

Lagoa do Macuco – testemunho MAC-C

FROM AN ESTUARY TO A FRESHWATER LAKE: A PALEO-ESTUARY EVOLUTION IN THE CONTEXT OF HOLOCENE SEA-LEVEL FLUCTUATIONS, SE BRAZIL

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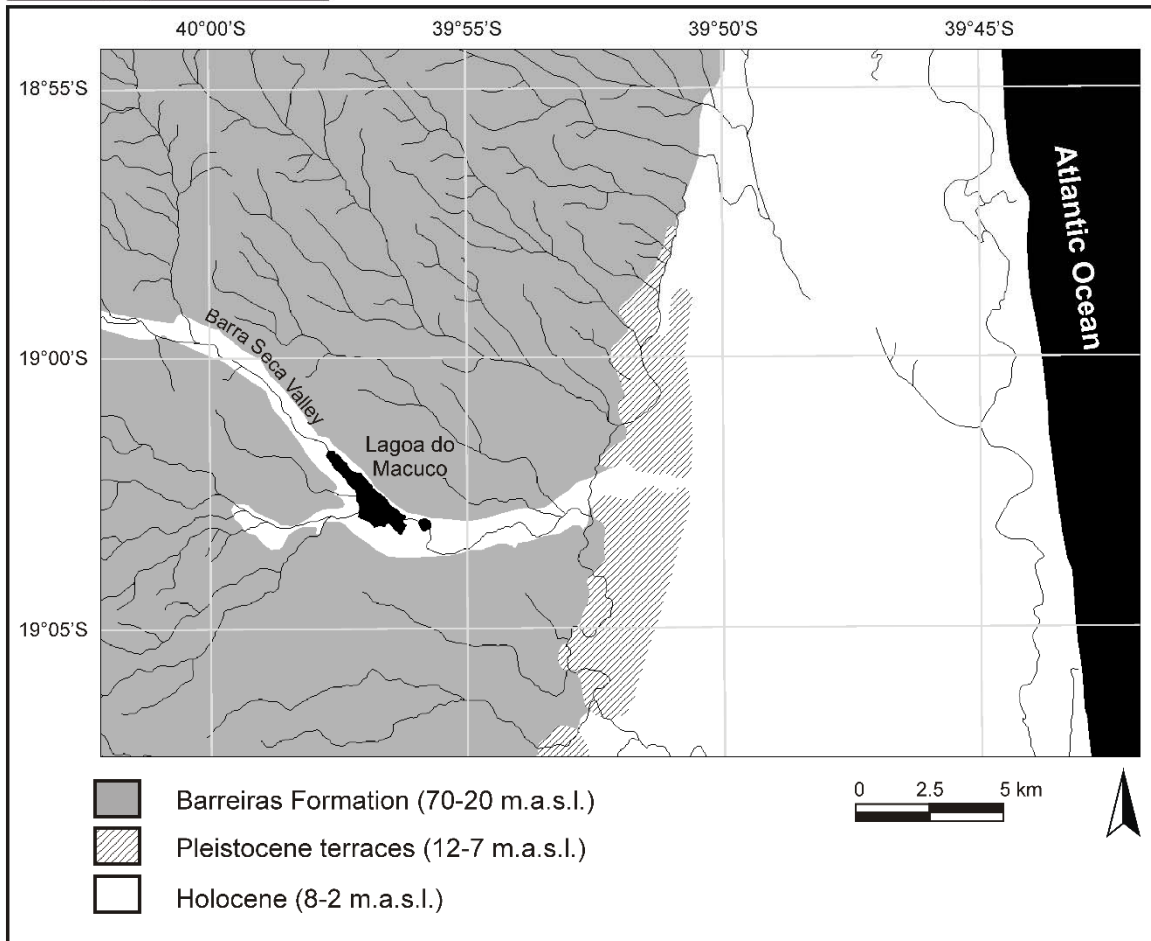
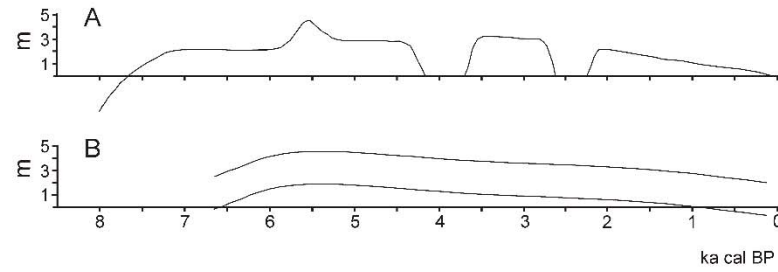


