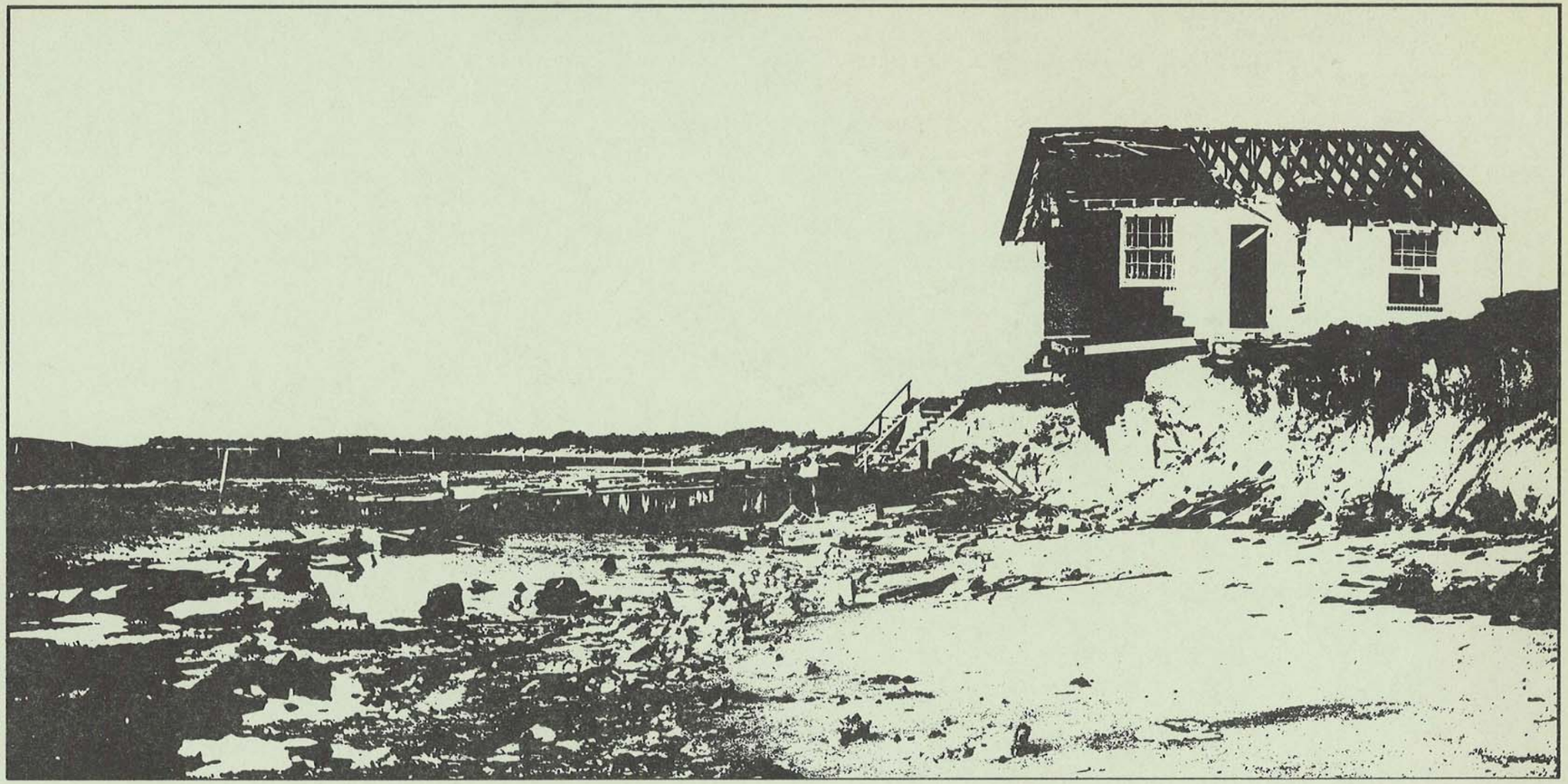
SHORELINE EROSION IN TIDEWATER VIRGINIA



Supported by the National Science Foundation, Research Applied to National Needs Program
NSF Grant Nos. GI 29909 and 34869 to the Chesapeake Research Consortium, Inc.

Chesapeake Research Consortium Report Number 8
Special Report in Applied Marine Science and Ocean Engineering Number 111 of the

VIRGINIA INSTITUTE OF MARINE SCIENCE
Gloucester Point, Virginia 23062

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PART I

THE SHORELINE EROSION STUDY

A. INTRODUCTION

Virtually every owner of waterfront property in Tidewater Virginia has gained an awareness of the importance of the problem of shoreline erosion either through the loss of his own property or through his observations of other properties. The problem is particularly acute for the homeowner who watches the reduction in the width of the fastland buffer between his home and the water. Aside from this obvious importance of erosion relative to the wasting of valuable land, the eroded materials also constitute a significant fraction of the total sediment introduced into the Chesapeake Bay system. The silts and clays eroded from the shoreline move into the deeper water and contribute to the general siltation problem. Most of the sands and gravels are left near the shoreline to form beaches or to accumulate in forms such as spits. The accumulations are at times troublesome if they block navigable channels to tributaries.

As the population is growing more rapidly in the coastal zone than in any other segment of the nation, the pressures on utilization of the shorelands also increase. As these pressures may become more severe, there is a need for planning the utilization of the limited resource of the shorelands. Without planning, the very elements which attract people to the shore may be destroyed by incompatible utilization. One part of the knowledge required for enlightened planning is the determination of how the shoreline is behaving in response to the natural forces exerted on it.

The need for shore erosion studies in the Chesapeake Bay system has long been recognized. As early as 1949 erosion information was compiled for the State of Maryland (Singewald and Slaughter, 1949). In 1962 an erosion survey was conducted in Virginia for the tidal Rappahannock River and part of the Potomac (Virginia Tidal Riverbank Erosion Survey). The survey included a limited economic analysis of the affected shoreline. The present study is the first comprehensive evaluation of erosion for the entire Virginia Chesapeake Bay system. The study does not include the ocean shoreline as that is currently under study and will be the subject of a future report.

The objective of this report is to provide a source of information about shoreline erosion that can be utilized by the public at large as well as by those county, state, and federal agencies which are concerned with the problems of shoreline erosion. Consideration of the erosion problem is an essential element in planning shoreland utilization.

The basic informational elements used in this study were a topographic map series of the 1850's and the 1940's. Comparisons were made of the high water shoreline positions at the two times, with measurement consisting of areal changes for individual small segments of the coastline. The derived statistics are thus averages over a rather long term. These are very useful data but they do mask the short term variability in the erosional processes. The user must have this fact in mind.

ACKNOWLEDGEMENTS

The study was funded by National Science Foundation, Research Applied to National Needs Program (RANN) Grants GI 29909 and 34869 to the Chesapeake Research Consortium, Inc. (Virginia Institute of Marine Science, The Johns Hopkins University, The University of Maryland, and the Smithsonian Institution). The compilation of the erosion data in this study was a large undertaking. Our task could not have been completed within the prescribed time had it not been for the generous assistance provided by the administration of the NASA-Langley Research Center in allowing the use of their X-Y digitizer. We most gratefully acknowledge this assistance.

The basic computer program for the calculation of area changes, shoreline length, and derived parameters was written by Hayden Gordon of V.I.M.S. Mr. Ashbury Sallenger, a graduate assistant, assisted in all phases of the study.

In addition, we acknowledge the wholehearted and professional work of Ken Thornberry and Bill Jenkins of the photo lab, Russell Bradley, Joe Gilley, Kaye Stubblefield, and Jane Davis of the art room. Finally, we thank Gaynor Williams for final composition and Beth Marshall for typing the report.

B. SHORE EROSION PROCESSES IN TIDEWATER VIRGINIA

Shore erosion is the process of detachment and transportation of sediment particles from the shore, resulting in the landward retreat of the land-water boundary. Although this process can be caused by wind action and the surface runoff of water, the most significant erosion agent on the shoreline of the Chesapeake Bay system is the action of wind waves. In many locations the tidal currents combine with the wave action to accelerate the process of transport of material from the site of erosion. Superimposed upon the active forces of waves, currents, runoff, and wind, another factor must be considered, specifically, the slow rise in sea level relative to the land. This is due to an increase in water volume from the slow melting of glaciers and/or the local absolute change in the land's elevation due to geological processes. This increase in sea level translates the erosive power of the waves further inshore.

The degree of shoreline recession which a particular site experiences is dependent upon many factors. The major factors are:

1. The intensity of wave action and the exposure to strong tidal currents.

2. The character of the sediments at the site and the degree of protection offered by vegetative cover, specifically marsh grass, at the shoreline.

3. The supply of sand moving along the shoreline from other eroding areas or from streams along the shoreline.

4. The gradient or slope of the fastland adjacent to the shoreline and the slope of the nearshore bottom.

Within the Chesapeake Bay and its tributary estuaries (e.g. James River) the dominating erosion agent is the waves generated by local wind action. The growth and height of the waves is controlled by four factors: the over water distance over which the wind is blowing, known as the fetch; the speed of the wind; the duration of the wind; and the depth of water.

Due to the weather patterns affecting the region, the peak winds occur during storms and the passage of fronts. For example, the northeast storms during the fall, winter and early spring generate winds, and therefore local waves. These winds and waves attack the western shore of the Bay and those tributary shorelines with a fetch to the northeast or east. The winds and low pressure along the ocean coastline have an additional, indirect, effect on the Bay system. The storms force additional water into the Bay. Frequently this local "wind tide" or storm surge may be one or two feet above the normal tide level. For example, in the March, 1962 storm, water elevations at Norfolk Harbor were 6.1 feet higher than predicted. Similar surge heights can occur during the passage of hurricanes (U.S. Army Corps of Engineers, 1970). When this occurs, the wave driven erosional action is concentrated higher on the fastland, above the usual beach which acts as a buffering zone in normal circumstances. In addition to surge forced into the Bay the local winds tend to push water against the shoreline which further enhances the water elevation. This is known as wind set-up. After the storm front has passed the winds frequently shift to the northwest quadrant. The eastern shore of the Bay is then exposed to intense wave action. Again the wind set-up raises the water elevation, resulting in the wave activity being concentrated above the usual beach level. These effects of storms are, of course, further enhanced if they occur in conjunction with the higher tides during the lunar month.

The orientation of the tributary estuaries, the James, York, Rappahannock and Potomac Rivers, is approximately northwest-southeast. This fact increases the vulnerability of their shorelines to intense wave action generated by winds from the northwest quadrant. Due to these winds, the south sides of these tributaries experience somewhat greater erosion than the north. The regional summer winds, with a dominant southerly and southwesterly direction, generate waves which attack the northern shores of the estuaries.

In addition to the height of the waves, the direction at which they impinge on the shoreline controls the magnitude of transport along the shoreline. This is central to the question of shoreline stability. Let us consider a hypothetical case of a shoreline several miles in length where the fastland is a cliff composed of a mixture of stratified gravel, sand, silt, and clay, a situation which is typical of much of the Virginia shoreline. Under wave attack, particularly if the water level is high due to the tide or storm surge, the cliff material itself may be undercut causing slumping of the face material. Continued wave action on the slumped material would winnow away the silts and clays leaving the sand and gravel to form a beach deposit. Part of the sand and gravel on the beach will be transported along the beach (longshore drift). The beach itself acts as buffer to wave energy as the waves break and run-up and back down the sloping foreshore. If there is sufficient sand drifting down the shore zone from the up-drift segment of the coast, the beach at any given site may remain full enough to cushion the effects of a particular storm. If, however, the sand supply up-drift is stopped, the buffer effect is reduced and erosion will ensue. Along the Virginia shoreline, waves approach from more than one direction at different times so that longshore drift occurs in both directions. However, in most cases there is a predominance of drift in one direction.

Much of the sand drifting along the Virginia coastline ultimately is deposited as spits or bars in front of lesser tributary creeks where it may contribute to choking of the entrance channel.

Marsh grass along the shoreline has a very beneficial influence in hindering erosion as it acts, through its root system, to bind the substrate while the grass itself slows the water flow and traps sand. Whenever possible, natural stands of grass should be untouched. Research is in progress to develop means of planting marsh grass for erosion protection; but, for the most part, this strategy has proved unsuccessful in areas receiving intense wave attack.

The erosional behavior of any particular segment of shoreline may be expected to vary from year to year depending upon the frequency and intensity of storms. Furthermore, similar variations may also arise from differences in the average mean sea level elevations, even though the long term (decades) trend is for a relative rise in sea level. In the lower Chesapeake Bay the long term trend is about 0.01 feet per year (Hicks, 1972). However, yearly variations of 0.15 feet per year are not uncommon. Although these differences are small they can be significant in terms of horizontal distances across a

gently sloping shore. The long term trend has dramatic consequences.

The role played by beaches in the physical processes of the coastline merits reiteration: beaches are natural land forms which serve to absorb incident wave energy thereby inhibiting erosion of the fastland. The details of the configuration of any given beach may change hour by hour or day by day as the accumulation of sand adjusts to changing conditions. By and large, the natural maintenance of beaches along Virginia's Chesapeake Bay system shoreline is attained at the expense of erosion of the fastlands. For any particular segment of shoreline, the source of sand is derived from an updrift erosion site or from erosion of fastland at that site itself. These factors are an essential consideration in the philosophy and strategy in planning erosion control programs.

C. METHODS AND MEASUREMENTS

METHODS. The first step of the work consisted of transferring the high water shoreline position from the older topographic map series to the later map series. The earlier map series was that of the Coast and Geodetic Survey performed in the 1850's while the later series was that of the U.S. Geological Survey performed during the period 1950 to 1968. All maps were rectified to a scale of 1:20,000 using stable base film positives. After both shoreline positions were on one map it was possible to identify sections of the shoreline where erosion or accretion had occurred. Each of these elemental sections, termed a reach, was numbered and its end points marked. In addition, note was made whether the shoreline consisted of marsh or beach. The end points of the reaches were chosen at identified map points whenever possible as long as it did not compromise the primary criterion. In all, 1,725 reaches were identified and measured.

Changes in shoreline position in the smaller tidal creeks were not included as some limit on the level of detail had to be set. The cut-off point for measuring the length of the shoreline was chosen as that point where the channel width narrowed to 150 feet.

Some areas of the shore lacked either one or the other of the surveys. Thus, of a total measured shoreline length of 2,951 miles, erosion characteristics were measured for 2,366 miles. The remainder, 585 miles, represents the shoreline length not assessed for erosion.

Islands and some of the more crenulated creeks required a somewhat different approach. In most cases there were no distinct reaches apparent when comparing an island's older and more recent shoreline positions. For these cases only the area change and new shoreline length were calculated. In complex creek systems which had many small areas of erosion or accretion the system was treated as a whole, again simply noting the net area change and the shoreline length.

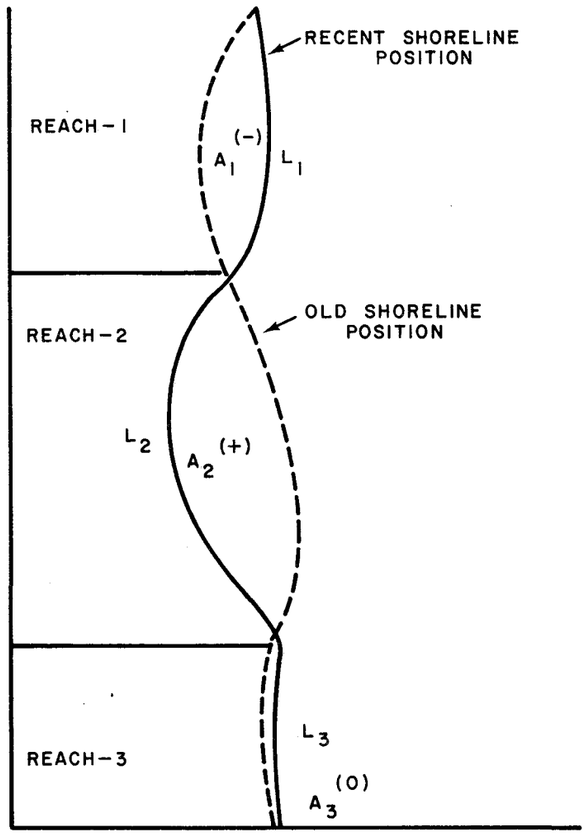


Fig. 1 - Schematic Presentation of Parameter Definition

The following parameters were measured or calculated for each reach (see Figure 1):

A. Area Change, A, in acres, represents the area enclosed between the newer and older shoreline positions. Each reach is identified as to whether the change was erosion or accretion.

B. Length of Shoreline, L, is expressed in thousands of feet, for example, 3,200 feet reads as 3.2. The shoreline used in this measurement was that delineated on the more recent map.

C. Mean Erosion or Accretion Distance, R, is expressed in feet. This parameter is calculated by dividing the area by length of shoreline.

D. The Average Rate of Erosion (or Accretion), E, is expressed in feet per year. This parameter was calculated by dividing the mean erosion distance by the time in years between the applicable surveys.

E. Height of Fastland (or Marsh), is expressed in feet. This parameter has considerable uncertainty since it was estimated from topographic maps with a contour interval of 5 to 20 feet. In some cases there was appreciable variation in elevation within a reach which necessitated another estimate of the average elevation. Marsh was considered to be three feet in height.

F. Volume Eroded or Accreted, V is expressed in cubic yards. This parameter was calculated by multiplying the area and the height of the fastland with subsequent conversion to cubic yards.

G. The Volume Coefficient is the expression used to normalize the volumes to a 100 year base. It was obtained by dividing the time span between the maps used a particular reach into 100.

H. The Adjusted Volume is the calculated volume lost or gained over a 100 year period. This is obtained by multiplying the volume coefficient by the unadjusted volume.

The measurement of area and shoreline length for each reach were made with an electronic X-Y digitizer with punch card output. Tests of reproducibility indicated a precision of ± 1% in area and even smaller differences between operators on the same machine. A computer program was written to calculate the area and the above output parameters.

The compilation of summary statistics for any given county raised a problem since our basic erosion information was based on variable time periods. For example, part of the measurements may have been made from surveys spaced 90 years apart while the other part was from surveys with a 70 year time span. Meaningful statistics for the entire county cannot be made simply by combining or averaging the time span. To circumvent this problem, the data for all reaches were normalized to 100 years. Thus, if a given reach lost 75 acres over 75 years it is assumed that the loss for 100 years is 100 acres. The assumption, then, is that the rate of loss (or accretion) is constant. Most people living along the shoreline and certainly those working in coastal processes realize this is a tenuous assumption since they will observe significant variations in the rate of loss from year to year depending upon the frequency and intensity of storms. However, such statistics do have meaning for planning and shoreline management purposes on a broad scale since relative differences in the severity of erosion will clearly show.

The distribution of the time span between surveys was as follows:

Number of Quadrangles	Time Span Between Surveys
46	99 to 90 years
23	89 to 80 years
19	79 to 70 years
8	69 years
3	54 years
1	40 years

D. ORGANIZATION OF THE REPORT

Since this report is intended to provide useful information for a wide audience, ranging from individual property owners to state and federal management agencies, the data for each shoreline reach investigated is included.

The entire Bay system was divided into eight sub-systems as shown in Figure 2. These are:

Chesapeake Bay Eastern Shore (CBES)
Chesapeake Bay Western Shore (CBWS)
Chesapeake Bay Southern Shore (CBSS)
James River up to Richmond
York River up to West Point
Piankatank River
Rappahannock River up to Fredericksburg
Potomac River up to Fairfax County.

Within each of these sub-systems the individual shoreline reaches were numbered sequentially. Summary results have been compiled for each subsystem and for each county having tidal shoreline exposure.

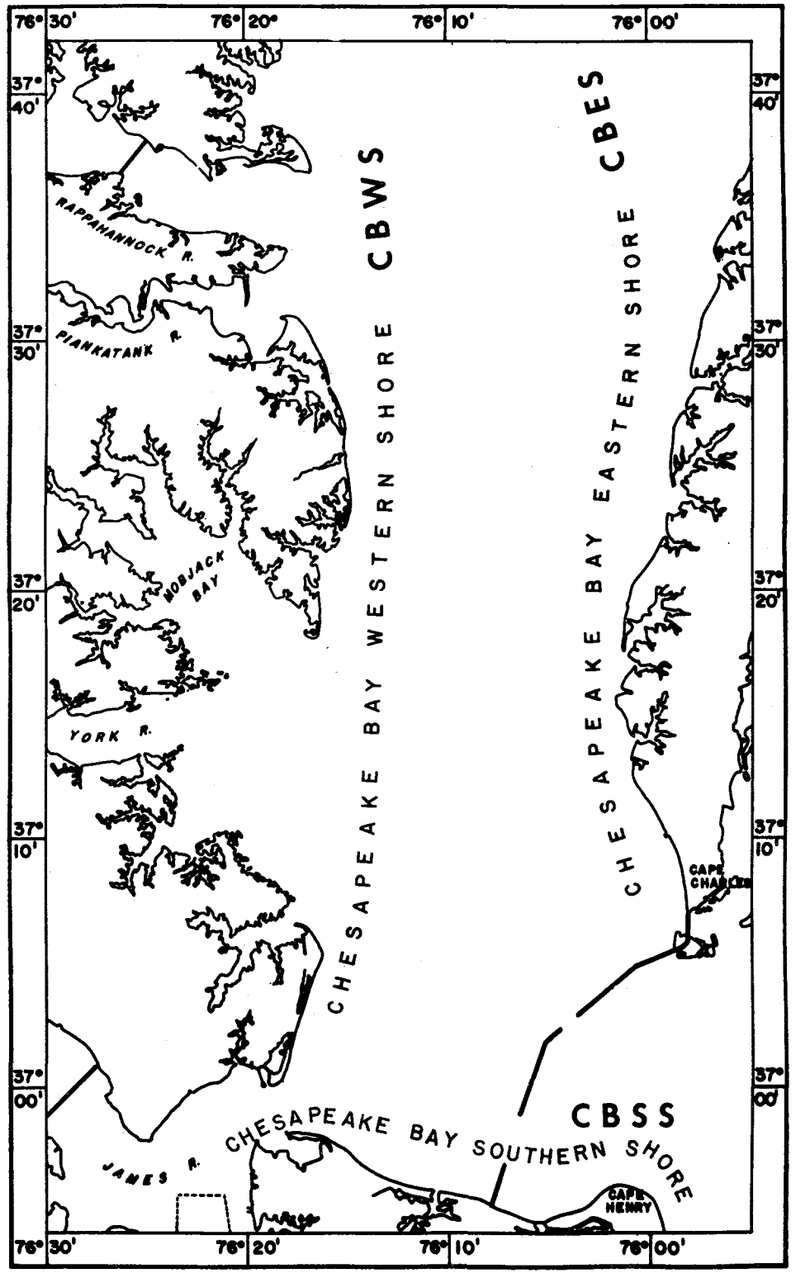


Fig. 2 - Location of Subsytems

PART II

RESULTS OF THE STUDY

A. SUMMARY STATISTICS

1. Summary of Shore Erosion in Tidewater Virginia

The shore erosion measurements for Tidewater Virginia, excluding the ocean shoreline, are summarized in Table 1. As mentioned previously the results of acreage and volumes of material lost have been prorated to a base time of one hundred years. Inspection of Table 1 indicates that over 21,000 acres of land had been lost due to erosion over a 100 year period over a shoreline length of approximately 2,400 statute miles. This gives an average loss of about nine acres per mile of shoreline per century if one were to consider the loss evenly distributed along the shoreline. The conservative estimate of the total volume of material lost by erosion and introduced into the waters of the Bay system was 270,126,000 cubic yards per 100 years. This is equivalent to a volume one mile square and 165 feet high.

2. Summary of Shore Erosion by Tidal Rivers and Bay Segments

The summary of erosion statistics for the major tidal rivers and segments of the Chesapeake Bay proper are given in Table 2. Although the statistics may be arranged in a number of meaningful ways, only one example is shown here: the ranking of the components with respect to acreage lost per mile of shoreline per century. This treats the information as though the loss has been evenly distributed along the shoreline which is, of course, not the case. It does, however, give some measure of the severity of the problem. Inspection of the table indicates there is most pronounced erosion on the shores of the Bay and that the next most severe erosion is in the wider rivers. This qualitative correspondence would be expected, as the width and orientation of the rivers determines the distance (fetch) over which the winds have to generate waves which are the principal erosion agent.

It should also be noted that some segments of the shoreline have been stabilized by erosion control structures within the time period of our data.

TABLE 1

SHORE EROSION STATISTICS

FOR THE VIRGINIA CHESAPEAKE BAY SYSTEM

Shoreline Lengths in Statute Miles	
Total Shoreline	2,951
Shoreline Measured for Erosion Characteristics	
Marsh Shoreline	793
Beach Shoreline	1,572
Total Measured	2,365
Shoreline Changes in Acres per 100 Years	
Marsh Shoreline (net)	- 7,361
Beach Shoreline (net)	- 13,718
Total Acreage Lost	- 21,079
Shoreline Changes in Cubic Yards per 100 Years	
Marsh Shoreline (net)	- 57,932,000
Beach Shoreline (net)	- 212,194,000
Total Volume Lost	- 270,126,000

3. Summary of Shore Erosion by Counties and Cities

The summary statistics for shore erosion are given in Table 3A and 3B. Table 3A lists the erosion characteristics by geographical subsystems and Table 3B arrays the same information according to county or city. Again these results may be arrayed in different ways that are of interest to those involved in managing or planning shoreline use or erosion defenses. One example is illustrated by Table 4. The counties and cities are listed in descending order with respect to the severity of erosion as reflected by acres lost per mile per 100 years. Inspection indicates that there are fourteen counties which lost at least 10 acres per mile per 100 years. This may be cast in another perspective by considering that a loss of 10 acres per mile per 100 years is equivalent to a recession of 0.8 foot per lineal foot of shoreline per year. Again this characterization considers the recession to be uniformly distributed through time and space, which is not the case.

TABLE 2

RANKING OF EROSION BY

RIVER SYSTEMS AND BAY SHORES

Chesapeake Bay* Southern Shore	- 16 acres/mile/century
Chesapeake Bay Eastern Shore	- 12 acres/mile/century
Chesapeake Bay Western Shore	- 11 acres/mile/century
Rappahannock River	- 9 acres/mile/century
Potomac River (Va.)	- 7 acres/mile/century
York River	- 6 acres/mile/century
James River**	- 5 acres/mile/century
Piankatank River	- 4 acres/mile/century

* Lynnhaven Bay system excluded; if included this segment would be very much lower.

** If Chesterfield and Henrico Counties are included the result drops to -0.8 acres/mile/century.

TABLE 3A SUMMARY STATISTICS FOR SUB-SYSTEMS

River, Bay Segment	County or City	SHORELINE LENGTHS: Total Shoreline	Measured Shoreline	Measured Marsh Shoreline	Measured Beach Shoreline	SHORELINE CHANGES - ACREAGE: Total Shoreline Net	Average E/A Length	Average Rate		Marsh Shoreline			SHORELINE CHANGES VOLUMES: Total Shoreline Net	Marsh Shoreline Net	Beach Shoreline Net
		Stat. Mi.	Stat. Mi.	Stat. Mi.	Stat. Mi.	Acres/100 years	Feet	Ft/Yr	Ac/Yr	Ero.	Acc.	Net	Cu Yds × 10^3	Cu Yds × 10^3	Cu Yds × 10^3
										Acres/100 years					
Chesapeake Bay Eastern Shore	Accomack	307	284	226	58	- 5205	- 151	- 1.5	-52.1	- 4834	+ 94	- 4740	- 32,252	- 27,621	- 4,631
	Northampton	140	96	24	72	- 782	- 67	- 0.7	- 7.8	- 120	+ 61	- 59	- 8,253	- 412	- 7,841
	Fisherman Island	9	9		9	+ 1238	+1095	+ 11	+12.4	0	0	0	+ 7,988	0	+ 7,988
	TOTAL	456	389	250	139	- 4749	- 98	- 1.0	-47.5	- 4954	+155	- 4799	- 32,516	- 28,033	- 4,484
Chesapeake Bay Southern Shore	Virginia Beach	78	10	0	10	- 207	- 166	- 1.7	- 2.1	0	0	0	- 1,187	0	- 1,187
	Norfolk	138	9	0	9	- 134	- 120	- 1.2	- 1.3	0	0	0	- 1,194	0	- 1,194
	Nansemond	44	3	0.3	3	- 46	- 115	- 1.2	- 0.5	0	+ 8	+ 8	- 508	+ 38	- 546
	TOTAL	260	22	0.3	22	- 387	- 145	- 1.4	- 3.9	0	+ 8	+ 8	- 2,889	+ 38	- 2,927
Chesapeake Bay Western Shore	Gloucester	132	132	44	88	- 628	- 62	- 0.6	- 6.3	- 540	+ 38	- 502	- 3,700	- 2,675	- 1,025
	Hampton	59	59	7	52	- 521	- 102	- 1.0	- 5.2	- 109	+ 0	- 109	- 5,092	- 797	- 4,295
	Lancaster	43	43	5	38	- 792	- 145	- 1.4	- 8.0	- 415	+ 3	- 412	- 8,015	- 4,676	- 3,339
	Mathews	159	159	37.5	121.5	- 1504	- 78	- 0.8	-15.0	- 547	+191	- 356	- 11,013	- 2,512	- 8,501
	Northumberland	160	160	13	147	- 1868	- 96	- 1.0	-18.7	- 268	+ 14	- 254	- 21,759	- 2,373	- 19,386
	York	99	99	43	56	- 1832	- 153	- 1.5	-18.3	- 1064	+ 6	- 1058	- 10,899	- 6,216	- 4,683
	TOTAL	652	652	149.5	502.5	- 7145	- 90	- 0.9	-71.4	- 2943	+252	- 2692	- 60,479	- 19,249	- 41,229
James	Charles City	90	90	40	50	- 200	- 26	- 0.3	- 2.0	- 232	+ 47	- 185	- 1,704	- 1,348	- 356
	Chesterfield	86	86	42	44	+ 1125	+ 108	+ 1.1	+11.2	- 104	+1548	+ 1444	+ 23,109	+ 11,871	+ 11,238
	Henrico	36	36	15	21	+ 501	+ 116	+ 1.2	+ 5.0	- 2	+ 253	+ 251	+ 4,791	+ 1,337	+ 3,454
	Isle of Wight	35	26	9	17	- 603	- 182	- 1.8	- 6.0	- 151	+ 20	- 131	- 14,029	- 11,572	- 2,457
	Prince George	65	65	36	29	- 402	- 116	- 1.2	- 4.0	- 139	+ 3	- 136	- 12,843	- 1,085	- 11,758
	James City	58	58	28	30	- 62	- 9	- 0.1	- 0.6	- 78	+113	+ 35	- 639	+ 172	- 811
	Newport News	24	24	7	17	- 231	- 80	- 0.8	- 2.3	- 123	+ 4	- 119	- 1,817	- 926	- 891
	Surry	40	34	2	32	- 498	- 120	- 1.2	- 5.0	- 105	+ 3	- 102	- 14,858	- 942	- 13,916
	TOTAL	434	419	179	240	- 370	- 7	- 0.1	- 3.7	- 934	+1991	+ 1057	- 17,990	- 2,493	- 15,497

TABLE 3A (Cont'd.)

SHORELINE LENGTHS

SHORELINE CHANGES - ACREAGE

SHORELINE CHANGES VOLUMES

River, Bay Segment	County or City	Total Shoreline	Measured Shoreline	Measured Marsh Shoreline	Measured Beach Shoreline	Total Shoreline Net	Average E/A Length	Average Rate		Marsh Shoreline			Total Shoreline Net	Marsh Shoreline Net	Beach Shoreline Net
										Ero.	Acc.	Net			
		Stat. Mi.	Stat. Mi.	Stat. Mi.	Stat. Mi.	Acres/100 years	Feet	Ft/Yr	Ac/Yr	Acres/100 years			Cu Yds × 10^3	Cu Yds × 10^3	Cu Yds × 10^3
Piankatank	Gloucester	18	18	0	18	- 8	- 10	- 0.1	- 0.1	0	0	0	- 108	0	- 108
	Mathews	25	25	0.5	24.5	- 244	- 82	- 0.8	- 2.4	- 7	0	- 7	- 2,264	- 44	- 2,220
	Middlesex	43	43	1	42	- 92	- 22	- 0.2	- 0.9	- 7	0	- 7	- 1,265	- 33	- 1,232
	TOTAL	86	86	1.5	84.5	- 344	- 33	- 0.3	- 3.4	- 14	0	- 14	- 3,637	- 77	- 3,560
Rappahannock	Caroline	29	29	9	20	- 743	- 211	- 2.1	- 7.4	- 1	+ 66	+ 65	- 25,894	+ 314	- 26,208
	Essex	77	77	16	61	- 1087	- 117	- 1.2	-10.9	- 152	+ 48	- 104	- 16,260	- 705	- 15,555
	King George	29	22	20	2	+ 59	+ 20	+ 0.2	+ 0.6	- 13	+ 84	+ 71	+ 276	+ 276	0
	Lancaster	125	125	21	104	- 561	- 56	- 0.6	- 5.6	- 159	+ 85	- 74	- 10,102	- 466	- 9,636
	Middlesex	90	90	8	82	- 1138	- 103	- 1.0	-11.4	- 105	+ 23	- 82	- 23,318	- 1,332	- 21,986
	Spotsylvania	8	8	0	8	- 40	- 39	- 0.4	- 0.4	0	0	0	- 1,002	0	- 1,002
	Stafford	5	3	1.5	1.5	+ 33	+ 86	+ 0.9	+ 0.3	0	0	0	+ 330	+ 94	+ 236
	Westmoreland	15	15	7	8	- 66	- 37	- 0.4	- 0.7	- 58	0	- 58	- 385	- 279	- 106
	Richmond	82	66	37	43	- 497	- 62	- 0.6	- 5.0	- 147	+ 2	- 145	- 5,333	- 779	- 4,554
	TOTAL	460	436	119.5	315.5	- 3966	- 75	- 0.8	-39.7	- 635	+308	- 327	- 81,688	- 2,877	- 78,811
Potomac	Fairfax	37	Insufficient Data					Insufficient Data						Insufficient Data	
	King George	32	8	0	8	- 141	- 147	- 1.5	- 1.4	0	0	0	- 5,226	0	- 5,226
	Northumberland	137	75	3	72	- 1392	- 154	- 1.5	-14.0	- 33	+ 2	- 31	- 16,316	- 170	- 16,146
	Prince William	26													
	Stafford	42				- 1167	- 132	- 1.3	-11.6	- 89	+ 62	- 27	- 32,427	+ 34	- 32,461
	Westmoreland	122	72	12	60										
	TOTAL	396	155	15	140	- 2700	- 144	- 1.4	-27.0	- 122	+ 64	- 58	- 53,969	- 136	- 53,833
York	Gloucester	123	123	50	73	- 517	- 48	- 0.5	- 5.2	- 258	+ 4	- 254	- 2,905	- 1,354	- 1,551
	James City	8	8	5	3	- 168	- 176	- 1.8	- 1.7	- 98	0	- 98	- 3,419	- 1,438	- 1,981
	King and Queen	14	14	5	9	- 43	- 26	- 0.3	- 0.4	- 20	+ 11	- 9	- 364	- 70	- 294
	King William	3	3	0	3	+ 16	+ 56	+ 0.6	+ 0.2	0	0	0	+ 76	0	+ 76
	York	52	52	12	40	- 541	- 86	- 0.9	- 5.4	- 187	+ 1	- 186	- 8,990	- 1,227	- 7,763
	New Kent	7	7	6	1	- 90	- 94	- 0.9	- 0.9	- 89	+ 3	- 86	- 1,356	- 1,016	- 340
	TOTAL	207	207	78	129	- 1343	- 54	- 0.5	-13.4	- 652	+ 19	- 633	- 16,958	- 5,105	- 11,853
	STATE TOTALS	2951	2365	793	1572	-21079	- 73	- 0.7	-210.8	-10,216	+ 2797	- 7361	- 270,126	- 57,932	- 212,194

TABLE 3B SUMMARY STATISTICS FOR TIDEWATER COUNTIES AND CITIES

County	Location	SHORELINE LENGTHS: Total Shline.	Msured Shline.	Msured. Marsh Shline.	Msured. Beach Shline.	SHORELINE CHANGES - ACREAGE: Total Shoreline Net	Average E/A Length	Average Rate		Marsh Shoreline			SHORELINE CHANGES VOLUMES: Total Shoreline Net	Marsh Shoreline Net	Beach Shoreline Net
										Ero.	Acc.	Net			
		Stat. Mi.	Stat. Mi.	Stat. Mi.	Stat. Mi.	Acres/100 years	Feet	Ft/Yr	Ac/Yr	Acres/100 years			Cu Yds x 10^3	Cu Yds x 10^3	Cu Yds x 10^3
Accomack	Ches. Bay E.S.	307	284	226	58	-5,205	- 151	- 1.5	-52.1	-4,834	+ 94	-4,740	- 32,252	-27,621	- 4,631
Caroline	Rappahannock	29	29	9	20	- 743	- 211	- 2.1	- 7.4	- 1	+ 66	+ 65	- 25,894	+ 314	-26,208
Charles City	James	90	90	40	50	- 200	- 26	- 0.3	- 2.0	- 232	+ 47	- 185	- 1,704	- 1,348	- 356
Chesterfield	James	86	86	42	44	+1,137	+ 108	+ 1.1	+11.2	- 104	+1,548	+1,444	+ 23,109	+11,871	+11,238
Essex	Rappahannock	77	77	16	61	-1,087	- 117	- 1.2	-10.9	- 152	+ 48	- 104	- 16,260	- 705	-15,555
Fairfax/Arlington	Potomac	37				Insufficient Data									
Gloucester	York	123	123	50	73	- 517	- 48	- 0.5	- 5.2	- 258	+ 4	- 254	- 2,905	- 1,354	- 1,551
	Ches. Bay W.S.	132	132	44	88	- 628	- 62	- 0.6	- 6.3	- 540	+ 38	- 502	- 3,700	- 2,675	- 1,025
	Piankatank	18	18	0	18	- 8	- 10	- 0.1	- 0.1	0	0	0	- 108	0	- 108
	Total Glou.	273	273	94	179	-1,153	- 35	- 0.4	-11.5	- 798	+ 42	- 756	- 6,713	- 4,029	- 2,688
Hampton	Ches. Bay W.S.	59	59	7	52	- 521	- 102	- 1.0	- 5.2	- 109	0	- 109	- 5,092	- 797	- 4,295
Henrico	James	36	36	15	21	+ 501	+ 116	+ 1.2	+ 5.0	- 2	+ 253	+ 251	+ 4,791	+ 1,337	+ 3,454
Isle of Wight	James	35	26	9	17	- 603	- 182	- 1.8	- 6.0	- 151	+ 20	- 131	- 14,019	-11,572	- 2,457
James City	James	58	58	28	30	- 62	- 9	- 0.1	- 0.6	- 78	+ 113	+ 35	- 639	+ 172	- 811
	York	8	8	5	3	- 168	- 176	- 1.8	- 1.7	- 98	0	- 98	- 3,419	- 1,438	- 1,981
	Total J.C.	66	66	33	33	- 230	- 29	- 0.3	- 2.3	- 176	+ 113	- 63	- 4,058	- 1,266	- 2,792
King George	Potomac	32	8	0	8	- 141	- 147	- 1.5	- 1.4	0	0	0	- 5,226	0	- 5,226
	Rappahannock	29	22	20	2	+ 59	+ 20	+ 0.2	+ 0.6	- 13	+ 84	+ 71	+ 276	+ 276	0
	Total K.G.	61	30	20	10	- 82	- 23	- 0.2	- 0.8	- 13	+ 84	+ 71	- 4,950	+ 276	- 5,226
King and Queen	York	14	14	5	9	- 43	- 26	- 0.3	- 0.4	- 20	+ 11	- 9	- 364	- 70	- 294
King William	York	3	3	0	3	+ 16	+ 56	+ 0.6	+ 0.2	0	0	0	+ 76	0	+ 76
Lancaster	Rappahannock	125	125	21	104	- 561	- 56	- 0.6	- 5.6	- 159	+ 85	- 74	- 10,102	- 466	- 9,636
	Ches. Bay W.S.	43	43	5	38	- 792	- 145	- 1.4	- 8.0	- 415	+ 3	- 412	- 8,015	- 4,676	- 3,339
	Total Lan.	168	168	26	142	-1,353	- 66	- 0.7	-13.5	- 574	+ 88	- 486	- 18,117	- 5,142	-12,975
Mathews	Ches. Bay W.S.	159	159	37.5	121.5	-1,504	- 78	- 0.8	-15.0	- 547	+ 191	- 356	- 11,013	- 2,512	- 8,501
	Piankatank	25	25	0.5	24.5	- 244	- 82	- 0.8	- 2.4	- 7	0	- 7	- 2,264	- 44	- 2,220
	Total Mathews	184	184	38.0	146.0	-1,748	- 78	- 0.8	-17.5	- 554	+ 191	- 363	- 13,277	- 2,556	-10,721

TABLE 3B (Cont'd.)

