Research on Sedimentation in Estuaries

SEDIMENTATION IN THE SUNDAYS ESTUARY

ROSIE REPORT No 3

By: JSV Reddering
K Esterhuysen

Project leader: IC Rust

Department of Geology
University of Port Elizabeth

November 1981

1) Needs cross sections near N2 bridge
2) Discussion on incised flood plain
3) More info on threatened houses at Cannonville

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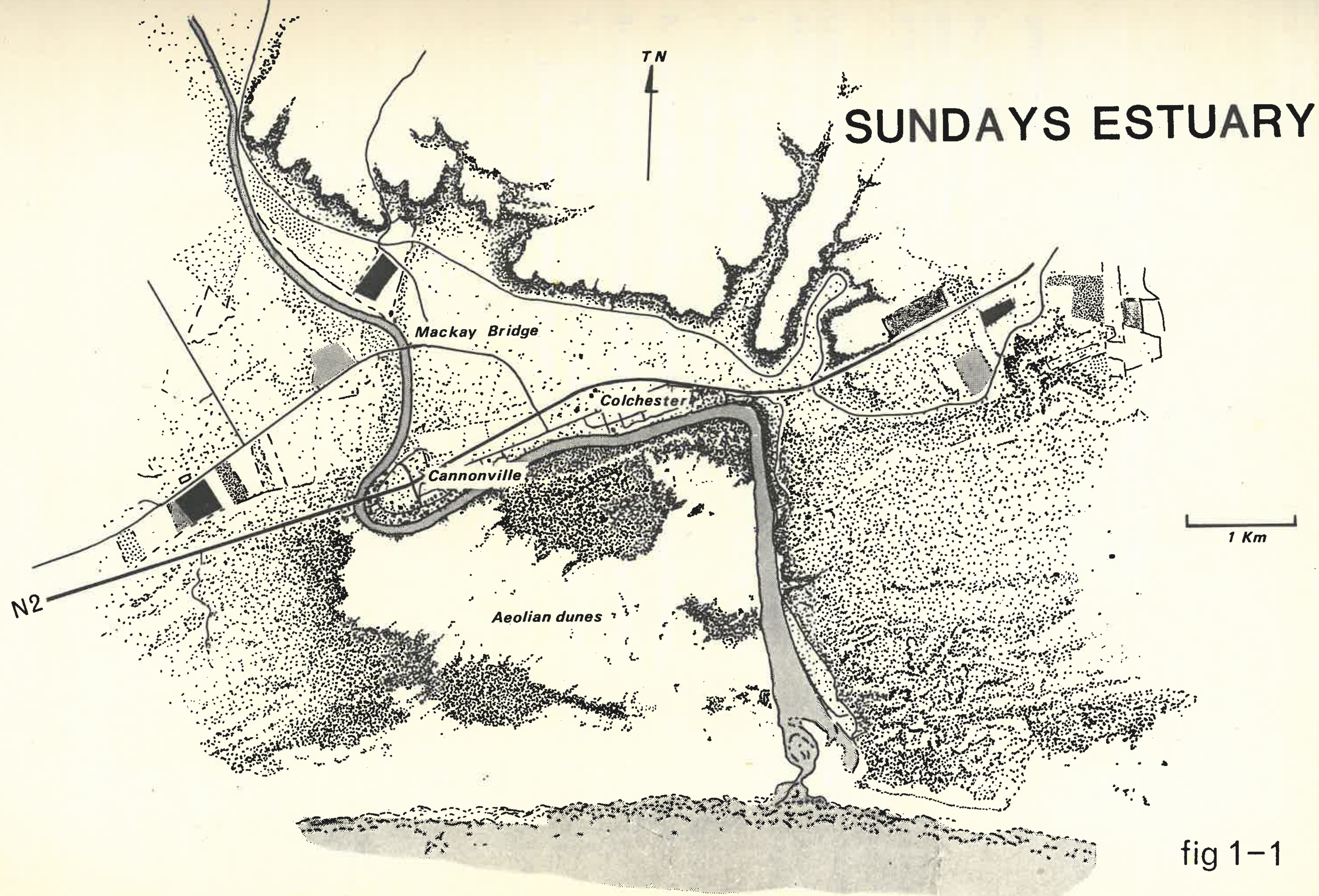

SUNDAYS ESTUARY
TN
Mackay Bridge
Colchester
Cannonville
N2
Aeolian dunes
1 Km

fig 1–1

SEDIMENTATION IN THE SUNDAYS ESTUARY

1. INTRODUCTION

The Sundays River flows into Algoa Bay through its estuary (fig. 1-1), about 30 km northeast of Port Elizabeth. There is little development along the banks of the estuary and human influence on it is small.

Little is known about the sedimentation in the Sundays estuary and the aims of this study are:

1. To determine whether sediment build-up is taking place in the estuary.
2. To determine the origin of the sediment in the estuary.
3. To establish baseline information for future reference.
4. To recommend management of the estuary from a sedimentological point of view where applicable.

LOCATION OF SUNDAYS RIVER

33°43'S,25°52'E

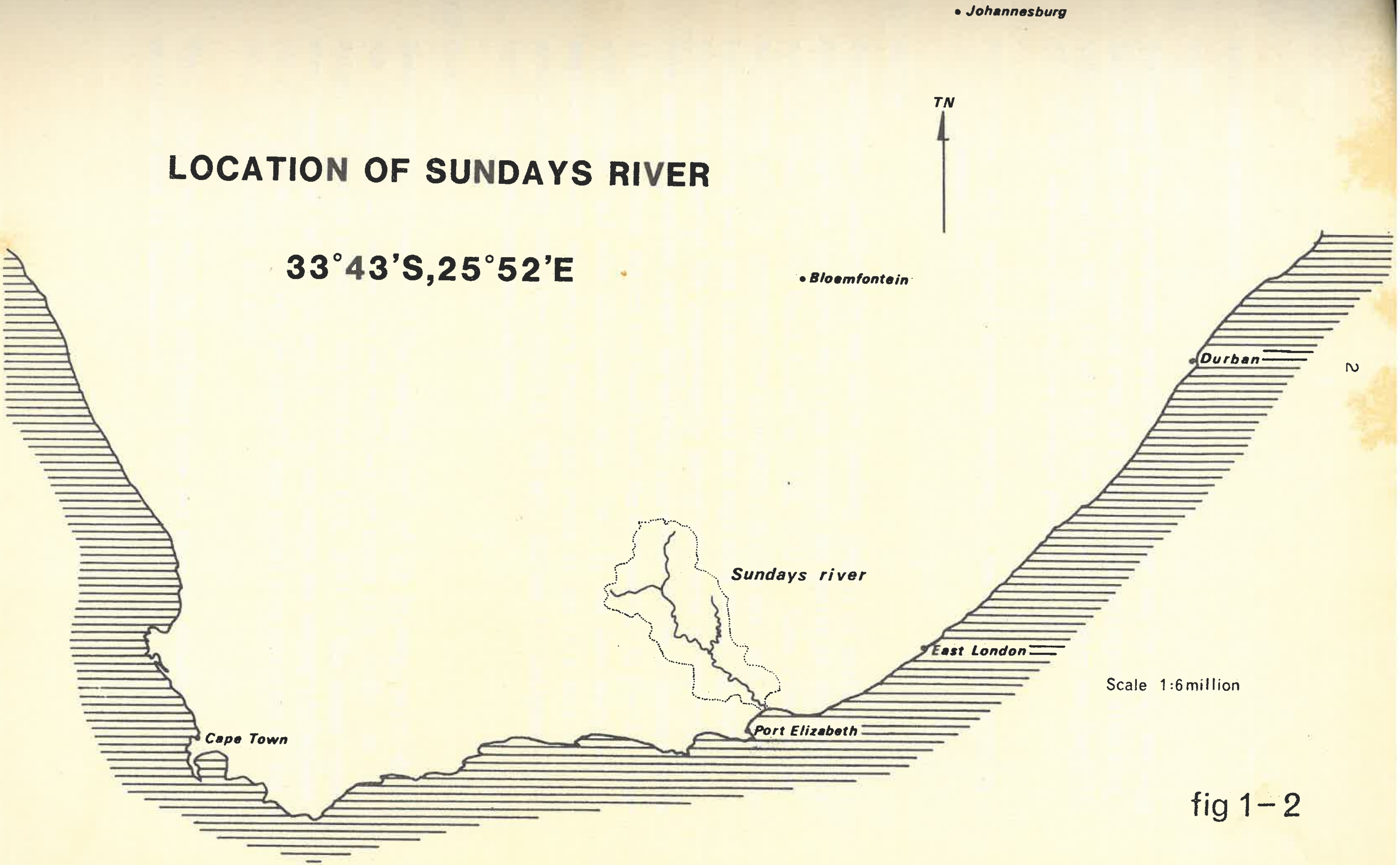


fig 1-2

2. BACKGROUND INFORMATION

2.1 River

The Sundays River originates north of Graaff Reinet and its large drainage basin (20 729 km^2) encloses an area of climatic and geological diversity. Lake Mentz (capacity 206 x 10^6 m^3) and the Van Ryneveld Pass Dam (Capacity 53 x 10^6 m^3) are major dams on the Sundays River (fig. 2-1).

Agriculture: with emphasis on sheep farming, is the main human activity in the catchment basin.

2.1.1 Geology

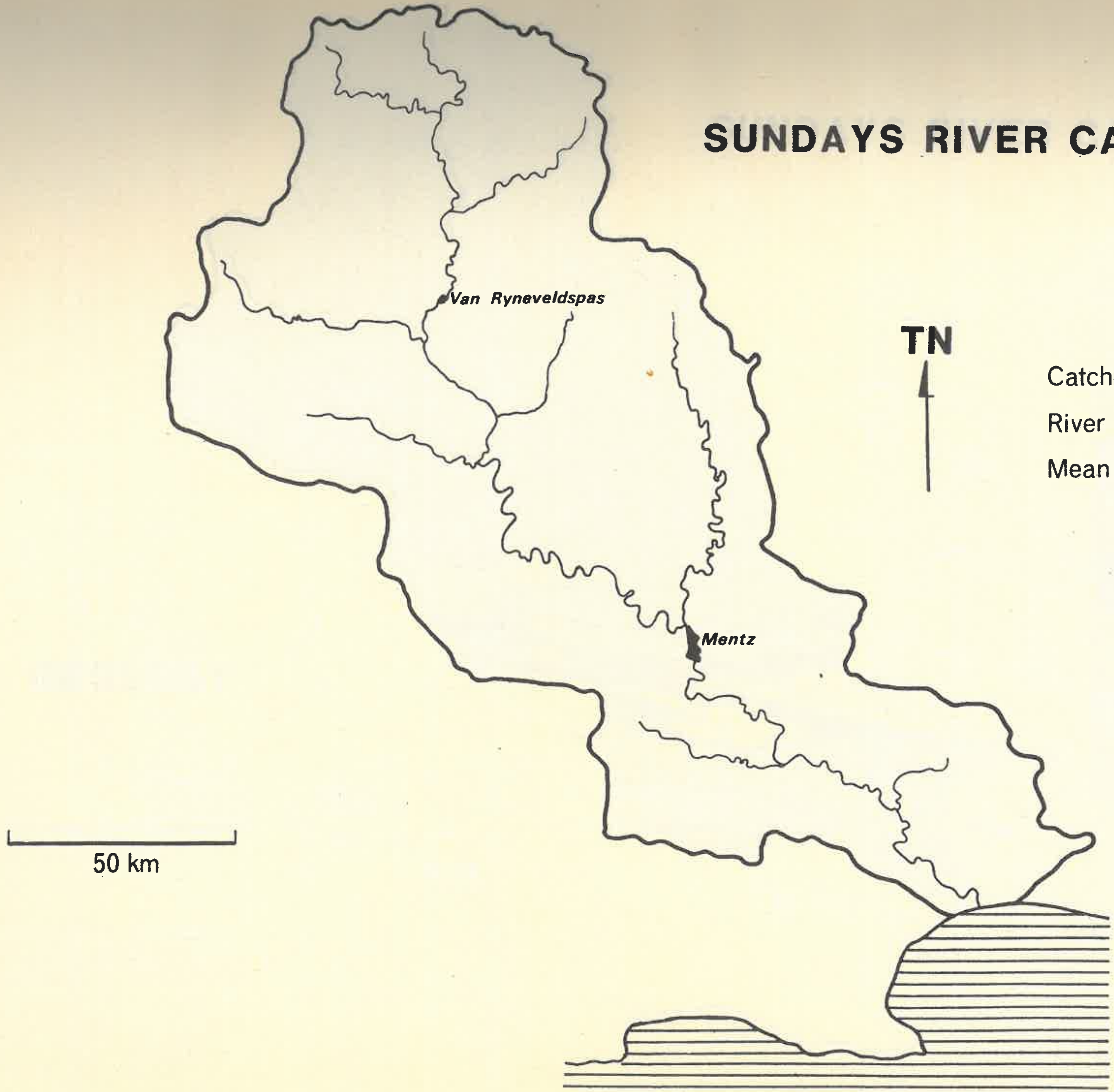
The geological substrate of the basin consists largely of shaly material. From its origin in the north the river crosses the shales of the Beaufort and Ecca Groups and the Dwyka Formation (fig. 2-2). These fine-grained successions all lie upstream from Lake Mentz, the largest dam on the river. Downstream from here the river crosses the Cape Fold Belt. A fault (fig. 2-2) separates the predominantly quartzitic rocks of the Fold Belt from the poorly consolidated sedimentary succession of the Uitenhage Group (fig. 2-2). These shales and sandstones readily weather to yield a clay-rich sediment load with subordinate sand. This is the most important sediment source of the estuary because the rocks of the Fold Belt are erosion-resistant and other potential sediment sources lie upstream from Lake Mentz which traps the sediment.

2.1.2 Climate

Summer rainfall prevails in the northern part of the drainage basin while the rainfall distribution in the south has two peaks (fig. 2-3); in autumn and in late winter. Precipitation (fig. 2-4) in the summer rainfall area ranges from 250 to 500 mm p.a. In the south the values lie between 400 and 1 000 mm p.a. With an overall mean annual precipitation of 323 mm this is a relatively dry area.

Wind patterns vary over the catchment area but over the estuary the prevailing wind is southwesterly.

