Supplement of

Revised predictive equations for salt intrusion modelling in estuaries

J. I. A. Gisen et al.

Correspondence to: J. I. A. Gisen (j.isabellaanakgisen@tudelft.nl)

Section SI (Table)

Table S1. Equations obtained from multiple regressions analysis.

Equations for multiple regression analysis	
$\frac{D_1^{TA}}{\upsilon_1 E_1} = 2141 N_r^{0.84} \left(\frac{h_1}{a_2}\right)$ (R1)	$\frac{D_1^{TA}}{\upsilon_1 E_1} = 0.2942 N_r^{0.56} \left(\frac{a_2}{h_1}\right)^{0.04} \left(\frac{g}{C^2}\right)^{0.23}$ (R10)
$\frac{D_1^{TA}}{\upsilon_1 E_1} = 0.1167 N_r^{0.57}$ (R2)	$\frac{D_1^{TA}}{\upsilon_1 E_1} = 0.2347 N_r^{0.57} \left(\frac{g}{C^2}\right)^{0.23} \left(\frac{E_1}{H_1}\right)^{0.08}$ (R11)
$\frac{D_1^{TA}}{\upsilon_1 E_1} = 0.1515 N_r^{0.58} \left(\frac{h_1}{a_2}\right)^{0.03}$ (R3)	$\frac{D_1^{TA}}{\upsilon_1 E_1} = 0.4225 N_r^{0.57} \left(\frac{g}{C^2}\right)^{0.22} \left(\frac{a_2}{\lambda_1}\right)^{0.02}$ (R12)
$\frac{D_1^{TA}}{\upsilon_1 E_1} = 0.3958 N_r^{0.57} \left(\frac{g}{C^2}\right)^{0.21}$ (R4)	$\frac{D_1^{TA}}{\upsilon_1 E_1} = 0.3873 N_r^{0.57} \left(\frac{g}{C^2}\right)^{0.21} \left(\frac{\lambda_1}{E_1}\right)^{0.01}$ (R13)
$\frac{D_1^{TA}}{\upsilon_1 E_1} = 0.2812 N_r^{0.57} \left(\frac{H_1}{E_1}\right)^{0.10}$ (R5)	$\frac{D_1^{TA}}{\upsilon_1 E_1} = 49.83 \left(N_r \cdot \frac{g}{C^2} \cdot \frac{H_1}{E_1}\right)^{0.44}$ (R14)
$\frac{D_1^{TA}}{\upsilon_1 E_1} = 0.1344 N_r^{0.57} \left(\frac{h_1}{E_1}\right)^{0.02}$ (R6)	$\frac{D_1^{TA}}{\upsilon_1 E_1} = 0.2708 \left(N_r \cdot \frac{g}{C^2} \cdot \frac{\lambda_1}{E_1}\right)^{0.45}$ (R15)
$\frac{D_1^{TA}}{\upsilon_1 E_1} = 0.1243 N_r^{0.58} \left(\frac{E_1}{\lambda_1}\right)^{0.02}$ (R7)	$\frac{D_1^{TA}}{\upsilon_1 E_1} = 0.2338 N_r^{0.56} \left(\frac{a_2}{h_1}\right)^{0.03} \left(\frac{g}{C^2}\right)^{0.24} \left(\frac{E_1}{H_1}\right)^{0.05}$ (R16)
$\frac{D_1^{TA}}{\upsilon_1 E_1} = 0.1138 N_r^{0.58} \left(\frac{\lambda_1}{a_2}\right)^{0.02}$ (R8)	$\frac{D_1^{TA}}{\upsilon_1 E_1} = 0.0514 \left(\frac{g}{C^2}\right)^{0.29} \left(\frac{E_1}{H_1}\right)^{0.12}$ (R17)
$\frac{D_1^{TA}}{\upsilon_1 E_1} = 1.9474 \left(N_r \cdot \frac{g}{C^2}\right)^{0.51}$ (R9)	$\frac{D_1}{\upsilon_1 E_1} = 0.5746 \left(\frac{g}{C^2}\right)^{0.31} \left(\frac{h_1}{B_1}\right)^{0.27}$ (R18)

Table S2. Data used to develop the predictive equation for the dispersion coefficient *D*.

(a) Reliable sets for calibration

No	Estuary	Date	A_1 (m^2)	h_1 (m)	H_0 (m)	E_0 (km)	T (hr)	Q (m^3/s)	K_m	δ_H (10^{-6} m^{-1})	D_1 (m^2/s)	D_1 [2]	D_1 [4]	D_1 [9]
1a	Kurau	27/02/13	660	5.2	2.0	9.4	12	50	30	-6.3	443	514	572	443
1b		28/02/13	660	5.2	2.0	9.4	12	50	30	-6.3	456	529	587	456
2	Perak	13/03/13	9210	4.5	2.5	12.5	12	316	65	3.0	235	199	159	235
3	Bernam	21/06/12	4460	3.5	2.9	14.0	12	42	70	1.7	169	141	116	169
4	Selangor	24/07/12	1000	3.6	4.0	12.7	12	41	40	-3.7	326	349	381	326
5	Muar	03/08/12	1580	5.6	2.0	11.0	12	35	45	-2.7	283	273	252	283
6	Endau	28/03/13	2000	6.5	1.9	10.0	12	54	45	-1.3	329	321	293	329
7	Maputo	28/04/82	4700	4.1	2.8	13.0	12	25	58	2.0	139	127	122	139
7a		15/07/82	4700	4.1	1.5	7.0	12	8	58	2.0	64	59	53	64
7b		19/04/84	4700	4.1	3.3	13.0	12	120	58	2.0	293	267	236	293
7c		17/05/84	4700	4.1	3.3	13.0	12	50	58	2.0	187	170	158	187
7d		29/05/84	4700	4.1	2.8	13.0	12	40	58	2.0	171	156	146	171
8	Thames (New)	07/04/49	10900	13.9	5.3	14.0	12	40	45	1.1	209	202	206	209
9	Corantijn	09/12/78	26800	5.4	1.8	10.0	12	120	40	-1.7	91	94	104	91
9a		14/12/78	26800	5.4	2.3	13.0	12	130	40	-1.7	91	94	111	91
9b		20/12/78	26800	5.4	1.6	9.0	12	220	40	-1.7	105	109	117	105
10	Sinnamary	12/11/93	1120	2.4	2.6	8.6	12	168	40	-5.0	293	312	315	293
10a		27/04/94	1120	2.4	2.9	9.6	12	148	40	-5.0	302	321	331	302
10b		02/11/94	1120	2.4	2.7	7.8	12	112	40	-5.0	385	408	392	385
10c		03/11/94	1120	2.4	2.9	9.5	12	112	40	-5.0	341	363	368	341
11	MaeKlong	08/03/77	1100	4.6	1.5	10.0	12	60	40	-4.2	466	490	478	466
11a		09/04/77	1100	4.6	2.0	9.0	12	36	40	-4.2	347	365	359	347
12	Lalang	20/10/89	2880	8.0	2.6	29.0	24	120	84	-0.5	762	557	358	762
13	Limpopo	04/04/80	1140	6.3	1.1	7.0	12	150	43	1.7	140	140	135	140
13a		31/12/82	1140	6.3	1.1	8.0	12	2	43	1.7	70	71	76	70
13b		14/07/94	1140	6.3	1.0	7.0	12	5	43	1.7	91	92	92	91
13c		24/07/94	1140	6.3	0.9	6.8	12	5	43	1.7	101	102	101	101
13d		10/08/94	1140	6.3	1.0	7.1	12	3	43	1.7	81	82	84	81
14	Tha Chin (New)	16/04/81	1440	5.6	1.6	12.0	24	55	50	-5.5	653	615	479	653
14a		27/02/86	1440	5.6	2.6	20.0	12	40	50	-10.6	410	390	380	410
14b		01/03/86	1440	5.6	1.8	14.0	24	40	50	-5.5	648	611	492	648
14c		13/08/87	1440	5.6	2.0	15.0	12	39	50	-10.6	320	303	286	320
15	ChaoPhya	05/06/62	3100	6.5	2.2	22.0	24	63	65	-2.2	509	428	328	509
15a		16/01/87	3100	6.5	2.5	14.0	24	180	65	-2.2	389	326	234	389
15b		23/02/83	3100	6.5	1.6	19.0	24	100	65	-2.2	574	481	353	574
15c		29/01/83	3100	6.5	2.4	26.0	24	90	65	-2.2	681	572	441	681
16	Edisto	12/07/10	5150	4.1	2.3	10.0	12	15	30	-8.8	120	144	195	120
16a		13/07/10	5150	4.1	2.3	10.0	12	14	30	-8.8	109	131	180	109
16b		14/07/10	5150	4.1	2.3	10.0	12	25	30	-8.8	156	187	247	156
16c		15/07/10	5150	4.1	2.3	10.0	12	25	30	-8.8	156	187	246	156
17	Elbe_Flanders	21/09/04	27300	9.0	3.0	18.0	12	200	32	2.0	168	188	254	168
17a	Elbe_Kuijper	21/09/04	46000	10.2	3.0	18.0	12	200	32	2.0	216	238	303	216
17b	Elbe_Savenije	21/09/04	43000	9.3	3.0	18.0	12	200	32	2.0	213	233	292	213
18	Pangani	27/10/07	860	3.2	4.2	17.0	12	15	42	10.0	254	271	321	254
18a		11/12/07	860	3.2	3.0	15.0	12	11	42	10.0	203	216	256	203
19	Rembau Linggi	05/07/12	1500	4.6	2.0	8.7	12	26	30	-14.0	253	308	384	253
20	Landak	15/09/09	2000	8.7	1.6	15.0	24	10	45	-6.7	176	169	163	176

