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 029 B	7.77	0.651	0.18	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 023	7.47	0.534	0.13	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 023	7.47	0.492	0.09	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 017 A	7.07	0.676	0.29	Korte and Hesselbo 2011

Robin Hood's Bay	HOOD 018 B	6.99	0.560	0.09	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 011 B	6.43	0.596	0.10	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 011 A	6.43	0.493	0.14	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 010 C	5.87	0.621	0.35	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 010 B	5.87	0.534	0.16	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 010 B	5.87	0.552	0.31	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 010 A	5.87	0.549	0.19	Korte and Hesselbo 2011
Hallaig Waterfall	Hal_5	5.70	0.832	0.20	present study
Hallaig Waterfall	Hal_5	5.70	0.777	0.13	present study
Hallaig Waterfall	Hal_3	5.67	0.668	0.31	present study
Robin Hood's Bay	HOOD 007	5.57	0.657	0.21	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 002	5.49	0.595	0.14	Korte and Hesselbo 2011
Hallaig Waterfall	Hal_10	5.35	0.703	0.16	present study
Hallaig Waterfall	Hal_10	5.35	0.682	0.14	present study
Hallaig Waterfall	Hal_10	5.35	0.670	0.09	present study
Hallaig Waterfall	Hal_12	5.32	0.720	0.20	present study
Hallaig Waterfall	Hal_12	5.32	0.763	0.17	present study
Hallaig Waterfall	Hal_16	5.25	0.642	0.10	present study
Hallaig Waterfall	Hal_16	5.25	0.620	0.05	present study
Hallaig Waterfall	Hal_36	5.21	0.709	0.28	present study
Hallaig Waterfall	Hal_19	5.21	0.631	0.28	present study
Hallaig Waterfall	Hal_36	5.21	0.704	0.21	present study
Hallaig Waterfall	Hal_19	5.21	0.715	0.09	present study
Hallaig Waterfall	Hal_34	5.20	0.674	0.31	present study
Hallaig Waterfall	Hal_35	5.20	0.699	0.23	present study
Hallaig Waterfall	Hal_32	5.18	0.648	0.15	present study
Hallaig Waterfall	Hal_32	5.18	0.602	0.02	present study
Hallaig Waterfall	Hal_31	5.17	0.627	0.06	present study
Hallaig Waterfall	Hal_31	5.17	0.617	0.06	present study
Hallaig Waterfall	Hal_30	5.17	0.673	0.31	present study
Hallaig Waterfall	Hal_21	5.13	0.592	0.03	present study
Hallaig Waterfall	Hal_21	5.13	0.578	0.02	present study
Hallaig Waterfall	Hal_22	5.13	0.651	0.04	present study
Hallaig Waterfall	Hal_39	5.10	0.758	0.10	present study
Hallaig Waterfall	Hal_39	5.10	0.585	0.02	present study
Hallaig Waterfall	Hal_43	5.08	0.711	0.04	present study
Hallaig Waterfall	Hal_43	5.08	0.690	0.03	present study
Robin Hood's Bay	HOOD 004 B	5.05	0.569	0.18	Korte and Hesselbo 2011
Robin Hood's Bay	HOOD 004 A	5.05	0.592	0.14	Korte and Hesselbo 2011
Hallaig Waterfall	Hal_60	4.87	0.832	0.09	present study
Hallaig Waterfall	Hal_60	4.87	0.735	0.07	present study
Hallaig Waterfall	Hal_71	4.80	0.707	0.22	present study
Hallaig Waterfall	Hal_71	4.80	0.675	0.17	present study
Hallaig Waterfall	Hal_73	4.80	0.632	0.07	present study
Hallaig Waterfall	Hal_73	4.80	0.615	0.07	present study
Ardnish	Ard_104	4.75	0.624	0.04	present study
