

WOODS HOLE OCEANOGRAPHIC INSTITUTION
Woods Hole, Massachusetts

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Reference No. 61-4

TABLES AND GRAPHS OF MEASUREMENTS
MADE ACROSS FOUR CAPE COD BEACHES

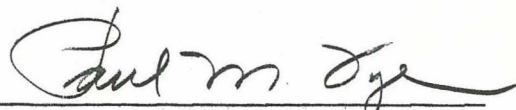
1957 - 1958

by

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APPROVED FOR DISTRIBUTION


Paul M. Fye, Director

FIGURES

- Figure 1. Index map, Cape Cod and beaches studied.
- Figure 2. Location of points measured in plan and profile at the beaches studied.
- Figure 3. Profiles across Highland Beach, December 1956 to October 1957.
- Figure 4a. Profiles across High Head Beach, January 1957 to October 1957.
- Figure 4b. Profiles across High Head Beach, January 1958 to May 1958.
- Figure 5. Profiles across Race Point Beach, January 1958 to May 1958.
- Figure 6. Profiles across New Beach, January 1958 to May 1958.

TABLES

- Table I Measurements made across Highland Beach, December 1956-May 1958. Slope of the foreshore, elevation and distance seaward from the origin of the reach, volume and volume changes are given for the same time interval.
- Table II Measurements made across High Head Beach, January 1957-May 1958. Slope of the foreshore, elevation and distance seaward from the origin of the reach, volume and volume changes are given for the same time interval.
- Table III Measurements made across Race Point Beach, January 1958-May 1958. Slope of the foreshore, elevation and distance seaward from the origin of the reach, volume and volume changes are given for the same time interval.
- Table IV Measurements made across New Beach, January 1958-May 1958. Slope of the foreshore, elevation and distance seaward from the origin of the reach, volume and volume changes are given for the same time interval.
- Table V Measurements made on the spits and bars at High Head (stakes 9 and 10) and Highland (stakes 10 and 11).

The primary purpose of this report is to present tables of measurements made across four Cape Cod beaches, (Figure 1). A report discussing the significance of these measurements has been accepted for publication (Zeigler and Tuttle, in press, The Journal of Geology). The tables were too lengthy to be included in that report, but somehow the measurements must be stored in a way that they can be distributed to those who wish to do more work with them. A second paper based on these tables is in preparation.

Discussion will be kept to a minimum in this presentation, on the assumption that persons sufficiently interested in using the tables will have read the published reports. Some of the figures from the published reports are included here also, and a bibliography of published and unpublished reports is given in Zeigler (1960), pp. 4-6.

In brief, iron pipes were driven into the beach on a line perpendicular to the shore and the elevation of their tops determined (Figure 2). Each time a beach profile was to be made, the elevation of the sand with respect to the tops of the pipes was measured. Thus, it was possible to compute the elevation of the beach at each of the measuring points by addition or subtraction. All of these beach elevations are given in Tables I, II, III, and V. Profiles from these data are given in Figures 3, 4a, 4b, 5, and 6.

For each of the profiles measured we computed the slope of the foreshore, defining the foreshore as that part of the beach between mean and mean low water. Foreshore slope values in degrees are also given in the tables.

Beach volumes were likewise computed for each profile measured. The

depth of the beach sand was considered to extend to a plane defined by mean low water, width of the beach parallel to the shore was arbitrarily chosen as one foot and the length of the beach was the measured profile itself. Total volumes and volume changes are given in the tables.

Distance of the reach from the foot of the dunes (origin stake) and the elevation of the reach are given. We define the reach as the most landward point on the beach reached by the last high tide prior to the measurement.

ACKNOWLEDGMENTS

There has been a vast amount of data processing associated with these beach measurements. A written acknowledgment cannot begin to convey our thanks to Mrs. Nancy Lander who patiently typed the thousands of numbers. Mr. Charles Innis, head of the Drafting Department and Mr. Herbert Ashmore, draftsman, provided such willing service that the writers had the timidity to ask for rather elaborate illustrations, which certainly make digestion of the tables easier.

The field work was supported entirely by the Geography Branch of the Office of Naval Research under contract number Nonr-1254 (00) (NR-388-018).

Table I Measurements made across Highland Beach, December 1956-May 1958. Slope of the foreshore, elevation and distance seaward from the origin of the reach, volume and volume changes are given for the same time interval.

Date	Highland 1956 - 1957										Foreshore		Reach		Volume	
	Elevations and Volumes										Dist.	Ave. slope	Elev. Dist.	Vol.	Vol. change	
	A	1	2	3	4	5	6	7	8	9						
Dec. 21, 1956	13.7	12.5	12.0	12.5	9.6	8.7	7.0	3.5	0.2		69	6.3		1296		
22	13.7	12.5	12.0	12.5	9.6	8.7	6.9	3.5	0.2		71	6.1		1285	-11	
23	13.7	12.5	12.0	12.5	8.5	6.6	5.6	3.2	0.2		84	5.2		1260	-25	
24	13.7	12.5	12.0	12.5	9.6	8.0	7.7	3.1	1.0		78	5.6		1300	40	
25	13.7	12.5	11.9	12.5	10.5	9.4	7.7	3.0	-0.3		59	7.3		1306	6	
26	13.7	12.6	12.1	12.6	10.5	9.4	7.2	3.6	0.5		70	6.2		1339	33	
27	13.7	12.6	12.1	12.1	10.6	9.5	7.5	3.8	0.2		66	6.6		1334	-5	
28	13.7	12.6	12.0	12.6	10.6	9.5	7.7	3.7	0.2		65	6.7		1344	10	
29	13.7	12.6	12.1	12.6	10.6	9.2	6.9	3.7	0.0		68	6.4		1317	-27	
30	13.7	12.6	12.1	12.2	8.7	7.1	5.7	2.9	1.3		102	4.3		1221	-96	
31	13.7	12.6	12.1	12.3	8.8	7.8	6.9	2.8	0.6		80	5.4		1285	64	
Jan. 1, 1957																
2	13.7	12.7	12.0	12.2	9.0	7.9	5.7	2.2	1.6		93	4.7		1195	-90	
3	13.7	12.6	12.4	12.5	9.2	8.2	4.4	1.8	1.7		95	4.6		1223	28	
4	13.7	12.6	12.0	11.9	9.1	7.5	4.9	2.5	1.9		103	4.2		1233	10	
5	13.7	12.6	12.0	12.1	9.2	7.9	5.3	3.5	1.7		98	4.4		1297	64	
6	13.7	12.6	12.0	12.1	9.2	7.6	6.7	4.5	0.9		84	5.2		1296	-1	
7	13.7	12.6	17.0	12.0	9.6	8.4	6.9	3.5			72	6.0		1291	-5	
8	13.7	12.6	12.0	12.2	9.9	8.6	7.2	3.4	0.0		67	6.5		1284	-7	
9	13.7	12.6	12.1	12.1	10.2	8.8	7.2	2.8	-0.3		63	6.9		1284	0	
10	13.7	12.6	12.1	12.1	10.2	9.0	7.4	3.3	-0.2		62	7.0		1286	2	
11	13.7	12.8	12.1	12.1	9.7	8.2	6.8	3.4	0.5		75	5.8		1286	0	
12																
13																
14	13.7	12.8	12.2	12.2	9.9	8.9	7.7	3.8	0.9		72	6.0		1340	54	
15	13.7	12.8	12.8	12.4	9.9	8.8	7.5	4.2	1.1	-4.5	73	5.9		1345	5	
16	13.7	12.8	12.3	11.6	9.1	7.8	6.5	4.4	2.1	-3.3	88	4.9		1285	-60	
17	13.7	12.8	12.8	12.5	9.8	8.5	7.2	4.1	1.9	-4.1	79	5.5		1362	77	
18	13.7	12.9	12.9	12.5	10.3	9.5	8.4	4.5	0.5	-4.2	61	7.1		1379	17	
19	13.7	12.9	12.9	12.5	10.6	9.6	8.6	4.7	0.4	-4.4	59	7.3		1417	38	
20																
21	13.7	12.9	12.9	12.5	10.5	9.6	8.6	4.7	0.6	-4.0	60	7.2		1415	-2	
22	13.7	12.8	12.9	12.5	10.6	9.6	8.6	4.6	0.7	-3.9	62	7.0		1419	4	
23	13.7	13.0	12.8	12.5	10.6	9.6	8.6	4.8	0.6	-3.8	60	7.2		1413	-6	
24	14.00	12.9	12.9	12.5	10.4	9.6	8.3	4.5	0.9	-3.9	65	6.7		1423	10	
25	14.00	12.9	12.9	12.5	10.4	9.6	8.3	5.1	0.7	-3.9	62	7.0		1429	6	
26																
27	14.0	12.8	12.8	12.5	10.4	9.6	8.5	4.4	1.2	-3.6	66	6.6		1440	11	
28	14.0	12.8	12.4	12.5	10.4	9.5	8.5	5.3	1.3	-3.5	65	6.7		1436	-4	
29	14.0	12.8	12.8	12.6	10.4	9.6	8.5	5.4	1.3	-3.5	64	6.8		1449	13	
30	14.0	12.8	12.8	12.5	10.5	9.8	8.7	4.5	0.6	-4.0	58	7.5		1424	-25	
31	14.0	12.8	12.8	12.5	10.5	10.0	9.0	5.3	0.7	-4.3	56	7.7		1458	34	
Feb. 1, 1957	14.0	12.8	12.8	12.6	10.5	10.0	9.0	5.5	1.2	-3.7	59	7.3		1469	11	
2																
3																
4	14.0	12.8	12.8	12.4	10.4	9.9	9.2				61	7.1		1479	10	
5	14.0	12.8	12.8	12.4	10.4	9.9	9.1	5.6	1.8		63	6.9		1488	9	
6	14.0	12.8	12.8	12.4	10.4	9.9	9.1	5.9	1.5	-3.2	59	7.3		1484	-4	
7	14.0	12.8	12.8	12.4	10.4	9.9	9.1	5.8	1.5	-3.2	59	7.3		1484	0	
8	14.0	12.8	12.7	12.4	10.4	9.9	9.1	6.1	1.9	-3.3	60	7.2		1498	14	
9	14.0	12.8	12.7	12.4	10.4	9.8	9.1	5.9	1.5	-3.6	58	7.5		1486	-12	
10																
11	14.0	12.8	12.7	12.5	10.5	10.2	9.8	5.4	1.7	-3.2	58	7.5		1497	11	
12	14.0	12.8	12.7	12.4	10.6	10.4	9.7	4.4	1.0	-3.6	58	7.5		1452	-45	
13	14.0	12.8	12.7	12.4	10.8	8.9	7.2	4.0	1.3	-3.4	76	5.7		1372	-80	
14	14.0	12.8	12.9	12.6	10.3	9.2	8.0	4.9	1.7	-3.0	71	6.1		1434	62	
15	14.0	13.6	13.3	12.2	9.8	8.4	7.3	4.2	1.6	-2.3	81	5.4		1378	-56	
16																
17	14.1	13.6	13.4	12.5	10.2	9.2	8.1	3.6	-0.1	-2.7	59	7.3		1369	-9	
18	14.1	13.6	13.3	12.5	10.2	9.2	8.2	3.4	0.0	-3.2	60	7.2		1370	1	
19	14.1	13.6	13.4	12.5	10.2	9.2	7.4	3.6	0.2	-3.4	69	6.3		1396	26	
20	14.1	13.6	13.4	12.5	10.2	9.2	7.4	3.3	0.7	-3.6	71	6.1		1358	-38	
21	14.1	13.6	13.4	12.5	10.3	7.8		2.0	-0.4	-3.8	69	6.3		1235	-23	
22	14.1	13.6	13.4	12.5	10.2	7.8		2.7	-0.4	-4.4	71	6.1		1280	45	
23	14.1	13.6	13.4	12.5	10.2	7.8		5.5	2.8	-0.1	74	5.9		1281	1	
24																
25	14.1	13.6	13.4	12.4	10.2	7.9		6.0	2.5	-0.2	72	6.0		1279	-2	
26	14.1	13.5	13.4	12.5	10.3	7.9		6.1	2.8	-0.2	72	6.0		1291	12	
27	14.1	13.6	13.4	12.5	10.2	7.8		6.4	3.1	-0.8	70	6.2		1306	15	
28	14.1	13.4	13.4	12.5	10.2	8.9		6.6	3.3	-0.6	65	6.7		1324	18	
Mar. 1, 1957	14.3	13.6	13.4	11.5	8.7	out		6.1	2.8	-0.3	75	5.8		1279	-46	
2																
3																
4	14.2	13.8	13.6	out	10.9			1.6	-1.2		53	8.2		1281	2	
5	14.2	13.8	13.6		10.9			6.6	1.6	-0.6	62	7.0		1276	-14	
6	14.2	13.8	13.6		10.9			6.6	2.0	-0.6	62	7.0		1280	13	
7	14.2	13.8	13.6		11.0			6.7	2.0	-0.7	56	7.7		1283	3	
8	14.20	13.74	13.79	out	10.49			6.21	1.91	-0.80	69	6.3		1266	-17	
9	14.20	13.74	13.48		9.03			6.36	2.28	-0.64	52	8.3		1227	-39	
10																
11	14.18	13.94	13.63		10.06			7.01	1.74	-0.83	70	6.2	12.7	39	1267	40

