Present-day sedimentation rates on the southern and southeastern Australian continental margins

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SUPPLEMENTARY PAPERS

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Supplementary Table 1 Dry bulk density (g cm^{-3}) (DBD), activities of ^{210}Pb , ^{226}Ra , ^{228}Th and $^{234}\text{Th}_{\text{xs}}$, mean grain size, percentage organic carbon (C_{org}) and percentage CaCO_3 content for the cores collected obtained along the western margin of the Tasman Sea during the SS2011-T1 cruise.

Supplementary Table 2 Dry bulk density (g cm^{-3}) (DBD), activities of ^{210}Pb , ^{226}Ra , ^{228}Th and $^{234}\text{Th}_{\text{xs}}$, mean grain size, percentage organic carbon (C_{org}) and percentage CaCO_3 contents for the cores collected obtained along the southern margin of Australia during the SS2011-T4 cruise.

Supplementary Table 1 Dry bulk density (g cm^{-3}) (DBD), activities of ^{210}Pb , ^{226}Ra , ^{228}Th and $^{234}\text{Th}_{\text{xs}}$, mean grain size, percentage organic carbon (C_{org}) and percentage CaCO_3 content for the cores collected obtained along the western margin of the Tasman Sea during the SS2011-T1 cruise.

Site	Sediment layer cm	DBD g cm^{-3}	^{210}Pb mBq g^{-1}	^{226}Ra mBq g^{-1}	^{232}Th mBq g^{-1}	$^{234}\text{Th}_{\text{xs}}$ mBq g^{-1}	Grain size μm	POC %	CaCO_3 %
<i>Western Tasman Sea (SS2011-T1 cruise)</i>									
S2	0–1	0.96	86.9 $\pm$ 7.5	16.0 $\pm$ 1.2	2.7 $\pm$ 0.7	18.6 $\pm$ 5.5	121	0.29%	72.5%
	1–2	0.97	87.5 $\pm$ 5.4	13.1 $\pm$ 0.8	3.8 $\pm$ 0.5		129	0.27%	75.5%
	2–3	0.96	72.3 $\pm$ 5.1	14.2 $\pm$ 0.8	2.1 $\pm$ 0.5				
	3–4	0.99	71.1 $\pm$ 4.2	13.5 $\pm$ 0.6	1.9 $\pm$ 0.4				
	4–5	1.00	59.3 $\pm$ 3.8	15.5 $\pm$ 0.6	4.2 $\pm$ 0.4				
	5–6	1.00	42.6 $\pm$ 3.0	16.4 $\pm$ 0.5	4.2 $\pm$ 0.4		153	0.27%	76.2%
	6–7	0.91	20.3 $\pm$ 2.3	17.4 $\pm$ 0.5	4.1 $\pm$ 0.4				
	7–8	0.93	14.3 $\pm$ 2.5	15.1 $\pm$ 0.6	3.3 $\pm$ 0.4		110		
	8–9	0.93							
	9–10	0.93							
	10–11	0.92	12.1 $\pm$ 2.2	14.6 $\pm$ 0.5	4.8 $\pm$ 0.4		84	0.24%	71.8%
	11–12	0.97							
	12–13	1.05							
	13–14	1.08							
	14–15	1.02					73	0.29%	66.9%
S3	0–0.5	0.54	271.0 $\pm$ 16.2	22.6 $\pm$ 1.8	4.0 $\pm$ 1.1	99.1 $\pm$ 4.9	32	0.84%	71.7%