SUNDAYS RIVER CATCHMENT AREA



Catchment area : 20729 km^2

River length : 310 km

Mean annual runoff : $186 \times 10^6 m^3$

fig 2–1

SUNDAYS RIVER CATCHMENT AREA

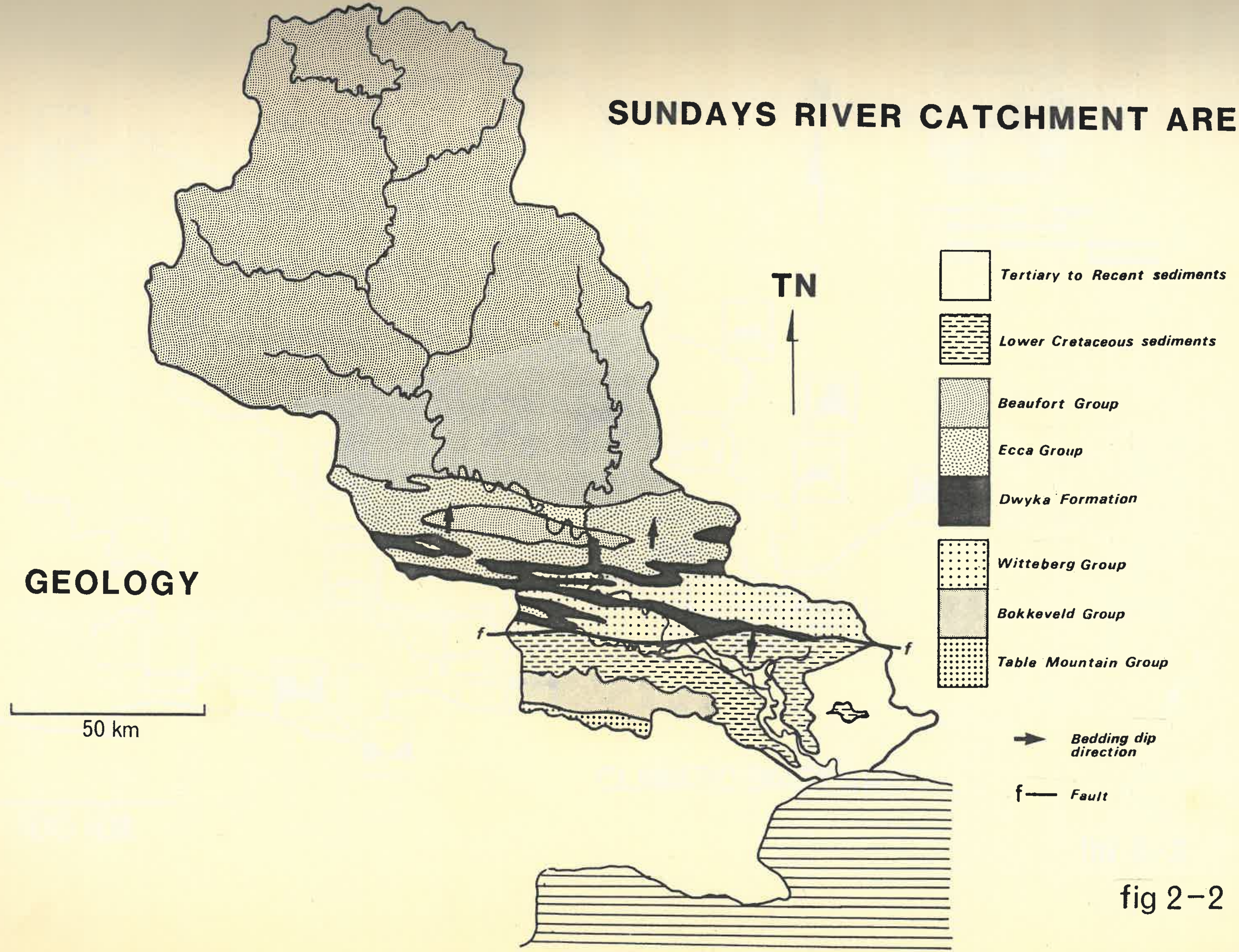
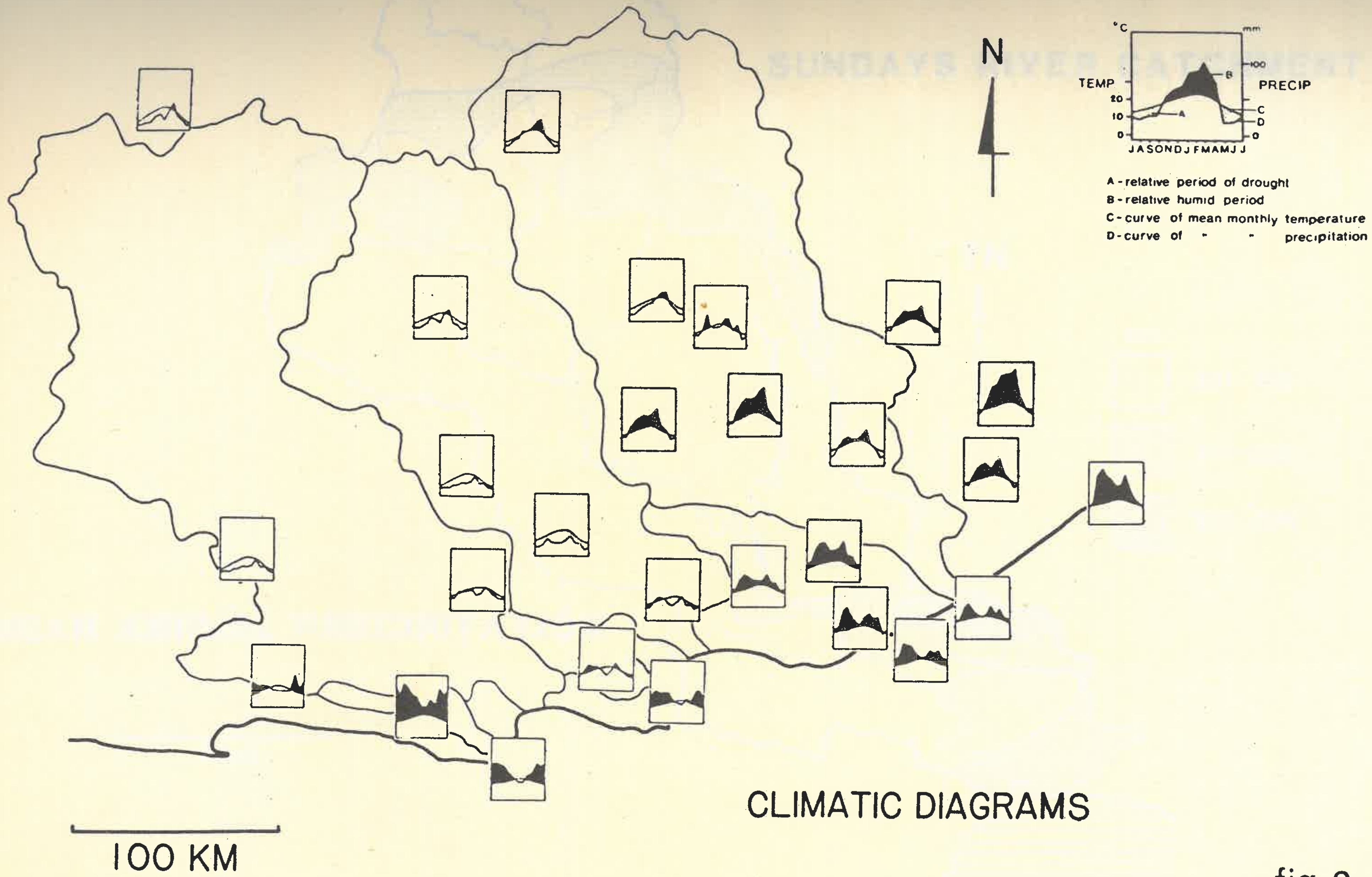


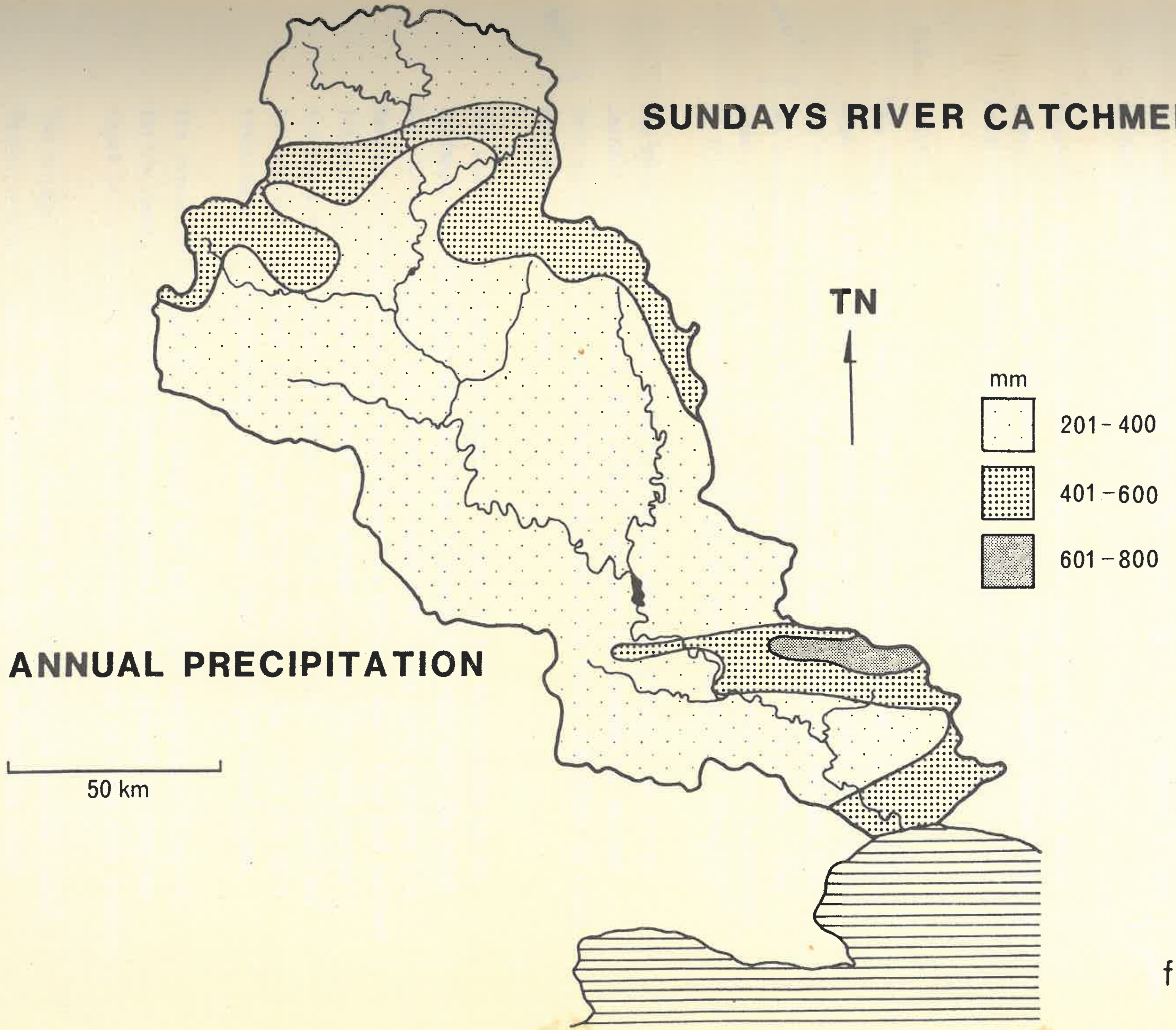
fig 2–2



CLIMATIC DIAGRAMS

fig 2–3

SUNDAYS RIVER CATCHMENT AREA



MEAN ANNUAL PRECIPITATION

fig 2 - 4

2.1.3 Soil and vegetation

Soils are shallow, poorly developed and contain lime (fig. 2-5). These are classified as lithosols on rock (MacVicar, 1971). (Lithosol & lime on the rocks??) joke

Vegetation (Acocks, 1975) shows a transition from Karoo and false Karoo types to Grasslands in the north (fig. 2-6). The Southern coastal regions have a cover of Eastern Coastal Bush and Forest.

2.2 Estuary

The estuary is 21 km long. Its tidal inlet on Algoa Bay is permanently open. The tidal limit in the upper estuary is transitional because it has no physical barrier. The meanders of the estuary are incised into the unconsolidated coastal plain sediments for most of its reach. The lower channel section near the inlet is cut into carbonate-rich sandstones of the Alexandria Formation and outcrops of the Sundays River Formation.

more?

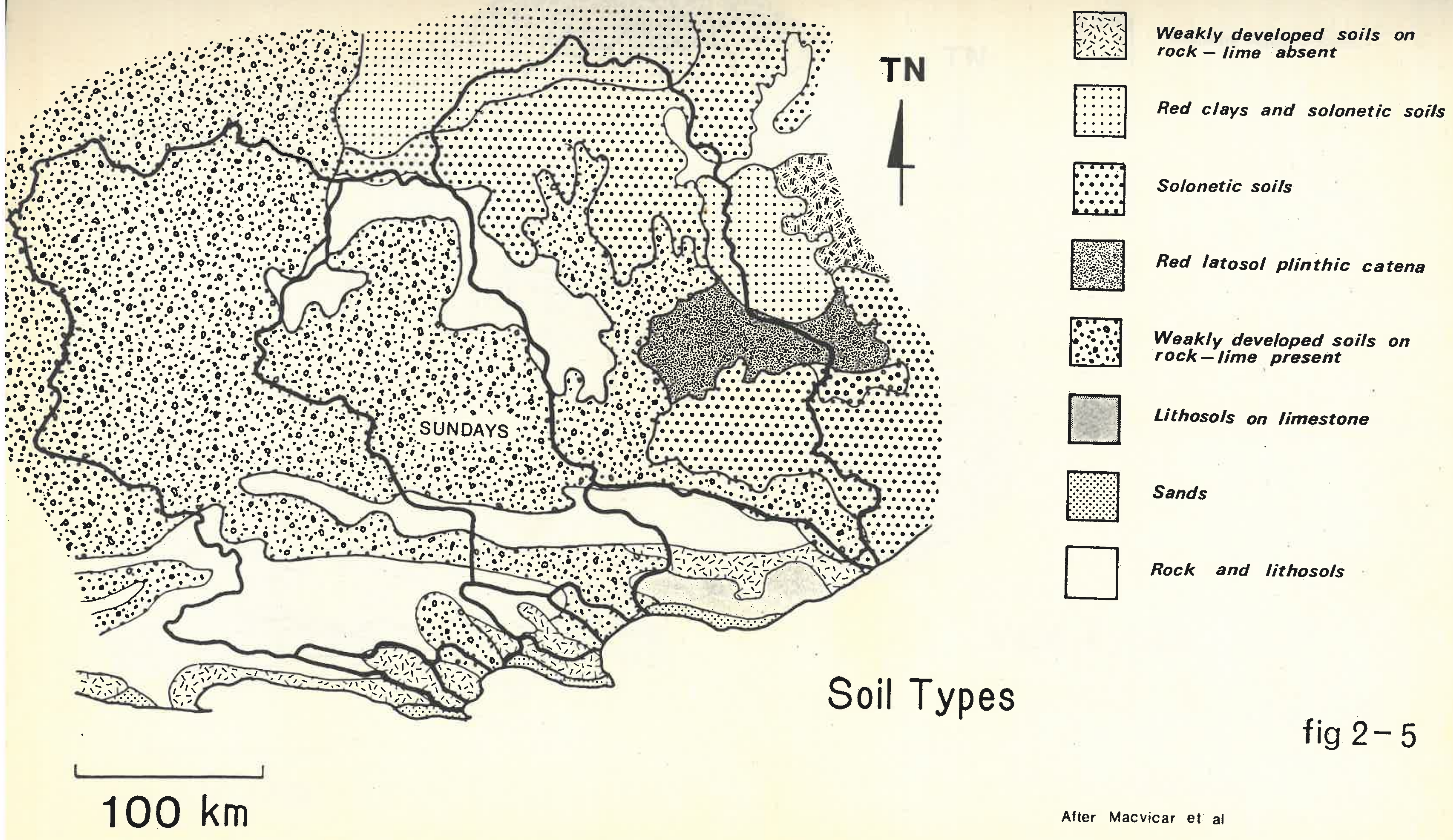
The maximum width of the estuary is 800 m near the inlet. The inlet channel is normally about 45 m wide. Because the channel is incised into older, partially consolidated sediments, the banks are often vertical and about 3 to 4 m high.

more

The width of the intertidal areas is related to the mud content of the sediment. Tidal flats are developed in the sandy areas near the inlet but farther up-estuary the widths of intertidal zones rarely exceed 5 m. Narrow intertidal areas are found where the sediment has a high mud content. Interstitial clay particles bind the sediment so that the tidal currents are not powerful enough to rework them into tidal flats. The lower mud content and the higher tidal current velocities near the inlet are more favourable for the formation of the tidal flats which are found there.