County	Location	SHORELINE LENGTHS: Total Shlne.	Msured. Shlne.	Msured. Marsh Shlne.	Msured. Beach Shlne.	SHORELINE CHANGES - ACREAGE: Total Shoreline Net	Average E/A Length	Average Rate		Marsh Shoreline: Ero.	Acc.	Net	SHORELINE CHANGES VOLUMES: Total Shoreline Net	Marsh Shoreline Net	Beach Shoreline Net
		Stat. Mi.	Stat. Mi.	Stat. Mi.	Stat. Mi.	Acres/100 years	Feet	Ft/Yr	Ac/Yr	Acres/100 years			Cu Yds x 10^3	Cu Yds x 10^3	Cu Yds x 10^3
Middlesex	Piankatank	43	43	1	42	- 92	- 22	- 0.2	- 0.9	- 7	0	7	- 1,265	- 33	- 1,232
	Rappahannock	90	90	8	82	-1,138	- 103	- 1.0	-11.4	- 105	+ 23	- 82	- 23,318	- 1,332	-21,986
	Total Middle.	133	133	9	124	-1,230	- 76	- 0.8	-12.3	- 112	+ 23	- 89	- 24,582	- 1,365	-23,218
Nansemond	Ches. Bay S.S.	44	3	0.3	3	- 46	- 115	- 1.2	- 0.5	0	+ 8	+ 8	- 508	+ 38	- 546
New Kent	York	7	7	6	1	- 90	- 94	- 0.9	- 0.9	- 89	+ 3	- 86	- 1,356	- 1,016	- 340
Newport News	James	24	24	7	17	- 231	- 80	- 0.8	- 2.3	- 123	+ 4	- 119	- 1,817	- 926	- 891
Norfolk	Ches. Bay S.S.	138	9	0	9	- 134	- 120	- 1.2	- 1.3	0	0	0	- 1,194	0	- 1,194
Northampton	Ches. Bay E.S.	140	96	24	72	- 782	- 67	- 0.7	- 7.8	- 120	+ 61	- 59	- 8,253	- 412	- 7,841
Fisherman Island	Ches. Bay E.S.	9	9	0	9	+1,238	+1,095	+11.0	+12.4	0	0	0	+ 7,988	0	+ 7,988
	Total Nh & F.I.	149	105	24	81	+ 456	+ 33	+ 0.3	+ 4.6	- 120	+ 61	- 59	- 265	- 412	+ 147
Northumberland	Potomac	137	75	3	72	-1,392	- 154	- 1.5	-14.0	- 33	+ 2	- 31	- 16,316	- 170	-16,146
	Ches. Bay W.S.	160	160	13	147	-1,868	- 96	- 1.0	-18.7	- 268	+ 14	- 254	- 21,759	- 2,373	-19,386
	Total Nhld.	297	235	16	219	-3,260	- 114	- 1.1	-32.6	- 301	+ 16	- 285	- 38.075	- 2,543	-35,532
Prince George	James	65	65	36	29	- 402	- 116	- 1.2	- 4.0	- 139	+ 3	- 136	- 12,843	- 1,085	-11,758
Prince William	Potomac	26				Insufficient Data									
Richmond	Rappahannock	82	66	37	29	- 497	- 62	- 0.6	- 5.0	- 147	+ 2	- 145	- 5,333	- 779	- 4,554
Spotsylvania	Rappahannock	8	8	0	8	- 40	- 39	- 0.4	- 0.4	0	0	0	- 1,002	0	- 1,002
Stafford	Potomac	42								0	0	0			
	Rappahannock	5	3	1.5	1.5	+ 33	+ 86	+ 0.9	+ 0.3	0	+ 20	+ 20	+ 331	+ 94	+ 236
	Total Stafford	47	3	1.5	1.5	+ 33	+ 86	+ 0.9	+ 0.3	0	+ 20	+ 20	+ 331	+ 94	+ 236
Surry	James	40	34	2	32	- 498	- 120	- 1.2	- 5.0	- 105	+ 3	- 102	- 14,858	- 942	-13,916
Virginia Beach	Ches. Bay S.S.	78	10	0	10	- 207	- 166	- 1.7	- 2.1	0	0	0	- 1,187	0	- 1,187
Westmoreland	Potomac	122	72	12	60	-1,167	- 132	- 1.3	-11.6	- 89	+ 62	- 27	- 32,427	+ 34	-32,461
	Rappahannock	15	15	7	8	- 66	- 37	- 0.4	- 0.7	- 58	0	- 58	- 385	- 279	- 106
	Total Wtld.	137	87	19	68	-1,233	- 117	- 1.2	-12.3	- 147	+ 62	- 85	- 32,812	- 245	-32,567
York	Ches. Bay W. S.	99	99	43	56	-1,832	- 153	- 1.5	-18.3	-1,064	+ 6	-1,058	- 10,899	- 6,216	- 4,683
	York	52	52	12	40	- 541	- 86	- 0.9	- 5.4	- 187	+ 1	- 186	- 8,990	- 1,227	- 7,763
		151	151	55	96	-2,373	- 130	- 1.3	-23.7	-1,251	+ 7	-1,244	- 19,889	- 7,443	-12,446
		2,951	2,365	793	1,572	-21,078	- 73	- 0.7	-210.8	-10,216	+2,797	-7,361	-270,126	-57,932	-212,194

TABLE 4

SEVERITY OF EROSION BY COUNTIES AND CITIES

County or City	Measured Shoreline (Statute Miles)	Acres Eroded Or Accreted Per 100 Years	Change In Acres Per Mile Per 100 Years
Caroline	29	- 743	- 26
Isle of Wight	26	- 603	- 23
Virginia Beach	10	- 207	- 21
Accomack	284	- 5,205	- 18
York	151	- 2,373	- 16
Nansemond	3	- 46	- 15
Norfolk	9	- 134	- 15
Westmoreland	87	- 1,328	- 15
Surry	34	- 498	- 15
Essex	77	- 1,087	- 14
Northumberland	235	- 3,260	- 14
New Kent	7	- 90	- 13
Newport News	24	- 231	- 10
Hampton	59	- 521	- 9
Mathews	184	- 1,749	- 9
Middlesex	133	- 1,230	- 9
Lancaster	168	- 1,353	- 8
Northampton (excluding Fishermans Island)	96	- 782	- 8
Richmond	66	- 497	- 8
Prince George	65	- 402	- 6
Spotsylvania	8	- 40	- 5
Gloucester	273	- 1,153	- 4
James City	66	- 230	- 3
King George	30	- 82	- 3
King and Queen	14	- 43	- 3
Charles City	90	- 200	- 2
King William	2	+ 16	+ 7
Stafford (incomplete)	3	+ 33	+ 11
Chesterfield	86	+ 1,125	+ 13
Henrico	26	+ 501	+ 19
Fairfax - Arlington	No Data	- - - -	- - -
Prince William	No Data	- - - -	- - -

B. RESULTS FOR INDIVIDUAL SHORELINE REACHES

1. Explanation of the Use of Tables for Individual Reaches

To arrive at the erosional history for a particular reach or reaches which encompass the user's area of interest, he should first look at the index map shown in Plate 1. From this index the user determines which map or maps contain his area of interest. For example, assume the user is interested in the erosional history of Gwynn Island in Mathews County. The index map (Plate 1) indicates that Plate (page) includes Gwynn Island. After turning to that page and locating Gwynn Island, the user must determine two items before obtaining the data relating to the area of interest. He must determine what reach or reaches encompass his area of interest and what system the reaches are in. Let us assume the user is interested in the northeast side of Gwynn Island between Sandy Point and Cherry Point. The reach number assigned this section of Gwynn Island is 326. The system designator is Chesapeake Bay Western Shore. With these two descriptions in mind, the user should then turn to the county data tables which are arranged in alphabetical order according to county. The Mathews County tables are on pages to . The user will note Mathews County has entries for Chesapeake Bay Western Shore and the Piankatank River. After locating this table for Chesapeake Bay Western Shore, he looks down the list of reach numbers until he comes to reach 326. This is the line of information containing the specific data on that reach. The second column in this table is the map number. This map number (8329) does not refer to the plates on which the reach numbers are plotted, but rather refers to maps used in compiling the erosion data. Recall that in this compilation two maps per area were used, one old map and one from the 1940's topographic map series. This map number from the tables (8329) corresponds to the 1940's map number used to compile the erosion data for reach 326. The time spans and maps used in compiling the data for various reaches are listed in Table 5. Examination of Table 5 shows that map 8329 was dated 1942 and that this was compared with map 504; dated 1852. Thus the time span used was 90 years. The next column gives the description of the beginning and end points of reach 326 as taken from the 1942 topographic map, 8329. Shoreline type, the fourth column, simply states whether reach 326 is marsh (M) or nonmarsh (B). The next two columns, five and six, should be considered together. They list whether reach 326 has undergone erosion or accretion. In the case of reach 326 there has been 283.6 acres of erosion during the time between surveys. Shoreline length, column seven, gives the length of reach 326 in thousands of feet or 19,000 feet. Column eight, mean length, expresses in feet the average distance the shore of reach 326 has retreated or advanced. Reach 326 has retreated 643.7 feet. This figure was arrived at by dividing the acres of erosion or accretion per reach by the shoreline length for that reach. The next column, the rate, expresses a yearly average of the number of feet the shoreline has retreated or advanced. The rate, 7.1 feet per year, was obtained by dividing the mean length 643.7 feet by the time span 90 years. Column ten, height, is the approximate height (5 feet) of the backshore of reach 326. The next three columns should also be considered as a group. Column eleven gives the volume of material lost or gained. Not all maps covered the same time span, thus the volumes listed in column eleven were adjusted to a 100 year span by multiplying by the coefficient to arrive at the adjusted volume. Adjusted volume is then the volume of material lost or gained over this 100 year span. Reach 326 lost 2,539,400 cubic yards of material over this 100 year span.

As a second example let us assume the user is interested in the reaches on Gwynn Island from Sandy Point to Narrows Point. He has located the appropriate Plate (#) from the index plate, and from Plate determined that reaches 326, 327, 42, 41, and 40 are those of interest. The question then to be answered is, in what system or systems do these reaches fall? As stated previously the Bay and its estuaries are divided into eight systems. In this example the five reaches are cataloged in two systems. Reaches 326 and 327 are in the Chesapeake Bay Western Shore system and reaches 42-40 are in the Piankatank River system. This delineation is noted on Plate by the heavy dashed line connecting Cherry Point and Stingray Point. Thus for Mathews County the reaches up to and including 327 are in the Chesapeake Bay Western Shore system and those from 26-42 are in the Piankatank River system. In this example the user would then have to look at two Mathews County tables. As before, one would be subtitled Chesapeake Bay Western Shore and the other Piankatank River. The erosional or accretional history from these tables for reaches 327-326, 42-40 would be obtained by the user in the same manner as described in the first example.

TABLE 5

YEAR COMPARISON OF MAPS

USED TO COMPILE REACH NUMBERS

New Map No.	Year	Old Map No.	Year	Time Span (Years)
8089	1941	1438	1877	64
8090	1941	1439	1877	64
8091	1941	1439	1877	64
8093	1941	1439	1877	64
8094	1941	1439	1877	64
8095	1941	1439	1877	64
8097	1941	1438	1877	64
8097	1941	1493	1880	61
8098	1941	1493	1880	61
8112	1942	1105	1868	74
8113	1942	1105	1868	74
8114	1942	861	1862	80
8115	1942	1105	1868	74
8138	1942	776	1849	93
8139	1942	1103	1868	74
8140	1942	1103	1868	74
8141	1942	1105	1868	74
8142	1942	860	1862	80
8143	1942	516	1855	87
8145	1942	1104	1868	74
8146	1942	1102	1868	74
8147	1942	776	1868	74
8148	1942	458	1849	93
8161	1942	272	1852	90
8162	1942	272	1852	90
8163	1942	271	1849	93
8164	1942	309	1850	92
8165	1942	349	1850	92
8166	1942	349	1850	92
8169	1942	307	1850	92
8170	1942	307	1850	92
8171	1942	350	1851	91
8172	1942	350	1851	91
8175	1942	350	1851	91
8176	1942	495	1888	54
8177	1942	495	1888	54
8182	1942	495	1888	54
8183	1942	509	1852	90
8294	1942	1598	1874	68
8295	1942	1353	1874	68
8296	1942	1958	1873	68
8301	1942	507	1852	90
8302	1942	507	1852	90
8303	1942	502	1852	90
8304	1942	501	1853	89
8305	1942	501	1853	89
8306	1942	497	1853	89
8311	1942	1266	1873	68
8312	1942	1266	1873	68
8313	1942	1265	1872	69
8314	1942	502	1853	89
8315	1942	499	1853	89
8316	1942	499	1853	89
8317	1942	1289	1874	68
8318	1942	1289	1874	68
8319	1948	1290	1874	74
8320	1948	1391	1874	74
8321	1948	1391	1874	74
8322	1948	1391	1874	74
8323	1948	1337	1874	74
8324	1948	1337	1874	74
8325	1948	686	1857	91
8326	1948	685	1857	91
8327	1942	1101	1868	74
8328	1942	504	1852	90
8329	1942	504	1852	90
8330	1942	1101	1904	40
8332	1948	686	1857	91
8333	1948	722	1858	90
8337	1942	722	1849	93
8338	1942	722	1849	93
8340	1942	1100	1869	73
8341	1942	1100	1857	85
8342	1942	521	1856	86
8343	1944	310	1850	94
8344	1944	661	1857	87
8345	1944	602	1856	88
8346	1942	602	1856	86
8347	1942	722	1862	80
8348	1942	722	1862	80
8349	1942	519	1855	87
8350	1942	518	1855	87
8351	1942	519	1855	87
8352	1942	520	1855	87
8353	1942	500	1850	92
8354	1942	500	1850	92
8355	1942	458	1849	93
8356	1942	1102	1868	74
8357	1942	1102	1868	74
8358	1942	519	1855	87
8359	1942	518	1855	87
8360	1942	517	1855	87
0652	1958	860	1862	96
0653	1958	859	1862	96
0903	1958	861	1862	96
0904	1958	863	1862	96
0905	1958	864	1862	96
0906	1958	864	1862	96
0907	1958	864	1862	96
0908	1958	864	1862	96
0912	1958	864	1862	96
0913	1958	864	1862	96
0914	1958	864	1862	96
0915	1958	864	1862	96
0919	1958	864	1862	96
0920	1958	864	1862	96
0923	1958	864	1862	96
2129	1961	864	1862	96
Topo	1968	434	1853	115
Topo	1968	435	1853	115
Topo	1968	513	1853	115
Topo	1968	514	1853	115
Topo	1968	515	1853	115
Topo	1968	516	1853	115
Topo	1968	517	1853	115

TABLE 6: ACCOMACK COUNTY
CHESAPEAKE BAY — EASTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
1	8164	TANGIER ISLAND LARGE	M	664.4		81.3	0.0	0.0	3	3215.7	1.08	3472.9
2	8164	TANGIER ISLAND EAST POINT MARSH	M	56.5		13.2	0.0	0.0	4	364.6		393.8
5	8164	GOOSE ISLAND	M	93.1		21.8	0.0	0.0	3	450.6		486.6
7	8164	SMALL ISLAND NORTH OF TANGIER	M		3.0	0.0	0.0	0.0	3	+ 14.5		+ 15.7
8	8164	QUEEN RIDGE	M	10.1		3.7	0.0	0.0	3	48.9		52.8
9	8164	OLD ISLAND NORTH OF QUEEN RIDGE	M	2.1		0.0	0.0	0.0	3	10.2		11.0
10	8164	LITTLE PINE ISLAND	M	0.2		0.0	0.0	0.0	3	1.0		1.1
11	8164	OLD ISLAND NORTH OF LITTLE PINE ISLAND	M	1.6		0.0	0.0	0.0	3	7.7		8.4
12	8164	OLD ISLAND SOUTH OF LITTLE PINE ISLAND	M	1.7		0.0	0.0	0.0	3	8.2		8.9
13	8164	LITTLE FOX ISLANDS	M	139.0		2.4	0.0	0.0	3	224.3		242.2
14	8164	WATTS ISLAND	M	154.6		25.6	0.0	0.0	3	249.4		269.4
15	8164	LITTLE WATTS ISLAND	M	7.3		1.1	0.0	0.0	3	35.3		38.2
16	8164	OLD ISLAND NORTH OF WATTS ISLAND	M	1.3		0.0	0.0	0.0	5	10.5		11.3
17	8163	SMITH GUT SPIT TO VA.-MD. LINE	M	110.2		1.5	3030.0	32.6	4	711.2	1.08	768.0
18	8163	VA.-MD. LINE TO LAGOON NORTH OF SMITH GUT SL	M			2.1			3			
19	8163	LAGOON NORTH OF SMITH GUT POINT	M	1.0		1.7	0.0	0.0	4	6.5		7.0
20	8163	LAGOON TO SMITH GUT POINT	M	8.2		2.3	153.5	1.6	3	39.7		42.8
21	8163	SMITH GUT POINT TO VA.-MD. LINE	M	20.7		5.3	168.1	1.8	5	167.0		180.3
22	8163	CHEESEMAN POINT ISLAND	M		62.8	0.0	0.0	0.0	3	+ 303.9		+ 328.3
23	8163	SEDGE ISLAND	M	13.5		3.1	0.0	0.0	3	65.3		70.6
24	8163	FISHING CREEK MARSH AND SOUTH POINT MARSH	M	83.5		39.2	0.0	0.0	4	538.8		582.0
25	8163	SMITH ISLAND BACK RANGE VA.-MD. LINE TO MAP EDGE	M	15.9		3.6	191.1	2.0	4	102.6		110.8
26	8163	SHANKS ISLAND	M	227.8		8.2	0.0	0.0	4	1470.1		1587.7
27	8163	CHEESEMAN ISLAND	M		1.7	0.0	0.0	0.0	3	+ 8.2		+ 8.9
30	8162	FIRST GREAT FOX ISLAND	M		147.9	19.8	0.0	0.0	3	715.8	1.08	773.1
31	8162	OLD ISLAND SOUTH OF GREAT FOX ISLAND	M	4.3		0.0	0.0	0.0	3	20.8		22.5
32	8162	OLD ISLAND SOUTH OF GREAT FOX ISLAND	M	15.5		0.0	0.0	0.0	3	75.0		81.0
33	8162	OLD ISLAND SOUTH OF GREAT FOX ISLAND	M	31.5		0.0	0.0	0.0	3	152.5		164.6
34	8162	DOES HAMMOCK ISLAND	M	3.8		1.1	0.0	0.0	3	18.4		19.8
35	8162	BIG LEDGE ISLAND	M	2.9		0.3	0.0	0.0	3	14.1		15.2
36	8162	OLD ISLAND SOUTH OF BIG LEDGE ISLAND	M	1.0		0.0	0.0	0.0	3	4.8		5.2
37	8162	OLD ISLAND SOUTH OF BIG LEDGE ISLAND	M	0.7		0.0	0.0	0.0	3	3.4		3.7
38	8162	GREEN HARBOR ISLE	M	4.2		1.3	0.0	0.0	3	20.3		21.9
39	8162	MAP EDGE TO HORSE HAMMOCK GUT	M	2.7		1.1	103.9	1.1	3	13.1		14.1
40	8162	HORSE HAMMOCK GUT	M	4.2		3.6	0.0	0.0	3	20.3		21.9
41	8162	HORSE HAMMOCK GUT ISLANDS	M	24.3		4.6	0.0	0.0	3	117.6		127.0
42	8162	HORSE HAMMOCK GUT TO VA.-MD. LINE	M	18.6		3.0	264.4	2.9	3	90.0		97.2
43	8160	POCOMOKE RIVER RIGHT SIDE SHORELINE	M			45.2			5		1.08	
44	8160	PIG POINT TO NORTH END POINT	M	92.2		13.2	302.5	3.2	4	595.0		642.6
45	8160	NORTH END POINT	B		4.4	1.6	115.0	1.2	3	+ 21.3		+ 23.0
46	8160	NORTH END POINT TO STARLING CREEK	B	96.4		9.1	459.5	4.9	3	468.1		505.5
47	8160	STARLING CREEK	M	17.7		6.0	0.0	0.0	4	114.2		123.4
48	8160	STARLING CREEK TO FISHING CREEK	M	22.9		2.9	336.8	3.6	5	184.7		199.5
49	8160	FISHING CREEK	M	9.4		7.0	0.0	0.0	5	75.8		81.9
50	8160	FISHING CREEK TO DRUM BAY	M	9.1		0.9	418.4	4.4	3	44.0		47.6
51	8160	DRUM BAY TO MAP EDGE	M	57.4		17.4	0.0	0.0	5	463.0		500.1
52	8160	MAP EDGE TO BACK COVE	M	25.2		5.9	183.7	1.9	5	203.3	1.08	219.5
53	8160	OLD ISLAND WEST OF BACK COVE	M	4.2		0.0	0.0	0.0	5	33.9		36.6

CHESAPEAKE BAY — EASTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
54	8160	BACK COVE	M	8.2		7.1	0.0	0.0	5	66.1		71.4
55	8160	BACK COVE TO BACK CREEK	M	19.2		4.9	169.5	1.8	5	154.8		167.3
56	8160	WEST MOUTH BACK CREEK	B	9.2		1.3	0.0	0.0	3	44.5		48.1
57	8160	BACK CREEK	M	41.7		15.8	0.0	0.0	5	336.4		363.3
58	8160	MESSONGO CREEK TO TIMS POINT	M	76.5		40.6	0.0	0.0	6	740.5		799.7
59	8160	SOUTH POINT TO ROCK GUT	M	11.2		3.8	126.6	1.3	6	108.4		117.1
60	8160	ROCK GUT TO CATTAIL CREEK	M	36.8		9.7	163.7	1.7	6	356.2		384.7
61	8160	CATTAIL CREEK	M	28.6		11.5	0.0	0.0	6	276.8		299.0
62	8166	EDGE - QUARTER MILE S OF CATTAIL CREEK	M	15.0		3.3	197.2	2.1	3	72.6		78.4
62A	8166	QUARTER MILE S OF CATTAIL CR - NAMELESS CR SL	M			1.3			3			
63	8166	OLD ISLAND OFF NAMELESS CREEK	M	2.8		0.0	0.0	0.0	3	13.5		14.6
63A	8166	NAMELESS CREEK - GREAT GUT	M	33.4		11.6	124.8	1.3	3	161.7		174.6
64	8166	GREAT GUT SPIT	M	11.0		0.8	0.0	0.0	3	53.2		57.5
64A	8166	GREAT GUT	M	19.1		10.7	0.0	0.0	3	92.4		99.8
65)	8166	GREAT GUT - QUARTER MILE S SL	M			1.0			3			
65A	8166	GUILFORD CREEK	M	54.3		39.5	0.0	0.0	3	262.8		283.8
66	8166	MUDDY CREEK	M	64.7		25.1	0.0	0.0	3	313.1		338.2
66A	8166	YOUNG CREEK	M	38.4		17.4	0.0	0.0	3	185.9		200.7
67	8166	CEDAR COVE	M	7.7		6.0	0.0	0.0	3	37.3		40.3
67A	8166	CEDAR COVE - SIMPSON POINT	M	24.8		7.8	137.1	1.4	3	120.0		129.6
68	8166	BAGWELL COVE ISLAND	M	1.7		0.8	0.0	0.0	3	8.2		8.9
68A	8166	SIMPSON PT	M	3.5		4.2	0.0	0.0	3	43.1		46.5
69	8166	SIMPSON BEND	M		4.4	1.1	163.5	1.7	3	+ 21.3		+ 23.0
70	8166	FRANCE CREEK	M	60.2		27.2	0.0	0.0	3	291.4		314.7
71	8166	PETER'S TUMP	M	3.1		2.4	0.0	0.0	3	15.0		16.2
72	8166	FRANCE CREEK - BACK CREEK	M	8.3		2.3	157.3	1.7	3	40.2		43.4
73	8166	BACK CREEK	M	48.3		16.5	0.0	0.0	3	233.8		252.5
74	8166	BACK CREEK - QUARTER MILE S	B	6.9		2.0	150.9	1.6	3	33.4		36.1
75	8166	QUARTER MILE S OF BACK CR - HUNTING CR SL	B			4.1			3			
76	8166	THE THOROFARE	B	44.8		38.0	0.0	0.0	3	216.8		234.2
77	8166	BAGWELL CREEK	B	37.9		26.3	0.0	0.0	3	183.4		198.1
78	8166	THOROFARE HILL	B	9.2		2.4	0.0	0.0	3	44.5		48.1
79	8166	WEBB ISLAND	B	29.3		16.0	0.0	0.0	3	141.8		153.2
80	8166	HALFMOON ISLAND	B	27.6		9.9	0.0	0.0	3	135.0		145.8
80A	8166	OLD ISLAND OFF WEBB ISLAND	B	1.9		0.0	0.0	0.0	3	9.2		9.9
81	8166	DOE CREEK	B	27.2		32.0	0.0	0.0	3	131.6		142.2
82	8166	DOE CREEK - CURTIS COVE	B	3.4		1.5	96.8	1.0	3	16.5		17.8
83	8166	CURTIS COVE	B	1.4		4.0	0.0	0.0	3	6.8		7.3
84	8166	CURTIS COVE - NAMELESS CREEK SL	B			1.4			3			
85	8166	NAMELESS CREEK	B	1.3		4.2	0.0	0.0	3	6.3		6.8
86	8165	DEEP CREEK RIGHT SIDE	M	10.0		14.0	0.0	0.0	6	96.8		104.5
87	8165	SAVAGE ISLAND	M	35.1		19.0	0.0	0.0	5	283.1		305.8
88	8165	SAVAGE ISLAND TO BACKWAY GUT	M	15.8		2.9	236.4	2.5	6	153.0		165.2
89	8165	BACKWAY GUT TO RUSSEL ISLAND	M	65.5		15.0	190.2	2.0	6	634.0		684.7
90	8165	SCOTT ISLAND	M	5.3		1.2	0.0	0.0	3	25.6		27.7
91	8165	OLD ISLAND EAST OF SCOTT ISLAND	M	0.9		0.0	0.0	0.0	3	4.4		4.7
92	8165	OLD ISLAND NORTH OF SCOTT ISLAND	M	2.8		0.0	0.0	0.0	3	13.6		14.6
93	8165	WEST MARSH TUMP	M	5.4		0.5	0.0	0.0	3	26.1		28.2
94	8165	OLD ISLAND SOUTH OF WEST MARSH TUMP	M	0.9		0.0	0.0	0.0	4	5.8		6.3
95	8165	ISLAND SOUTHWEST OF WEST MARSH TUMP	M	8.8		0.8	0.0	0.0	3	42.6		46.0
96	8165	NORTHERN ISLAND IN THE MIDDLE OF THE THOROFARE	M	1.6		0.4	0.0	0.0	3	7.7		8.4

ACCOMACK COUNTY (continued)

CHESAPEAKE BAY — EASTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
97	8165	SOUTHERN ISLAND IN MIDDLE OF THOREFARE	M	1.2		0.4	0.0	0.0	3	5.8		6.3
98	8165	RUSSELL ISLAND POINT TO CAMP ISLAND	M	55.3		11.7	205.4	2.2	5	446.1		481.8
99	8165	CAMP ISLAND	M	14.7		1.0	0.0	0.0	3	71.1	1.08	76.8
100	8165	CAMP ISLAND TO BACK CREEK	M	12.1		2.6	203.8	2.2	5	97.5		105.4
101	8165	BACK CREEK TO OLD BEACH	M	28.0		4.0	300.3	3.2	5	225.8		243.9
102	8165	OLD BEACH	M	18.6		5.4	0.0	0.0	5	150.0		162.0
103	8165	ISLAND SOUTH OF OLD BEACH	M	10.8		2.6	0.0	0.0	5	87.1		99.0
104	8165	BEACH ISLAND	M	17.5		0.0	0.0	0.0	3	84.7		91.4
106	8165	ISLAND NORTH OF BEACH ISLE	M	8.1		0.7	0.0	0.0	3	39.1		42.3
107	8165	OLD BEACH TO BEACH POINT	M	24.1		5.0	209.0	2.2	3			
108	8165	POMPCO CREEK	M	125.0		48.3	0.0	0.0	3	605.0		653.4
109	8165	CHESCONESSEX CREEK	M	141.9		48.0	0.0	0.0	6	1373.5		1483.4
110	8169	BACK CREEK	M	28.6		25.8	0.0	0.0	6	276.8		299.0
111	8169	SOUND BEACH TO WARE POINT	M	131.2		12.2	466.6	5.0	5	1058.3		1143.0
112	8169	WARE POINT	M		2.4	0.9	109.7	1.1	3	+ 11.6		+ 12.5
113	8169	ONANCOCK CREEK	B	141.7		121.4	0.0	0.0	6	1371.6		1481.3
114	8169	THICKETT POINT TO MATCHOTANK CREEK	M	13.2		3.3	175.3	1.9	8	170.3		184.0
115	8169	MATCHOTANK CREEK	B	22.7		15.1	0.0	0.0	6	219.7		237.2
116	8169	PARKERS ISLAND	M	56.1		14.6	0.0	0.0	5	452.5		488.7
118	8169	ISLAND EAST OF PARKERS ISLAND	M	3.8		1.2	0.0	0.0	3	18.4		19.8
119	8169	INDIAN POINT TO TARKHILL CREEK	M	32.6		10.0	141.2	1.5	6	315.5		340.8
120	8169	OLD ISLAND WEST OF PARKERS ISLAND	M	12.8		0.0	0.0	0.0	3	61.9		66.9
121	8169	ISLAND SOUTH OF PARKERS ISLAND	M	4.7		1.6	0.0	0.0	5	37.9		40.9
122	8169	ISLAND SOUTHWEST OF PARKERS IS	M	11.9		2.6	0.0	0.0	3	57.5		62.1
123	8169	FINNEYS ISLAND	M	48.6		26.6	0.0	0.0	4	313.6		338.7
124	8169	SCARBOUROUGH ISLAND	M	20.4		6.8	0.0	0.0	4	131.6		142.1
124A	8169	OLD ISLAND SOUTH OF SCARBOROUGH ISLAND	M	1.8		0.0	0.0	0.0	4	11.6		12.5
125	8169	TARKHILL CREEK	M	21.2		15.6	0.0	0.0	6	205.2		221.6
126	8169	TARKHILL CREEK TO KLONDIKE POINT	M	14.3		4.2	148.4	1.6	5	115.3		124.5
127	8169	PUNGOTEAGUE CREEK TO BOGGS WHARF	B	127.1		56.4	0.0	0.0	6	1230.3		1328.7
128	8169	BLUFF POINT TO MAP EDGE	M	24.6		3.7	284.5	3.0	6	238.1		257.1
129	8170	MAP EDGE TO BUTCHER CREEK	M	14.7		2.6	247.3	2.6	2	47.4		51.2
130	8170	RIGHT SIDE BUTCHER CREEK TO MOUTH	M	32.1		4.2	325.5	3.5	3	155.3		167.8
131	8170	BUTCHER CREEK TO SPIT	M	70.8		10.6	0.0	0.0	2	228.4		246.7
132	8170	CREEK EAST OF SPIT TO HACKS NECK CREEK	M	7.2		2.0	152.7	1.6	3	11.6		12.5
133	8170	HACKS NECK CREEK	M	6.2		2.8	0.0	0.0	3	30.0		32.4
134	8170	HACKS NECK CREEK TO BACK CREEK	M	16.5		4.1	173.6	1.8	3	79.9		86.2
135	8170	BACK CREEK	M	22.5		11.3	0.0	0.0	3	36.3		39.2
136	8170	BACK CREEK TO MAP EDGE	M	10.2		2.3	190.0	2.0	3	16.4		17.8
137	8170	MILBY POINT	M	10.3		1.8	243.3	2.6	2	33.2		35.8
138	8171	CURATUCK CREEK TO MAP EDGE	M	74.0		15.7	205.2	2.2	3	358.1		386.8
139	8171	MAP EDGE TO SANDY POINT	M	76.9		10.7	312.3	3.4	4	496.3		535.9
140	8171	SANDY POINT SPIT	M	4.1		2.2	0.0	0.0	3	19.9		21.4
141	8171	BACK CREEK	M	26.2		16.1	0.0	0.0	4	169.1		182.6
142	8171	CRADDOCK CREEK	M	72.6		53.2	0.0	0.0	4	468.3		505.8
143	8171	CRADDOCK CREEK TO POLES BLUFF	M	101.1		9.8	449.3	4.9	4	652.4		704.6
144	8171	POLES BLUFF	M		13.1	5.5	103.7	1.1	3	+ 63.4		+ 68.5
145	8171	OCCOHANNOCK CREEK	M	5.5		60.0	0.0	0.0	4	577.6		610.5

TABLE 7: CAROLINE COUNTY

RAPPAHANNOCK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
9	435	SNOW CREEK TO MAP EDGE	B	14.4		5.0	124.4	1.0	30	697.0	.88	613.3
10	435	MAP EDGE TO HOLLYWOOD BEND	B		12.0	3.0	170.7	1.4	7	+ 135.5		+ 119.3
11	435	HOLLYWOOD BEND TO MAP EDGE	B	5.5		1.8	131.5	1.1	5	44.4		39.0
12	435	MAP EDGE TO SPRINGHILL REACH	B			6.2						
13	435	SPRINGHILL REACH TO DICKS CREEK	B		22.2	4.1	234.4	2.0	6	+ 214.9		+ 189.1
14	435	DICK CREEK TO MILL REACH	B	8.6		3.6	102.4	0.8	30	416.2		366.3
15	435	MOSS NECK MARSH TO WARE CREEK	M		23.7	7.8	131.7	1.1	3	+ 114.7		+ 100.9
16	435	WARE CREEK TO CLIFF	B		1.3	1.8	32.5	0.2	4	+ 8.4		+ 7.4
17	435	CLIFF TO SKINKERS NECK	B	16.9		10.1	72.6	0.6	40	1090.6		959.7
18	435	SKINKERS NECK MARSH	M		13.5	6.5	90.4	0.7	3	+ 65.3		+ 57.5
19	513	WHITE MARSH	M	0.8		29.6	0.0	0.0	3	3.8		3.4
20	513	BERRY PLANE BAR TO OPPOSITE CLEVE MARSH	B			35.2						
21	513	MARSH OPPOSITE CLEVE MARSH	M		37.5	4.7	341.3	2.9	3	+ 181.5		+ 159.7
22	514	MAP EDGE TO MILL CREEK	B			18.1						
23	514	MILL CREEK TO MARSH POINT	B	67.8		16.8	175.7	1.5	7	765.7		673.8
24	514	MARSH TO PORTOBACO CREEK	B	840.7		0.0	0.0	0.0	20	27,126.6		23,871.4

TABLE 8: CHARLES CITY COUNTY

JAMES RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
323	8323	PIER TO MAP EDGE SHORELINE	B			19.6					1.35	
324	8323	OLD NECK TO PIER	M	13.7		4.7	127.5	1.7	3	66.3		89.5
325	8323	OLD NECK	M		6.9	9.1	0.0	0.0	3	+ 33.4		+ 45.1
326	8323	OLD NECK CREEK TO OLD NECK	M	7.4		2.8	116.3	1.5	3	35.8		48.4
327	8323	OLD NECK CR TO OLD NECK CR SHORELINE	M			2.8						
328	8323	SMALL CREEK TO OLD NECK CREEK	M		20.8	2.7	335.4	4.5	3	+ 100.7		+ 135.9
329	8323	LARGE CREEK	M	2.4		1.3	78.7	1.0	3	11.6		15.7
330	8323	PIER RUINS TO LARGE CREEK	B	3.9		2.5	66.8	0.9	10	62.9		84.9
331	8323	EAGLE BOTTOM TO PIER RUINS SHORELINE	B			4.9						
332	8323	POINT TO EAGLE BOTTOM	M	19.8		8.2	104.7	1.4	5	159.7		215.6
333	8323	MARSH TO POINT SHORELINE	B			3.1						
334	8323	MORRIS CREEK TO MARSH SHORELINE	M	23.1		5.6	177.9	2.4	5	186.3		251.6
335	8323	FERRY POINT TO MORRIS CREEK	B	23.2		7.8	129.5	1.7	5	187.1		252.6
336	8323	MAP EDGE TO NUMB 1938 SHORELINE	B			4.3						
337	8323	NUMB TO FERRY POINT	B	2.5		2.5	44.4	0.6	5	20.2		27.2
338	8320	MAP EDGE TO SILO	B	15.5		4.7	142.4	1.9	5	125.0	1.35	168.8
339	8320	SILO TO MARK SHORELINE	B			4.9						
340	8320	MARK TO DANCING POINT	B	4.4		2.2	84.7	1.1	5	35.5		47.9
341	8320	DANCING POINT TO SANDY POINT SHORELINE	B			6.6						
342	8320	SANDY POINT	M		1.4	1.1	55.4	0.7	5	+ 11.3		+ 15.2
343	8320	SANDY POINT TO MAP EDGE	B			6.3						
345	8323	MAP EDGE TO OLDFIELD SHORELINE	B			17.5					1.35	
346	8323	OLDFIELD	B		1.2	0.6	81.6	1.1	10	+ 19.4		+ 26.1

CHARLES CITY COUNTY (continued)

JAMES RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
347	8323	KENNON TO OLDFIELD SHORELINE	B			8.5						
348	8322	EDGE OF MAP TO PIT	B		6.3	2.6	104.4	1.4	7	+ 71.1	1.35	+ 96.1
349	8322	PIT TO TYLER CREEK	B	2.2		2.6	37.8	0.5	5	17.7		24.0
350	8322	TYLER CREEK SHORELINE	M			3.8						
351	8322	TYLER CREEK TO MILTON LIGHT,1953	B	9.4		3.7	110.3	1.4	5	75.8		102.4
352	8322	MILTON LIGHT TO 20	B			1.9						
353	8322	20 TO MOUTH OF KITTEWAN CREEK	M	2.6		1.8	62.1	0.8	5	21.0		28.3
354	8322	KITTEWAN CREEK SHORELINE	M			26.7						
355	8322	MAPSICO CREEK SHORELINE	M			17.7						
356	8322	KITTEWAN CREEK TO NAMELESS CREEK	M	36.8		12.1	131.8	1.7	10	593.7		801.5
357	8322	NAMELESS CREEK SHORELINE	M			14.4						
358	8322	NAMELESS CREEK TO WEYANOKE POINT	M	8.6		2.5	147.7	1.9	4	55.5		74.9
359	8322	WEYANOKE POINT TO JCS(USF)1938	M		16.8	4.9	147.0	1.9	4	+ 108.4		+ 146.4
360	8322	JCS(USF)1938 TO X77 SHORELINE	B			13.2						
361	8322	X77 TO OLDS POINT	B	4.1		1.9	93.7	1.2	3	19.8		26.8
362	8322	OLDS POINT TO QUEENS CREEK	B	7.7		2.9	112.9	1.5	5	62.1		83.8
363	8322	QUEENS CREEK TO SHORELINE	M			22.8						
364	8322	GUNNS RUN SHORELINE	M			21.1						
365	8322	QUEENS CREEK TO SOUTH BARN GABLE 1938	M			3.7						
366	8322	SOUTH BARN GABLE,1938 TO WILCOX 1932	B	0.9		0.7	58.2	0.7	10	14.5		19.6
367	8322	WILCOX,1932 TO KX	B			6.2						
368	8322	BUCKLERS POINT	M	8.9		4.3	88.6	1.1	5	71.8		96.9
369	8321	EDGE OF MAP TO BUCK 2,1942	M	1.9		1.7	49.2	0.6	3	9.2		12.4
370	8321	BUCK 2, 1942 TO NAMELESS CREEK SHORELINE	M			1.4						
371	8321	NAMELESS CREEK TO HERRING CREEK	M	0.7		1.3	22.7	0.3	3	3.4	1.35	4.6
372	8321	HERRING CREEK SHORELINE	M			69.6						
373	8321	DUCKING STOOL POINT	M	0.4		0.5	38.5	0.5	3	1.9		2.6
374	8321	DUCKING STOOL POINT TO ROAD 7 SHORELINE	B			5.8						
375	8321	ROAD 7 TO MARK	B	10.2		9.7	45.7	0.6	10	164.6		222.2
376	8321	MARK TO DUCK BLIND	B	1.8		1.3	58.5	0.7	5	14.5		19.6
377	8321	DUCK BLIND TO NAMELESS CREEK	B			6.2						
378	8321	NAMELESS CREEK TO NAMELESS POINT	B	5.3		4.1	56.7	0.7	5	42.8		57.7
379	8321	NAMELESS POINT TO EPPES CREEK SHORELINE	B			3.6						
380	8321	EPPES CREEK SHORELINE	B			13.8						
381	8321	EPPES CREEK TO EPPES, 1910	M	2.9		1.5	82.9	1.1	5	23.4		31.6
382	8321	EPPES, 1910 TO NAMELESS CREEK	B			3.2						
383	8321	NAMELESS CREEK SHORELINE	B			1.4						
384	8321	NAMELESS CREEK TO EDGE OF MAP SHORELINE	M			0.7						
385	8090	EDGE OF MAP TO MARK SHORELINE	M			1.7						
386	8090	MARK TO PACKS POINT	M	2.2		2.0	47.1	0.7	3	10.6	1.56	16.6
387	8090	PACKS POINT TO DUCK BLIND SHORELINE	M			4.1						
388	8090	DUCK BLIND TO JEC (USE) 1942	B	3.4		1.8	80.0	1.2	3	16.6		25.7
389	8090	JEC (USE) 1942 TO SHALLOW SHORELINE	B			0.8						
390	8090	SHALLOW	B		0.7	0.4	68.7	1.0	3	+ 3.4		+ 5.3
391	8090	SHALLOW TO STAKES SHORELINE	B			3.4						
392	8090	STAKES TO PILING	B		1.4	1.0	56.5	0.8	5	+ 11.3		+ 17.6
393	8090	PILING TO EDGE OF MAP SHORELINE	B			3.1						
394	8090	EPPES ISLAND MAP EDGE TO 77015' 30 LONG SHORELINE	B			0.0						
399	8089	MAP EDGE TO TURKEY ISLAND CREEK	B		23.2	4.1	241.7	3.7	7	+262.0		+408.7
400	8089	TURKEY ISLAND CREEK SHORELINE	B			19.1					1.56	