	0.5–1	0.62	315.9 $\pm$ 10.2	30.6 $\pm$ 1.2	5.1 $\pm$ 0.7	12.2 $\pm$ 4.7			
	1–1.5	0.69	219.6 $\pm$ 8.0	32.0 $\pm$ 1.0	6.5 $\pm$ 0.6			0.84%	72.9%
	1.5–2	0.74							
	2–2.5	0.76	121.4 $\pm$ 4.0	29.7 $\pm$ 0.6	5.1 $\pm$ 0.4			0.97%	73.7%
	2.5–3	0.78							
	3–3.5	0.79	73.0 $\pm$ 5.2	30.0 $\pm$ 1.0	5.2 $\pm$ 0.6				
	3.5–4	0.79							
	4–4.5	0.80							
	4.5–5	0.81							
	5–6	0.85	55.7 $\pm$ 3.8	31.3 $\pm$ 0.8	5.3 $\pm$ 0.4		25	0.74%	75.3%
	6–7	0.80	71.5 $\pm$ 4.8	30.2 $\pm$ 0.9	4.4 $\pm$ 0.5				
	7–8	0.85							
	8–9	0.89	39.1 $\pm$ 3.5	29.5 $\pm$ 0.8	5.6 $\pm$ 0.5				
	9–10	0.93							
	10–11	0.92	35.2 $\pm$ 2.7	27.8 $\pm$ 0.7	4.9 $\pm$ 0.4		24	0.74%	76.1%
	11–12	0.88							
S4	0–1	0.71	166.9 $\pm$ 14.9	9.8 $\pm$ 1.5	6.1 $\pm$ 1.2	51.0 $\pm$ 9.0	29	1.07%	79.7%
	1–1.5	0.75	161.3 $\pm$ 6.9	7.7 $\pm$ 0.7	6.1 $\pm$ 0.6			1.08%	78.6%
	1.5–2	0.71							
	2–2.5	0.76	124.3 $\pm$ 5.6	7.6 $\pm$ 0.6	4.0 $\pm$ 0.5			0.98%	80.6%
	2.5–3	0.77							
	3–3.5	0.83	111.8 $\pm$ 5.6	8.5 $\pm$ 0.7	5.1 $\pm$ 0.5				
	3.5–4	0.84							
	4–4.5	0.84							
	4.5–5	0.83							
	5–6	0.84	96.4 $\pm$ 4.6	8.7 $\pm$ 0.5	4.9 $\pm$ 0.4		29	0.95%	80.8%
	6–7	0.87							
	7–8	0.85	61.9 $\pm$ 3.8	9.1 $\pm$ 0.5	4.2 $\pm$ 0.4				
	8–9	0.89							
	9–10	0.87							
	10–11	0.88	24.8 $\pm$ 2.7	8.2 $\pm$ 0.5	3.3 $\pm$ 0.4		27	0.94%	83.0%
	11–12	0.90							
	12–13	0.92	17.3 $\pm$ 3.1	7.2 $\pm$ 0.6	3.6 $\pm$ 0.4				
	13–14	0.93							
	14–15	0.91							
S5	15–16	0.89	6.3 $\pm$ 3.0	7.7 $\pm$ 0.6	4.3 $\pm$ 0.5		28	0.95%	83.2%
	16–17	0.85	15.4 $\pm$ 2.3	8.8 $\pm$ 0.5	3.5 $\pm$ 0.3				
	0–0.5	0.51	265.2 $\pm$ 16.5	10.7 $\pm$ 1.5	11.7 $\pm$ 1.3	38.8 $\pm$ 8.7	26	1.28%	54.3%
	0.5–1	0.66	269.7 $\pm$ 13.2	14.1 $\pm$ 1.2	13.1 $\pm$ 1.1	12.7 $\pm$ 6.8			
	1–1.5	0.64	230.8 $\pm$ 8.2	13.4 $\pm$ 0.8	10.9 $\pm$ 0.7			1.40%	56.3%
	1.5–2	0.64							

Site	Sediment layer cm	DBD g cm ⁻³	²¹⁰ Pb mBq g ⁻¹	²²⁶ Ra mBq g ⁻¹	²³² Th mBq g ⁻¹	²³⁴ Th _{xs} mBq g ⁻¹	Grain size µm	POC %	CaCO ₃ %
S8	2–2.5	0.79	277.0 ± 9.3	15.6 ± 0.9	14.2 ± 0.8		25	1.44%	56.4%
	2.5–3	0.70							
	3–3.5	0.75	236.6 ± 6.7	14.0 ± 0.6	12.4 ± 0.6				
	3.5–4	0.79							
	4–4.5	0.75							
	4.5–5	0.70							
	5–6	0.73	193.9 ± 11.3	15.2 ± 1.2	15.0 ± 1.1		21	1.39%	55.2%