The estuarine channel is deep enough for small boat navigation along its entire length. The inlet channel presents a slight hazard to boats because it is shallow at low tide and the channel bottom is lined with pebbles.

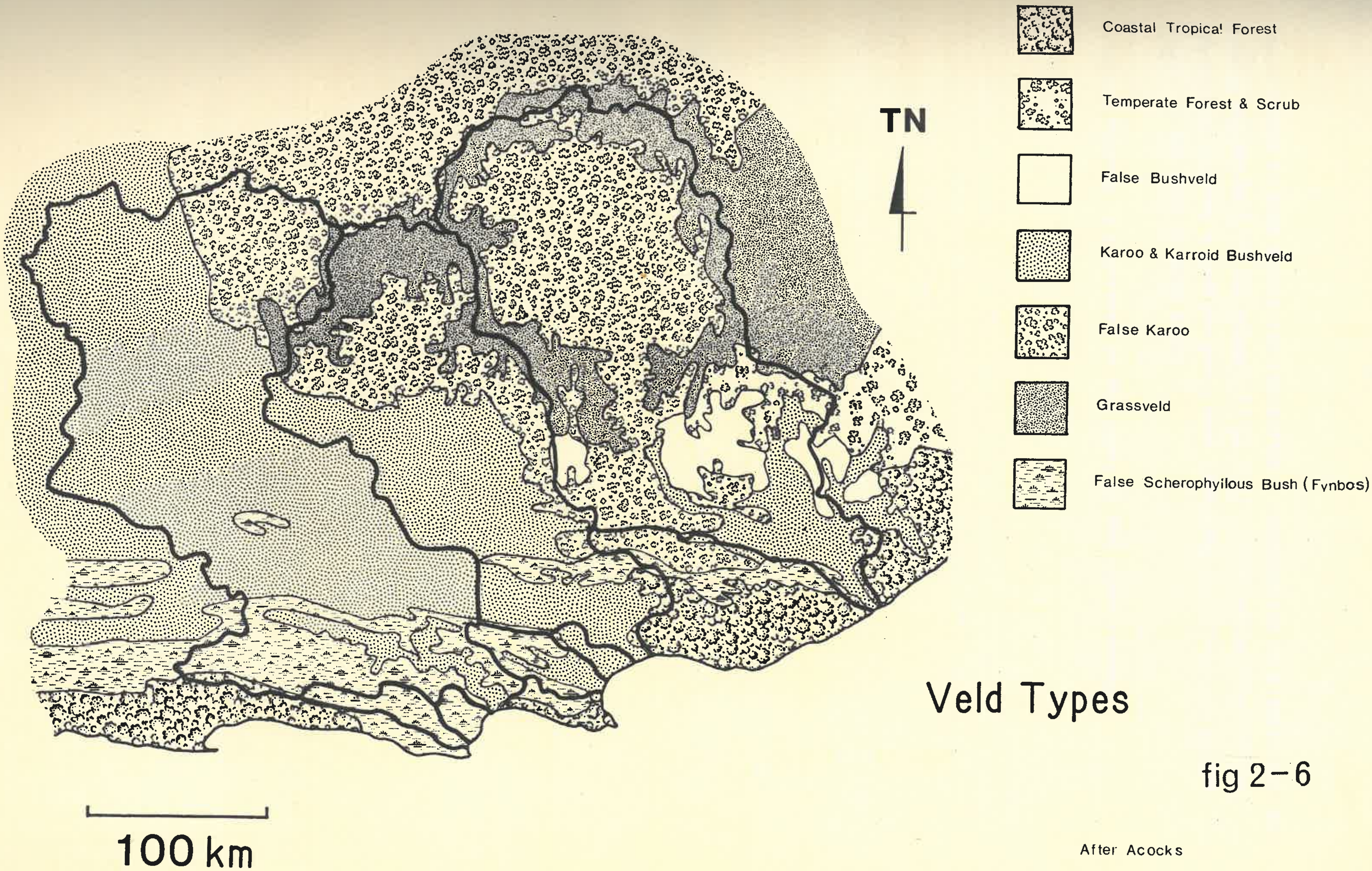
Two bridges cross the estuary: the new N2 road bridge and the old (1895) MacKay bridge. These are respectively 7,8 and 8,5 km from the inlet (fig. 1-1).



Soil Types

fig 2-5

After Macvicar et al



Veld Types

fig 2-6

After Acocks

The estuary is used mainly for recreation. Cannonville is a small holiday hamlet on the bank of the estuary (fig. 1-1). The recreational infrastructure includes a caravan park, boat launching facilities and access roads to the bank in many areas.

Limited farming is practised on the banks of the upper estuary.

3. FIELD OBSERVATIONS

Field observations in the estuary have shown that:

3.1 The erosion base at the channel bottom of the estuary is frequently encountered along the whole length of the estuary.

3.2 Apart from an area in the lower estuary the channel is deep and easily navigable by small craft.

3.3 Some channels near the tidal inlet are shallow and lined with pebbles from the adjacent beach. At low tide the navigation of small craft is hazardous in this area.

3.4 Wind-blown sand enters the estuary from the aeolian dune field to the southwest (fig. 1-1).

3.5 The meandering course of the estuarine channels has caused bank erosion to the west of the N2 road bridge. Properties in that area (fig. 1-1) will eventually be undermined as the process continues. Attempted counter-measures have so far been ineffective.

4. SEDIMENT DISTRIBUTION

4.1 Sediment size parameters and composition

The sediment substrate was sampled on a pre-determined grid (fig. 4-1). Intertidal and subtidal samples were collected at the sediment surface. Samples were also obtained at a depth of 0,5 m into the sediment substrate by coring. Subtidal sampling and observations were carried out with the aid of SCUBA.

Grain size proportions were determined by wet-sieving the samples through a 0.063 mm sieve and dry-sieving the coarser material. These size distributions were used to calculate the statistical parameters of the sediment particles. Calcium carbonate content of the sediment was determined with the aid of a carbonate "bomb" (Schink et al, 1979). Organic content of the samples was determined by peroxide leaching (McCave, 1979). This method does not give the total mass of the organic material present but it indicates the concentration which is likely to influence the redox potential of the sediment. Calculations and statistical analysis were handled with the aid of a computer. Detailed data are given in APPENDIX 1. The grain size distribution patterns of the lower estuary are contoured in figs. 4-2 and 4-3. Data for the upper estuary is only available in APPENDIX 1.

4.2 Origin of estuarine sediment

Fluvial sand grains near the tidal limit of the estuary consist almost exclusively of rock fragments. Acid-leached (carbonate-free) marine sand grains from the coastal dune field to the southwest are distinguishable from the beach sand by better rounding and a high polish on the aeolian grain surfaces. Source determination of Sundays estuary is therefore straightforward.

Fluvial mud and sand forms the sedimentary substrate of the largest part of the estuary (fig. 4-4). The shoals near the inlet consist of marine sand. The slipfaces of these flood-tidal deltas shown on the aerial photographs (section 4.3) are directed landward. This confirms their marine source. Wind-blown sand is rarely found far from the southwestern bank of the lower estuary (fig. 4-4).

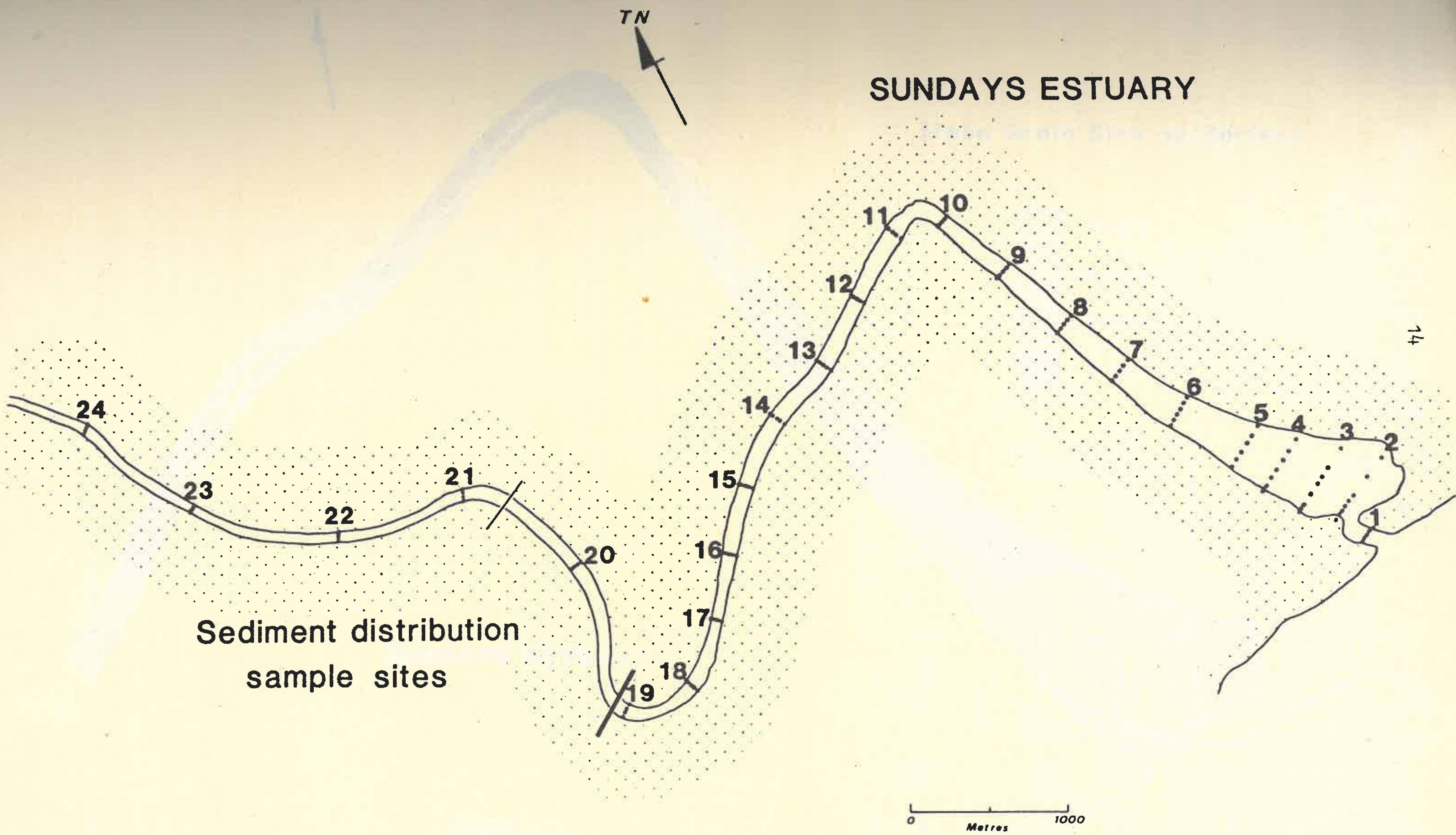

SUNDAYS ESTUARY
TN
Sediment distribution
sample sites
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
0
Metres
1000

fig 4 – 1

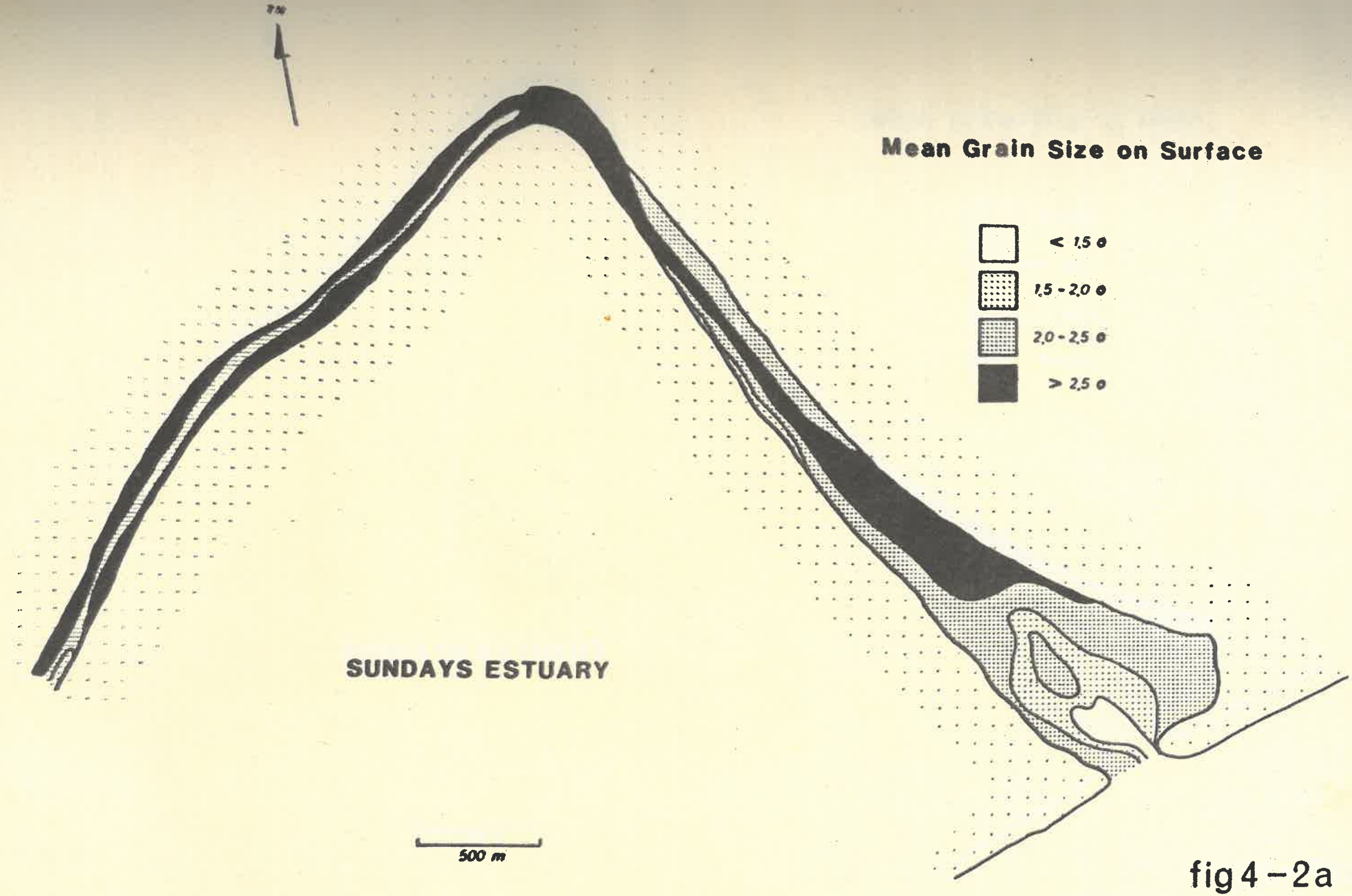

TN
Mean Grain Size on Surface
< 1,5 ø
1,5 - 2,0 ø
2,0 - 2,5 ø
> 2,5 ø
SUNDAYS ESTUARY
500 m

