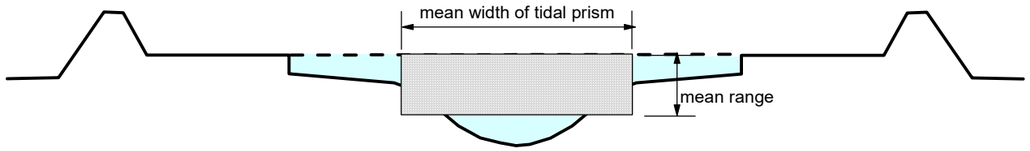
Levels of the mud between Methersgate Quay and Kyson's Point

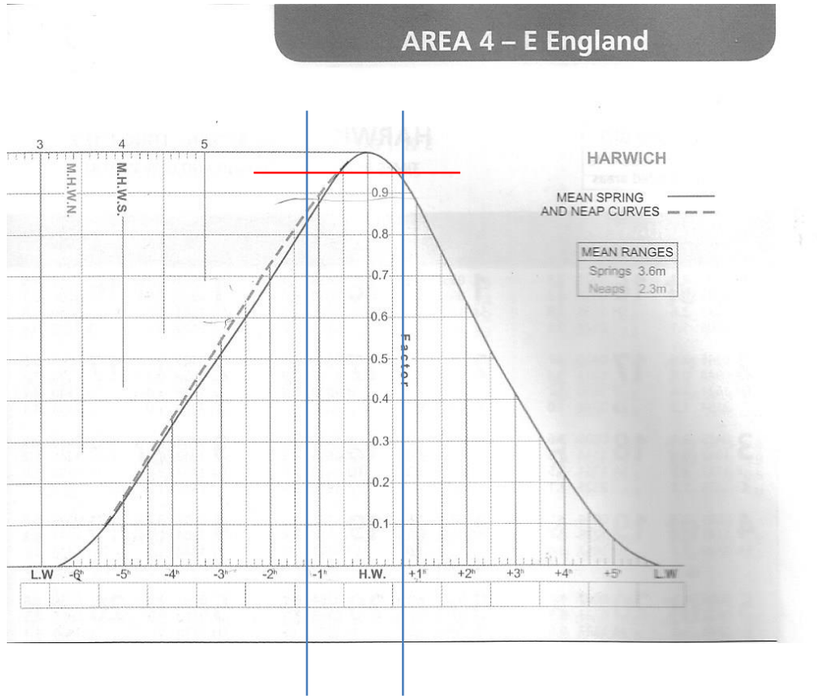
Sediment deposited in the River Deben: The total amount of sediment deposited in the estuary is calculated to be 72,800m^3/year
Surveys: The surveys of the level of the mud were carried out by Tam Grundy for the Kyson Fairway Committee and took place in 2007, 2012 and 2019.
Levels to chart Datum: The levels in the survey were given to Chart Datum at 105 positions between the Cruising Club and Methersgate Quay.
Levels to Ordance Datum: The Chart Datum levels have been converted to Ordnance Datum
Change in Level: The change of level of the mud at each position was calculated for the period 2007 to 2012, 2013 to 2019 and 2007 to 2019.

From these results the mean value of sedimentation change over 12 years was calculated: +11.8mm/year