Date	A	1	2	3	4	5	6	7	8	9	Foreshore		Reach		Volume		
											Dist.	Ave. slope	Elev.	Dist.	Vol.	Vol. change	
Mar. 12, 1957	14.20	13.94	14.13		10.38		7.54	1.64	-1.14			56	7.7			1302	35
13	14.22	13.94	13.64	12.25	9.99		7.17	2.57	-1.46			60	7.2			1304	2
14	14.20	13.89	13.86	11.98	9.25		6.30	2.18	-1.74			65	6.7			1249	-55
15	14.20	13.89	13.88	12.53	10.22		7.01	2.18	-1.74			57	7.6			1301	52
16																	
17																	
18	14.20	13.84	13.86	12.82	10.72		7.36	2.58	-1.25			61	7.1			1356	55
19	14.20	13.84	13.89	12.90	10.74		7.23	2.56	-1.14			60	7.2			1339	-17
20	14.21	13.74	13.86	12.87	9.80		6.31	3.38	-0.24			55	7.9			1329	-10
21	14.26	12.69	14.11	12.02	9.20		6.84	3.60	0.44			82	5.3	12.7	19	1318	-11
22	14.20	12.79	14.61	12.07	9.85		6.61	2.47	-0.94			67	6.5			1281	-37
23																	
24																	
25	14.20	13.74	13.86	12.02	9.99		6.54	2.60	-0.03			75	5.8			1297	16
26	14.20	13.74	13.76	12.07	10.08		6.63	2.83	-0.09			75	5.8			1336	39
27	14.20	13.74	13.71	12.08	10.05		6.79	3.06	-0.44			70	6.2			1313	-23
28	14.20	13.74	13.71	12.02	10.08		7.07	2.70	-0.84			59	7.3			1303	-10
29	14.20	13.74	13.71	12.03	10.07		7.31	2.64	-1.10			65	6.7			1308	5
30																	
31																	
April 1, 1957	14.20	13.74	13.76	12.07	10.08		7.13	2.30	-0.92			65	6.7			1296	-12
2	14.20	13.74	13.76	12.01	10.10		7.19	2.46	-0.96			65	6.7			1304	8
3	14.20	13.74	13.76	12.11	9.97		6.76	2.67	-0.80			70	6.2			1299	-5
4	14.20	13.74	13.76	12.12	9.90		6.36	2.82	-0.65			72	6.0			1292	-7
5	14.20	13.74	13.76	12.07	9.97		6.38	2.81	-0.70			73	5.9			1292	0
6	14.70	14.34	14.11	12.09	9.83		6.43	1.25	-1.89			60	7.2			1256	-36
7																	
8	14.70	14.34	14.11	12.17	9.94		6.24	1.48	-2.30			61	7.1			1259	3
9	14.70	14.34	14.11	11.42	out		5.46	1.57	-2.06			65	6.7			1201	-58
10	14.70	14.34	14.11	11.48			5.71	1.31	-2.24			65	6.7			1204	3
11	14.70	14.34	14.11	11.37			5.61	1.19	-2.25			67	6.5			1195	-9
12	14.70	14.34	14.11	11.41	8.10		5.56	1.21	-2.04			70	6.2			1136	-59
13																	
14																	
15	14.70	14.34	14.11	11.47	9.18		6.55	1.70	-2.08			60	7.2			1245	109
16	14.70	14.34	14.11	11.48	9.36		6.36	1.58	-2.34			57	7.5			1239	-6
17	14.70	14.34	14.11	11.47	9.26		6.60	1.61	-2.24							1245	6
18	14.70	14.34	14.11	11.48	9.35		6.16	1.18	-2.34			60	7.2			1223	-22
19	14.70	14.34	14.11	11.47	9.41		6.34	1.53	-2.43							1238	15
20	14.70	14.34	14.11	11.47	9.40		6.31	1.08	-2.50			60	7.2	14.3	19	1233	-5
21	14.70	14.34	14.11	11.47	9.42		5.98	1.20	-2.59					8.0	81	1219	-14
22	14.70	14.34	14.11	11.39	9.38		5.88	1.06	-2.60			59	7.3			1211	-8
23	14.70	14.34	14.11	11.51	9.35		5.91	0.85	-2.58			60	7.2			1209	-2
24																	
25	14.70	14.34	14.11	11.55	9.35		5.82	0.94	-2.99			57	7.6			1208	-1
26	14.70	14.34	14.11	11.51	9.39		5.84	0.70	-2.26			60	7.2	13.9	33	1204	-4
27	14.70	14.34	14.11	11.50	9.40		5.86	0.70	-2.56			59	7.3			1204	0
28	14.70	14.34	14.11	11.48	9.35		5.76	1.08	-2.64			62	7.0			1209	5
29	14.70	14.34	14.11	11.48	7.35		5.60	0.48	-2.72			70	6.2			1149	-60
30																	
31	14.70	14.34	14.11	11.47	8.91		5.67	0.35	out			52	8.3			1180	31
May 1, 1957	14.70	14.34	14.11	11.51	9.11		5.66	0.90	-3.43			57	7.6			1197	17
2	14.70	14.34	14.11	11.52	8.90		5.10	-0.54				51	8.5			1150	-47
3	14.70	14.34	14.11	11.54	8.16		4.57	-0.30	-4.12							1124	-26
4	14.70	14.34	14.11	11.55	6.20		4.02	-0.05	-4.00			68	6.4			1071	-53
5	14.70	14.34	14.11	7.57	5.06		3.63	0.85	-3.53			85	5.1			975	-96
6	14.70	14.34	14.11	6.65	6.73		4.61	0.75	-3.93			92	4.7			1006	31
7	14.70	14.34	14.11	6.97	6.75		4.81	0.46	-3.29			90	4.8			1023	17
8	14.70	14.34	14.11	7.31	6.77		4.70	0.45	-3.35			82	5.3			1027	4
9	14.70	14.34	14.11	6.72	6.48		5.03	0.10	-3.53			82	5.3			1012	-15
10	14.70	14.34	14.11	6.81	7.35		4.74	0.20	-3.90			87	5.0			1025	13
11	14.70	14.34	14.11	7.37	7.60		3.86	1.08	-3.68			87	5.0			1035	10
12	14.70	14.34	14.11	8.27	7.35		4.71	0.26	-3.52			72	6.0			1055	20
13	14.70	14.34	14.11	7.73	7.45		4.94	0.20	-3.97			72	6.0			1051	-4
14	14.70	14.34	14.11	7.97	7.54		3.76	0.08	-4.31			72	6.0			1022	-29
15	14.70	14.34	14.11	8.07	7.56		5.11	0.36	-4.15							1069	47
16	14.70	14.34	14.11	7.95	7.48		5.16	0.45	-4.03			75	5.8			1067	-2
17	14.70	14.34	14.11	8.12	7.35		5.13	0.53	-3.13			67	6.5			1069	2
18	14.70	14.34	14.11	8.37	7.46		5.22	out	-3.98							1075	6
19	14.70	14.34	14.11	8.35	7.50		5.34	0.86	-4.44			70	6.2			1090	15
20	14.70	14.34	14.11	9.07	7.50		5.20	0.24	-4.65			77	5.6			1087	-3
21	14.70	14.34	14.11	9.12	7.55		4.66	-0.23	out			65	6.7			1066	-21
22	14.70	14.34	14.11	8.97	7.40		5.34	-2.22				50	8.6			1056	-10
23	14.70	14.34	14.11	8.97	7.46		4.43	-0.26	-3.54			70	6.2			1054	-2
24	14.70	14.34	14.11	8.97	7.35		4.34	-0.50	-3.62			62	7.0			1046	-8
25	14.70	14.34	14.11	8.97	5.65		gone	-2.30				52	8.3			984	-62
26	14.70	14.34	14.11	10.45	5.55		3.46	-2.10				57	7.6			999	15
27	14.70	14.34	14.11	10.83	7.27		4.56	-0.82				67	6.5			1084	85
28	14.70	14.34	14.11	10.98	7.90		5.11	-0.50				55	7.9			1118	34
29																	
30	14.70	14.34	14.11	10.99	8.46		5.87	0.32				60	7.2			1166	48
31	14.70	14.34															

Date	A	1	2	3	4	5	6	7	8	9	Foreshore		Volume		
											Dist.	Ave. slope	Vol.	Vol. change	
May 30, 1957															
31	14.70	14.34	14.11	10.97	8.68		6.36	1.27				62	7.0	1206	-11
June 1, 1957	14.70	14.34	14.11	10.97	8.70		6.26	1.22				60	7.2	1202	- 4
2															
3	14.70	14.34	14.11	10.96	8.80		6.01	1.45				65	6.7	1203	1
4	14.70	14.34	14.11	10.98	8.80		6.18	1.55				62	7.0	1212	9
5	14.70	14.34	14.11	10.97	8.81		6.88	1.61				60	7.2	1232	20
6	14.70	14.34	14.11	10.98	8.84		7.19	1.80				55	7.9	1245	13
7	14.70	14.34	14.11	10.97	8.82		7.19	1.75				57	7.6	1244	- 1
8															
9															
10	14.70	14.34	14.11	10.99	8.87		7.14	2.15				45	9.6	1258	14
11	14.70	14.34	14.11	11.05	8.86		7.13	2.15				60	7.2	1259	1
12	14.70	14.34	14.11	10.97	8.86		7.30	2.53				62	7.0	1291	32
13	14.70	14.34	14.11	10.97	9.90		7.66	2.60	-1.91			62	7.0	1308	17
14	14.70	14.34	14.11	10.94	9.21		8.30	2.46				50	8.6	1304	- 4
15															
16															
17															
18	14.70	14.34	14.11	11.01	9.44		8.71	2.75				50	8.6	1337	33
19	14.70	14.34	14.11	10.99	9.44		8.94	2.84				50	8.6	1339	2
20	14.70	14.34	14.11	10.97	9.43		8.87	2.90				48	9.0	1338	- 1
21	14.70	14.34	14.11	11.02	9.44		8.96	2.85				50	8.6	1341	3
22															
23															
24	14.70	14.34	14.11	10.96	9.45		8.96	3.10				55	7.9	1350	9
25	14.70	14.34	14.11	10.97	9.43		8.88	3.16				54	8.0	1350	0
26	14.70	14.34	14.11	10.95	9.40		9.09	2.90				47	9.2	1344	- 6
27	14.70	14.34	14.11	10.93	9.41		9.10	3.00				48	9.0	1347	3
28															
29															
30															
July 1, 1957	14.70	14.34	14.11	10.89	10.39		9.26	3.26				52	8.3	1381	34
2	14.70	14.34	14.11	10.92	10.52		8.99	2.67				50	8.6	1356	-25
3	14.70	14.34	14.11	10.95	10.56		buried	2.90				45	9.6	1403	47
4															
5															
6															
7															
8	14.70	14.34	14.11	10.99	10.56			3.57				46	9.4	1450	47
9															
10	14.70	14.34	14.11	11.02	10.58			3.60				45	9.6	1454	4
11	14.70	14.34	14.11	10.89	10.60			3.23				47	9.2	1425	-29
12															
13															
14															
15	14.70	14.34	14.11	10.93	10.60		buried	3.78				50	8.6	1466	41
16	14.70	14.34	14.11	11.08	10.58			3.72				50	8.6	1464	- 2
17	14.70	14.34	14.11	11.13	10.62		9.96	3.87				50	8.6	1432	-32
18	14.70	14.34	14.11	11.08	10.59		10.11	3.98				52	8.3	1445	13
19	14.70	14.34	14.11	11.05	10.60		10.01	4.08				44	9.8	1441	- 4
20															
21															
22	14.70	14.34	14.11	11.12	10.61		10.06	4.17				52	8.3	1448	7
23	14.70	14.34	14.11	11.05	9.63		9.76	4.40				52	8.3	1433	-15
24	14.70	14.34	14.11	11.07	9.65		9.89	4.24				56	7.7	1430	- 3
25	14.70	14.34	14.11	11.08	10.60		10.06	3.35				42	10.3	1412	-18
26	14.70	14.34	14.11	11.02	10.60		9.96	2.83				41	10.5	1389	-23
27															
28															
29															
30															
31	14.70	14.34	14.11	11.17	11.15		9.56	2.56				45	9.6	1409	20
August 1, 1957	14.70	14.34	14.11	11.20	11.35		9.56	2.44				43	10.0	1386	-23
2	14.70	14.34	14.11	10.92	11.40		9.71	2.62				42	10.3	1391	5
3															
4															
5	14.70	14.34	14.11	10.81	11.40		9.81	2.66				50	8.6	1379	-12
6															
7	14.70	14.34	14.11	11.00	11.36		9.94	2.62				52	8.3	1398	19
8	14.70	14.34	14.11	10.97	11.45		8.98	2.55				55	7.9	1372	-26
9	14.70	14.34	14.11	11.02	11.47		9.72	2.64				52	8.3	1395	23
10															
11															
12	14.70	14.34	14.11	10.97	11.36		9.71	2.85				55	7.9	1399	4
13	14.70	14.34	14.11	10.92	11.43		10.16	2.45				42	10.3	1399	0
14	14.70	14.34	14.11	10.99	11.40		9.81	3.35				57	7.6	1404	5
15	14.70	14.34	14.11	11.03	11.45		9.96	3.44				62	7.0	1429	25
16	14.70	14.34	14.11	11.02	11.45		9.56	3.35				60	7.2	1416	-13
17															
18															
19	14.70	14.34	14.11	11.01	11.41		9.61	3.83				61	7.1	1437	21
20	14.70	14.34	14.11	10.92	11.43		9.56	3.80				62	7.0	1434	- 3

Date	A	1	2	3	4	5	6	7	8	9	Foreshore		Reach		Volume	
											Dist.	Ave. slope	Elev.	Dist.	Vol.	Vol. change
August 21, 1957	14.70	14.34	14.11	11.05	11.40		10.06	2.58				50	8.6		1402	-32
22	14.70	14.34	14.11	11.02	11.48		8.59	1.99				55	7.9		1346	-56
23	14.70	14.34	14.11	10.98	11.48		8.67	2.14				57	7.6		1351	5
24																
25																
26	14.70	14.34	14.11	11.50	11.59		8.83	2.23				57	7.6		1371	20
27	14.70	14.34	14.11	11.52	11.85		9.46	3.15				59	7.3		1425	54
28																
29	14.70	14.34	14.11	11.43	11.98		8.86	3.10				65	6.7		1409	-16
30	14.70	14.34	14.11	11.37	11.90		9.02	3.30				62	7.0		1418	9
31																
Sept. 1, 1957	14.70	14.34	14.11	11.47	11.90		9.21	3.70				55	7.9		1442	24
2																
3																
4	14.70	14.34	14.11	11.45	11.78		9.11	3.78							1441	-1
5	14.70	14.34	14.11	11.47	11.85		9.11	3.95				72	6.0		1450	9
6																
7																
8	14.70	14.34	14.11	11.47	11.80		9.26	4.08				74	5.9		1469	8
9	14.70	14.34	14.11	11.45	11.85		9.36	4.20				75	5.8		1472	11
10	14.70	14.34	14.11	11.44	11.82		9.36	4.27				68	6.4		1483	3
11	14.70	14.34	14.11	11.47	11.78		9.66	4.37				72	6.0		1483	11
12	14.70	14.34	14.11	11.42	11.69		9.61	4.45				80	5.4		1379	-4
13																
14																
15																
16																
17																
18																
19																
20																
21																
22																
23	14.70	14.34	14.11	11.41	12.30		10.51	4.47				62	7.0		1543	64
24																
25	14.70	14.34	14.11	11.67	13.10		10.86	4.70				57	7.6		1553	10
26																
27	14.70	14.34	14.11	11.79	buried		6.71	2.38				74	5.9		1521	-32
28	14.70	14.34	14.11	11.96	buried		9.04	2.34				55	7.9		1638	17
29																
30	14.70	14.34	14.11	11.97	12.73		8.65	3.65				70	6.2		1455	-183
Oct. 1, 1957	14.70	14.34	14.11	11.99	12.93		8.84	3.88				72	6.0		1476	21
2	14.70	14.34	14.11	11.86	13.05		9.96	4.70				67	6.5		1541	65
3																
4																
5																
6	14.70	14.34	14.11	11.97	11.52		7.81	2.90				75	5.8		1378	-163
7	14.70	14.34	14.11	11.97	9.82		6.89	2.84				85	5.1		1319	-59
8	14.70	14.34	14.11	11.37	12.60		6.56	2.37				82	5.3		1337	18
Jan. 2, 1958	14.80	14.36	13.92	12.19	11.89		11.06	6.39	1.81	-2.54		62	7.0		1645	
3	14.80	14.36	13.92	12.13	11.89		11.22	6.54	1.72	-3.04		62	7.0		1653	8
4	14.80	14.36	13.92	12.15	11.93		11.11	4.87	1.59	-2.19		77	5.6		1608	-45
6	14.80	14.36	13.92	12.20	11.94		11.08	6.01	1.45	-3.54		66	6.6		1620	20
7	14.80	14.36	13.92	12.10	11.94		11.12	6.29	1.45	-3.85		61	7.1	8.5	87	1626
8	14.80	14.36	13.92	12.27	11.80		8.41	4.31	1.44	-1.83		87	5.0	11.7	73	
9	14.80	14.36	13.92	12.76	11.06		8.77	5.29	1.10	-2.68		85	5.1	15.3	-6	1523
10	14.80	14.36	13.92	13.94	11.27		8.34	4.57	0.47	-2.89		82	5.3	13.7	31	1479
11	14.80	14.36	13.92	13.04	11.69		9.21	4.84	-0.53	-3.89		62	7.0	14.5	83	1507
13	14.80	14.36	13.92	13.04	11.69		8.26	4.04	-0.73	-4.24		67	6.5	11.4	75	1452
14	14.80	14.36	13.92	12.99	11.69		8.26	3.99	-0.58	-4.14		70	6.2	11.4	74	1453
15	15.00	14.36	13.92	11.52	8.50		6.56	4.09	0.24	-1.69		110	4.0	15.3	-6	1330
16	14.90	14.36	13.92	11.49	8.79		6.56	4.61	0.41	-1.57		112	3.9	14.5	16	1345
17	15.00	14.36	14.22	12.63	10.31		8.11	5.37	-0.34	-2.19		70	6.2	15.0	0	1465
18	15.00	14.36	14.22	12.55	10.45		8.24	5.29	-0.48			75	5.8	13.9	35	1470
20	15.00	14.36	14.22	12.90	11.69		8.25	4.15	-0.43			77	5.6	13.4	38	1460
21	15.00	14.36	14.22	12.99	10.51		7.81	4.33	-1.27	-3.30		72	6.0	13.3	40	1428
22	15.00	14.36	14.22	12.96	10.69		7.91	4.43	-1.29			74	5.9	14.4	21	1438
23	15.00	14.36	14.22	13.00	10.59		8.06	4.35	-1.29			80	5.4	11.6	66	1438
24	15.00	14.36	14.22	12.99	10.38		6.75	2.29	-3.47			69	6.3	13.2	50	1327
25	15.00	14.36	14.22	12.94	8.79		5.72	2.25	-2.93			82	5.3	8.9	73	1267
26	15.60	13.86	14.42	11.94	9.01		7.34	2.29	-2.13			67	6.5	16.0	-5	1300
27	15.60	13.86	14.52	12.34	9.68		7.46		0.27			62	7.0	13.5	40	1395
28	15.60	13.86	14.52	12.44	10.34		8.11		0.88			54	8.0	14.5	32	1457
29	14.90	13.86	14.40	12.64	10.55		7.98	4.30		-3.04		75	5.8			1479
30	14.90	13.66	14.42	12.75	10.59		7.84	3.70	-0.40			79	5.5	14.2	28	