Note: H_0, E_0, δ_H and Q reflect the condition at the time of observation.

(b) Less Reliable Sets for Verification

No	Estuary	Date	A_1 (m^2)	h_1 (m)	H_0 (m)	E_0 (km)	T (hr)	Q (m^3/s)	K_m	δ_H (10^{-6} m^{-1})	D_1 (m^2/s)	D_1 [2]	D_1 [4]	D_1 [9]
21	Delaware	23/08/32	255000	6.8	1.7	8.0	12	120	55	0.7	42	38	37	42
21a		04/10/32	255000	6.8	1.7	8.0	12	72	55	0.7	31	28	28	31
22	Westerschelde	01/07/87	150000	9.4	3.0	10.0	12	90	46	2.8	61	58	61	61
22a		02/11/00	150000	9.4	4.0	12.0	12	220	46	2.8	111	105	107	111
23	Pungue	26/05/82	14500	2.8	5.0	9.0	12	50	31	-8.5	79	97	137	79
23a		06/08/82	14500	2.8	5.2	10.0	12	36	31	-8.5	71	86	127	71
23b		22/09/82	14500	2.8	5.2	15.0	12	26	31	-8.5	66	81	131	66
23c		29/10/82	14500	2.8	6.0	15.0	12	60	31	-8.5	105	129	197	105
23d		31/01/02	14500	2.8	6.2	19.0	12	262	31	-8.5	213	261	389	213
23e		27/02/02	14500	2.8	6.1	21.0	12	200	31	-8.5	191	234	362	191
23f		01/03/02	14500	2.8	6.7	27.0	12	150	31	-8.5	170	209	345	170
23g		26/09/80	14500	2.8	6.3	17.0	12	22	31	-8.5	62	76	127	62
23h		03/10/93	14500	2.8	5.3	11.0	12	10	31	-8.5	36	45	72	36
23i		12/10/93	14500	2.8	3.8	15.0	12	10	31	-8.5	40	49	83	40
23j		16/10/93	14500	2.8	6.4	16.0	12	10	31	-8.5	40	49	85	40
24	Incomati	05/09/82	1070	2.8	1.4	7.0	12	2	56	-19.9	41	39	37	41
24a		23/06/93	1070	2.8	1.4	8.0	12	4	56	-19.9	53	50	47	53
24b		07/07/93	1070	2.8	2.6	9.0	12	4	56	-19.9	52	49	48	52
25	Solo	26/07/88	2070	9.2	0.8	9.0	24	50	31	3.0	727	805	743	727
25a		08/09/88	2070	9.2	0.4	5.0	24	7	31	3.0	218	242	224	218
26	Eems	-	120000	3.8	3.6	15.0	12	10	31	-0.7	14	17	31	14
27	Tejo	18/08/81	100000	5.0	3.4	10.0	12	29	56	2.2	31	28	30	31
27a		21/10/81	100000	5.0	1.9	6.0	12	149	56	2.2	68	62	54	68
28	Elbe_Flanders	09/07/02	27300	9.0	3.3	10.0	12	100	32	2.0	25	28	41	25
28a		04/04/04	27300	9.0	3.7	22.0	12	211	32	2.0	51	57	92	51
28b		01/11/04	27300	9.0	3.4	10.0	12	100	32	2.0	28	31	45	28
29a	Elbe_Kuijper	09/07/02	46000	10.2	3.3	10.0	12	100	32	2.0	75	83	104	75
29b		04/04/04	46000	10.2	3.7	21.0	12	211	32	2.0	167	185	250	167
29c		01/11/04	46000	10.2	3.4	10.0	12	100	32	2.0	70	77	97	70
30a	Elbe_Savenije	09/07/02	43000	9.3	3.3	10.0	12	100	32	2.0	75	81	101	75
30b		04/04/04	43000	9.3	3.7	21.0	12	211	32	2.0	165	181	242	165
30c		01/11/04	43000	9.3	3.4	10.0	12	100	32	2.0	69	75	94	69
31a	Rompin	10/07/98	840	6.1	1.7	8.7	12	20	15	-33.4	107	167	283	107
31b		11/07/98	840	6.1	1.8	8.7	12	20	15	-33.4	100	155	265	100
31c		12/07/98	840	6.1	1.9	8.7	12	20	15	-33.4	96	150	257	96
32a	Ulu Sedili Besar	24/06/98	670	4.7	1.1	11.0	12	8	30	-25.5	160	192	252	160
32b		25/06/98	670	4.7	1.2	11.0	12	8	30	-25.5	161	193	253	161
32c		26/06/98	670	4.7	1.3	11.0	12	8	30	-25.5	170	204	266	170

Note: H_0, E_0, δ_H and Q reflect the condition at the time of observation.