Ardnish	Ard_104	4.75	0.617	0.07	present study
Ardnish	Ard_104	4.75	0.626	0.16	present study
Ardnish	Ard_105	4.75	0.595	0.09	present study

Ardnish	Ard_105	4.75	0.578	0.11	present study
Hallaig Waterfall	Hal_101	4.68	0.679	0.07	present study
Hallaig Waterfall	Hal_101	4.68	0.740	0.04	present study
Hallaig Waterfall	Hal_100	4.63	0.759	0.19	present study
Hallaig Waterfall	Hal_100	4.63	0.785	0.17	present study
Ardnish	Ard_102	4.58	0.645	0.11	present study
Ardnish	Ard_102	4.58	0.628	0.14	present study
Ardnish	Ard_102	4.58	0.719	0.37	present study
Ardnish	Ard_108	4.52	0.644	0.07	present study
Ardnish	Ard_108	4.52	0.682	0.19	present study
Ardnish	Ard_109	4.52	0.581	0.07	present study
Ardnish	Ard_109	4.52	0.611	0.14	present study
Ardnish	Ard_109	4.52	0.564	0.26	present study
Hallaig Waterfall	Hal_117	4.51	0.620	0.10	present study
Hallaig Waterfall	Hal_131	4.45	0.629	0.03	present study
Hallaig Waterfall	Hal_132	4.45	0.617	0.14	present study
Hallaig Waterfall	Hal_132	4.45	0.572	0.11	present study
Hallaig Waterfall	Hal_135	4.43	0.703	0.09	present study
Hallaig Waterfall	Hal_135	4.43	0.685	0.08	present study
Hallaig Waterfall	Hal_136	4.43	0.680	0.16	present study
Hallaig Waterfall	Hal_136	4.43	0.639	0.15	present study
Ardnish	Ard_127	4.31	0.565	0.10	present study
Ardnish	Ard_127	4.31	0.663	0.18	present study
Ardnish	Ard_127	4.31	0.625	0.23	present study
Hallaig Waterfall	Hal_158	4.30	0.605	0.06	present study
Hallaig Waterfall	Hal_158	4.30	0.655	0.02	present study
Ardnish	Ard_128	4.28	0.736	0.15	present study
Ardnish	Ard_128	4.28	0.628	0.22	present study
Ardnish	Ard_128	4.28	0.639	0.23	present study
Hallaig Waterfall	Hal_163	4.28	0.586	0.05	present study
Hallaig Waterfall	Hal_163	4.28	0.599	0.04	present study
Hallaig Waterfall	Hal_166	4.27	0.570	0.04	present study
Hallaig Waterfall	Hal_166	4.27	0.553	0.03	present study
Ardnish	Ard_122	4.26	0.601	0.05	present study
Ardnish	Ard_122	4.26	0.546	0.08	present study
Ardnish	Ard_122	4.26	0.741	0.30	present study
Ardnish	Ard_116	4.26	0.568	0.08	present study
Ardnish	Ard_116	4.26	0.579	0.13	present study
Ardnish	Ard_116	4.26	0.617	0.25	present study
Ardnish	Ard_117	4.26	0.639	0.03	present study
Ardnish	Ard_117	4.26	0.631	0.05	present study
Borreraig	Bor_144	4.26	0.677	0.14	present study
Hallaig Waterfall	Hal_168	4.26	0.684	0.03	present study
Hallaig Waterfall	Hal_168	4.26	0.696	0.02	present study
Ardnish	Ard_125	4.25	0.626	0.12	present study
Ardnish	Ard_125	4.25	0.610	0.12	present study
Ardnish	Ard_125	4.25	0.588	0.19	present study
Ardnish	Ard_120	4.25	0.603	0.13	present study
Ardnish	Ard_121	4.25	0.578	0.13	present study

Ardnish	Ard_120	4.25	0.557	0.14	present study
Ardnish	Ard_120	4.25	0.559	0.15	present study
Ardnish	Ard_121	4.25	0.617	0.18	present study
Ardnish	Ard_129	4.24	0.559	0.05	present study
Ardnish	Ard_129	4.24	0.639	0.16	present study
Ardnish	Ard_129	4.24	0.630	0.21	present study
Ardnish	Ard_133	4.24	0.575	0.07	present study
Ardnish	Ard_133	4.24	0.572	0.10	present study
Ardnish	Ard_133	4.24	0.580	0.11	present study