TABLE 9: CHESTERFIELD COUNTY

JAMES RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
1	8098	EDGE OF MAP	B		24.9	5.1	209.5	3.2	5	+ 200.8	1.56	313.3
2	8097	EDGE OF MAP TO GOODE CREEK	B		2.2	0.5	190.1	2.9	5	+ 17.7		27.7
3	8097	GOODE CREEK SHORELINE	B			12.8						
4	8097	GOODE CREEK TO NO 18 PIER	B		1.9	0.9	86.5	1.3	5	+ 15.3		23.9
5	8097	NO 18 TO JETTIES	B		0.6	0.9	29.8	0.4	10	+ 9.7		15.1
6	8097	WEST TRANSMISSION TOWER TO NO 25	B		44.0	6.4	296.1	4.6	15	+1064.8		1661.1
7	8097	NO 25 TO 25 FOOT BANK SHORELINE	B			3.8						
8	8097	25 FOOT BANK TO NO 28	B	1.1		0.9	55.8	0.8	40	70.9		110.7
9	8097	NO 28 TO NO 29 SHORELINE	B			1.2						
10	8097	NO 29 TO MARK	B	0.5		0.5	49.6	0.7	5	4.0		6.3
11	8097	MARK TO MAP EDGE	B		19.6	6.1	139.7	2.1	20	+ 632.4		986.6
12	8096	MAP EDGE TO FALLING CREEK	B		0.5	0.4	57.4	0.8	20	+ 16.1	1.56	25.2
13	8096	FALLING CREEK TO DOLPHIN PIER	B	4.9		4.9	42.9	0.6	10	79.1		123.3
14	8096	DOLPHIN PIER TO 7-10' BLUFF SHORELINE	B			5.0						
15	8096	7-10' BLUFF TO 24' LONG	B		4.6	2.5	78.7	1.2	60	+ 445.3		694.6
16	8096	24 24' LONG TO 25' LAT SHORELINE	B			2.2						
17	8096	25' LAT TO 2ND OLD PIER	B	3.0		1.6	81.9	1.2	10	48.4		75.5
18	8096	2ND OLD PIER TO CREEK BM	B		2.7	2.1	54.9	0.8	10	+ 43.6		67.9
19	8096	CREEK BM TO 24' LAT SHORELINE	B			3.0						
20	8096	24' LAT TO PILING	B			1.8						
21	8096	PILING TO 23'40'' LAT,23'LONG	B	1.9		1.1	72.9	1.1	10	30.6		47.8
22	8096	23'40'' TO PROCTOR CREEK SHORELINE	B			2.6						
23	8096	PROCTOR CREEK TO MAP EDGE	B	7.8		4.0	85.5	1.3	10	125.8		196.3
24	8089	HATCHER IS EDGE OF MAP TO 22'15'' LONG SL	B			2.9					1.56	
25	8089	22'15'' LONG TO 22'LONG	B		5.5	1.8	132.2	2.0	25	+ 221.8		346.1
26	8089	22' LONG TO 23' LAT SHORELINE	M			3.7						
27	8089	23' LAT TO 22'40'' LAT	B	3.2		1.3	106.2	1.6	10	51.6		80.5
28	8089	FARRAR 1 TO MAP EDGE	B	1.9		0.8	106.2	1.6	3	9.2		14.3
28A	8089	22'40'' LAT TO MAP EDGE	B		12.5	0.0	0.0	0.0	3	+ 60.5		94.4
29	8090	EDGE OF MAP TO NAMELESS LAGOON	M	1.7		1.0	70.4	1.1	3	8.2	1.56	12.8
30	8090	NAMELESS LAGOON	M	5.8		1.8	0.0	0.0	3	28.1		43.8
31	8090	NAMELESS LAGOON TO MARK SHORELINE	M			0.8						
32	8090	MARK TO 22' LATITUDE	M	0.9		0.7	54.4	0.8	3	4.4		6.8
33	8090	22' LATITUDE TO CANAL SHORELINE	M			2.5						
34	8090	CANAL TO MAP EDGE	B		2.2	2.0	47.7	0.7	4	+ 14.2		22.1
35	8095	EDGE OF MAP TO NAMELESS CREEK	B	4.0		2.0	84.3	1.3	3	19.4	1.56	30.2
36	8095	NAMELESS CREEK SHORELINE	B			3.3						
37	8095	NAMELESS CREEK TO PILING SHORELINE	M			1.2						
38	8095	PILING TO POLE,1943	B	12.0		2.9	176.9	2.7	3	58.1		90.6
39	8095	POLE,1943 TO END OF JAMES	M		67.6	6.7	434.7	6.7	3	+ 327.2		510.4
40	8095	NAMELESS CREEK TO END OF JAMES	M	1.1		1.2	40.7	0.3	3	5.3		8.3
41	8095	PILING TO NAMELESS CREEK	B			3.8						
42	8095	CATWALK TO PILING	B	6.4		4.6	61.0	0.9	50	516.3		805.4
43	8095	EDGE OF MAP TO CATWALK	B		9.4	1.9	213.5	3.3	90	+1364.9		2129.2
44	8090	MAP EDGE TO MARK	B	6.8		4.6	64.3	1.0	80	877.6	1.56	1369.1
45	8090	GROUNDED BARGES TO MUD SHORELINE				1.7						
46	8090	MUD TO PILING	B		17.9	2.6	293.1	4.5	100	+2887.8	1.56	4505.1
47	8090	PILING TO EDGE OF MAP	B	0.7		0.0	0.0	0.0	10	11.3		17.6
48	8089	MAP EDGE TO CATWALK RUINS SHORELINE	B			2.9					1.56	
49	8089	CATWALK RUINS TO 20'20'' LONG	M	5.1		3.1	71.5	1.1	3	24.7		38.5
50	8089	20'15'' JETTY TO PILE UP	M		0.9	0.4	102.8	1.6	3	+ 4.4		6.8
51	8089	20'15'' TO 19'50''	M	2.6		1.4	79.1	1.2	3	12.6		19.6

CHESTERFIELD COUNTY (continued)

JAMES RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
52	8089	19'50'' LONG TO 23'25'' LAT SHORELINE	B			6.9						
53	8089	23'25'' TO 24' 20'' LAT	M		24.3	5.8	182.1	2.8	10	+ 392.0		611.6
54	8089	24'20'' LAT TO OBSTRUCTION SHORELINE	M			1.4						
55	8089	OBSTRUCTION TO 18' LONG	M	2.4		1.5	70.0	1.0	3	12.6		18.1
56	8089	18' LONG TO 23'20'' LAT SHORELINE	B			6.4						
57	8089	23'20'' LAT TO MAP EDGE	B		41.5	5.8	310.5	4.8	3	+ 200.8		313.3
58	8090	JONES NECK	B		2.7	0.6	174.9	2.7	3	+ 13.1	1.56	20.4
59	8090	JONES NECK TO NAMELESS CREEK SHORELINE	B			9.9						
60	8090	NAMELESS CREEK SHORELINE	B			6.3						
61	8090	NAMELESS CREEK TO EDGE OF MAP SHORELINE	B			14.4						
62	8089	MAP EDGE TO 15'40'' LONG	B		17.4	2.6	291.3	4.5	20	+ 561.4	1.56	875.8
63	8089	15'40'' TO 15'28''	B	2.7		1.4	81.2	1.2	3	13.1		20.4
64	8089	15'25'' MAP EDGE	B		49.6	7.2	299.3	4.6	3	+ 240.1		374.5
65	8090	EDGE OF MAP TO NAMELESS CREEK SHORELINE	M			1.1					1.56	
66	8090	NAMELESS CREEK SHORELINE	M			26.5						
67A	8090	NAMELESS CREEK TO JAMES RIVER LIGHT	M		130.6	12.0	473.2	7.3	3	+ 632.1		986.1
67	8090	JAMES RIVER LIGHT TO MARK SHORELINE	B			2.3						
68	8090	MARK TO 17 DEG INTERCEPT WITH SHORELINE	B	5.6		3.3	73.6	1.1	10	90.3		140.9
69	8090	17 DEGREE INTERCEPT TO SHAND CREEK	B			1.6						
70	8090	SHAND CREEK SHORELINE	B			3.1						
71	8090	NAMELESS ISLAND TO CROSSED BY 17' LONG	B		73.9	0.0	0.0	0.0	40	+4769.0		7439.7
72	8090	17' LONG WITH SHORE TO JOHNSON CREEK	B		59.4	3.8	667.7	10.4	3	+ 287.5		448.5
73	8090	SHAND CREEK TO JOHNSON CREEK SHORELINE	M			3.3						
74	8090	JOHNSON CREEK SHORELINE	M			16.9						
75	8090	JOHNSON CREEK TO EDGE OF MAP	M		53.4	14.6	0.0	0.0	3	+ 258.5		403.2
76	8090	JOHNSON CREEK TO MAP EDGE	M		99.7	15.5	0.0	0.0	3	+ 482.5		752.8
77	8090	NORTH EAST SMALL ISLE	M		12.7	0.0	0.0	0.0	3	+ 61.5		95.9
78	8090	DUCK BLIND ISLE	B		2.6	0.0	0.0	0.0	3	+ 12.6		19.6
79	8091	APPOMATTOX RIVER NAMELESS CR TO MAP EDGE	M		7.9	2.7	124.5	1.9	3	+ 38.2	1.56	59.6
80	8091	NAMELESS CR SHORELINE	M			1.5						
81	8091	NAMELESS TO NAMELESS	M		1.9	0.6	123.4	1.9	3	+ 9.2		14.3
82	8091	NAMELESS CR TO NAMELESS CR	M		2.4	0.8	123.1	1.9	3	+ 11.6		18.1
83	8091	NAMELESS CR SHORELINE	M			5.2						
84	8091	TEN ISLES OF ACCRETION NO 1	M		1.7	0.0	0.0	0.0	3	+ 8.2		12.8
85	8091	NO 2	M		0.4	0.0	0.0	0.0	3	+ 1.9		3.0
86	8091	NO 3	M		0.0	0.0	0.0	0.0				
87	8091	NO 4	M		0.1	0.0	0.0	0.0	3	+ .4		.8
88	8091	NO 5	M		0.7	0.0	0.0	0.0	3	+ 3.4		5.3
89	8091	NO 6	M		0.2	0.0	0.0	0.0	3	+ 1.0		1.5
90	8091	NO 7	M		0.5	0.0	0.0	0.0	3	+ 2.4		3.8
91	8091	NO 8	M		0.2	0.0	0.0	0.0	3	+ 1.0		1.5
92	8091	NO 9	M	0.5		0.0	0.0	0.0	3	2.4		3.8
93	8091	NO 10	M		0.2	0.0	0.0	0.0	3	+ 1.0		1.5
94	8090	MAP EDGE TO POINT OF ROCKS	M		4.8	2.1	99.3	1.5	3	+ 23.2	1.56	36.2
95	8090	POINT OF ROCKS TO 60 FOOT SHORELINE	B			1.7						
96	8090	60 FOOT TO MARK	B		2.1	2.1	42.1	0.6	50	+ 169.4		264.2
97	8090	MARK TO ROAD SHORELINE	B			1.5						
98	8091	EDGE OF MAP TO NAMELESS POINT	B	5.0		2.1	100.4	1.5	90	726.0	1.56	1152.6
99	8090	COBBS ISLAND	M		35.9	12.0	0.0	0.0	20	+1158.4	1.56	1807.1

CHESTERFIELD COUNTY (continued)

JAMES RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
100	8091	APPOMATTOX RIVER COBBS ISLE	M	4.4		5.1	0.0	0.0	20	141.9	1.56	221.5
101	8090	SUNKEN ISLAND	M		7.0	5.4	0.0	0.0	5	+ 56.5	1.56	88.1
102	8091	POINT TO MARK SHORELINE	M			2.8						
103	8091	MARK TO SWIFT CREEK	M	7.6		2.6	126.9	1.9	10	122.6		191.3
104	8091	CAT ISLAND	M		46.6	0.0	0.0	0.0	20	+1503.6		2345.7
105	8091	GILLIAMS ISLAND	M	23.6		22.6	0.0	0.0	3	114.2		178.2
106	8091	SWIFT CR TO SYCAMORE,1943	M	4.1		1.4	124.0	1.9	3	19.8		30.9
107	8091	LONG ISLE AND BACK CREEK ISLE	M	3.5		17.5	0.0	0.0	3	16.9		26.4
108	8091	NORTH HALLS ISLAND	M		4.9	9.9	0.0	0.0	3	+ 23.7		37.0
109	8091	SYCAMORE,1943 TO POINT	B	43.5		3.4	0.0	0.0	3	210.5		328.4
110	8091	NAMELESS POINT TO CANAL	M	8.2		2.9	124.3	20.7	3	39.7		61.9
111	8091	THREE ISLANDS	M	0.3		0.0	0.0	0.0	3	1.5		2.3
111A	8090	SOUTH WEST SMALL ISLE	M		10.5	4.1	0.0	0.0	3	+ 50.8	1.56	79.3
112	8091	THREE ISLANDS	B	0.5		0.0	0.0	0.0	3	2.4	1.56	3.8
113	8091	THREE ISLANDS	B	0.5		0.0	0.0	0.0	3	2.4		3.8
114	8091	WEST SHORELINE OF HALLS ISLAND	B			14.6						
115	8091	EAST SHORELINE OF HALLS ISLAND	B			8.8						
116	8091	CANAL TO MAP EDGE SHORELINE	B			5.6						

TABLE 10: ESSEX COUNTY

RAPPAHANNOCK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
25	514	PORTOBAGO CR TO MARSH POINT	M			8.2			7		.88	
27	515	POINT TO CREEK	M	104.1		15.2	296.5	2.5	3	503.8		443.4
28	515	CREEK TO HORSEHEAD POINT MARSH	M		19.0	3.3	251.2	2.1	3	+ 91.9		+ 80.9
29	515	HORSEHEAD POINT MARSH	M	56.4		26.4	0.0	0.0	3	+ 272.9		+ 240.2
30	515	MARSH TO BAYLORS CREEK	B	26.9		6.6	177.2	1.5	7	303.8		267.3
31	515	BAYLORS CREEK MOUTH	M		20.8	0.0	0.0	0.0	3	+ 100.7		+ 88.6
32	515	CREEK TO OTTERBURN MARSH	M			17.9			10			
33	515	OTTERBURN MARSH	M	1.3		12.6	0.0	0.0	3	6.3		5.5
34	516	OTTERBURN MARSH TO CREEKL	B	43.4		11.8	159.8	1.3	17	1190.7		1047.5
35	516	CREEK TO BEVERLY MARSH	B	20.1		8.9	97.5	0.8	5	162.1		142.7
36	516	BEVERLY MARSH TO PAYNES ISLAND	M	80.6		15.7	223.1	1.9	3	390.1		343.3

ESSEX COUNTY (continued)

RAPPAHANNOCK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
37	516	PAYNES ISLAND TO ISLAND POINT	B			5.1						
38	517	ISLAND POINT	B	28.5		6.1	202.8	1.7	3	137.9		121.4
39	517	OCCUPACIA CREEK TO SLUICE CREEK	B	55.2		10.6	226.5	1.9	7	623.4		548.6
40	517	SLUICE CREEK TO BEFORE LEWIS CREEK	B	216.6		20.9	450.2	3.9	3	1048.3		922.5
49	8360	MAP EDGE TO BROAD CREEK	B	43.2		4.8	385.8	4.4	3	209.1	1.15	240.5
50	8360	JENKINS LANDING TO MALLORYS POINT	B	76.4		16.3	203.7	2.3	20	2465.2		2834.9
51	8360	MALLORYS POINT TO MOUNT LANDING CREEK	B	45.2		9.4	208.9	2.4	4	291.7		335.4
52	8360	MOUNT LANDING CREEK SHORELINE	B			41.0			3			
53	8360	MOUNT LANDING CREEK TO MAP EDGE	B	24.4		4.4	241.9	2.7	10			
54	8359	MAP EDGE TO HOSKINS CREEK	B	52.2		10.8	209.5	2.4	10	842.2		968.5
55	8359	HOSKINS CREEK SHORELINE	B			24.7						
56	8359	HOSKINS CREEK TO RICHMOND BEACH	B	17.7		3.4	221.3	2.5	10	285.6		328.4
57	8359	RICHMOND BEACH TO TUG SHORELINE	B			2.5						
58	8359	TUG TO PISCATAWAY CREEK	B	31.9		6.4	216.6	2.4	5	257.3		295.9
59	8359	PISCATAWAY CREEK SHORELINE	B			37.7			8			
60	8359	PISCATAWAY CREEK TO TOM SHORELINE	B			1.8			8			
61	8359	TOM TO LOWERY POINT	B	22.4		7.4	131.6	1.5	4	144.5		166.2
62	8359	LOWERY POINT	B	10.0		0.0	0.0	0.0	4	64.5		74.2
63	8359	LOWERY POINT TO SOUTH OF RED HILL SL	B			3.2			7			
64	8359	SOUTH RED HILL TO 1/2 MILE DOWNSTREAM	B	10.0		2.1	199.6	2.2	4	64.5		74.2
65	8359	MAP EDGE TO 1/2 MILE SOUTH RED HILL	B	7.9		2.5	136.9	1.5	5	63.7		73.3
66	8350	MAP EDGE TO AREA BEFORE EUBANK	B		34.4	10.2	146.8	1.6	5	+ 277.5		+ 319.1
67	8350	AREA 1/4 MILE NORTH OF EUBANK	B			0.7			5			
68	8350	1/4 MILE NORTH OF EUBANK TO 1/2 MILE SOUTH	M		10.0	2.3	188.7	2.1	4	+ 64.5		+ 74.2
69	8350	MAP EDGE TO 1/2 MILE SOUTH EUBANK SL	B			10.2			6			
70	8351	MAP EDGE TO JONES POINT	B	185.5		27.4	294.2	3.3	20	5985.5		6883.3
71	8351	JONES POINT	M		4.5	1.1	173.3	1.9	10	+ 72.6		+ 83.5
72	8351	JONES POINT TO ESSEX CO LINE	B	14.8		2.8	225.8	2.5	20	477.5		549.2

TABLE 11: GLOUCESTER COUNTY

CHESAPEAKE BAY - WESTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/ YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
113	8327	SHORELINE ACROSS FROM HOG IS.	M			2.0			3		1.35	
114	8327	JENKINS NECK POINT	M		0.9	0.6	62.3	0.8	4	+ 5.8		7.8
115	8327	JENKINS NECK PT TO HEADWATERS MONDAY CR	M	26.6		12.4	93.4	1.2	3	128.7		173.8
116	8327	HEADWATERS OF MONDAY CR TO MARK	M			10.4						
117	8327	MARK TO MOUTH OF MONDAY CR	M	17.8		9.9	77.9	1.0	4	114.9		155.1
118	8327	MOUTH OF MONDAY CR TO MOUTH OF LITTLE MONDAY CR	M			2.5						

GLOUCESTER COUNTY (continued)
CHESAPEAKE BAY - WESTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
119	8327	MARSH ISLAND NORTH OF GUINEA MARSHES	M	25.8		11.1	0.0	0.0	3	124.9		168.6
120	8327	LITTLE MONDAY CR	M	11.8		6.1	84.5	1.1	3	57.1		77.1
121	8327	NORTH MOUTH OF LITTLE MONDAY CR TO MARK	M	10.4		6.5	69.8	0.9	3	50.3		68.0
122	8327	MARK TO EAST MOUTH OF JOHN WEST CREEK	M	29.8		3.9	330.7	4.4	3	144.2		194.7
123	8327	JOHN WEST CREEK	M	21.9		12.5	76.0	1.0	3	106.0		143.1
124	8327	WEST MOUTH J. WEST CR TO EAST MOUTH BELVIN CR	M			7.0						
125	8327	BELVINS CREEK	M			17.4						
126	8327	BELVINS CREEK TO BROWNS BAYLIGHT	M			13.4						
127	8327	BROWNS BAYLIGHT TO BUSH PT	M	18.4		3.3	236.4	3.1				
128	8327	BUSH PT TO ROCK PT	M	10.4		5.4	83.1	1.1	4	118.7		160.3
129	8327	ROCK PT TO MOUTH OF LONG CREEK	M	32.2		8.3	168.7	2.2	4	67.1		90.6
130	8327	LONG CREEK SHORELINE	M			8.8			4	207.8		280.5
131	8327	LONG CREEK TO KING CREEK	M			4.3						
132	8327	KING CREEK SHORELINE	M			6.2						
133	8327	KING CR. TO EAST MOUTH OF SOUTHWEST BRANCH	M			5.0						
134	8327	SOUTHWEST BRANCH SHORELINE	B			105.6						
135	8327	STUMP PT TO MARSHALL 1930	B			3.8						
136	8327	MARSHALL 1930 TO VAUGHNS CR NW BRANCH	B			13.8						
137	8327	VAUGHNS CREEK SHORELINE	B			19.8						
138	8327	VAUGHNS CR TO W MOUTH OF NORTHWEST BRANCH	B			45.1						
139	8327	COD POINT TO STERLING CREEK	B			9.1						
140	8327	STERLING CREEK SHORELINE	B			4.4						
141	8327	STERLING CR TO FREE SCHOOL CR	B			1.1						
142	8327	FREE SCHOOL CREEK SHORELINE	B			9.6						
143	8327	FREE SCHOOL CR TO WHITTAKER CR	B			8.7						
144	8327	WHITTAKER CREEK SHORELINE	B			9.8						
145	8327	WHITTAKER CR TO TURTLENECK PT SHORELINE	B			6.0						
146	8327	TURTLENECK PT TO MUD PT	M	9.7		2.4	175.4	2.3	3	46.9		63.4
147	8327	SEVEN CEDAR PT TO MUD PT	M	36.1		15.3	102.3	1.3	3	174.7		235.9
148	8327	SEVEN CEDAR PT TO TOW STAKE PT	M	16.5		5.2	136.9	1.8	3	79.9		107.8
149	8327	TOW STAKE PT TO WARE RIVER PT	B	13.7		4.6	128.5	1.7	4	88.4		119.4
150	8327	WARE RIVER PT TO GOAT POINT CREEK	M	24.9		6.9	156.3	2.1	3	120.5		162.7
151	8327	GOAT POINT CREEK SHORELINE	M			1.3						
152	8327	GOAT PT CREEK TO SINCLAIR CREEK	M	6.5		1.7	165.8	2.2	3	31.5		42.5
153	8327	SINCLAIR CREEK	M	4.6		2.6	75.3	1.0	3	22.3		30.1
154	8327	SINCLAIR CREEK TO PAGES CREEK	B	3.6		1.3	121.6	1.6	3	17.4		23.5
155	8327	PAGES CREEK	B	4.6		2.4	82.2	1.1	4	29.7		40.1
156	8327	PAGES CREEK TO WINDMILL POINT	B	37.6		8.0	203.8	2.7	4	242.6		327.6
157	8327	WINDMILL POINT SHORELINE	B			2.8						
158	8327	OLD HOUSE CREEK SHORELINE	B			13.6						
159	8327	OLD HOUSE CREEK TO WILSONS CREEK SHORELINE	M			9.7					1.35	
160	8327	WILSONS CREEK SHORELINE	M			28.5						
161	8327	WILSONS CREEK TO MAP EDGE SHORELINE	M			3.3						
162	8330	EDGE OF MAP TO ROAD 4U	B	5.4		2.9	80.2	2.0	5	43.6	2.5	108.9
163	8330	ROAD 4U TO BAILEY WHARF BEACON	B	6.7		3.4	83.6	2.0	3	32.4		81.1
164	8330	BAILEY WHARF BEACON TO END OF MARSH	B	9.0		3.9	98.4	2.4	3	43.6		108.9
165	8330	END OF MARSH TO HORSE 1930	M			0.9						
166	8330	HORSE 1930 TO END OF SECOND LAGOON	M	12.7		4.1	133.2	3.3	3	61.5		153.7
167	8330	SECOND LAGOON TO WARE RIVER POINT	M			1.2						
168	8330	WARE RIVER POINT TO EDGE OF MAP	M			23.3						
169	8330	BM TO EDGE OF MAP	M			18.4						

GLOUCESTER COUNTY (continued)

CHESAPEAKE BAY - WESTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 100
170	8330	SIX FOOT BLUFF TO BM	B	1.5		0.8	83.9	2.0	5	12.1		30.3
171	8330	FOUR FOOT BLUFF TO SIX FOOT BLUFF	B			5.4						
172	8330	THOMAS 1930 TO FOUR FOOT BANK BLUFF	B	1.7		1.1	64.7	1.6	6	16.5		41.1
173	8330	PIER FENCE TO THOMAS, 1930	B			1.7						
174	8330	NAMELESS CREEK TO PIER FENCE	B		3.8	2.1	76.0	1.9	5	+ 30.7		76.6
175	8330	NAMELESS LAGOON TO NAMELESS CREEK	M	0.9		0.5	83.5	2.0	3	4.4		10.9
176	8330	NAMELESS LAGOON	M		0.3	0.7	21.6	0.5	3	1.5		3.6
177	8330	POINT AT PILE	M	0.8		0.6	58.8	1.4	3	3.8		9.7
178	8330	WOOD JETTIES TO PILE	M			4.3						
179	8330	KALEDA, 1944 TO WOOD JETTIES	B	6.3		3.1	88.7	2.2	5	50.8		127.0
180	8330	WOOD BULK TO KALEDA, 1944	B		1.1	0.6	70.6	1.7	5	8.8		22.2
181	8330	POND TO WOOD BULK	B			0.7						
182	8330	ROAD 4U TO POND	M		7.6	2.4	135.6	3.3	3	36.8		91.9
183	8330	EDGE OF MAP TO ROAD 4U	M			0.6						
184	8330	MARSH ISLE NO OLD	M		0.9	0.0	0.0	0.0	2	2.9		7.3
185	8330	WARE NECK POINT	B	42.2		10.5	175.0	2.3	3	204.3		510.6
186	8330	MAP EDGE TO CHIM, 1944 POINT SHORELINE	M			3.1						
187	8330	CHIM, 1944 POINT	M		1.0	3.1	0.0	0.0	3	4.8		12.1
188	8330	SILVER CREEK BAY	B		2.4	1.5	68.9	1.7	3	11.6		29.0
189	8330	SILVER CREEK ISLAND	M	1.9		0.4	0.0	0.0	2	6.1		15.3
190	8330	SILVER CREEK POINT TO HORSE POINT SHORELINE	M			1.3						
191	8330	FIRST HORSE POINT	B		1.2	0.7	76.7	1.9	5	9.7		24.2
192	8330	HORSE POINT SHORELINE	M			1.1						
193	8330	HORSE POINT TO DAVIS CREEK	B		4.3	1.8	104.1	2.6	3	20.8		52.0
194	8330	DAVIS CREEK SHORELINE	B			17.9						
195	8330	DAVIS CREEK TO LOWER LONE POINT MARSH SHORELINE	B			1.8						
196	8330	LOWER LONE POINT MARSH	M		2.8	2.0	60.8	1.5	3	13.6		33.9
197	8330	LOWER MARSH TO LONE POINT SHORELINE	M			1.2						
198	8330	LONE POINT	M	3.2		2.2	63.4	1.5	3	15.5		38.7
199	8330	BELLEVILLE CREEK TO LONE POINT SHORELINE	M			3.7						
200	8330	BELLEVILLE CREEK SHORELINE	M			9.2						
201	8330	BELLEVILLE CREEK TO THOMAS BM	B		1.1	1.1	43.6	1.0	5	8.8		22.2
202	8330	THOMAS, 1936 BM TO BACK CREEK	B	5.1		4.9	45.1	1.1	4	32.9		82.3
203	8330	BACK CREEK SHORELINE	B			12.4						
204	8330	BACK CREEK TO ELMINGTON CREEK	B	9.4		0.0	0.0	0.0	4	60.7		151.6
205	8330	ELMINGTON CREEK SHORELINE	B			5.5						
206	8330	ELMINGTON CREEK TO TODDSBURY CREEK SHORELINE	B			3.9						
207	8330	TODDSBURY CREEK SHORELINE	B			4.6						
208	8330	TODDSBURY CREEK TO TODD BM SHORELINE	B			1.4						
209	8330	NAMELESS CREEK TO TABB BM	B	1.8		1.3	59.7	1.4	5	14.5		36.3
210	8330	TABB BM TO 2ND NAMELESS CREEK	B		3.5	0.0	0.0	0.0	3	16.9		42.4
211	8330	2ND NAMELESS CREEK TO LAST BM, 1936 SHORELINE	B			8.3						
212	8330	LAST BM TO COUNTY LINE	M		3.8	1.5	109.0	2.7	3	18.4		45.9

GLOUCESTER COUNTY
PIANKATANK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
			B			56.0					1.18	
1	8340	HEADWATERS TO MAP EDGE SL	B	1.9		1.3	65.6	0.7	15	46.0		54.3
2	8341	MAP EDGE TO DEEP POINT	B			5.1						
3	8341	DEEP POINT TO 1/4 MI N OF FRENCH CR SL	B	3.1		1.2	110.9	1.3	5	25.0		29.5
4	8341	1/4 MI N OF FRENCH CR TO FRENCH CR	B			5.1						
5	8341	FRENCH CREEK TO COOPER POINT SL	B		1.3	0.7	78.3	0.9	4	+ 8.4		9.9
6	8341	COOPER POINT	B	2.8		1.2	98.7	1.1	5	22.6		26.6
7	8341	COOPER POINT TO PIER S OF DOTS	B			1.7						
8	8341	PIER TO FERRY CREEK SL	B			11.9						
9	8341	FERRY CREEK SL	B			1.9						
10	8341	FERRY CR TO POINT E OF FERRY CR SL	B		1.4	0.6	96.7	1.1	5	+ 11.3		13.3
11	8341	POINT EAST OF FERRY CREEK	B			0.8						
12	8341	POINT EAST OF FERRY CR TO DANCING CREEK SL	B			2.2						
13	8341	DANCING CREEK TO PIANKITANK 23,1932 SL	B	1.8		1.3	60.2	0.7	6	17.4		20.6
14	8341	PIANKATANK23,1932 TO 26'30'' LONG	B			2.6						
15	8341	26'30'' LONG TO HOLLAND POINT SL										

GLOUCESTER COUNTY
YORK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
40	8328	GUINEA MARSH IS.	M	4.0		6.0	0.0	0.0	3	19.4	1.1	21.3
41	8328	SMALL IS GUINEA MARSHES	M	4.0		3.3	0.0	0.0	3	19.4		21.3
42	8328	SMALL IS LEFT OF CENTER LARGE	M	20.1		14.8	0.0	0.0	3	97.3		107.0
43	8328	SEPERATE SMALL IS GUINEA MARSH	M	3.5		1.0	0.0	0.0	3	16.9		18.6
44	8328	VERY SMALL IS. RIGHT GUINEA MARSH	M	0.7		0.2	0.0	0.0	3	3.4		3.7
45	8328	UPPER LEFT LARGE IS GUINEA MARSH	M	25.9		8.3	0.0	0.0	3	125.4		137.9
46	8328	LARGE CENTER IS CUT BY MAP GUINEA MARSH	M	7.9		12.1	0.0	0.0	3	38.2		42.1
47	8327	GUINEA MARSH IS	M	17.6		14.1	0.0	0.0	3	85.2	1.35	115.0
48	8327	SMALL IS BETWEEN GUINEA MARSH AND HOG IS.	B	1.5		2.3	0.0	0.0	3	2.4		3.3
49	8327	SMALL IS GUINEA AROUND HOG IS	M	3.4		1.0	0.0	0.0	3	16.5		22.2
50	8327	HOG IS	M	11.5		7.0	0.0	0.0	3	55.7		75.1
51	8327	SANDY PT TO SAND BEACH SPIT	B	31.2		9.5	142.0	1.9	4	201.3		271.8
52	8327	SANDY PT IS	B	1.5		2.2	0.0	0.0	3	7.3		9.8
53	8327	PERRIN RIVER SHORELINE LENGTH	B			181.1						
54	8327	ALLANS IS	M	45.3		10.7	0.0	0.0	3	219.3		296.0
57	8327	YORK BY 1944 WEST OF 250' PIER	B	13.5		5.5	106.8	1.4	5	108.9		147.0
58	8327	WEST OF 250 FT PIER TO WOOD 1944	B			1.3						
59	8327	WOOD 1944 GAINES PT	B	1.1		0.9	54.4	0.7	12	21.3		28.7
60	8327	GAINES PT TO SOUTH GABLE,1932	B		1.0	0.7	62.6	0.8	12	+ 19.4		+ 26.1
61	8327	SOUTH GABLE 1932 TO EAST MOUTH SARAHS CR.	B			5.2						
62	8327	SARAHS CREEK SHORELINE LENGTH	B			74.6						

GLOUCESTER COUNTY (continued)
YORK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
63	8327	WEST MOUTH SARAHS CR TO WOOD BOX DRAIN	B	5.8		3.7	68.7	0.9	10	93.6		126.5
64	8327	WOOD BOX DRAIN TO MAP EDGE	B			1.5						
65A	8317	GLOUCESTER POINT SHORELINE	B			3.5					1.47	
65	8326	MAP EDGE TO CAMP CREE	B	2.1		1.6	58.8	0.6	10	33.9	1.09	36.9
66	8326	CAMP CREE TO RD 4 PT SL	B			1.5			10			
67	8326	ROAD FOUR POINT	B	0.5		0.6	40.3	0.4	10	8.1		8.8
68	8326	ROAD FOUR PT	B	1.7		0.9	77.8	0.8	8	21.9		23.9
69	8326	SWIMMING POOL REACH	B			1.9			10			
70	8326	MUMFORT IS SOUTH IS	M	1.9		4.2	0.0	0.0	3	9.2		10.0
71	8326	MUMFORT IS MIDDLE IS	M	8.0		5.6	0.0	0.0	3	38.7		42.2
72	8326	NORTH MUMFORT ISLAND	M	2.9		0.6	0.0	0.0	3	14.0		15.3
73	8326	HAYES SCHOOL REACH	B	2.7		1.5	75.9	0.8	3	13.1		14.3
74	8326	SHORE BEHIND CARMINES IS	B	3.0		2.9	45.2	0.4	3	14.5		15.8
75	8326	CARMINES LANDING POINT	B	22.6		17.0	57.7	0.6	3	109.4		119.2
76	8326	SOUTH CARMINES IS	M	1.3		2.0	0.0	0.0	3	6.3		6.9
77	8326	NORTH CARMINES IS	M	4.3		2.6	0.0	0.0	3	20.8		22.7
78	8326	NORTHERN MOST CARMINES IS	M		1.1	0.0	0.0	0.0	3	+ 5.3		+ 5.8
79	8326	TIMBERNECK CR SHORELINE	M			31.4			5	265.7		289.6
80	8326	SOUTH CATLETT IS TO POPLAR CR	M	54.9		36.8	64.8	0.7	3			
81	8326	CEDARBUSH CR SHORELINE	M			16.2			5	160.5		175.0
82	8326	CLIVER LANDING	M	19.9		10.9	79.2	0.8	3	8.2		8.9
83	8326	CEDARBUSH CR IS	B	1.7		0.1	0.0	0.0	3	67.3		73.3
84	8326	CARTER CREEK RIGHT SIDE EROSION	M	13.9		6.6	91.4	1.0	5			
85	8326	CARTER CREEK SHORELINE	M			15.2			3	44.0		48.0
86	8326	CARTER CREEK LEFT SIDE EROSION		9.1		4.8	81.2	0.8				
87	8326	BLUNDERING POINT SHORELINE	M			1.3					1.09	
88	8326	BLUNDERING POINT	B	4.6		4.5	44.2	0.4	3	22.3		24.3
89	8326	GUM POINT TO ABERDEEN CR	B	18.3		5.8	135.7	1.4	5	147.6		160.9
90	8326	ABERDEEN CR SHORELINE	B			15.6			5			
91	8326	ABERDEEN CR TO JONES CR	B	33.6		12.9	112.9	1.2	3	162.6		177.3
92	8326	CONCORD SHORELINE	B	5.5		0.0	0.0	0.0	3	26.6		29.0
93	8326	SANDY CREEK TO MAP EDGE	B	13.0		0.0	0.0	0.0	3	62.9		68.6
94	8325	MAP EDGE TO MAPEDGE	B			3.4					1.09	
95	8332	MAP EDGE TO CAPAHOSIC SHORELINE	B			3.4					1.09	
96	8332	CAPAHOSIC AREA	B		5.7	1.8	137.8	1.5	3	+ 27.6		+ 30.1
97	8332	COWPEN NECK TO ALMONDSVILLE	B		5.3	3.6	63.8	0.7	3	+ 25.7		+ 27.9
98	8332	ALMONDSVILLE TO BARREN PT	B	13.4		4.8	120.1	1.3	3	64.9		70.7
99	8332	PURTAN BAY SHORELINE	M			18.1			3			
100	8332	INDIAN CR	M	2.6		1.7	66.1	0.7	5	20.9		22.9
101	8332	PURTAN IS TO ADAM CR	M			4.2			5			
102	8332	PURTAN ISLAND	M	1.6		0.9	74.5	0.8	5	12.9		14.0
103	8332	ADAMS CR	M	3.4		2.2	66.2	0.7	5	27.4		29.9
104	8332	FOLT 2 VFC TO ADAMS CR	M			1.5			5			
105	8332	FOLT 2 VFC	M		1.9	1.6	51.9	0.5	5	+ 15.3		+ 16.7
106	8332	WEST END SHORELINE	M			1.6			5			
107	8332	POROPOTANK BAY	M	10.6		4.0	115.9	1.2	3	51.3		55.9
108	8332	MORRIS BAY TO POROPOTANK RIGHT IS	M			20.0			3			

TABLE 12: CITY OF HAMPTON
CHESAPEAKE BAY — WESTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
1	8314	MAP EDGE TO NAMELESS CR SHORELINE	B			3.4					1.12	
2	8314	NAMELESS C MOUTH OF	B		0.9	0.4	90.0	1.0	3	+ 4.4		4.9
3	8314	NAMELESS CR TO HAMPTON CR	B	31.1		6.6	205.2	2.3	3	150.5		168.6
4	8314	SUNSET CR SHORELINE	B			9.0						
5	8314	SLATERS CR SHORELINE	B			6.2						
6	8314	BRIGHTS CR SHORELINE	B			5.9						
7	8314	HERBERTS CR SHORELINE	B			3.9						
8	8314	HAMPTON CREEK MINUS NAMED CREEKS	B			61.7						
9	8314	NATIONAL SOLDIERS HOME SHORE	B	1.2		1.0	54.8	0.6	4	7.7		8.7
10	8314	NAMELESS CR NEAR ROSELAND MANOR	B	2.4		0.1	0.0	0.0	3	11.6		13.0
11	8314	ROSELAND MANOR CR TO OLD POINT COMFORT SHORELIN	B			5.9						
12	8314	OLD POINT COMFORT TO RUGGLES SHORELINE	B			7.2						
13	8314	RUGGLES TO BUCKROE BEACH	B	38.5		9.8	169.9	1.9	7	434.8		486.9
14	8314	BUCKROE BEACH TO FOX BM	B	104.1		10.2	443.5	4.9	7	1175.6		1316.7
15	8314	FOX BM TO ED BM	B	171.1		13.0	571.2	6.4	7	1932.3		2164.2
16	8314	NORTHEND PT TO ED BM	M	39.1		4.7	359.2	4.0	7	441.6		494.6
17	8314	NORTHEND PT	B	5.4		0.0	0.0	0.0	4	34.8		39.0
17A	8314	NORTHEND PT SHORELINE	B			1.0						
18	8314	NORTHEND PT TO GRUNLAND CR	M	31.3		6.1	220.4	2.4	3	151.5		169.7
19	8314	GRUNLAND CR	M	11.7		6.2	81.9	0.9	1	18.9		21.1
20	8314	GRUNLAND PT TO DANDY PT	M	4.9		2.6	82.4	0.9	4	31.6		35.4
21	8314	DANDY PT CREEKS SHORELINE	B			15.1						
22	8314	DANDY PT TO WINDMILL POINT	B	14.2		3.9	155.9	1.7	4	91.6		102.6
23	8314	HARRIS CR SHORELINE	B			43.3						
24	8314	HARRIS CREEK TO STONY PT.	M	10.6		2.6	174.0	1.9	4	68.4		76.6
25	8314	STONY PT. TO MEARS	M			13.7						
26	8314	SOUTHWEST BRANCH OF BACK RIVER	B			56.9						
27	8314	WILLOUGHBY PT. TO STAVE BM.	B			7.2						