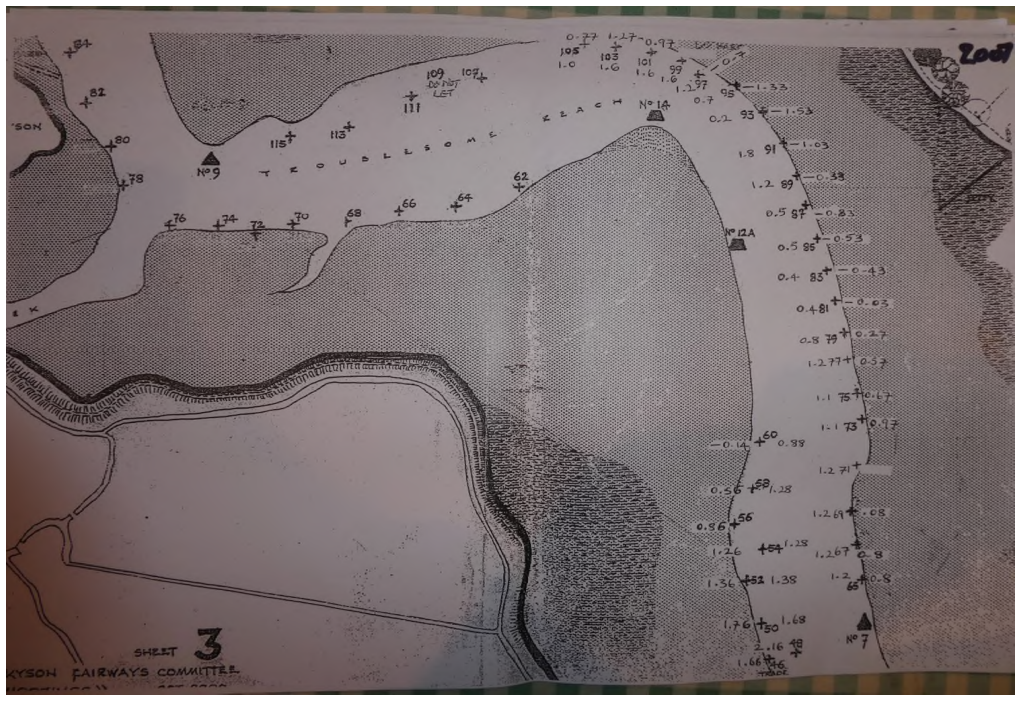
River Deben tidal flow

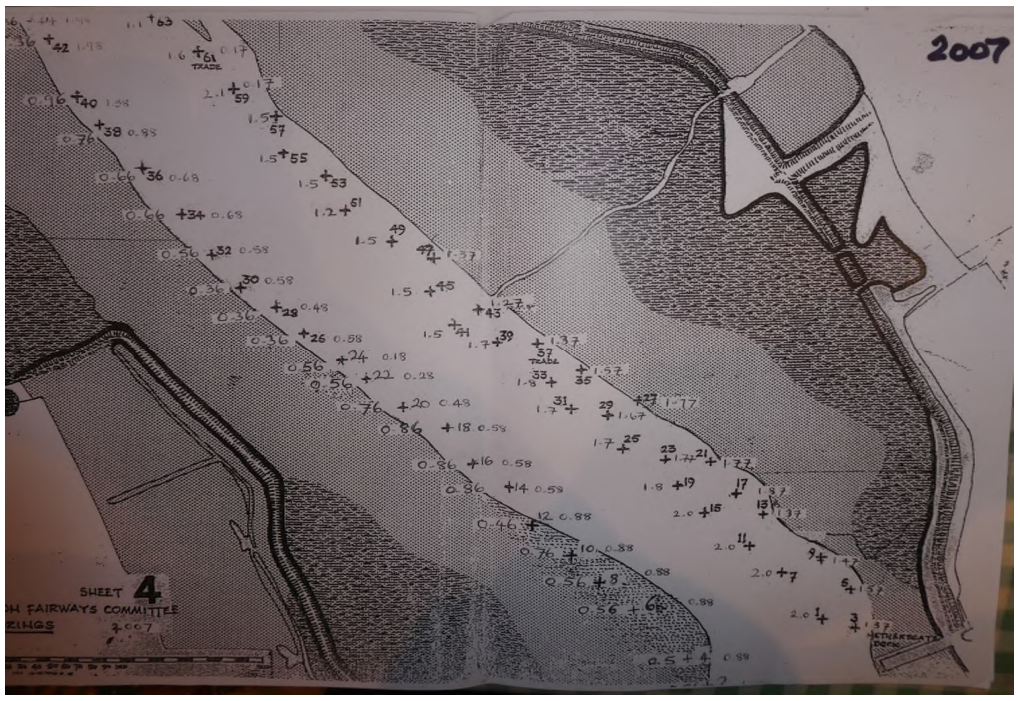
Tidal Prism: The volume of water in an estuary or inlet between mean high tide and mean low tide.