	6–7	0.78							
	7–8	0.77	146.8 ± 6.0	15.2 ± 0.7	13.1 ± 0.7				
	8–9	0.85							
	9–10	0.87	87.6 ± 8.2	14.3 ± 1.2	13.3 ± 1.1				
	10–11	0.85	90.5 ± 6.1	12.7 ± 0.8	12.8 ± 0.8		22	1.37%	58.9%
	11–12	0.85	112.3 ± 6.0	12.9 ± 0.8	12.7 ± 0.7				
	12–13	0.84	51.4 ± 3.6	13.7 ± 0.6	13.4 ± 0.6				
	13–14	0.84	23.2 ± 2.5	13.4 ± 0.5	11.9 ± 0.4				
	14–15	0.89							
	15–16	0.90	16.9 ± 2.9	13.4 ± 0.6	11.3 ± 0.6		25	1.19%	63.0%
	16–17	0.92	16.1 ± 1.7	14.3 ± 0.4	11.8 ± 0.4				
	17–18.5	0.88							
S8	0–1	0.74	183.1 ± 10.5	11.1 ± 1.1	3.9 ± 0.8	94.8 ± 6.4	57	0.41%	63.6%
	1–2	0.85	99.0 ± 4.7	14.5 ± 0.6	6.0 ± 0.5	1.7 ± 4.7		0.37%	65.0%
	2–2.5	0.84	63.8 ± 3.9	15.0 ± 0.6	6.8 ± 0.5			0.40%	63.0%
	2.5–3	0.87							
	3–3.5	0.87							
	3.5–4	0.87	32.6 ± 3.4	11.9 ± 0.6	8.3 ± 0.5				
	4–4.5	0.87							
	4.5–5	0.87							
	5–6	0.90	38.8 ± 2.6	14.8 ± 0.5	6.0 ± 0.3		62	0.39%	65.4%
	6–7	0.90							
	7–8	0.90	19.3 ± 2.3	13.3 ± 0.5	5.8 ± 0.4				
	8–9	0.91							
	9–10	0.90	15.2 ± 2.5	13.5 ± 0.6	6.0 ± 0.4				
	10–11	0.91					41	0.42%	64.8%
	11–12	0.92							
	12–13	0.93	13.5 ± 1.7	13.3 ± 0.4	5.8 ± 0.3				
	13–14	0.95							
	14–15	0.93							
	15–16	0.98					54	0.38%	64.8%
	16–17	0.94							
	17–18	0.95							
	18–19	0.94							
	19–20	0.96					49	0.30%	65.3%
S10	0–0.5	0.62	132.7 ± 10.7	11.3 ± 1.3	7.0 ± 1.0	51.1 ± 8.0	27	0.29%	69.2%
	0.5–1	0.67	87.3 ± 5.1	10.2 ± 0.7	4.4 ± 0.5				
	1–1.5	0.66	83.6 ± 5.5	15.8 ± 0.8	5.4 ± 0.6			0.27%	67.3%
	1.5–2	0.75							
	2–2.5	0.83	79.9 ± 7.3	14.8 ± 1.1	6.8 ± 0.8			0.27%	68.6%
	2.5–3	0.77							
	3–3.5	0.85							
	3.5–4	0.77	37.2 ± 3.6	16.1 ± 0.7	4.6 ± 0.5				
	4–4.5	0.80							
	4.5–5	0.82							
	5–5.5	0.84	16.4 ± 2.6	12.2 ± 0.5	6.5 ± 0.4		27	0.24%	67.2%
	5.5–6	0.84							
	6–6.5	0.84	21.1 ± 2.2	16.9 ± 0.5	6.8 ± 0.4				
	6.5–7	0.84							
	7–7.5	0.84							
	7.5–8	0.85	18.6 ± 2.4	19.4 ± 0.6	7.2 ± 0.4		35	0.29%	69.0%

Supplementary Table 2 Dry bulk density (g cm^{-3}) (DBD), activities of ^{210}Pb , ^{226}Ra , ^{232}Th and $^{234}\text{Th}_{\text{xs}}$, mean grain size, percentage organic carbon (C_{org}) and percentage CaCO_3 contents for the cores collected obtained along the southern margin of Australia during the SS2011-T4 cruise.