Date	A	1	2	3	4	6	7	8	9	Foreshore		Reach		Volume	
										Dist.	Ave. slope	Elev.	Dist.	Vol.	Vol. change
Jan. 31, 1958	14.90	13.66	14.42	12.75	10.59	7.70	3.20	-1.10		75	5.8	13.1	36	1382	
Feb. 1, 1958	14.90	13.66	14.42	12.35	9.40	7.03	3.29	-0.19		82	5.3	14.0	8	1342	-40
3	15.00	13.96	14.48	12.33	10.07	7.54	3.17	-0.35	-4.14	82	5.3	14.0	8	1371	29
4	15.00	13.96	14.48	12.64	10.16	7.42	3.06	-0.65	-4.04	69	6.3	13.6	48	1369	-2
5	15.00	13.96	14.48	12.64	9.91	6.66	2.00	0.01		75	5.8	13.1	52	1319	-50
6	15.00	13.96	14.48	12.64	10.23	7.44	1.98	-0.60	-4.20	65	6.7	14.3	27	1338	19
7	15.00	13.96	14.48	12.54	10.27	7.47	3.00	-0.51		67	6.5	10.8	68	1370	32
9	15.00	13.96	14.48	12.79	9.59	6.46	1.60	-0.77	-3.54	70	6.2	12.8	54	1290	-80
10	15.00	13.96	14.48	12.77	9.71	7.01	3.08	-1.00		67	6.5			1344	59
11	15.00	13.96	14.48	12.67	9.74	7.25	3.07	-0.70	-4.42	68	6.4			1357	8
12	15.00	14.46	14.30	12.64	9.74	7.33	3.38	-0.17		69	6.3			1380	23
13	15.00	14.46	14.30	12.64	9.78	7.64	3.58	-0.20		67	6.5	10.4	62	1395	15
14	15.00	14.46	14.30	12.66	9.96	6.82	3.40	0.46	-2.74	75	5.8	12.0	57	1381	-14
15	15.00	14.46	14.30	12.86	10.10	7.00	3.87	1.36	-1.65	90	4.8	6.4	100	1441	61
16	15.00	14.46	14.30	11.24	8.57	7.01	4.42	0.80	0.11	125	3.5	14.8	8	1377	-64
17	15.00	14.46	14.30	11.29	9.44	8.63	4.38	-0.05	-1.46	62	7.0	10.5	62	1410	23
18	15.00	14.46	14.30	11.29	9.54	8.64	4.48	0.15	-2.52	59	7.3	10.0	68	1411	1
20	15.00	14.46	14.30	11.30	9.59	8.64	4.94	1.17	-1.37	78	5.6	9.3	87	1415	4
21	15.00	14.46	14.30	11.30	9.55	8.70	4.55	1.65	-0.29	94	4.6	9.2	90	1465	50
24	15.00	14.46	14.30	11.34	9.53	8.69	4.90	1.82	-0.38	92	4.7	6.8	109	1479	14
25	15.00	14.30	14.30	11.34	9.40	8.64	5.48	2.12	-1.04	84	5.2	7.3	104	1499	20
26	15.00	14.46	14.30	11.19	9.40	8.76	5.82	2.05	1.00	130	3.3	7.0	112	1507	8
27	15.00	14.46	14.30	11.19	9.40	8.76	6.56	2.50	-1.58	75	5.8	8.8	94	1536	29
28	15.00	14.46	14.30	11.44	9.77	9.34	5.85	1.75	-2.02	69	6.3	14.4	27	1528	-8
Mar. 1, 1958	15.00	14.46	14.30	11.39	10.69	10.04	5.35	0.55	-1.96	57	7.6	12.5	51	1539	11
2	15.00	14.46	14.30	11.43	11.15	9.52	5.30	0.76	-2.29	60	7.2	14.4	27	1518	-21
3	15.00	14.46	14.30	11.72	11.55	10.01	4.82	-0.19		50	8.6	13.0	43	1510	-8
5	15.00	14.46	14.30	11.74	11.64	10.26	5.00	-0.09		52	8.3	13.8	43	1529	19
8	15.00	14.46	14.30	11.82	11.71	7.61	4.10	-3.20		56	7.7	11.3	77	1389	-140
10	15.00	14.46	14.30	11.85	11.79	9.60	3.95	-1.15	-3.39	50	8.6	14.3	31	1470	81
11	15.00	14.46	14.30	11.93	11.74	9.35	3.82	-1.10	-3.56	51	8.5			1458	-12
12	15.00	14.46	14.30	11.94	11.79	9.76	4.38	-1.01		50	8.6	13.2	42	1485	27
13	15.00	14.46	14.30	11.90	11.75	10.14	4.90	-0.80	-3.60	48	9.0	14.3	31	1517	32
14	15.00	14.46	14.30	12.05	11.84	10.14	4.46	-0.45		50	8.6	14.0	33	1512	-5
15	15.00	14.46	14.30	12.52	10.08	8.21	4.15	-1.10		59	7.3	13.4	42	1420	-92
17	15.00	14.36	14.32	12.52	11.03	9.41	5.13	-0.45	-2.48	51	8.5	14.4	19	1507	87
18	15.00	14.36	14.32	12.56	11.07	9.56	4.90	0.10	-1.93	60	7.2	13.2	43	1511	4
20	15.00	14.36	14.32	12.64	11.27	9.26	5.46	0.69	-0.34	75	5.8	13.4	42	1542	31
21	15.00	14.36	14.42	12.36	10.21	8.77	5.29	-0.33	-0.24	59	7.3	13.5	25	1469	-73
22	15.00	14.36	14.47	12.40	10.79	9.42	5.72	-0.61	-0.50	49	8.8	13.5	25	1510	41
24	15.00	14.36	14.47	12.50	10.95	9.85	5.56	-1.07	-1.79	42	10.3	13.6	41	1524	14
25	15.00	14.36	14.47	12.47	10.95	9.98	6.09	-1.35	-2.46	43	10.0	11.7	64	1544	20
26	15.00	14.36	14.47	12.49	10.95	10.01	6.35	-1.58	-2.69	38	11.3	11.3	68	1548	6
27	15.00	14.36	14.47	12.52	11.13	8.76	4.37	-2.45		51	8.5	13.5	42	1453	3
28	15.00	14.36	14.52	12.18	9.72	8.00	3.40	-3.35		47	9.2	14.4	25	1366	-87
31	15.00	14.36	14.64	12.84	9.09	8.01	1.77	0.22		69	6.3	14.6	29	1345	-21
Apr. 1	15.00	14.36	14.62	12.90	9.01	7.48	0.80	1.07		87	5.0	13.4	51	1321	-24
2 a.m.	15.00	14.36	14.62	11.16	9.05	8.58	5.10	-1.35		55	7.9	14.2	0	1410	89
2 p.m.	16.20	13.71	12.55	9.64	8.16	5.92	3.42	-3.15				14.9	-10	1187	-223
3 a.m.	16.20	13.46	12.07	10.38	7.91	5.86	4.10	-3.25		80	5.4	14.5	-6	1225	38
3 p.m.	16.10	13.76	11.79	9.74	8.47	6.14	3.00	-3.35	-2.04					1183	-42
4 a.m.	16.35	13.86	13.92	12.44	7.79	7.93	2.78	-0.85		92	4.7	15.5	-15	1316	-133
4 p.m.	16.35	13.71	12.57	10.12	8.49	6.26	2.28	-3.85	-2.98					1189	-127
5	16.35	13.81	12.92	9.96	9.61	6.84	3.00	-4.05	-3.61	60	7.2			1252	63
7	16.35	13.81	12.92	11.86	10.34	6.76	3.06	-0.06		72	6.0			1329	77
8	16.35	13.86	12.07	12.32	10.98	7.51	3.00		-4.26	70	6.2	14.5	17	1354	25
9	16.35	13.86	13.02	12.29	10.95	7.65	3.10		-3.74	72	6.0	13.0	31	1380	26
10	16.35	13.86	13.02	12.29	10.95	7.64	3.18		-3.99	75	5.8	8.4	90	1385	5
11	16.35	13.86	13.02	12.29	11.39	7.76	3.00		-3.67	72	6.0	11.6	71	1406	21
12	16.35	13.86	13.02	12.48	11.02	7.74	3.40		-3.54	72	6.0	12.7	42	1401	-5
14	16.35	13.86	13.12	12.46	11.33	7.75	3.00		-4.84	65	6.7	12.5	54	1382	-19
15	16.35	13.86	13.12	12.46	11.39	7.78	1.97			52	8.3	11.9	64		
16	16.35	13.86	13.25	12.41	11.44	7.85	2.60		-4.25	65	6.7	9.7	75	1372	
18	16.35	13.86	13.25	12.41	11.44	7.71	2.50		-4.35	65	6.7			1366	-6
19	16.35	13.86	13.25	12.43	11.08	7.38	2.76			69	6.3	12.5	54	1353	-13
21	16.35	13.86	13.25	12.46	11.17	5.77	0.60			54	8.0	12.6	52	1294	-104
22	16.35	13.86	13.25	12.46	11.19	6.04	1.00		-5.26	55	7.9	9.3	92	1267	-18
23	16.35	13.86	13.25	12.46	11.24	5.72	0.70		-6.24	55	7.9	11.3	73	1251	-16
24	16.35	13.86	13.25	12.46	10.05	4.80	0.80			60	7.2	10.0	73	1209	-42
25	16.35	13.86	13.25	12.01	9.40	4.28	0.05			59	7.3			1158	-51
28	16.35	13.86	13.25	12.50	9.43	3.44	0.00		-5.32	59	7.3	12.8	43	1145	-13
29	16.35	13.86	13.25	12.50	7.76	3.09	-0.69		-5.25	54	8.0	10.4	62	1099	-46
30	16.35	13.86	13.25	12.50	7.34	2.82	-0.85		-5.25	55	7.9			1077	-22
May 1, 1958	16.35	13.86	13.25	12.50	7.45	2.76	-1.04		-5.35	50	8.6			1074	-3
2	16.35	13.86	13.25	12.50	7.79	2.96	-1.20		-5.27	50	8.6	7.8	73	1086	12
5	16.35	13.86	13.25	12.50	8.07	2.80	-0.85		-5.30	55	7.9	10.4	64	1089	3
6	16.35	13.86	13.25	12.54	7.07	3.08	-0.42		-5.25	61	7.1				

Table II Measurements made across High Head Beach, January 1957-May 1958. Slope of the foreshore, elevation and distance seaward from the origin of the reach, volume and volume changes are given for the same time interval.