Table S3. Data and results of the maximum salt intrusion length L^{HWS}

(a) Reliable Sets for Calibration													
No	**Estuary**	**Date**	**A_1 (m^2)**	**a_2 (km)**	**x_1 (m)**	**E_0 (km)**	**Q (m^3/s)**	**K Pre**	**N_r**	**L^{HWS} (km)**	**L^{HWS} [2]**	**L^{HWS} [4]**	**L^{HWS} [9]**
1a	Kurau	27/02/13	660	46	3600	9.4	50	0.35	0.4530	17	23	24	26
1b		28/02/13	660	46	3600	9.4	50	0.35	0.4765	18	23	25	26
2	Perak	13/03/13	9210	37	4000	12.5	316	0.24	0.0493	29	31	29	26
3	Bernam	21/06/12	4460	25	4300	14.0	42	0.22	0.0190	58	48	44	41
4	Selangor	24/07/12	1000	13	2800	12.7	41	0.42	0.0891	22	21	22	22
5	Muar	03/08/12	1580	100	3900	11.0	35	0.32	0.1150	51	43	42	40
6	Endau	28/03/13	2000	44	4800	10.0	54	0.33	0.2050	29	39	39	37
7	Maputo	28/04/82	4700	16	5100	13.0	25	0.32	0.0173	30	41	39	39
7a		15/07/82	4700	16	5100	7.0	8	0.32	0.0389	36	43	41	40
7b		19/04/84	4700	16	5100	13.0	120	0.32	0.0635	27	30	29	28
7c		17/05/84	4700	16	5100	13.0	50	0.32	0.0289	28	35	34	33
7d		29/05/84	4700	16	5100	13.0	40	0.32	0.0248	32	37	36	35
8	Thames (New)	07/04/49	10900	23	31000	14.0	40	0.24	0.0250	100	94	93	93
9	Corantijn	09/12/78	26800	64	18000	10.0	120	0.27	0.0237	86	73	74	78
9a		14/12/78	26800	64	18000	13.0	130	0.27	0.0095	93	71	73	78
9b		20/12/78	26800	64	18000	9.0	220	0.27	0.0445	87	58	59	61
10	Sinnamary	12/11/93	1120	39	2700	8.6	168	0.46	0.2923	10	11	11	11
10a		27/04/94	1120	39	2700	9.6	148	0.46	0.2090	12	12	12	13
10b		02/11/94	1120	39	2700	7.8	112	0.46	0.6594	17	14	15	14
10c		03/11/94	1120	39	2700	9.5	112	0.46	0.2689	14	14	15	15
11	MaeKlong	08/03/77	1100	150	3200	10.0	60	0.48	0.3871	32	25	26	25
11a		09/04/77	1100	150	3200	9.0	36	0.48	0.3335	47	28	29	29
12	Lalang	20/10/89	2880	167	0	29.0	120	0.57	0.0677	34	44	36	29
13	Limpopo	04/04/80	1140	115	20000	7.0	150	0.38	0.1406	27	26	26	26
13a		31/12/82	1140	115	20000	8.0	2	0.38	0.0264	72	99	99	103
13b		14/07/94	1140	115	20000	7.0	5	0.38	0.0665	53	68	68	69
13c		24/07/94	1140	115	20000	6.8	5	0.38	0.0881	58	72	72	72
13d		10/08/94	1140	115	20000	7.1	3	0.38	0.0515	65	85	85	86
14	Tha Chin (New)	16/04/81	1440	87	5000	12.0	55	0.31	1.2382	72	54	52	44
14a		27/02/86	1440	87	5000	20.0	40	0.31	0.0316	51	53	51	51
14b		01/03/86	1440	87	5000	14.0	40	0.31	0.7125	57	66	64	56
14c		13/08/87	1440	87	5000	15.0	39	0.31	0.0559	46	44	43	41
15	ChaoPhya	05/06/62	3100	130	12000	22.0	63	0.71	0.0963	50	54	50	44
15a		16/01/87	3100	130	12000	14.0	180	0.71	0.2913	26	28	27	25
15b		23/02/83	3100	130	12000	19.0	100	0.71	0.1981	43	44	41	36
15c		29/01/83	3100	130	12000	26.0	90	0.71	0.0894	52	54	50	45
16	Edisto	12/07/10	5150	15	2000	10.0	15	0.31	0.0366	43	41	44	48
16a		13/07/10	5150	15	2000	10.0	14	0.31	0.0312	45	41	43	48
16b		14/07/10	5150	15	2000	10.0	25	0.31	0.0580	44	38	40	44
16c		15/07/10	5150	15	2000	10.0	25	0.31	0.0579	43	38	40	44
17	Elbe_Flanders	21/09/04	27300	70	33000	18.0	200	0.27	0.0064	92	98	102	115
17a	Elbe_Kuijper	21/09/04	46000	66	0	18.0	200	0.25	0.0125	93	101	106	118
17b	Elbe_Savenije	21/09/04	43000	66	0	18.0	200	0.28	0.0122	94	91	95	107
18	Pangani	27/10/07	860	15	3100	17.0	15	0.41	0.0181	29	30	30	32
18a		11/12/07	860	15	3100	15.0	11	0.41	0.0189	25	30	30	32
19	Rembau Linggi	05/07/12	1500	8	500	8.7	26	0.36	0.2123	20	19	20	22
20	Landak	15/09/09	2000	60	0	15.0	10	0.69	0.0522	36	44	43	42