Table 1 ^{14}C results of the core MAC-C from Lagoa do Macuco.

Lab ^a #	Dated material	Depth (cm)	Age (BP)	Age (cal BP; 2σ)
UGAMS3405	Bulk sediment	4–6	101.39 ± 0.33^b	1958–1996 ^c
UGAMS3406	Bulk sediment	20–22	100 ± 30	253–0
UGAMS3407	Bulk sediment	48–50	110 ± 30	253–0
UGAMS4265	Bulk sediment	64–66	290 ± 25	440–154
TO13702	Bulk sediment	68–70	1090 ± 90	1171–767
UGAMS3408	Bulk sediment	72–74	1430 ± 30	1348–1190
TO13483	Bulk sediment	76–78	2440 ± 70	2717–2208
UGAMS4266	Bulk sediment	80–82	3260 ± 25	3479–3361
UGAMS4267	Bulk sediment	92–94	3820 ± 25	4238–3992
TO13699	Bulk sediment	108–110	4560 ± 60	5431–4888
TO13700	Bulk sediment	122–124	4580 ± 120	5571–4858
UGAMS4268	Bulk sediment	126–128	5460 ± 30	6293–6024
UGAMS4269	Bulk sediment	134–136	5780 ± 30	6634–6414
TO13484	Bulk sediment	138–140	6100 ± 80	7159–6694
TO13701	Bulk sediment	170–172	6470 ± 70	7458–7172
TO13485	Plant fragments	198–200	6730 ± 80	7667–7430

^aUGAMS, AMS, University of Georgia, USA; TO, AMS, Isotrace Laboratory, Toronto, Canada.

^b ^{14}C activity in pMC.

^cCalibrated age in cal AD.