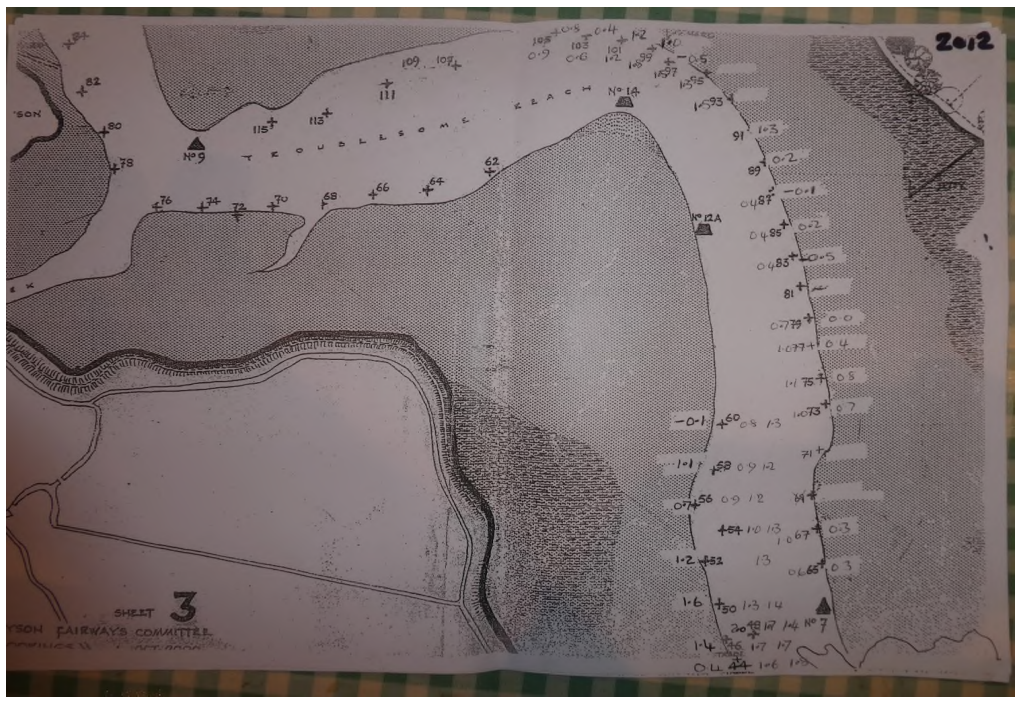


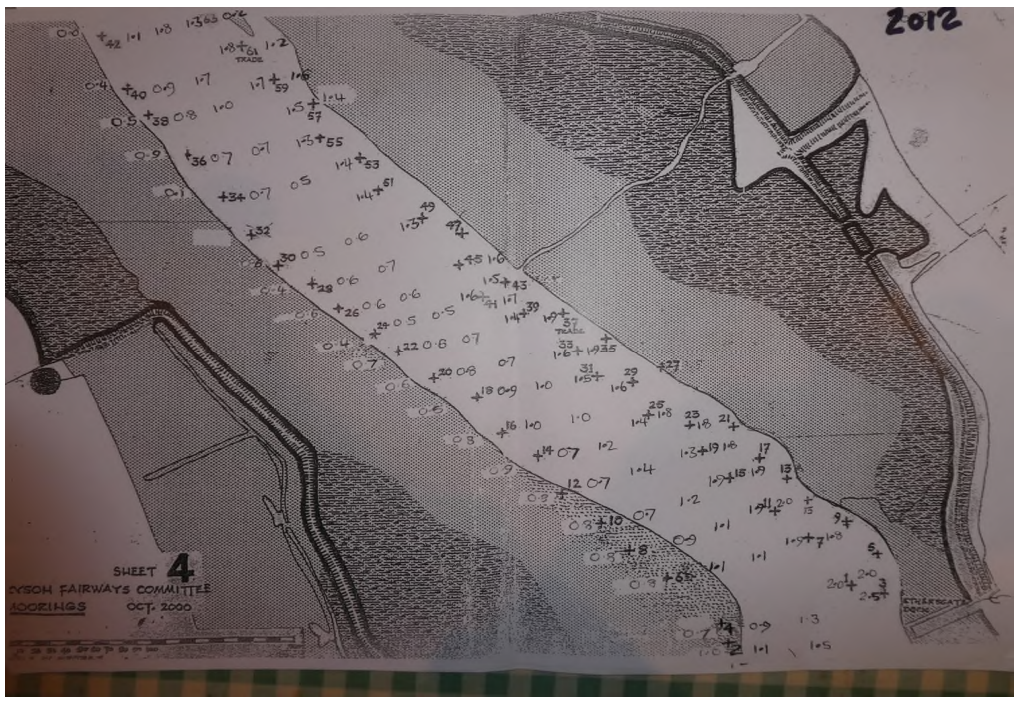


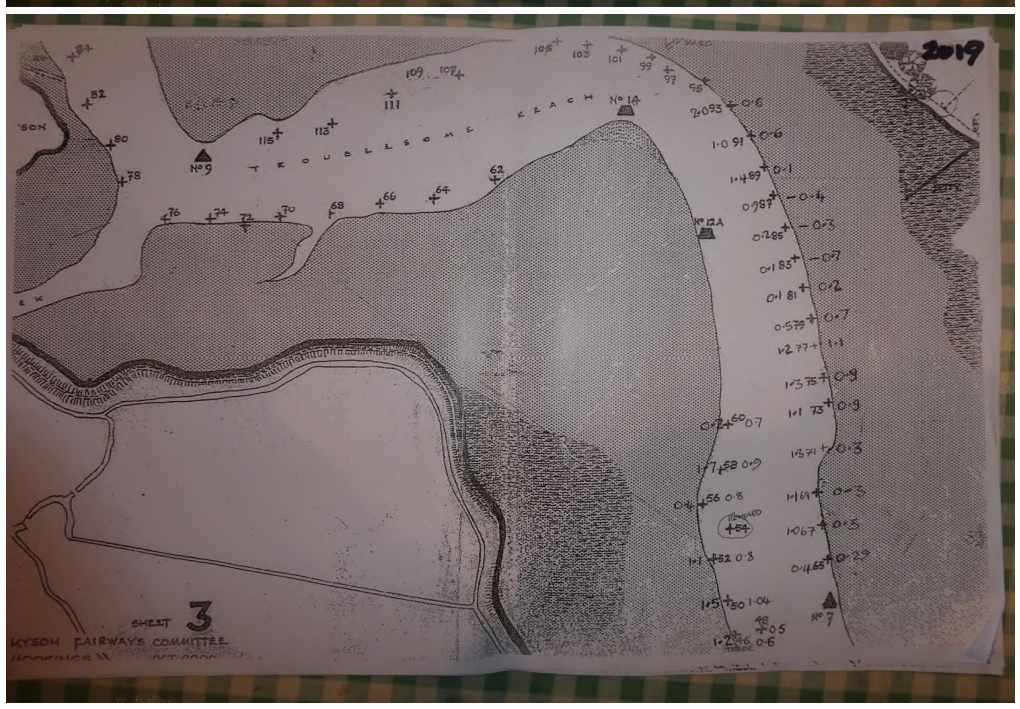
Model a rectangular tidal prism (see simplified diagram)		
Mean tidal range (m)	3	
Mean volume of tidal prism (m^3)	19,000,000	from 'Healthy Estuaries'
Length of tidal prism (m)	19,040	from Google Earth
Mean width of tidal prism (m)	333	
Sedimentation rate on saltmarsh and tidal prism (mm/year)	3.5	to retain equilibrium
Volume of sediment in tidal prism (m^3/year)	**66,500**	
Density of sediment (tonnes/m^3)	1.7	
Mass of sediment tidal prism per year (tonnes/year)	**113,050**	
Volume of water /day (m^3) say 2 tides/day	38,000,000	
Volume of water /year (m^3) Say 350 days	13,300,000,000	
Level of saltmarsh aOD (m)	1.75	
Level of saltmarsh aCD (m) (+ 1.95)	3.7	
Deben MHWS aCD (m)	4.2	
Deben MHWN aCD (m)	3.4	
Factor for Salltmarsh level cf MHWS (see chart)	0.9	
Factor of time above MHWS per tide (see chart)	0.17	
Mean depth of water over saltmarsh for period covered by water (m)	0.10	
No. of tides per year	705	
Mean depth of water over saltmarsh for 1 year (m)	11.8	
Net area of saltmarsh, excluding channels and lagoons (ha)	180	
Volume of water covering saltmarsh/year (m^3)	21,150,000	
Volume of sediment on saltmarsh per year (m^3/year)	**6,300**	
Mass of sediment on saltmarsh per year (tonnes/year)	**10,710**	
Total volume of sediment deposited in river each year year (m^3/year)	**72,800**	
Total mass of sediment deposited in river each year (tonnes/year)	**123,760**	
Volume of water per tonne of sediment deposited on saltmarsh (m^3/tonne)	1,975	
% mass/volume (tonne/m^3 %)	0.05	
Tidal area between river walls froom Google Earth (ha)	974	