Ardnish	Ard_136	4.23	0.704	0.16	present study
Ardnish	Ard_136	4.23	0.786	0.21	present study
Borreraig	Bor_137	4.23	0.703	0.15	present study
Borreraig	Bor_137	4.23	0.656	0.10	present study
Hallaig Waterfall	Hal_176	4.22	0.644	0.02	present study
Hallaig Waterfall	Hal_176	4.22	0.685	0.01	present study
Hallaig Waterfall	Hal_177	4.22	0.626	0.21	present study
Hallaig Waterfall	Hal_177	4.22	0.570	0.18	present study
Ardnish	Ard_155	4.13	0.639	0.14	present study
Ardnish	Ard_155	4.13	0.669	0.39	present study
Ardnish	Ard_155	4.13	0.650	0.42	present study
Ardnish	Ard_151	4.07	0.637	0.07	present study
Ardnish	Ard_151	4.07	0.567	0.17	present study
Ardnish	Ard_148	4.07	0.655	0.11	present study
Ardnish	Ard_148	4.07	0.736	0.22	present study
Ardnish	Ard_146	4.06	0.619	0.13	present study
Ardnish	Ard_144	4.06	0.555	0.03	present study
Ardnish	Ard_144	4.06	0.545	0.05	present study
Ardnish	Ard_144	4.06	0.549	0.08	present study
Hallaig Waterfall	Hal_198	4.06	0.535	0.04	present study
Hallaig Waterfall	Hal_198	4.06	0.608	0.03	present study
Hallaig Waterfall	Hal_199	4.05	0.585	0.06	present study
Hallaig Waterfall	Hal_199	4.05	0.679	0.06	present study
Ardnish	Ard_142	4.05	0.582	0.08	present study
Ardnish	Ard_142	4.05	0.575	0.13	present study
Ardnish	Ard_142	4.05	0.650	0.28	present study
Lochaline	Alt M. 13A	3.95	0.725	0.17	present study
Lochaline	Alt M. 12	3.90	0.846	0.45	present study
Lochaline	Alt M. 12	3.90	0.790	0.10	present study
Lochaline	Alt M. 12	3.90	0.792	0.09	present study
Lochaline	Alt M. 11	3.84	0.832	0.16	present study
Lochaline	Alt M. 10	3.79	0.679	0.10	present study
Lochaline	Alt M. 7	3.66	0.825	0.31	present study
Lochaline	Alt M. 4	3.66	0.821	0.17	present study
Lochaline	Alt M. 6	3.66	0.770	0.14	present study
Lochaline	Alt M. 9	3.66	0.676	0.08	present study
Lochaline	Alt M. 7	3.66	0.741	0.05	present study
Lochaline	Alt M. 7	3.66	0.782	0.05	present study
Lochaline	Alt M. 3	3.66	0.808	0.04	present study
Lochaline	Alt M. 8	3.66	0.808	0.04	present study

Lochaline	Alt L. 69	3.66	0.732	0.03	present study
Lochaline	Alt M. 5	3.66	0.781	0.03	present study
Lochaline	Alt M. 1	3.66	0.746	0.03	present study
Lochaline	Alt M. 3	3.66	0.707	0.02	present study
Lochaline	Alt L. 69	3.66	0.685	0.02	present study
Lochaline	Alt L. 69	3.66	0.654	0.01	present study
Lochaline	Alt L. 68	3.66	0.741	0.12	present study
Lochaline	Alt L. 67	3.66	0.723	0.03	present study
Lochaline	Alt L. 67	3.66	0.747	0.01	present study
Lochaline	Alt L. 66	3.66	0.675	0.12	present study
Lochaline	Alt L. 66	3.66	0.747	0.06	present study
Lochaline	Alt L. 65	3.63	0.798	0.36	present study
Lochaline	Alt L. 65	3.63	0.746	0.11	present study
Lochaline	Alt L. 65	3.63	0.736	0.09	present study
Lochaline	Alt L. 64	3.63	0.714	0.14	present study
Lochaline	Alt L. 64	3.63	0.728	0.09	present study
Lochaline	Alt L. 63	3.63	0.709	0.04	present study
Lochaline	Alt L. 62	3.62	0.752	0.10	present study
Lochaline	Alt L. 62	3.62	0.810	0.07	present study
Lochaline	Alt L. 61	3.60	0.810	0.23	present study
Lochaline	Alt L. 61	3.60	0.683	0.02	present study