fig 4 – 2a

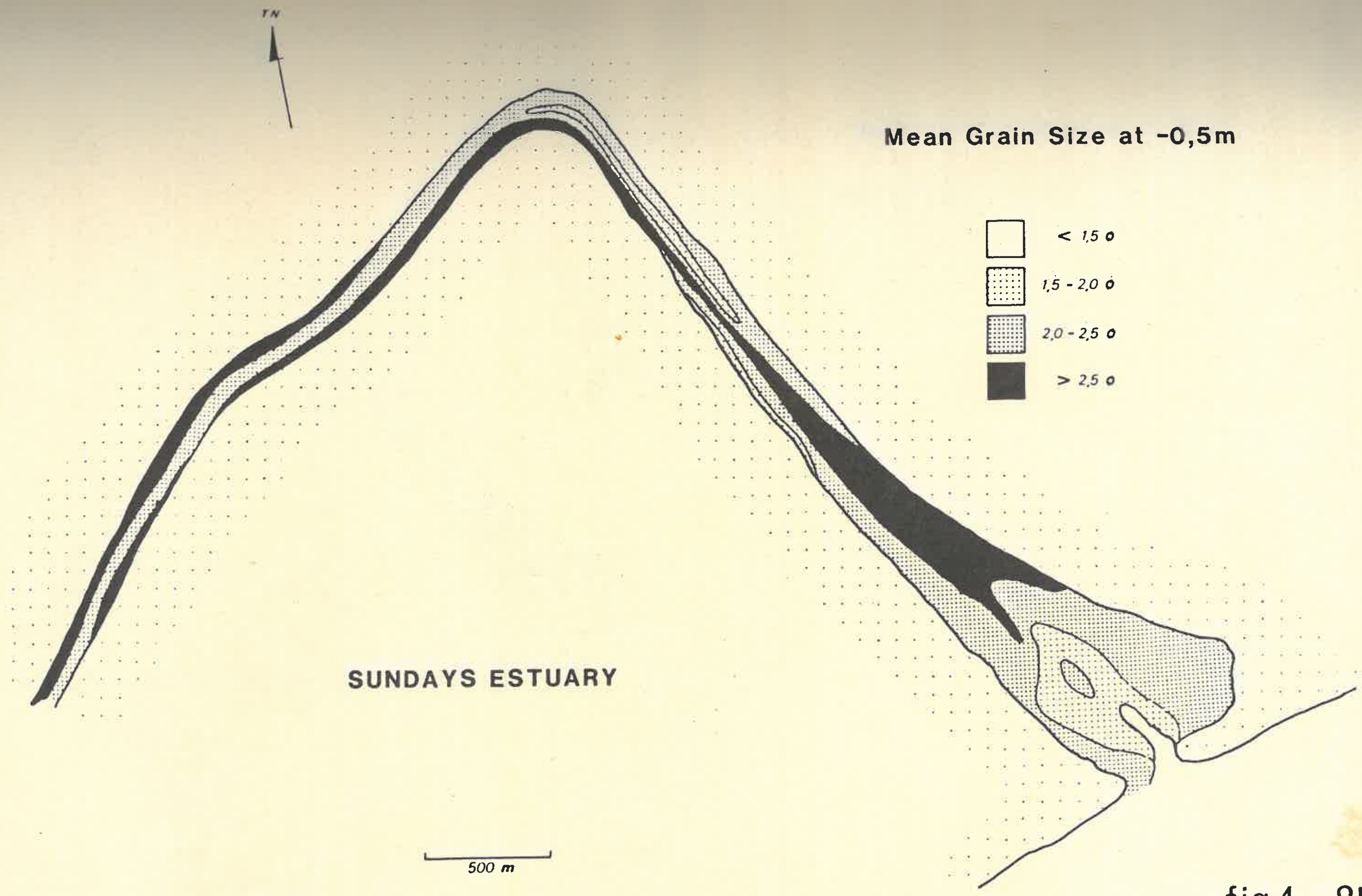

TN
Mean Grain Size at -0,5m
< 1,5 ø
1,5 - 2,0 ø
2,0 - 2,5 ø
> 2,5 ø
SUNDAYS ESTUARY
500 m

fig 4 – 2b

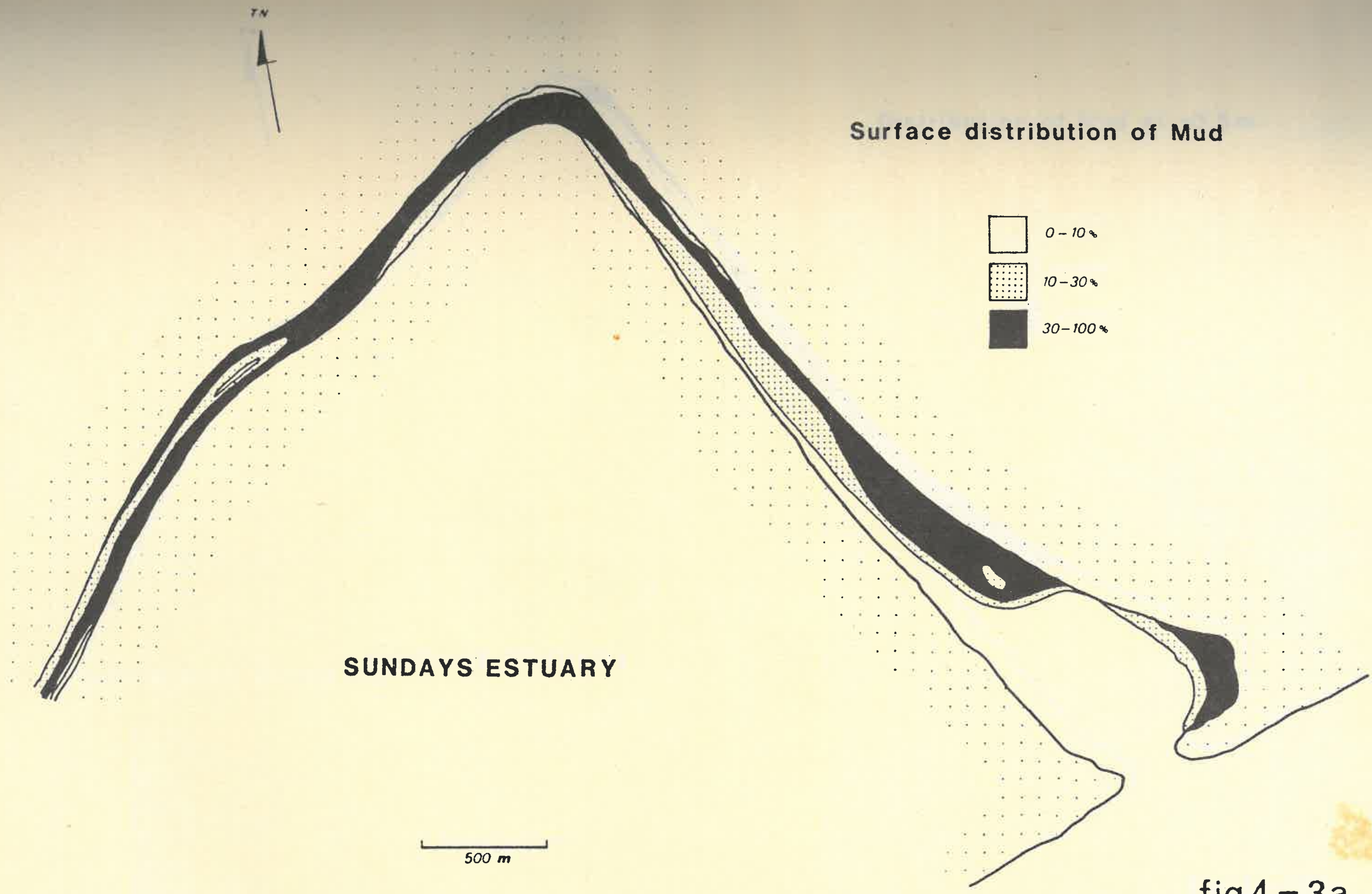

TN
Surface distribution of Mud
0 – 10 %
10 – 30 %
30 – 100 %
SUNDAYS ESTUARY
500 m

fig 4 – 3a

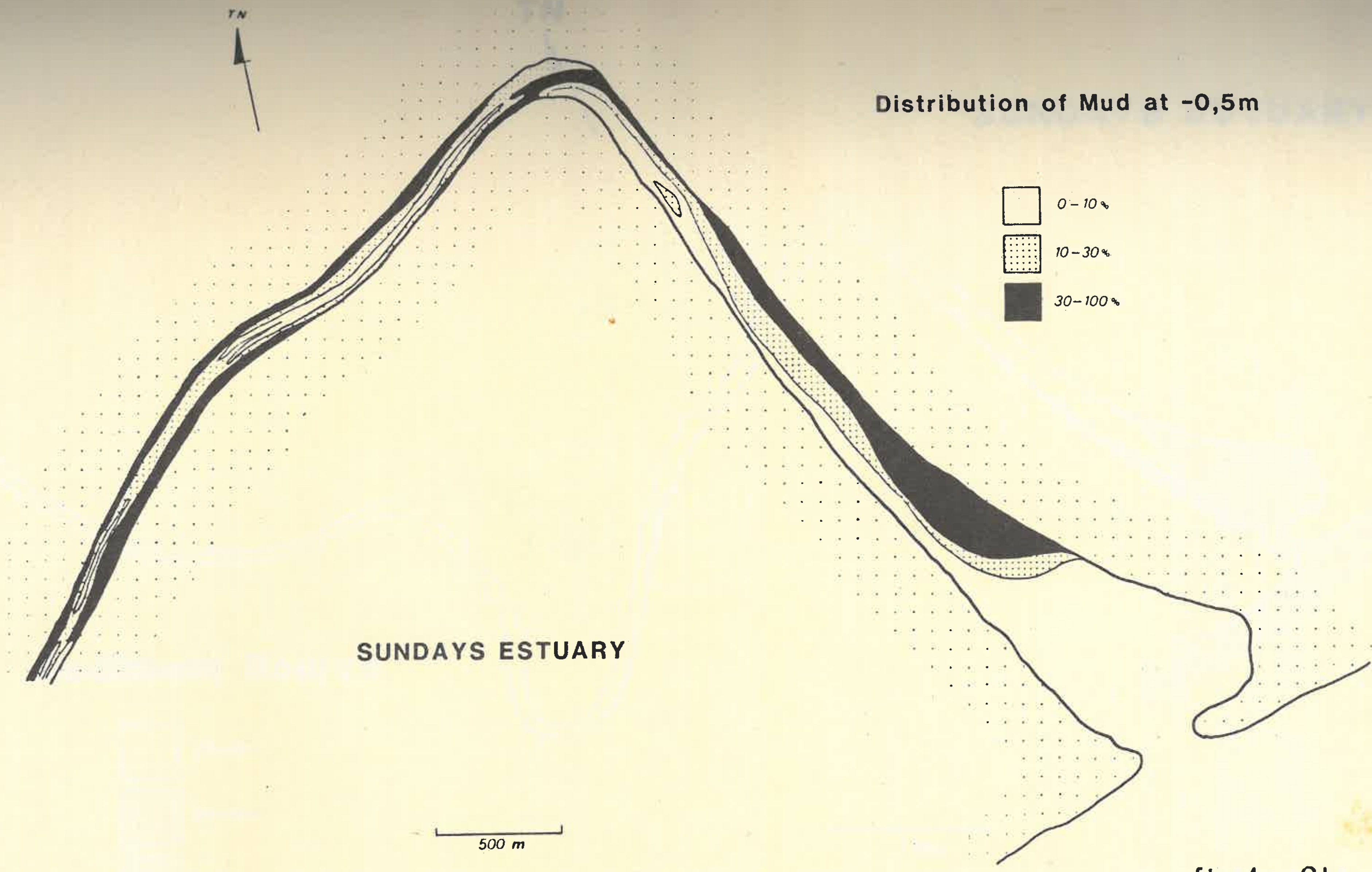

Distribution of Mud at -0,5m
0 - 10 %
10 - 30 %
30 - 100 %
TN
SUNDAYS ESTUARY
500 m