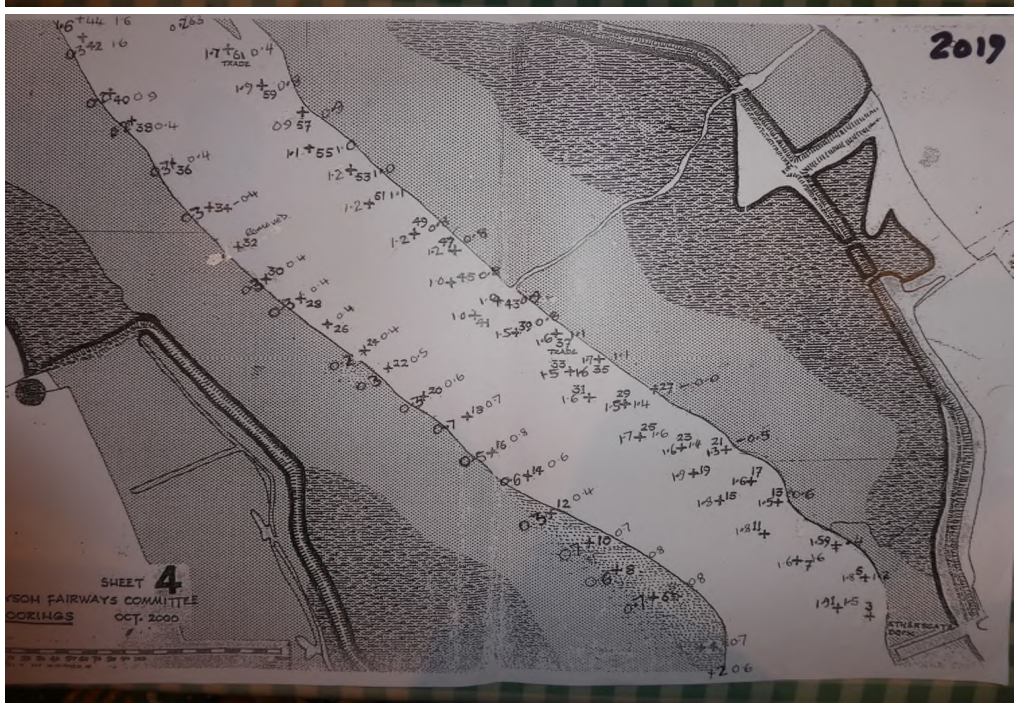

2007
SHEET 3
KYSON FAIRWAYS COMMITTEE
TROUBLESOME
No 14
No 9
No 12A
No 7


2007
SHEET 4
FAIRWAYS COMMITTEE


2012
SHEET 3
KYSON FAIRWAYS COMMITTEE
TROUBLESOME
No 14
No 9
No 12A
No 7


2012
SHEET 4
KYSON FAIRWAYS COMMITTEE
OCT. 2000


2019
SHEET 3
KYSON FAIRWAYS COMMITTEE
TROUBLESOME
No 14
No 9
No 12A
No 7


2019
SHEET 4
KYSON FAIRWAYS COMMITTEE
OCT. 2000

Deben survey of mud levels
Relative to Chart datum + down - up

Position	2007								2012								2019							
	West side		East river side		East middle		East bank side		West side		River bed	East river side		East middle		East bank side		West side		East river side		East Middle		East bank side	
	Inshore	Offshore	Offshore	Inshore	Offshore	Inshore	Offshore	Inshore	Inshore	Offshore		Offshore	Inshore	Offshre	Inshore	Offshore	Inshore	Inshore	Offshore	Offshore	Inshore	Offshore	Inshore	Offshore	Inshore
1			2.00									2.00								1.90	1.5				
2									1	1.10	1.5								0.60						
3								1.37								2.50									
4	0.5	0.88							0.7	0.90	1.3								0.70						
5								1.57																1.80	1.20
6	0.56	0.88							0.80	1.10	1.10							0.7	0.80						
7			2.00									1.90	1.80							1.60	1.60				
8	0.56	0.88							0.80	0.90	1.10							0.60	0.80						
9								1.47																1.50	0.40
10	0.76	0.88							0.70	0.80	1.20							0.70	0.70						
11			2.00									2.00	1.90							1.80					
12	0.46	0.88							0.80	0.70	1.40							0.30	0.40						
13								1.37																1.50	0.60
14	0.86	0.58							0.90	0.70	1.20							0.60	0.60						
15			2.00																	1.8					
16		2.00							0.8	1.00	1.00	1.90	1.90					0.5	0.8						
17								1.87																1.60	
18	0.86	0.58							0.50	0.90	1.00							0.70	0.70						
19			1.80									1.30	1.80							1.90					
20	0.76	0.48							0.60	0.80	0.70							0.30	0.60						
21								1.77																1.3	-0.50
22	0.56	0.28							0.70	0.60	0.70							0.30	0.50						
23						1.77									1.80							1.60	1.40		
24	0.56	0.18							0.40	0.50	0.50							0.20	0.40						
25			1.70									1.40	1.80							1.70	1.60				
26	0.36	0.58							0.60	0.60	0.60								0.40						
27								1.77																	0.00
28	0.36	0.48							0.40	0.60	0.7							0.30	0.40						
29						1.67								1.60						1.50	1.40				
30	0.36	0.58							0.60	0.50	0.6							0.30	0.40						
31			1.70									1.50								1.60					
32	0.56	0.58																							
33						1.80								1.90	1.60							1.60	1.50		
34	0.66	0.68							0.10	0.70	0.5							0.30	0.40						
35								1.57																1.70	1.10
36	0.66	0.68							0.90	0.70	0.7							0.30	0.40						
37								1.37								1.90								1.70	1.10
38	0.76	0.88							0.50	0.80	1							0.20	0.40						
39					1.70							1.40								1.50	0.90				
40	0.96	1.58							0.40	0.90	1.7							0.20	0.90						
41			1.50									1.60	1.70							1.00					
42	1.36	1.98							0.00	1.10	1.8							0.30	1.60						
43								1.27								1.50								1.00	0.90
44									0.11	1.60	1.8							1.6	1.6						
45					1.50										1.60							1.00	0.80		
46	1.66								1.40	1.70	1.7							1.2	0.6						
47								1.37																1.20	0.80
48	2.16								2.00	1.70	1.4								0.5						
49					1.50									1.30								1.20	0.80		
50	1.76	1.68							1.60	1.30	1.4							1.5	1.04						
51					1.20									1.40								1.20	1.1		
52	1.36	1.38							1.20		1.3							1.1	0.8						
53							1.50									1.40								1.2	1
54	1.26	1.28								1.00	1.3														
55					1.50									1.30								1.10	1		
56	0.86								0.70	0.90	1.2							0.4	0.8						
57							1.50									1.50	1.40							0.9	0.9
58	0.56	1.28							1.10	0.90	1.2							1.7	0.9						
59					0.17	2.10										1.70	1.60					1.90	0.80		
60	-0.14	0.88							-0.10	0.80	1.3							0.2	0.7						
61					0.17	1.60										1.80	1.2					1.7	0.40		
62																									
63																1.30	0.20			0.7					
64																									
65							1.20	0.80								0.6	0.3							0.4	0.29
66																									
67							1.20	0.80								1	0.3							1	0.5
68																									
69							1.20	0.80																1.1	0.3
70																									
71							1.20																	1.3	0.3
72																									
73							1.10	0.97								1	0.7							1.1	0.9
74																									
75							1.10	0.67								1.1	0.8							1.3	0.9
76																									
77							1.20	0.57								1	0.4							1.2	1.1
78																									
79							0.80	0.27								0.7	0							0.5	0.7
80																									
81							0.48	-0.03																0.1	0.2
82																									
83							0.40	-0.43								0.4	-0.5							0.1	-0.7
84																									
85							0.50	-0.53								0.4	0.2							0.2	-0.3
86																									
87							0.50	-0.83								0.4	-0.1							0.9	-0.4
88																									
89							1.20	-0.33									0.2							1.4	0.1
90																									
91							1.80	-1.03									1.3							1	0.6
92																									
93							0.20	-1.53								1.5								2	0.6
94																									
95							0.70	-1.33								1.3									
96																									
97							1.2	-0.70								1.5	-0.5								
98																									
99							1.60									1.8	1								
100																									
101							1.60	0.97								1.2	1.2								
102																									
103							1.60	1.27								0.6	0.4								
104																									
105							1.00	0.77								0.9	0.8								

Deben survey of mud levels
Levels (m) to Ordnace Datum Assume Chart datum is 1.95m below Ordance Datum