Site	Sediment layer	DBD g cm^{-3}	^{210}Pb mBq g^{-1}	^{226}Ra mBq g^{-1}	^{232}Th mBq g^{-1}	$^{234}\text{Th}_{\text{xs}}$ mBq g^{-1}	Grain size μm	POC %	CaCO_3 %
<i>Southern Australian margin (SS2011-T4 cruise)</i>									
S11	0–0.5	0.86	158.1 $\pm$ 9.7	16.6 $\pm$ 1.1	2.8 $\pm$ 0.8	28.4 $\pm$ 5.0	24	0.34%	85.0%
	0.5–1	0.95	110.4 $\pm$ 6.0	18.5 $\pm$ 0.8	3.3 $\pm$ 0.5	1.8 $\pm$ 3.0			
	1–1.5	0.97	75.7 $\pm$ 6.6	18.5 $\pm$ 1.1	2.0 $\pm$ 0.6				
	1.5–2	1.02							
	2–2.5	1.03	52.3 $\pm$ 4.1	21.7 $\pm$ 0.8	2.0 $\pm$ 0.6				
	2.5–3	1.05							
	3–3.5	1.04	41.9 $\pm$ 4.0	21.7 $\pm$ 0.8	2.9 $\pm$ 0.5				
	3.5–4	1.01					23	0.25%	86.3%
	4–4.5	1.01	29.5 $\pm$ 3.8	19.8 $\pm$ 0.9	1.7 $\pm$ 0.4				
	4.5–5	1.06							
	5–5.5	1.05	25.9 $\pm$ 2.3	22.0 $\pm$ 0.5	1.2 $\pm$ 0.3				
	5.5–6	1.07							
	6–6.5	1.07							
	6.5–7	1.08							
	7–7.5	1.08							
	7.5–8	1.07							
	8–8.5	1.09							
	8.5–9	1.10							
	9–9.5	1.10							
	9.5–10	1.09					20		
S15	0–0.5	1.04	87.9 $\pm$ 7.7	15.7 $\pm$ 1.1	1.1 $\pm$ 0.6	19.6 $\pm$ 5.0	67	0.34%	87.0%
	0.5–1	1.05	88.8 $\pm$ 8.3	17.0 $\pm$ 1.3	3.0 $\pm$ 0.8				
	1–1.5	1.03	44.4 $\pm$ 5.5	17.5 $\pm$ 1.0	2.2 $\pm$ 0.6				
	1.5–2	1.07	32.6 $\pm$ 2.5	13.8 $\pm$ 0.5	2.4 $\pm$ 0.3				
	2–2.5	1.02	28.3 $\pm$ 3.0	16.9 $\pm$ 0.6	2.3 $\pm$ 0.4		15	0.30%	86.8%
	2.5–3	1.05							
	3–3.5	1.03	21.6 $\pm$ 2.8	18.2 $\pm$ 0.6	1.8 $\pm$ 0.3				
	3.5–4	1.02							
S17	0–0.5	1.05	42.1 $\pm$ 3.4	10.5 $\pm$ 0.6	2.3 $\pm$ 0.4	23.8 $\pm$ 2.9	58	0.47%	88.1%
	0.5–1	1.10	56.3 $\pm$ 4.1	9.8 $\pm$ 0.6	1.7 $\pm$ 0.4		68		
	1–1.5	1.08	85.9 $\pm$ 5.1	36.4 $\pm$ 1.0	2.7 $\pm$ 0.6		91		
	1.5–2	1.08	42.7 $\pm$ 5.5	9.1 $\pm$ 0.9	2.9 $\pm$ 0.6				
	2–2.5	1.10	48.1 $\pm$ 4.2	9.1 $\pm$ 0.6	2.1 $\pm$ 0.4				
	2.5–3	1.14	33.3 $\pm$ 2.8	10.0 $\pm$ 0.5	1.2 $\pm$ 0.3				