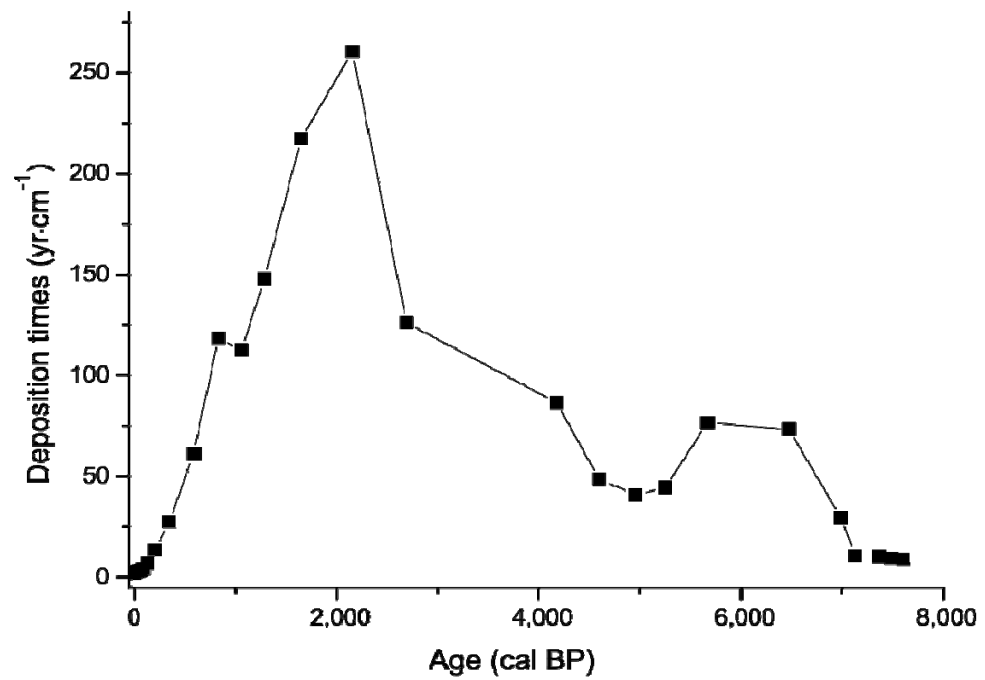
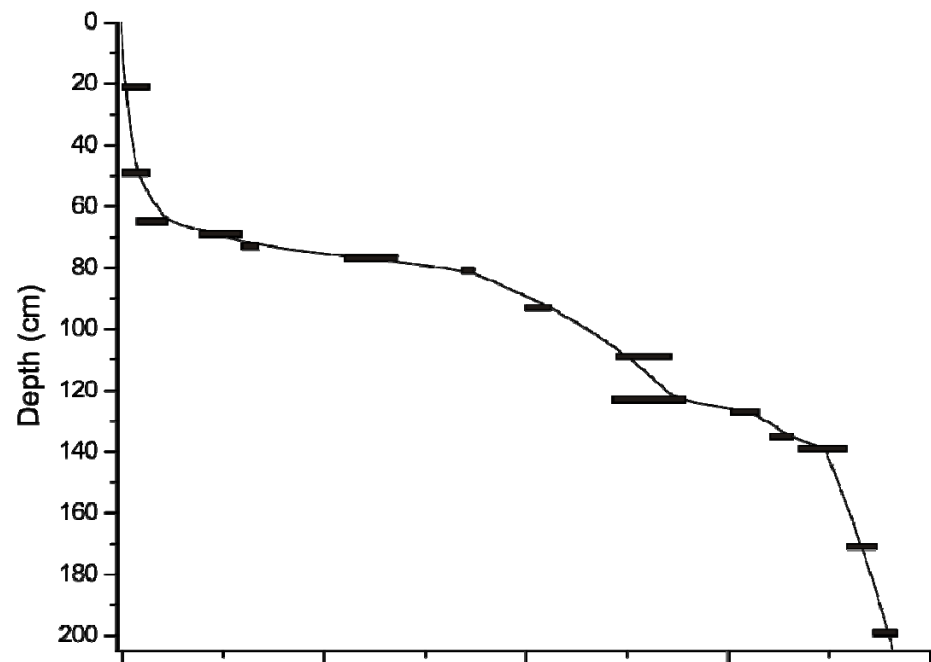