TABLE 13: HENRICO COUNTY
JAMES RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
401	8089	TURKEY ISLAND CREEK TO 15'5'' LONG	B		2.9	1.0	127.0	1.9	4	+ 18.7	1.56	29.2
402	8089	MARSH ISLAND	B		1.4	0.0	0.0	0.0	4	+ 9.0		14.1
403	8089	15'5'' LONG TO NAMELESS POINT	B	0.8		0.7	52.0	0.8	10	12.9		20.1
404	8089	NAMELESS POINT TO 15'50'' LONG SHORELINE	B			3.2						
405	8089	15'50'' TO 20 FT BLUFF	B	6.2		2.6	103.8	1.6	15	150.0		234.1
406	8089	20 FT BLUFF TO MAP EDGE	B		13.7	3.2	183.4	2.8	15	+ 331.5		517.2

HENRICO COUNTY (continued)
JAMES RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
407	8090	CURLES NECK CREEK	M		123.6	46.6	0.0	0.0	4	+ 797.6	1.56	1244.3
408	8090	LARGE NAMELESS CREEK WITHIN CURLES NECK CR SL	M			8.6						
409	8090	CURLES NECK CREEK TO MARK	M	1.7		1.1	66.6	1.0	3	8.2		12.8
410	8090	MARK CNE TO MARK TWO	M		13.9	3.1	195.3	3.0	3	+ 67.3		105.0
411	8090	MARK TWO TO MARK THREE	M			4.1						
412	8090	MARK THREE TO CATWALK RUINS	B		9.1	2.7	144.9	2.2	3	+ 44.0		68.7
413	8090	CATWALK RUINS TO NAMELESS ISLAND SHORELINE	B			8.2						
414	8090	NAMELESS ISLAND	B		3.0	0.0	0.0	0.0	3	+ 14.5		22.7
415	8090	NAMELESS ISLAND TO MAP EDGE SHORELINE	B			2.6						
416	8089	JONES NECK EDGE OF MAP TO 17'50'' LONG SHORELI	B			11.5					1.56	
417	8089	17'50'' LONG TO FOURMILE CREEK	B		5.2	0.0	0.0	0.0	5	+ 41.9		65.4
418	8089	FOURMILE CREEK SHORELINE	M			13.6						
419	8089	FOURMILE CR TO ROUNDABOUT CREEK SHORELINE	B			1.8						
420	8089	ROUNDABOUT CR TO 18'50'' LONG	B		23.5	1.6	0.0	0.0	3	+ 113.7		177.4
421	8089	18'50'' TO 19'15'' SHORELINE	B			3.4						
422	8089	19'15'' TO VARINA WATER TANK	B		34.1	0.6	0.0	0.0	3	+ 165.0		257.5
423	8089	VARINA WATER TANK TO DUTCH GAP	B			5.4						
424	8089	DUTCH GAP	B	10.6		1.1	394.9	6.1	10	171.0		266.8
425	8089	DUTCH GAP TO 22'15'' LONG SHORELINE	B			0.0						
426	8089	22'15'' TO EDGE OF MAP	B	5.2		1.7	129.8	2.0	5	41.9		65.4
427	8096	MAP EDGE TO NAMELESS POINT	B	1.8		1.6	50.2	0.7	5	14.5	1.56	22.7
428	8096	NAMELESS POINT	B		1.8	0.9	86.2	1.3	5	+ 14.5		22.7
429	8096	NAMELESS POINT TO 23' LONG SHORELINE	B			2.0						
430	8096	SAND PIT POINT	B		1.4	0.6	102.8	1.6	5	+ 11.3		17.6
431	8096	SAND PIT POINT TO JAMES RIVER LIGHT SHORELINE	B			3.3						
432	8096	JAMES RIVER LIGHT TO 24'45'' LAT	B		32.1	7.5	185.6	2.9	10	+ 517.9		807.9
433	8096	24'45'' TO 24'30'' LONG SHORELINE	B			6.3						
434	8096	24'30'' TO CORNELIUS CREEK	B	1.6		0.8	89.8	1.4	5	12.9		20.1
435	8096	CORNELIUS CREEK TO 25'30'' LONG	B	9.4		4.1	98.7	1.5	10	151.7		236.6
436	8096	25' 304'' MAP EDGE	B		15.3	4.7	142.4	2.2	20	+ 493.7		770.1
437	8097	EDGE OF MAP TO SAND AND GRAVEL SHORELINE	B			5.2					1.57	
438	8097	SAND AND GRAVEL TO NO 63	B		46.2	10.6	189.4	2.9	10	+ 745.4		1162.7
439	8097	NO 63 TO JETTIES	B		30.7	7.1	186.2	2.9	5	+ 247.6		386.3
440	8097	JETTIES TO MAP EDGE SHORELINE	B			0.5						
441	8098	EDGE OF MAP TO DOLPHINS SHORELINE	B			2.3						

TABLE 14: ISLE OF WIGHT COUNTY

JAMES RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
200	8318	LAWNES CREEK POINT	M		1.4	0.6	102.1	1.5	3	6.8		10.0
201	8318	LAWNES CREEK POINT TO MAP EDGE	B	17.2		5.6	133.1	1.9	5	138.7		204.0
202	8311	HOLLY PT TO MAP EDGE UPPER	B	41.7		20.7	87.5	1.2	20	1345.5	1.47	1977.9
203	8311	FERGUSSONS WHARF TO SHORELINE RUINS				1.8						
204	8311	JONES F ECC -- MAP EDGE	B	23.2		19.9	50.7	0.7	5	187.1		275.1
205	8312	DAYS PT TO MAP EDGE	B	220.1		36.8	260.4	3.8	20	7101.9	1.47	10,439.8
206	8312	DAYS PT	M		12.1	2.2	237.0	3.4	10	+ 195.2		+ 286.9
207	8312	WILLIAMS CR BIG SPIT	M	8.0		1.9	177.9	2.6	15	193.6		284.6
208	8312	RAINBOW FARM POINT	B	7.3		3.7	85.5	1.2	25	294.4		432.8
209	8305	SMALL AREAS BY GOODWIN VFC	M	0.2		0.7	70.1	0.7	3	.9	1.12	1.4
210	8305	BALLARD MARSH POINT	M	0.6		12.0	154.5	1.7	3	2.9		3.3
211	8305	MAP EDGE TO KINGS CREEK	M	39.9		9.8	176.3	1.9	3	193.1		216.3
212	8304	MAP EDGE TO COOPER CREEK NORTH	M	30.5		5.7	233.4	2.6	3	147.6	1.12	165.3
213	8304	RAGGED ISLAND	M	38.1		10.3	161.0	1.8	3	184.4		206.5
214	8304	CHUCKATUCK CREEK TO RAGGED ISLAND CREEK	M	15.0		5.9	110.7	1.2	4	96.8		108.4

TABLE 15: JAMES CITY COUNTY

JAMES RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
285	8317	BAILEY CREEK TO WOODS CREEK SHORELINE	M			26.7					1.47	
286	8317	WOODS CREEK TO MOUTH SKIFFES CREEK	B		21.6	6.6	142.7	2.0	3	+ 104.5		153.7
287	8317	SKIFFES CR TO ISLAND ON 650 GRID	B		6.2	0.0	0.0	0.0	5	+ 50.0		73.5
288	8317	SKIFFES CR ISLAND	B		0.8	0.0	0.0	0.0	5	+ 6.5		9.5
289	8317	SKIFFES CREEK ISLAND	M		1.1	0.0	0.0	0.0	5	+ 8.8		13.1
290	8317	SKIFFES CREEK ISLAND	B		3.8	0.0	0.0	0.0	5	+ 30.6		45.1
291	8317	SKIFFES CREEEK POINT TO SLIDE BM	B	18.4		9.6	83.4	1.2	5	148.4		218.2
292	8317	MAP EDGE TO JUST BEFORE SLIDE SHORELINE	B			0.0						
293	8318	COLLEGE CREEK TO MAP EDGE	B			23.1					1.47	
294	8318	COLLEGE CREEK NEW ISLAND	M		7.9	4.8	0.0	0.0	3	+ 38.2		56.2
295	8318	COLLEGE CREEK SPIT	B	6.5		2.1	131.1	1.9	3	31.5		46.2
296	8318	SOUTH SILO TO ARCHERSHAPE	B	8.0		7.2	47.9	0.7	3	38.7		56.9
297	8318	SOUTH SILO	B	1.2		0.6	81.3	1.1				
298	8318	SOUTH SILO TO MILL CREEK SHORELINE	B			5.6						
299	8318	MILL CREEK BANK	B	1.8		0.8	90.7	1.3	3	8.7		12.8
300	8318	MILL CREEK TO MAP EDGE	B	3.1		1.7	79.2	1.1	3	15.0		22.1

JAMES CITY COUNTY
JAMES RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
301	8318	BLACK POINT TO MAP EDGE	M			5.5						
302	8318	JAMESTOWN IS LOWER PT TO BLACK POINT	M			72.2						
303	8319	MAP EDGE TO JAMESTOWN ISLAND SHORELINE	B			11.1					1.35	
304	8319	CHURCH POINT	B	5.6		2.7	89.7	1.2	5	45.2		61.0
305	8319	SANDY BAY	M	6.9		2.4	120.7	1.6	5	55.6		75.1
306	8319	GLASS HOUSE POINT SPIT	B	31.9		0.0	0.0	0.0	5	257.3		347.4
307	8319	GLASS HOUSE POINT TO BARRETS POINT SHORELINE	B			28.0						
308	8324	LOWER MAP EDGE TO SHORELINE	B	8.7		5.0	76.1	1.0	3	126.3	1.35	170.5
309	8324	SHORELINE TO MAP EDGE	B			3.9						
309A	8323	GORDON ISLAND	M	22.7		9.5	103.3	1.3	3	109.9		148.3
310	8324	MAP EDGE TO SMALL CREEK SHORELINE	B			4.1						
311	8324	SMALL CREEK TO SMALL CREEK	M	0.2		5.5	0.0	0.0	4	1.3		1.7
312	8324	SMALL CREEK TO SHIELDS POINT	B	19.1		9.8	84.1	1.1	3	92.4		124.8
313	8324	SHIELDS POINT MARSH	M		44.0	4.0	473.9	6.4	3	+ 213.		287.5
314	8324	SHIELDS POINT MARSH ISLAND	M		24.3	0.0	0.0	0.0	3	+ 117.6		158.8
315	8324	BLACKSTUMP CREEK	M		5.4	4.7	0.0	0.0	3	+ 26.1		35.3
316	8324	SIMPSON IS. CREEK TO YARMOUTH CREEK	M	7.8		3.1	109.8	1.4	3	37.7		51.0
317	8324	YARMOUTH CREEK TO MAP EDGE	M	3.6		2.2	69.5	0.9	3	17.4		23.5
318	8324	MAP EDGE TO SHIPYARD LANDING SHORELINE	M			3.2						
319	8324	SHIPYARD LANDING TO MAP EDGE	B	4.1		2.0	90.4	1.2	4	26.5		35.7
320	8324	UNCLES NECK CREEK TO MAP EDGE	M	11.6		4.1	122.8	1.6	3	56.1		75.8
321	8323	POINT ACROSS FROM SUNKEN MARSH SHORELINE	B			4.9					1.35	
322	8323	MAP EDGE TO MAP EDGE AROUND BIG MARSH PT	B			27.3						

JAMES CITY COUNTY
YORK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/ YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
8	8333	WARE CREEK TO MAP EDGE	M	11.4		4.6	106.4	1.1	3	55.2	1.11	61.3
9	8332	MAP EDGE TC TASKINAS CREEK	B	55.1		15.7	152.2	1.6	20	1777.9	1.09	1937.9
10A	8332	TASKINAS CREEK TO LOWER MAP EDGE	M	78.3		19.4	175.2	1.9	10	1263.3		1376.9
10	8325	MAP EDGE TC SKIMINC CREEK	B	8.2		1.9	183.8	2.0	3	39.7	1.09	43.3

TABLE 16: KING GEORGE COUNTY

POTOMAC RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
1	913	MAP EDGE TO CHOTANK CREEK	B	45.7		9.0	220.3	2.2	5	368.6	1.04	383.3
2	913	MAP EDGE TO CHOTANK CREEK	B	20.0		6.5	132.4	1.3	80	2581.3		2684.5
3	907	NAMELESS AREA	B	14.3		5.4	114.4	1.1	80	1845.6		1919.4
4	908	MATHIAS POINT	B	56.5		20.9	117.4	1.2	8	229.2		238.4

KING GEORGE COUNTY — STAFFORD COUNTY

RAPPAHANNOCK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
289	514	MAP EDGE TO CREEK	M	12.1		4.0	131.6	1.1	3	58.6	.88	51.5
290	513	MAP EDGE TO MAP EDGE SL	M			63.0						
293	435	LAMB CREEK TO CORBINS NECK SL	B			8.9						
294	435	CORBINS NECK MATSH	M		79.3	20.5	0.0	0.0	3	+ 383.8		337.7
295	435	CORBINS NECK TO NEXT MARSH SL	M			2.6						
296	435	MARSH	M	1.4		13.0	0.0	0.0	5	11.3		9.9

TABLE 17: KING AND QUEEN COUNTY

YORK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/ YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
109	8332	POROPOTANK SHORELINE	B			26.4			3		1.09	
110	8332	POROPOTANK BAY TO ROANE	M	4.3		3.4	54.8	0.6	5	34.7		37.8
111	8332	ROANE TO DITCH SHORELINE	M			4.7			3			
112	8332	FIRST DITCH TO CREEK	M		7.8	4.5	76.4	0.8	4	+ 50.3		+ 54.8
113	8332	CREEK TO BELLEVIEW SHORELINE	B			6.0						
114	8332	BELLEVIEW TO MAP EDGE	B	19.8		5.8	147.5	1.6	5	159.7		174.1
115	8333	MAP EDGE TO A CREEK	M	6.6		2.7	106.6	1.1	3	31.9	1.10	35.1
116	8333	MAP EDGE TO CREEK SHORELINE	M			1.5			3			
117	8338	MAP EDGE TO COLDERS CREEK SHORELINE	M			4.7			5		1.08	
118	8338	COLDERS CREEK TO GOFF POINT	M	7.5		2.9	113.3	1.2	5	60.5		65.3
119	8338	GOFF POINT TO BROOKSHIRE	B	11.5		6.0	83.1	0.8	6	111.3		120.2
120	8338	BROOKSHIRE TO BROOKS CREEK SHORELINE	B			2.4			5			
121	8338	BROOKS CREEK TO BRIDGE	M		2.5	1.8	59.4	0.6	3	+ 12.1		+ 13.1

TABLE 18: KING WILLIAM COUNTY

YORK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION (ACRES)	AREAS ACCRETION (ACRES)	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
1	8338	BRIDGE TO WEST POINT BULKHEAD	B		22.9	7.8	127.1	1.3	3	110.8	1.08	119.7
122	8338	BRIDGE TO WEST POINT BULKHEAD	B	8.3		4.4	82.5	0.8	3	40.2		43.4

LANCASTER COUNTY

CHESAPEAKE BAY - WESTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION (ACRES)	AREAS ACCRETION (ACRES)	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/ YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
328	8343	WINDMILL POINT TO NORTH POINT	M	368.1		21.5	745.6	7.9	7	4157.1	1.06	4406.5
329	8343	LITTLE BAY	B	55.4		28.9	0.0	0.0	5	446.9		473.7
330	8343	ANTIPOISON CREEK PLUS HARPERS CREEK	B	33.7		34.8	0.0	0.0	5	271.8		288.1
331	8343	LITTLE BAY TO TABBS CREEK	B	53.0		4.3	534.1	5.6	6	518.8		550.0
332	8343	TABBS CREEK	B	39.6		25.2	0.0	0.0	6	383.3		406.3
333	8343	TABBS CREEK TO 39'25'' LAT	M		2.7	0.7	158.7	1.6	3	+ 13.1		13.9
334	8343	39'20'' LAT TO DYMER CREEK	M	33.2		2.5	567.3	6.0	5	267.8		283.9
335	8343	DYMER CREEK TO 21'50'' LONG	B	20.5		60.1	0.0	0.0	7	231.5		245.4
336	8343	DYMER CREK TO INDIAN CREEK	B	74.5		5.1	626.2	6.6	5	601.0		637.1
337	8343	INDIAN CREEK TO COUNTY LINE	B	72.0		40.9	0.0	0.0	6	697.0		738.8

TABLE 19: LANCASTER COUNTY
RAPPAHANNOCK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/ YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
145	8342	WINDMILL POINT TO WESTLAND	B	29.5		3.5	366.5	4.2	5	237.9	1.16	276.0
146	8342	WESTLAND SHORE AREA	B		10.1	1.7	257.0	2.9	5	+ 81.5		96.1
147	8342	WESTLAND TO MAP EDGE	B	23.3		35.0	0.0	0.0	5	187.9		218.0
148	8342	EDGE OF MAP - MOUTH OF WINDMILL POINT CREEK SL	M			2.9						
149	8342	MOUTH OF WINDMILL CREEK - 19' LONG	M	3.1		1.4	98.1	1.1	6	30.0		34.8
150	8342	19' LONG - 19'30& LONG SL	B			4.0						
151	8342	19'30& LONG - 21'15& LONG LAGOON	B		22.8	16.6	123.4	1.4	5	+ 183.9		213.3
152	8342	ISLAND EAST OF MOSQUITO ISLAND	M	3.6		1.6	0.0	0.0	3	17.4		20.2
153	8342	MOSQUITO ISLAND PLUS ISLAND TO NORTH	M		71.4	17.1	0.0	0.0	3	+ 345.6		400.8
154	8342	21'15'' LONG LAGOON	B	0.4		1.3	0.0	0.0	5	3.2		3.7
155	8342	21'15'' LONG LAGOON TO MOSQUITO CREEK EK	B		7.1	2.2	136.9	1.5	5	+ 57.3		66.4
156	8342	MOSQUITO CREEK SL NORTH	B			6.0						
157	8342	21'55'' - WEST CREEK MOUTH	B			2.6						
158	8342	CREEK MOUTH TO MOSQUITO POINT	B	18.0		3.3	233.9	2.7	10	290.4		336.8
159	8342	MOSQUITO POINT TO 22 LONG	B		14.3	2.9	211.2	2.4	5	+ 115.4		133.8
160	8342	22' LONG - EDGE OF MAP SL	B			3.8						
161	8344	76D22'30'' LONG TO 22'50'' LONG	B	3.2		1.8	77.5	0.8	25	129.1	1.15	148.4
162	8344	LAN 1947 - 20' BLUFF SL	B			2.3						
163	8344	20' BLUFF - CHERRY PT.	B	15.7		4.3	156.3	1.7	10	253.3		291.3
164	8344	CHERRY PT. SL	B			0.5						
165	8344	CHERRY PT. - 38' LAT	B	9.9		3.2	134.4	1.5	20	319.4		367.4
166	8344	38' LAT- 25'5'' LONG SL	B			3.4						
167	8344	25'5 LONG - WEST END OF 20' BLUFF	M	1.2		0.9	61.2	0.7	5	9.7		11.1
168	8344	20' BLUFF - POINT EAST OF CARTER CREEK	B		1.7	1.3	56.0	0.6	5	+ 13.7		15.7
169	8344	POINT EAST OF CARTER CREEK - CARTER CREEK	B	19.1		5.7	144.4	1.6	7	215.7		248.1
170	8344	EAST MOUTH OF CARTER CREEK	B		0.3	0.3	49.3	0.5	5	+ 2.4		2.8
171	8344	CARTER CREEK SL	B			82.6						
172	8344	CARTER CREEK - PIER AT ORCHARD 3, 1942	B	6.5		2.8	98.9	1.1	6	62.9		72.4
173	8344	PIER AT ORCHARD 3, 1942 - ORCHARD PT.	B	2.6		1.3	86.0	0.9	7	29.4		33.7
174	8344	ORCHARD PT - CAMPBELL MEMORIAL PRES CHURCH	B	3.8		1.5	105.4	1.2	10	61.3		70.5
175	8344	CAMPBELL MEM PRES CH - WHARTON GR CP LAGOON	B	7.8		2.4	139.0	1.5	10	125.8		144.7
176	8344	WHARTON GROVE CAMP LAGOON	B		5.1	7.3	0.0	0.0	10	+ 82.3		94.6
177	8344	WHARTON GROVE CAMP LAGOON ISLAND	B		0.0	1.3	0.0	0.0				
178	8344	WHARTON GROVE CAMP LAGOON - CORROTOMAN RIVER	B	8.8		2.6	142.6	1.6	10	141.9		163.3
179	8344	CORROTOMAN R & CORROT. PT - NAMELESS LAGOON	B	38.9		7.1	235.5	2.7	11	690.3		793.9
180	8344	CORROT. R. & NAMELESS LAGOON - TAYLOR CR	B	11.1		2.4	202.9	2.3	10	179.1		205.9
181	8344	TAYLOR RIVER SL	B			22.4						
182	8344	CORROT. R. & TAYLOR CR - MORAN CR	B	39.9		3.8	446.8	5.1	10	643.7		740.3
183	8344	MORAN CR SL	B			20.7						
184	8344	CORROT. R. & MORAN CR - EASTERN BR	B	18.1		5.3	148.2	1.7	15	438.0		503.7
185	8344	EASTERN BR SL	B			89.6						
186	8344	WESTERN BRANCH SL	B			28.9						
187	8344	MOUTH OF WESTERN BR - BAR PT.	B	7.2		3.5	89.0	1.0	12	139.4		160.3
188	8344	CORROT. RIVER & BAR PT - YANKEE PT SL	B			2.5						
189	8344	CORROT. R. & YANKEE PT - BALL PT	B	41.7		33.2	0.0	0.0	10	673.8		774.9
190	8344	CORROT. R. & BALL PT	B		3.2	1.2	113.0	1.2	10	+ 51.6		59.4
191	8344	CORROT R & BALL PT - TOWN CR SL	B			1.5					1.15	
192	8344	TOWN CR	B	10.4		5.7	0.0	0.0	10	167.8		192.9
193	8344	CORROT. R.& TOWN CR - ABANDONED WHARF SL	B			0.7						
194	8344	ABANDONED WHARF AREA	B		2.9	0.8	153.2	1.7	9	42.1		48.4
195	8344	ABANDONED WHARF - EDGE OF MAP	B	20.3		5.3	167.1	1.9	9	294.7		338.9
196	8344	SOUTH MOUTH OF WHITEHOUSE CR - EDGE OF MAP	M	15.6		4.9	137.4	1.5	4	100.6		115.8

LANCASTER COUNTY (continued)

RAPPAHANNOCK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/ YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
197	8345	EDGE OF MAP - POND AT 30' LONG	M	2.2		1.4	67.5	0.7	3	10.6	1.14	12.1
198	8345	POND AT 30' LONG	M	1.7		4.7	0.0	0.0	10	27.4		31.3
199	8345	POND AT 30' LONG - LAGOON N OF TOWLES PT	B	8.8		2.8	134.1	1.5	12	170.4		194.2
200	8345	POND - MIDWAY BETWEEN POND AND WYATT CR	B	7.7		2.9	114.3	1.2	12	149.1		169.9
201	8345	MIDWAY BETWEEN POND AND WYATT CR - WYATT CR SL	B			1.5						
202	8345	WYATT CR SL	B			4.0						
203	8345	WYATT CR - MIDWAY BETWEEN WYATT CR & BEECH CR	B			2.1						
204	8345	MIDWAY BET WYATTS CR & BEECH CR - BEECH CR SL	B			1.3						
205	8345	BEECH CR AND POND SL	M			12.8						
206	8345	ROGUE PT SL	M			2.1						
207	8345	ROGUE PT - PAYNES CR	B	70.3		12.2	250.3	2.8				
208	8345	PAYNES CR SL	M			13.2			18	2041.5		2327.3
209	8345	PAYNES CR - GREENVALE CR	B	16.6		4.1	174.7	1.9				
210	8345	GREENVALE CR SL	B			22.5			20	535.6		610.6
211	8345	GREENVALE CR - RUINED DOCK AND OYSTER HOUSE	B	12.3		3.5	152.0	1.7				
212	8345	RUINED DOCK AND OYSTER HOUSE AREA	B		1.4	0.8	73.4	0.8	10	198.4		226.2
213	8345	RUINED DOCK AND OYSTER HOUSE - CANNERY AREA	B	21.0		6.3	145.5	1.6	12	22.1		25.2
214	8345	CANNERY AREA	B		4.8	1.6	126.9	1.4	12	406.6		463.5
215	8345	CANNERY AREA - CR N OF CANNERY	B	4.8		1.6	128.8	1.4	6	46.5		52.9
216	8345	CR N OF CANNERY - 44'30& LAT	B		3.3	1.0	143.6	1.6	10	77.4		88.3
217	8345	44'30& LAT - EDGE OF MAP SL	B			2.4			8	42.6		48.6
218	8352	EDGE OF MAP - CR N OF NAVY AUX AIR FIELD	B	8.6		3.1	119.9	1.3			1.15	
219	8352	CR N OF NAVY AUX AIR FIELD-34'40'' LONG	B		4.9	1.1	185.0	2.1	10	138.7		159.6
220	8352	34'40& LONG - MIDDLE OF BOER RD SL	B			2.3			10	70.1		90.9
221	8352	BOER RD - DEEP CR	B	7.6		1.2	260.6	2.9				
222	8352	SPIT ON S MOUTH OF DEEP CR	M		2.3	1.2	83.7	0.9	10	122.6		141.0
223	8352	DEEP CR SL	B			23.1			5	18.6		21.3
224	8352	NW MOUTH OF DEEP CR	M		2.6	1.3	86.7	0.9				
225	8352	DEEP CR - MULBERRY CR	M	61.5		12.0	222.4	2.5	3	12.6		14.5
226	8352	MULBERRY CR SL	M			22.2			3	297.7		312.5
227	8352	COLBERT PT	B		0.4	1.7	0.0	0.0				
228	8352	COLBERT PT - EDGE OF MAP	B			1.3			5	3.2		3.7
229	8351	EDGE OF MAP - PT S OF CURLETTS PT SL	M			2.1					1.15	
230	8351	PT S OF CURLETTS PT - CURLETTS PT	B	13.2		2.0	277.8	3.1				
231	8351	LANCASTER CR & CURLETTS PT - GRID 1679	M	49.2		5.5	388.2	4.4	5	106.5		122.5
232	8351	GRID 1679 - EDGE OF MAP SL	M			2.2			4	317.5		365.1

TABLE 20: MATHEWS COUNTY
CHESAPEAKE BAY - WESTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
213	8330	COUNTY LINE TO MORGANS CREEK	M	7.5		1.9	171.8	4.2	3	36.3	2.5	90.8
214	8330	MORGANS CREEK TO LAST BM SHORELINE	B			1.4						
215	8330	LAST,1936 SPIT	M	0.5		1.3	0.0	0.0	3	2.4		6.1
216	8330	LAST BM TO HILL BM	B	12.5		5.4	101.2	2.5	5	100.8		252.1
217	8330	HILL BM TO SAND BM	B	4.2		3.7	49.6	1.2	5	33.9		84.7
218	8330	SAND BM TO HICKS BM	B	4.5		3.6	55.1	1.3	5	36.3		90.8
219	8330	HICKS BM TO AUBURN WHARF SHORELINE	B			7.7						
220	8330	WOOD PIER MARSH	B		1.8	1.3	59.0	1.4	5	+ 14.5		+ 36.3
221	8330	NAMELESS CREEK TO OAK BM	B		5.4	2.7	86.5	2.1	3	+ 26.1		+ 65.3
222	8330	OAK BM TO ROYS PT	B	2.5		1.9	57.6	1.4	3	12.1		30.3
223	8330	ROYS POINT	B	0.1		2.2	0.0	0.0	2	0.3		0.8
224	8330	ROYS POINT TO HAMPTON CREEK	B	8.0		3.3	104.4	2.6	3	38.7		96.8
225	8330	HAMPTON CREEK SHORELINE	B			4.6						
226	8330	HAMPTON CREEK TO OLD BM,1936	B	10.0		3.7	117.9	2.9	5	80.7		201.7
227	8330	REST OF BLACKWATER CREEK SHORELINE	B			15.0						
228	8330	GREEN MANSION COVE	B	3.7		9.2	0.0	0.0	3	17.9		44.8
229	8330	OAKLAND CREEK SHORELINE	B			11.0						
230	8330	NAMELESS CREEK TO RAYMOND CREEK SHORELINE	B			14.7						
231	8330	RAYMOND CREEK SHORELINE	B			9.7						
232	8330	SIBLEY CREEK TO SMITH LOT	B	3.3		1.1	129.7	3.2	5	26.6		66.5
233	8330	SMITH LOT TO CEDAR POINT SHORELINE	B			1.1						
234	8330	SMITH LOT TO CAKES CREEK	B	6.2		2.7	99.4	2.4	3	30.0		75.0
235	8330	CAKES CREEK SHORELINE	B			6.4						
236	8330	CAKES CREEK TO DIGGS CREEK	B	4.6		2.1	91.7	2.2	4	29.7		74.2
237	8330	DIGGS CREEK TO MAP EDGE	M	7.2		1.8	174.9	4.3	4	46.5		116.2
238	8329	EAST RIVER SHORELINE	B			153.2						
239	8328	MARSH ISLAND	M	8.9		3.1	126.0	1.4	5	71.8	1.11	79.7
240	8328	WHITE NECK	B	23.6		13.3	0.0	0.0	5	190.4		211.3
241	8328	POINT EAST OF WHITE NECK	B	2.4		1.1	98.5	1.0	6	23.2		25.8
242	8328	EDGE OF MAP - NAMELESS CREEK	B	5.7		1.7	142.8	1.5	5	46.0		51.0
243	8328	NAMELESS CREEK	B	3.3		1.6	0.0	0.0	5	26.6		29.5
244	8328	NAMELESS CREEK - WEST LANDING CREEK SHORELINE	B			0.7						
245	8328	WEST LANDING CREEK	B	9.9		6.8	0.0	0.0	5	79.9		88.6
246	8328	WEST LANDING CREEK - SLOOP CREEK	B	32.9		6.3	226.5	2.5	3	159.2		176.8
247	8328	SLOOP CREEK SHORELINE	B			7.4						
248	8328	SLOOP CREEK ISLAND	M		5.6	2.1	0.0	0.0	3	+ 27.1		+ 30.1
249	8328	SLOOP CREEK-21'5''LAT	B	4.8		1.9	106.9	1.1	5	38.7		43.0
250	8328	21'5''LAT-20'55'' LAT SL	B			0.8						
251	8328	20'55''LAT TO 20'45''LAT 19'15''LONG	M	12.8		3.6	153.3	1.7	3	62.0		68.8
252	8328	MARSH ISLAND 20'45''LAT 19'30'' LONG	M		3.1	1.5	0.0	0.0	3	+ 15.0		+ 16.6
253	8328	20'45''LAT-19'15''LONGX20'30''LAT 19'10''LONG	M		11.1	3.1	152.5	1.6	3	+ 53.7		+ 59.6
254	8328	PEPPER CREEK	M	26.1		20.5	0.0	0.0	5	210.5		233.7
255	8328	PEPPER CREEK POINT	B	14.8		1.5	419.8	4.6	5	119.4		132.5
256	8328	PEPPER CREEK MARSH ISLAND	M		50.6	8.4	0.0	0.0	3	+ 244.9		+ 271.8
257	8328	PEPPER CREEK POINT TO DAVIS CREEK	B	26.9		6.4	183.6	2.0	5	217.0		240.9
258	8328	DAVIS CREEK	B	9.3		10.7	0.0	0.0	5	75.0		83.3

MATHEWS COUNTY (continued)
CHESAPEAKE BAY - WESTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
259	8328	DAVIS CREEK TO HARPER CREEK	M	19.3		3.5	239.8	2.6	3	93.4	1.11	103.7
260	8328	HARPER CREEK	M	13.1		8.6	0.0	0.0	3	63.4		70.4
261	8328	HARPER CREEK TO DEEP CREEK	M		20.3	3.6	244.0	2.7	3	+ 98.3		109.1
262	8328	NEW POINT COMFORT	B	85.2		13.1	0.0	0.0	3	412.4		457.7
263	8328	MARSH ISLAND NORTH OF NEW POINT COMFORT	M		10.2	2.6	0.0	0.0	3	+ 49.4		54.8
264	8328	18'30''LAT ISLAND	M		6.0	3.4	0.0	0.0	3	+ 29.0		32.2
265	8328	18'30''LAT ROUND ISLAND - OLD	M	5.2		0.0	0.0	0.0	3	25.2		27.9
266	8328	18'40''LAT OBLONG ISLAND - OLD	M	8.2		0.0	0.0	0.0	3	39.7		44.1
267	8328	DEEP CREEK POINT - CABLE CROSSING	B	9.6		3.1	132.6	1.4	3	46.5		51.6
268	8328	CABLE CROSSING - MARSHY ISLANDS SHORELINE	M			1.3						
269	8328	MARSHY ISLANDS - DYER CREEK	M	18.1		5.1	152.0	1.6	3	87.6		97.2
270	8328	SEWER PIPE ISLAND	B	13.4		0.0	0.0	0.0	11	237.8		264.0
271	8328	DYER CREEK POINT	B	29.2		0.4	2780.0	30.9	5	235.5		261.5
272	8328	DYER CREEK POINT - 16'30''LONG	M	5.2		1.1	193.2	2.1	5	41.9		46.1
273	8328	TWO CREEKS ON THE SOUTH MOUTH OF DYER CREEK	M	13.6		6.3	0.0	0.0	3	65.8		73.1
274	8328	DYER CREEK SHORELINE	M			10.8						
275	8328	DYER CREEK - CHERRY ISLAND SHORELINE	M			4.2						
276	8328	CHERRY ISLAND - DOCTORS CREEK	B	18.4		4.0	200.0	2.2	3	89.1		98.9
277	8328	CHERRY ISLAND	B		2.8	1.6	0.0	0.0	3	+ 13.6		15.0
278	8328	ISLAND EAST OF CHERRY ISLAND - OLD	B	8.3		0.0	0.0	0.0	3	40.2		44.6
279	8328	NEW POINT WHARF MARSH ISLAND	M		31.8	6.2	0.0	0.0	3	+ 153.9		170.8
280	8328	DOCTORS CREEK	B	2.5		8.6	0.0	0.0	3	12.1		13.4
281	8328	MILL POINT MARSH	M		22.1	6.8	0.0	0.0	3	+ 107.0		118.7
282	8328	SMITH CREEK	B	7.6		6.2	0.0	0.0	3	36.8		40.8
283	8328	HORN HARBOR (LESS SMITH CREEK)	B	62.2		59.0	0.0	0.0	3	301.0		334.2
284	8328	HORN HARBOR TO 21'40''LAT 15'40''LONG	B		10.1	2.9	147.7	1.6	3	+ 48.9		54.3
285	8328	SHEEP ISLAND	B		12.8	3.9	0.0	0.0	3	+ 62.0		68.7
286	8328	ISLAND EAST OF SHEEP ISLAND	B	2.8		0.0	0.0	0.0	3	13.6		15.0
287	8328	MARSH ISLAND NORTH OF SHEEP ISLAND	M		5.9	2.7	0.0	0.0	3	+ 28.6		31.7
288	8328	21'40''LAT 15'40''LONG TO NAMELESS POINT	M	7.4		2.3	136.2	1.5	3	35.8		39.8
289	8328	NAMELESS POINT - 22' LAT 15'20''LONG	M	43.3		2.5	726.5	8.0	3	209.6		232.6
290	8328	22' LAT 15' 20''LONG -CHANNEL TO WINTER HARBOR	M	0.6		5.2	0.0	0.0	3	2.9		3.2
291	8328	MOUTH OF CHANNEL TO WINTER HARBOR - EDGE OF MAP	M	12.1		4.3	121.5	1.3	3	58.6		65.0
292	8328	22'30''LAT 15'10''AREA TO EDGE OF MAP	B		9.4	5.7	0.0	0.0	3	45.5		50.5
293	8328	MARSH ISLAND SOUTH OF EDGE OF MAP	M		5.7	2.1	0.0	0.0	3	+ 27.6		30.6
294	8329	MAP EDGE TO 17D24' SHORELINE	B			9.3					1.11	
295	8329	NORTH PART WINTER HARBOR ABOVE 17D24'	B		1.4	11.2	0.0	0.0	3	6.7		7.5
296	8329	17D24' TO RIGBY ISLAND	B	130.6		13.4	422.0	4.6	5	1053.5		1169.4
297	8329	RIGBY ISLAND SPIT	M	119.2		33.1	0.0	0.0	4	769.2		853.8
298	8329	RIGBY ISLAND TO BACK CREEK	B	27.4		7.5	158.8	1.7	4	176.8		196.3
299	8329	BACK CREEK	M	9.2		8.0	0.0	0.0	4	59.4		65.9
300	8329	STOAKES CREEK	M	34.6		16.1	0.0	0.0	4	223.3		247.8
301	8329	STOAKES TO HOOK, 1920 BM	M	13.6		3.2	181.0	2.0	5	109.7		121.8
302	8329	HOOK,1920 BM TO BILLUPS CREEK	M	26.6		3.9	290.6	3.2	5	214.6		238.2
303	8329	BILLUPS CREEK	B	42.1		22.4	0.0	0.0	6	407.5		452.4
304	8329	BILLUPS CREEK TO HUDGINS CREEK	B	6.1		2.2	120.3	1.3	5	49.2		54.6
305	8329	HUDGINS CREEK	B		9.1	6.7	0.0	0.0	6	+ 88.1		97.8
306	8329	HUDGINS CREEK TO MORRIS CREEK	B	12.3		3.6	149.3	1.6	5	99.2		110.1
307	8329	STUTTS CREEK SHORELINE	B			36.3						
308	8329	FANNY'S POINT TO LARGE NAMELESS CREEK	B	15.8		4.5	152.0	1.6	6	152.9		169.8
309	8329	LARGE NAMELESS CREEK	B	18.3		6.4	0.0	0.0	6	177.1		196.6

MATHEWS COUNTY (continued)

CHESAPEAKE BAY - WESTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
310	8329	NAMELESS CREEK TO POINT BREEZE SHORELINE	M			2.5						
311	8329	POINT BREEZE TO 17D28'45''	B	18.4		3.7	213.0	2.3	3	89.1		98.8
312	8329	17D28'45'' TO MARSH	B	11.3		2.2	225.2	2.5	3	54.7		60.7
313	8329	MARSH TO LANES CREEK	M	11.2		2.3	209.1	2.3	4	72.3		80.2
314	8329	LANES CREEK	B	18.9		11.1	0.0	0.0	4	122.0	1.11	135.4
315	8329	LANES CREEK TO CABLE CROSSING	B	9.4		3.2	127.1	1.4	4	60.7		67.3
316	8329	WRECK TO CALLIS WHARF	B		12.4	7.2	0.0	0.0	5	+ 100.0		+ 111.0
317	8329	CALLIS WHARF TO EDWARDS CREEK	B	5.4		2.3	99.1	1.1	5	43.6		48.4
318	8329	EDWARDS CREEK	B	9.7		8.3	0.0	0.0	3	46.9		52.1
319	8329	MILL POINT TO COCKRELLS POINT SHORELINE	B			2.8						
320	8329	BARN CREEK TO HICKORY NUT COVE	B	4.6		1.4	142.3	1.5	5	37.1		41.2
321	8329	HICKORY NUT COVE	M	2.6		2.4	0.0	0.0	6	25.2		27.9
322	8329	HICKORY NUT COVE TO HILLS CREEK	M	1.9		0.7	109.8	1.2	6	18.4		20.4
323	8329	HILLS CREEK	M	14.9		6.0	0.0	0.0	4	96.2		106.7
324	8329	HILLS CREEK TO SANDY POINT	M	30.9		1.5	0.0	0.0	5	249.3		276.7
325	8329	SAND SHOAL	B		4.4	0.0	0.0	0.0	5	+ 35.5		+ 39.4
326	8329	GWYNN ISLAND SANDY PT TO CHERRY PT	B	283.6		19.1	643.7	7.1	5	2287.7		2539.4
327	8329	CHERRY POINT	B		9.0	3.3	118.8	1.3	6	+ 87.1		+ 96.7