Position	2007								2012								2019							
	West side		East river side		East middle		East bank side		West side		River bed	East river side		East middle		East bank side		West side		East river side		East Middle		East bank side	
	Inshore	Offshore	Offshore	Inshore	Offshore	Inshore	Offshore	Inshore	Inshore	Offshore		Offshore	Inshore	Offshre	Inshore	Offshore	Inshore	Inshore	Offshore	Offshore	Inshore	Offshore	Inshore	Offshore	Inshore
1			-3.95									-3.95								-3.85	-3.45				
2									-2.95	-3.05	-3.45								-2.55						
3								-3.32								-4.45									
4	-2.45	-2.83							-2.65	-2.85	-3.25								-2.65						
5								-3.52																-3.75	-3.15
6	-2.51	-2.83							-2.75	-3.05	-3.05							-2.65	-2.75						
7			-3.95									-3.85	-3.75					-1.95		-3.55	-3.55				
8	-2.51	-2.83							-2.75	-2.85	-3.05							-2.55	-2.75						
9								-3.42																-3.45	-2.35
10	-2.71	-2.83							-2.65	-2.75	-3.15							-2.65	-2.65						
11			-3.95									-3.95	-3.85							-3.75					
12	-2.41	-2.83							-2.75	-2.65	-3.35							-2.25	-2.35						
13								-3.32																-3.45	-2.55
14	-2.81	-2.53							-2.85	-2.65	-3.15							-2.55	-2.55						
15			-3.95																	-3.75					
16		-3.95							-2.75	-2.95	-2.95	-3.85	-3.85					-2.45	-2.75						
17								-3.82					0											-3.55	
18	-2.81	-2.53							-2.45	-2.85	-2.95							-2.65	-2.65						
19			-3.75						-1.95			-3.25	-3.75							-3.85					
20	-2.71	-2.43							-2.55	-2.75	-4.60							-2.25	-2.55						
21								-3.72																-3.25	-1.45
22	-2.51	-2.23							-2.65	-2.55	2.65							-2.25	-2.45						
23						-3.72									-3.75							-3.55	-3.35		
24	-2.51	-2.13							-2.35	-2.45	-2.45							-2.15	-2.35						
25			-3.65									-3.35	-3.75							-3.65	-3.55				
26	-2.31	-2.53							-2.55	-2.55	-2.55								2.35						
27								-3.72																	-1.95
28	-2.31	-2.43							-2.35	-2.55	-2.65							-2.25	-2.35						
29						-3.62								-3.55						-3.45	-3.35				
30	-2.31	-2.53							-2.55	-2.45	-2.55							-2.25	2.35						
31			-3.65									-3.45								-3.55					
32	-2.51	-2.53																							
33						-3.75								-3.85	-3.55							-3.55	-3.45		
34	-2.61	-2.63							-2.05	-2.65	-2.45							-2.25	-2.35						
35								-3.52																-3.65	-3.05
36	-2.61	-2.63							-2.85	-2.65	-2.65							-2.25	-2.35						
37								-3.32								-3.85								-3.65	-3.05
38	-2.71	-2.83							-2.45	-2.75	-2.95							-2.15	-2.35						
39					-3.65							-3.35								-3.45	-2.85				
40	-2.91	-3.53							-2.35	-2.85	-3.65							-2.15	-2.85						
41			-3.45									-3.55	-3.65							-2.95					
42	-3.31	-3.93							-1.95	-3.05	-3.75							-2.25	-3.55						
43								-3.22								-3.45								-2.95	-2.85
44									-2.06	-3.55	-3.75							-3.55	-3.55						
45					-3.45										-3.55							-2.95	-2.75		
46	-3.61								-3.35	-3.65	-3.65							-3.15	-2.55						
47								-3.32																-3.15	-2.75
48	-2.16								-3.95	-3.65	-3.35								-2.45						
49					-3.45									-3.25								-3.15	-2.75		
50	-3.71	-3.63							-3.55	-3.25	-3.35							-3.45	-2.99						
51					-3.15									-3.35								-3.15	-3.05		
52	-3.31	-3.33							-3.15		-3.25							-3.05	-2.75						
53							-3.45									-3.35								-3.15	-2.95
54	-3.21	-3.23								-2.95	-3.25														
55					-3.45									-3.25								-3.05	-2.95		
56	-2.81								-2.65	-2.85	-3.15							-2.35	-2.75						
57							-3.45									-3.45	-3.35							-2.85	-2.85
58	-2.51	-3.23							-3.05	-2.85	-3.15							-3.65	-2.85		0				
59					-2.12	-4.05										-3.65	-3.55					-3.85	-2.75	0	
60	-1.81	-2.83							-1.85	-2.75	-3.25						0	-2.15	-2.65						
61					-2.12	-3.55										-3.75	-3.15					-3.65	-2.35		
62																	0								
63																-3.25	-2.15			-2.65					
64																				-1.95					
65							-3.15	-2.75								-2.55	-2.25							-2.35	-2.24
66																									
67							-3.15	-2.75								-2.95	-2.25							-2.95	-2.45
68																									
69							-3.15	-2.75																-3.05	-2.25
70																									
71							-3.15																	-3.25	-2.25
72																									
73							-3.05	-2.92								-2.95	-2.65							-3.05	-2.85
74																									
75							-3.05	-2.62								-3.05	-2.75							-3.25	-2.85
76																									
77							-3.15	-2.52								-2.95	-2.35							-3.15	-3.05
78																									
79							-2.75	-2.22								-2.65								-2.45	-2.65
80																									
81							-2.43	-1.92																-2.05	-2.15
82																									
83							-2.35	-1.52								-2.35	-1.45							-2.05	-1.25
84																									
85							-2.45	-1.42								-2.35	-2.15							-2.15	-1.65
86																									
87							-2.45	-1.12								-2.35	-1.85							-2.85	-1.55
88																									
89							-3.15	-1.62									-2.15							-3.35	-2.05
90																									
91							-3.75	-0.92									-3.25							-2.95	-2.55
92																									
93							-2.15	-0.42								-3.45								-3.95	-2.55
94																									
95							-2.65	-0.62								-3.25									
96																									
97							-3.15	-1.25								-3.45	-1.45								
98																									
99							-3.55									-3.75	-2.95								
100																									
101							-3.55	-2.92								-3.15	-3.15								
102																									
103							-3.55	-3.22								-2.55	-2.35								
104																									
105							-2.95	-2.72								-2.85	-2.75								