(b) Less Reliable Sets for Verification														
No	**Estuary**	**Date**	**A_1 (m^2)**	**a_2 (km)**	**x_1 (m)**	**E_0 (km)**	**Q (m^3/s)**	**K Pre**	**N_r**	**L^{HWS} (km)**	**L^{HWS} [2]**	**L^{HWS} [4]**	**L^{HWS} [9]**
21	Delaware	23/08/32	255000	41	0	8.0	120	0.09	0.0120	147	136	132	131
21a		04/10/32	255000	41	0	8.0	72	0.09	0.0072	160	145	141	141
22	Westerschelde	01/07/87	150000	27	0	10.0	90	0.10	0.0107	120	104	102	104
22a		02/11/00	150000	27	0	12.0	220	0.10	0.0159	124	97	96	96
23	Pungue	26/05/82	14500	19	0	9.0	50	0.22	0.0242	59	40	43	48
23a		06/08/82	14500	19	0	10.0	36	0.22	0.0138	65	43	47	53
23b		22/09/82	14500	19	0	15.0	26	0.22	0.0030	73	50	54	62
23c		29/10/82	14500	19	0	15.0	60	0.22	0.0067	63	44	47	55
23d		31/01/02	14500	19	0	19.0	262	0.22	0.0100	50	35	37	44
23e		27/02/02	14500	19	0	21.0	200	0.22	0.0059	47	38	41	48
23f		01/03/02	14500	19	0	27.0	150	0.22	0.0020	56	43	47	55
23g		26/09/80	14500	19	0	17.0	22	0.22	0.0017	82	53	56	65
23h		03/10/93	14500	19	0	11.0	10	0.22	0.0031	86	54	58	66
23i		12/10/93	14500	19	0	15.0	10	0.22	0.0012	86	58	61	71
23j		16/10/93	14500	19	0	16.0	10	0.22	0.0010	98	58	62	72
24	Incomati	05/09/82	1070	40	15000	7.0	2	0.34	0.0528	67	57	56	54
24a		23/06/93	1070	40	15000	8.0	4	0.34	0.0506	53	47	46	45
24b		07/07/93	1070	40	15000	9.0	4	0.34	0.0326	57	48	47	46
25	Solo	26/07/88	2070	226	0	9.0	50	0.64	3.6975	29	47	51	48
25a		08/09/88	2070	226	0	5.0	7	0.64	3.5219	39	86	93	88
26	Eems	-	120000	19	0	15.0	10	0.11	0.0002	83	91	94	106
27	Tejo	18/08/81	100000	13	0	10.0	29	0.16	0.0032	60	56	55	56
27a		21/10/81	100000	13	0	6.0	149	0.16	0.0771	50	44	43	41
28	Elbe_Flanders	09/07/02	27300	70	33000	10.0	100	0.27	0.0018	49	60	62	71
28a		04/04/04	27300	70	33000	22.0	211	0.27	0.0004	57	65	67	78
28b		01/11/04	27300	70	33000	10.0	100	0.27	0.0022	58	62	64	73
29a	Elbe_Kuijper	09/07/02	46000	66	0	10.0	100	0.25	0.0154	52	80	84	95
29b		04/04/04	46000	66	0	21.0	211	0.25	0.0046	68	87	92	107
29c		01/11/04	46000	66	0	10.0	100	0.25	0.0134	63	76	81	92
30a	Elbe_Savenije	09/07/02	43000	66	0	10.0	100	0.28	0.0151	52	71	75	85
30b		04/04/04	43000	66	0	21.0	211	0.28	0.0046	67	79	83	96
30c		01/11/04	43000	66	0	10.0	100	0.28	0.0131	61	68	72	81
31a	Rompin	10/07/98	840	110	19000	8.7	20	0.64	0.4240	43	30	34	40
31b		11/07/98	840	110	19000	8.7	20	0.64	0.3722	42	30	33	39
31c		12/07/98	840	110	19000	8.7	20	0.64	0.3515	41	29	33	39
32a	Ulu Sedili Besar	24/06/98	670	38	4300	11.0	8	0.45	0.0600	28	32	35	40
32b		25/06/98	670	38	4300	11.0	8	0.45	0.0606	29	32	35	40
32c		26/06/98	670	38	4300	11.0	8	0.45	0.0668	32	33	36	42

Table S4. Results from the regression analyses for the predictive equation of Van der Burgh's coefficient *K*.

Van der Burg's Coefficient K Regression		
K	**R^2**	***SE***
	0.72	0.11
Dimensionless ratio	***Exponent***	***SE***
Intercept	-5.10	1.97
B_f/B_1	0.30	0.12
g/C^2	0.09	0.10
E_1/H_1	0.97	0.31
h_1/b_2	0.11	0.12
H_1/h_1	1.10	0.36
λ_1/E_1	1.68	0.79

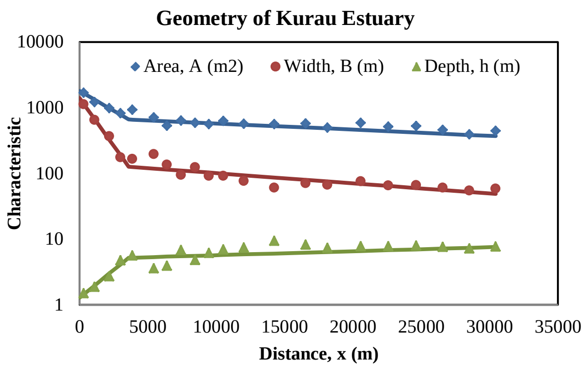
Table S5. Results from the regression analysis for the predictive equation of dispersion coefficient *D*.

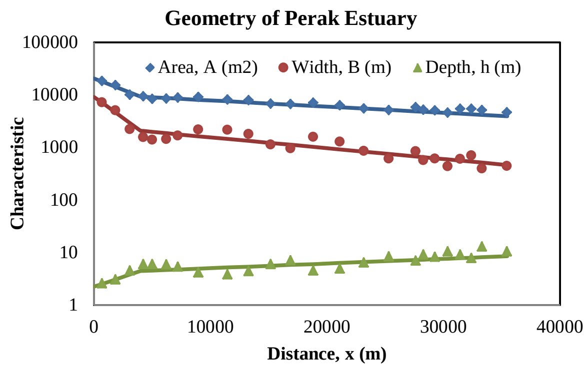
Dispersion Coefficient D_1^{TA} Regression (1/2)					
Eqn. R1	**R^2**	***SE***	**Eqn. R2**	**R^2**	***SE***
	0.67	0.33		0.84	0.14
Dimensionless ratio	***Exponent***	***SE***	***Dimensionless ratio***	***Exponent***	***SE***
Coefficient	3.33	0.11	Coefficient	-0.93	0.05
Nr_1	0.84	0.09	Nr_1	0.57	0.04
Eqn. R3	**R^2**	***SE***	**Eqn. R4**	**R^2**	***SE***
	0.84	0.14		0.86	0.13
Dimensionless ratio	***Exponent***	***SE***	***Dimensionless ratio***	***Exponent***	***SE***
Coefficient	-0.82	0.30	Coefficient	-0.40	0.21
Nr_1	0.58	0.04	Nr_1	0.57	0.04
h_1/a_2	0.03	0.07	g/C^2	0.21	0.08
Eqn. R5	**R^2**	***SE***	**Eqn. R6**	**R^2**	***SE***
	0.84	0.14		0.84	0.14
Dimensionless ratio	***Exponent***	***SE***	***Dimensionless ratio***	***Exponent***	***SE***
Coefficient	-0.55	0.51	Coefficient	-0.87	0.40
Nr_1	0.57	0.04	Nr_1	0.57	0.04
H_1/E_1	0.10	0.14	h_1/E_1	0.02	0.12
Eqn. R7	**R^2**	***SE***	**Eqn. R8**	**R^2**	***SE***
	0.84	0.14		0.84	0.14
Dimensionless ratio	***Exponent***	***SE***	***Dimensionless ratio***	***Exponent***	***SE***
Coefficient	-0.91	0.26	Coefficient	-0.94	0.07
Nr_1	0.58	0.04	Nr_1	0.58	0.04
λ_1/E_1	-0.02	0.16	λ_1/a_2	0.02	0.07
Eqn. R9	**R^2**	***SE***	**Eqn. R10**	**R^2**	***SE***
	0.80	0.15		0.86	0.13
Dimensionless ratio	***Exponent***	***SE***	***Dimensionless ratio***	***Exponent***	***SE***
Coefficient	0.29	0.14	Coefficient	-0.53	0.31
$Nr_1.g/C^2$	0.51	0.04	Nr_1	0.56	0.04
			h_1/a_2	-0.04	0.07
			g/C^2	0.23	0.09