MATHEWS COUNTY

PIANKATANK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
16	8341	HOLLAND POINT TO POND	B	10.7		3.8	120.6	1.4	10	172.6	1.18	203.7
17	8341	POND TO 1/4 MI WEST OF TWIGGS FERRY SL	B			1.9			10			
18	8341	1/4 WEST TO 1/4 EAST OF TWIGGS FERRY	B	2.0		1.7	50.1	0.5	10	32.3		38.1
19	8341	1/4 EAST TO CYPRES 1920	B	1.6		1.4	52.2	0.6	10	25.8		30.6
20	8341	CYPRES 1920 TO PIER SOUTH OF IRON POINT SL	B			2.2			10			
21	8341	PIER TO 1/8 MILE SOUTH IRON POINT	B	1.7		1.0	71.2	0.8	6	16.5		19.4
22	8341	IRON POINT	B	2.5		1.1	98.2	1.1	5	20.2		23.8
23	8341	IRON POINT TO GINNY POINT SL	B			1.3			5			
24	8341	GINNY POINT	B	3.9		2.2	78.5	0.9	5	31.5		37.1
25	8341	COBBS CREEK SL	B			13.6			5			
26	8341	COBBS CREEK TO POND POINT SL	B			3.4			10			
27	8341	POND POINT TO RTE 629	B	3.4		1.6	89.8	1.0	20	109.7		129.5
28	8341	RTE 629 TO ROANE POINT SL	B			2.9			10			
29	8341	ROANE POINT TO NAMELESS CREEK TO SOUTH	B	1.4		0.9	69.6	0.8	5	11.3		13.3
32	8329	IRON POINT TO MAP EDGE	B	29.5		5.8	218.6	2.4	5	238.0	1.11	264.1
33	8329	BURTON POINT TO IRON POINT	B	56.3		12.1	202.3	2.2	4	363.3		403.3
34	8329	QUEENS CREEK TO BURTON POINT	B	46.3		6.0	334.0	3.7	3	224.1		248.7
35	8329	QUEENS CREEK SHORELINE	B			43.9						
36	8329	WINDER CREEK TO QUEENS CREEK	M	6.2		2.2	119.0	1.3	4	40.0		44.4
37	8329	PIER TO WINDER CREEK	B	14.7		3.5	181.1	2.0	4	94.8		105.3
38	8329	CABLE CROSSING TO PIER SL	M			1.6						
39	8329	NARROWS POINT TO WRECK SL	M			2.3						
40	8329	NARROWS POINT	M		2.4	1.2	84.4	0.9	4	+ 15.5		+ 17.2
41	8329	37D29'30'' TO NARROWS POINT SL	B			1.9						
42	8329	CHERRY POINT TO 37D29'30''	B	40.2		9.0	194.2	2.1	10	648.6		719.9

TABLE 21: MIDDLESEX COUNTY
PIANKATANK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
43	8342	STINGRAY POINT TO 2ND CREEK NE OF JACKSON CREEK	M		22.9	4.7	211.0	2.4	3	+ 110.8	1.16	+ 128.6
44	8342	2ND CREEK NE OF JACKSON CREEK	B	5.8		4.4	0.0	0.0	3	28.1		32.6
45	8342	2ND CREEK TO FIRST SL	B			1.0						
46	8342	JACKSON CREEK AND 1ST TO NORTH	B	10.3		16.6	0.0	0.0	4	64.5		77.1
47	8342	STOVE POINT NECK	B	40.8		17.0	0.0	0.0	4	263.3		310.7
48	8342	STOVE POINT NECK TO ROUTE 634	B		0.5	15.0	1.6	0.0	4	+ 3.2		+ 3.8
49	8342	ROUTE 634 TO FISHING POINT	B	1.5		1.0	62.2	0.7	4	9.7		11.4
50	8342	FISHING POINT	B		2.9	1.2	99.0	1.1	5	+ 23.4		+ 27.1
51	8342	FISHING POINT TO 1/4 MILE BEFORE MOORE CREEK SL	B			2.8						
52	8342	1/4 MILE BEFORE TO MOORE CREEK	B		8.4	1.7	205.1	2.3	5	+ 67.8		+ 78.6
53	8342	MOORE CREEK TO BLAND POINT SL	B			1.9						
54	8342	BLAND POINT TO 1/2 MILE WEST	B		3.9	1.2	133.6	1.5	5	+ 31.5		+ 36.5
55	8341	MAP EDGE TO 20 FOOT BLUFF SL	B			3.3					1.18	
55A	8341	MAP EDGE TO 20' BLUFF SL	B			0.9						
56	8341	20 ' BLUFF TO 22'50'' LONG	B	2.1		1.4	65.6	0.7	10	33.9		40.0
57	8341	22'50'' LONG TO HEALY CREEK SL	B			2.9						
58	8341	HEALY CREEK SL	B			17.6						
59	8341	LAGOON AT WEST OF MOUTH OF HEALY CR	B	1.1		0.8	59.8	0.7	10	17.7		20.9
60	8341	HEALY CREEK TO HORSE POINT	B	4.2		1.8	103.2	1.2	7	47.4		56.0
61	8341	HORSE POINT TO CONRAD WHARF SL	B			5.1						
62	8341	CONRAD WHARF TO DOCK AND CABIN	B	14.2		5.4	113.4	1.3	20	458.2		540.7
63	8341	DOCK AND CABIN TO WILTON CREEK SL	B			3.2						
64	8341	WILTON CREEK SL	B			24.4						
65	8341	WILTON CR TO SW EXTENSION OF WILTON PT	B	6.7		3.3	87.6	1.0	9	97.3		114.8
66	8341	WILTON POINT TO DOCTOR POINT	B	39.0		15.1	111.9	1.3	5	314.6		371.2
67	8341	BERKLEY ISLAND	B		10.2	0.0	0.0	0.0	3	+ 49.4		+ 58.3
68	8341	DOCTOR POINT TO WOODSTOCK LAGOON SL	B			18.2						
69	8341	WOODSTOCK LAGOON	B	1.5		1.0	65.3	0.7	10	24.2		28.6
70	8341	WOODSTOCK LAGOON TO PT NORTH OF COACH POINT SL	B			4.3						
71	8341	POINT NORTH OF COACH POINT	B		0.8	0.5	69.4	0.8	4	+ 5.2		+ 6.1
72	8341	MAP EDGE TO POINT NORTH OF COACH POINT SL	B			3.3						
73	8340	MAP EDGE TO HEADWATERS SL	B			44.2						

MIDDLESEX COUNTY

RAPPAHANNOCK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
73	8351	MAP EDGE TO MIDDLESEX CO LINE	B	170.0		0.0	0.0	0.0	15	4114.0	1.15	4731.1
74	8346	MAP EDGE TO MUD CREEK	B	61.5		4.6	580.0	6.5	18	1785.9		2053.8
75	8345	EDGE OF MAP - MIDWAY FROM EDGE TO PUNCHBOWL	B	4.0		1.3	125.4	1.4	9	58.1	1.14	66.2
76	8345	MIDWAY FROM MAP EDGE TO PUNCHBOWL	M		6.6	1.7	169.5	1.9	5	+ 53.2		+ 60.7
77	8345	PUNCHBOWL - 20'BLUFF	M	7.5		2.0	158.5	1.8	5	60.5		68.9
78	8345	20' BLUFF - ORCHARD	B		2.8	1.1	114.1	1.2	9	+ 40.6		+ 46.3
79	8345	ORCHARD - PARROTS CR	B	6.5		1.5	188.8	2.1	28	209.7		239.1
80	8345	MOUTH OF PARROTS CR - EDGE OF MAP	B	4.5		4.4	0.0	0.0	10	72.6		82.7
81	8345	SOUTH MOUTH OF PARROTTS CR	B	1.3		0.3	164.2	1.8	10	20.9		23.9
82	8345	PARROTTS CR - SMOKY PT	B	35.9		0.0	0.0	0.0	10	579.2		660.3
83	8345	SMOKY PT	M		0.9	0.6	62.6	0.7	6	+ 8.7		+ 9.9
84	8345	HARRY GEORGE CR SL	M			10.7						
85	8345	HARRY GEORGE CR - WEEKS CR	B	20.4		4.7	186.9	2.1	7	230.4		262.6
86	8345	WEEKS CR AND ASSOCIATED CR SL	B			22.2						
87	8345	WEEKS CR - WEEKS V.F.C., 1919	B	16.7		3.0	236.0	2.6	10	269.4		307.1
88	8345	WEEKS, V.F.C. 1919 - PT NE OF LONG PT	B	33.2		8.7	166.5	1.8	10	535.6		610.6
89	8345	PT NE OF LONG PT - LONG PT SL	M			2.4						
90	8345	LONG PT	B	1.5		0.9	67.9	0.7	9	21.8		24.8
91	8345	LAGRANGE CR SL (SEGMENT TO EDGE OF MAP)	B			35.8						
92	8345	LAGRANGE CR - ROBINSON CR	B	31.2		7.5	180.9	2.0	7	352.4		401.7
93	8345	N MOUTH OF ROBINSON CR - WATERTANK	B	8.5		2.4	149.6	1.7	9	123.4		140.7
94	8345	ROBINSON CR SL (LESS MOUTH - WATER TANK)	B			24.5						
95	8345	35'LONG 39'20&LAT-E MOUTH OF CR TO E (ROB CR)	B	13.8		2.0	294.5	3.3	10	222.6		253.8
96	8345	S MOUTH OF ROB CR - URBANA CR	B	37.5		4.6	353.9	4.0	18	1089.0		1241.5
97	8345	N MOUTH OF URBANNA CR	B		5.8	1.9	130.5	1.4	5	+ 46.8		+ 53.3
98	8345	URBANNA CR MOUTH - CONCRETE BRIDGE (URBANNA CR	B	5.0		1.5	144.6	1.6	5	40.3		45.9
99	8345	URBANNA CR SL (LESS MOUTH TO BRIDGE)	B			18.9						
100	8345	BAILEY PT	B		1.1	0.6	80.2	0.9	10	+ 17.7		+ 20.2
101	8345	BAILEY PT - 37'45& LAT	B	26.3		5.4	210.5	2.3	18	763.7		870.7
102	8345	37'45& - 37'35&	B		3.7	1.2	132.5	1.5	10	+ 59.7		+ 68.1
103	8345	37'30& LAT - EDGE OF MAP	B	1.9		0.6	132.6	1.5	10	30.6		34.9
104	8340	MAP EDGE TO NAMELESS POINT	B	2.5		0.7	142.1	1.6	5	20.2	1.37	27.6
105	8340	NAMELESS POINT	B		0.7	0.3	86.9	1.0	5	+ 5.6		+ 7.7
106	8340	MAP EDGE TO NAMELESS POINT	B	60.6		15.8	166.1	1.9	18	1759.8		2410.9
107	8341	EDGE OF MAP - END BLUFF	B	30.0		9.5	136.8	1.6	20	968.0	1.18	1142.2
108	8341	SAND SPIT (END BLUFF - SAND RIDGE)	B	20.7		8.3	0.0	0.0	10	333.9		394.1
109	8341	MEACHIM CREEK ISLAND	B		2.9	0.0	0.0	0.0	3	+ 14.0		+ 16.6
110	8341	MEACHIM CREEK AND NAMELESS CREEK TO EAST	B	28.8		27.2	0.0	0.0	20	929.3		1096.6
111	8341	GREY POINT - MEACHIM CREEK SL	B			2.6						
112	8341	GREY POINT	B	3.5		0.8	186.9	2.1	12	67.7		79.9
113	8341	GREY POINT - 36'30'' LAT	B		0.9	0.5	76.1	0.8	5	+ 7.3		+ 8.5
114	8341	36'30'' LAT - 36'15'' LAT LAGOON	B	1.8		0.8	101.4	1.1	5	14.5		17.1
115	8341	36'15'' LAT LAGOON	B	4.0		7.5	0.0	0.0	10	64.5		76.1
116	8341	36'15'' LAT LAGOON-CREEK NORTH OF LOCKLIES CR	B	8.6		2.0	180.6	2.1	3	41.6		49.1
117	8341	CREEK NORTH OF LOCKLIES CREEK	B		0.0	5.8	0.0	0.0	5			
118	8341	CR NORTH OF LOCKLIES CR - LOCKLIES CR	B	2.4		0.7	138.7	1.6	5	19.4		22.8
119	8341	LOCKLIES CREEK SL	B			33.9						
120	8341	LOCKIES CREEK - SPOIL BANKS	M	11.1		3.3	144.9	1.7	5	89.5	1.18	105.6
121	8341	SHELL PILE - SPOIL BANKS SL	M			0.9						
122	8341	PARROT ISLAND	B	11.7		9.3	0.0	0.0	5	94.4		111.4
123	8341	MILL CREEK - SHELL PILE	B	13.1		2.9	194.2	2.2	5	105.7		124.7

MIDDLESEX COUNTY (continued)

RAPPAHANNOCK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
124	8341	MILL CREEK SL	B			73.4						
125	8341	26'10'' LONG 35'LAT-25'40'' LONG 35'LAT	B	17.5		4.7	160.6	1.8	20	564.6		666.3
126	8341	25'40'' LONG 35' LAT-LAGOON AT MOUTH OF MILL	B		2.8	0.9	130.6	1.5	10	+ 45.2		+ 53.3
127	8341	LAGOON AT MOUTH OF MILL CREEK	B		2.2	3.4	0.0	0.0	9	+ 31.9		+ 37.7
128	8341	MILL CR LAGOON-OLD LAGOON 24'40'' LONG	B	12.7		3.7	147.5	1.7	9	184.4		217.6
129	8341	OLD LAGOON 24'40'' LONG	B		3.5	0.0	0.0	0.0	5	+ 28.2		+ 33.3
130	8341	OLD LAGOON - SAND AND PINES	B	10.2		3.2	136.7	1.6	8	131.6		155.3
131	8341	SAND AND PINES - 20 FT BLUFF	B		2.6	0.9	119.1	1.4	9	+ 37.7		+ 44.5
132	8341	TWENTY FOOT BLUFF TO WOOD CREEK	B			2.0						
133	8341	WOOD CREEK TO MAP EDGE	B			5.0						
134	8342	EDGE OF MAP - RD 40	B	23.1		3.6	274.6	3.1	25	931.7	1.16	1099.4
135	8342	RD 40 - GRASS AND MARSH	M		5.8	1.5	160.7	1.8	5	+ 46.8		+ 55.2
136	8342	GRASS AND MARSH - STURGEON CREEK	B	42.3		6.0	306.8	3.5	14	955.4		1127.4
137	8342	STURGEON CREEK	B	38.4		16.0	0.0	0.0	15	929.3		1096.6
138	8342	STURGEON CREEK - TIMBER NECK	M	26.6		3.0	378.3	4.3	10	429.1		506.4
139	8342	TIMBER NECK - MARSH ISLAND LAGOON	M	22.3		3.3	290.1	3.3	4	143.9		169.8
140	8342	MARSH ISLAND LAGOON	B	6.6		3.7	0.0	0.0	4	42.6		50.3
141	8342	MARSH ISLAND LAGOON - BROAD CREEK	B	8.2		1.3	263.1	3.0	4	52.9		62.4
142	8342	BROAD CREEK	M	13.1		14.1	0.0	0.0	3	63.4		74.8
143	8342	MARSH ISLAND AT THE MOUTH OF BROAD CREEK	B		13.2	0.0	0.0	0.0	5	+ 106.5		+ 125.6
144	8342	STINGRAY POINT		115.9		9.5	527.5	6.1	4	747.9		882.6

TABLE 22: NANSEMOND COUNTY

NANSEMOND RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
1	8304	CHUCKATUCK CR TO BLINKHORN CR	B	27.2		7.0	167.8	2.3	8	351.1	1.12	393.2
2	8304	BLINKHORN CR TO CEDAR PT	B	11.1		5.5	87.2	1.2	5	89.5		100.3
3	8304	CEDAR POINT SPIT	M		7.0	1.4	208.8	2.9	3	+ 33.9		+ 37.9
4	8304	CEDAR PT SPIT TO MAP EDGE	B	9.8		3.2	130.6	1.8	3	47.4		53.1

TABLE 23: NEW KENT COUNTY
YORK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
2	8338	BRIDGE TO ELTHAM MARSH CREEK	M		2.5	2.9	37.5	0.4	5	+ 20.2	1.08	+ 21.8
3	8338	ELTHAM MARSH CREEK TO FERRY CREEK	M	6.7		3.7	79.7	0.8	5	54.1		58.4
4	8338	FERRY CREEK TO SHOAL AREA SHORELINE	B			4.6			5			
5	8338	SHOAL AREA TO MAP EDGE	B	3.9		1.9	88.1	0.9	5	31.5		34.0
6	8333	UPPER MAP EDGE TO TERRAPIN POINT	M	48.2		15.7	133.8	1.4	10	777.6	1.09	839.8
7	8333	TERRAPIN POINT TO WARE CREEK	M	26.7		8.8	130.9	1.4	3	129.2		139.3

TABLE 24: CITY OF NEWPORT NEWS

JAMES RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS ACRES EROSION	AREAS ACRES ACCRETION	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
248	8313	MAP EDGE TO JAMES RIVER BRIDGE SHORELINE				0.8					1.45	
249	8313	ACCRETION BEHIND JAMES R. BRIDGE	B		0.5	0.1	143.4	2.0	25	+ 20.1		+ 29.2
250	8313	HILTON VILLAGE TO JAMES RIVER BRIDGE SHORELINE	M			0.8						
251	8313	WATERS CREEK TO NAMELESS CR	B	2.0		1.9	45.6	0.6	25	80.7		116.9
252	8313	WATERS CREEK	M	3.6		1.5	99.6	1.4	7	40.7		59.0
253	8313	WATERS CREEK TO MAP EDGE	M	7.1		3.6	85.3	1.2	25	286.4		415.2
254	8312	BLUNT PT TO MAP EDGE	B			6.1					1.47	
255	8312	BLUNT POINT	B	1.2		0.9	55.7	0.8	10	5.8		8.5
256	8312	DEEP CREEK TO BLUNT POINT SHORELINE	B			9.6						
257	8312	N.N. PRISON FARM SPIT TO DEEP CREEK SHORELINE	B			5.5						
258	8312	NEWPORT NEWS PRISON FARM SPIT	M	1.8		0.0	0.0	0.0	3	8.7		12.8
259	8312	THOROFARE POINT TO N.N. PRISON FARM SPIT SHOREL	B			13.1						
260	8312	PATCH VFC TO THOROFARE SECOND ISLAND	B	24.4		10.5	100.5	1.4	3	118.1		173.6
261	8312	PATCH VFC SHORELINE	B			1.3						
262	8312	LANDS END	B	3.4		2.3	65.4	0.9	3	16.5		24.2
263	8312	JAIL POINT	M	10.7		2.4	0.0	0.0	3	51.8		76.1
264	8312	AREA AROUND JAIL USE BM	M	9.1		0.0	0.0	0.0	3	44.0		64.7
265	8312	NAMELESS CR TO NELLS CR	B	30.5		9.2	144.1	2.0	5	246.0		361.7
266	8312	SWASH HOLE IS NUM ONE NORTH	M	10.6		2.1	0.0	0.0	3	51.3		75.4
267	8312	SWASH HOLE IS NUM TWO NEW	M	4.3		1.8	0.0	0.0	3	20.8		30.6
268	8312	SWASH HOLE IS NUM THREE NEW	M	11.4		4.2	0.0	0.0	3	55.2		81.1
269	8312	SWASH HOLE IS NUM FOUR NEW	M	3.6		0.9	0.0	0.0	3	17.4		25.6
270	8312	1ST NAMELESS CR TO 2ND	M			2.6						
271	8312	FORD CR TO NAMELESS CR 1ST	M	4.3		3.0	62.6	0.8	3	20.8		30.6
272	8312	MAP EDGE TO MARSHY PT	M	16.8		8.3	88.2	1.2	5	135.5		199.2
273	8312	MULBERRY USE ISLAND	M	0.8		0.0	0.0	0.0	4	5.2		7.6
274	8318	MULBERRY ISLAND SHORELINE	M			0.7						
275	8317	MAP EDGE TO EUSTIS SHORELINE	M			0.7					1.47	
276	8317	EUSTIS BM TO CHISHOLM CREEK	B	10.6		2.5	183.0	2.6	3	51.3		75.4
277	8317	CHISHOLM CREEK TO FIRST NAMELESS CREEK	B	6.7		5.7	51.2	0.7	3	32.4		47.7
278	8317	SKIFFES CREEK TO MOUTH THIRD NAMELESS CREEK SL	B			11.8						
279	8317	MOUTH OF SKIFFES CR TO 650 GRID SHORELINE	B			1.2						
280	8317	650 GRID TO MOUTH BAILEY CREEK	B		3.3	1.0	140.3	2.0	3	+ 16.0		+ 23.5
281	8317	BAILEY CREEK SHORELINE	M			8.0						
282	8317	BAILEY CREEK ISLAND	M		1.0	0.0	0.0	0.0	3	+ 4.8		+ 7.1
283	8317	SMALL BAILEY CREEK ISLAND	M		0.4	0.0	0.0	0.0	3	+ 1.9		+ 2.8
284	8317	INTERMEDIATE BAILEY CREEK ISLAND	M		0.9	0.0	0.0	0.0	3	+ 4.4		+ 6.4

TABLE 25: CITY OF NORFOLK
CHESAPEAKE BAY - SOUTHERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
8	8302	LITTLE CREEK TO EAST OCEAN VIEW	B	19.6		3.7	229.0	2.5	3	94.8	1.11	105.3
9	8302	EAST OCEAN VIEW TO 3/4 M EAST COTTAGE PARK SL	B			6.4						
10	8302	3/4 M E OF COTTAGE PARK TO MAP EDGE	B	35.5		10.6	145.9	1.6	5	286.4		317.8
11	8303	MAP EDGE TO WILLOUGHBY SPIT	B	20.6		5.0	179.3	1.9	10	332.3		368.9
12	8303	WILLOUGHBY SPIT	B	44.9		23.1	0.0	0.0	5	362.2		402.0
										1075.7		1194.0

TABLE 26: NORTHAMPTON COUNTY
CHESAPEAKE BAY — EASTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
146	8171	OCCOHANNOCK CREEK RIGHT SIDE	B	41.7		67.6	0.0	0.0	3	201.8	1.09	220.0
147	8171	SPARROW POINT CREEK TO SOUTH AREA	B	30.6		3.6	364.7	4.0	4	197.5		215.2
148	8171	CREEK SOUTH OF SPARROW POINT	B		19.3	5.5	0.0	0.0	4	+ 124.6		135.8
149	8171	CREEK SOUTH SPARROW PT TO CREEK WEST OF BATTLE	B	6.4		1.6	169.5	1.8	5	51.6		56.3
150	8171	CREEK NORTH OF BATTLE POINT	B		13.5	6.8	0.0	0.0	4	+ 87.1		95.0
151	8171	AREA NORTH BATTLE POINT TO MAP EDGE	B	102.3		9.7	457.0	5.0	4	660.2		720.0
152	8175	MAP EDGE TO NASSAWADOX POINT	B	116.4		9.7	518.9	5.7	9	1690.1	1.09	1842.2
153	8175	NASSAWADOX CREEK TO CHURCH CREEK AND WAREHOUSE	B	83.1		90.2	0.0	0.0	6	804.4		876.8
154	8175	SHOOTING POINT TO WESTERHOUSE CREEK	B	28.5		5.7	216.6	2.3	9	413.8		451.1
155	8175	WESTERHOUSE CREEK TO 1/2 MILE SOUTH	B	10.9		3.0	155.0	1.7	9	158.3		172.5
156	8175	AREA 1/2 MILE SOUTH WESTERHOUSE CREEK	B		5.0	1.4	152.2	1.6	8	+ 64.5		+ 70.3
157	8175	AREA TO CHURCH NECK SL	B	6.3		4.0	67.8	0.7	10	101.6		110.8
158	8175	DEPOSITION AREA NEAR CHURCH NECK	B		5.4	1.7	135.5	1.4	8	+ 65.8		71.7
159	8175	CHURCH NECK TO HUNGAR CREEK	B	37.1		9.6	167.6	1.8	10	598.5		652.4
160	8175	WILSONIA NECK BAY	B		11.5	17.4	0.0	0.0	3	+ 55.7		60.7
161	8175	WILSONIA NECK BAY SOUTHWEST ISLE	B	0.2		1.2	0.0	0.0	3	1.0		1.1
162	8175	EAST ISLAND	M	1.3		0.8	0.0	0.0	3	6.3		6.9
163	8175	CENTRAL ILSE	M	4.8		2.1	0.0	0.0	3	23.2		25.3
164	8175	OLD ISLAND EAST OF CENTRAL ISLE	B	0.7		0.0	0.0	0.0	5	5.6		6.2
165	8175	HONEYMOON ISLAND SPIT	B	20.2		2.1	0.0	0.0	5	163.0		177.6
166	8175	HONEYMOON ISLE SPIT TO MAP EDGE	B	23.8		3.7	276.4	3.0	10	384.0		418.5
167	8177	MAP EDGE TO HERRING CLIFF	B		15.3	3.1	211.4	3.9	3	+ 74.1	1.85	137.0
168	8177	HERRING CLIFF TO WINDMILL TOWER	B			25.6						
169	8177	WINDMILL TOWER TO WHITE CLIFFS R	B	15.0		2.8	232.4	4.3	5	121.0		223.8
170	8177	WHITE CLIFFS TO MAP EDGE	B	33.6		7.3	198.8	3.6	8	433.7		802.3
171	8176	MAP EDGE TO 37D20' LAT	B	61.6		7.0	380.7	7.0	8	795.1	1.85	1470.8
172	8176	37D20' TO 37D19' LAT	B	14.8		0.0	0.0	0.0	7	167.1		309.2
173	8176	37D19' LAT TO WESCOTT POINT SPIT	B	22.4		5.6	173.8	3.2	7	253.0		468.0

NORTHAMPTON COUNTY (continued)
CHESAPEAKE BAY — EASTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
174	8176	WESTCOTT POINT SPIT	B		25.4	9.1	121.2	2.2	5	+ 204.9		379.1
175	8176	OLD WESTCOTT POINT SPIT	B	3.9		1.6	103.3	1.9	5	31.5		58.2
176	8176	OLD WESTCOTT POINT SPIT TO CUSTIS COVE	B	8.8		3.3	114.1	2.1	4	56.8		105.1
177	8176	CUSTIS COVE TO MAP EDGE	B	12.5		5.3	103.2	1.9	4	80.7		149.2
178	8177	CHERRYSTONE INLET	M		16.7	65.7	0.0	0.0	2	+ 53.9		99.7
179	8176	MAP EDGE TO MILL CREEK SHORELINE				3.4						
180	8176	MILL CREEK TO MILL POINT	M	6.3		2.8	96.8	1.7	4	40.6		75.2
181	8176	MILL POINT TO LAGOON NORTH OF KINGS CREEK	B	12.3		3.9	136.7	2.5	4	79.4		146.8
182	8176	LAGOON NORTH OF KINGS CR TO KINGS CR SL				2.9						
183	8176	KINGS CREEK TO ONE HALF MILLE INLAND	M	4.4		15.1	0.0	0.0	3	21.3		39.4
184	8176	KINGS CR TO S CAPE CHARLES HARBOR SL				8.6						
185	8176	SOUTH CAPE CHARLES HARBOR TO 3/4 MI SOUTH	B		33.5	3.5	411.2	7.6	10	+ 540.5		999.8
186	8176	MAP EDGE TO 3/4 M SOUTH CAPE CHARLES HARBOR	B	2.2		2.0	49.3	0.9	7	24.8		45.9
187	8182	MAP EDGE TO OLD PLANTATION CREEK	B	25.6		6.9	161.0	2.9	3	123.9	1.85	229.2
188	8182	OLD PLANTATION CREEK	M		13.4	14.9	0.0	0.0	4	+ 86.5		160.0
189	8182	OLD PLANTATION CREEK NORTH ISLAND SL	M			2.5			3			
190	8182	OLD PLANTATION CREEK SOUTH ISLAND	M	1.6		5.1	0.0	0.0	3	11.6		21.5
191	8182	SMALL ISLAND OFF CR EAST MOUTH OLD PLANTATION	M		0.8	0.0	0.0	0.0	4	+ 5.2		9.6
192	8182	OLD PLANTATION CR NORTH SMALL ISLAND			0.8	0.0	0.0	0.0	4	+ 5.2	1.85	9.6
193	8182	OLD PLANTATION CR SOUTH SMALL ISLAND			1.2	0.0	0.0	0.0	3	+ 5.8		10.7
194	8182	OLD PLANTATION CREEK TO MAP EDGE		48.4		16.5	127.0	2.3	3	234.3		433.4
195	2675	MAP EDGE TO PIER ACCRETION SL				1.6					1.66	
196	2675	PIER NORTH SIDE ACCRETION	B		20.1	2.7	313.5	7.4	5	+ 162.1		269.2
197	2675	PIER TO MARK	B	9.5		3.8	108.0	2.5	25	383.2		636.1
198	2675	MARK TO MARK SL				2.7						
199	2675	MARK TO SMALL SPIT SL				5.0						
200	2675	CAPE CHARLES	B		2.1	17.8	0.0	0.0				
201	2675	FISHERMANS ISLAND	B		745.7	49.2	0.0	0.0	7	+ 23.7		39.4
									4	+4812.3		7988.4

TABLE 27: NORTHUMBERLAND COUNTY
CHESAPEAKE BAY— WESTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
338	8343	INDIAN CREEK TO COUNTY LINE	B	265.5		175.5	0.0	0.0	7	4127.7	1.06	4375.4
339	8343	HARRY CREEK	B	11.7		20.2	0.0	0.0	5	94.4		100.0
340	8343	BARNES CREEK	M	29.9		16.9	0.0	0.0	6	289.4		306.8
341	8343	STRIP SEPERATING BARNES CR AND CHES BAY	M		9.6	0.0	0.0	0.0	6	+ 92.9		+ 98.5
342	8343	BLUFF POINT TO CREEK SOUTH OF JARVIS CREEK	B	145.9		12.7	497.4	5.2	6	1412.3		1497.1
343	8343	CREEK SOUTH OF JARVIS CR TO KENT POINT	B	5.2		23.9	0.0	0.0	5	41.9		44.5
344	8343	PRENTICE CREEK	B	15.3		17.8	0.0	0.0	5	123.4		130.8
345	8343	PRENTICE CREEK TO DIVIDING CREEK	B	6.5		1.0	274.8	2.9	5	52.4		55.6
346	8343	DIVIDING CREEK TO 45' LAT	B	34.9		42.6	0.0	0.0	6	337.8		358.1
347	8343	DIVIDING CREEK TO 18'40'' LONG 43'50'' LAT	B	9.0		2.8	138.5	1.4	6	87.1		92.3
348	8343	18'40'' LONG TO 18'50'' LONG	M		3.4	1.0	145.7	1.5	5	+ 27.4		+ 29.1
349	8343	MAP EDGE TO 18'50'' LONG 43'45'' LAT	M	52.1		11.5	197.1	2.0	5	420.3		445.5
350	8354	MAP EDGE TO BALL CREEK	M	16.7		2.8	257.1	2.7	7	188.6	1.08	199.9
351	8354	BALL CREEK	B	24.2		23.4	0.0	0.0	8	312.3		331.1
352	8354	BALL CREEK TO CLOVERDALE CREEK	B	24.5		3.7	282.1	3.0	7	276.7		293.3
353	8354	OLD ISLAND OFF CLOVERDALE CREEK	B	2.1		0.0	0.0	0.0	10	33.8		35.9
354	8354	CLOVERDALE CREEK	B	12.0		6.5	0.0	0.0	3	58.1		61.6
355	8354	DAMERON MARSH (CLOVERDALE CR TO MILL CR)	M	101.3		30.3	0.0	0.0	6	980.6		1039.4
356	8354	TWO LARGE ISLANDS EAST OF DAMERON MARSH	M	39.9		5.8	0.0	0.0	6	386.2		409.4
357	8354	TWO SMALL ISLANDS EAST OF DAMERON MARSH	M	7.1		0.9	0.0	0.0	5	61.3		65.0
358	8354	OLD ISLANDS SOUTH OF TWO LARGE ISLANDS	M	3.4		0.0	0.0	0.0	6	32.9		34.9
359	8354	MILL CREEK TO 20'20'' LONG	B	64.9		36.7	0.0	0.0				
360	8354	MILL CREEK TO EAST OF 20'20'' LONG SL	B			20.2						
361	8354	MILL CREEK TO HARVEYS CREEK	B	10.4		2.0	224.6	2.4	10	167.8		177.9
362	8354	HARVEYS CREEK	B	10.2		14.4	0.0	0.0				
363	8354	HARVEYS CREEK NORTH MOUTH	B		2.8	1.6	74.4	0.8	3	+ 13.6		+ 14.4
364	8354	HARVEYS CREEK TO TOWLES CREEK	B	28.8		1.9	661.1	7.1	5	232.3		246.3
365	8354	TOWLES CREEK	B	7.3		5.0	0.0	0.0	3	35.3		38.2
366	8354	TOWLES CREEK TO BUSSEL POINT	B	19.4		2.6	316.8	3.4	6	187.8		202.8
367	8354	BUSSEL POINT	B		6.1	2.7	98.6	1.0	3	+ 29.5		+ 31.9
368	8354	CRANES CREEK	B	45.5		26.7	0.0	0.0	8	587.3		634.2
369	8354	LITTLE SANDY POINT TO SANDY POINT	B	19.9		3.9	222.8	2.4	10	321.1		346.7
370	8354	SANDY POINT	B		1.4	0.9	62.9	0.6	3	+ 6.8		+ 7.3
371	8354	SANDY POINT TO SHELL CREEK	B	15.3		5.9	113.0	1.2	9	222.2		239.9
372	8354	SHELL CREEK	B	3.5		4.5	0.0	0.0	3	16.9		18.3
373	8354	SHELL CREEK TO GOUGHER	B			2.1						
374	8354	GOUGHER CREEK	B	19.4		10.7	0.0	0.0	8	250.4		270.4
375	8354	GOUGHER CREEK TO PENNEY CREEK	B	7.4		2.5	125.4	1.3	6	71.6		77.4
375A	8354	PENNY CREEK	B	1.8		1.7	0.0	0.0	6	17.4		18.8
376	8354	PENNY CREEK TO MARY VFC	B			1.5						
377	8354	MARY VFC TO ROGUE POINT	B	5.8		2.8	89.3	0.9	7	65.5		70.7
378	8354	ROGUE POINT TO BARRETT CREEK	B	15.2		4.5	145.3	1.5	9	220.7		238.4
379	8354	BARRETT CREEK	B	8.7		17.8	0.0	0.0	9	126.3		136.4
380	8354	BARRETT CREEK TO TIPERS CREEK	B	3.3		1.1	130.2	1.4	10	53.2		57.5
381	8354	TIPERS CREEK	B	19.5		8.5	0.0	0.0	10	314.6		339.7
382	8354	1/2 EXTENT TIPERS CREEK SL	B			7.8						
383	8354	TIPERS CREEK TO GLEBE POINT BRIDGE AREA	B	8.5		2.2	165.9	1.8	10	137.1	1.08	148.1
384	8354	GLEBE POINT BRIDGE AREA	B		3.7	1.1	138.1	1.5	10	+ 59.7		+ 64.5
385	8354	BRIDGE AREA TO BALES CREEK SL	B			1.1						
386	8354	LAGOON NORTH OF BALES CREEK	B	2.2		1.5	0.0	0.0	3	10.6		11.5
386A	8354	EAGLE POINT TO MAP EDGE SL	B			3.7						
387	8354	MAP EDGE TO BETTS MILL CREEK	B	5.4		2.4	97.5	1.0	12	104.5		112.9

NORTHUMBERLAND COUNTY (continued)
CHESAPEAKE BAY— WESTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION	AREAS ACCRETION	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
				ACRES								
388	8354	BETTS MILL CREEK SL	B			11.3						
389	8354	BETTS MILL CREEK TO GLEBE POINT	B	30.0		5.7	227.6	2.4	15	726.0		784.1
390	8354	GLEBE POINT TO COLES CREEK	B		8.6	3.0	122.3	1.3	10	+ 138.7		+ 149.8
391	8354	COLES CREEK	B	6.6		4.8	0.0	0.0	7	74.5		80.5
392	8354	COLES CREEK TO HALFWAY TO FERRY POINT	B	5.3		2.5	92.5	1.0	10	85.5		92.3
393	8354	1/2 WAY TO HORN HARBOR SL	B			4.4						
394	8354	HORN HARBOR	B	7.7		6.6	0.0	0.0	10	124.2		134.2
395	8354	HORN HARBOR TO 20' LONG SL	B			2.6						
396	8354	20' LONG TO 20'10'' LONG	B	2.0		0.9	88.6	0.9	9	29.0		31.4
397	8354	20'10'' LONG AREA	B		1.3	0.6	82.1	0.8	10	+ 21.0		+ 22.7
398	8354	20'10'' LONG TO COLLINS POINT	B	15.8		5.9	115.5	1.2	5	127.5		137.7
399	8354	WAREHOUSE CREEK	B	20.7		13.2	0.0	0.0	6	200.4		216.4
400	8354	WAREHOUSE CREEK TO WHAYS CREEK	B	34.3		7.6	194.6	2.1	8	442.7		478.1
401	8354	WHAYS CREEK	B	30.9		15.6	0.0	0.0	9	448.7		484.6
402	8354	WHAYS CREEK TO REASON CREEK	B	24.8		4.3	246.9	2.6	7	280.1		302.5
403	8354	REASON CREEK	B	6.5		10.7	0.0	0.0	10	104.9		113.3
404	8354	REASON CREEK TO COCKRELL CREEK	B	38.7		6.7	250.7	2.7	7	437.1		472.0
405	8354	COCKRELL CREEK	B	117.3		80.9	0.0	0.0	5	946.2		1021.9
406	8354	COCKRELL CREEK TO MARSH ON FLEET POINT	B	9.8		2.3	184.3	2.0	5	79.1		85.4
407	8354	MARSH AREA ON FLEET POINT	B		4.4	1.2	152.3	1.6	4	+ 28.4		+ 30.7
408	8354	MARSH TO CREEK WEST OF TASKMAKERS CREEK	B	50.8		7.0	314.9	3.4	5	409.8		442.6
409	8354	TASKMERS CREEK AND CREEK TO WEST	B	18.9		20.2	0.0	0.0	7	213.4		230.5
410	8354	CHESAPEAKE BEACH TO MAP EDGE	B	222.7		17.2	563.5	6.1	10	3592.9		3880.3
411	8355	MAP EDGE TO 3/4 MI SOUTH OF SMITH POINT	B	2.6		1.0	110.8	1.1	8	33.6		36.2
412	8355	SMITH POINT TO 3/4 MI SOUTH SMITH POINT	B		6.4	2.5	112.0	1.2	7	+ 72.3		+ 78.1

NORTHUMBERLAND COUNTY
POTOMAC RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION	AREAS ACCRETION	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
				ACRES								
51	8147	WILKINS CREEK 1/2 MI	B		3.4	9.4	0.0	0.0	10	+ 54.8	1.35	74.1
52	8147	WILKINS CREEK TO MUNDY POINT	B	7.9		2.0	170.3	2.3	7	89.2		120.4
53	8147	SOUTH YEOCOMINCO RIVER	B	31.6		32.3	0.0	0.0	5	254.9		344.1
54	8147	CORNISH CREEK	B	6.9		9.4	0.0	0.0	4	44.5		60.1
55	8147	BARN POINT TO THICKET POINT	B	17.8		5.0	153.5	2.0	5	143.6		193.8
56	8147	WEST FLANK OF THICKET POINT	M		1.3	0.8	71.5	0.9	3	+ 6.3		+ 8.5
57	8147	THICKET POINT TO MAP EDGE	B	37.6		5.9	276.6	3.7	5	303.3		409.5
58	8147	MAP EDGE TO RTE 680 SL	B			1.1						

NORTHUMBERLAND COUNTY (continued)
POTOMAC RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
59	8147	RTE 680 TO CHERRY POINT NECK	B	25.4		5.5	200.6	2.7	5	204.9		276.6
60	8147	CHERRY POINT NECK	B	19.0		12.9	0.0	0.0	4	122.6		165.5
61	8147	HOG ISLAND MARSH	M	20.5		10.2	0.0	0.0	3	99.2		133.9
62	8147	SOUTH BANK JUDITH SOUND	B	13.1		12.2	0.0	0.0	4	84.5		114.1
63	8147	TRAVIS PT	B	9.0		2.7	0.0	0.0	4	58.1		78.4
64	8147	TRAVIS POINT TO MAP EDGE	B	13.0		2.0	280.6	3.7	4	83.9		113.3
66	8356	MAP EDGE TO TRAVIS POINT	B	5.3		1.5	151.0	2.0	4	34.2		46.2
67	8356	KINGSCOTE CREEK	B	22.6		15.1	0.0	0.0	8	291.7		393.8
67A	8147	REMAINDER OF KINGSCOTE CREEK	B	14.0		15.3	0.0	0.0	8	180.7		243.9
68	8356	THE GLEBE MOUTH TO ONE MILE WEST	B	14.0		17.5	0.0	0.0	6	135.5		182.9
69	8356	HONEST POINT	B	8.5		1.2	296.6	4.0	5	68.6		92.6
70	8356	WALNUT POINT	B		1.1	0.6	76.5	1.0	5	+ 8.8		+ 11.9
71	8356	WALNUT POINT TO BALLS CREEK	B	17.7		4.1	187.4	2.5	5	142.8		192.8
72	8356	BALLS CREEK TO COD CREEK	B	62.9		3.4	788.4	10.6	6	608.8		821.9
73	8356	COD CREEK TO PRESLEY CREEK	B	66.2		6.7	427.9	5.7	7	747.6		1009.3
74	8356	PRESLEY CREEK TO 1/2 MI WEST OF HULL CREEK	B	49.9		7.5	287.2	3.8	9	724.5		978.1
75	8356	MAP EDGE TO 1/4 FROM HULL CREEK	B	22.1		4.1	230.6	3.1	8	285.2		385.1
76	8355	MAP EDGE TO S EXTENT OF GINNY BEACH	B	446.7		42.5	457.4	4.9	10	7206.8	1.08	7783.3
77	8355	OLD MOUTH TO LITTLE WICOMICO RIVER	B		1.8	0.0	0.0	0.0	6	+ 17.4		+ 18.8
78	8355	LITTLE WICOMICO RIVER	B	165.1		123.8	0.0	0.0	6	1598.2		1726.0
79	8355	ELLYSON CREEK	B	27.6		17.0	0.0	0.0	6	267.2		288.5
80	8355	BACK CREEK	B	4.3		5.3	0.0	0.0	6	41.6		44.9
81	8355	SHARPS CREEK	M	5.1		3.9	0.0	0.0	5	41.1		44.4
82	8355	TABS CREEK	B	13.5		5.9	0.0	0.0	6	130.7		141.1
83	8355	SMITH POINT	B	28.1		5.0	244.6	2.6	5	226.7		244.8