	3–3.5	1.12	29.5 $\pm$ 4.6	12.0 $\pm$ 0.9	2.1 $\pm$ 0.5				
	3.5–4	1.18	24.8 $\pm$ 2.8	9.6 $\pm$ 0.5	1.9 $\pm$ 0.3				
	4–4.5	1.18	18.1 $\pm$ 2.7	10.8 $\pm$ 0.5	2.4 $\pm$ 0.4				
	4.5–5	1.16	18.2 $\pm$ 2.4	11.0 $\pm$ 0.5	2.0 $\pm$ 0.4		61		
S18	0–0.5	0.89	133.9 $\pm$ 5.5	33.2 $\pm$ 0.9	3.7 $\pm$ 0.5	43.0 $\pm$ 3.9	25	0.28%	86.3%
	0.5–1	0.90	130.7 $\pm$ 9.5	39.9 $\pm$ 1.7	3.0 $\pm$ 0.8	3.0 $\pm$ 6.5	25		
	1–1.5	0.89	91.7 $\pm$ 5.4	39.2 $\pm$ 1.1	2.0 $\pm$ 0.5		20		
	1.5–2	0.94	70.6 $\pm$ 7.6	41.3 $\pm$ 1.6	2.3 $\pm$ 0.8				
	2–2.5	0.95	62.9 $\pm$ 7.2	38.6 $\pm$ 1.6	1.8 $\pm$ 0.7				
	2.5–3	0.95							

Site	Sediment layer	DBD	^{210}Pb	^{226}Ra	^{232}Th	$^{234}\text{Th}_{\text{xs}}$	Grain size	POC	CaCO_3
	cm	g cm^{-3}	mBq g^{-1}	mBq g^{-1}	mBq g^{-1}	mBq g^{-1}	μm	%	%
S18	3–3.5	0.92	50.1 ± 4.0	38.2 ± 1.0	1.7 ± 0.5			0.21%	86.9%
	3.5–4	0.92	37.8 ± 3.9	39.8 ± 1.0	3.0 ± 0.5				
	4–4.5	0.92	58.1 ± 3.0	38.4 ± 0.7	2.1 ± 0.3				
	4.5–5	0.94	44.8 ± 3.6	39.0 ± 0.9	3.2 ± 0.4				
	5–6	0.94	40.9 ± 4.3	39.9 ± 1.1	3.1 ± 0.5		22		
	6–7	0.98							
	7–8	0.98							
	8–9	1.11							
	9–10	1.04							
	10–11	1.00					25		
	11–12	1.05							
	12–13	1.01							
	13–14	1.04							
	14–15	1.07							
	15–16	1.09					22		
	16–17	1.10							
	17–18	1.12							
	18–19	1.12							
S19	0–0.5	0.51	184.6 ± 12.3	25.1 ± 1.6	6.4 ± 1.0	14.1 ± 6.2	11	0.90%	66.3%
	0.5–1	0.62	125.8 ± 9.9	22.5 ± 1.5	7.8 ± 1.0	0.3 ± 6.8			
	1–1.5	0.59	118.5 ± 9.0	28.9 ± 1.4	8.8 ± 0.9				
	1.5–2	0.72	82.4 ± 4.4	25.8 ± 0.8	8.6 ± 0.5				
	2–2.5	0.78	45.3 ± 3.7	23.9 ± 0.8	7.9 ± 0.5				
	2.5–3	0.77	40.7 ± 4.6	26.2 ± 1.0	7.8 ± 0.7				
	3–3.5	0.81	42.5 ± 4.2	28.1 ± 0.9	9.3 ± 0.6			0.83%	69.4%
	3.5–4	0.85							
	4–4.5	0.85	35.6 ± 2.5	24.1 ± 0.6	8.2 ± 0.4				
	4.5–5	0.86							
	5–6	0.87	27.5 ± 2.8	23.4 ± 0.7	9.6 ± 0.5		13		
	6–7	0.88							
	7–8	0.88							