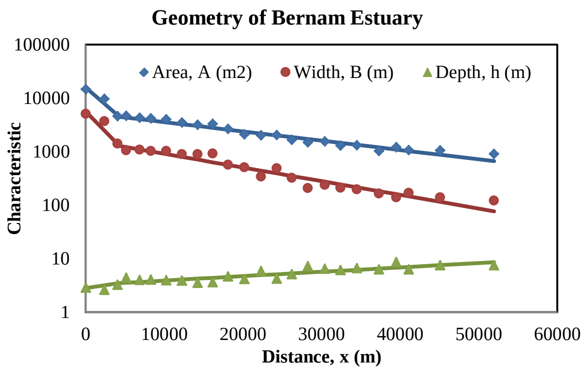
Dispersion Coefficient D_1^{TA} Regression (2/2)

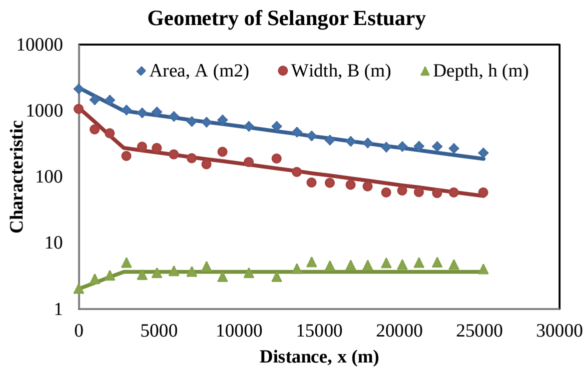
Eqn. R11	R^2	*SE*	**Eqn. R12**	R^2	*SE*
	0.86	0.13		0.86	0.13
Dimensionless ratio	***Exponent***	***SE***	***Dimensionless ratio***	***Exponent***	***SE***
Coefficient	-0.63	0.48	Coefficient	-0.37	0.23
Nr_1	0.57	0.04	Nr_1	0.57	0.04
g/C^2	0.23	0.09	g/C^2	0.22	0.08
H_1/E_1	-0.08	0.15	λ_1/a_2	-0.02	0.07
Eqn. R13	R^2	*SE*	**Eqn. R14**	R^2	*SE*
	0.86	0.13		0.71	0.19
Dimensionless ratio	***Exponent***	***SE***	***Dimensionless ratio***	***Exponent***	***SE***
Coefficient	-0.41	0.31	Coefficient	1.70	0.31
Nr_1	0.57	0.04	$Nr_1.g/C^2.H_1/E_1$	0.44	0.04
g/C^2	0.21	0.08			
λ_1/E_1	0.01	0.15			
Eqn. R15	R^2	*SE*	**Eqn. R16**	R^2	*SE*
	0.80	0.16		0.86	0.14
Dimensionless ratio	***Exponent***	***SE***	***Dimensionless ratio***	***Exponent***	***SE***
Coefficient	-0.57	0.08	Coefficient	-0.63	0.48
$Nr_1.g/C^2.\lambda_1/E_1$	0.45	0.03	Nr_1	0.56	0.04
			h_1/a_2	-0.03	0.08
			g/C^2	0.24	0.10
			H_1/E_1	-0.05	0.17
Eqn. R17	R^2	*SE*	**Eqn. R18**	R^2	*SE*
	0.03	0.35		0.17	0.32
Dimensionless ratio	***Exponent***	***SE***	***Dimensionless ratio***	***Exponent***	***SE***
Coefficient	-1.29	1.23	Coefficient	-0.24	0.57
g/C^2	0.29	0.24	g/C^2	0.31	0.20
H_1/E_1	-0.12	0.38	B_1/h_1	-0.27	0.10

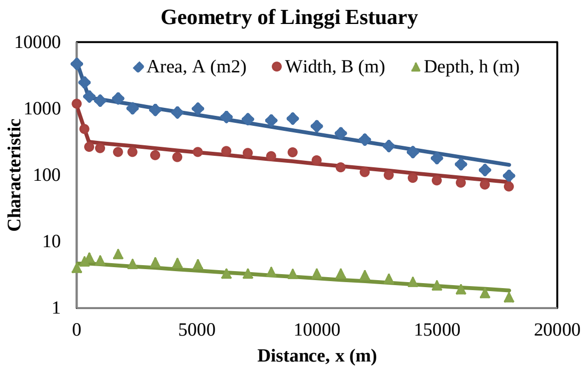
Section II (Figure)