Lochaline	Alt L. 61	3.60	0.701	0.02	present study
Lochaline	Alt L. 60	3.57	0.824	0.04	present study
Lochaline	Alt L. 60	3.57	0.735	0.03	present study
Lochaline	Alt L. 60	3.57	0.872	0.02	present study
Lochaline	Alt L. 60	3.57	0.847	0.01	present study
Lochaline	Alt L. 59	3.56	0.645	0.03	present study
Lochaline	Alt L. 59	3.56	0.694	0.00	present study
Lochaline	Alt L. 58	3.55	0.920	0.19	present study
Lochaline	Alt L. 58	3.55	0.768	0.12	present study
Lochaline	Alt L. 57	3.54	0.811	0.11	present study
Lochaline	Alt L. 56	3.54	0.742	0.06	present study
Lochaline	Alt L. 55	3.53	0.886	0.02	present study
Lochaline	Alt L. 54	3.52	0.820	0.18	present study
Lochaline	Alt L. 54	3.52	0.781	0.17	present study
Lochaline	Alt L. 54	3.52	0.775	0.14	present study
Lochaline	Alt L. 52	3.52	0.839	0.12	present study
Lochaline	Alt L. 49	3.49	0.721	0.03	present study
Lochaline	Alt L. 49	3.49	0.711	0.02	present study
Lochaline	Alt L. 47	3.46	0.807	0.28	present study
Lochaline	Alt L. 47	3.46	0.774	0.21	present study
Lochaline	Alt L. 46	3.46	0.788	0.15	present study
Lochaline	Alt L. 46	3.46	0.754	0.07	present study
Lochaline	Alt L. 45	3.46	0.683	0.07	present study
Lochaline	Alt L. 44	3.45	0.681	0.05	present study
Lochaline	Alt L. 44	3.45	0.740	0.05	present study
Lochaline	Alt L. 43	3.44	0.726	0.08	present study
Lochaline	Alt L. 42	3.43	0.862	0.19	present study
Lochaline	Alt L. 42	3.43	0.767	0.07	present study

Lochaline	Alt L. 41	3.42	0.833	0.21	present study
Lochaline	Alt L. 40	3.37	0.695	0.05	present study
Lochaline	Alt L. 40	3.37	0.710	0.04	present study
Lochaline	Alt L. 39	3.36	0.911	0.03	present study
Lochaline	Alt L. 39	3.36	0.950	0.03	present study
Lochaline	Alt L. 39	3.36	0.903	0.03	present study
Lochaline	Alt L. 38	3.34	0.857	0.02	present study
Lochaline	Alt L. 37	3.32	0.757	0.03	present study
Lochaline	Alt L. 37	3.32	0.752	0.03	present study
Lochaline	Alt L. 37	3.32	0.677	0.01	present study
Lochaline	Alt L. 36	3.30	0.711	0.03	present study
Lochaline	Alt L. 35	3.27	0.830	0.15	present study
Lochaline	Alt L. 34	3.23	0.879	0.02	present study
Lochaline	Alt L. 33	3.23	0.840	0.10	present study
Lochaline	Alt L. 33	3.23	0.802	0.08	present study
Lochaline	Alt L. 33	3.23	0.893	0.04	present study
Lochaline	Alt L. 33	3.23	0.886	0.03	present study
Lochaline	Alt L. 33	3.23	0.957	0.03	present study
Lochaline	Alt L. 31	3.17	0.804	0.11	present study
Lochaline	Alt L. 30	3.16	0.710	0.04	present study
Lochaline	Alt L. 30	3.16	0.907	0.01	present study
Lochaline	Alt S. 14	2.99	0.774	0.15	present study
Lochaline	Alt S. 14	2.99	0.704	0.10	present study
Lochaline	Alt S. 14	2.99	0.690	0.03	present study
Lochaline	Alt S. 13	2.98	0.905	0.05	present study
Lochaline	Alt S. 13	2.98	0.738	0.04	present study
Lochaline	Alt S. 13	2.98	0.723	0.03	present study
Lochaline	Alt S. 12	2.85	0.723	0.05	present study
Lochaline	Alt S. 12	2.85	0.741	0.03	present study
Lochaline	Alt S. 10	2.84	0.767	0.16	present study
Lochaline	Alt S. 11	2.84	0.995	0.22	present study
Lochaline	Alt S. 9	2.83	0.804	0.13	present study
Lochaline	Alt S. 8	2.81	0.768	0.05	present study