TABLE 28: PRINCE GEORGE COUNTY
JAMES RIVER

REACH NO.	MAP NO	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
117	8091	BULL HILL RUN TO MAP EDGE	B	14.3		4.7	132.4	2.0	50	1153.5	1.56	1799.5
118	8091	BULL HILL RUN	B			4.7						
119	8091	NAMELESS CREEK SHORELINE	B			2.0						
120	8091	GROUNDED BARGE TO NAMELESS CREEK	B	1.4		0.9	67.7	1.0	50	112.9		176.2
121	8091	PILING TO GROUNDED BARGE	B		0.4	0.5	34.9	0.5	40	+ 25.8		+ 40.3
122	8091	NAMELESS POINT TO PILING	B	3.8		2.0	82.3	1.2	40	245.2		382.5
123	8091	BOAT SHED TO NAMELESS POINT	B	4.3		2.1	86.6	1.3	30	208.1		324.6
124	8091	MAP EDGE TO BOAT ISLAND	B	1.2		0.9	55.6	0.8	40	77.4		120.8
125	8090	HOPEWELL SHORELINE	B			4.8					1.56	
126	8091	GRAVELLY RUN TO MAP EDGE SHORELINE	B			7.3					1.56	
127	8091	GRAVELLY RUN SHORELINE	M			15.7						
128	8091	BAILEY CREEK SHORELINE	M			38.3						
129	8321	NAMELESS POINT TO EDGE OF MAP	B	0.8		0.8	40.3	0.5	20	25.8	1.35	34.8
130	8321	GOLF COURSE TO NAMELESS CREEK POINT	B	8.6		7.6	49.5	0.6	40	554.9		749.2
131	8321	JORDAN POINT TO GOLF COURSE	B	5.1		3.9	56.1	0.7	10	82.3		111.1
132	8321	JENNY CREEK TO JORDAN POINT	B	27.9		7.8	155.5	2.1	5	225.1		303.8
133	8321	JENNY CREEK SHORELINE	M			3.2						
134	8321	CHAPPELL CREEK TO JENNY CREEK	B	11.6		4.0	126.4	1.7	50	935.7		1263.2
135	8321	CHAPPELL CREEK SHORELINE	M			2.9						
136	8321	PIER RUINS TO CHAPPELL CREEK	B	6.7		2.6	109.5	1.4	50	540.5		729.6
137	8321	FENCE TO PIER RUINS	B	9.1		5.3	74.0	1.0	60	880.8		1189.2
138	8321	ROAD 6 TO FENCE SHORELINE	B			1.5						
139	8321	COGGINS POINT TO ROAD 6	B	12.2		5.0	105.4	1.4	50	984.1		1328.6
140	8321	POWELL CREEK TO COGGINS CREEK POINT SHORELINE	M			1.3						
141	8321	POWELL CREEK SHORELINE	M			65.8						
142	8321	MUD TO POWELL CREEK	M	4.7		2.3	88.0	1.1	3	22.7		30.7
143	8321	MARK TO MUD SHORELINE	B			1.0						
144	8321	EDGE OF MAP TO MARK	B	21.9		8.7	108.6	1.4	30	1059.9		1430.9
145	8322	ROAD SEVEN TO EDGE OF MAP	B	10.7		5.2	88.7	1.1	20	345.3	1.35	466.1
146	8322	MARK TO ROAD SEVEN	B	2.8		2.0	60.6	0.8	10	45.2		60.9
147	8322	TREES IN WATER TO WINDMILL POINT	M	28.9		10.5	120.1	1.6	3	139.8		188.8
148	8322	FLOWERDEW HUNDRED CREEK TO TREES IN WATER	B	11.6		2.7	183.4	2.4	5	95.6		126.3
149	8322	FLOWERDEW HUNDRED CREEK SHORELINE	B			25.6						
149A	8322	WINDMILL POINT TO MARK SHORELINE	B			1.6						
149B	8322	WINDMILL POINT	M	3.7		2.1	75.3	1.0	3	17.9		24.2
150	8322	FORT POWHATAN LIGHT TO FLOWERDEW HUNDRED CREEK	B	3.2		2.0	69.2	0.9	20	103.3		139.4
151	8322	PIER TO FORT POWHATAN LIGHT	B	5.1		2.0	109.6	1.4	10	82.3		111.1
152	8322	JCX(USE)1938 TO PIER	B	2.5		1.5	74.4	1.0	5	20.2		27.2
153	8322	WARDS CREEK TO JCX(USE)1938	M	4.7		2.1	97.8	1.3	3	22.7		30.7
154	8322	WARDS CREEK SHORELINE	M			13.4						
155	8322	MARK TO WARDS CREEK SHORELINE	B			3.4						
156	8322	M TO MARK	B		1.7	1.2	61.5	0.8	10	+ 27.4		+ 37.0

PRINCE GEORGE COUNTY (continued)
JAMES RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
157	8322	JDA(USE)1938 TO M SHORELINE	B			7.5						
158	8322	MARK TO JDA(USE)1938	B	0.9		1.2	33.7	0.4	3	4.4		5.8
159	8322	ROAD 7 TO MARK SHORELINE	B			1.2						
160	8322	BRANDON ROAD TO ROAD 7	B	0.8		0.8	43.8	0.5	10	12.9		17.4
161	8322	BRIAR,1938 TO BRANDON ROAD SHORELINE				3.6					1.35	
162	8322	NAMELESS CREEK TO BRIAR,1938	M	8.0		4.0	87.5	1.1	3	38.7		52.3
163	8322	NAMELESS CREEK TO NAMELESS CREEK	M		1.2	0.9	58.4	0.7	3	+ 5.8		+ 7.8
164	8322	UNNAMED CREEK SHORELINE	M			0.0						
165	8322	DASHED LINE TO UNNAMED CREEK	M	1.0		0.8	56.3	0.7	3	4.8		6.5
166	8322	KENNON MARSH TO DASHED LINE	M		1.1	1.1	44.3	0.5	3	+ 5.3		+ 7.2
167	8322	DASHED LINE TO KENNON MARSH POINT	M	2.9		1.7	72.9	0.9	3	14.0		18.9
168	8322	EDGE OF MAP TO DASHED LINE	M	9.3		3.4	119.1	1.6	3	45.0		60.7
169	8323	KENNON MARSH	M	9.2		4.9	82.3	1.1	3	45.4		61.0
170	8323	SECOND PART OF KENNON MARSH	M	3.1		1.2	106.0	1.4	3	15.0		20.3
171	8323	MAP EDGE TO BRANDON POINT	B	6.8		4.4	67.0	0.9	5	54.8		74.1
172	8323	BRANDON POINT TO BRANDON WHARF LIGHT	B	13.8		5.8	103.3	1.3	20	445.3		601.1
173	8323	BRANDON WHARF LIGHT TO MAP EDGE	B	6.0		2.4	107.4	1.4	20	193.6		261.4
174	8320	UPPER CHIPPOKES CREEK	M	27.8		13.7	88.1	1.1	10	448.5		605.5

TABLE 29: RICHMOND COUNTY
RAPPAHANNOCK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS ACRES EROSION	AREAS ACRES ACCRETION	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 100
233	8351	EDGE OF MAP - PEARSON ISLAND SL (LANCASTER CR)	B			5.4					1.15	
234	8351	PEARSON ISLAND (LANCASTER CR)	B	12.9		1.7	326.3	3.7	10	208.1		239.3
235	8351	**MORATTICO CR AND PERCH CR SL**	B			27.5						
236	8351	MORATTICO CR - MIDWAY TO TARPLEY PT SL	M			2.5						
237	8351	MIDWAY FROM MORATTICO CR TO TARPLEY PT-TARP PT	M	9.4		2.5	159.4	1.8	5	75.8		87.2
238	8351	TARPLEY PT	M	3.7		2.4	0.0	0.0	5	29.8		34.3
239	8351	OAKLEY LANDING - FARNHAM CR	B	70.7		13.4	229.8	2.6	5	570.3		655.8
240	8351	S MOUTH OF FARNHAM CR	B		2.7	1.0	112.5	1.2	5	21.8		25.0
241	8351	FARNHAM CR SL	M			47.8						
242	8351	FARNHAM CR - ADD SL	B			2.0						
243	8351	ADD - SHARPS RD PT.	B	10.5		4.2	108.0	1.2	5	84.7		97.4
244	8351	SHARPS RD PT	B		1.1	0.6	83.9	0.9	8	14.2		16.3.
245	8351	SHARPS RD PT - CR E OF SUGGETTS PT	B	29.7		6.9	186.9	2.1	5	239.6		275.5
246	8351	CR E OF SUGGETTS PT - SUGGETTS PT SL	M			2.2						
247	8351	SUGGETTS PT - NEALS PT	B	33.7		8.3	177.0	2.0	5	271.8		312.6
248	8351	NEALS PT - RICHARDSON CR	B	15.3		4.1	159.3	1.8	10	246.8		283.8
249	8351	S MOUTH OF RICHARDSON CR	M		2.1	0.9	100.9	1.1	3	74.1		85.2
250	8351	RICHARDSON CR SL	M			24.9						
251	8351	RICHARDSON CR - WAVERLEY PT	M	7.0		2.2	135.7	1.5	3	33.9		38.9
252	8351	WAVERLEY PT	B		3.2	1.2	117.4	1.3	8	41.3		47.5
253	8351	WAVERLY PT - EDGE OF MAP SL	B			1.7						
254	8359	ACCACEEK PT TO MAP EDGE SL	B			4.7					1.15	
255	8359	ACCACEEK POINT TO LITTLE CARTER CREEK	B	99.0		20.4	210.7	2.4	12	1916.6		2204.1
256	8359	LITTLE CARTER CREEK SHORELINE	B			36.3						
257	8359	LITTLE CARTER CREEK TO MCGUIRE CREEK	M	56.8		8.8	280.5	3.2	4	366.5		421.5
258	8359	MCGUIRE CREEK TO 1/2 WAY TO MANGORIGHT POINT	M	5.0		1.4	147.7	1.6	3	24.2		27.8
259	8359	1/2 WAY TO MANGORIGHT POINT SHORELINE	M			1.8						
260	8359	MANGORIGHT POINT TO LEE	M	22.2		7.5	127.6	1.4	3	107.4		123.6
261	8359	LEE TO CAT POINT CREEK	B	62.9		10.5	258.8	2.9	4	405.9		466.8
262	8359	CAT POINT CREEK SHORELINE	M			89.7						
263	8359	NAYLORS POINT	B	2.3		0.9	102.0	1.1	10	37.1		42.6
264	8359	NAYLORS POINT TO C DOCTORS CREEK SL	B			4.9						
265	8359	DOCTORS CREEK TO MAP EDGE	B		5.0	1.9	111.4	1.2	4	32.3		37.1
266	8360	MAP EDGE TO JOE	B		3.3	1.0	141.0	1.6	3	15.9	1.15	18.4
267	8360	JOE TO WATERVIEW CREEK	M	3.5		1.0	147.1	1.6	3	16.9		19.5
268	8360	WATERVIEW CR TO NAMELESS CREEK WEST OF WATERVIE	M			1.5						
269	8360	CREEK WEST OF WATERVIEW CREEK	M	9.9		3.1	138.2	1.5	3	47.9		55.1
270	8360	MULBERRY POINT TO 54' LONG 59'30'' LAT	M	10.6		3.6	128.6	1.4	3	51.3		59.0
271	8360	54' LONG 59'30'' LAT TO MAP EDGE	B		7.0	2.7	109.6	1.2	4	45.2		51.9
280	517	**MULBERRY MARSH TO WILNA CREEK**	B			9.1					.88	
281	517	WILNA CREEK MARSH	B	7.4		2.7	118.6	1.0	3	35.8		31.5
282	517	MARSH TO MAP EDGE SL	B			8.1						
283	516	MAP EDGE TO MARSH SL	B			30.3						
284	516	MARSH	B	19.5		5.9	142.7	1.2	5	157.3		138.4
285	516	MARSH TO MAP EDGE SL	B			10.3						

TABLE 30: SPOTSYLVANIA COUNTY

RAPPAHANNOCK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
1	434	SCOTTS ISLAND TO HAZEL RUN	B			6.0			10		.88	
2	434	HAZEL RUN TO DEEP RUN	B	11.6		3.4	148.1	1.2	10	187.1		164.7
3	434	DEEP RUN TO FREDRICKSBURG COUNTRY CLUB	B			8.8			22			
4	434	COUNTRY CLUB TO PRATT BAR	B	8.0		2.9	118.8	1.0	10	129.1		113.6
5	434	PRATT BAR TO CLIFF	B			2.9			40			
6	434	CLIFF TO MASSAPONAX CREEK	B	25.5		6.8	163.3	1.4	20	822.8		724.1
7	434	MASSAPONAX CREEK TO MAP EDGE	B			4.9			23			
8	435	MAP EDGE TO SNOW CREEK	B			8.6			5			

TABLE 31: STAFFORD COUNTY

RAPPAHANNOCK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
297	435	MUDDY CREEK TO NEXT CREEK	M		16.6	8.2	88.0	0.7	4	107.1		94.3
298	435	MAP EDGE TO SODDEN BM	B		20.8	8.5	105.9	0.9	8	268.5		236.2

TABLE 32: SURRY COUNTY

JAMES RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
175	8320	UPPER CHIPPOKES CREEK MOUTH TO MAP EDGE SHORELI	B			6.4					1.35	
176	8320	WHARF FLAGPOLE TO UPPER CHIPPOKES CREEK	B	3.2		1.8	78.7	1.0	10	51.6		69.7
177	8320	PIER RUINS TO WHARF FLAGPOLE SHORELINE	B			2.3						
178	8320	MARK TO PIER RUINS	B	2.4		1.1	93.7	1.2	10	38.7		52.3
179	8320	ROAD 7 TO MARK SHORELINE	B			6.6						
180	8320	NAMELESS CREEK TO ROAD 7	B	15.9		5.3	129.0	1.7	60	1539.1		2077.8
181	8320	NAMELESS CREEK SHORELINE	B			25.8						
182	8320	EDGE OF MAP TO ROAD 4	B	38.5		20.2	82.6	11.8	60	3727.8		5031.2
183	8319	MAP EDGE TO DILLARD WHARF SHORELINE	B			2.1						
184	8319	DILLARD WHARF TO SWANN POINT	B	39.8		20.8	83.1	1.1	60	3852.6		5201.1
185	8319	BLACK DUCK GUT TO GRAYS CREEK FIRST BEND	B	20.5		10.9	81.6	1.1	10	348.5		470.4
186	8319	GRAYS CREEK POINT	M		2.3	0.8	117.1	1.5	10	+ 37.1		+ 50.1
187	8319	PLEASANT POINT TO GRAYS CREEK POINT	B	15.8		8.1	84.5	1.1	10	254.9		344.1
188	8319	MAP EDGE TO PLEASANT POINT	B	26.2		12.9	88.2	1.1	8	338.2		456.5
189	8318	MAP EDGE TO LOWER CHIPPOKES CREEK MOUTH	B			12.0						
190	8318	BAYES POINT SPIT	B		26.5	0.0	0.0	0.0	8	+ 342.0		+ 502.8
191	8318	DREWRY POINT TO BAYES POINT	B	6.2		3.5	76.9	1.1	8	80.0		117.6
192	8318	DREWRY POINT TO MCILVANE BM	B	7.4		2.7	118.0	1.7	9	107.5		157.9
193	8318	MCILVANE BM TO HOG IS CR WEST SHORELINE	B			2.1						
194	8318	HOG ISLAND CREEK NORTH POND	M	76.1		0.0	0.0	0.0	3	368.3		541.4
195	8318	HOG ISLAND CREEK SOUTH POND	M	38.1		0.0	0.0	0.0	3	184.4		271.1
196	8318	HOG POINT TO HOG IS CREEK WEST	M	25.2		9.4	115.9	1.7	3	122.0		179.3
197	8318	HOG POINT TO WALNUT POINT	B	59.0		13.2	194.2	2.8	2	190.4		280.0
198	8318	HOG IS EAST CREEK MOUTH SHORELINE	M			2.0						
199	8318	HOG ISLAND CREEK EAST TO LAWNES CREEK NORTH	B	22.5		8.8	111.3	1.6	3	108.9		160.1

TABLE 33: CITY OF VIRGINIA BEACH

CHESAPEAKE BAY — SOUTHERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
1	8301	FORT STORY TO CAPE HENRY	B	107.2		11.3	410.8	4.5	4	691.8	1.11	767.9
2	8301	LYNNHAVEN INLET TO FORT STORY	B		105.6	17.3	265.1	2.9	4	+681.5		+ 756.4
3	8301	LYNNHAVEN INLET SPIT	B	2.9		0.0	0.0	0.0	4	18.7		20.8
4	8301	MAP EDGE TO LYNNHAVEN INLET	B	87.2		9.6	394.4	4.3	3	422.1		468.5
5	8302	MAP EDGE TO 4/5 MI EAST OF LITTLE CREEK	B	100.2		10.8	404.5	4.4	4	646.6		717.8
6	8302	4/5 MI EAST OF LITTLE CREEK TO 1/4 MI E OF L CR	B			2.9						
7	8302	1/4 EAST TO LITTLE CREEK	B		5.8	2.2	110.5	1.2	3	+ 28.1		+ 31.2

TABLE 34: WESTMORELAND COUNTY

POTOMAC RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
5	8114	EDGE OF MAP - TEXACO BULK PLANT	B	37.2		10.1	158.9	1.9	15	900.2	1.25	1125.3
6	8114	TEXACO BULK PLANT - WHITE PT	B	11.9		4.0	127.6	1.5	8	153.6		191.9
7	8114	WHITE PT - EDGE OF MAP SL	B			2.2						
8	8142	SEBASTIAN PT - SPRINGFIELD	B		15.3	5.1	131.0	1.6	4	+ 98.7	1.25	+ 123.4
9	8142	SPRINGFIELD - MATTOX CR SL	B			2.2						
10	8142	PAYNES PT	B		1.0	1.2	37.6	0.4	3	+ 4.8		+ 6.1
11	8142	MATTOX CR (TO LOW PT)	B	37.2		35.8	0.0	0.0	10	600.2		750.2
12	8142	CHURCH PT - EDGE OF MAP	B	173.7		26.7	283.0	3.5	60	16,814.2		21,017.7
13	8141	KENTUCKY RUN TO NOMINI CLIFFS SL	B			5.0					1.35	
14	8141	NOMINI CLIFFS	B	4.9		1.9	111.7	1.5	75	592.9		800.4
15	8141	NOMINI CLIFFS TO CLIFTON HILL SL	B			1.4						
15A	8141	CLIFTON HILL AREA	B	4.0		1.3	128.6	1.7	45	290.4		392.0
16	8141	CLIFTON HILL TO CURRIOMAN BAY SL	B			3.4						
17	8141	3/4 WEST OF CURRIOMAN BAY TO HANLOVER SPIT	B	10.9		3.0	157.6	2.1	5	87.9		118.7
18	8141	HANLOVER SPIT	B	0.8		4.1	0.0	0.0	3	3.8		5.2
19	8141	HANLOVER POINT TO COLD HARBOR CREEK	B	1.0		3.2	14.7	0.1	10	16.1		21.8
20	8141	1/2 MI INTO COLD HARBOR CREEK	B	9.5		5.4	0.0	0.0	5	76.6		103.4
21	8141	WILLIAM POINT TO 1/4 M NW OF CURRIOMAN LANDING	B	4.1		1.9	92.6	1.2	10	66.1		89.3
22	8141	1/2 MI OUT TO CURRIOMAN LANDING	B		4.4	2.0	93.1	1.2	5	+ 35.5		+ 47.9
23	8141	CURRIOMAN CREEK TO MAP EDGE	B	13.0		3.2	174.6	2.3	20	419.5		566.3
24	8141	HANLOVER INLET	B	9.5		0.0	0.0	0.0	3	45.9		62.1
25	8141	HOLLIS MARSH	M	43.0		12.7	0.0	0.0	3	208.1		280.9
26	8140	ELBOW POINT SPIT	M	15.1		23.7	0.0	0.0	3	73.1		98.7
27	8140	MAP EDGE TO POOR JACK CREEK	M		11.1	3.7	127.9	1.7	8	+ 143.3		+ 193.4
28	8140	POOR JACK CREEK TO SNONTS CREEK SL	B			2.3						
29	8140	WEST MOUTH OF SNONTS CREEK	M		2.4	1.3	76.0	1.0	15	+ 58.1		+ 78.4
30	8140	SNONTS CREEK TO NOMINI CREEK	B	7.0		4.1	74.4	1.0	10	112.9		152.5
31	8140	CEDAR ISLAND	M	5.7		2.7	0.0	0.0	4	36.8		49.6
32	8140	MATHEWS POINT TO BUCKNER CREEK	B	4.0		15.6	0.0	0.0	15	96.8		130.7
33	8140	WHITE POINT SPIT	B	2.1		12.4	0.0	0.0	3	10.2		13.7
34	8140	WHITE POINT SPIT TO KINGCOPSICO POINT	B	28.1		5.8	210.4	2.8	7	317.3		428.4
35	8140	KINGCOPSICO POINT TO CABIN POINT	B	55.7		11.8	204.7	2.7	10	898.6		1213.1
35A	8140	CABIN PT. - GLEBE PT. SPIT	M		29.9	6.6	196.1	2.6	3	+ 144.7		+ 195.4
36	8140	GLEBE POINT SPIT	M		2.7	5.8	0.0	0.0	3	+ 13.1		+ 17.6
37	8140	BEATLEY POINT TO BELLFIELD COVE	B	21.5		2.5	365.0	4.9	5	173.4		234.1
38	8140	BELLFIELD COVE	M	2.0		3.8	0.0	0.0	5	16.1		21.8
39	8140	BELLFIELD COVE TO COLES POINT	B	44.4		7.1	272.6	3.6	7	501.4		676.9
40	8140	COLES POINT	B		4.6	1.5	133.2	1.8	10	+ 74.2		+ 100.2
41	8139	MAP EDGE TO RAGGED POINT	B	21.5		3.6	255.0	3.4	7	242.8		327.8
42	8139	RAGGED POINT	B		0.3	5.3	0.0	0.0	3	+ 1.5		+ 1.9
43	8139	RAGGED POINT TO MAP EDGE	B	40.3		8.2	212.2	2.8	5	325.1		438.8
44	8146	MAP EDGE TO GARDNER CREEK	B	12.1		4.6	113.1	1.5	5	97.6		131.7
45	8146	GARDNER CREEK TO JACKSON CREEK	B	7.1		2.7	111.1	1.5	5	57.3		77.3
46	8146	JACKSON CREEK TO BONUM CREEK	B	38.2		5.3	312.2	4.2	5	308.1		415.9
47	8146	BONUM CREEK TO LYNCH POINT	B	129.9		27.5	205.4	2.7	5	1047.8		1414.6
48	8146	LYNCH POINT	B		6.8	2.0	144.1	1.9	3	+ 32.9		+ 44.4
49	8146	YEOCOMICO RIVER	B	142.6		74.3	0.0	0.0	8	1840.5	1.35	2484.6

WESTMORELAND COUNTY

RAPPAHANNOCK RIVER

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
286	515	MAP EDGE TO DRAKES MARSH CREEK	B	9.3		5.1	78.7	0.6	8	120.0	.88	105.6
287	515	DRAKES MARSH AND BLIND POINT	M	65.4		35.5	0.0	0.0	3	316.5		278.5
288	515	MARSH TO MAP EDGE SHORE LINE	M			36.9						

TABLE 35: YORK COUNTY

CHESAPEAKE BAY — WESTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
28	8314	CEDAR PT.	M			2.8					1.12	
29	8314	CEDAR CREEK	M	1.5		1.2	56.5	0.6	3	7.3		8.1
30	8314	CEDAR CREEK TO TOPPING CREEK	M			1.7			3	10.7		11.9
31	8314	TOPPING CREEK PT.	M	2.2		1.1	85.3	0.9	3	3.4		3.8
32	8314	TOPPING CREEK	M	0.7		0.7	40.4	0.4	3	65.3		73.2
33	8314	TOPPING CREEK TO WATTS CREEK	M	13.5		5.9	99.3	1.1	4	29.7		33.3
34	8314	WATTS CREEK TO BACK LANDING	M	4.6		2.1	95.8	1.0	5	92.8		103.9
35	8314	BACK LANDING TO TIN SHELL PT.	M	11.5		5.5	91.1	1.0	3	44.0		49.3
36	8314	TIN SHELL PT. TO AMORYS WHARF	M	9.1		2.8	137.1	1.5	3	19.4		21.7
37	8314	AMORYS WHARF TO FORE LANDING CREEK	M	4.0		1.6	108.6	1.2	3	30.0		33.6
38	8314	FORE LANDING CREEK TO LONG CREEK	M	6.2		2.3	114.4	1.2	3	27.1		30.4
39	8314	LONG CREEK TO BACK CREEK	B	5.6		2.0	119.6	1.3	4	66.5		74.4
40	8314	BACK CREEK TO HIGH CEDAR CREEK	M	10.3		4.2	105.7	1.1	4	78.1		87.5
41	8314	HIGH CEDAR CREEK	B	12.1		6.1	85.7	0.9	4	60.0		67.2
42	8314	HIGH CEDAR CREEK TO MUDDY CREEK	M	9.3		3.1	129.9	1.4	4	30.9		34.7
43	8314	MUDDY CREEK TO FLAT GUT.	M	4.8		1.8	116.4	1.3	3	29.0		32.5
44	8314	FLAT GUT TO TOWER 3	M	6.0		2.0	127.0	1.4	4	+ 6.5		+ 7.2
45	8314	TOWER 3 PT.	M		1.0	1.0	43.6	0.4	3	7.7		8.7
46	8314	TOWER 3 TO THOROFARE	M	1.6		0.7	101.4	1.1	4	58.7		65.8
47	8314	PLUMTREE I TO MAP UPPER END	M	9.1		1.2	313.5	3.5	3	85.7	1.12	95.9
48	8315	PLUMTREE ISLE TO MAP EDGE	M	17.7		4.8	0.0	0.0				

YORK COUNTY (continued)

CHESAPEAKE BAY — WESTERN SHORE

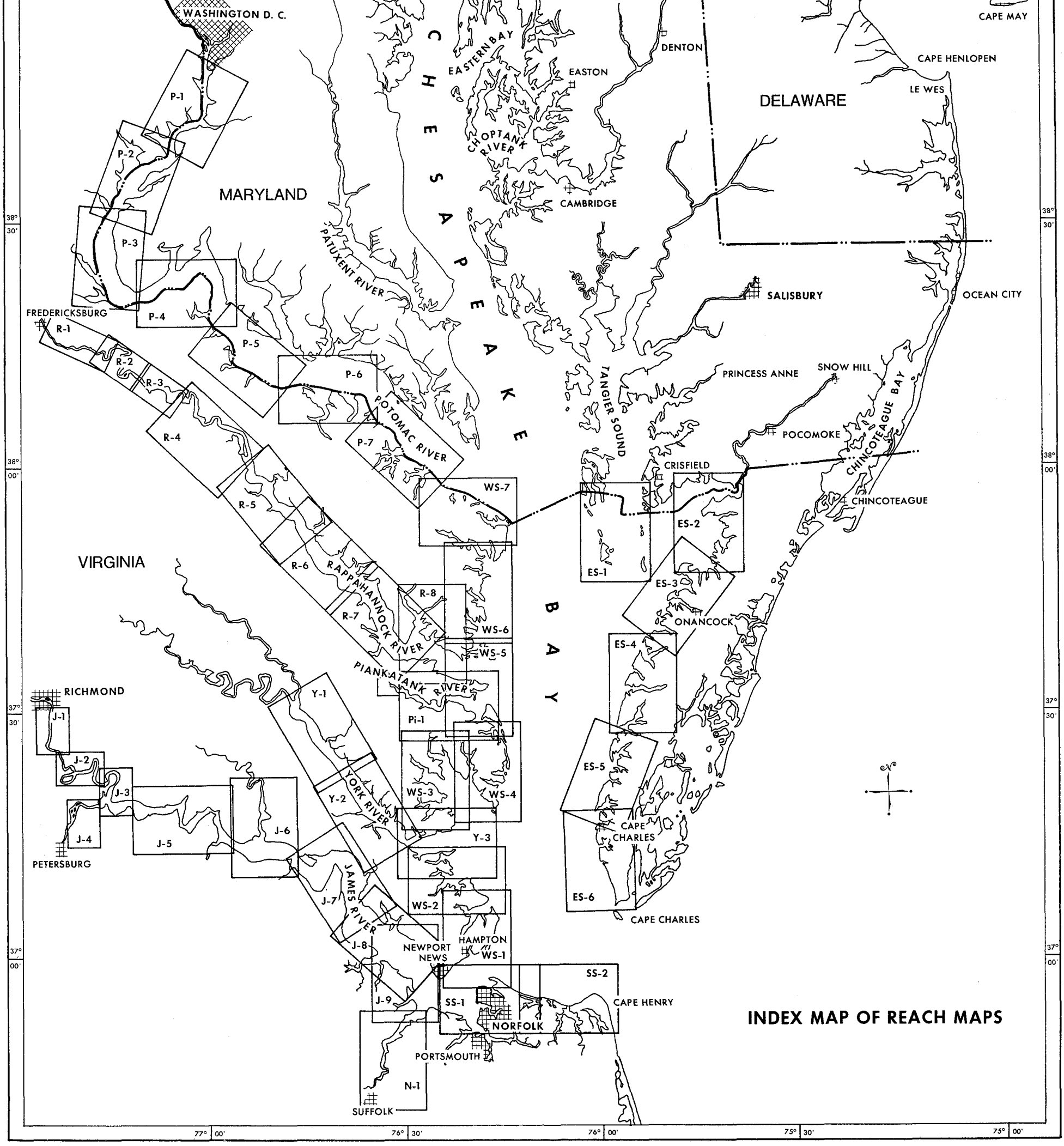
REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
49	8315	MAP EDGE TO TOWER SHORELINE	M			0.4						
50	8315	TOWER TO NAMELESS STREAM	M		3.2	1.3	101.4	1.1	3	+ 15.5		17.3
51	8315	NAMELESS STREAM TO GUM HAMMOCK CREEK	M	6.7		3.2	92.0	1.0	3	32.4		36.3
52	8315	GUM HAMMOCK CREEK	M	23.9		4.3	0.0	0.0	3	115.7		129.6
53	8315	GUM HAMMOCK CREEK TO 1597 GRID SHORELINE	M			0.8						
54	8315	1597 GRID TO PLU	M	2.1		0.9	100.2	1.1	4	13.6		15.2
55	8315	PLU TO 1598X677 GRID	M	262.2		27.1	0.0	0.0	4	1692.1		1895.1
56	8315	1598X677 TO 676.25X1598.5	M	12.3		5.0	106.6	1.1	4	79.4		88.9
57	8315	WHALEBONE ISLAND	M	4.6		1.3	0.0	0.0	3	22.3		24.9
58	8315	NAMELESS CREEK.	M	5.3		1.9	0.0	0.0	3	25.6		28.7
59	8315	NAMELESS CREEK TO 675.75X1598.75 SHORELINE	M			1.5						
60	8315	675.75X1598.75 TO 1600X675.50	M	73.5		10.2	0.0	0.0	4	474.3		531.2
61	8315	1600X675.5 TO 1600.25X675.5	M	4.3		3.3	0.0	0.0	3	20.8		23.3
62	8315	1600.25X675.25 TO 1601.5X674.75	M	111.3		20.7	0.0	0.0	4	718.3		804.5
63	8315	SANDY BAY TO 1601.5X674.75	M	69.8		4.5	667.1	7.4	4	450.4		504.5
64	8315	SANDY BAY	M	31.4		3.0	0.0	0.0	3	151.9		170.2
65	8315	DAL LAGOON TO SANDY BAY	M	19.7		3.9	215.6	2.4	4	127.1		142.4
66	8315	DAL LAGOON	M	3.9		4.2	0.0	0.0	4	25.2		28.2
67	8315	LLOYD BAY TO DAL LAGOON	M	25.9		6.8	165.4	1.8	3	125.4		140.4
68	8315	LLOYD BAY	M	44.1		17.8	0.0	0.0	3	213.4		239.1
69	8315	MARSH ISLE	M	0.0		1.6	0.0	0.0				
70	8315	BENNETT CREEK TO LLOYD BAY	M	16.8		4.9	147.6	1.6	3	81.3		91.1
71	8315	EASTON COVE	B	15.1		7.0	0.0	0.0	4	97.5		109.1
72	8315	FLOYDS BAY	B	15.4		6.8	0.0	0.0	4	99.4		111.3
73	8315	BENNETT CREEK	B	29.6		24.4	0.0	0.0	4	191.0		213.9
74	8316	LYONS CREEK	B	25.0		14.7	0.0	0.0	4	161.3	1.12	180.7
75	8316	LYONS CREEK ISLAND	B	1.7		1.0	0.0	0.0	3	8.2		9.2
76	8316	BAY POINT TO ROBERTS CREEK	B	29.2		4.2	297.6	3.3	3	141.3		158.3
77	8316	ROBERTS CREEK	B	18.6		10.3	0.0	0.0	3	90.0		100.8
78	8316	ROBERTS CREEK TO HUNTS POINT	B	16.1		2.1	325.6	3.6	4	103.9		116.4
79	8316	HUNTS POINT TO GRID 669.5 SHORELINE	B			0.5						
80	8316	GRID 669.5 TO LAMBS CREEK	B	16.5		4.3	167.3	1.8	3	79.8		89.4
81	8316	LAMBS CREEK	B	42.1		16.2	0.0	0.0	3	203.7		228.2
82	8316	LAMBS CREEK TO MOORES CREEK	B	36.0		10.0	156.9	1.7	4	232.3		260.2
83	8316	MOORES CREEK SHORELINE	B			6.1						
84	8316	MOORES CREEK TO GRID 666.5 GRID	B	4.3		1.4	127.9	1.4	5	34.7		38.8
85	8316	666.5 TO 665.25 GRID SHORELINE	B			16.8						
86	8316	665.25 TO 1598 GRID	B	20.5		5.4	165.9	1.8	5	165.4		185.2
87	8316	QUARTER MARCH CREEK	B	11.8		6.3	0.0	0.0	5	95.2		97.1
88	8316	QUARTER MARCH CREEK TO NAMELESS CREEK SHORELI	B			2.3						
89	8316	NAMELESS CREEK	B	3.1		2.0	0.0	0.0	4	20.0		22.4
90	8316	NAMELESS CREEK TO WEST	B	2.4		1.1	94.9	1.0	5	19.4		21.7
91	8316	WEST TO YORKVILLE POINT	B		3.6	1.6	93.9	1.0	5	+ 29.0		+ 32.5
92	8316	YORKVILLE POINT TO 666.5 X1600.5 GRID SHORELIN	B			10.1						
93	8316	666.5 X 16600.5 GRID TO PATRICKS CREEK	B	9.4		2.4	164.4	1.8	4	60.6		67.9
94	8316	PATRICKS CREEK TO NAMELESS CREEK SHORELINE	B			1.3						
95	8316	NAMELESS CREEK	B	1.9		3.5	0.0	0.0	4	12.3		13.7
96	8316	NAMELESS CREEK TO 1600.5 GRID SHORELINE	B			3.1						
97	8316	1600.5 TO RED LIGHT	B	8.2		3.8	94.1	1.0	5	66.1		74.1
98	8316	RED LIGHT TO HODGES COVE SHORELINE	B			1.2						
99	8316	HODGES COVE	B	19.0		6.5	0.0	0.0	4	116.2		130.1
100	8316	HODGES COVE TO SHIP POINT	B	12.9		3.4	163.9	1.8	5	104.1		116.5

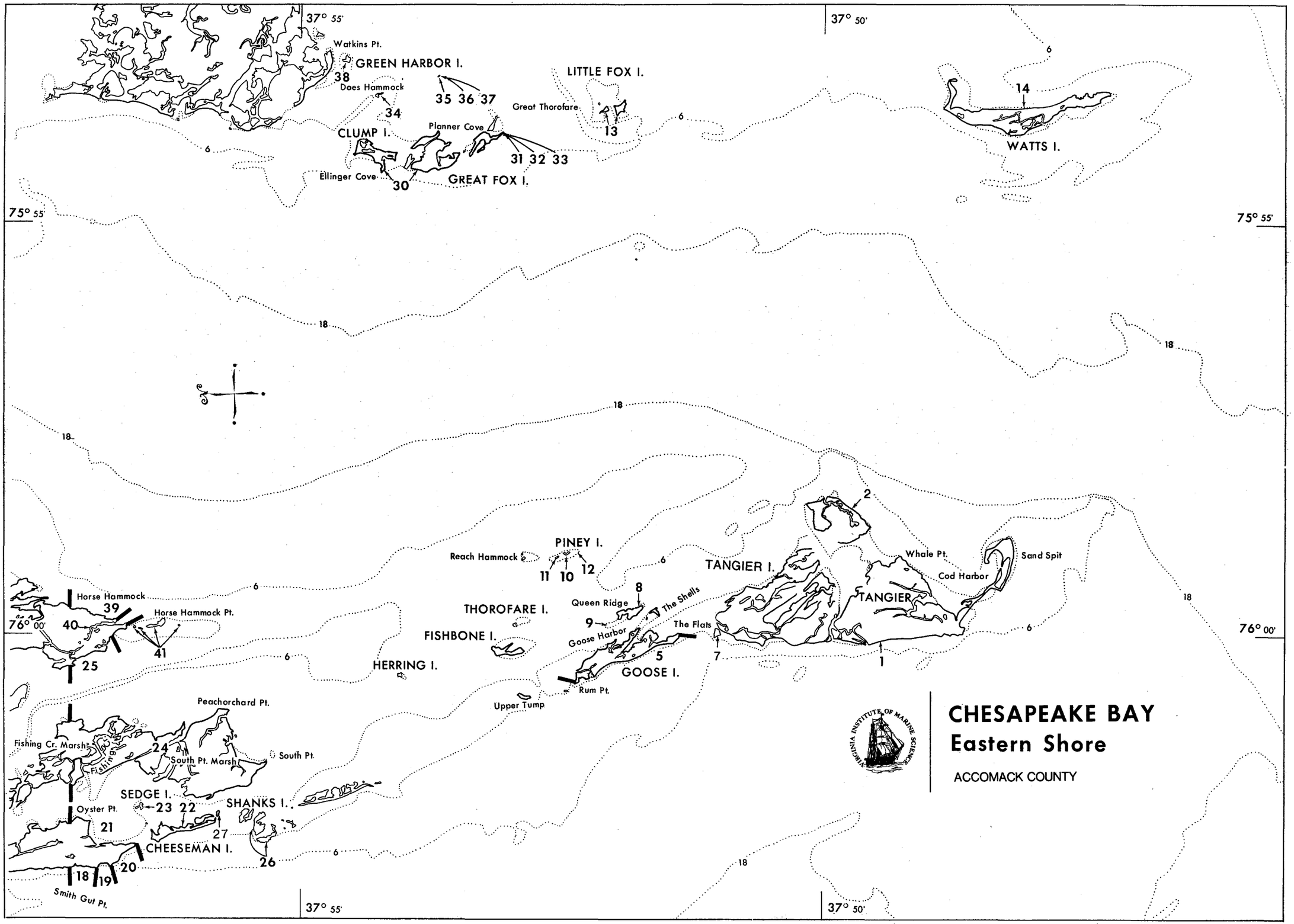
YORK COUNTY (continued)
CHESAPEAKE BAY — WESTERN SHORE

REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
101	8316	CHISMAN CREEK	B	117.3		44.0	0.0	0.0	4	757.0		847.8
102	8316	BOATHOUSE CREEK	B	26.2		6.4	0.0	0.0	3	126.8		142.0
103	8316	GOOSE CREEK	B	28.7		9.3	0.0	0.0	4	185.2		207.4
104	8316	CABIN CREEK	M	31.1		9.8	0.0	0.0	3	150.5		168.6
105	8316	CABIN CREEK TO 670.10 GRID	M		1.3	0.7	76.3	0.8	3	+ 6.3		+ 7.1
106	8316	670.10 TO YORK POINT	B	3.2		1.7	81.5	0.9	3	15.5		17.4
107	8316	YORK POINT TO BAY TREE CREEK	B	19.2		4.1	202.5	2.2	3	92.9		104.1
108	8316	BAY TREE CREEK	M	27.8		10.6	0.0	0.0	3	134.5		150.7
109	8316	BAY TREE CREEK TO GREEN POINT	B	77.3		9.6	347.9	3.9	3	374.1		419.4
110	8316	CLAXTON CREEK	M	48.3		21.9	0.0	0.0	3	233.8		261.9
111	8316	BACK CREEK	B	47.6		30.8	0.0	0.0	4	307.8		344.7
112	8316	BACK CREEK TO SAND BOX	B	28.2		7.9	155.1	1.7	5	227.5		254.8