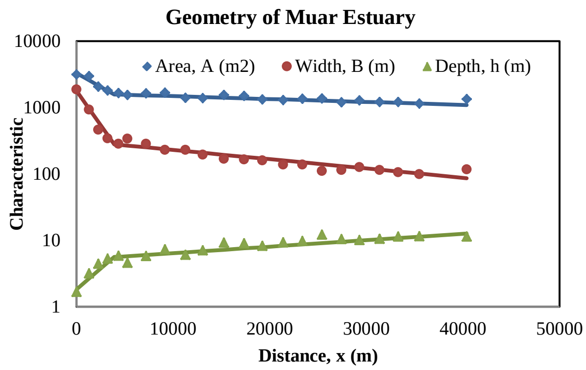


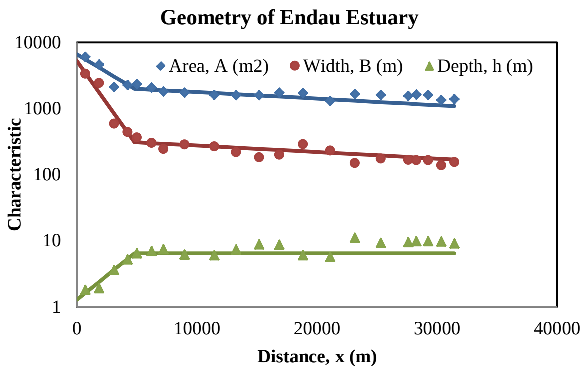


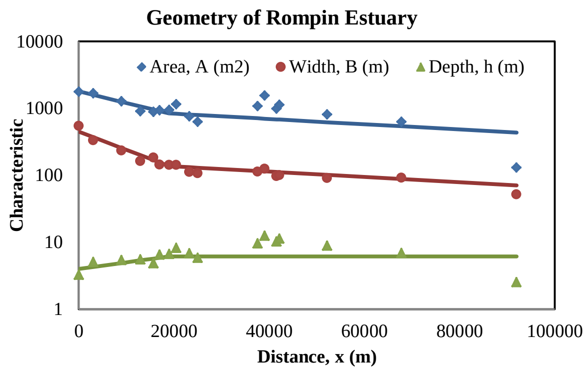


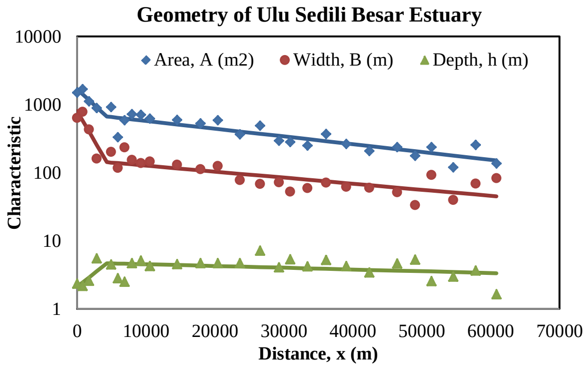


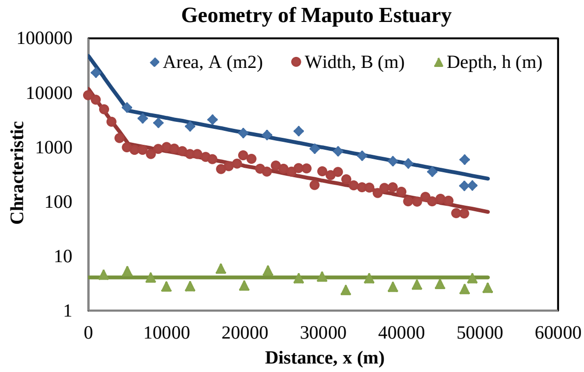


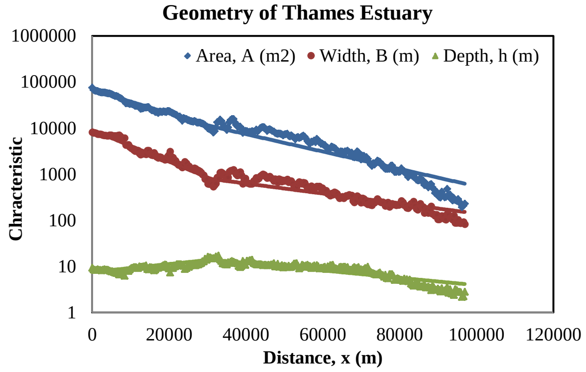


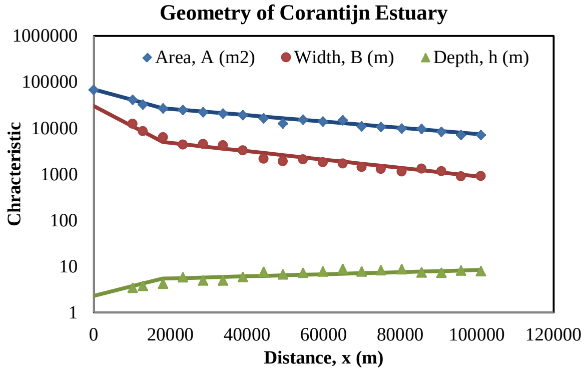


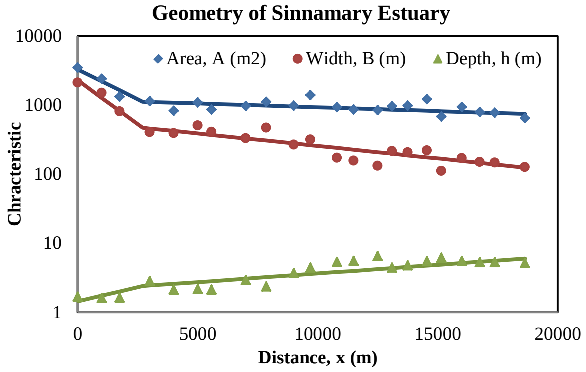


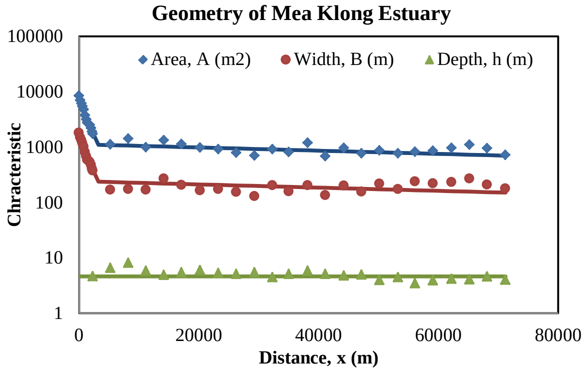

Geometry of Ulu Sedili Besar Estuary
Area, A (m2)
Width, B (m)
Depth, h (m)
Characteristic
10000
1000
100
10
1
0
10000
20000
30000
40000
50000
60000
70000
Distance, x (m)

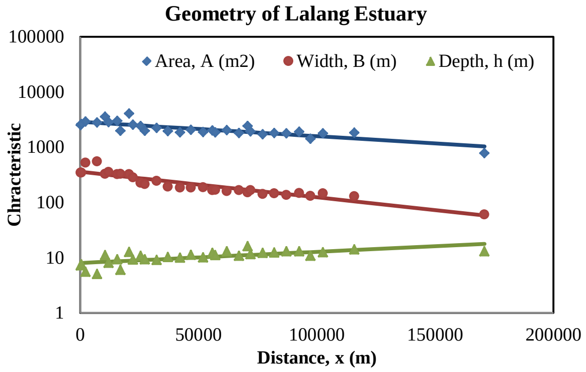

Geometry of Maputo Estuary
Area, A (m2)
Width, B (m)
Depth, h (m)
Chracteristic
100000
10000
1000
100
10
1
0
10000
20000
30000
40000
50000
60000
Distance, x (m)

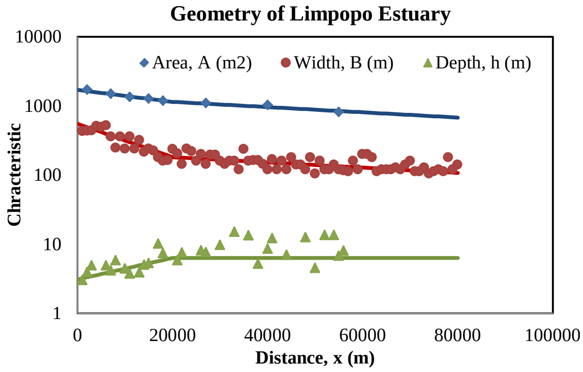

Geometry of Thames Estuary
Area, A (m2)
Width, B (m)
Depth, h (m)
Chracteristic
1000000
100000
10000
1000
100
10
1
0
20000
40000
60000
80000
100000
120000
Distance, x (m)