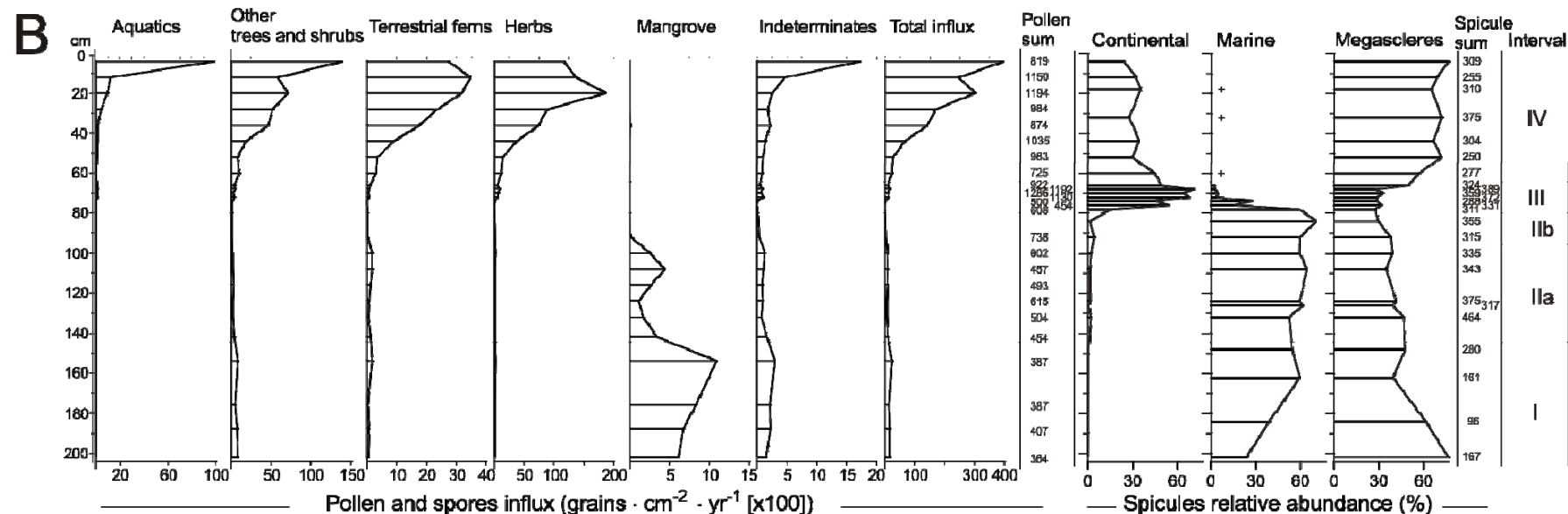
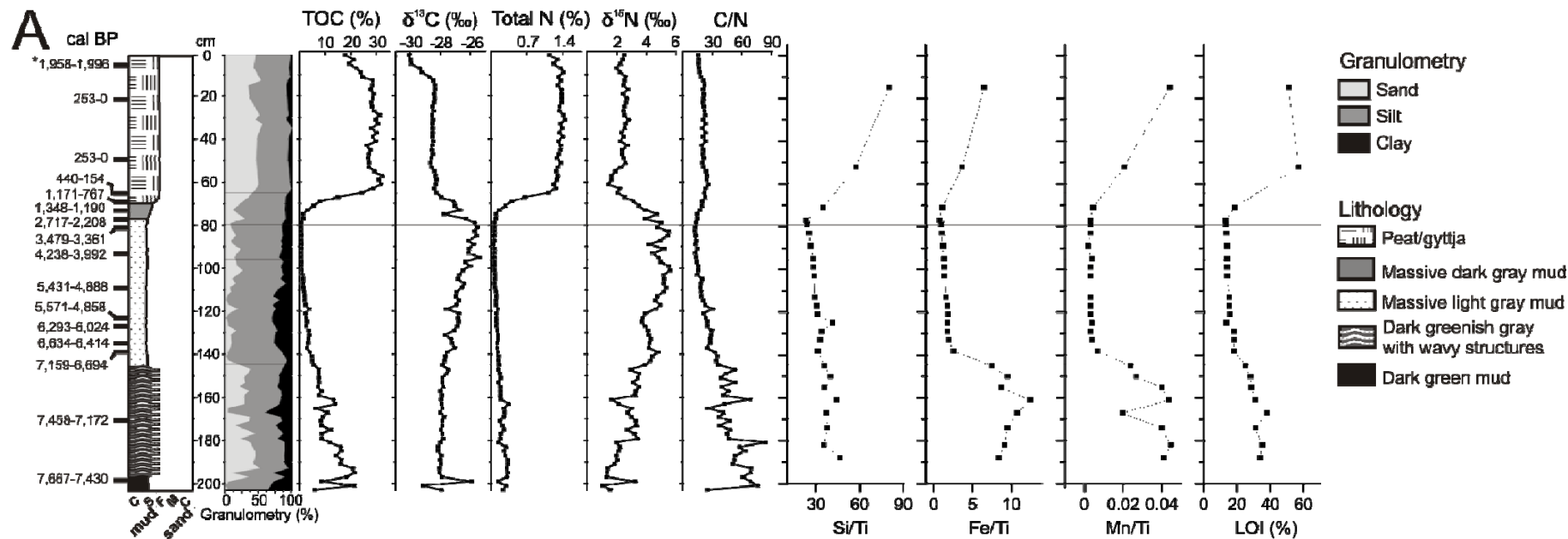