Date	Elevations and Volumes								Foreshore		Reach		Volume	
	1	2	3	4	5	6	7	8	Dist.	Ave. Slope	Elev.	Dist.	Vol.	Vol. Change
Jan. 22, 1957	15.10	13.3	11.1	8.1	4.75	2.2	-0.3	-0.8	71	6.4			1168	
23	15.10	13.3	11.2	8.4	5.0	2.0	-0.3	-0.9	68	6.7			1175	7
24	15.1	13.3	10.9	8.4	6.1	3.3	0.3	-0.9	76	6.0			1228	53
25	15.1	13.3	10.9	8.8	5.8	2.7	-0.4	-0.9	65	7.0			1208	-20
26														
27	15.1	13.3	10.9	7.9	5.6	3.1	0.1	-0.6	80	5.7			1185	-23
28	15.1	13.3	11.2	7.9	5.7	2.8	-0.1	-1.1	75	6.1			1203	18
29	15.1	13.3	11.1	8.8	6.1	2.8	0.0	-1.2	68	6.7			1238	35
30	15.1	13.4	10.6	8.7	5.8	2.4	0.3	-1.4	73	6.3			1230	-8
31	15.1	13.4	10.8	8.5	5.5	2.6	0.1	-1.0	72	6.3			1203	-27
Feb. 1, 1957	15.1	13.4	10.8	8.5	5.5	2.6	0.0	-1.3	70	6.5			1205	2
2														
3														
4	15.1	13.5	10.9	8.9	5.8	2.7	0.0	-1.3	67	6.8			1228	23
5	15.1	13.4	11.0	8.4	6.0	3.2	0.2	-1.3	72	6.3			1204	12
6	15.1	13.4	10.95	8.4	5.9	3.0	0.1	-1.4	72	6.3			1230	-10
7	15.1	13.4	10.9	8.6	5.8	3.1	0.5	-1.4	77	5.9			1238	8
8	15.0	13.8	10.9	9.4	5.8	3.0	0.3	-1.5	70	6.5			1253	15
9	15.0	13.4	10.9	9.4	6.3	3.3	0.5	-1.6	70	6.5			1260	7
10														
11	15.0	13.4	10.9	8.3	6.1	3.5	0.5		74	6.2			1248	-12
12	15.0	13.5	10.3	7.8	5.8	3.4	0.8	-1.4	87	5.3			1215	-33
13	15.0	13.6	9.1	7.2	5.4	3.3	1.0	-1.0	98	4.7			1168	-47
14	14.9	11.8	9.4	7.1	5.0	2.7	0.6	-0.7	97	4.7			1090	-78
15	14.25	11.0	9.2	7.1	5.1	2.8	1.0	-0.5	100	4.6			1083	-7
16														
17	14.7	12.4	10.0	7.1	4.1	1.8	0.2	-0.5	86	5.3			1063	-20
18	13.8	12.6	8.7	5.3	3.2	1.4	0.2	-0.6	97	4.7			950	-113
19	14.3	12.6	9.1	5.8	2.9	1.1	0.0	-0.6	94	4.9			960	10
20	14.3	12.6	8.6	6.4	4.3	1.9	-0.3	-0.8	89	5.1			1006	46
21	14.3	13.5	8.9	6.9	5.0	2.9	0.5	-0.5	99	4.6			1115	109
22	14.3	12.5	9.2	7.3	4.5	1.8	0.1	-0.7	88	5.2			1055	-60
23	14.3	12.4	9.2	7.4	4.8	2.0	0.1	-0.6	87	5.3			1070	15
24														
25	14.3	12.4	9.4	7.1	4.9	2.4	-0.1	-0.8	84	5.4			1083	13
26	14.2	12.4	9.4	8.0	4.8	2.4	0.0	-0.6	77	5.9			1103	20
27	14.2	12.4	9.5	7.4	4.9	2.2	0.0	-0.6	83	5.7			1083	-20
28	14.3	12.4	9.5	6.8	4.5	2.25	0.1	-0.6	93	4.9			1065	-18
Mar. 1, 1957	14.0	11.2	8.9	6.6	4.2	2.3	0.1	0.0	113	4.0			1008	-57
2														
3														
4	14.4	11.9	8.5	5.6	3.0	0.6	-0.5	-1.1	85	5.4			917	-91
5	14.4	11.9	8.6	6.6	3.6	0.8	-0.6		81	5.6			962	45
6	14.3	11.9	8.9	6.7	3.9	1.2	-0.6	-0.9	81	5.6			984	22
7	14.4	11.9	9.0	6.8	3.8	1.2	0.0	-0.8	92	5.0			995	11
8	14.43	11.94	9.19	6.15	3.42	0.96	-0.78	-1.03	78	5.9			968	-27
9	14.01	10.74	8.47	6.31	3.30	-1.33			62	7.4			884	-84
10														
11	14.33	10.84	8.01	5.20	2.02	out	-1.31	-1.75	80	5.7			837	-47
12	14.32	11.27	8.85	5.93	2.41		-1.32	-1.67	76	6.0			899	62
13	14.29	11.68	9.12	6.14	2.38	0.46	-1.36	-1.71	70	6.5			920	21
14	14.42	12.04	9.30	6.29	2.60	0.47	-1.33	-1.88	71	6.4			944	24
15	14.52	11.88	9.05	6.11	2.30	0.62	-1.45	-1.94	74	6.2			925	-19
16														
17														
18	14.78	12.66	9.62	5.97	out	-0.12	-1.56	-2.09	61	7.5			963	38
19	14.78	12.72	9.51	5.97		-0.04	-1.60	-2.07	64	7.1			965	2
20	14.83	10.64	7.91	6.45		1.52	-1.31	lost	90	5.1			964	-1
21	13.94	11.36	out	6.10		1.02	-1.40		85	5.4			985	21
22	14.08	11.53		6.26		0.73	out		74	6.2			940	-44
23														
24														
25	14.04	11.84		5.93		-0.23			67	6.8			910	-30
26	14.03	11.84		5.85		0.24			70	6.5			914	4
27	14.01	11.84		6.07		0.46			71	6.4			933	19
28	14.16	11.79		7.06		0.30			62	7.4			986	53
29	14.05	11.48		6.73		0.20			66	6.9	11.5	125	965	-21
30														
31														
Apr. 1, 1957	14.00	11.84		6.73		0.72			69	6.6			975	10
2	14.01	11.92		6.28		0.75			65	7.0			951	-24
3	14.03	12.07		5.87		0.41			65	7.0			931	-20
4	14.01	12.05		6.10		0.24			61	7.5			933	2
5	14.03	12.04		6.15		0.37			63	7.2			946	13
6	14.03	12.04	9.82	7.23		0.82			54	8.4			1014	68
7														
8	14.03	12.45	9.66	6.54	3.30	0.38			57	8.0			978	-36
9	14.11	10.44	7.81	6.58	5.27	2.22			95	4.8			979	1
10	14.14	11.23	8.89	6.11	3.29	0.46			71	6.4			919	-60
11	14.11	11.21	8.93	6.68	3.37	0.20			67	6.8			930	11
12	14.13	11.21	8.97	6.38	3.44	0.46			71	6.4			931	1
13														
14														
15	14.13	11.21	9.00	5.90	3.23	0.12			69	6.6			910	-21

Date								Foreshore		Reach		Volume		
	1	2	3	4	5	6	7	8	Dist.	Ave. Slope	Elev.	Dist.	Vol.	Vol. Change
Apr. 16 a.m.	14.12	11.69	9.31	6.26	3.42	0.38			68	6.7			948	38
16 p.m.	14.13	11.69	9.07	6.05	3.32	0.25			68	6.7			935	-13
17 a.m.	14.09	11.74	9.15	6.04	3.44	0.27			68	6.7			940	5
17 p.m.	14.09	11.44	9.48	6.60	3.51	0.24			64	7.1			953	13
18 a.m.	14.08	11.33	9.68	6.74	3.36	0.15			62	7.4			955	2
18 p.m.	14.08	11.56	9.83	6.80	3.45	0.03			60	7.6			968	13
19	14.07	11.79	9.98	7.04	3.48	-0.13			56	8.1	11.5	130	979	11
20	14.12	11.78	9.92	6.90	3.48	-0.03			59	7.7			975	-4
21														
22	14.31	11.72	10.18	6.88	3.41	-0.19			57	8.0			979	4
23	14.13	11.30	10.20	6.79	3.30	-0.23			58	7.9			963	-16
24	14.11	11.74	10.17	6.74	3.38	-0.03			56	8.1			973	10
25	14.10	11.24	10.17	6.62	3.42	0.42			59	7.7			966	-7
26	14.11	11.80	10.31	6.93	3.37	0.32			63	7.2			999	33
27														
28	14.10	11.97	10.02	6.62	3.30	1.00	-1.82		61	7.5			987	-12
29	14.09	12.05	10.33	6.54	3.12	0.02	-2.16		69	6.6			928	-59
30														
May 1 a.m.	14.11	12.05	10.06	6.83	3.27	0.31			60	7.6	11.3	137	985	57
1 p.m.	14.13	12.07	9.71	6.85	4.13	0.60	-1.93		67	6.8	11.2	135	1004	19
2	14.12	12.08	8.95	6.80	4.37	0.81	-2.12		71	6.4	9.4	147	999	-5
3	14.11	11.89	8.47	6.45	4.43	1.17	-1.96		79	5.8	9.9	140	978	-32
4	14.05	11.84	9.40	7.25	4.43	1.22	-1.40		72	6.3			1017	39
5	14.06	11.90	9.32	6.81	4.07	1.30	-1.73		74	6.2			1002	-15
6	14.13	11.84	9.32	6.60	3.12	1.54	-1.36		76	6.0			973	-29
7	14.47	11.68	9.92	7.27	4.17	0.74	-2.03		63	7.2			1053	80
8	14.47	11.84	9.92	7.27	4.25	0.73	-2.02		65	7.0			1036	-17
9	14.06	11.95	8.88	7.28	3.84	-0.23	-2.86		55	8.3			995	-41
10	14.09	11.84	10.15	7.34	3.84	0.68	-2.16		61	7.5			1010	15
11	14.08	12.00	10.05	6.90	3.30	-0.32	-2.12		56	8.1			977	-33
12 a.m.	14.17	11.84	10.39	7.10	3.58	0.62	-2.01		63	7.2			1006	29
12 p.m.	14.13	11.84	10.38	7.08	3.68	0.43	-2.15		61	7.5			1003	-3
13	14.06	11.84	10.38	7.11	3.44	0.46	-2.10		61	7.5			999	4
14 a.m.	14.08	11.84	10.37	6.95	3.77	0.22	-1.76		62	7.4			1005	56
14 p.m.	14.08	11.84	10.40	6.96	3.63	0.52	-1.51		64	7.1			1007	2
15	14.09	11.84	10.27	7.00	3.58	0.62	-2.20		63	7.2			1004	-53
16	14.10	11.84	10.12	6.89	3.78	0.62	-1.69		65	7.0			997	-27
17	14.06	11.92	9.89	6.84	3.74	0.67	-2.26	-0.86	66	6.9			997	0
18	14.08	11.94	9.90	6.73	3.72	0.57	-2.18	-1.32	65	7.0			964	-33
19	14.10	11.92	10.05	6.69	3.72	0.47	-2.16		64	7.1			974	10
20	14.10	11.84	9.71	6.50	4.02	1.31	-1.52		74	6.2			999	25
21	14.06	12.14	9.07	6.42	4.17	1.50	-1.63		75	6.1			996	-3
22	13.99	12.24	9.74	6.20	3.15	0.32			65	7.0			964	-35
23	14.03	12.65	9.72	6.08	2.62	0.01			63	7.2			953	-11
24	14.04	12.82	9.47	5.42	2.93	-0.12	-2.76		63	7.2			929	-24
25														
26	14.07	12.80	8.97	5.25	2.40	-0.12	-3.00		66	6.9			911	-18
27	14.13	12.88	8.99	5.30	2.50	-0.24	-2.96		66	6.9			920	9
28	14.09	12.83	9.28	5.52	2.32	-0.43	-2.99		62	7.4			922	2
29	14.09	12.82	9.03	5.65	3.02	-0.23	-3.08		66	6.9			935	13
30														
31	14.09	12.79	8.90	5.36	2.95	-0.11	-3.38	-0.61	67	6.8			925	-10
June 1, 1957	13.98	12.82	8.80	5.10	2.72	-0.05	-2.56		68	6.7			913	-12
2														
3	14.07	12.85	9.31	5.57	2.72	0.07	-2.59	-0.81	67	6.8			940	27
4	14.06	12.82	9.50	6.00	2.62	-0.13	-2.58	-0.76	63	7.2			947	7
5	14.06	12.80	9.57	6.10	2.60	-0.02	-2.50	-0.70	63	7.2			954	7
6	14.03	12.82	9.68		2.60	-0.30	-2.60		61	7.5			953	-1
7	14.03	12.82	9.66		2.70	-0.08	-2.55	-0.86	63	7.2			959	6
8														
9														
10	14.07	12.82	9.69		3.04	-0.06	-2.59		61	7.5			972	-11
11	14.07	12.82	9.50		2.97	0.12	-2.53		67	6.8			966	-6
12	14.07	12.84	9.40		3.08	0.22	-2.43	-0.86	65	7.0			967	1
13	14.06	12.64	9.43		2.86	0.06			65	7.0			954	-13
14	14.03	12.85	9.86		3.02	-0.20			60	7.6			979	25
15														
16														
17														
18	14.01	12.81	9.78		3.17	-0.05	-2.81		61	7.5			985	6
19	14.03	12.80	9.75		3.17	-0.08			60	7.6			981	-4
20	14.05	12.81	9.82		3.09	0.27	-3.06		63	7.2			984	3
21	14.01	12.86	9.76		2.94	0.10	-3.00		64	7.1			975	-9
22														
23														
24	14.03	12.83	9.74		3.08	-0.02	-2.20		62	7.4			975	0
25	13.98	12.82	9.85		3.03	0.08	-2.88	-1.06	64	7.1			976	1
26	14.03	12.86	9.77		3.06	-0.58	-2.68		58	7.9			976	0
27	14.07	12.80	9.91		3.02	-0.49	-3.04		58	7.9			975	-1
28														
29														
30														
July 1, 1957	14.08	12.92	9.82		3.72				67	6.8			987	12
2	14.04	12.94	10.05		3.11	0.01	-2.77	-1.06	61	7.5			992	5