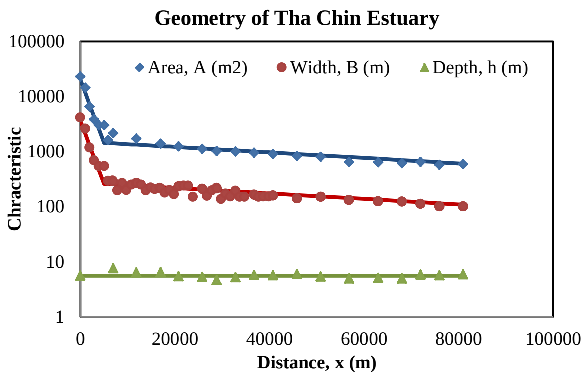

Geometry of Corantijn Estuary
Area, A (m2)
Width, B (m)
Depth, h (m)
Chracteristic
1000000
100000
10000
1000
100
10
1
0
20000
40000
60000
80000
100000
120000
Distance, x (m)

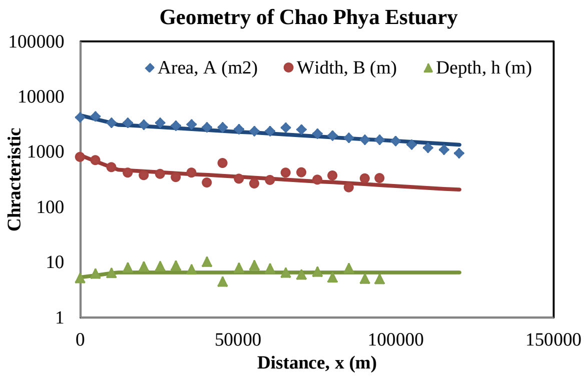

Geometry of Sinnamary Estuary
Area, A (m2)
Width, B (m)
Depth, h (m)
Chracteristic
10000
1000
100
10
1
0
5000
10000
15000
20000
Distance, x (m)

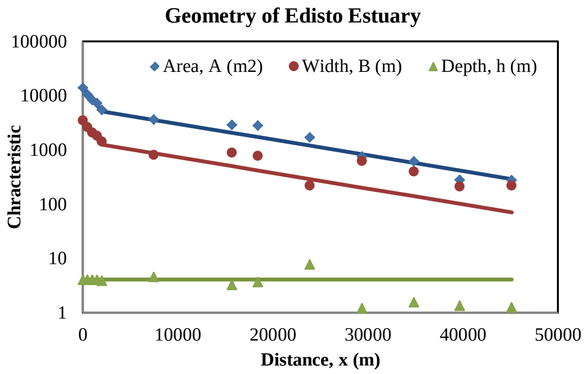

Geometry of Mea Klong Estuary
Area, A (m2)
Width, B (m)
Depth, h (m)
Chracteristic
100000
10000
1000
100
10
1
0
20000
40000
60000
80000
Distance, x (m)

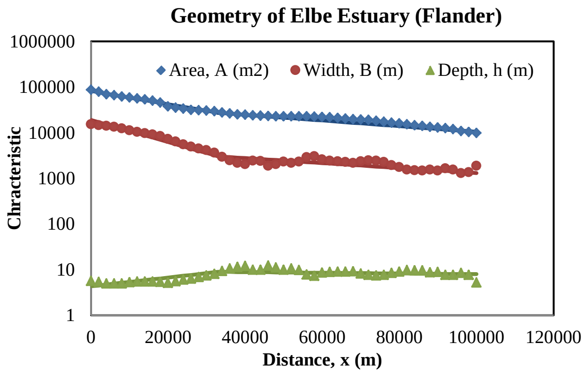

Geometry of Lalang Estuary
Area, A (m2)
Width, B (m)
Depth, h (m)
Chracteristic
100000
10000
1000
100
10
1
0
50000
100000
150000
200000
Distance, x (m)

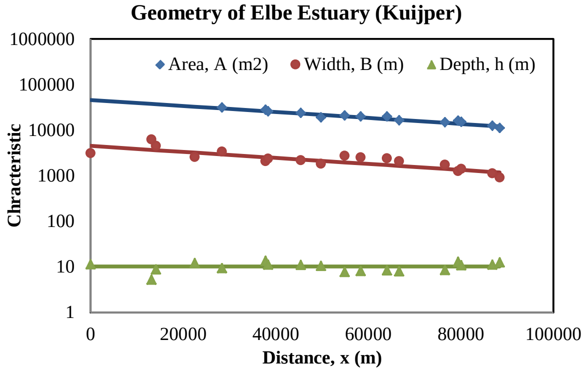

Geometry of Limpopo Estuary
Area, A (m2)
Width, B (m)
Depth, h (m)
Chracteristic
10000
1000
100
10
1
0
20000
40000
60000
80000
100000
Distance, x (m)

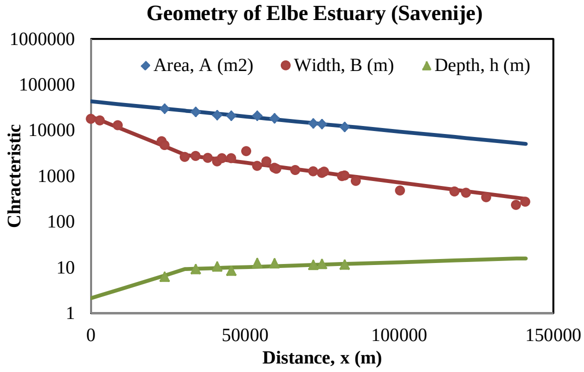

Geometry of Tha Chin Estuary
Area, A (m2)
Width, B (m)
Depth, h (m)
Chracteristic
Distance, x (m)
100000
10000
1000
100
10
1
0
20000
40000
60000
80000
100000

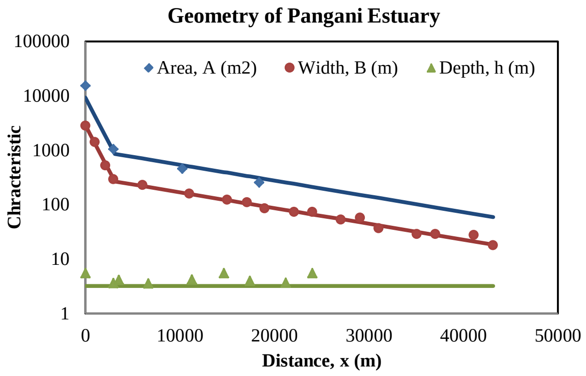

Geometry of Chao Phya Estuary
Area, A (m2)
Width, B (m)
Depth, h (m)
Chracteristic
Distance, x (m)
100000
10000
1000
100
10
1
0
50000
100000
150000

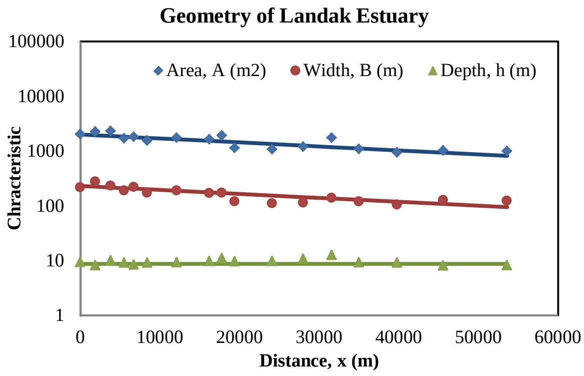

Geometry of Edisto Estuary
Area, A (m2)
Width, B (m)
Depth, h (m)
Chracteristic
Distance, x (m)
100000
10000
1000
100
10
1
0
10000
20000
30000
40000
50000