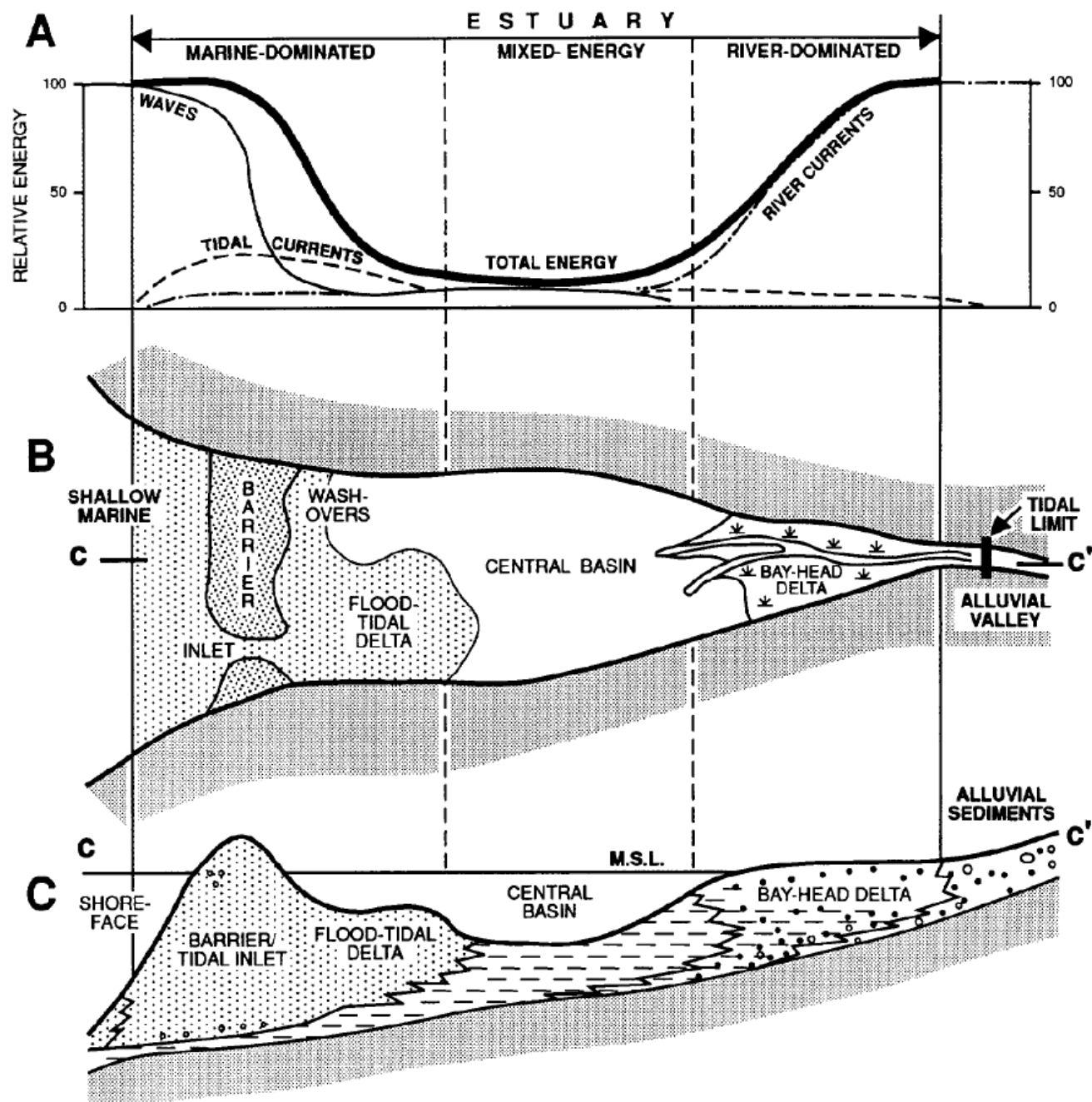
Table 2 Summary of analytical results according to the 5 time intervals identified in MAC-C core.^a