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Date	B	1	2	3	4	5	6	7	8	Foreshore		Reach		Volume	
										Dist.	Ave. Slope	Elev.	Dist.	Vol.	Vol. Change
Mar. 31, 1958	19.82	14.38				3.05	4.19	"0"		103	4.4	17.5	45	1403	-33
Apr. 1, 1958	19.82	14.75				2.92	3.55			102	4.5			1366	-37
2 a.m.	19.82	14.05		8.82		3.92	4.80			112	4.1	15.2	75	1343	-23
2 p.m.	20.35	13.53		10.72		1.22	4.50	2.48		115	4.0	22.2	-56	1542	199
3 a.m.	20.55	12.28		10.92		1.92	4.80	2.00		102	4.5	22.2	-56	1563	21
3 p.m.	20.55	13.35		10.52		0.87	4.16	1.68		104	4.4	22.3	-56	1485	-78
4 a.m.	20.95	13.59		9.92		-0.18	4.05	1.50		107	4.3	21.9	-40	1382	-103
4 p.m.	20.95	13.47		10.02		0.72	3.67	1.39		105	4.4	19.3	15	1438	56
5 a.m.	20.95	14.53		10.20		0.37	2.90	0.48		94	4.9	19.5	40	1378	-60
6															
7	20.95	14.93		8.72		-1.63	1.80	-0.69		89	5.1			1217	-161
8	20.95	15.93				-0.58	2.08	-0.67	-2.96	98	4.7	17.4	65	1321	104
9	20.95	15.93	14.56	10.95			2.55	0.07		90	5.1	17.0	70	1449	128
10	20.95	15.93	14.56	10.84			3.06	-0.81	-3.56	81	5.6	11.0	150	1443	-6
11	20.95	15.93	14.56	10.84			3.00	0.61		93	4.9	7.3	175	1442	-1
12	20.95	16.01	14.21	10.79			2.60			89	5.1	18.1	60	1399	-43
13															
14	20.95	16.04	14.16	11.36			3.17	0.38		87	5.3	14.2	125	1459	60
15	20.95	16.04	14.16	11.43			2.90	0.16		88	5.2	11.3	150	1427	-32
16	20.95	16.04	14.22	11.44			3.02	-0.55		81	5.6	12.0	145	1446	19
17	20.95	16.04	14.22	11.44		0.50	2.80	0.06		85	5.4	8.4	169	1355	-91
18	20.95	16.04	14.40	12.20			2.90	-0.21		82	5.6			1486	131
19															
20															
21	20.95	16.04	14.58	12.26			2.06	-0.37		82	5.6	15.3	113	1449	-37
22	20.95	16.02	14.76	12.32			2.28	-0.28		82	5.6	15.3	113	1470	21
23	20.95	16.02	14.76	12.46			1.96	-0.33		82	5.6	13.0	144	1458	-12
24	20.95	16.02	14.65	11.84			2.00	-0.57		81	5.6	15.0	120	1426	-32
25	20.95	16.02	14.65	12.06			2.09	-0.22		83	5.5			1443	17
26															
27															
28															
29	20.95	16.02	14.68	12.01		-0.78	2.44	-0.14		83	5.5	14.8	125	1462	-16
30	20.95	16.02	14.68	12.01			2.14	-0.39		82	5.6	12.5	145	1442	-20
May 1, 1958	20.95	16.02	14.65	12.18			1.68	-0.69		79	5.8	12.2	150	1425	-17
2	20.95	16.02	14.65	12.26			1.67	-0.87		78	5.9	14.8	125	1422	-3
3															
4															
5	20.95	16.02	14.66	12.32			1.42	0.84		111	4.1	15.0	120	1420	-2
6	20.95	16.02	14.66	11.98			2.65	0.29		87	5.3	14.8	125	1475	55
7	20.95	16.02	14.65	11.51			1.88	0.35		93	4.9	14.8	125	1414	-61
8	20.95	16.02	14.94	11.66			3.45	-0.01		84	5.4	15.4	112	1502	88
9	20.95	16.02	14.94	12.31			1.97	-0.07		82	5.6	13.3	139	1461	-41
10															
11															
12	20.95	16.02	14.94	11.73			1.89	-0.56		81	5.6	10.0	167	1424	-37
13	20.95	16.02	14.97	11.82			2.81	-0.50		82	5.6	15.2	120	1471	47
14	20.95	16.02	14.97	11.82			1.59	-0.62		78	5.8	12.6	140	1411	-60
15	20.95	16.02	14.97	11.75			2.58	-0.71		81	5.6	13.5	137	1456	45
16	20.95	16.02	14.97	11.86			1.72	-0.79		78	5.8	13.5	137	1419	-37
17															
18															
19	20.95	16.02	14.97	11.92			1.45	-1.33		74	6.2	6.1	200	1406	-13
20	20.95	16.02	14.97	12.34			1.21	-1.53		72	6.3	14.0	132	1418	12
21	20.44	16.07	14.92	12.35			1.02			72	6.3	13.7	138	1386	32
22	20.44	16.07	14.92	12.34			1.11	-1.59	-2.49	71	6.4	13.7	121	1391	5
23	20.44	16.07	14.92	12.37			1.10	-1.93		70	6.5	11.9	152	1390	-1
24															
25															
26	20.44	16.07	14.92	12.37			0.92			66	6.9	8.2	170	1385	-5
27	20.44	16.07	14.92	12.37			1.24	-1.62	-2.81	71	6.4	8.0	171	1398	13
28	20.44	16.07	15.01	11.09			1.50	-1.27		77	5.9	15.5	113	1355	-43
29	20.44	16.07	14.58	11.12			0.60	-1.52		71	6.4	17.0	90	1300	-55

Table III Measurements made across Race Point Beach, January 1958-May 1958. Slope of the foreshore, elevation and distance seaward from the origin of the reach, volume and volume changes are given for the same time interval.

Date	RACE POINT 1958								Foreshore			Reach		Volume	
	A	1	2	3	4	5	6	7	Dist.	Ave. Slope	Elev.	Dist.	Vol.	Vol. change	
Jan. 6, 1958	20.64	13.87	11.48	9.71	6.77	4.78	1.52	-2.97	79	6.5			1872		
7	20.64	13.87	11.49	9.71	7.15	4.73	1.26	-3.00	77	6.7	9	111	1899	27	
8	20.64	13.87	10.62	7.89	6.02	4.12	1.09	-1.67	98	5.2	12.5	67	1775	-124	
9	20.64	14.02	10.98	9.11	7.32	4.68	2.00	-1.47	92	5.6	14.3	25	1807	32	
10	20.64	13.97	11.73	9.65	7.77	4.73	1.62	-1.97	82	6.3	14.1	45	1836	29	
11															
12	20.64	14.02	11.23	9.58	6.15	4.03	1.77	-2.12	80	6.4	10.7	86	1853	17	
13	20.64	14.02	11.20	9.55	6.27	5.48	2.42	-2.02	87	5.9	10.6	86	1909	56	
14	20.64	14.02	11.23	9.56	6.32	5.52	2.44	-2.29	83	6.2	9.7	100	1912	3	
15	20.64	14.02	12.34	9.06	7.46	6.13	3.37	-1.43	95	5.4	14.2	46	2003	91	
16	20.64	14.02	11.24	9.21	7.52	6.10	2.88	-1.97	90	5.7	14.3	41	1960	-43	
17	20.64	14.02	11.20	9.58	7.63	5.38	1.70	-1.75	84	6.1			1992	-38	
18															
19															
20															
21	20.64	14.02	11.86	11.11	6.77	4.13	1.36	-2.77	73	7.0	11.3	91	1915	-7	
22															
23	20.64	14.02	11.24	11.21	6.42	3.82	1.92	-2.15	78	6.6	10.0	108	1901	-14	
24	20.64	13.75	12.43	8.95	6.05	4.51	1.66	-1.97	89	5.8	13.4	58	1876	-25	
25															
26	20.64	13.97	12.43	10.92	8.77	6.46	3.37	-1.83	75	6.8	14.4	41	2110	234	
27	20.64	13.97	12.46	11.61	10.07	7.28	3.60	-1.02	65	7.9	13.8	55	2167	57	
28	20.64	13.92	12.50	12.11	10.29	7.88	4.27	-0.02	68	7.5	12.9	69	2211	44	
29	20.64	13.91	12.52	12.01	10.77	8.38	5.37	-0.13	61	8.4	12.9	70	2255	44	
30	20.64	13.92	12.53	12.06	10.62	8.58	5.70	-0.07	61	8.4	10.7	121	2306	51	
31	20.64	13.92	12.53	12.11	10.77	7.96	5.60	-0.07	66	7.8	11.0	118	2287	-19	
Feb. 1, 1958															
2															
3	20.64	14.07	12.56	12.41	8.97	6.03	3.67	-0.53	78	6.6	13.4	67	2158	-129	
4	20.64	14.07	12.56	12.26	8.35	5.76	3.34	-0.27	83	6.2	12.4	87	2127	-31	
5	20.64	14.07	12.56	12.26	7.58	4.77	2.87	-0.67	86	6.0	12.4	80	2064	-63	
6															
7	20.64	14.07	12.56	12.25	8.17	6.10	2.78	-0.93	82	6.3	11.8	103	2106	42	
8															
9	20.64	14.07	12.56	12.37	5.27	3.36	2.30	-0.17	92	5.6	10.9	107	1974	-132	
10	20.64	14.07	12.56	12.31	4.47	2.30	0.67	-1.57	84	6.1			1860	-114	
11	20.64	14.07	12.56	12.31	4.62	2.15	1.06	-1.80	84	6.1	12.0	106	1868	8	
12	20.64	14.11	12.62	12.38	4.72	2.10	0.93	-1.85	82	6.3	12.1	110	1875	7	
13	20.64	14.11	12.62	12.38	4.49	2.50	0.81	-1.90	82	6.3	12.3	112	1862	-13	
14	20.64	14.11	12.62	8.01	4.19	1.97	-0.44	-2.33	77	6.7	8.5	89	1726	-136	
15	20.64	14.11	12.62	8.11	3.97	2.00	0.17	-2.43	83	6.2	8.6	92	1736	10	
16	20.64	14.11	10.60	9.81	8.25	3.82	2.18		97	5.3	10.5	79	1873	137	
17	20.64	14.11	10.78	10.71	6.97	4.74	0.36	-2.23	71	7.2	17.5	25	1882	9	
18															
19	20.64	14.11	10.68	10.64	6.05	3.38	-0.10		66	7.8	8.4	115	1815	-67	
20	20.64	14.11	10.74	10.78	6.03	4.85	0.01	-2.80	65	7.9	7.5	121	1870	55	
21	20.64	14.11	10.74	10.78	6.79	4.51	-0.18	-3.19	64	8.0			1864	-6	
22															
23															
24	20.64	14.11	11.00	10.71	7.19	5.45	0.98	-3.07	71	7.2	10.3	103	1922	58	
25	20.64	14.11	10.81	10.76	7.27	5.46	0.80	-3.11	68	7.5	10.5	108	1919	-3	
26	20.64	14.11	10.77	10.71	7.21	4.51	-0.30	-3.41	60	8.5	10.1	106	1871	-48	
27	20.64	14.11	10.77	10.75	6.19	5.81	2.30	-2.79	80	6.4	7.2	139	1934	63	
28	20.64	14.11	11.00	10.51	9.27	7.93	2.82	-2.62	61	8.4	10.2	114	2075	141	
29															
Mar. 1, 1958	20.64	14.11	10.78	11.75	10.39	8.28	3.59	-1.09	57	9.0	11.4	71	2172	97	
2	20.64	14.11	10.82	12.51	10.17	8.38	3.77	-0.89	58	8.8	14.4	40	2196	24	
3	20.64	14.11	10.82	12.21	11.17	9.18	3.50	-2.61	43	11.8			2213	17	
4															
5	20.64	14.11	10.78	11.73	11.07	8.63	1.68	-2.09	44	11.6	11.4	68	2135	-78	
6															
7															
8	20.64	14.11	10.88	12.89	8.49	5.46	0.78	-2.65	62	8.3	11.4	70	2002	-133	

Date	RACE POINT 1958									Reach			Volume	
	A	1	2	3	4	5	6	7	Foreshore		Elev.	Dist.	Vol.	Vol. change
									Dist.	Ave. Slope				
Mar. 9, 1958														
10	20.64	14.11	10.76	12.83	9.03	6.40	0.29	-2.89	53	9.6	16.7	25	2018	16
11	20.64	14.11	10.88	12.88	9.12	6.49	0.87	-3.73	54	9.5	11.5	70	2042	24
12	20.64	14.11	11.87	12.80	9.33	5.97	0.79	-2.91	55	9.3	12.5	70	2060	18
13	20.64	14.11	12.10	12.97	9.43	5.59	0.79	-2.83	55	9.3	13.7	55	2057	-3
14	20.64	14.11	12.13	12.79	9.57	5.39	0.46	-3.53	51	10.0	13.1	87	2050	-7
15	20.64	14.11	12.22	12.56	9.67	6.78	2.25	-1.45	63	8.1	12.8	68	2125	75
16														
17	20.64	14.19	12.26	12.91	9.99	8.63	5.12	-0.35	66	7.8	12.6	80	2302	177
18	20.64	14.19	12.26	12.86	10.12	8.94	5.72	-0.12	78	6.6	10.2	125	2321	19
19														
20	20.64	14.52	12.44	12.86	10.07	8.13	5.37		68	7.5	13.4	68	2102	-219
21														
22	20.64	14.52	12.44	13.56	10.97	8.83	buried	-0.32	57	9.0	13.0	89	2232	130
23														
24	20.64	14.19	12.44	13.81	10.67	8.03	4.52	-0.92	59	8.7	13.4	104	2307	75
25	20.64	14.19	12.44	13.56	10.77	7.88	4.32	-0.22	65	7.9	11.2	121	2297	-10
26	20.64	14.02	12.44	13.56	10.62	7.68	4.37		69	7.4			2280	-17
27	20.64	14.02	12.58	13.61	9.92	7.78	3.92	-0.03	71	7.2	9.2	137	2258	-22
28	20.64	14.02	12.63	14.11	10.77	buried	5.40	buried	83	6.2	12.8	70	2394	136
29														
30														
31														
Apr. 1, 1958	20.64	14.87	13.04	14.16	11.57	8.55			74	6.9	15.2	41	2453	59
2	20.64	14.67	12.88	12.73	10.17	8.38	5.22		75	6.8	18.7	25	2342	-111
2	21.24	15.12	13.18	13.26	11.67	8.58	5.67	buried	77	6.7	18.8	25	2476	134
3	21.24	15.15	13.34	15.06	10.04	buried	4.72		84	6.1	14.9	53	2406	-70
3	21.24	15.01	13.33	13.61	11.01	8.53	buried				14.8	70	2516	110
4	21.24	15.07	13.43	13.71	11.87	9.23	4.72		51	10.0	13.7	72	2421	-95
5														
6														
7	21.24	15.12	13.43	14.41	12.57	10.38	buried		55	9.3	13.8	84	2849	428
8	21.24	15.12	13.43	14.41	12.97	10.68	8.02		58	8.8	13.2	120	2785	-64
9	21.24	15.12	13.43	14.41	12.97	10.68	7.82	buried	59	8.7			2748	-37
10														
11	21.24	15.12	13.43	14.41	12.97	10.68	7.62	buried	59	8.7	8.0	167	2716	-32
12	21.24	15.12	13.43	14.41	12.67	10.76	7.33	6.53	84	6.1	13.7	112	2664	-52
13														
14	21.24	15.12	13.43	14.41	12.67	10.73	8.22	3.73	66	7.8	13.0	120	2687	23
15	21.24	14.98	13.48	14.41	12.67	10.73	8.64	3.47	57	9.0	4.0	204	2677	-10
16	21.24	14.98	13.48	14.41	12.55	10.43	7.87	3.79	73	7.0	4.0	204	2673	-4
17	21.24	14.98	13.48	14.41	12.55	10.43	7.87	3.79	72	7.1	3.5	220	2673	0
18	21.24	14.98	13.48	14.41	12.55	10.43	8.32	3.08	58	8.8	9.5	167	2635	-38
19														
20														
21	21.24	14.98	13.48	14.41	12.55	10.43	8.37	2.97	58	8.8	9.6	160	2632	-3
22	21.24	14.98	13.48	14.41	12.55	10.43	8.22	3.11	59	8.7	7.4	181	2633	1
23	21.24	14.98	13.48	14.41	12.55	10.32	7.91	3.35	66	7.8	8.2	175	2636	3
24	21.24	14.98	13.48	14.41	12.55	10.32	8.05	3.16	61	8.4			2632	-4
25	21.24	14.98	13.48	14.41	12.55	10.32	7.89	3.09	63	8.1	7.6	182	2614	-18
26														
27														
28	21.24	14.98	13.48	14.41	12.55	10.32	8.54	3.14	55	9.3	4.4	190	2641	27
29	21.24	14.98	13.48	14.41	12.55	10.32	8.24	4.00	72	7.1			2671	30
30	21.24	14.98	13.48	14.41	12.55	10.32	8.68	3.05	53	9.6	8.2	175	2641	-30
May 1, 1958	21.24	14.98	13.48	14.41	12.55	10.32	8.59	3.13	56	9.1	8.3	175	2642	1
2	21.24	14.98	13.48	14.41	12.55	10.32	8.32	3.69	65	7.9	7.8	182	2657	15
3														
4														
5	21.24	14.98	13.48	14.41	12.55	10.32	8.26	3.50	64	8.0			2648	-9
6	21.24	14.98	13.48	14.41	12.55	10.32	8.51	2.83	54	9.5	8.8	167	2632	-16
7	21.24	14.98	13.48	14.41	12.55	10.70	8.52	3.16	57	9.0	8.9	166	2648	16

Table IV Measurements made across New Beach, January 1958-May 1958. Slope of the foreshore, elevation and distance seaward from the origin of the reach, volume and volume changes are given for the same time interval.