Geometry of Elbe Estuary (Flander)
Area, A (m2)
Width, B (m)
Depth, h (m)
Chracteristic
Distance, x (m)
1000000
100000
10000
1000
100
10
1
0
20000
40000
60000
80000
100000
120000


Geometry of Elbe Estuary (Kuijper)
Area, A (m2)
Width, B (m)
Depth, h (m)
Chracteristic
Distance, x (m)
1000000
100000
10000
1000
100
10
1
0
20000
40000
60000
80000
100000


Geometry of Elbe Estuary (Savenije)
Area, A (m2)
Width, B (m)
Depth, h (m)
Chracteristic
Distance, x (m)
1000000
100000
10000
1000
100
10
1
0
50000
100000
150000


Geometry of Pangani Estuary
Area, A (m2)
Width, B (m)
Depth, h (m)
Chracteristic
Distance, x (m)
100000
10000
1000
100
10
1
0
10000
20000
30000
40000
50000


Geometry of Landak Estuary
Area, A (m2)
Width, B (m)
Depth, h (m)
Chracteristic
Distance, x (m)
100000
10000
1000
100
10
1
0
10000
20000
30000
40000
50000
60000

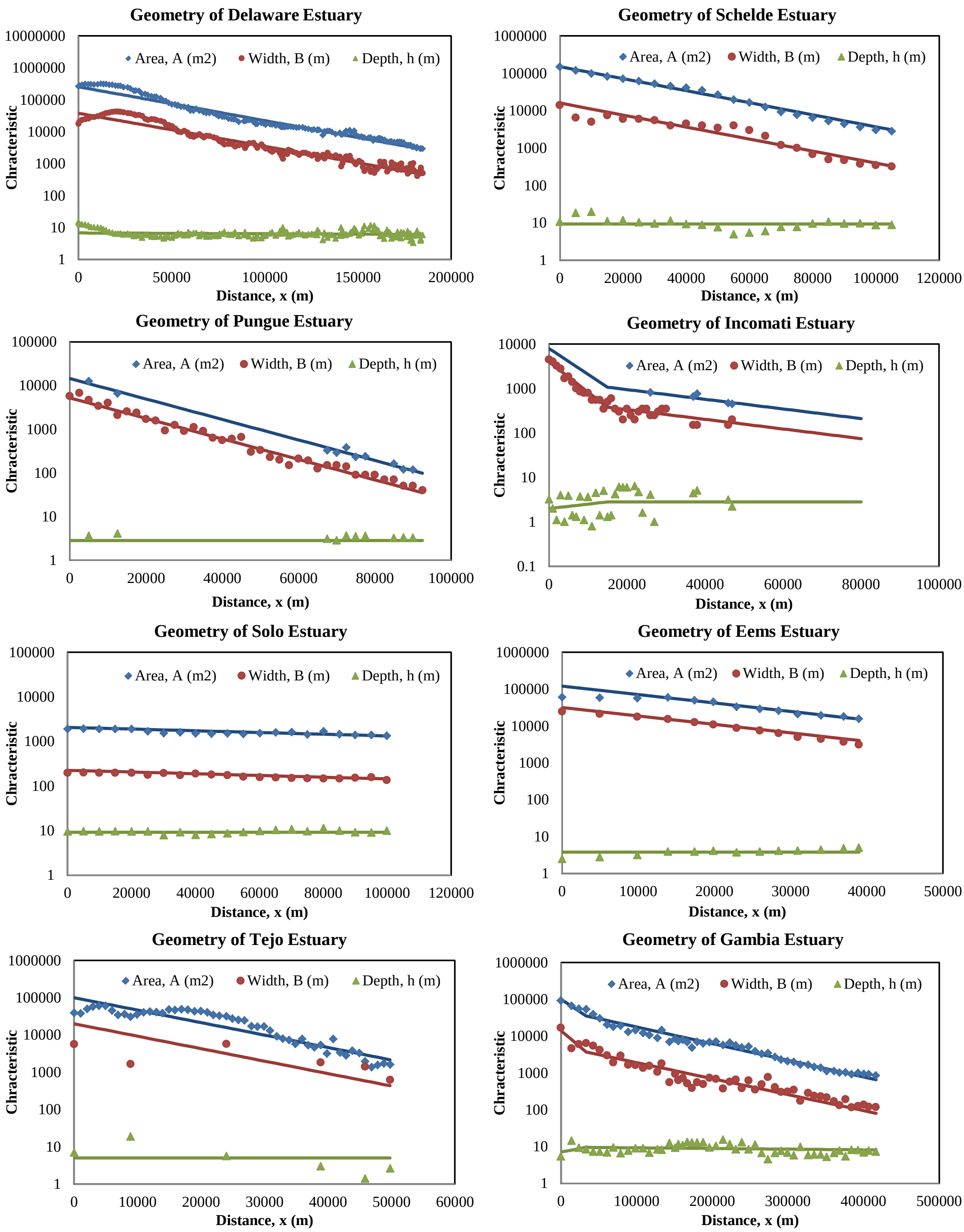


Figure S1. Compilation of the geometry analysis for the 7 newly surveyed estuaries and those collected from existing resources (mainly from Savenije (2005, 2012)).

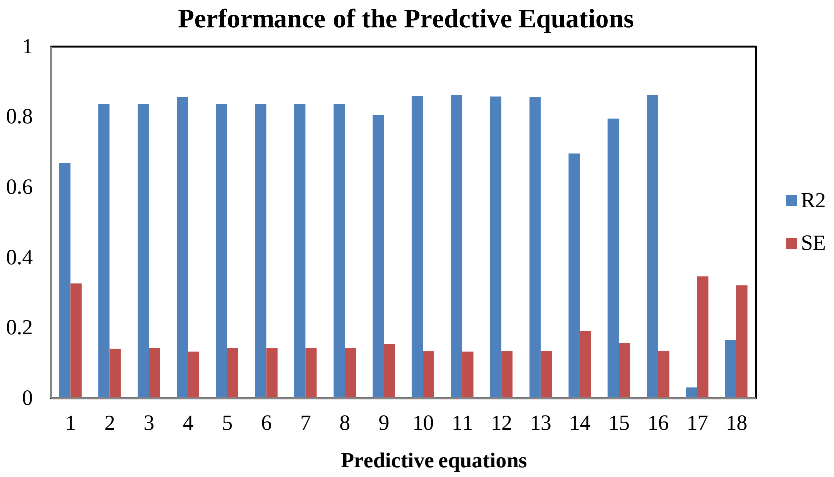


Figure S2. Chart showing the correlation coefficient R^2 and standard error *SE* for each predictive equation.