Lochaline	Alt S. 8	2.81	0.887	0.00	present study
Lochaline	Alt S. 6	2.79	0.756	0.06	present study
Lochaline	Alt S. 7	2.77	0.738	0.14	present study
Lochaline	Alt S. 7	2.77	0.704	0.11	present study
Lochaline	Alt S. 7	2.77	0.695	0.11	present study
Lochaline	Alt S. 5	2.77	0.739	0.04	present study
Lochaline	Alt S. 5	2.77	0.853	0.04	present study
Lochaline	Alt S. 4	2.76	0.673	0.03	present study
Lochaline	Alt S. 4	2.76	0.690	0.00	present study
Lochaline	Alt S. 3	2.75	0.744	0.09	present study
Lochaline	Alt S. 2	2.72	0.760	0.04	present study
Lochaline	Alt L. 28	2.72	0.768	0.11	present study
Lochaline	Alt S. 1	2.72	0.818	0.09	present study
Lochaline	Alt L. 27	2.71	0.655	0.02	present study
Lochaline	Alt L. 26	2.68	0.708	0.09	present study
Lochaline	Alt L. 25	2.68	0.754	0.06	present study

Lochaline	Alt L. 24	2.60	0.696	0.00	present study
Lochaline	Alt L. 24	2.60	0.767	0.00	present study
Lochaline	Alt L. 21	2.54	0.735	0.05	present study
Lochaline	Alt L. 21	2.54	0.743	0.03	present study
Lochaline	Alt L. 20	2.53	0.750	0.12	present study
Lochaline	Alt L. 17 = 15-17	2.34	0.708	0.11	present study
Lochaline	Alt L. 17 = 15-17	2.34	0.788	0.08	present study
Lochaline	Alt L. 17 = 15-17	2.34	0.739	0.07	present study
Lochaline	Alt L. 15	2.34	0.732	0.32	present study
Lochaline	Alt L. 15	2.34	0.818	0.14	present study
Lochaline	Alt L. 16	2.34	0.778	0.05	present study
Lochaline	Alt L. 12	2.21	0.799	0.04	present study
Lochaline	Alt L. 12	2.21	0.909	0.03	present study
Lochaline	Alt L. 9	2.19	0.761	0.09	present study
Lochaline	Alt L. 6	2.18	0.868	0.24	present study
Lochaline	Alt L. 8	2.18	0.776	0.19	present study
Lochaline	Alt L. 3	2.10	0.827	0.12	present study
Lochaline	Alt L. 4	2.09	0.945	0.22	present study
Lochaline	Alt L. 1	2.02	0.799	0.29	present study
Lochaline	Alt L. 2	2.02	0.904	0.26	present study
Lochaline	Alt L. 1	2.02	0.802	0.10	present study
Lochaline	Alt L. 1	2.02	0.870	0.06	present study

## Calculations

Stage	Ammonite Zone			belemnites			oysters			bel/biv	unc.	reconstructed Seawater Sr/Ca					<sup>87</sup> Sr/ <sup>86</sup> Sr				
	numerical J2002	name	Age G2004	Sr/Ca mmol/mol	2sd	2err	n	Sr/Ca mmol/mol	2sd	2err		belemnites Sr/Ca	2err	oysters Sr/Ca	2err	combined Sr/Ca	2err	zone avg	2err		
Callovian	47.5	lamberti	163.81	1.21	0.02	0.02						3.8	0.1			3.8	0.1	0.706852	0.000004		
Callovian	46.5	athleta	163.97	1.29	0.10	0.10						4.1	0.3			4.1	0.3	0.706853	0.000004		
Callovian	45.5	coronatum	164.5	1.27	0.09	0.09						4.0	0.3			4.0	0.3	0.706848	0.000012		
Callovian	44.5		164.72	1.28	0.05	0.05						4.1	0.2			4.1	0.2	0.706869	0.000008		
Callovian	42.5		164.95	1.37	0.10	0.10						4.4	0.3			4.4	0.3	0.706917	0.000012		
Callovian	41.5	herveyi	165.40	1.29	0.02	0.02						4.1	0.1			4.1	0.1	0.706915	0.000005		
Callovian	38.5	hodsoni	166.07	1.50	0.04	0.04						4.8	0.1			4.8	0.1	0.707013	0.000005		
Bathonian	37.5	morrissi	166.78	1.56	0.04	0.04						4.9	0.1			4.9	0.1	0.707027	0.000003		
Bathonian	35.5	progracilis	167.37	1.73	0.19	0.19						5.5	0.6			5.5	0.6	0.707033	0.000013		