YORK COUNTY
YORK RIVER

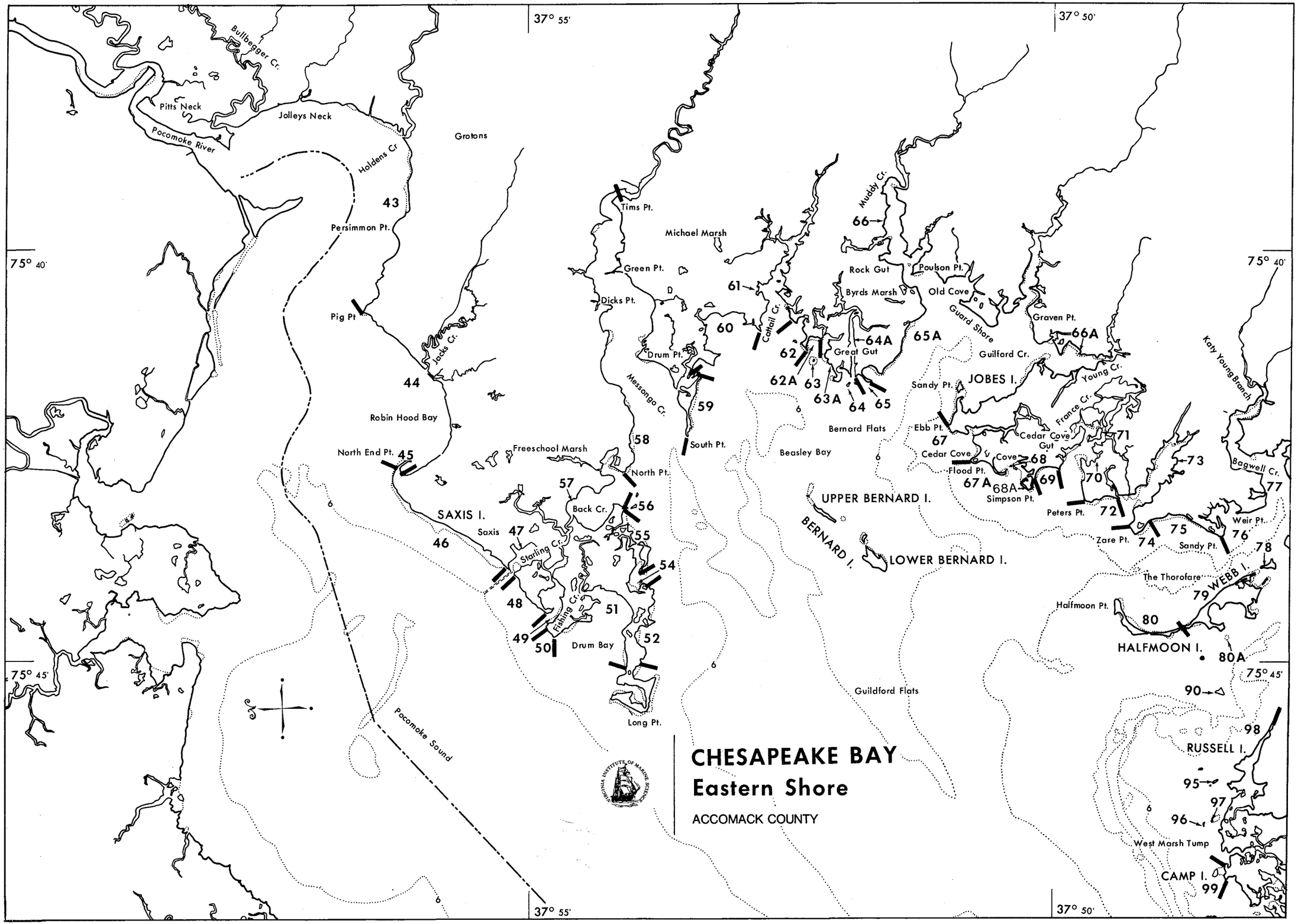
REACH NO.	MAP NO.	DESCRIPTION	SHORELINE TYPE	AREAS EROSION ACRES	AREAS ACCRETION ACRES	SHORELINE LENGTH FEET × 1000	MEAN LENGTH FEET	RATE FT/YR	HEIGHT FEET	VOLUME CU. YD. × 1000	COEFFICIENT	ADJUSTED VOLUME CU. YD. × 1000
11	8325	SKIMINO CREEK TO CARTER CREEK	B	52.3		11.1	204.6	2.2	10	253.1	1.09	275.9
12	8325	CARTER CREEK TO BIGLER MILL POINT	B	40.4		7.3	239.5	2.6	10	195.5		213.1
13	8325	BIGLER MILL PT TO BEAVERDAM SWAMP CREEK	M	5.8		2.7	90.7	0.9	5	28.1		30.6
14	8325	BEAVERDAM SWAMP TO MAP EDGE	B	13.3		6.3	91.3	1.0	10	64.4		70.1
15	8326	MAP EDGE TO QUEEN CREEK	B	10.9		3.9	120.9	1.3	10	175.9	1.09	191.7
16	8326	QUEEN CREEK TO PENNIMAN SPIT	B	57.7		13.8	181.7	1.9	20	744.7		811.7
17	8326	PENNIMAN SPIT	M	7.6		5.6	0.0	0.0	3	36.8		40.1
18	8326	KING CREEK SHORELINE	B			18.7						
19	8326	FELGATES CREEK SHORELINE	B			26.3						
20	8326	POLEY POINT TO SANDY POINT	B	24.8		7.8	137.8	1.5	25	320.1		348.9
21	8326	INDIAN FIELD CREEK SHORELINE	B			18.1						
22	8326	SANDY POINT NEW	B		6.4	9.7	0.0	0.0	3	+ 30.9		+ 33.8
23	8326	SANDY POINT TO STONY POINT	B		5.3	15.9	0.0	0.0	9	+ 42.7		+ 46.6
24	8317	MAP EDGE TO GASOLINE TANK SHORELINE	B			4.3						
25	8317	YORK RIVER CLIFFS	B	19.1		12.6	65.7	0.7	40	1232.6	1.47	1811.9
26	8316	MAP EDGE TO WEST BRANCH	B	37.7		10.8	151.2	1.6	35	2128.8		2384.3
27	8316	WEST BRANCH TO GRID 662-1607 SHORELINE	B			22.4					1.12	
28	8316	GRID 1607-662 TO WEST BRANCH	B	12.6		0.0	0.0	0.0	5	101.6		113.8
29	8316	WORMLEY CREEK SHORELINE	B			17.0						
30	8316	WORMLEY CREEK TO SANDBOX	B	104.0		14.4	313.6	3.5	10	1677.8		1879.2
31	8316	LARGE GOODWIN ISLAND	M	42.5		14.2	0.0	0.0	4	274.3		302.2
32	8316	INTERMEDIATE GOODWIN ISLAND	M	41.1		22.7	0.0	0.0	3	198.9		222.8
33	8316	TUE POINT ISLAND	M	14.5		4.5	0.0	0.0	3	70.2		78.6
34	8316	GOODWIN ISLAND SMALL	M		0.8	1.8	0.0	0.0	3	+ 3.9		+ 4.3
35	8316	GOODWIN ISLAND TO GRID 1607.5	B	3.4		0.9	0.0	0.0	3	16.5		18.4
36	8316	GOODWIN ISLAND	M	2.4		1.0	0.0	0.0	3	116.2		130.1
37	8316	ISLAND EAST OF TUE POINT	M	2.7		0.0	0.0	0.0	3	130.7		146.4


39°
77° 00'
76° 30'
76° 00'
75° 30'
75° 00'
ANNAPOLIS
WASHINGTON D. C.
CAPE MAY
CAPE MAY
DENTON
EASTERN BAY
EASTON
CHOPTANK RIVER
CAMBRIDGE
CAPE HENLOPEN
LE WES
DELAWARE
MARYLAND
C H E S A P E A K E
B A Y
P-1
P-2
P-3
P-4
P-5
P-6
P-7
PATUXENT RIVER
POTOMAC RIVER
FREDERICKSBURG
R-1
R-2
R-3
R-4
R-5
R-6
R-7
R-8
RAPPAHANNOCK RIVER
WS-7
WS-6
WS-5
WS-4
WS-3
WS-2
WS-1
PIANKATANK RIVER
Pi-1
Y-1
Y-2
Y-3
YORK RIVER
VIRGINIA
RICHMOND
J-1
J-2
J-3
J-4
J-5
J-6
J-7
J-8
J-9
PETERSBURG
JAMES RIVER
NEWPORT NEWS
HAMPTON
SALISBURY
OCEAN CITY
TANGIER SOUND
PRINCESS ANNE
SNOW HILL
POCOMOKE
CHINCOTEAGUE BAY
CRISFIELD
CHINCOTEAGUE
ES-1
ES-2
ES-3
ES-4
ES-5
ES-6
ONANCOCK
CAPE CHARLES
CAPE CHARLES
SS-1
SS-2
CAPE HENRY
NORFOLK
PORTSMOUTH
N-1
SUFFOLK
INDEX MAP OF REACH MAPS



CHESAPEAKE BAY
Eastern Shore

ACCOMACK COUNTY



CHESAPEAKE BAY
Eastern Shore
ACCOMACK COUNTY

CHESAPEAKE BAY
Eastern Shore

ACCOMACK COUNTY

37° 45'
75° 50'
37° 50'
75° 45'
37° 40'
75° 40'

18
6

106
104
103
102
BEACH I.
101
100
CAMP I.
99
96
West Marsh Tump
97
107
Big Marsh
98
95
93-94
Camp Island Gut
89
ROGUE I.
Pompco Cr.
Island Bay
RUSSELL I.
90- 91
92
Halfmoon Pt.
108
Back Way Gut
80
Rainy Pt.
HALFMOON I.
109
SAVAGE I.
87
80A
The Thorofare
88
79
Rock Gut
WEBB I.
86
82
Custis Cove
Custis Pt.
78
Sandy Pt.
84
75
The Notch
Weir Pt.
83
Flannegan Pt.
81
85
76
77
Bagwell Cr.
Deep Cr.
Willis Gut
Doe Cr.
Hunting Cr.
Hopkins

120
PARKERS I.
122
116
124
SCARBOROUGH I.
118
123
121
FINNEYS I.
119
126
Bluff Pt.
125
Indian Pt.
Tarkill Cr.
127
Pungoteague Cr.
Sluitkill Neck
Harborton
Taylor Cr.

Sound Beach
111
112
Ware Pt.
Parkers Marsh
Back Cr.
110
Thicket Pt.
114
113
Onancock Cr.
East Point
Matchotank Cr.
115
Broadway Neck
Finneys Neck
Bailey Neck
Poplar Cove Whf.
Poplar Cove
Cedar Cr.
Onley Pt.
Finneys Whf.
Chesconessex Cr.
Chesconessex

CHESAPEAKE BAY
Eastern Shore

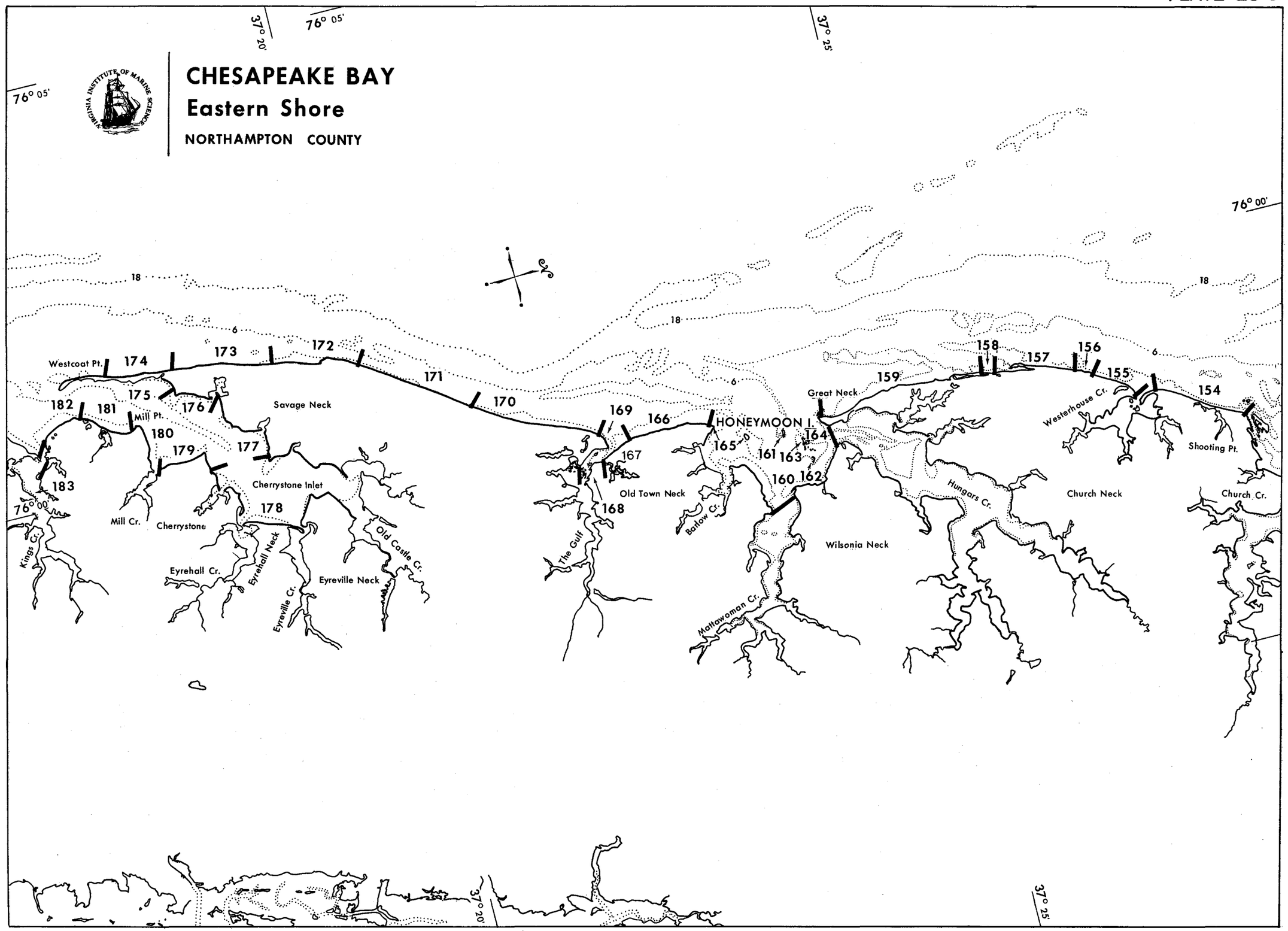
ACCOMACK COUNTY
NORTHAMPTON COUNTY

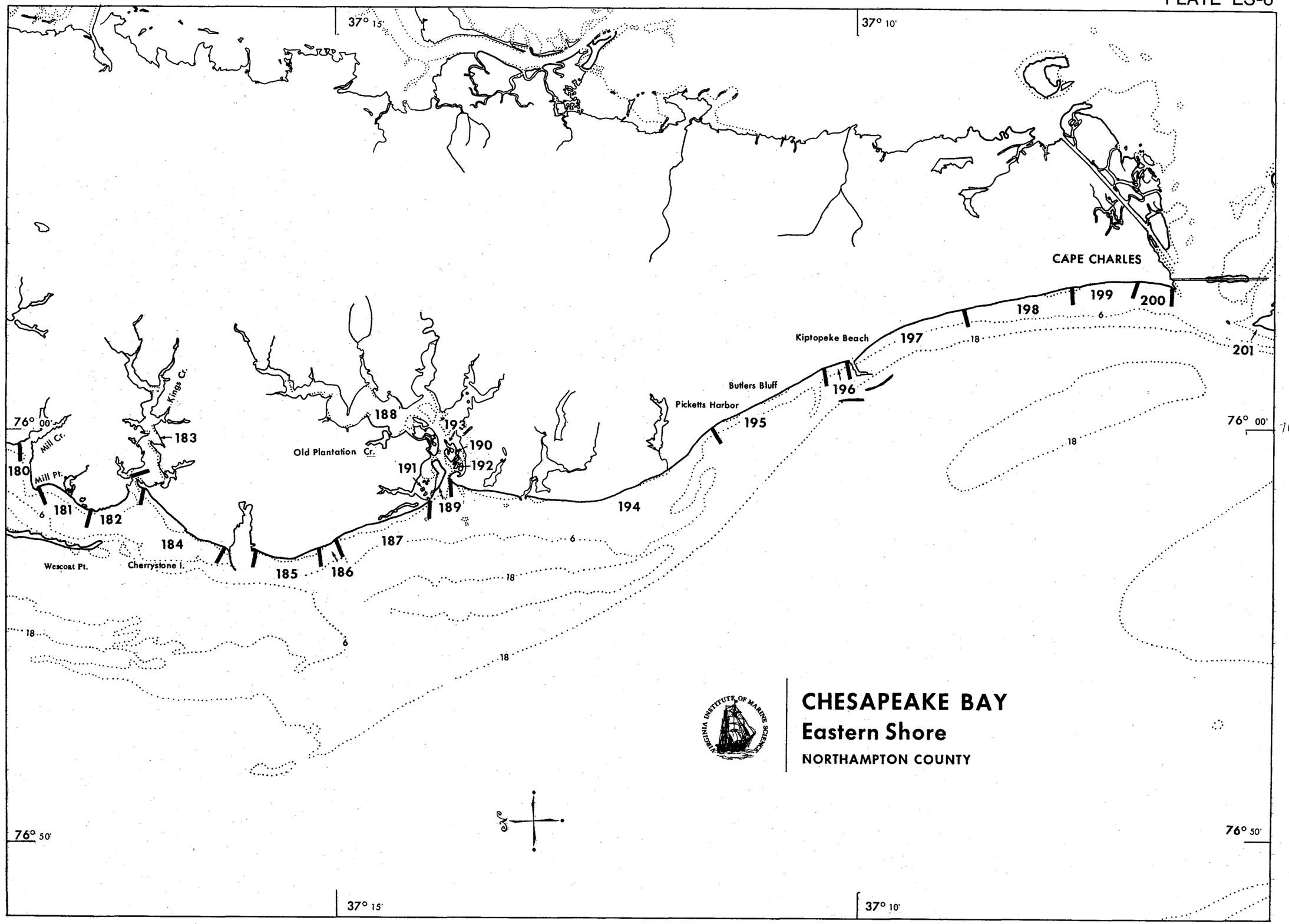
VIRGINIA INSTITUTE OF MARINE SCIENCE

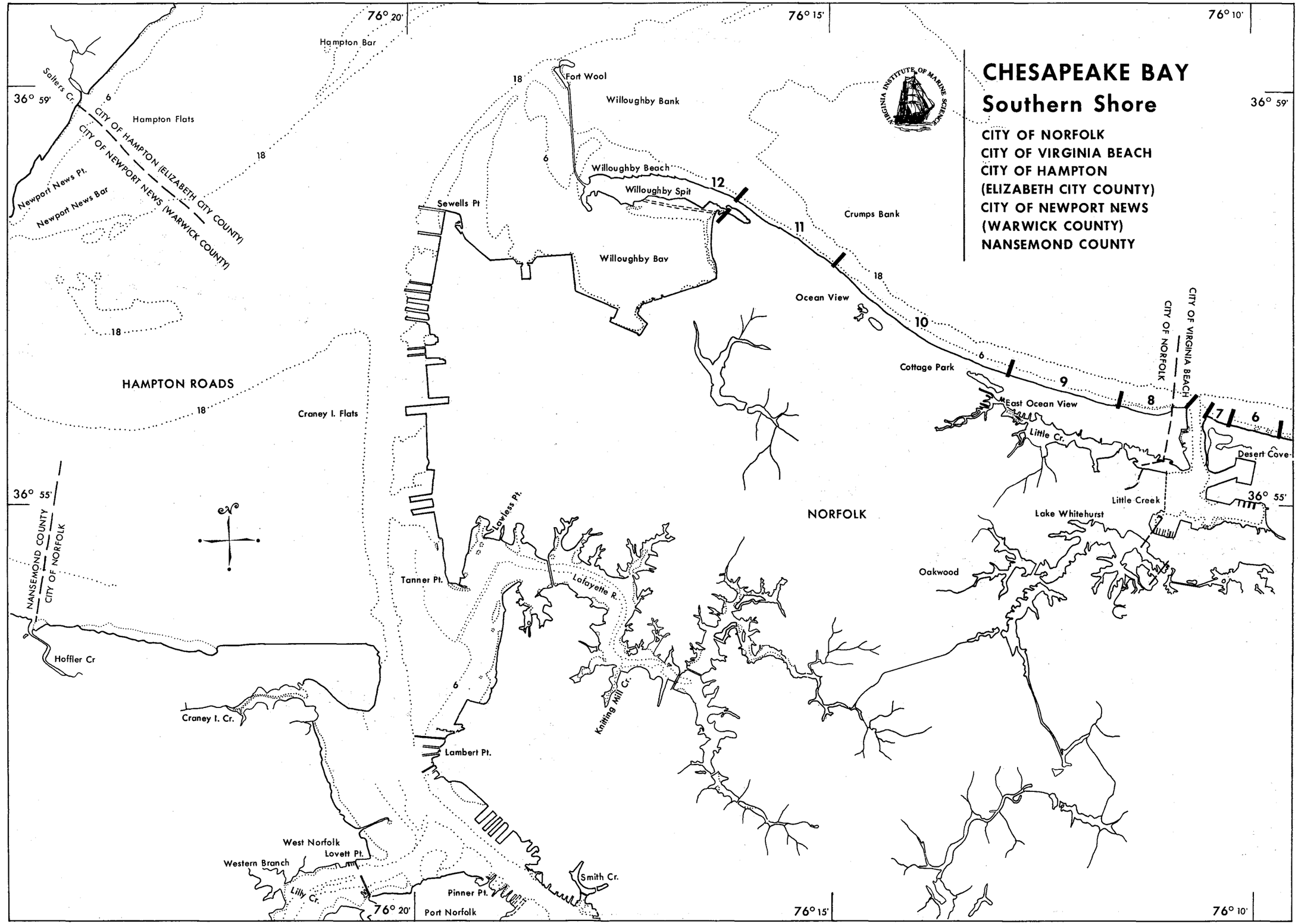
37° 40'
75° 8'
37° 35'
37° 30'
75° 50'
75° 55'

Taylor Cr.
Harborton
Hacks Neck
Nandua Cr.
Curratuck Cr.
Butcher Cr.
130
131
132
133
134
135
136
137
138
Milbys Pt.
Hyslop Marsh
139
140
141
142
Scarborough Neck
143
144
145
146
Occohannock Cr.
147
148
149
150
Battle Pt.
151
Downing Beach
152
Nassawadox Pt.
154
Shooting Pt.
Church Cr.
153
Occohannock Neck
Wellington Neck
Nassawadox Cr.
Worehouse Cr.
Elliotts Neck
ACCOMAC COUNTY
NORTHAMPTON COUNTY
6
18

CHESAPEAKE BAY
Eastern Shore
NORTHAMPTON COUNTY




37° 15'
37° 10'
CAPE CHARLES
198
199
200
201
Kiptopeke Beach
197
Butlers Bluff
Picketts Harbor
196
195
194
76° 00'
Kings Cr.
183
Mill Cr.
180
Mill Pt.
181
182
Old Plantation Cr.
188
193
190
191
192
189
184
187
Wescoat Pt.
Cherrystone I.
185
186
18
6
76° 50'
37° 15'
37° 10'
CHESAPEAKE BAY
Eastern Shore
NORTHAMPTON COUNTY


CHESAPEAKE BAY
Southern Shore
CITY OF NORFOLK
CITY OF VIRGINIA BEACH
CITY OF HAMPTON
(ELIZABETH CITY COUNTY)
CITY OF NEWPORT NEWS
(WARWICK COUNTY)
NANSEMOND COUNTY
VIRGINIA INSTITUTE OF MARINE SCIENCE
76° 20'
76° 15'
76° 10'
36° 59'
36° 55'
Hampton Bar
Sallers Cr.
Hampton Flats
CITY OF HAMPTON (ELIZABETH CITY COUNTY)
CITY OF NEWPORT NEWS (WARWICK COUNTY)
Newport News Pt.
Newport News Bar
HAMPTON ROADS
Craney I. Flats
NANSEMOND COUNTY
CITY OF NORFOLK
Hoffler Cr
Craney I. Cr.
Fort Wool
Willoughby Bank
Willoughby Beach
Willoughby Spit
Willoughby Bay
Sewells Pt
Crumps Bank
Ocean View
Cottage Park
East Ocean View
Little Cr.
CITY OF NORFOLK
CITY OF VIRGINIA BEACH
Desert Cove
Little Creek
Lake Whitehurst
Oakwood
NORFOLK
Tanner Pt.
Lowless Pt.
Lafayette R.
Knitting Mill Cr.
Lambert Pt.
West Norfolk
Lovett Pt.
Western Branch
Lilly Cr.
Pinner Pt.
Port Norfolk
Smith Cr.
18
12
11
10
9
8
7
6

CHESAPEAKE BAY
Southern Shore

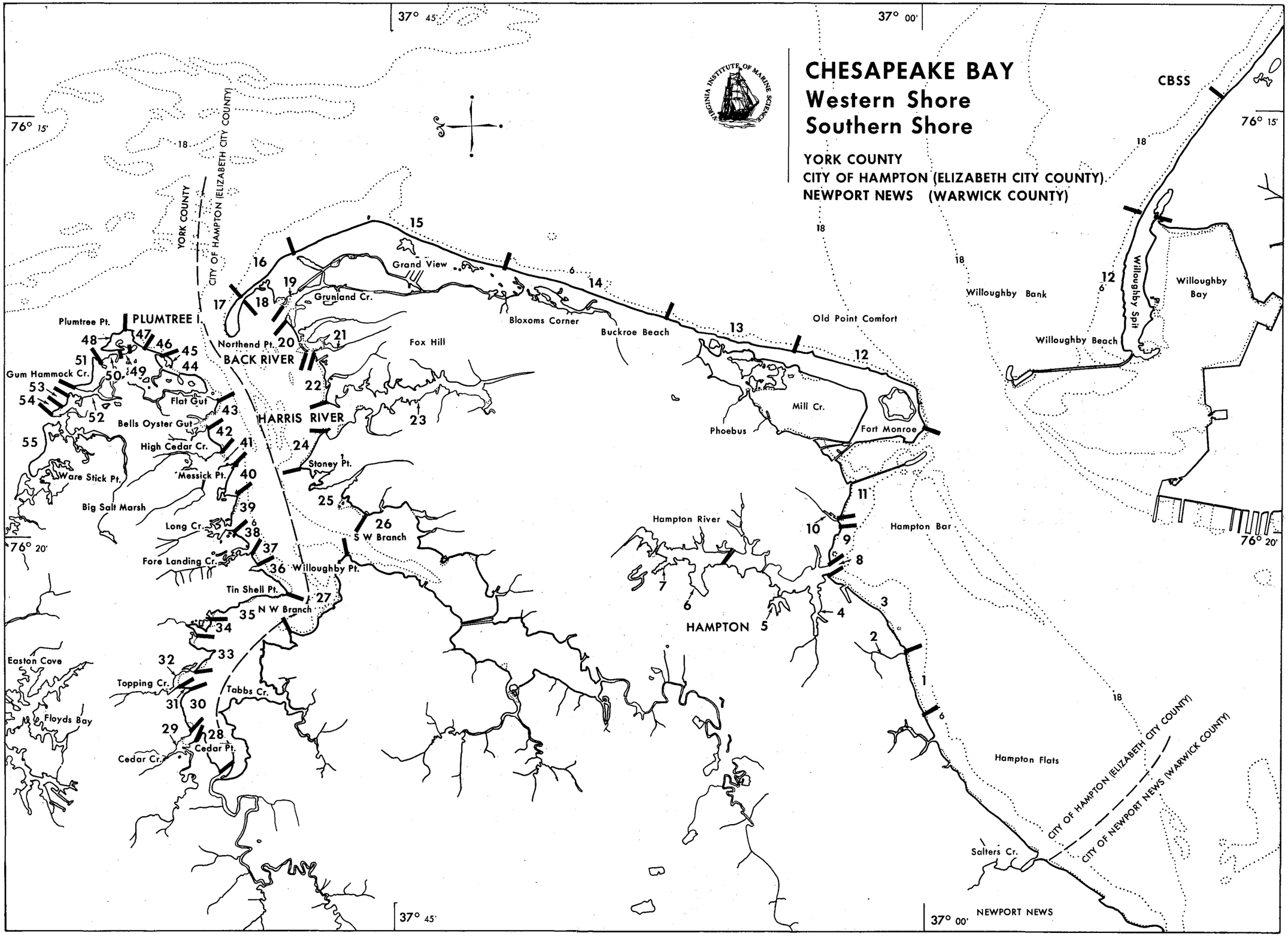
CITY OF VIRGINIA BEACH
CITY OF NORFOLK

76° 10'
76° 05'
76° 00'
36° 59'
36° 55'

East Ocean View
Little Cr.
Little Creek
Desert Cove
Little Cr. Cove
Lake Whitehurst
Chubbs Lake
Lake Bradford
Chesapeake Beach
Lake Joyce
Ocean Park
Bayside
Lynnhaven Roads
Lynnhaven Inlet
Lynnhaven Shores
Inlet
CAPE HENRY
Long Cr.
Carter Pt.
White Hill Lake
North Virginia Beach
Seashore State Park
Broad Bay
Pleasure House Cr.
Bayville Cr.
Hill Pt.
Thoroughgood Cove
Fentress
Lynnhaven River
Brock Cove
Dey Cove
Mill Dam Cr.
The Narrows
Rainey Gut
Crystal Lake
Mapps Pt.
Keeling Cove
Eagles Nest Pt.
Lynnhaven Bay
Sandy Pt.
Great Neck
Alanton
Linkhorn Bay
Bay Colony
Witch Duck Bay
Witch Duck Pt.
Western Branch
Dix Cr.
Reedtown
Little Neck
Brown Cove
Trants Pt.
Eastern Branch
Hebden Cove
Buchanan Cr.
Thurston Branch
Smith Pt.
Wolfsnare Cr.
Wolfsnare Pt.
Deary Cove
Bird Neck Pt.
VIRGINIA BEACH

CHESAPEAKE BAY
Western Shore
Southern Shore

YORK COUNTY
CITY OF HAMPTON (ELIZABETH CITY COUNTY)
NEWPORT NEWS (WARWICK COUNTY)



CHESAPEAKE BAY
Western Shore

YORK COUNTY
CITY OF HAMPTON
(ELIZABETH CITY COUNTY)

76° 25'
76° 20'
37° 10'

YORK RIVER
Tue Pt.
GOODWIN I.
Thorofare
Goodwin Neck
West Branch
Wormley Cr.
Back Cr.
Claxton Cr.
Bay Tree Pt.
Bay Tree Cr.
Goose Cr.
Cabin Cr.
Boathouse Cr.
Chisman Cr.
York Pt.
Hodges Cove
Patricks Cr.
Bennett Cr.
Bay Pt.
Marsh I.
Lyons Cr.
White House Cove
Easton Cove
Floyds Bay
Quarter March Cr.
Lambs Cr.
Moores Cr.
Sandy Bay
Hunts Pt.
Marsh Pt.
Drum Pt.
WHALEBONE I.
Ware Stick Pt.
Gum Hammock Cr.
Big Salt Marsh
PLUMTREE I.
Plumtree Pt.
High Cedar Cr.
Messick Pt.
Bells Oyster Gut
Flat Gut
Northend Pt.
Cedar Cr.
Topping Cr.
Cedar Pt.
NW Branch
Fore Landing Cr.
Long Cr.
Tin Shell Pt.
Tabbs Cr.
YORK COUNTY
CITY OF HAMPTON (ELIZABETH CITY COUNTY)
Back River
Grunland Cr.

CHESAPEAKE BAY
Western Shore

MATHEWS COUNTY
GLOUCESTER COUNTY

VIRGINIA INSTITUTE OF MARINE SCIENCE

37° 25'
37° 20'
76° 25'
76° 30'

NORTH RIVER
MATHEWS COUNTY
GLOUCESTER COUNTY

Diggs Cr.
Cakes Cr.
Cedar Pt.
Raymond Cr.
Oakland Cr.
Greenmansion Cr.
Roys Pt.
Blackwater Cr.
Hampton Cr.
Lone Pt.
Horse Pt.
Davis Cr.
Ware Neck Pt.
Belleville Cr.
Toddsbury Cr.
Elmington Cr.
Back Cr.
Wilson Cr.
Windmill Pt.
Oldhouse Cr.
Tow Stake Pt.
Ware River Pt.
Seven Cedar Pt.
Caucus Bay
Mud Pt.
Turtle Neck Pt.
Whittaker Cr.
Free School Cr.
Sterling Cr.
Bryant Bay
Cod Pt.
W Branch
Vaughns Cr

240 239 237 236 235 234 233 232 231 230 229 228 227 226 225 224 223 222 221 220 219 218 217 216 215 214 213 212 211 210 209 208 207 206 205 204 203 202 201 200 199 198 197 196 195 194 193 192 191 190 189 188 187 186 185 184 183 182 181 180 179 178 177 176 175 174 173 172 171 170 169 168 167 166 165 164 163 162 161 160 159 158 157 156 155 154 153 152 151 150 149 148 147 146 145 144 143 142 141 140 139 138 137 136 135 134 133 132 131 130 129 128 127 126 125 124 123 122 121 120 119 118 117 116

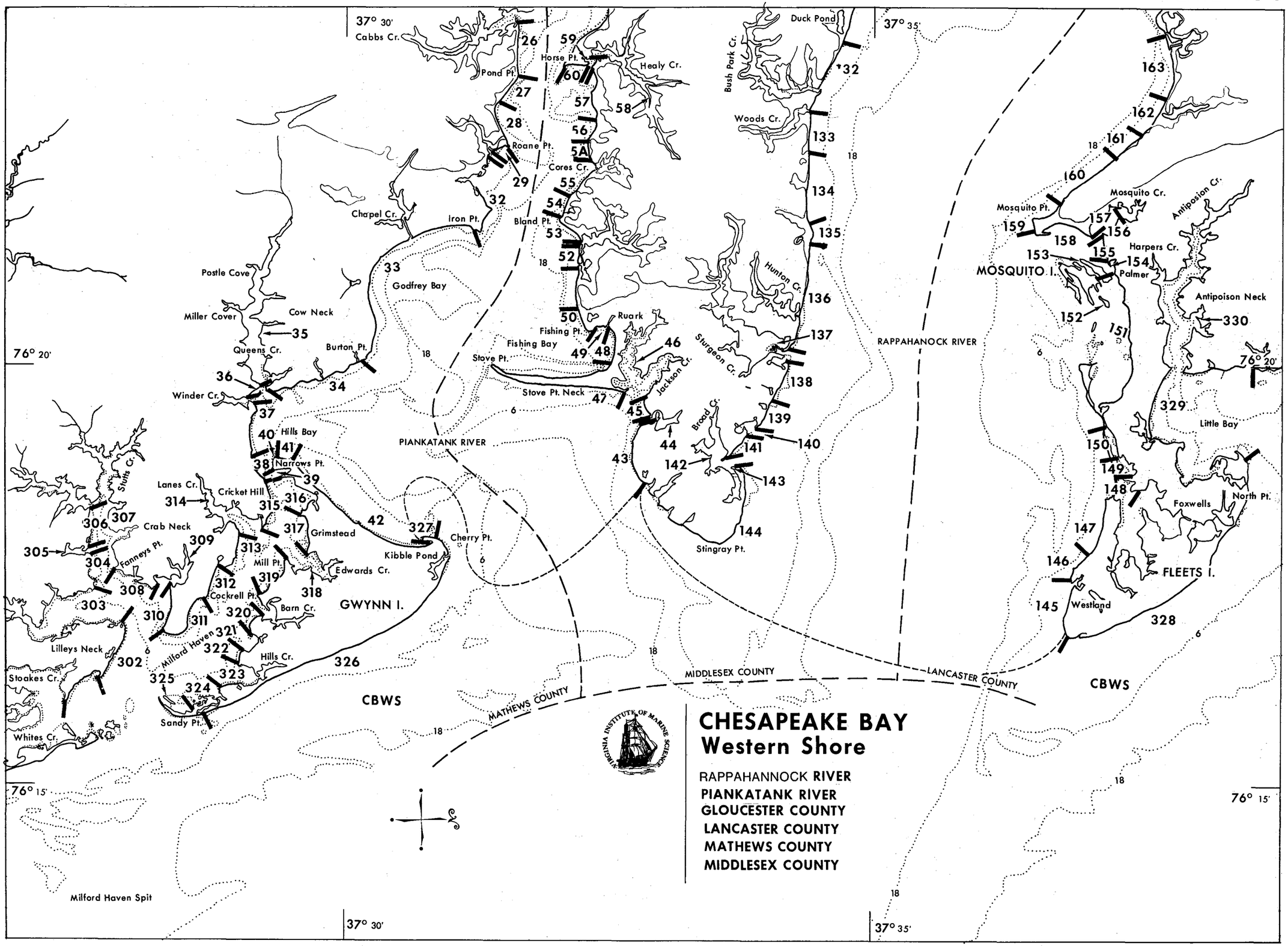
CHESAPEAKE BAY
Western Shore

MATHEWS COUNTY
GLOUCESTER COUNTY

VIRGINIA INSTITUTE OF MARINE SCIENCE

37° 25'
37° 20'
76° 15'
76° 20'

Rigby I.
Whites Cr.
Gwynn I.
Sandy Pt.
Milford Haven
Pt. Breeze
Lilleys Neck
Billups Cr.
Fanneys Pt.
Lanes Cr.
Stutts Cr.
Stokes Cr.
Bethel Beach
Winter Harbor
Potato Neck
Horn Harbor
Mill Pt.
Smith Cr.
Doctors Cr.
Dryer Cr.
Harper Cr.
Deep Cr.
New Point Comfort
Davis Cr.
Pepper Cr.
Sloop Cr.
East River
Diggs Cr.
Cakes Cr.
Mobjack Bay
MATHEWS COUNTY
GLOUCESTER COUNTY


37° 30'
Cabbs Cr.
Pond Pt.
Horse Pt.
Healy Cr.
Roane Pt.
Cores Cr.
Bland Pt.
Iron Pt.
Chapel Cr.
Postle Cove
Godfrey Bay
Miller Cover
Cow Neck
Queens Cr.
Burton Pt.
Winder Cr.
Hills Bay
Narrows Pt.
Lanes Cr.
Cricket Hill
Stutts Cr.
Crab Neck
Fanneys Pt.
Grimstead
Mill Pt.
Edwards Cr.
Kibble Pond
Cherry Pt.
Cockrell Pt.
Barn Cr.
GWYNN I.
Milford Haven
Hills Cr.
Lilleys Neck
Stoakes Cr.
Whites Cr.
Sandy Pt.
Milford Haven Spit
CBWS
76° 20'
76° 15'
PIANKATANK RIVER
Fishing Bay
Stove Pt.
Stove Pt. Neck
Fishing Pt.
Ruark
Jackson Cr.
Sturgeon Cr.
Hunton Cr.
Broad Cr.
Bush Park Cr.
Woods Cr.
Duck Pond
Stingray Pt.
RAPPAHANOCK RIVER
Mosquito Pt.
Mosquito Cr.
Antiposian Cr.
MOSQUITO I.
Harpers Cr.
Palmer
Antipoison Neck
Little Bay
Foxwells
North Pt.
FLEETS I.
Westland
MIDDLESEX COUNTY
LANCASTER COUNTY
MATHEWS COUNTY
CHESAPEAKE BAY
Western Shore
RAPPAHANNOCK RIVER
PIANKATANK RIVER
GLOUCESTER COUNTY
LANCASTER COUNTY
MATHEWS COUNTY
MIDDLESEX COUNTY

CHESAPEAKE BAY
Western Shore
NORTHUMBERLAND COUNTY
LANCASTER COUNTY

VIRGINIA INSTITUTE OF MARINE SCIENCE

37° 50'
37° 45'
37° 40'
76° 15'
76° 20'

Chesapeake Beach
Taskmakers Cr.
Bull Neck
Cockrell Cr.
Tim Pt.
Fleet Pt.
Cockrell Neck
Cockrell Pt.
Fairport
Reason Cr.
Whays Cr.
Haynie Pt.
Shell Cr.
Gougher Cr.
Mila
Bailey Prong
Cranes Cr.
Towles Cr.
Harveys Cr.
Harveys Neck
Ingram Bay
Dameron Marsh
Sandy Pt.
Bussel Pt.
Mills Cr.
Cloverdale Cr.
Ball Neck
Ball Cr.
Salt Pond
Ingram Cove
Hughlett Pt.
Jarvis Pt.
Kent Pt.
Ditchley
Jarvis Cr.
Dividing Cr.
Natty Pt. Cove
Harveys
Lawrence Cove
Prentice Cr.
Highland Lndg
Bluff Point Neck
Bluff Pt.
Barnes Cr.
Fleets Bay
Henrys Cr.
Indian Cr.
GROG I.
Rones Bay
Bells Cr.
Hunts Cove
Arthur Cove
Longs Cr.
Johnson Cr.
Dimer Cr.
Ocran
Ashleys Cove
Georges Cove
Poplar Neck Cr.
Warehouse Pt.
Fleets Bay Neck
Kilmarnock Wharf
Waverly Cove
Grace Pt.
Pitmans Cove
Chases Cove
Poplar Neck
Tabbs Cr.
Dunton Mill
Barrett Cr.
Bogey Neck
Tipers Cr.