New Beach 1958														
Elevations and Volumes														
Date	Elevations								Foreshore		Reach		Volume	
	1	2	3	4	5	6	7	8	Dist.	Ave. slope	Elev.	Dist.	Vol.	Vol. change
Jan. 1, 1958														
2	10.48	12.40	10.54	7.95	7.59	6.94	4.44	1.51	123'	4.2°	10.5	75	1687	
3	10.48	12.40	10.54	8.10	7.58	6.85	4.56	1.60	121	4.3	10.5	75	1692	5
4	10.76	12.23	10.38	8.03	8.40	6.63	4.32	1.28	120	4.3			1692	0
5														
6	10.93	12.13	10.37	9.45	8.65	6.35	3.66	1.07	89	5.8			1706	14
7	10.93	12.31	10.36	9.60	8.47	6.35	3.25	1.03	99	5.2	11.3	66	1702	- 4
8	11.13	12.31	10.41	9.32	8.07	6.29	3.63	0.87	99	5.2	11.3	66	1695	- 7
9	11.12	12.27	10.39	9.19	8.05	6.25	3.76		107	4.8	11.4	18	1702	7
10	11.12	12.31	10.47	9.43	8.05	6.15	3.96		109	4.7	11.4	67	1728	25
11	11.12	12.28	10.52	9.35	8.15	6.13	3.82	1.18	104	4.9	11.4	67	1706	- 22
12	11.12	12.28	10.55	10.46	8.17	5.60	4.01		100	5.1	10.5	84	1779	71
13														
14	11.12	12.28	10.50	10.48	8.25	6.09	3.71	1.06	96	5.4	11.3	67	1730	- 47
15	11.12	12.28	10.42	10.22	8.29	6.14	3.65	0.71	89	5.8			1715	- 15
16														
17	11.12	12.28	10.77	10.10	8.34	5.03	3.50	1.07	95	5.4	11.9	56	1710	- 5
18														
19	11.98	12.01	8.32	7.32	6.05	5.17	2.34	3.52	157	3.3	8.0	83	1574	-136
20														
21	11.13	12.29	11.05	10.54	9.58	5.85	2.74	0.67	80	6.4	11.3	95	1742	168
22	11.13	12.29	11.07	10.83	9.55	5.85	4.76		116	4.4	11.4	69	1835	93
23	11.13	12.28	11.09	10.40	7.88	5.85	4.79	0.78	91	5.6			1748	- 87
24	11.17	12.27	11.03	10.55	8.60	5.99	2.85	0.42	83	6.2	11.2	73	1717	- 31
25														
26	11.17	12.23	11.02	10.61	8.63	5.95	2.61	0.70	90	5.7	12.0	55	1717	0
27	11.17	12.23	11.05	10.70	8.45	5.91	2.69	0.45	87	5.9	11.1	75	1712	- 5
28														
29	11.17	12.23	11.02	10.85	8.56	5.53	2.82	0.52	85	6.0	11.0	75	1713	1
30														
31	11.17	12.23	11.02	10.80	8.00	5.64	2.98	0.52	88	5.8	11.0	80	1766	53
Feb. 1, 1958														
2														
3	11.17	12.23	11.51	9.67	8.15	6.25	3.11	0.07	89	5.8	10.2	90	1705	- 61
4	11.17	12.33	11.67	9.23	8.30	6.41	3.45	0.04	84	6.1			1707	2
5	11.17	12.41	12.29	9.20	8.70	6.23	2.92	0.85	98	5.2	13.0	69	1738	31
6	11.17	12.41	11.69	9.65	8.67	6.25	3.01	-0.19	81	6.3			1717	- 21
7	11.17	12.41	11.69	9.65	8.60	6.23	2.98	-0.12	83	6.2	10.3	84	1715	- 2
8														
9	11.17	12.41	11.55	7.56	7.60	5.53	3.25	-0.22	106	4.9	11.7	33	1623	- 92
10	11.17	12.39	9.28	7.65	6.37	5.49	3.14	2.67	138	3.7	11.8	55	1493	- 30
11	11.48	12.41	9.23	7.65	6.26	5.43	3.22	3.03	141	3.7	10.1	60	1612	- 19
12	11.43	12.43	9.24	7.65	6.31	5.36	3.40	3.03	144	3.6	9.9	70	1616	- 4
13	11.43	12.43	9.06	7.75	6.37	5.37	3.41	2.00	144	3.6	8.9	78	1592	- 24
14	11.43	12.33	9.15	6.81	6.25	5.89	3.06	2.52	145	3.6	11.7	55	1584	- 8
15	11.43	12.35	9.19	6.70	6.62	6.20	2.98	2.49	145	3.6	11.7	67	1596	- 10
16														
17	11.93	11.91	8.97	6.60	6.91	5.69	2.41	2.69	146	3.5	12.0	"N"	1572	- 24
18														
19														
20	11.94	11.96	8.07	7.08	7.61	5.74	2.50	3.81	153	3.4	10.8	50	1594	- 22
21	11.94	12.05	8.43	6.83	6.82	4.99	2.76		136	3.8	9.2	70	1444	-150
22														
23														
24	11.58	11.98	8.75	7.00	7.58	6.29	2.50	2.52	142	3.6	11.3	55	1592	148
25	11.93	11.67	8.83	6.94	7.42	6.28	2.52	2.38	142	3.6	11.7	50	1587	- 5
26	11.93	11.94	8.94	8.33	7.17	6.56	2.19	1.68	135	3.8	8.9	75	1628	41
27	11.92	11.97	8.96	8.45	7.18	6.50	2.20	1.66	135	3.8	9.6	70	1615	- 13
28	11.92	11.94	8.85	8.45	6.92	6.41	2.18	1.44	136	3.8	8.6	83	1591	- 24
Mar. 1, 1958	11.89	11.97	9.04	8.13	7.38	6.22	2.02	1.52	134	3.8	11.2	65	1593	2
2	11.89	11.99	9.03	7.13	7.39	6.15	2.06	1.64	133	3.9	12.0	42	1567	- 26
3	11.89	11.98	9.31	8.08	7.30	6.20	1.96	1.52	127	4.1	11.9	44	1591	24
4														
5														
6	11.94	12.28	9.05	7.97	7.20	6.20	1.84	1.44	132	3.9	12.2	44	1586	- 5
7														
8														
9														
10	12.26	11.85	8.52	9.03	8.11	6.13	1.86	1.29	105	4.9	11.9	44	1616	30
11	12.26	11.85	8.47	9.02	8.26	6.07	1.84	1.22	104	4.9	11.8	50	1614	- 2
12	12.26	11.88	8.41	9.10	8.22	6.05	1.82	1.22	102	5.0	10.8	56	1614	0
13	12.24	11.88	8.41	9.45	8.47	6.04	1.66	0.87	113	4.6	10.5	58	1624	10
14	12.24	11.83	8.45	9.42	8.54	5.99	1.66	1.04	94	5.5	11.8	71	1587	- 37
15	12.28	11.99	8.87	9.41	8.10	5.87	0.58		70	7.3	9.0	85	1570	- 17
16														
17	12.28	11.99	9.45	9.21	8.15	5.77	1.76	0.74	110	4.7	12.1	42	1630	60
18														
19	12.28	11.91	9.45	9.27	8.09	5.65	1.26	1.30	101	5.1	9.4	111	1620	- 10
20														
21	12.28	11.91	9.35	8.47	7.75	5.77	0.92	0.81	120	4.3	10.7	63	1574	- 46
22	12.28	11.91	9.32	8.52	7.82	5.80			134	3.8	12.0	44	1666	92
23														
24	12.28	11.97	9.51	8.88	8.17	5.81	1.36		90	5.7	12.0	44	1572	- 94

Date	1	2	3	4	5	6	7	8	Foreshore		Reach		Volume	
									Dist.	Ave. slope	Elev.	Dist.	Vol.	Vol. change
Mar. 25, 1958	12.28	11.68	8.87	8.55	6.71	5.69	3.48	-0.90	122	4.2	8.8	77	1572	0
26	12.28	11.75	8.87	8.97	8.18	5.81	1.64	0.87	118	4.4	8.9	85	1605	33
27	12.28	11.65	9.12	8.95	8.15	5.69	1.42	0.33	112	4.6	9.1	82	1586	-19
28	12.28	11.89	9.45	8.97	7.95	5.69	1.02	0.32	110	4.7	9.3	82	1586	0
29														
30														
31														
Apr. 1, 1958	10.59	10.22	10.89	7.55	7.52	5.14	1.53	1.32	135	3.8	13.4	25	1500	-86
2 a.m.	12.24	11.11	9.45	8.65	7.42	5.29	0.61		88	5.8	12.5	12	1520	20
2 p.m.	12.97	11.71	9.72	9.10	7.98	5.59	0.95		78	6.6			1593	73
3 a.m.	12.98	11.68	8.03	9.24	7.30	5.47	3.54	-1.32	88	5.8	12.7	0	1593	0
3 p.m.	13.06	11.15	9.95	9.31	7.84	5.44	0.96	-0.32	88	5.8	11.1	37	1590	-3
4	13.05	10.85	9.69	9.28	7.84	6.35			81	6.3			1616	26
5														
6														
7	13.08	11.68	9.87	9.19	7.79	5.28	1.16		79	6.5	11.7	50	1591	-25
8	13.13	11.67	9.96	9.15	7.96	5.35	0.92		75	6.8	12.8	67	1595	4
9	13.13	11.63	9.81	8.50	7.73	5.48	1.42	0.70	105	4.9	11.5	53	1592	-3
10														
11	13.08	11.63	9.80	8.42	8.01	6.50	0.06	1.58	85	6.0	9.3	85	1587	-5
12	13.05	11.63	9.81	9.03	7.81	5.32	1.16		83	6.2	12.8	31	1588	1
13														
14	13.08	11.69	9.87	9.04	7.52	5.27	0.96	0.63	123	4.2			1606	18
15	13.08	11.69	9.87	9.04	7.98	5.36	0.96	0.79	122	4.2	9.1	96	1622	16
16	13.08	11.63	9.87	9.09	7.96	5.26	1.06	0.84	123	4.2	9.0	100	1623	1
17	13.08	11.63	9.87	8.31	8.08	5.24	1.06	0.54	132	3.9	8.1	119	1595	-28
18	13.08	11.63	9.87	8.31	7.99	5.25	1.60	0.65	126	4.1	8.2	114	1619	24
19														
20														
21	13.08	11.63	9.87	7.73	7.87	6.49			108	4.8	8.2	90	1630	11
22	13.08	11.61	9.99	8.84	7.46	5.71			92	5.6	10.3	70	1609	-21
23	13.08	11.61	10.11	8.71	7.60	5.91	1.78		92	5.6			1610	1
24	13.08	11.61	10.17	8.75	7.71	6.04	1.81	1.12	129	4.0			1660	50
25	13.08	11.61	10.18	8.67	7.54	5.97	1.60	1.12	108	4.8			1645	-15
26														
27														
28	13.08	11.61	10.18	8.66	7.81	5.91	1.72	1.29	130	4.0			1658	13
29	13.08	11.61	10.18	8.69	7.53	6.16	1.80	0.78	123	4.2			1644	-14
30	13.08	11.61	10.18	8.38	7.43	6.19	1.94	1.37	133	3.9			1656	12
May 1, 1958	13.08	11.61	10.15	8.48	7.43	6.16	1.91	1.32	131	3.9			1655	-1
2	13.08	11.61	10.07	8.53	7.49	6.33	1.84	1.46	134	3.8			1663	8
3														
4														
5	13.08	11.61	10.31	8.42	7.63	6.23	1.85	1.32	135	3.8			1670	7
6	13.08	11.61	10.37	8.15	7.64	6.21	1.80		95	5.4			1613	-57
7	13.08	11.61	10.38	8.10	7.68	6.23	1.83	1.24	116	4.4			1644	11
8	13.08	11.61	10.49	7.98	7.96	6.11	1.74		97	5.3			1616	-28
9	13.08	11.61	10.56	7.87	7.89	5.99	1.84	1.27	118	4.4			1643	27
10														
11														
12	13.08	11.61	10.56	8.25	7.71	6.56	1.99	1.79	119	4.3			1677	34
13	13.08	11.61	10.56	8.27	7.87	6.50	1.96	1.65	117	4.4			1677	0
14	13.08	11.61	10.56	8.20	8.29	6.34	2.56	1.52	117	4.4			1694	17
15	13.08	11.61	10.38	8.19	8.38	6.31	2.09	1.56	119	4.3			1680	-14
16	13.08	11.61	10.38	8.21	7.59	6.20	2.05	1.52	118	4.4			1656	-24
17														
18														
19	13.08	11.61	10.65	8.55	8.03	6.61	2.40	1.90	116	4.4			1709	53
20														
21	13.08	11.71	10.67	8.54	7.98	6.83	2.43	2.04	119	4.3			1722	13
22	13.08	11.71	10.67	8.54	7.94	6.78	2.40	2.11	118	4.4			1720	-2
23	13.08	11.71	10.47	8.74	7.90	6.71	2.62	2.36	118	4.4			1728	8
24														
25														
26	13.08	11.71	10.47	8.77	7.85	6.85	2.63	2.17	115	4.5			1727	-1
27	13.08	11.71	10.47	8.86	7.84	6.87	2.64	2.17	115	4.5			1730	3
28	13.08	11.71	10.45	8.81	8.10	6.94	2.57	2.02	116	4.4			1731	1
29	13.08	11.71	10.52	8.71	8.14	7.02	2.48	2.07	116	4.4			1733	2

Table V - Measurements made on the spits and bars at High Head
(stakes 9 and 10) and Highland (stakes 10 and 11)