	8–9	0.84							
	9–10	0.92							
	10–11	0.87					11		
	11–12	0.91							
	12–13	0.91							
	13–14	0.93							
	14–14.5	0.89					12		
S20	0–1	0.57	304.7 ± 8.3	25.7 ± 0.9	8.2 ± 0.6	58.5 ± 4.8	14	1.04%	67.1%
	1–1.5	0.67	189.3 ± 8.2	25.3 ± 1.1	7.8 ± 0.7	2.0 ± 5.2			
	1.5–2	0.74							
	2–2.5	0.73	161.8 ± 12.3	24.7 ± 1.7	6.5 ± 1.1				
	2.5–3	0.76	142.1 ± 9.0	26.6 ± 1.3	7.7 ± 0.9				
	3–3.5	0.78	122.2 ± 6.4	23.3 ± 1.0	7.5 ± 0.6			0.91%	70.2%
	3.5–4	0.78	56.5 ± 5.0	25.8 ± 1.0	6.9 ± 0.6				
	4–4.5	0.84	37.8 ± 4.1	24.7 ± 0.9	4.3 ± 0.5				
	4.5–5	0.84	44.4 ± 2.3	25.5 ± 0.5	6.6 ± 0.3				
	5–5.5	0.86	47.6 ± 3.7	26.1 ± 0.8	7.5 ± 0.5		12		
	5.5–6	0.86							
	6–6.5	0.89							

Site	Sediment layer cm	DBD g cm ⁻³	²¹⁰ Pb mBq g ⁻¹	²²⁶ Ra mBq g ⁻¹	²³² Th mBq g ⁻¹	²³⁴ Th _{xs} mBq g ⁻¹	Grain size µm	POC %	CaCO ₃ %
S20	6.5–7	0.89							
	7–7.5	0.91							
	7.5–8	0.89							
	8–8.5	0.91							
	8.5–9	0.93							
	9–9.5	0.94							
	9.5–10	0.94							
	10–10.5	0.96					13		
	10.5–11	0.96							
	11.–11.5	0.95							
	11.5–12	0.96							
	12–12.5	0.90							
S21	0–0.5	0.76	191.4 ± 6.4	36.7 ± 0.9	1.9 ± 0.4	37.1 ± 4.3	36.2	0.36%	81.6%
	0.5–1	0.76	166.1 ± 6.2	38.1 ± 1.0	3.1 ± 0.5	9.2 ± 4.1			
	1–1.5	0.81	126.9 ± 9.5	34.7 ± 1.6	2.2 ± 0.7				
	1.5–2	0.82							
	2–2.5	0.84	87.8 ± 5.4	40.2 ± 1.1	3.4 ± 0.5				
	2.5–3	0.83							
	3–3.5	0.86	58.9 ± 3.1	35.0 ± 0.7	3.1 ± 0.3				
	3.5–4	0.86							
	4–4.5	0.86	39.9 ± 4.7	35.4 ± 1.1	2.2 ± 0.6				
	4.5–5	0.88							
	5–5.5	0.87	37.4 ± 3.2	33.7 ± 0.8	2.9 ± 0.4		33.2	0.29%	81.7%
	5.5–6	0.90							
	6–6.5	0.89	36.4 ± 3.8	37.8 ± 1.0	3.5 ± 0.5				
	6.5–7	0.89							
	7–7.5	0.92							
	7.5–8	0.95							
	8–8.5	0.93							
	8.5–9	0.92							
	9–9.5	0.94							
	9.5–10	0.90							
	10–10.5	0.90					22.6		
	10.5–11	0.89							
	11–11.5	0.91							
	11.5–12	0.90							