fig 4 - 3b

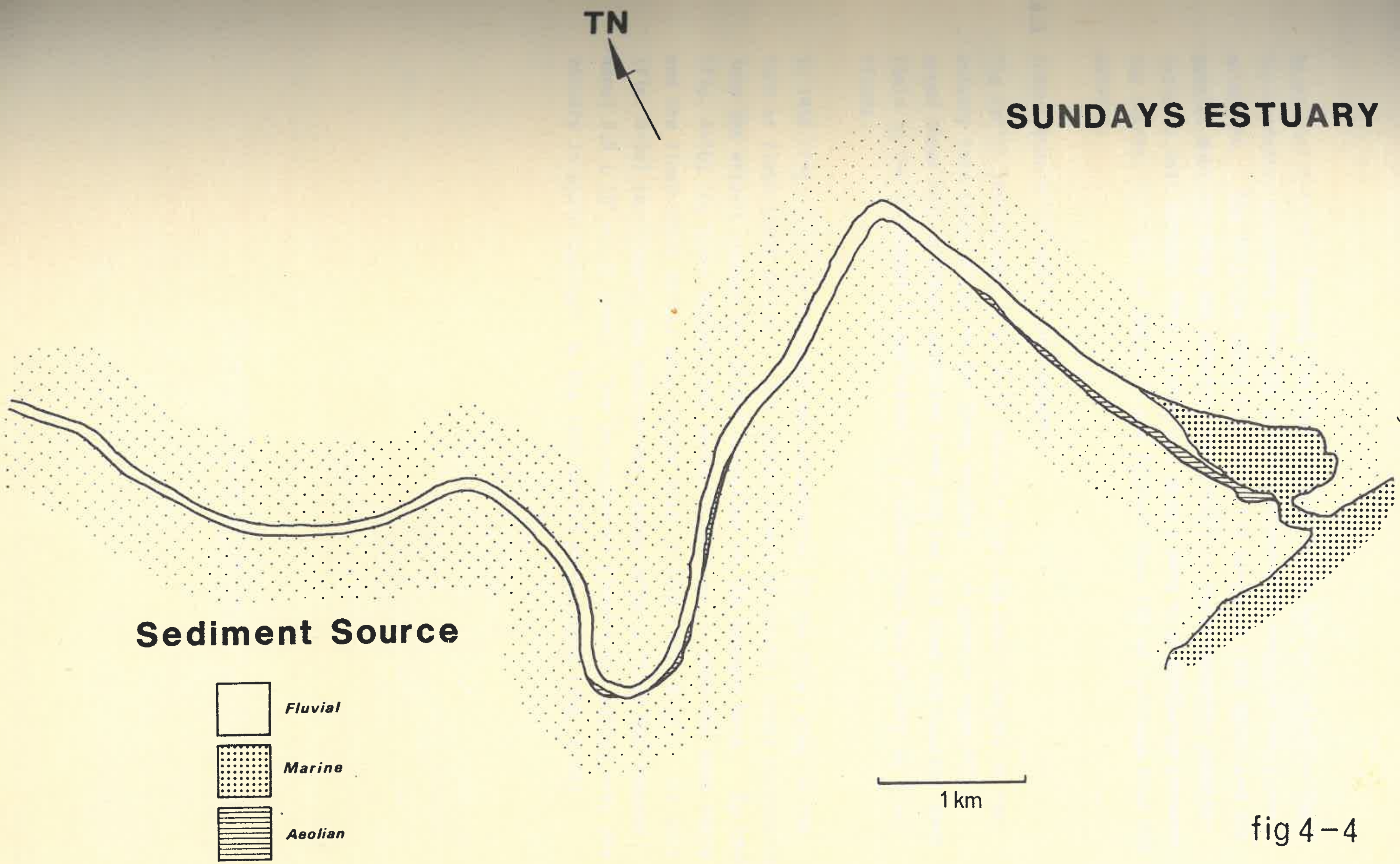

SUNDAYS ESTUARY
TN
Sediment Source
Fluvial
Marine
Aeolian
1 km

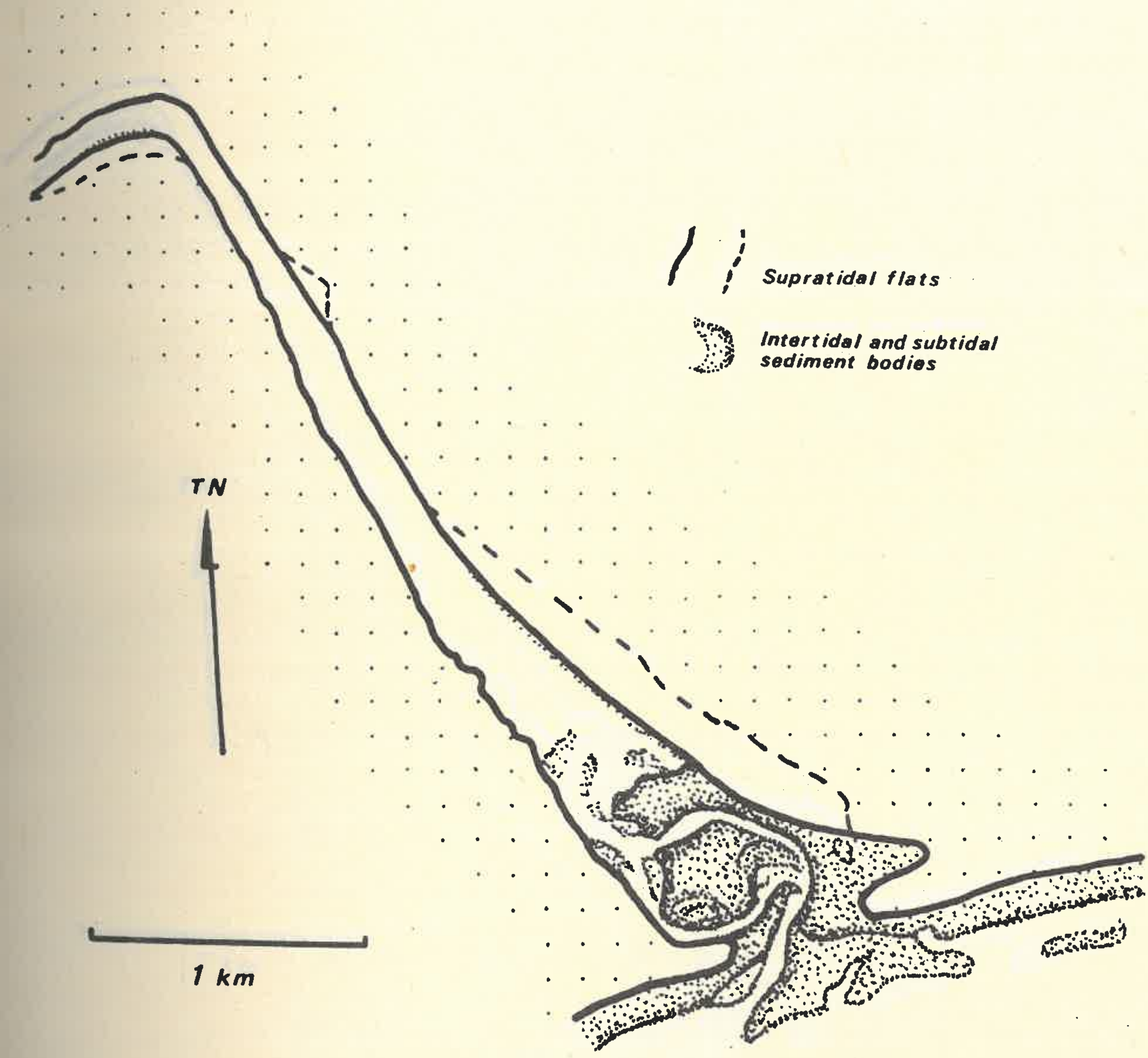
fig 4-4

Occasional hornfels Pebbles are found at the inlet and the adjacent beach. These pebbles originate from the contact metamorphic zones of the Karoo dolerites. The dolerite dykes and sills lie north of Lake Mentz and the pebbles must pre-date dam construction (1923). These hornfels pebbles indicate that Sundays River floods can have a very high discharge because the nearest outcrops of dolerite are farther than 150 km upstream from the estuary.

4.3 Interpretation of aerial photographs

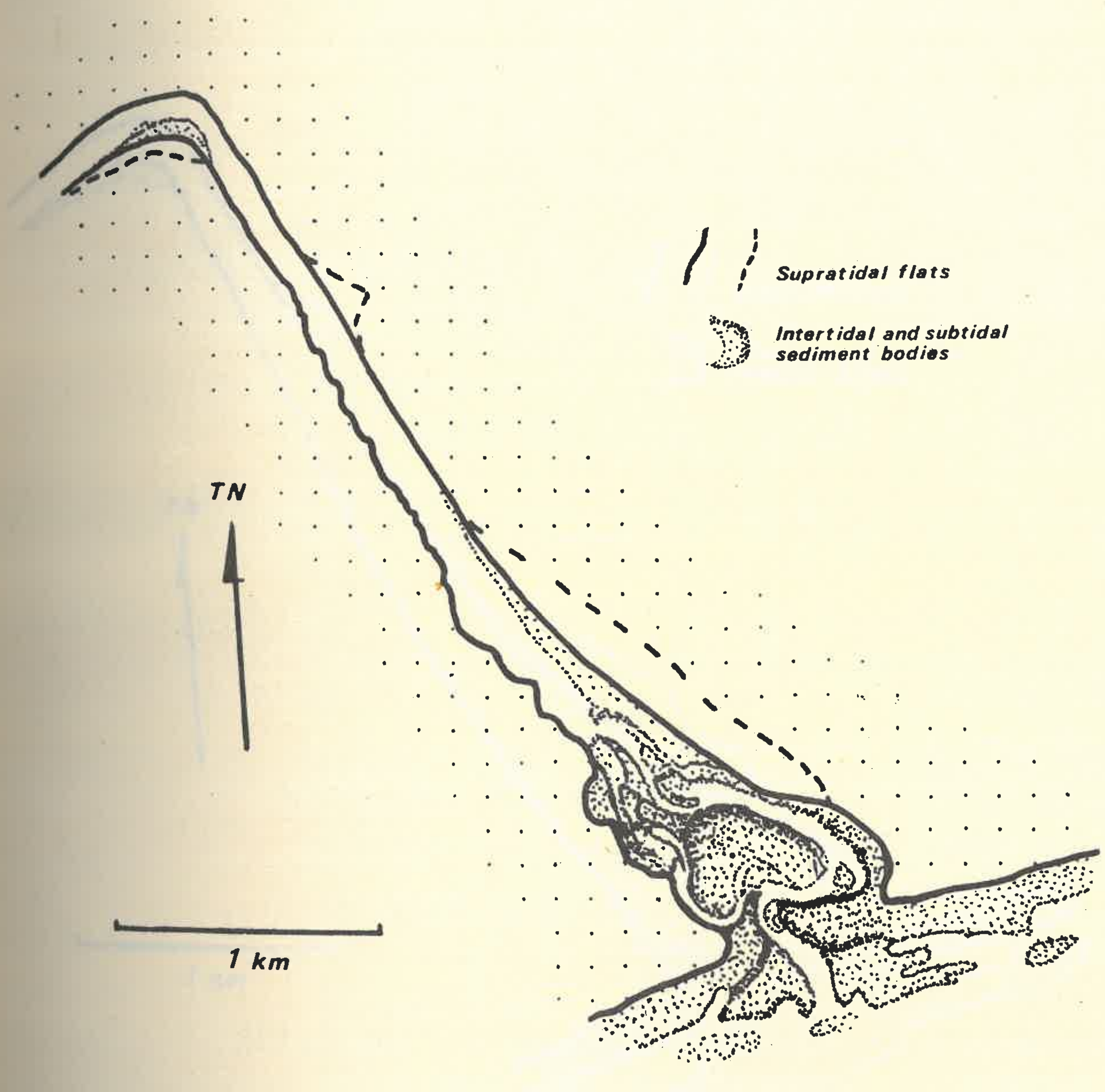
The aerial photographs (fig. 4-5) indicate that the main changes in the estuary have taken place in its lower reaches. A general repetitive trend shows that sediment entering from the sea and from the coastal dune field to the southwest is periodically flushed from the estuary by river floods.

In 1939 (fig. 4-5a) marine sand was accumulated in the inlet area in the form of flood-tidal deltas. The lobate fronts of coastal dunes prograding into the estuary caused the slight serration on the western bank. By 1960 (fig. 4-5b) the lower estuary had markedly narrowed. Both the dune field and the flood-tidal deltas were larger than in 1939 (fig. 4-5a). In 1971 (fig. 4-5c) the estuary was considerably wider after a flood had removed about 0,9 x 10^6 m^3 of sand. The intrusion of flood-tidal deltas into the estuary is again apparent in the 1978 aerial photographs (fig. 4-5d).