Bathonian	34.5	tenuiplicatus	167.83	1.55	0.17	0.17						4.9	0.5			4.9	0.5	0.707040	0.000008		
Bathonian	33.5	zigzag	168.28	1.47	0.08	0.08						4.6	0.2			4.6	0.2	0.707043	0.000007		
Bajocian	32.5	parkinsoni	168.69	1.53	0.07	0.07						4.9	0.2			4.9	0.2	0.707058	0.000008		
Bajocian	29.5	humphriesianum	169.7															0.707176	0.000003		
Bajocian	28.5	propinquans	169.9															0.707218	0.000013		
Bajocian	27.5	laeviuscula	170.1	1.66	0.35	0.10	12					5.3	0.3			5.3	0.3	0.707257	0.000013		
Bajocian	26.5	ovalis	170.2	1.43	0.22	0.05	18					4.5	0.2			4.5	0.2	0.707289	0.000010		
Bajocian	25.5	discites	170.3	1.62	0.44	0.10	20					5.1	0.3			5.1	0.3	0.707285	0.000007		
Aalenian	24.5	concavum	170.8															0.707288	0.000006		
Aalenian	23.5	bradfordensis	171.3	1.82	0.28	0.09	10					5.8	0.3			5.8	0.3	0.707277			
Aalenian	22.5	murchisonae	172.1	1.55	0.31	0.10	10					4.9	0.3			4.9	0.3	0.707306	0.000015		
Aalenian	21.5	scissum	173.1	1.70	0.29	0.07	18					5.4	0.2			5.4	0.2	0.707309	0.000013		
Aalenian	20.5	opalinum	174.2	1.79	0.27	0.07	14					5.7	0.2			5.7	0.2	0.707296	0.000009		
Toarcian	19.5	levesquei	175.0	1.75	0.34	0.05	40					5.5	0.2			5.5	0.2	0.707294	0.000012		
Toarcian	18.5	thouarensse	176.2															0.707267	0.000024		
Toarcian	17.5	variabilis	178.2	1.92	0.48	0.06	62					6.1	0.2			6.1	0.2	0.707259			
Toarcian	16.5	bifrons	180.4	1.88	0.44	0.04	139					6.0	0.1			6.0	0.1	0.707237	0.000011		
Toarcian	15.5	serpentinum	181.7	1.76	0.35	0.04	80					5.6	0.1			5.6	0.1	0.707162	0.000027		
Toarcian	14.5	tenuicostatum	182.7	1.34	0.36	0.06	36					4.2	0.2			4.2	0.2	0.707097	0.000008		
Pliensbachian	13.5	spinatum	184.6	1.63	0.58	0.15	15	0.47	0.06	0.04	3	3.5	0.6	5.2	0.5	4.7	0.4	4.9	0.7	0.707099	0.000011
Pliensbachian	12.5	margaritatus	186.5	1.64	0.44	0.08	29	0.50	0.23	0.06	15	3.3	0.6	5.2	0.3	5.0	0.6	5.1	0.3	0.707175	0.000012
Pliensbachian	11.5	davoei	188.5	1.49	0.71	0.25	8	0.50	0.16	0.03	24	3.0	0.7	4.7	0.8	5.0	0.3	4.8	0.3	0.707232	0.000011
Pliensbachian	10.5	ibex	189.4	1.37	0.75	0.13	32	0.45	0.16	0.04	14	3.0	0.6	4.3	0.4	4.5	0.4	4.4	0.2	0.707272	0.000014
Pliensbachian	9.5	jamesoni	190.8	1.44	0.61	0.11	28	0.50	0.17	0.02	52	2.8	0.4	4.6	0.4	5.0	0.2	4.8	0.7	0.707344	0.000010
Sinemurian	8.5	raricostatum	192.8	1.77	0.43	0.12	13	0.58	0.11	0.02	29	3.1	0.3	5.6	0.4	5.8	0.2	5.7	0.2	0.707456	0.000020
Sinemurian	7.5	oxynotum	193.8	1.59	0.17	0.12	2	0.55	0.22	0.08	7	2.9	0.7	5.0	0.4	5.5	0.8	5.3	0.7	0.707571	
Sinemurian	6.5	obtusum	195.3	1.82	0.45	0.20	5	0.55	0.10	0.06	3	3.3	0.7	5.8	0.6	5.5	0.6	5.6	0.4	0.707528	0.000019
Sinemurian	5.5	turneri	196.3	2.29	0.40	0.28	2	0.66	0.14	0.02	36	3.5	0.6	7.2	0.9	6.6	0.2	6.9	1.0	0.707574	0.000037
Sinemurian	4.5	semicostatum	197.8					0.63	0.12	0.01	94					6.3	0.1	6.3	0.1	0.707654	0.000074
Sinemurian	3.5	bucklandi	199.3					0.78	0.15	0.02	84					7.8	0.2	7.8	0.2	0.707747	0.000030
Hettangian	2.5	angulata	200.1					0.78	0.15	0.02	50					7.8	0.2	7.8	0.2	0.707757	0.000008
Hettangian	1.5	liasicus	200.9																0.707756	0.000021	
Hettangian	0.5	planorbis	201.1																0.707775	0.000036	