		1957			
		High Head		Highland	
Date		9	10	10	11
Jan.	17, 1957			-6.0	-5.7
	18			-5.9	-5.1
	21			-5.9	-5.1
	22	-1.0	-1.6		
	23		-1.0	-6.0	-5.2
	24	-1.0	-1.6	-6.5	-5.4
	25	-1.0	-1.6		
	27	-1.0	-1.6		
	28	-1.3	-1.7		
	29	-1.25	-1.75		
	30	-1.1	-2.0		
	31	-1.2	-1.9		
Feb.	1, 1957	-1.15	-1.85		
	4		-1.8		
	5		-1.8		
	6		-1.8		
	9		-1.8		
	11		1.9		
	12	-1.2	1.9	-5.3	-4.4
	13	-1.0	1.7	-4.9	-4.7
	14	-1.0	1.7	-4.3	-5.0
	15	-1.4	2.0		-5.5
	17	-1.3	2.1		-5.5
	18	-1.3	2.1		-5.5
	19	-1.2	2.0	-4.3	-5.6
	21	-1.0	1.6	-4.8	-5.7
	22		1.7	-4.9	-5.6
	23	-1.0	1.7	-5.1	-5.7
	25	-1.1	1.7	-5.4	-5.8
	26	-1.1			
	27	-1.0	-1.7		
	28	-1.2	-1.9		
Mar.	4, 1957	-1.8	-3.1		
	5	-1.7			
	6	-1.5			
	7	-1.5	-2.6		

Date	High Head		Highland	
	9	10	10	11
Mar. 8, 1957	-1.72			
11	-2.37			
12	-2.87	-3.35	-6.78	
13	-2.45	-3.30	-6.88	
14	-2.37	-3.43	-6.82	-7.41
15	-2.52	-3.45	-6.82	-4.95
18	-2.70	-3.55		-4.42
19	-2.60	-3.53	-6.73	-4.20
26	-3.00	-4.4	-6.28	-6.45
28	-3.10		-6.28	-6.70
Apr. 2, 1957	-3.20			
3	-3.25		-6.63	-6.85
5	-3.32			
8	-3.30			
10	-3.10		-6.78	
11	-3.12		-6.78	-7.87
12	-3.15		-6.85	-7.90
15	-3.10		-6.76	-7.59
16 a.m.	-3.24		-6.70	-7.75
16 p.m.	-3.19		-6.75	-7.71
17 a.m.	-3.18		-6.83	-7.57
17 p.m.	-3.20		-6.89	-7.69
18 a.m.	-3.22		-6.88	-7.57
18 p.m.	-3.41		-6.91	-7.55
19			-6.88	-7.45
20			-6.90	
22			-6.53	
23			-6.65	
24			-6.60	
May 2, 1957	-3.42			
11	-3.20	-4.44		
12	-3.29		-6.93	
13	-3.20		-6.98	
16	-3.29		-6.68	
17	-3.32	-4.50	-6.98	
18			-6.98	
31	-3.65	-5.93	-5.93	

Date	High Head		Highland	
	9	10	10	11
June 1, 1957			-6.82	
3	-4.01		-6.53	
4	-3.65		-6.73	
5	-3.65		-6.80	
7	-3.67		-6.83	
July 2, 1957	-3.90	-5.88		
3	-3.70	-5.58		
8	-4.08			
Aug. 1, 1957	-3.76	-5.58		
29	-4.01			

References Cited

Zeigler, J. M., 1960, Beaches Studied in the Cape Cod area, conducted during the period August 1953 - April 1960; Woods Hole Oceanographic Institution, Ref. No. 60-20.

Zeigler, J. M., and S. D. Tuttle, (in press). Beach Changes Based on Daily Measurements of four Cape Cod Beaches; The Journal of Geology.

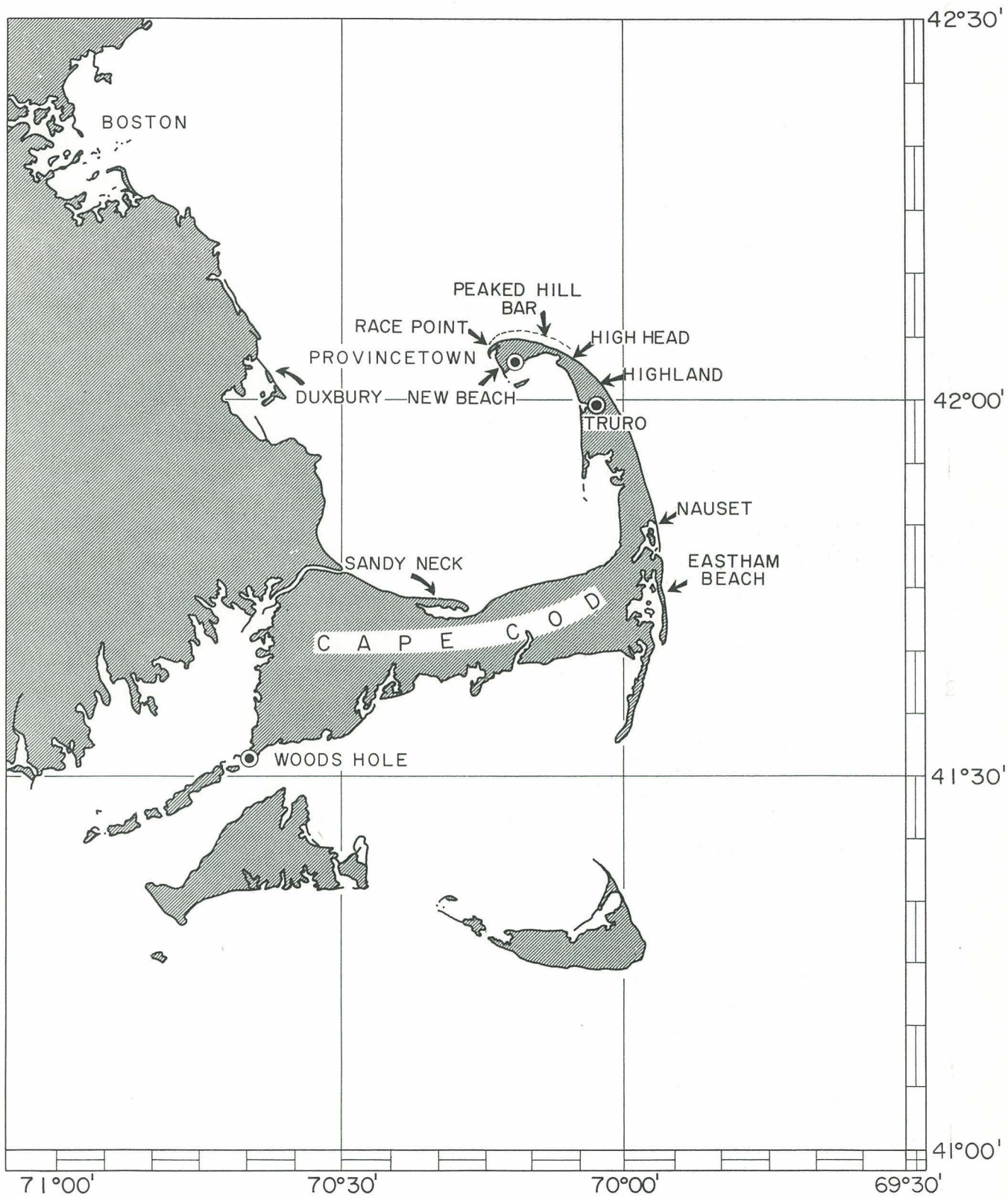


Figure 1. Index map, Cape Cod and beaches studied.

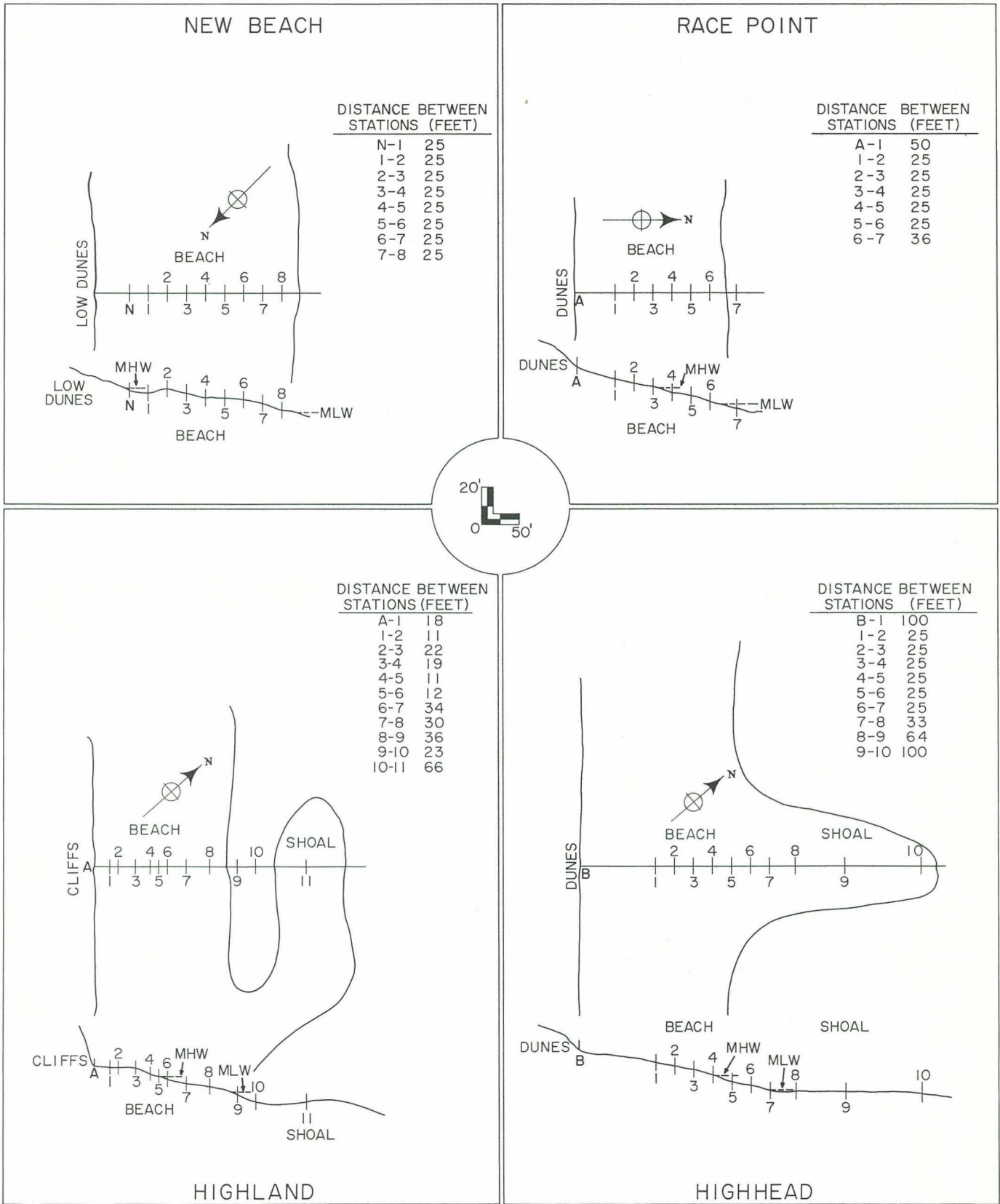


Figure 2. Location of points measured in plan and profile at the beaches studied.

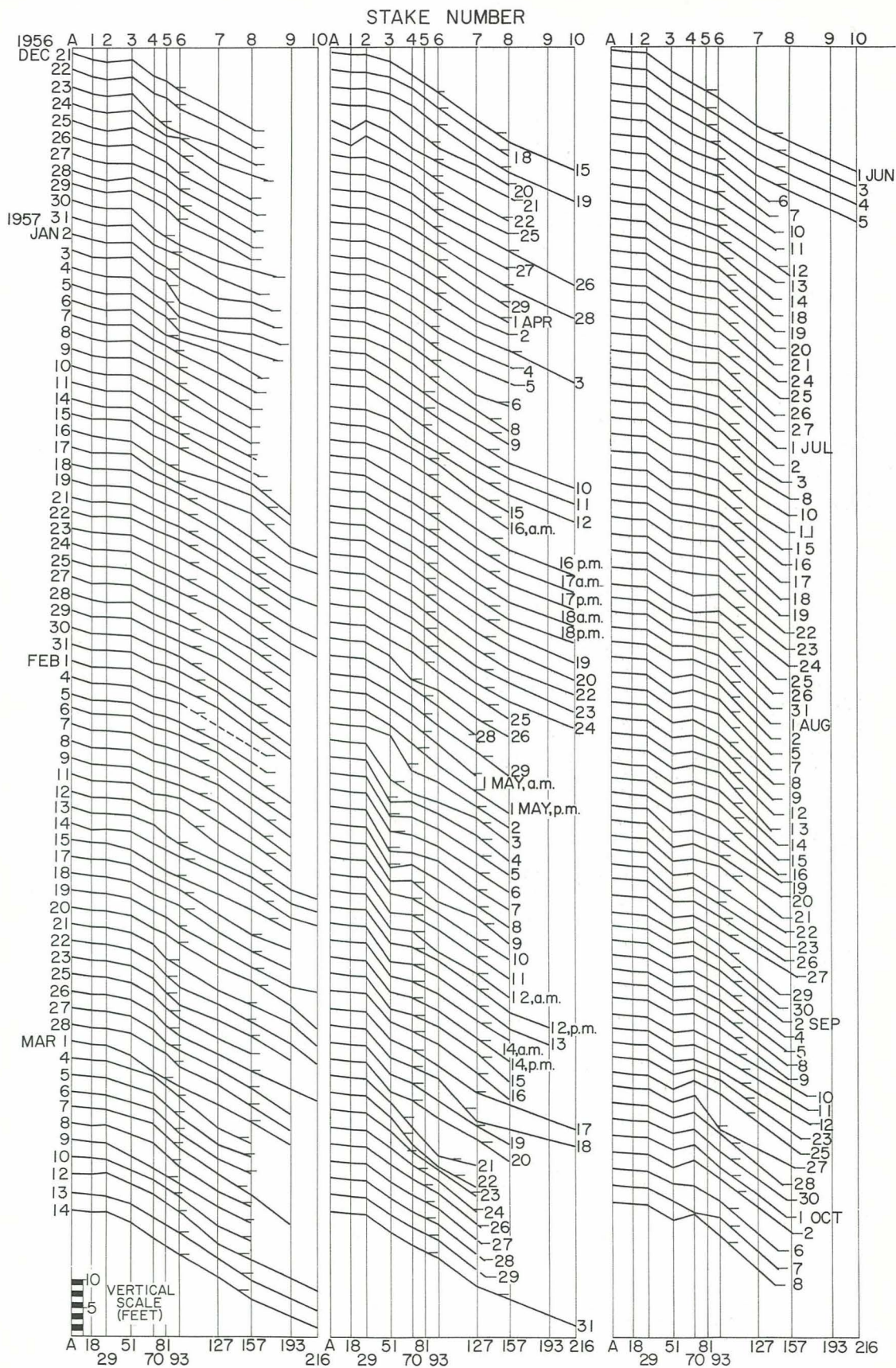


Figure 3. Profiles across Highland Beach, December 1956 to October 1957.