Interval	Granulometry	Mangrove	Spicules	$\delta^{13}\text{C}$ (‰)	$\delta^{15}\text{N}$ (‰)	C/N	Si/Ti	Fe/Ti	Mn/Ti	LOI
cal BP	(%)	grains $\text{cm}^{-2} \text{yr}^{-1}$	(%)	minimum	minimum	min.	min.	min.	minimum	minimum
cm				maximum	maximum	max.	max.	max.	maximum	maximum
				mean	mean	mean	mean	mean	mean	mean
IV	clay: 1–9 (5)	0–14 (2)	Marine: traces	–30.1	+1.4	16	57.4	3.7	0.021	51.3
585–present	silt: 40–57 (48)		Continental: 24–44 (32)	–28.3	+2.8	26	80.3	6.5	0.044	57.1
66–00	sand: 34–55 (47)		Megascleres: 56–76 (68)	–28.7	+2.3	21	68.8	5.1	0.032	54.2
III	clay: 10–15 (11)	0–1 (0)	Marine: 2–58 (16)	–28.0	+2.5	14	22.7	0.8	0.003	13.2
3190–585	silt: 55–78 (68)		Continental: 15–71 (52)	–25.7	+5.0	22	34.8	1.1	0.005	18.5
80–66	sand: 8–35 (21)		Megascleres: 27–49 (32)	–26.9	+3.8	17	27.2	0.9	0.004	15.1
IIb	clay: 14–19 (16)	11	Marine: 59–70 (64)	–26.1	+4.1	12	25.0	1.0	0.002	13.7
4396–3190	silt: 61–75 (70)		Continental: 1–4 (3)	–25.4	+5.5	15	27.8	1.3	0.004	13.9
96–80	sand: 8–23 (14)		Megascleres: 29–37 (33)	–25.8	+4.9	13	26.4	1.2	0.003	13.8
IIa	clay: 8–31 (21)	109–438 (265)	Marine: 52–64 (59)	–27.7	+3.7	15	28.0	1.4	0.003	13.7
7015–4396	silt: 56–87 (69)		Continental: 0–2 (1)	–26.0	+5.6	35	41.5	2.6	0.007	18.3
144–96	sand: 1–26 (10)		Megascleres: 34–46 (40)	–27.0	+4.6	24	31.7	1.8	0.004	15.9
I	clay: 6–41 (20)	619–1089 (803)	Marine: 25–61 (44)	–29.2	+1.0	24	35.3	7.5	0.020	25.2
7623–7015	silt: 41–68 (53)		Continental: 0	–25.9	+3.9	83	46.6	12.4	0.045	38.0
204–144	sand: 1–51 (27)		Megascleres: 39–75 (56)	–27.9	+2.6	50	39.0	9.5	0.035	31.3