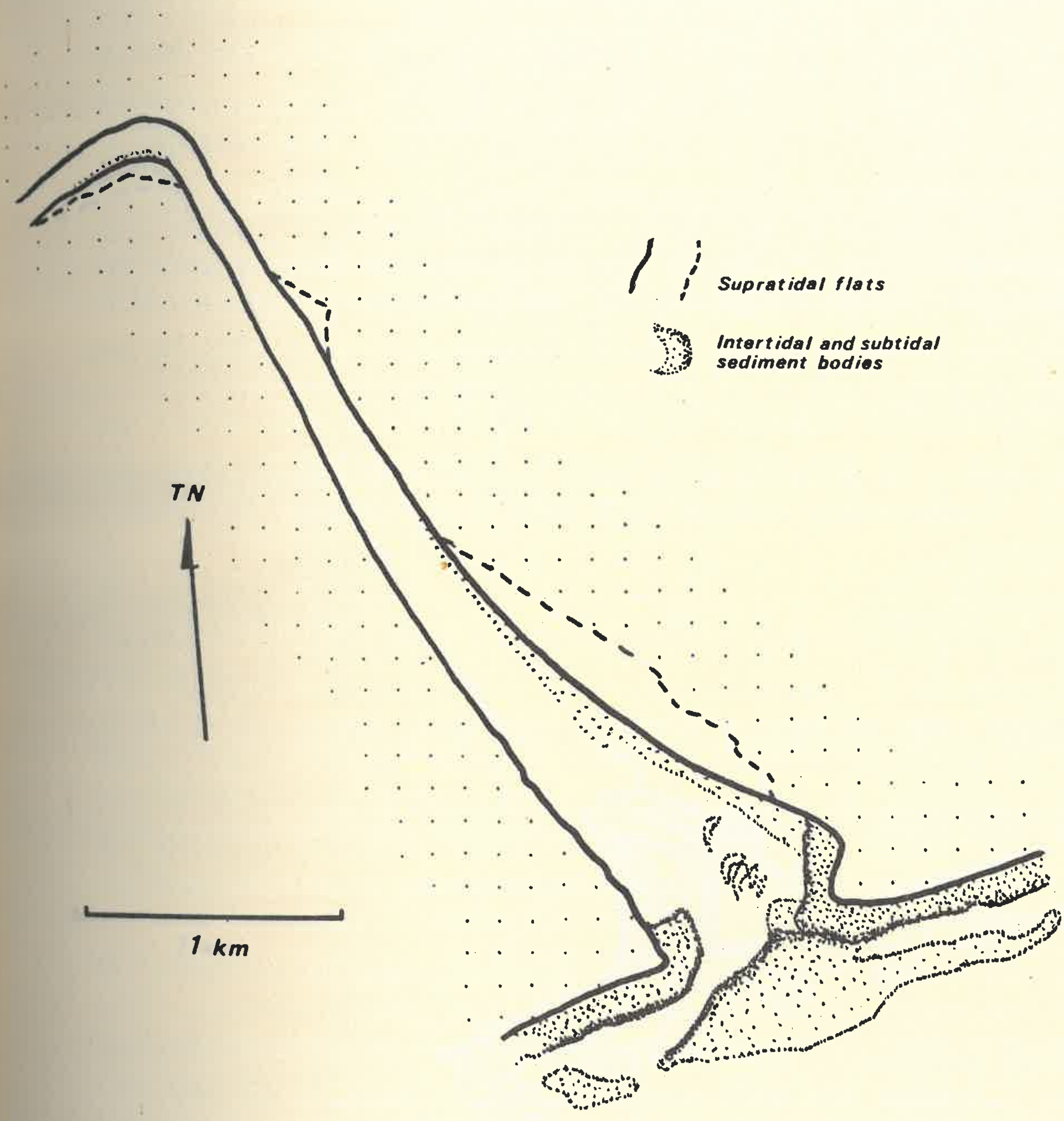
Sundays Estuary 1939

fig 4 – 5 a



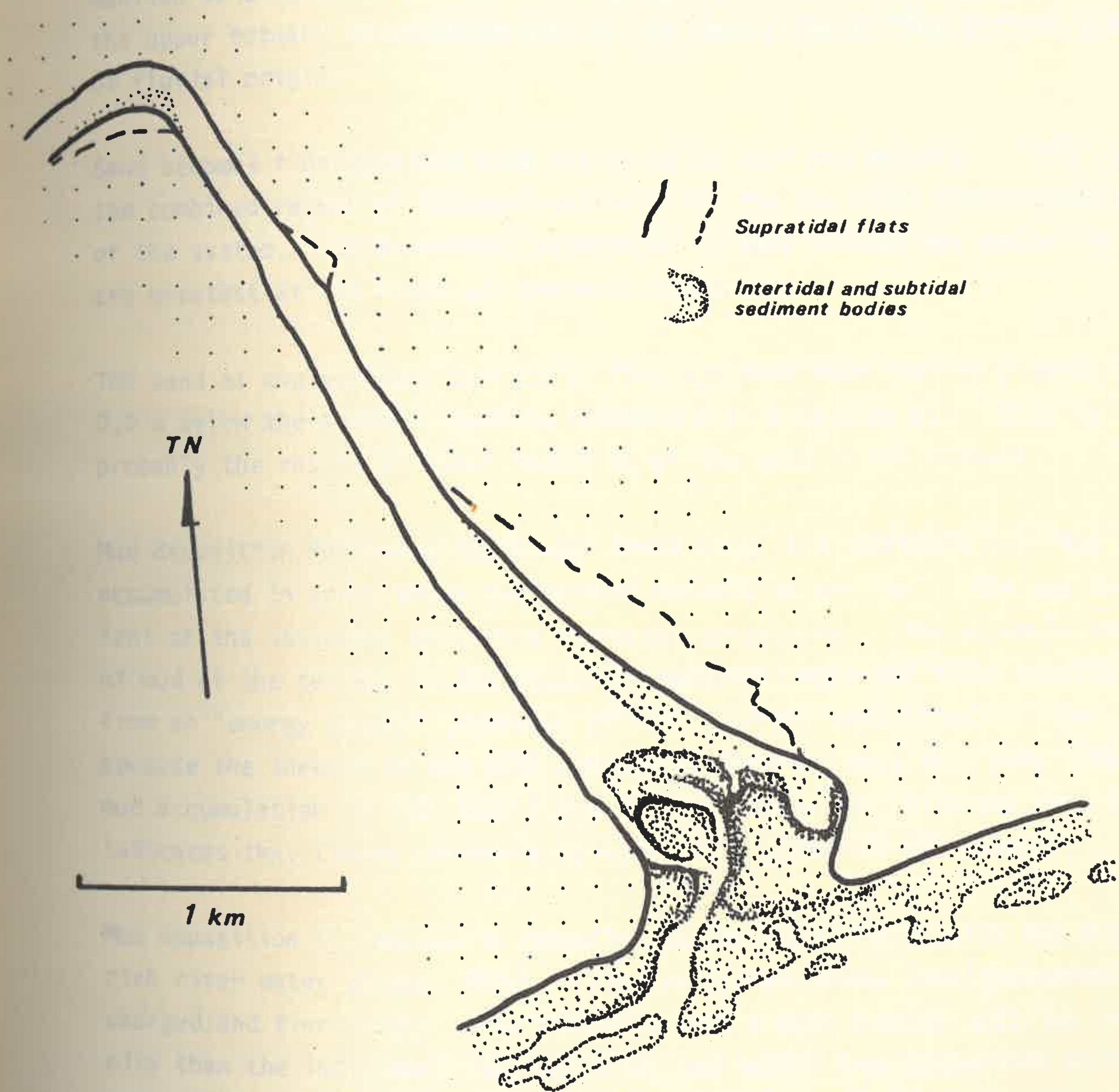
Sundays Estuary 1960

fig 4 – 5 b



Sundays Estuary 1971

fig 4-5c



Sundays Estuary 1978

fig 4 – 5 d

5. INTERPRETATION OF RESULTS

The mud and sediment distribution patterns exhibit a trend common in eastern Cape estuaries.

Marine sand migrates up the estuary under the influence of flood-dominant tidal currents. Shoals of this sediment near the inlet are called flood-tidal deltas. These show clearly on the aerial photograph maps (fig. 4-5). Aeolian sand is found on the southwestern bank of the lower estuary while the upper estuary is characterised by the deposition of fine-grained sand of fluvial origin.

Sand becomes finer-grained from the inlet up into the estuary. This is the combined result of sediment availability and the tidal hydrodynamics of the system. Tidal current velocities in small microtidal estuaries are greatest at the inlet and decrease up-estuary.

The sand at the sediment surface is finer-grained than that at a depth of 0,5 m below the sediment surface (compare fig. 4-2a with b). This is probably the result of tidal reworking of the sand in the estuary.

Mud deposition follows a reciprocal trend (fig. 4-3, APPENDIX 1). Mud is accumulated in areas where the current velocities are low. The mud content of the sediments therefore increases up-estuary. The accumulation of mud at the surface in the estuarine embayment near the inlet results from an "energy shadow" (Wanless, 1976). Current velocities are low because the inertia of the main current is directed past this area. This mud accumulation is less than 0,5 m thick (compare fig. 4-3a and b). It indicates that floods periodically scour this corner of the estuary.

Mud deposition is induced in estuaries by sea water mixing with the clay-rich river water (Drake, 1976). Clay particles become electrostatically charged and flocculate. The floccules have a much greater settling velocity than the individual clay particles and settle from suspension much more readily. This sedimentation of mud, called siltation, rarely takes place where the current velocities are high; hence the relative absence of mud near the inlet.

The mud content at the sediment surface is higher than at a depth of 0,5 m below this surface (compare fig. 4-3a with b). It is caused by mud deposition since a previous flood removed all poorly consolidated mud from the estuary.

Although it is difficult to determine exactly how much wind-blown sand enters the estuary, the aerial photographs indicate that the volumes are in the order of $2,5 \times 10^4$ m^3 per annum. There are also indications that flood discharge periodically removes the combined sediment load of the coastal dunes and the flood-tidal delta.

Pebbles that form a lag in the tidal inlet channel have been transported there by longshore drift. Wave action in the surf zone on the adjacent beach to the west entrains the pebbles during storms. While the pebbles are in temporary "suspension" the longshore drift transports them towards the inlet where they are deposited. Wave action can no longer entrain the pebbles once they are in the deeper inlet channel. In addition tidal currents are not powerful enough to remove the pebbles and therefore they accumulate. The aerial photographs (section 4.3) show that river floods remove these pebbles from the inlet. Hornfels pebbles (section 4.2) from the catchment area make up an insignificant proportion of the conglomerate in the inlet.

The erosion base at the bottom of the channel of the Sundays is commonly encountered underwater. It is usually characterised by a lag gravel of pebbles and coarse shell fragments but in the Sundays it is also found in the form of very compacted clay. Floods scour the channel bottom to this level and the fact that it is found at a shallow depth below the sediment surface is an indication that little sediment is being accumulated in the estuary.

The shallow sections of the estuary coincide with the distribution of marine sand. The channel section which is underlain by a fluvial sediment substrate is deep (more than 1,5 m below MSL) and easily navigable by small boats.

6. CONCLUSIONS AND RECOMMENDATIONS

Excessive sediment build-up does not take place in the Sundays estuary and it can therefore not influence the ecology of the system.

The migration of the coastal dune field into the lower estuary (figs. 1-1, 4-4 and 4-5) will have to be considered if additional dams are planned on the Sundays River. After long dry periods the dune field extends a considerable distance across the channel (e.g. fig. 4-5b). An artificially reduced discharge would have a similar effect. If the dune field were allowed to block the whole channel it could cause serious inundation of the area upstream if the river subsequently came down in flood. The likelihood of such an event is presently remote.

The threat of collapse to the houses on the eroding estuary bank to the west of the N2-road bridge is the result of oversight. Methods to save these properties would be expensive and the desired results may not be achieved. Such corrective measures could also change the meander pattern of the channel which would jeopardise the safety of other properties farther down-estuary.

ACKNOWLEDGEMENTS

The sedimentological study of the Sundays estuary was initiated in the SE Cape Marine Pollution programme and is continued by the group responsible for Research on Sedimentation in Estuaries (ROSIE).

The study is financed by the Council for Scientific and Industrial Research through the Cooperative Scientific Programmes. It forms part of the SANCOR marine geology programme.

The sediment analyses were carried out in the laboratory by Willem Smuts and by Anni and Margi Tonin.

Shelagh Matthews and Russell Shone read the manuscript and suggested various improvements.

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APPENDIX 1

This section lists all the sediment parameters which were obtained from the Sundays estuary. The sample lines are marked on fig. 4-1. The positions of sample stations can be found from the coded sample numbers listed below. For example sample number "S 3:4T" originates from the Sundays ("S") and was collected on line number 3 ("3", see fig. 4-1). It was taken at the sediment surface ("T" denotes TOP) at position 4 on the line. This sampling spot (indicated as a dot, fig. 4-1) is the fourth from the LEFT looking up-estuary. Samples were also collected 0,5 m below the sediment surface by coring. These samples are indicated by a "B" (for "BOTTOM") in the code.

All grain sizes that are listed below are in PHI-units and NOT in mm. (PHI = $-\log_2$ (grain size in mm / 1 mm))

The parameters as listed below are as follows:

VCS - Very coarse sand (grain diameters between 1 mm and 2 mm)
CS - Coarse sand (grain diameters between 0,5 mm and 1 mm)
MS - Medium sand (grain diameters between 0,25 mm and 0,5 mm)
FS - Fine sand (grain diameters between 0,125 mm and 0,25 mm)
VFS - Very fine sand (grain diameters between 0,063 mm and 0,125 mm)
Mud - Silt + clay (grain diameters less than 0,063 mm)

Median Ø - The distribution median in PHI-units ($Md = P_{50}$) *
Mean Ø - The mean grain size in PHI-units ($M = (P_{16} + P_{84}) / 2$)
Sorting Ø - The grain sorting in PHI-units ($S = (P_{84} - P_{16}) / 2$)
Skewness Ø - The distribution skewness in PHI-units ($Sk = (M - Md) / S$)
Kurtosis Ø - The distribution kurtosis in PHI-units
($K = ((P_{95} - P_5) / 2) - S) / S$)

% $CaCO_3$ - The percentage (by mass) calcium carbonate in the sediment
% Org C - The percentage (by mass) of peroxide digested organic material

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* P_X = The Xth percentile of the cumulative distribution. All parameter formulas were obtained from Buller and McManus (1979).
Trace amounts of $CaCO_3$ are indicated by "tr" in relevant column.

/MJ
10-12-81

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median Ø	Mean grain size Ø	Sorting Ø	Skewness Ø	Kurtosis Ø	% $CaCO_3$	% Org C
S1:1T	0	0,5	51,13	46,87	0,25	1,25	1,96	1,98	0,68	0	0,32	59,7	0
1B	0	1,4	48,25	48,6	0,7	1,05	2	1,99	0,69	0	0,32	43,7	0
2T	0	1,46	40,82	56,27	0,58	0,87	2,13	2,04	0,69	0,13	0,34	n.d.	n.d.
2B						NOT	DETERMINED						
3T	78,51	2,62	11,4	7,08	0,13	0,26	0,36	0,22	1,01	0,57	0,6	n.d.	n.d.
3B						NOT	DETERMINED						
4T	42,07	6,7	42,07	8,44	0,15	0,58	1,02	0,6	1,22	0,34	0,35	n.d.	n.d.
4B													
5T	5,42	16,01	49,51	28,33	0,49	0,25	1,57	1,56	0,9	0	0,63	n.d.	n.d.
5B													
S2:1T	0	0	14,49	82,24	2,34	0,93	2,43	2,43	0,41	0	0,99	27,5	0
1B	0	0	13,52	84,34	1,42	0,71	2,43	2,43	0,4	0	0,99	28,9	0
2T	0,43	0,86	20,17	76,39	1,29	0,86	2,37	2,27	0,54	0,17	0,63	30,2	0
2B	0	0,88	32,65	64,12	1,18	1,18	1,25	2,11	0,66	0,2	0,38	31,0	0

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median Ø	Mean grain size Ø	Sorting Ø	Skewness Ø	Kurtosis Ø	% $CaCO_3$	% Org C
S2: 3T	0,78	9,37	47,66	40,62	0,78	0,78	1,83	1,87	0,75	0,1	0,63	36,3	0
3B	0	3,1	79,72	15,49	0,56	1,13	1,58	1,59	0,43	0	0,98	33,4	5,8
4T	7,67	30,45	53,96	6,44	0,5	0,99	1,21	1,05	0,79	0,2	0,7	62,0	1,6
4B	0,68	7,88	76,71	13,7	0	1,03	1,53	1,53	0,44	0	1,39	42,9	0
5T	1,31	8,9	73,82	14,92	0	1,05	1,53	1,53	0,46	0	1,48	39,7	3,1
5B	0,37	2,93	56,41	38,46	0,37	1,47	1,81	1,91	0,69	0,14	0,34	32,7	3,8
6T	6,21	9,76	68,51	14,41	0	1,11	1,49	1,48	0,5	0	1,88	46,8	1,0
6B	5,33	13,01	65,25	15,57	0	0,85	1,48	1,4	0,59	0,13	1,32	40,0	5,6
7T	0	0,29	36,15	60,99	0,87	1,75	2,21	2,09	0,66	0,18	0,36	34,6	4,3
7B	0	0,2	31,06	65,53	0,6	2,61	2,27	2,13	0,64	0,21	0,4	30,8	0
8T	0,25	0,25	9,31	21,57	5,39	63,24	2,4	2,28	0,7	0,17	0,8	0	1,1
8B	1,74	1,04	22,22	50,69	18,06	6,25	2,43	2,36	0,81	0,1	0,64	21,3	5,4
S3:1T	0	0,27	30,11	67,74	0,81	1,08	2,28	2,15	0,63	0,21	0,41	33,3	0
1B	0	0,27	18,04	79,58	1,06	1,06	2,39	2,34	0,48	0,11	0,78	30,0	0

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median Ø	Mean grain size Ø	Sorting Ø	Skewness Ø	Kurtosis Ø	% $CaCO_3$	% Org C
S3:2T	0,53	4,21	56,05	35	2,86	1,32	1,8	1,91	0,72	0,17	0,35	34,7	0
2B	1,2	6,02	43,37	47,39	0,8	1,2	1,97	1,94	0,74	0	0,54	34,1	0
3T	0,64	4,28	62,96	30,41	0,86	0,86	1,71	1,84	0,67	0,2	0,4	33,9	0,5
3B	0,24	0,97	50,36	46,49	0,97	0,97	1,96	1,99	0,69	0	0,32	33,5	2,5
4T						NOT DETERMINED							
4B						NOT DETERMINED							
5T	0	1,13	26,79	67,17	3,4	1,51	2,32	2,18	0,64	0,21	0,45	39,0	0
5B	0	1,2	44,82	50,36	1,93	1,69	2,06	2,03	0,7	0,1	0,33	37,2	0
6T	0,48	3,81	50,48	39,29	4,29	1,67	1,89	1,97	0,74	0,11	0,33	37,1	0
6B	0,54	3,24	58,11	35,68	0,81	1,62	1,78	1,89	0,69	0,16	0,36	36,4	0,4
7T	0,24	1,67	39,23	56,22	1,2	1,44	2,14	2,05	0,69	0,14	0,34	36,3	0,4
7B	0	0,3	12,17	84,57	1,48	1,48	2,44	2,44	0,4	0	0,99	33,4	0,4
8T	0	0,42	19,38	60,63	7,92	11,67	2,4	2,3	0,95	0,17	0,88	25,6	1,3
8B	0	0,68	17,63	73,56	4,41	3,73	2,41	2,34	0,51	0,12	0,73	28,0	2,6