Change in level of mud
- less mud + more mud

Position		West Side					
		2007 to 2012		2012 to 2019		2007 to 2019	
		Inshore	Offshore	Inshore	Offshore	Inshore	Offshore
1							
2							
3							
4		-200	-20		200	-200	180
5							
6		-240	-220	100	300	-140	80
7							
8		-240	-20	200	100	-40	80
9							
10		60	80	0	100	60	180
11							
12		-340	180	500	300	160	480
13							
14		-40	-120	300	100	260	-20
15							
16				300	200	300	200
17							
18		360	-320	-200	200	160	-120
19							
20		160	-320	300	200	460	-120
21							
22		-140	-320	400	100	260	-220
23							
24		160	-320	200	100	360	-220
25							
26		-240	-20			-240	-20
27							
28		-40	-120	100	200	60	80
29							
30		-240	80	300		60	80
31							
32							
33							
34		560	-20	-200	300	360	280
35							
36		-240	-20	600	300	360	280
37							
38		260	80	300	400	560	480
39							
40		560	680	200		760	680
41							
42		1360	880	-300	-500	1060	380
43							
44							
45							
46		260		200		460	0
47							
48							
49							
50		160	380	100	260	260	640
51							
52		160		100		260	
53							
54			280	0			280
55							
56		160		300	100	460	100
57							
58		-540	380	-600	0		380
59							
60		-40	80	-300	100	-340	180
61							
62							
63							
64							
65							
66							
67							
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							
81							
82							
83							
84							
85							
86							
87							
88							
89							
90							
91							
92							
93							
94							
95							
96							
97							
98							
99							
100							
101							
102							
103							
104							
105							
	Total	**1680**	**1260**	**2900**	**3060**	**5720**	**4320**
	Mean	**67**	**57**	**116**	**153**	**238**	**173**
Change in level/year over 12 years (mm/yr)						20	14
Mean value of change in level/year Inshore over 12 years (mm/yr)						10	
Mean value of change in level/year Offshore over 12 years (mm/yr)						13	
Mean value of change over 12 years (mm/yr)				**11.8**			

Position	East Side 2007 to 2012					
	East river side		East middle		East bank side	
	Offshore	Inshore	Offshore	Inshore	Offshore	Inshore
1	0					
2						
3						
4						
5						
6						
7	100					
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19	500					
20						
21						
22						
23				-30		
24						
25	300					
26						
27						
28						
29						
30						
31	200					
32						
33				200		
34						
35						
36						
37						
38						
39						
40						
41	-100					
42						
43						
44						
45						
46						
47						
48						
49			200			
50						
51			-200			
52						
53					100	
54						
55			200			
56						
57					0	
58						
59						
60						
61						
62						
63						
64						
65					600	500
66						
67					200	500
68						
69						
70						
71						
72						
73					100	270
74						
75					0	-130
76						
77					200	170
78						
79					100	
80						
81						
82						
83					0	70
84						
85					100	-730
86						
87					100	-730
88						
89						-530
90						
91						
92						
93						420
94						
95					-600	620
96						
97					-300	-200
98						
99					-200	
100						
101					400	-230
102						
103					1000	870
104						
105					100	-30
Total	**1000**		**200**	**170**	**1900**	**840**
Mean	**167**		**67**	**85**	**112**	**56**

Position	East Side 2012 to 2019					
	East river side		East middle		East bank side	
	Offshore	Inshore	Offshore	Inshore	Offshore	Inshore
1						
2						
3						
4						
5						
6						
7	300	200				
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19	-600					
20						
21						
22						
23				400		
24						
25	-300	200				
26						
27						
28						
29						
30						
31	-100	0				
32						
33				100		
34						
35						
36						
37						
38						
39						
40						
41	600					
42						
43						
44						
45						
46						
47						
48						
49			100			
50						
51			200			
52						
53					200	
54						
55			200			
56						
57					600	
58						
59						
60						
61						
62						
63						
64						
65					200	10
66						
67					0	-200
68						
69						
70						
71						
72						
73					-100	-200
74						
75					-200	-100
76						
77					-200	-700
78						
79					200	
80						
81						
82						
83					300	200
84						
85					200	500
86						
87					-500	300
88						
89						100
90						
91						700
92						
93						
94						
95						
96						
97						
98						
99						
100						
101						
102						
103						
104						
105						
Total	**-100**	**400**	**500**	**500**	**700**	**610**
Mean	**-20**	**133**	**167**	**250**	**64**	**55**

Position	East Side 2007 to 2019					
	East river side		East middle		East bank side	
	Offshore	Inshore	Offshore	Inshore	Offshore	Inshore
1						
2						
3						
4						
5						
6						
7	400	200				
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19	-100					
20						
21						
22						
23						
24						
25	0	200				
26						
27						
28						
29						
30						
31	100					
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49			300			
50						
51			0			
52						
53					300	
54						
55						
56						
57					600	
58						
59						
60						
61						
62						
63						
64						
65					800	510
66						
67					200	300
68						
69						
70						
71						
72						
73					0	70
74						
75					-200	-230
76						
77					0	-530
78						
79					300	
80						
81						
82						
83					300	270
84						
85					300	-230
86						
87					-400	-430
88						
89						-430
90						
91						
92						
93						
94						
95						
96						
97						
98						
99						
100						
101						
102						
103						
104						
105						
Total	**500**	**400**	**300**		**2200**	**-700**
Mean	**125**	**200**	**150**		**200**	**-78**
	10	17	13		17	-6