^aValues in parentheses denote the mean.Table 3 $\delta^{13}\text{C}$, $\delta^{15}\text{N}$, and C/N of plants from Lagoa do Macuco.

Species	$\delta^{13}\text{C}$ (‰)	$\delta^{15}\text{N}$ (‰)	C/N
<i>Cabomba</i> sp.	–32.2	+2.0	21
<i>Ceratopteris thalictroides</i>	–30.6	+4.0	17
<i>Eleocharis intersticta</i>	–30.8	+2.1	30
<i>Oxycaryum cubense</i>	–31.0	+6.6	24
<i>Panicum</i> cf. <i>stoloniferum</i>	–30.3	+2.6	17
<i>Salvinia</i> sp.	–31.9	+1.2	36
<i>Tonina fluviatilis</i>	–32.0	+0.6	16
<i>Typha</i> sp.	–29.8	+5.0	11
<i>Utricularia</i> sp.	–33.3	+4.9	19
Mean	–31.3 ± 1.1	+3.2 ± 2.0	21 ± 8





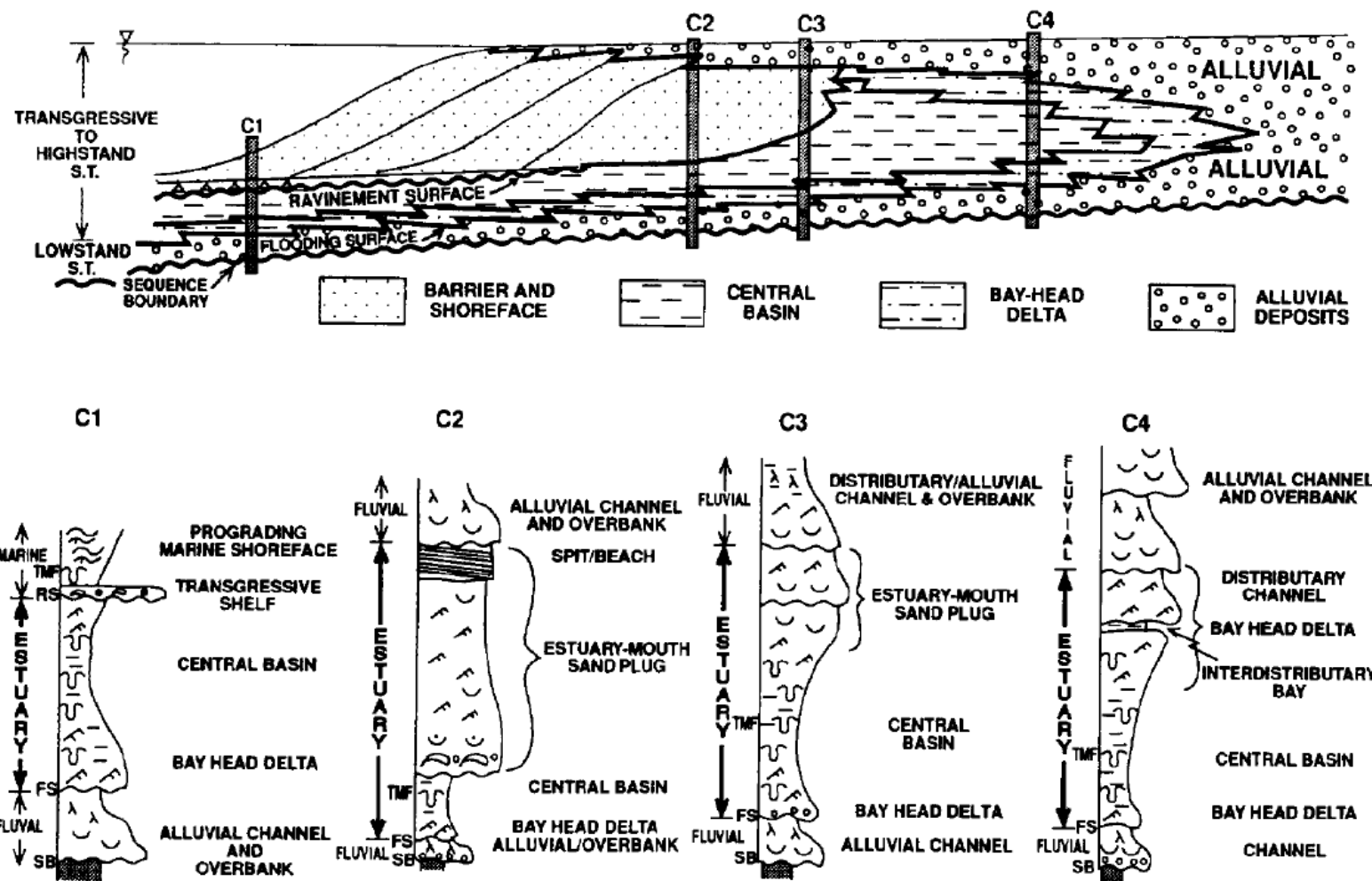


FIG. 13.—Schematic section along the axis of a wave-dominated estuary, showing the distribution of lithofacies resulting from transgression of the estuary, followed by estuary filling and shoreface progradation. The amount of the transgressive succession preserved depends on the relative rates of sea-level rise and headward translation of the shoreface. See Figure 14 for legend.