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median Ø	Mean grain size Ø	Sorting Ø	Skewness Ø	Kurtosis Ø	% $CaCO_3$	% Org C
S4: 1T	0	0,41	17,7	79,42	1,65	0,82	2,4	2,35	0,47	0,1	0,8	37,4	2,1
1B	0	0,3	13,9	82,78	2,42	0,6	2,43	2,43	0,41	0	1,0	34,1	0,6
2T	0,23	0,45	17,12	73,17	5,63	2,7	2,42	2,37	0,5	0,1	0,9	33,6	0,4
2B	0	0,34	12,75	74,5	10,07	2,36	3,48	3,48	0,45	0	1,42	33,2	0,5
3T	0	0,44	23,56	68,67	5,78	1,56	2,37	2,25	0,6	0,19	0,62	31,6	0,7
3B	0	0,39	10,04	75,29	11,58	2,7	2,51	2,51	0,44	0	1,43	33,2	0,8
4T	0	2,16	63,27	33,33	0,31	0,93	1,75	1,88	0,66	0,19	0,38	36,8	0,4
4B	0	2,13	52,13	43,62	1,06	1,06	1,91	1,96	0,7	0,1	0,33	34,3	0,7
5T	0	1,15	50,0	47,31	0,38	1,15	1,97	1,98	0,69	0	0,32	33,5	1,1
5B	0	0,75	22,47	67,04	5,99	3,75	2,37	2,26	0,6	0,19	0,67	29,6	1,0
6T	0	0,35	10,8	78,05	7,67	3,14	2,48	2,48	0,42	0	1,31	31,1	1,7
6B	0	1,52	36,97	40,3	11,52	9,7	2,17	2,14	0,79	0	0,6	24,2	0,8
7T	0,31	0,94	41,25	55,62	0,63	1,25	2,12	2,04	0,69	0,12	0,33	27,3	0,4
7B	0,3	0,3	24,4	61,14	6,93	6,93	2,35	2,23	0,64	0,19	0,68	25,0	0,6

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median ø	Mean grain size ø	Sorting ø	Skewness ø	Kurtosis ø	% $CaCO_3$	% Org C
S5: 1T	0,34	3,09	34,71	59,79	0,69	1,37	2,19	2,05	0,7	0,19	0,35	34,2	2,0
1B	0,27	2,19	26,58	64,93	1,64	4,38	2,29	2,14	0,65	0,23	0,43	33,8	2,5
2T	0	0,27	14,59	81,89	1,89	1,35	2,42	2,42	0,41	0	1,01	34,5	0,8
2B	0	0	11,99	74,23	9,44	4,34	2,48	2,48	0,44	0	1,39	29,0	1,6
3T	0	0,58	9,25	52,89	31,21	6,07	2,7	2,81	0,71	0,15	0,69	29,1	1,0
3B	0,29	0,87	23,55	51,74	16,86	6,69	2,42	2,35	0,76	0,1	0,68	14,5	2,5
4T	0	0	3,47	19,08	30,92	46,53	3,14	3,0	0,73	0,19	0,47	8,5	2,3
4B	0	0,51	6,36	41,48	31,55	20,1	2,8	2,87	0,73	0,1	0,6	16,7	1,0
5T	0	0,43	14,32	27,14	18,8	39,32	2,57	2,57	0,92	0	0,45	11,5	1,2
5B	0,22	0,88	24,72	54,55	5,96	13,69	2,32	2,18	0,67	0,2	0,6	34,4	1,6
6T	0	0,38	4,14	13,53	34,21	47,74	3,24	3,02	0,74	0,29	0,62	0	2,0
6B	0	0	9,84	28,15	25,4	36,61	2,78	2,81	0,79	0	0,61	11,9	1,7
S: 1T	0,21	1,7	42,55	53,4	0,64	1,49	2,09	2,02	0,7	0,1	0,33	34,8	0
1B	0	0,83	10,0	22,22	9,44	57,5	2,47	2,44	0,83	0	0,57	20,6	0

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median ϕ	Mean grain size ϕ	Sorting ϕ	Skewness ϕ	Kurtosis ϕ	% $CaCO_3$	% Org C
S6: 2T	0,21	1,03	23,0	52,16	11,29	12,32	2,38	2,25	0,7	0,18	0,78	26,6	3,4
2B	0	0,37	15,87	67,34	9,78	6,64	2,45	2,42	0,5	0,1	1,24	29,8	0,7
3T	0,3	0,3	2,74	16,72	27,36	52,58	3,13	2,99	0,73	0,2	0,54	6,8	2,1
3B	0	0	5,48	21,1	31,51	41,92	3,08	2,94	0,76	0,18	0,56	0	1,5
4T	0	0,61	3,25	21,34	33,94	40,55	3,13	2,99	0,73	0,19	0,5	0	1,5
4B	0,85	0,85	2,26	7,06	25,42	63,56	3,28	3,08	0,75	0,35	0,91	0	2,2
5T	0,51	0	1,8	19,79	23,91	53,98	3,04	2,97	0,72	0,1	0,33	7,6	1,9
5B	0,24	0,24	1,69	14,77	21,55	61,5	3,11	2,99	0,72	0,16	0,43	5,7	1,5
S: 1T	0	3,4	85,03	10,54	0,34	0,68	1,54	1,54	0,4	0	0,94	38,0	4,2
1B	0	3,2	58,62	32,27	1,23	4,68	1,76	1,89	0,68	0,19	0,37	34,1	0
2T	0	0	18,95	59,21	9,21	12,63	2,42	2,33	0,59	0,15	0,94	26,8	5,1
2B	0	0,31	36,16	56,29	4,72	2,52	2,22	2,11	0,69	0,15	0,35	32,2	0,7

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median ø	Mean grain size ø	Sorting ø	Skewness ø	Kurtosis ø	% $CaCO_3$	% Org C
S7: 3T	0	0,35	2,13	30,85	35,82	30,85	3,03	2,98	0,71	0,1	0,32	0	1,8
3B	0	0	2,02	31,99	50,84	15,15	3,17	3,05	0,69	0,17	0,35	0	1,3
4T	0	0,61	17,99	35,37	16,46	29,57	2,47	2,45	0,86	0	0,52	0	1,6
4B	0	1,24	17,43	28,22	22,41	30,71	2,57	2,53	0,97	0	0,4	0	0
5T	5,34	0,56	3,37	36,8	7,58	46,35	2,48	2,38	0,59	0,16	2,52	19,8	1,5
5B	0,7	0,35	3,5	31,12	4,2	60,14	2,49	2,49	0,44	0	1,59	12,8	2,4
S8: 1T	0	1,06	56,61	40,74	0,53	1,06	1,86	1,94	0,68	0,13	0,34	32,6	1,0
1B	0	0,7	50,52	44,95	1,05	2,79	1,95	1,99	0,69	0,1	0,33	33,8	0,7
2T	0	0,52	12,57	59,42	9,42	18,06	2,47	2,47	0,47	0	1,43	27,2	1,5
2B	0	0,26	33,33	61,15	3,41	1,84	2,25	2,13	0,67	0,18	0,37	40,8	1,5
3T	0	0,26	13,81	41,43	25,58	18,93	2,64	2,71	0,79	0,1	0,63	6,2	1,1
3B	0	0,29	10,29	30,0	19,14	40,29	2,64	2,7	0,8	0,1	0,61	6,5	1,8
4T	0,79	5,54	24,01	14,25	11,87	43,54	1,91	2,18	1,06	0,25	0,6	6,3	2,3
4B	2,44	17,32	62,44	11,22	2,93	3,66	1,46	1,36	0,62	0,15	1,19	7,9	4,9

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median Ø	Mean grain size Ø	Sorting Ø	Skewness Ø	Kurtosis Ø	% $CaCO_3$	% Org C
S8: 5T	0,54	0,54	5,09	63,54	8,85	21,45	2,52	2,52	0,42	0	1,37	26,7	1,4
5B	2,68	0,67	3,02	37,58	7,38	48,66	2,51	2,51	0,46	0	2,98	18,3	2,3
S9: 1T	0	0	54,18	44,62	0	1,2	1,91	1,97	0,68	0,1	0,33	37,2	0,4
1B	0	0	28,94	67,82	0,69	2,55	2,29	2,16	0,62	0,21	0,43	41,1	0,2
2T	0	0	2,57	42,0	24,57	30,86	2,76	2,88	0,67	0,17	0,36	10,9	1,1
2B	0	0	0,93	28,97	35,05	35,05	3,07	3,01	0,69	0,1	0,33	9,1	1,5
3T	0	0,22	37,37	41,04	4,75	16,63	2,1	2,07	0,72	0	0,4	8,0	0,8
3B	0	0,36	66,06	27,74	1,82	4,01	1,72	1,87	0,64	0,23	0,42	5,0	0
4T	1,74	3,91	25,65	5,65	8,7	54,35	1,67	2,11	1,05	0,42	0,72	6,8	1,3
5B	0,62	10,15	70,15	11,38	3,38	4,31	1,53	1,53	0,46	0	1,66	6,3	0,8
5T	0,6	0	8,63	67,86	10,42	12,5	2,51	2,51	0,44	0	1,44	23,2	0,5
5B	0	0,36	7,14	57,86	3,21	31,43	2,46	2,46	0,4	0	0,94	23,2	1,1
S10: 1T	0	0	2,61	80,42	14,62	2,35	2,57	2,57	0,41	0	0,98	28,6	2,2
1B	0	0	4,52	85,33	4,52	7,63	2,5	2,5	0,38	0	0,32	27,5	1,0

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median ϕ	Mean grain size ϕ	Sorting ϕ	Skewness ϕ	Kurtosis ϕ	% $CaCO_3$	% Org C
S10: 2T	0	0	3,37	24,0	27,58	45,05	3,0	2,95	0,73	0,1	0,43	6,4	1,9
2B	0	0	0,57	43,39	45,98	10,06	3,02	3,0	0,68	0	0,32	3,5	6,6
3T	0	0,41	3,7	20,99	15,64	59,26	2,77	2,85	0,73	0,1	0,66	7,1	2,2
3B	5,73	5,73	33,59	46,35	2,86	5,73	2,04	1,92	0,81	0,15	0,93	5,7	4,8
4T	0	0	1,04	2,59	15,03	81,35	3,38	3,28	0,52	0,2	0,94	7,5	2,9
4B	4,24	0,61	1,21	1,82	7,27	84,85	2,83	1,62	2,05	0,59	0,15	9,0	2,0
S11: 1T	1,34	0,26	1,82	25,71	15,58	54,29	2,72	2,82	0,71	0,15	1,73	8,6	1,0
1B	0,72	0	1,08	10,83	10,11	77,26	2,88	2,9	0,74	0	0,7	8,3	2,5
2T	0	0,56	14,08	33,8	16,62	34,93	2,53	2,54	0,84	0	0,56	5,0	1,9
2B	0	0	1,32	32,89	50,66	15,13	3,16	3,05	0,68	0,16	0,34	5,9	0,5
3T	0	0,35	13,64	36,01	13,29	36,71	2,49	2,48	0,76	0	0,68	6,8	1,1
3B	0	0,48	6,67	25,71	20,95	46,19	2,77	2,82	0,77	0,1	0,66	10,3	1,4

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median ϕ	Mean grain size ϕ	Sorting ϕ	Skewness ϕ	Kurtosis ϕ	% $CaCO_3$	% Org C
S11: 4T	0	0,4	14,06	13,65	6,43	65,46	2,21	2,25	0,89	0,1	0,49	6,2	1,4
4B	0	0,82	43,17	17,76	11,48	26,78	1,83	2,12	0,87	0,33	0,51	5,5	0,9
5T	0,23	0,46	13,67	43,96	21,18	20,5	2,58	2,64	0,76	0,1	0,69	7,4	0,9
5B	1,35	0,81	17,3	38,65	14,86	27,03	2,44	2,38	0,83	0,1	0,6	6,7	0,4
S12: 1T	0,26	0	1,83	65,71	11,78	20,42	2,57	2,57	0,41	0	0,98	22,4	1,7
1B	0	0	0,49	10,34	0,99	88,18	2,52	2,52	0,39	0	0,79	5,5	6,5
2T	0,33	2,33	21,33	24,67	11,67	39,67	2,25	2,25	0,92	0	0,48	5,7	1,4
2B	0	0,56	13,45	46,22	34,45	5,32	2,72	2,79	0,77	0,1	0,66	5,1	0,4
3T	0	0	15,28	49,02	15,63	20,07	2,5	2,51	0,67	0	0,85	0	1,1
3B	0	0,34	26,31	54,47	13,66	5,23	2,38	2,27	0,7	0,16	0,76	0	0,7
4T	0	0,2	3,37	20,04	10,12	66,27	2,66	2,78	0,69	0,17	0,74	4,5	1,9
4B	0,43	0,43	0,87	1,74	2,17	94,35	2,63	2,31	1,27	0,25	0,66	0	6,4
5T	0,61	0,41	3,48	46,11	3,69	45,7	2,49	2,49	0,4	0	1,22	20,0	2,6
5B	0	0,35	2,08	17,01	0,69	79,86	2,45	2,45	0,4	0	1,07	12,6	4,8

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median ϕ	Mean grain size ϕ	Sorting ϕ	Skewness ϕ	Kurtosis ϕ	% $CaCO_3$	% Org C
S13 1T	0	0	0,2	11,61	54,53	33,66	3,39	3,35	0,45	-0,1	0,84	3,8	4,3
1B	0	0	0	17,04	68,73	14,23	3,38	3,3	0,5	-0,15	0,69	3,6	1,1
2T	0	0	0,84	10,86	22,96	65,34	3,25	3,1	0,66	-0,23	0,39	6,8	3,4
2B	0	0	1,6	48,63	44,06	5,71	2,94	2,97	0,69	0	0,33	4,0	0,4
3T	0	0,3	1,21	19,7	13,33	65,45	2,8	2,89	0,69	0,14	0,35	7,0	5,7
3B	0	0	28,19	32,6	11,03	28,19	2,24	2,2	0,79	-0,1	0,61	5,7	1,5
4T	0,33	1,31	16,72	3,61	4,59	73,44	1,7	2,12	0,96	0,44	0,54	6,0	5,0
4B	0	0,27	19,18	42,47	13,42	24,66	2,43	2,36	0,74	-0,1	0,71	5,9	2,0
5T	0,58	0,29	1,73	25,36	24,5	47,55	2,93	2,94	0,71	0	0,32	6,9	1,7
5B	0,47	0,47	2,82	32,71	22,35	41,18	2,78	2,88	0,7	0,13	0,54	6,8	0,9
S14: 1T	0,47	0,95	2,84	20,38	30,81	44,55	3,1	2,97	0,74	-0,18	0,64	6,6	1,9
1B	1,28	2,04	7,65	16,84	22,7	49,49	2,85	2,63	1,01	-0,21	0,62	5,6	1,6
2T	0	0,64	16,99	64,97	10,83	6,58	2,45	2,39	0,55	-0,11	1,13	9,0	0,9
2B	0	0,66	15,97	59,47	13,13	10,5	2,47	2,42	0,56	-0,1	1,15	8,7	0,8