Deben survey of mud levels
Create Sections from Mooring details

Position	2007								2012								2019							
	East side		West river side		West middle		West bank side		East side		River bed	West river side		West middle		West bank side		East side		West river side		West Middle		West bank side	
	Inshore	Offshore	Offshore	Inshore	Offshore	Inshore	Offshore	Inshore	Inshore	Offshore		Offshore	Inshore	Offshre	Inshore	Offshore	Inshore	Inshore	Offshore	Offshore	Inshore	Offshore	Inshore	Offshore	Inshore
1												-3.95								-3.85	-3.45				
2									-2.95	-3.05	-3.45								-2.55						
3																-4.45									
4	-2.45	-2.83	-3.95					-3.32	-2.65	-2.85	-3.25								-2.65						
5			-3.95					-3.52																-3.75	-3.15
								-3.42																	
6	-2.51	-2.83	-3.95					-3.32	-2.75	-3.05	-3.05							-2.65	-2.75						
7												-3.85	-3.75					-1.95		-3.55	-3.55				
8	-2.51	-2.83	-3.95					-3.82	-2.75	-2.85	-3.05							-2.55	-2.75						
9																								-3.45	-2.35
10	-2.71	-2.83	-3.75					-3.72	-2.65	-2.75	-3.15							-2.65	-2.65						
11												-3.95	-3.85							-3.75					
12	-2.41	-2.83	-3.65					-3.72	-2.75	-2.65	-3.35							-2.25	-2.35						
13																								-3.45	-2.55
14	-2.81	-2.53				-3.62			-2.85	-2.65	-3.15							-2.55	-2.55						
15																				-3.75					
16		-3.95						-3.52	-2.75	-2.95	-2.95	-3.85	-3.85					-2.45	-2.75						
17						-3.72							0											-3.55	
18	-2.81	-2.53				-3.75			-2.45	-2.85	-2.95							-2.65	-2.65						
19								-3.32	-1.95			-3.25	-3.75							-3.85					
20	-2.71	-2.43			-3.65				-2.55	-2.75	-4.60							-2.25	-2.55						
21			-3.65																					-3.25	-1.45
22	-2.51	-2.23	-3.45					-3.22	-2.65	-2.55	2.65							-2.25	-2.45						
23															-3.75							-3.55	-3.35		
24	-2.51	-2.13			-3.45				-2.35	-2.45	-2.45							-2.15	-2.35						
25												-3.35	-3.75							-3.65	-3.55				
26	-2.31	-2.53						-3.32	-2.55	-2.55	-2.55								2.35						
27																									-1.95
28	-2.31	-2.43			-3.45				-2.35	-2.55	-2.65							-2.25	-2.35						
29														-3.55						-3.45	-3.35				
30	-2.31	-2.53			-3.15				-2.55	-2.45	-2.55							-2.25	2.35						
31												-3.45								-3.55					
32	-2.51	-2.53					-3.45																		
33														-3.85	-3.55							-3.55	-3.45		
34	-2.61	-2.63			-3.45				-2.05	-2.65	-2.45							-2.25	-2.35						
35																								-3.65	-3.05
36	-2.61	-2.63					-3.45		-2.85	-2.65	-2.65							-2.25	-2.35						
37																-3.85								-3.65	-3.05
38	-2.71	-2.83			-2.12	-4.05			-2.45	-2.75	-2.95							-2.15	-2.35						
39												-3.35								-3.45	-2.85				
40	-2.91	-3.53			-2.12	-3.55			-2.35	-2.85	-3.65							-2.15	-2.85						
41												-3.55	-3.65							-2.95					
42	-3.31	-3.93							-1.95	-3.05	-3.75							-2.25	-3.55						
43																-3.45								-2.95	-2.85
44									-2.06	-3.55	-3.75							-3.55	-3.55						
45															-3.55							-2.95	-2.75		
46	-3.61								-3.35	-3.65	-3.65							-3.15	-2.55						
47																								-3.15	-2.75
48	-2.16								-3.95	-3.65	-3.35								-2.45						
49														-3.25								-3.15	-2.75		
50	-3.71	-3.63							-3.55	-3.25	-3.35							-3.45	-2.99						
51														-3.35								-3.15	-3.05		
52	-3.31	-3.33					-3.15	-2.75	-3.15		-3.25							-3.05	-2.75						
53																-3.35								-3.15	-2.95
54	-3.21	-3.23					-3.15	-2.75		-2.95	-3.25														
55														-3.25								-3.05	-2.95		
56	-2.81						-3.15	-2.75	-2.65	-2.85	-3.15							-2.35	-2.75						
57																-3.45	-3.35							-2.85	-2.85
58	-2.51	-3.23							-3.05	-2.85	-3.15								-3.65	-2.85	0				
59							-3.15									-3.65	-3.55					-3.85	-2.75	0	
60	-1.81	-2.83					-3.05	-2.92	-1.85	-2.75	-3.25						0		-2.15	-2.65					
61																-3.75	-3.15					-3.65	-2.35		
62																	0								
63																-3.25	-2.15			-2.65					
64																				-1.95					
65																-2.55	-2.25							-2.35	-2.24
66																									
67																-2.95	-2.25							-2.95	-2.45
68																									
69																								-3.05	-2.25
70																									
71																								-3.25	-2.25
72																									
73																-2.95	-2.65							-3.05	-2.85
74																									
75							-3.05	-2.62								-3.05	-2.75							-3.25	-2.85
76																									
77							-3.15	-2.52								-2.95	-2.35							-3.15	-3.05
78																									
79							-2.75	-2.22								-2.65								-2.45	-2.65
80																									
81							-2.43	-1.92																-2.05	-2.15
82																									
83							-2.35	-1.52								-2.35	-2.45							2.05	-1.25
84																								0	
85							-2.45	-1.42								-2.35	-2.15							-2.15	-1.65
86																									
87							-2.45	-1.12								-2.35	-1.85							-2.85	-1.55
88																									
89							-3.15	-1.62									-2.15							-3.35	-2.05
90																									
91							-3.75	-0.92									-3.25							-2.95	-2.55
92																									
93							-2.15	-0.42								-3.45								-3.95	-2.55
94																									
95							-2.65	-0.62								-3.25									
96																									
97							-3.15	-1.25								-3.45	-1.45								
98																									
99							-5.50									-3.75	-2.95								
100																									
101							-3.55	-2.92								-3.15	-3.15								
102																									
103							-3.55	-3.22								-2.55	-2.35								
104																									
105							-2.95	-2.72								-2.85	-2.75								