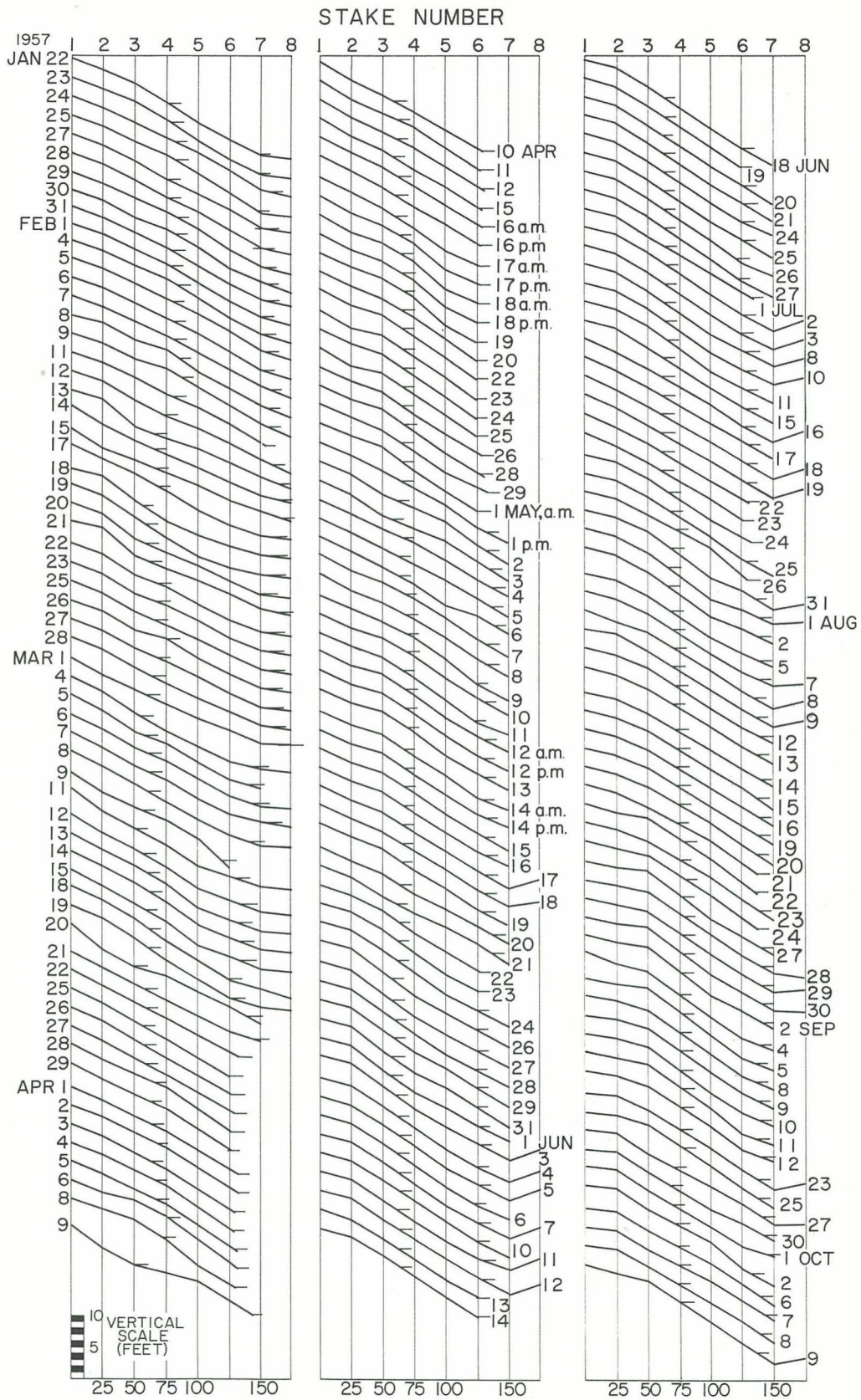


Figure 4a. Profiles across High Head Beach, January 1957 to October 1957.

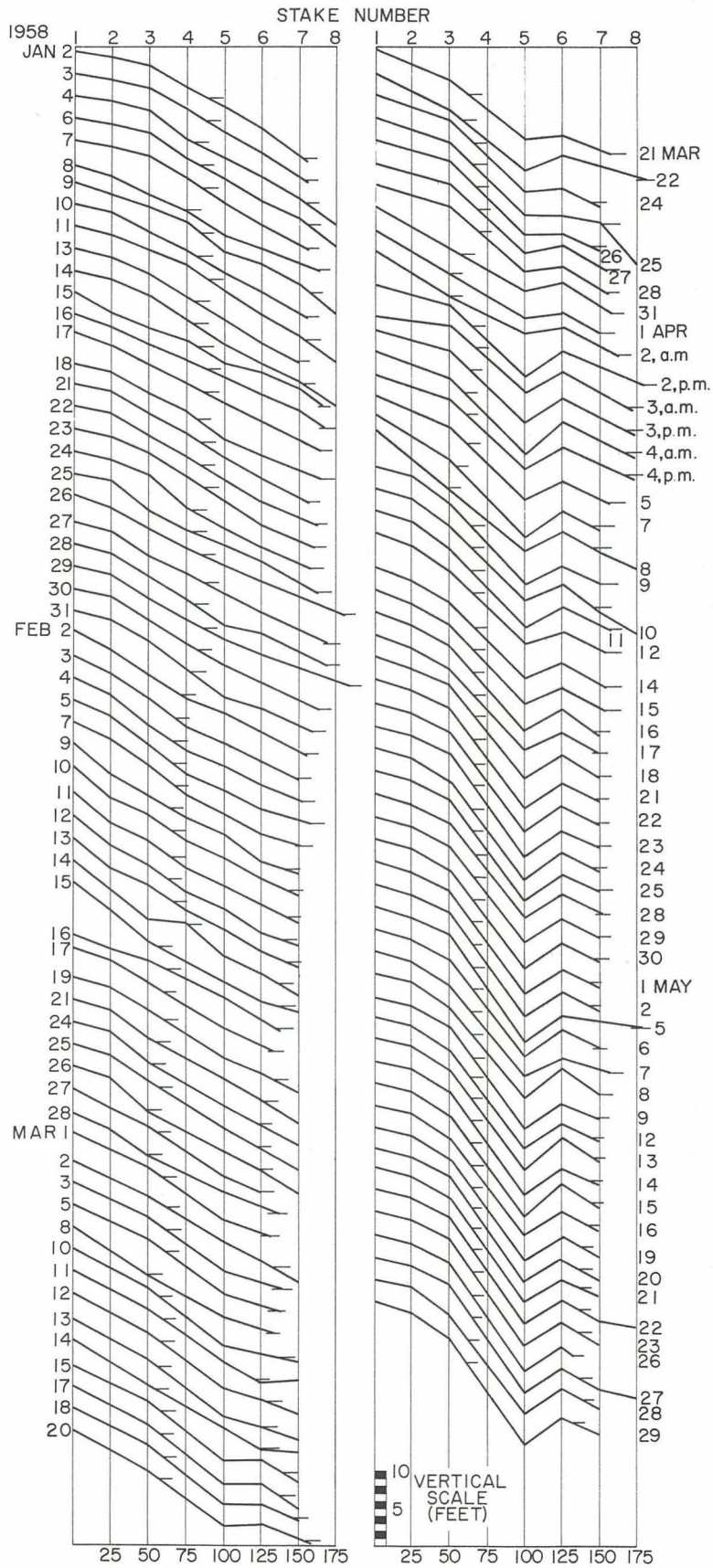


Figure 4b. Profiles across High Head Beach, January 1958 to May 1958.

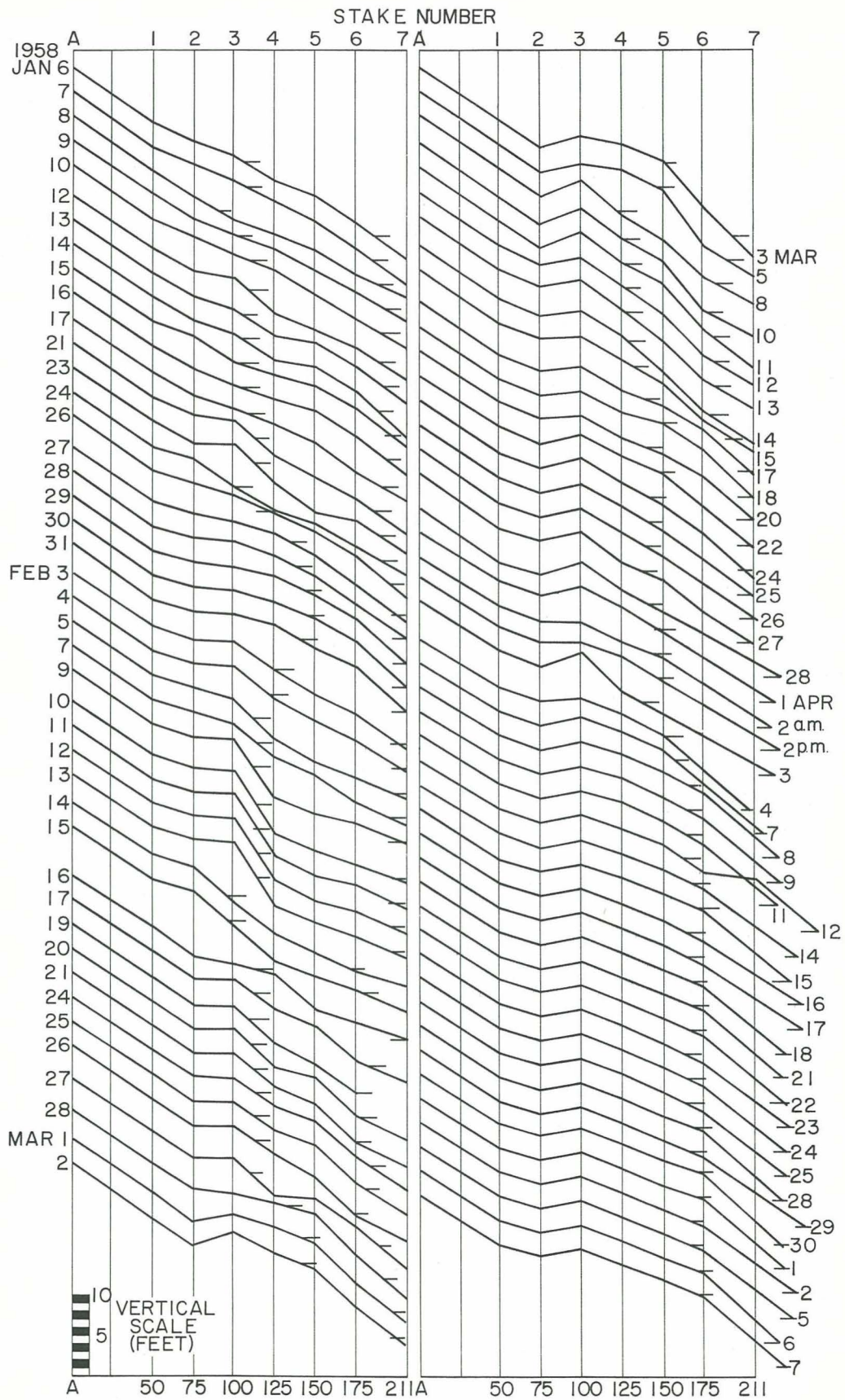


Figure 5. Profiles across Race Point Beach, January 1958 to May 1958.

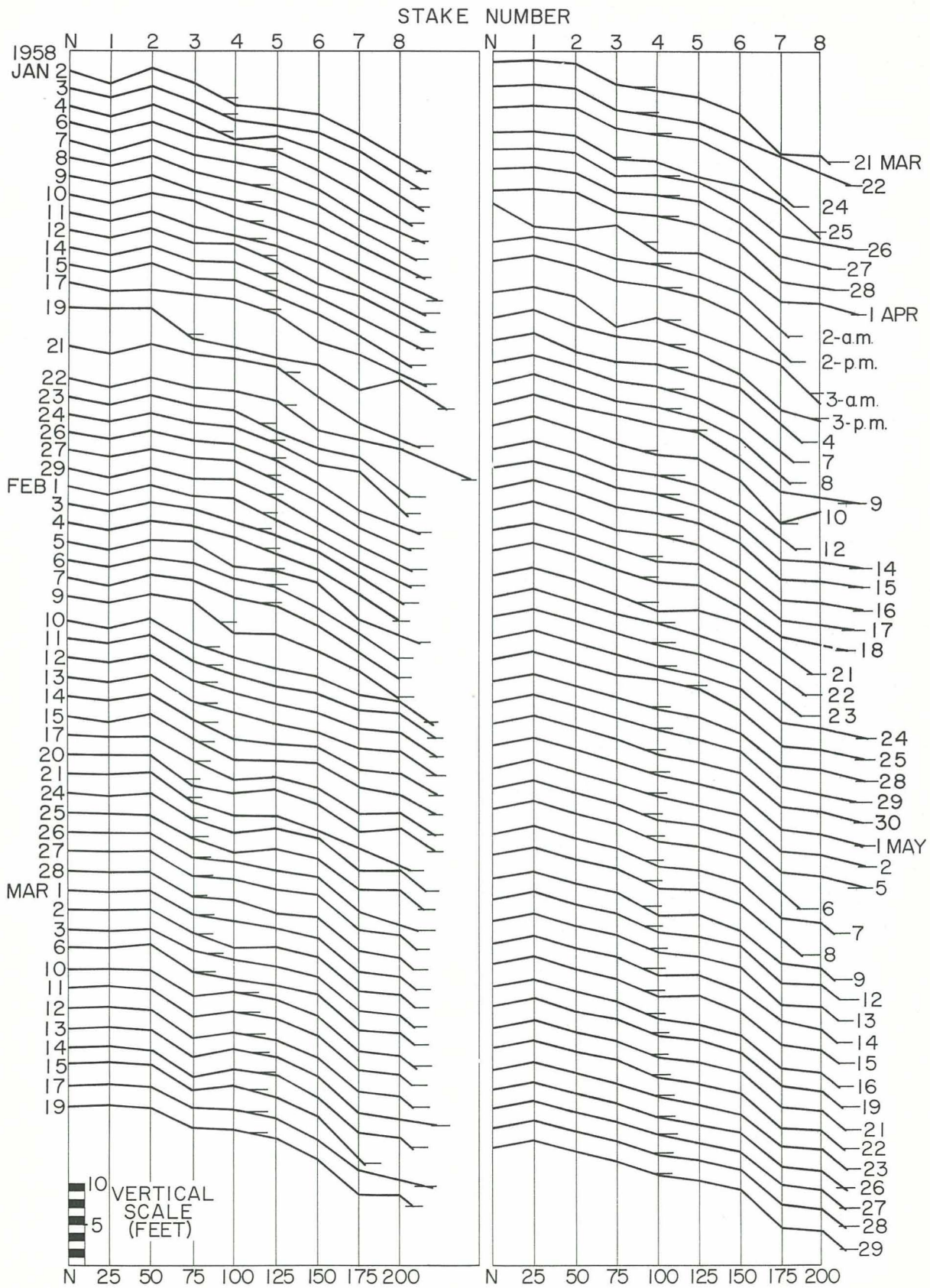


Figure 6. Profiles across New Beach, January 1958 to May 1958.