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median ϕ	Mean grain size ϕ	Sorting ϕ	Skewness ϕ	Kurtosis ϕ	% $CaCO_3$	% Org C
S14: 3T	0	0,49	16,71	39,8	14,25	28,75	2,46	2,43	0,77	0	0,66	5,6	1,4
3B	0	0,2	11,35	56,18	19,52	12,75	2,57	2,66	0,62	0,15	0,94	7,0	0,8
4T	0	0	11,01	9,79	3,06	76,15	2,09	2,13	0,79	0,1	0,59	10,8	5,3
4B	0,61	0,61	64,17	28,54	1,21	4,86	1,72	1,86	0,65	0,22	0,41	6,5	1,1
5T	0,26	0,26	0,79	6,86	6,07	55,75	2,85	2,88	0,74	0	0,78	7,7	4,5
5B	0,22	0,45	2,02	39,24	9,42	48,65	3,59	3,63	0,49	0,1	0,81	21,7	2,8
S15: 1T	0,81	0,2	6,87	37,78	17,78	36,57	2,63	2,74	0,68	0,17	0,83	14,0	2,7
1B	0	0,27	1,89	15,09	10,51	72,24	2,78	2,86	0,71	0,12	0,6	6,7	2,1
2T	0	1,09	17,45	25,45	8,0	48,0	2,29	2,2	0,74	-0,12	0,65	8,4	2,8
2B	0	2,26	32,41	22,61	11,06	31,66	1,98	2,14	0,87	0,18	0,52	8,3	1,5
3T	0	0	16,6	50,59	16,6	16,21	2,5	2,5	0,69	0	0,8	7,3	1,3
3B	0	0	16,04	56,92	15,38	11,65	2,49	2,48	0,6	0	1,03	5,3	1,0
4T	0	0	2,23	28,34	22,93	46,5	2,87	2,93	0,7	0,1	0,33	4,1	3,4
4B	0	0	4,01	54,77	18,13	23,09	2,63	3,74	0,58	0,18	0,56	5,1	1,1

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median ϕ	Mean grain size ϕ	Sorting ϕ	Skewness ϕ	Kurtosis ϕ	% $CaCO_3$	% Org C
S15:5T	0,54	0,27	0,82	8,72	14,44	75,2	3,14	3,0	0,73	-0,2	0,64	7,1	1,7
5B	0,76	0,25	1,52	6,6	6,09	84,77	2,77	2,77	0,83	0	1,33	7,5	3,5
S16:1T	2,17	0,27	1,36	24,12	4,34	67,75	2,51	2,51	0,45	0	3,27	11,8	1,5
1B	0	0	0	2,7	0,3	97,0	2,56	2,56	0,38	0	0,91	0	3,2
2T	0	0	1,14	7,99	10,73	80,14	3,07	2,98	0,72	-0,13	0,41	4,5	3,4
2B	0	0,36	0,72	5,42	2,89	90,61	2,67	2,78	0,7	0,16	0,92	6,2	3,1
3T	0	2,69	33,87	11,83	1,88	44,73	1,66	1,82	0,66	0,24	0,52	9,0	3,8
3B	0,2	2,39	32,6	14,91	6,36	43,54	1,79	2,01	0,81	0,27	0,57	5,0	1,7
4T	0	0	2,86	44,76	31,43	20,95	2,82	2,91	0,69	0,13	0,34	6,4	5,9
4B	0	0	6,64	74,52	14,99	3,85	2,56	2,56	0,44	0	1,23	0	0,7
5T	0	0	2,29	66,46	17,92	13,33	2,62	2,7	0,53	0,16	0,64	15,2	0,8
5B	0	0	1,14	22,32	7,52	69,02	2,64	2,76	0,58	0,19	0,52	7,2	
S17:1T	0	0	13,8	85,48	0,72	0	2,42	2,42	0,4	0	1,0	44,2	0,0
1B	0	0,39	16,44	66,54	5,68	10,96	2,42	2,36	0,51	0,12	0,91	16,8	0,5

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median ϕ	Mean grain size ϕ	Sorting ϕ	Skewness ϕ	Kurtosis ϕ	% $CaCO_3$	% Org C
S17: 2T	0	1,6	14,71	3,21	0,53	79,95	1,57	1,64	0,53	0,12	1,11	6,4	7,7
2B	0,18	2,67	78,61	14,08	0,71	3,74	1,58	1,58	0,42	0	1,02	4,4	1,4
3T	0	0	6,92	27,67	3,46	61,95	2,44	2,39	0,51	-0,1	1,12	7,0	5,5
3B	0	0,19	17,65	49,53	4,36	28,27	2,36	2,25	0,61	0.19	0,63	5,2	2,6
4T	0	0	0,84	49,06	32,91	17,91	2,83	2,93	0,67	0,15	0,34	4,4	4,6
4B	0	0	0,61	53,75	34,69	10,95	2,82	2,92	0,67	0,16	0,35	3,7	1,7
5T	0	0	2,24	45,14	36,41	16,21	2,88	2,94	0,69	0,1	0,33	6,8	1,0
5B	0	0	0	1,04	0,26	98,7	2,63	2,7	0,5	0,15	0,69	9,6	6,7
S18: 1T	0	0	0	1,3	4,56	94,14	3,36	3,26	0,54	-0,19	0,59	8,4	2,6
1B	0	0	0	0,96	1,44	97,6	3,17	3,07	0,67	-0,15	0,34	0	2,8
2T	0	0	1,12	7,26	7,26	84,36	2,95	2,95	0,73	0	0,5	7,6	3,9
2B	0	0	0,42	0,84	0,42	98,33	2,5	2,5	0,86	0	0,51	0	10,2
3T	0	1,35	20,61	22,97	4,73	50,34	2,13	2,09	0,77	0	0,57	5	4,3
3B	0	1,83	40,18	34,7	7,76	15,53	2,01	2,06	0,77	0,1	0,55	3,8	1,3

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median ϕ	Mean grain size ϕ	Sorting ϕ	Skewness ϕ	Kurtosis ϕ	% $CaCO_3$	% Org C
S18: 4T	0	0	4,35	43,04	8,26	44,35	2,55	2,55	0,44	0	1,3	6,6	5,2
4B	0	0	5,39	72,51	15,09	7,01	2,57	2,57	0,44	0	1,07	0	0,6
5T	0,53	0,53	5,6	33,33	32,27	27,73	2,88	2,89	0,75	0	0,63	5,2	1,0
5B	0	0,39	0,39	1,55	1,55	96,12	2,75	2,6	1,0	-0,15	0,69	0	7,6
S19: 1T	0	0	5,94	81,8	10, 73	1,53	2,53	2,53	0,41	0	1,09	30,1	0,6
1B	0	0	2,95	63,29	27,64	6,12	2,7	2,82	0,63	0,2	0,42	18,8	0,9
2T	0,26	0,52	1,29	13,7	24,81	59,43	3,18	3,03	0,71	-0,21	0,38	5,0	3,2
2B	0	0	0,28	3,42	11,11	85,19	3,33	3,2	0,59	-0,23	0,53	6,7	3,1
3T	0	0	0,71	7,8	11,7	79,79	3,14	3,02	0,7	-0,16	0,34	5,2	4,7
3B	0,23	0	1,17	14,45	30,77	53,38	3,24	3,09	0,67	-0,23	0,39	4,0	2,7
4T	0,19	1,69	30,34	44,38	1,69	21,72	2,16	2,05	0,7	-0,15	0,34	4,8	1,9
4B	0	0,16	20,16	75,24	1,9	2,54	2,38	2,29	0,53	-0,16	0,64	0	0,5
5T	0	1,53	20,84	60,23	11,85	5,54	2,41	2,3	0,65	-0,18	0,89	3,5	1,4
5B	0	0,99	14,74	65,73	10,43	8,11	2,46	2,43	0,5	-0,1	1,3	3,7	0,7

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median ϕ	Mean grain size ϕ	Sorting ϕ	Skewness ϕ	Kurtosis ϕ	% $CaCO_3$	% Org C
S20: 1T	0	0,3	1,78	17,51	37,39	43,03	3,24	3,08	0,68	-0,23	0,39	4,7	1,3
1B	0	0,24	0,49	4,14	15,09	80,05	3,34	3,19	0,6	-0,25	0,57	4,5	2,4
2T	0	0,25	16,05	49,88	19,26	14,57	2,53	2,56	0,73	0	0,74	0	1,4
2B	0	0,38	14,4	51,82	18,43	14,97	2,54	2,59	0,67	0,1	0,86	0	1,1
3T	0,19	4,08	43,6	31,35	11,13	9,65	1,94	2,06	0,83	0,15	0,56	0	1,5
3B	0	3,32	39,34	34,97	12,06	10,31	2,06	2,11	0,83	0,1	0,57	0	1,1
4T	0,41	0,41	4,94	22,02	16,46	55,76	1,74	2,81	0,76	0,1	0,71	4,1	1,4
4B	0,78	0,39	0,58	1,36	7,56	89,34	3,29	2,85	0,92	-0,48	1,3	6,3	1,9
S21: 1T	0,25	0,25	1,52	7,83	16,92	73,23	3,21	3,02	0,73	-0,26	0,63	5,5	2,4
1B	0	0	0	0,33	0,33	99,35	3,0	3,0	0,68	0	0,32	0	4,0
2T	0,14	7,99	66,76	12,27	1,57	11,27	1,54	1,54	0,45	0	1,47	0	1,4
2B	0,5	7,93	66,28	11,57	1,49	12,23	1,53	1,53	0,45	0	1,51	5,2	1,4
3T	0	0	0	1,52	1,52	96,97	3,0	3,0	0,68	0	0,32	6,3	7,7
3B	0,83	0,28	0	0,28	0,28	98,33	0	1,18	1,86	0,63	0,24	7,3	4,5

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median φ	Mean grain size φ	Sorting φ	Skewness φ	Kurtosis φ	% $CaCO_3$	% Org C
S21:4T	1,81	0,68	1,81	11,34	14,97	69,39	2,97	2,86	0,81	-0,13	1,5	3,8	2,2
4B	0	0,37	0,37	3,37	11,61	84,27	3,32	3,15	0,63	-0,27	0,53	7,5	3,7
S22:1T	0	0	0,53	5,53	8,16	85,79	3,13	3,02	0,7	-0,16	0,34	0	3,0
1B	0	0	0	0,76	0,76	98,47	3,0	3,0	0,68	0	0,32	0	7,1
2T	0,29	6,2	65,85	13,4	1,44	12,82	1,56	1,59	0,48	0,1	1,23	4,8	1,3
2B	0,54	4,35	70,75	17,41	1,63	5,31	1,6	1,68	0,54	0,16	0,72	3,7	1,1
3T	0	0	0,1	87,39	5,53	7,0	2,53	2,53	0,36	0	0,53	3,6	1,8
3B	0	0,15	2,95	68,34	18,41	10,16	2,61	2,69	0,53	0,15	0,65	3,8	0,8
4T	0,24	0	2,18	16,26	25,49	55,83	3,13	3,0	0,72	-0,18	0,4	3,9	1,7
4B	0	0	0,6	4,82	6,02	88,55	3,05	2,98	0,72	-0,1	0,36	6,4	3,9
S23:1T	0,2	0,2	0,98	4,91	11,98	81,73	3,24	3,04	0,72	-0,28	0,66	0	2,3
1B	0	0	0	2,69	10,0	87,31	3,37	3,28	0,52	-0,17	0,63	6,4	3,9
2T	0	0	0,46	22,58	15,67	61,29	2,84	2,93	0,68	0,14	0,34	3,7	3,9
2B	0	0,49	11,53	31,17	20,29	36,53	2,63	2,67	0,83	0	0,57	3,5	1,5

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median ϕ	Mean grain size ϕ	Sorting ϕ	Skewness ϕ	Kurtosis ϕ	% $CaCO_3$	% Org C
S23:3T	0,18	4,74	38,32	36,86	9,12	10,77	2,04	2,05	0,81	0	0,61	4,9	1,3
3B	0	4,59	31,96	38,07	11,31	14,07	2,17	2,11	0,82	-0,1	0,63	0	1,3
4T	0,77	0,51	5,38	15,38	13,08	64,87	2,71	2,69	0,88	0	0,57	5,1	1,9
4B	0	0	0,78	3,11	2,72	93,39	2,81	2,85	0,76	0,1	0,61	4,8	1,7
S24:1T	0,35	0	0	2,1	3,15	94,41	3,11	2,99	0,73	-0,17	1,82	3,7	2,8
1B	0	0	0	0,41	0,41	99,18	3,0	3,0	0,68	0	0,32	5,8	3,5
2T	0	0	7,59	42,95	22,99	26,46	2,68	2,79	0,7	0,16	0,69	3,8	3,1
2B	0	0	9,4	50,0	26,28	14,32	2,67	2,78	0,7	0,16	0,71	5,5	1,5
3T	0	0,64	27,01	34,73	5,47	32,15	2,18	2,11	0,73	-0,1	0,55	5,0	2,7
3B	0	0,63	33,19	44,12	6,72	15,34	2,19	2,12	0,73	-0,1	0,55	3,5	2,0
4T	0,12	36,89	0,37	4,9	12,25	45,47	0,74	1,76	1,53	0,67	0,21	5,5	1,9
4B	0	0	0	0,42	1,26	98,32	3,33	3,21	0,57	-0,21	0,51	5,1	3,8
S25:1T	0	0,3	1,51	8,73	5,42	84,04	2,71	2,81	0,72	0,14	0,75	9,0	2,6
1B	0	0	0,54	0	1,08	98,38	3,25	2,62	1,14	-0,55	0,22	4,3	3,3

Station number	% VCS	% CS	% MS	% FS	% VFS	% Mud	Median ϕ	Mean grain size ϕ	Sorting ϕ	Skewness ϕ	Kurtosis ϕ	% $CaCO_3$	% Org C
S25: 2T	0	0,87	19,83	30,61	11,95	36,73	2,36	2,31	0,84	-0,1	0,55	7,0	2,8
2B	0	0,41	15,89	60,14	14,11	9,45	2,48	2,44	0,55	-0,1	1,18	0	1,0
3T	0	0,5	32,58	37,59	6,52	22,81	2,15	2,1	0,74	-0,1	0,50	0	1,8
3B	0	0,3	29,5	58,7	6,2	5,3	2,3	2,18	0,67	-0,18	0,55	0	1,0
4T	1,38	0,92	4,82	26,15	15,14	51,61	2,65	2,76	0,73	0,14	0,92	0	2,7
4B	0	0	0	0,4	0	99,6	2,5	2,5	0,34	0	0,32	0	5,0
S26: 1T	0,4	0	2,8	14,8	8,0	74,0	2,66	2,77	0,71	0,16	0,78	3,7	1,8
1B	0	0,37	0,37	0,37	0,37	98,51	2,0	2,0	1,36	0	0,32	8,0	3,4
2T	0	1,38	24,9	35,18	14,03	24,51	2,33	2,28	0,85	0	0,54	3,6	1,2
2B	0	0,15	17,73	68,17	10,76	3,2	2,45	2,4	0,53	-0,1	1,15	0	0,6
3T	0	0,77	10,0	20,0	8,46	60,77	2,44	2,4	0,85	0	0,55	13,8	3,7
3B	0	0	0,51	0,51	0,51	98,47	2,5	2,5	1,02	0	0,32	5,1	4,3
4T	1,62	1,95	3,57	13,96	7,79	71,1	2,52	2,35	1,06	-0,16	0,86	6,1	2,7
4B	0	0	0,45	0,45	1,35	97,75	3,17	2,77	0,97	-0,41	0,38	5,6	5,6