NORTHUMBERLAND COUNTY
LANCASTER COUNTY

CHESAPEAKE BAY
Western Shore
POTOMAC RIVER
NORTHUMBERLAND COUNTY

VIRGINIA INSTITUTE OF MARINE SCIENCE

76° 25' 76° 20' 76° 15'

37° 55' 37° 50'

Boy Quarter Neck
Neuman Neck
Hull Cr.
Mob Neck
Hack Neck
Ellyson Cr.
Little Wicomico River
Smith Pt.
Cod Cr.
Back Cr.
Bridge Cr.
Sharps Cr.
Bridge Neck
Rock Hole
Gaskins Pond
Owens Pond
Reedville
Chesapeake Beach
Tim Pt.
Reason Cr.
Whoys Cr.
Warehouse Cr.
Horn Harbor
Collins Pt.
Rogue Pt.
Ferry Pt.
Glebe Pt.
Eagle Pt.
Balls Cr.
Coles Cr.
Betts Mill Cr.
Blackwells Cr.
Cedar Pt.
Coopers Ldg.
Indian Pt.
Bush Mill Stream
Barrett Cr.
Tipers Cr.
Bogey Neck
Haynie Pt.
Mila

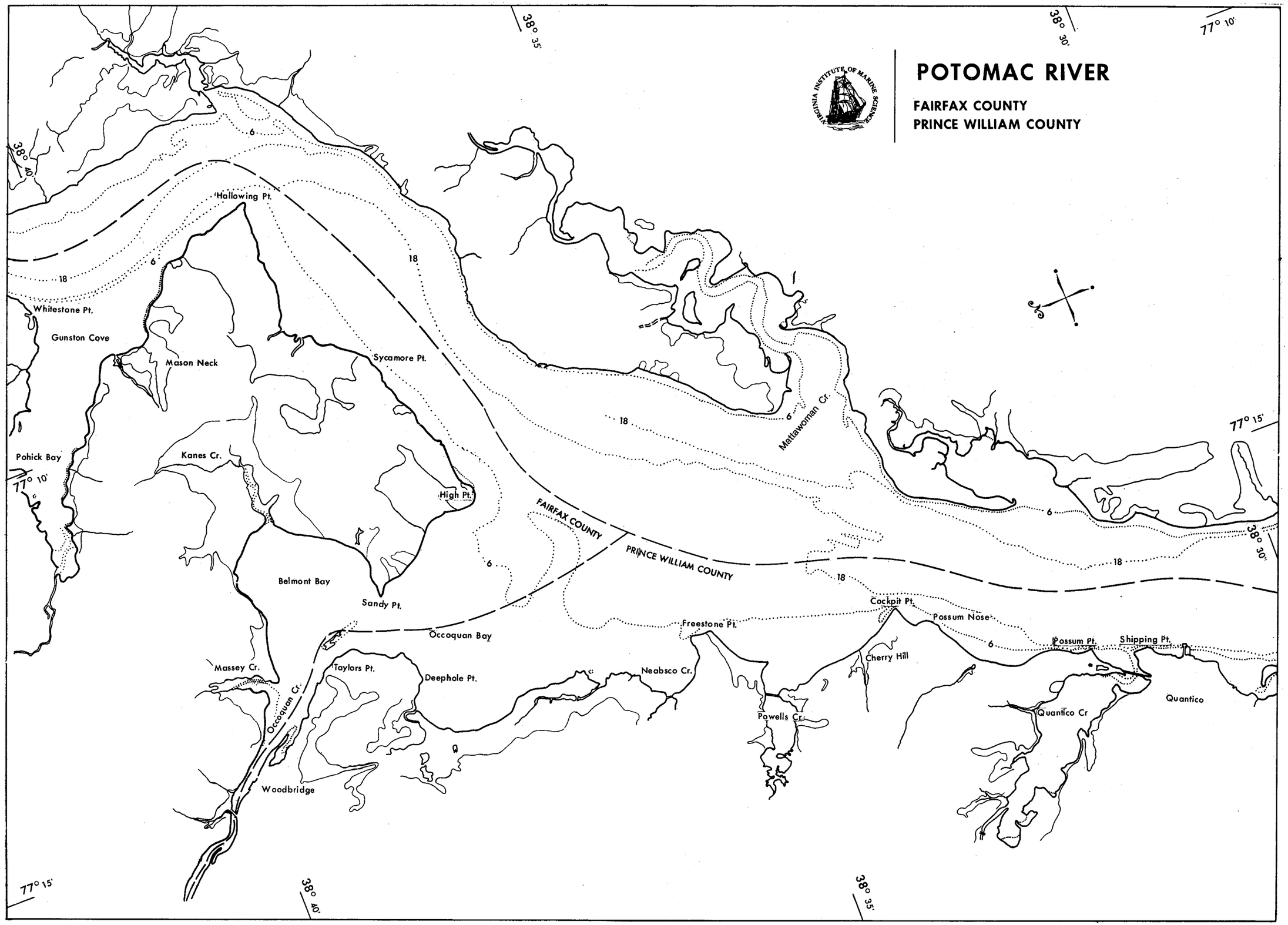
18 6 18 6 18 6

74 75 76 77 78 79 80 81 82 83 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 410 411 412

POTOMAC RIVER

FAIRFAX COUNTY
ALEXANDRIA COUNTY
ARLINGTON COUNTY

77° 10'
38° 45'
38° 50'
77° 05'
38° 40'
77° 10'
Pohick Bay
Accotink Bay
Gunston Cove
Whitestone Pt.
Dogue Cr.
Ferry Pt.
Little Hunting Cr.
Mt. Vernon
Hunting Cr.
ALEXANDRIA
ALEXANDRIA COUNTY
ARLINGTON COUNTY
FAIRFAX COUNTY
Jones Pt.
New Alexandria
Warwick
Wellington
Snowden
Sheridan Pt.
6
18
77° 00'
77° 05'
38° 40'
77° 10'
38° 45'


POTOMAC RIVER
FAIRFAX COUNTY
PRINCE WILLIAM COUNTY
VIRGINIA INSTITUTE OF MARINE SCIENCE
38° 35'
38° 30'
77° 10'
38° 40'
77° 15'
Hallowing Pt.
Whitestone Pt.
Gunston Cove
Mason Neck
Sycamore Pt.
Pohick Bay
Kanes Cr.
High Pt.
Belmont Bay
Sandy Pt.
Occoquan Bay
Massey Cr.
Taylors Pt.
Deephole Pt.
Occoquan Cr.
Woodbridge
Neabsco Cr.
Freestone Pt.
Powells Cr.
Cherry Hill
Cockpit Pt.
Possum Nose
Possum Pt.
Shipping Pt.
Quantico Cr
Quantico
Mattawoman Cr.
FAIRFAX COUNTY
PRINCE WILLIAM COUNTY
6
18

POTOMAC RIVER

PRINCE WILLIAM COUNTY
STAFFORD COUNTY
KING GEORGE COUNTY

38° 30'
38° 25'
38° 20'
77° 15'
77° 20'
Maryland Pt.
Thomas Pt.
Fairview Beach
Goose Bay
Sandy Pt.
Marlows Bay
Liverpool Pt.
Blue Bank
Douglas Pt.
Wades Bay
Clifton Beach
Smith Pt.
Passapatanzy Cr.
Marlboro Pt.
Quantico
Clifton Pt.
Widewater
Brent Marsh
Brent Pt.
Simms Pt.
Shackley Pt.
Thorney Pt.
Bennetts Pt.
Watsons Pt.
Gourds Pt.
Accokeek Cr.
Potomac Cr.
PRINCE WILLIAM COUNTY
STAFFORD COUNTY
KING GEORGE COUNTY
6
18

77° 10'

77° 05'

77° 00'

38° 25'

38° 20'

Mathias Pt.

Persimmon Pt.

Mathias Pt. Neck

Stuart Pt.

Metomkin Pt.

Chotank Cr.

Somerset Beach

Gambo Cr.

Dahlgren

Upper Machodoc Cr.

Baber Pt.

1

2

3

4

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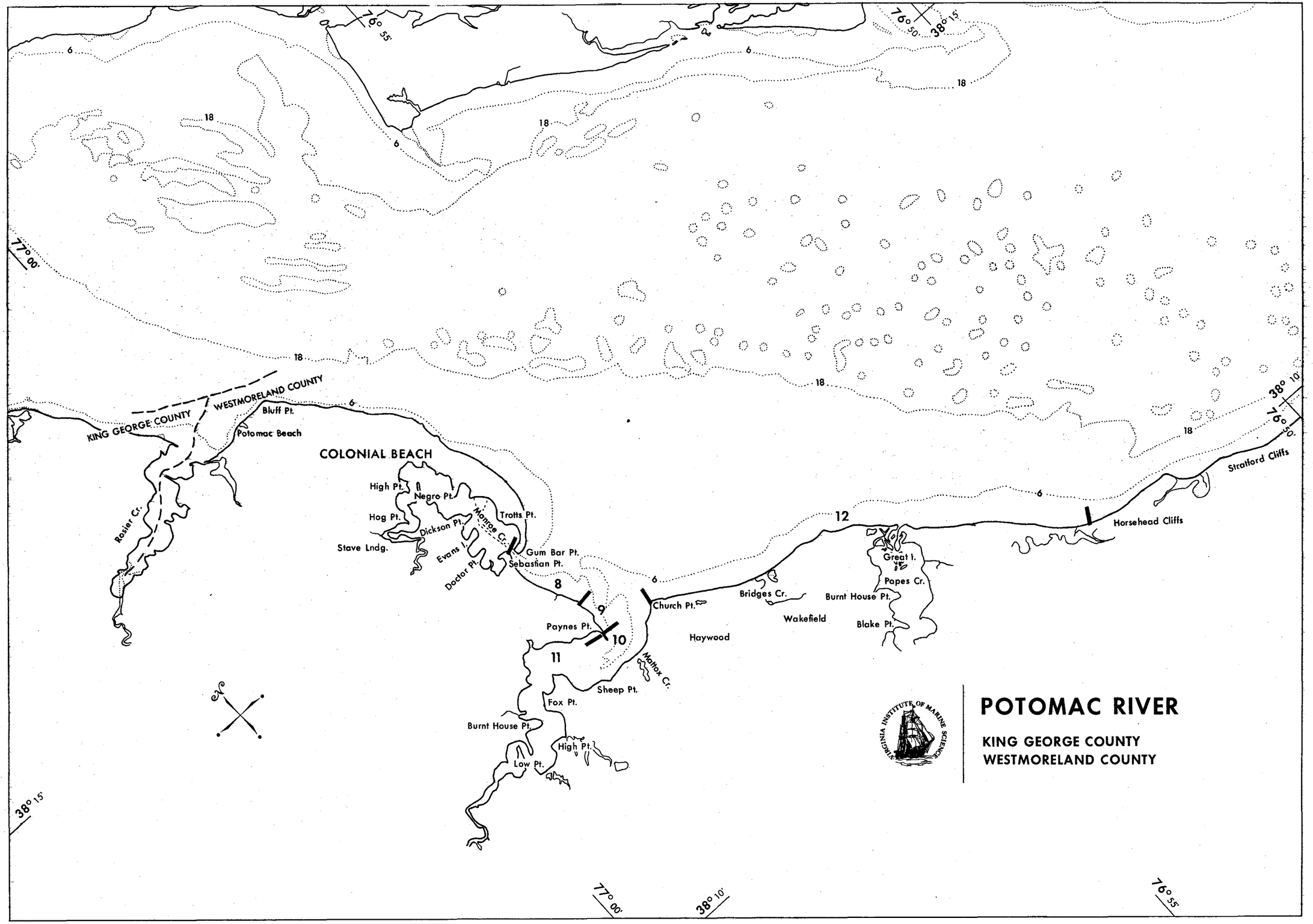
POTOMAC RIVER

KING GEORGE COUNTY


76° 55'
76° 50'
38° 15'
6
18
77° 00'
KING GEORGE COUNTY
WESTMORELAND COUNTY
Bluff Pt.
Potomac Beach
COLONIAL BEACH
High Pt.
Negro Pt.
Hog Pt.
Dickson Pt.
Monroe Cr.
Trotts Pt.
Stave Lndg.
Evans I.
Doctor Pt.
Gum Bar Pt.
Sebastian Pt.
Rosier Cr.
8
9
10
11
12
Paynes Pt.
Church Pt.
Bridges Cr.
Wakefield
Haywood
Mattox Cr.
Sheep Pt.
Fox Pt.
Burnt House Pt.
High Pt.
Low Pt.
Great I.
Papes Cr.
Burnt House Pt.
Blake Pt.
Stratford Cliffs
Horsehead Cliffs
38° 10'
38° 15'
77° 00'
76° 55'
POTOMAC RIVER
KING GEORGE COUNTY
WESTMORELAND COUNTY

POTOMAC RIVER

WESTMORELAND COUNTY

VIRGINIA INSTITUTE OF MARINE SCIENCE

76° 50'
76° 45'
76° 40'
38° 10'

Stratford Cliffs
Nomini Cliffs
Mt. Airy
Cold Harbor Cr.
Currioman Bay
Currioman Cr.
Poor Jack Cr.
Elbow Pt.
Hollis Marsh
Nomini Bay
Herring Pond
Kingcopsico Pt.
Cabin Pt.
Cabin Point Cr.
Grapevine Pt.
Coles Pt.
Blackbeard Pond
Ragged Pt. Beach
Ragged Pt.
Branson Cove
Long Pond
Coles Neck
Buckner Cr.
CEDAR I.
White Pt.
Icehouse Pt.
White Oak Pt.
Hickory Pt.
Smarts Cr.
Matthews Cove
Glebe Pt.
Glebe Cr.
Danger Pt.
Plumb Pt.
Tidwells
Narrow Beach
Cherry Orchard Pt.
Kirk Pt.
Parham Pt.
Gardner Cr.
Jackson Cr.
Hinnom Deep Pt.
Pierce Cr
Nomini
Mount Holly

POTOMAC RIVER

WESTMORELAND COUNTY
NORTHUMBERLAND COUNTY

76° 30'
38° 05'
76° 25'
38° 00'
76° 35'
38° 05'
38° 00'
76° 35'
76° 30'

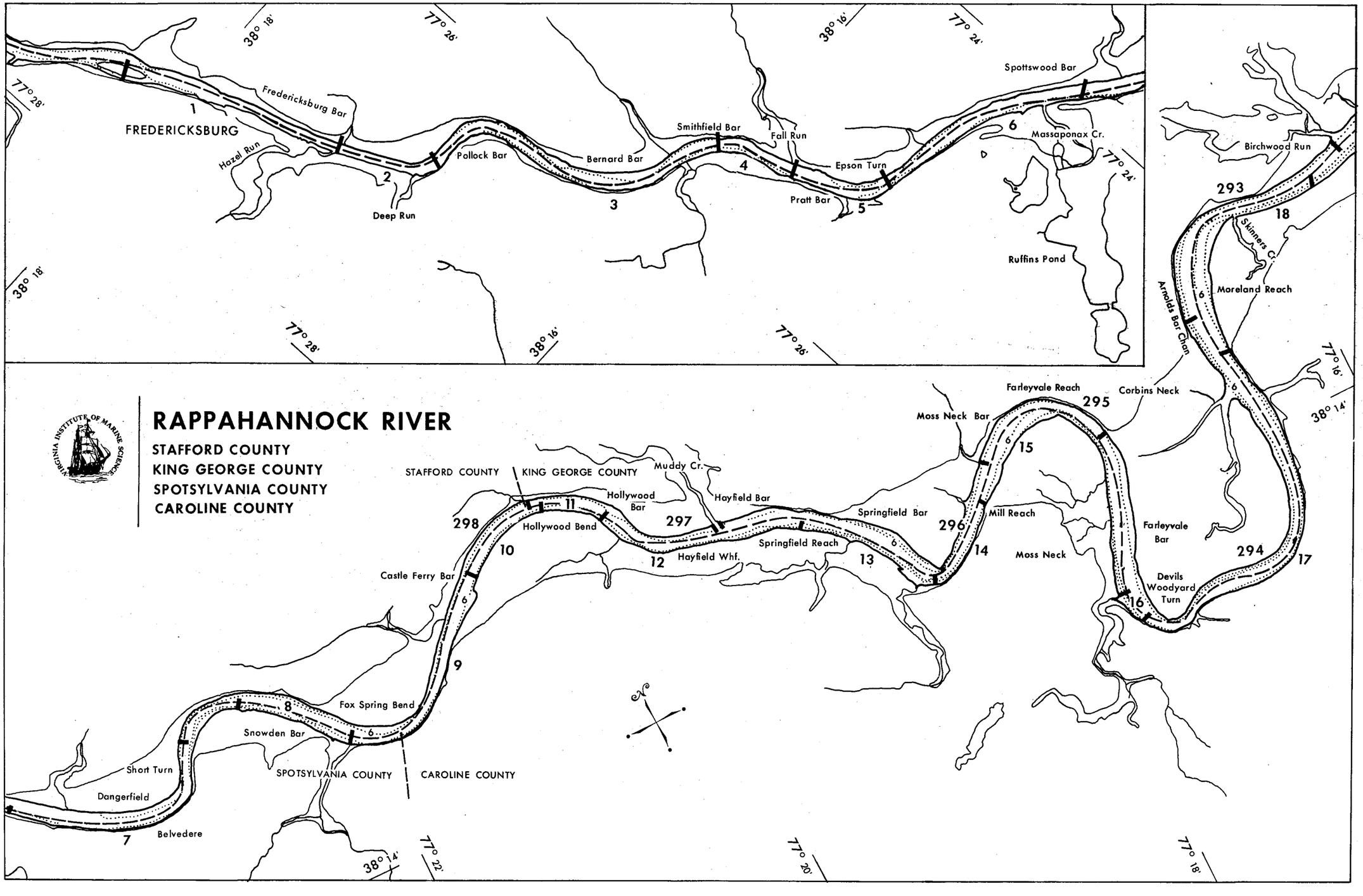
Sandy Pt.
Jackson Cr.
Bonum Cr.
Sandy Pt. Neck
Shannon Branch
Lynch Pt.
Hog I.
Judith Sound
Travis Pt.
Lewisetta
Kingscote Cr.
Bay Quarter Neck
Cod Cr.
The Glebe
Coan R.
Mundy Pt.
West Yeocomico R.
South Yeocomico R.
WESTMORELAND COUNTY
NORTHUMBERLAND COUNTY

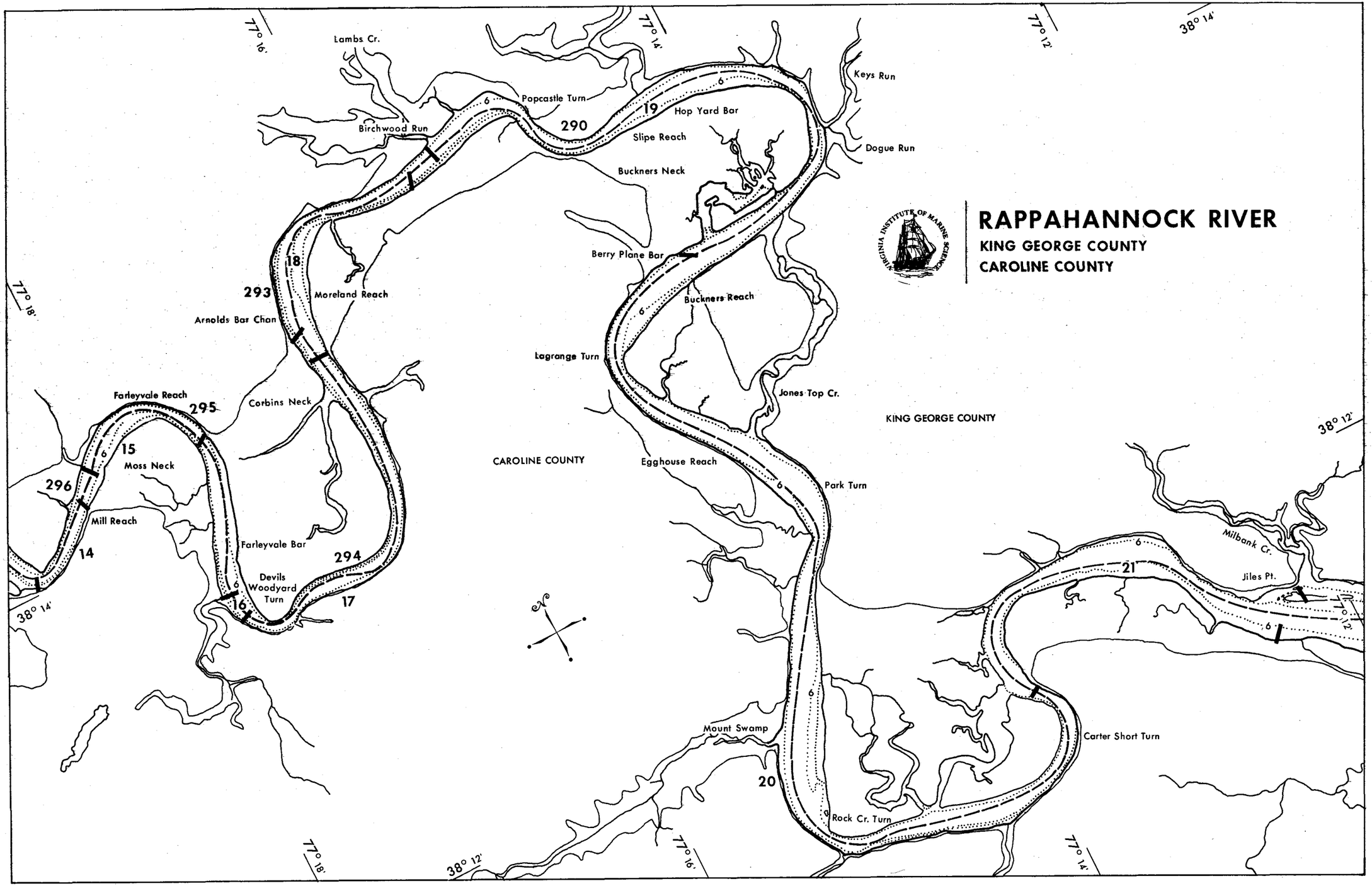
47 48 49 51 52 53 54 55 56 57 58 59 60 61 62 63 64 66 67 67A 68 69 70 71 72 73

6 18

RAPPAHANNOCK RIVER

STAFFORD COUNTY
KING GEORGE COUNTY
SPOTSYLVANIA COUNTY
CAROLINE COUNTY





RAPPAHANNOCK RIVER

KING GEORGE COUNTY
CAROLINE COUNTY

RAPPAHANNOCK RIVER

KING GEORGE COUNTY
CAROLINE COUNTY
ESSEX COUNTY

VIRGINIA INSTITUTE OF MARINE SCIENCE

38° 12'
77° 12'
77° 10'
77° 08'
77° 06'
38° 10'
38° 08'
38° 10'
77° 12'
77° 10'
77° 08'
77° 06'
38° 08'

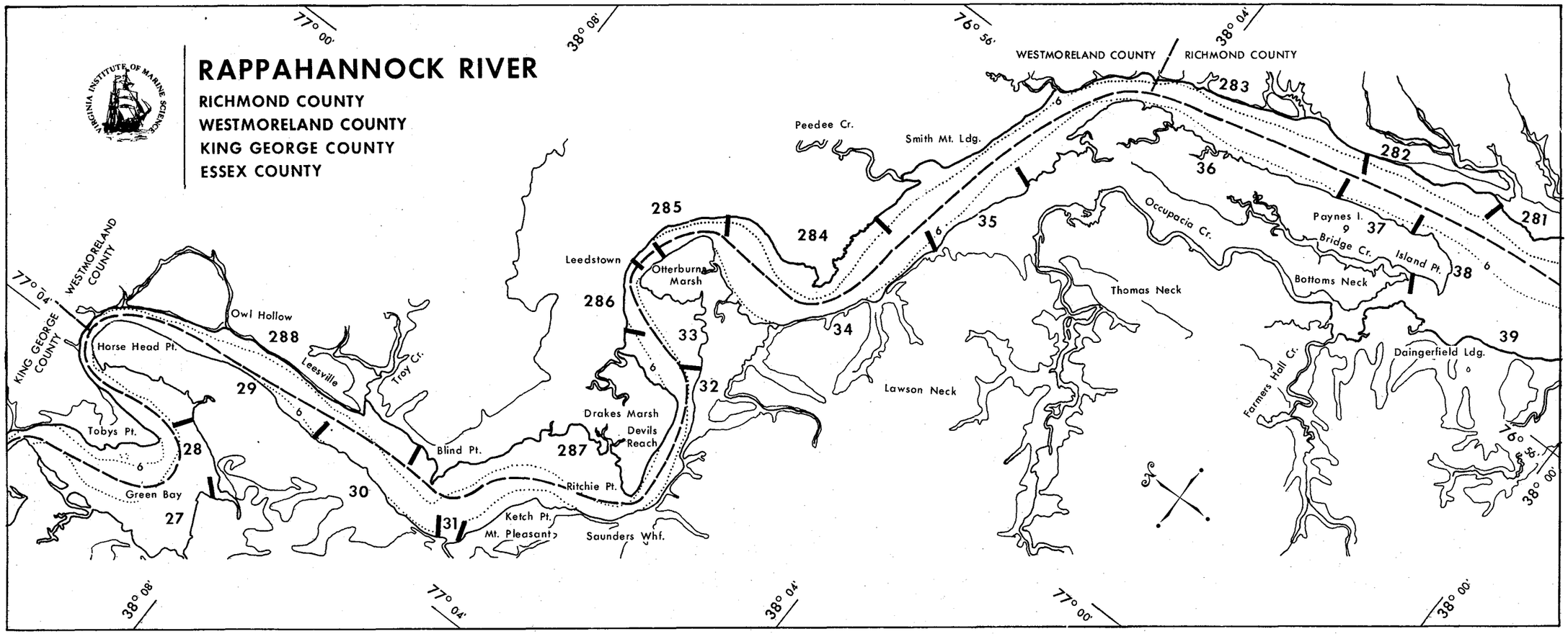
Millbank
Millbank Bar
Belle Grove
Port Conway
Goldenvale Cr.
Port Royal
Waverly
Gingoteague Cr.
Oaken Brow
Nanzatico Bay
Jetts Cr.
Old Woodlawn
Marsh Pt.
Cone Cr.
Long Pt.
Mud Folly Bend
KING GEORGE COUNTY
CAROLINE COUNTY
ESSEX COUNTY
Mill Cr.
Portobago
Portobago Bay
Portobago Cr.

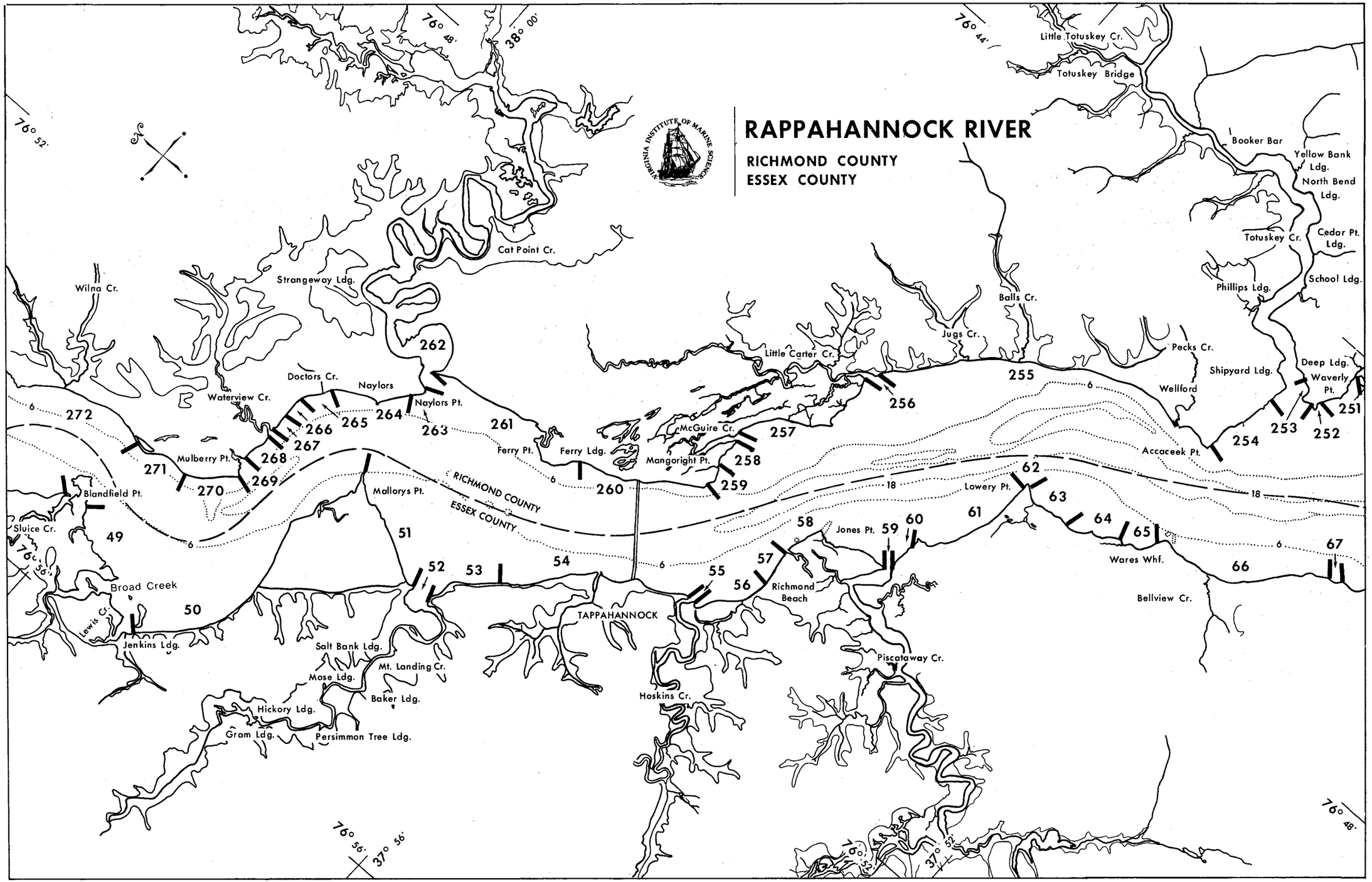
22
23
24
25
27

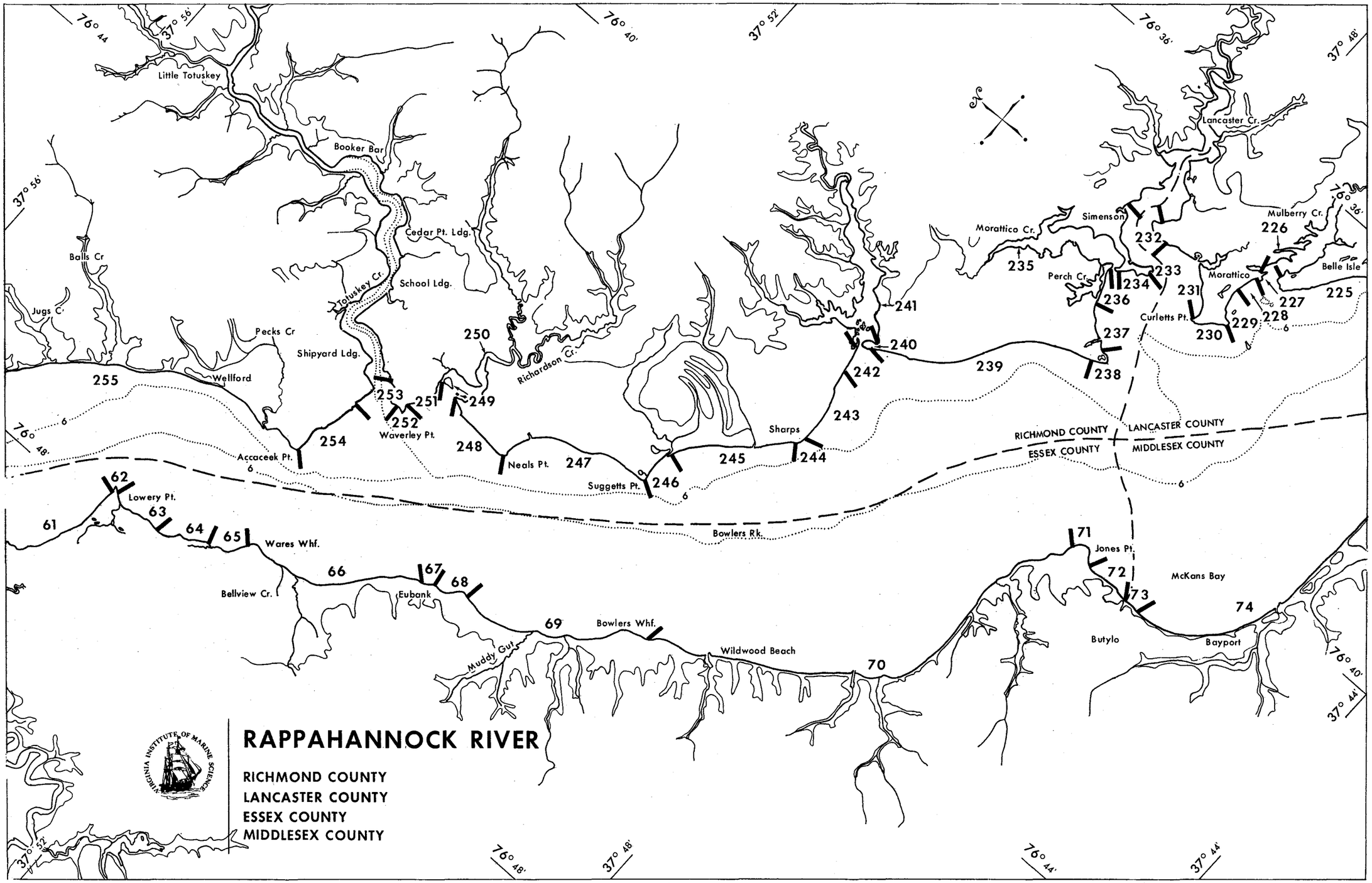
6

RAPPAHANNOCK RIVER

RICHMOND COUNTY
WESTMORELAND COUNTY
KING GEORGE COUNTY
ESSEX COUNTY

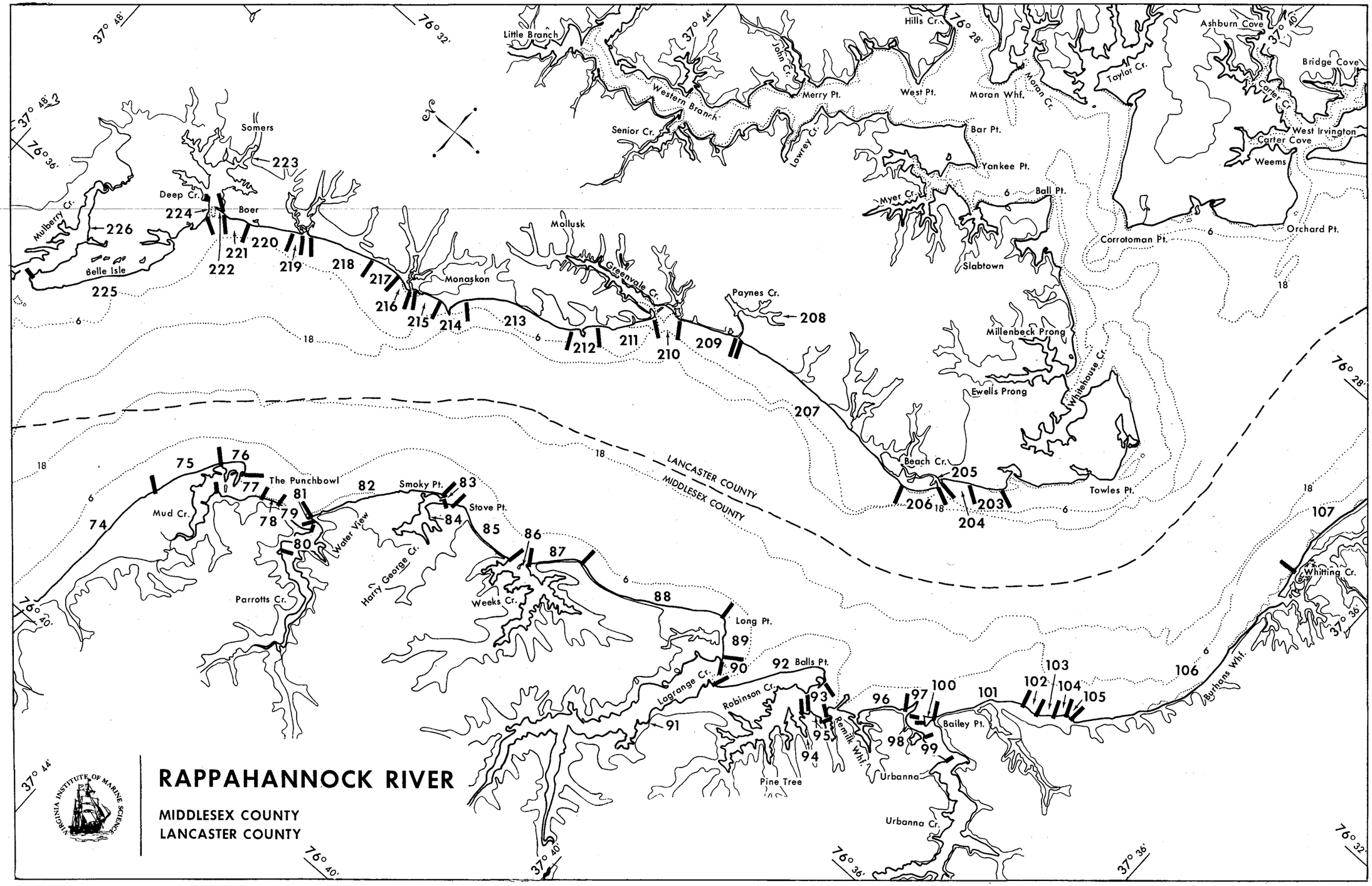



RAPPAHANNOCK RIVER
RICHMOND COUNTY
ESSEX COUNTY
VIRGINIA INSTITUTE OF MARINE SCIENCE
76° 52'
76° 48'
38° 00'
76° 44'
Little Totuskey Cr.
Totuskey Bridge
Booker Bar
Yellow Bank Ldg.
North Bend Ldg.
Totuskey Cr.
Cedar Pt. Ldg.
School Ldg.
Phillips Ldg.
Balls Cr.
Jugs Cr.
Pecks Cr.
Shipyard Ldg.
Deep Ldg.
Waverly Pt.
Wellford
Accaceek Pt.
Little Carter Cr.
McGuire Cr.
Mangoright Pt.
Ferry Pt.
Ferry Ldg.
Cat Point Cr.
Strangeway Ldg.
Wilna Cr.
Waterview Cr.
Doctors Cr.
Naylors
Naylors Pt.
Mulberry Pt.
Blandfield Pt.
Sluice Cr.
Broad Creek
Lewis Cr.
Jenkins Ldg.
Mallorys Pt.
RICHMOND COUNTY
ESSEX COUNTY
Salt Bank Ldg.
Mt. Landing Cr.
Mose Ldg.
Baker Ldg.
Hickory Ldg.
Gram Ldg.
Persimmon Tree Ldg.
TAPPAHANNOCK
Hoskins Cr.
Lowery Pt.
Jones Pt.
Richmond Beach
Piscataway Cr.
Wares Whf.
Bellview Cr.
76° 56'
37° 56'
76° 52'
37° 52'
76° 48'



RAPPAHANNOCK RIVER

RICHMOND COUNTY
LANCASTER COUNTY
ESSEX COUNTY
MIDDLESEX COUNTY



RAPPAHANNOCK RIVER

MIDDLESEX COUNTY
LANCASTER COUNTY

RAPPAHANNOCK RIVER

LANCASTER COUNTY

MIDDLESEX COUNTY

VIRGINIA INSTITUTE OF MARINE SCIENCE

37° 45'

37° 40'

37° 35'

76° 25'

76° 30'

Highland Lndg.

Warehouse Pt.

Fleets Bay Neck

Kilmarnock Wharf

Antipoison Neck

Palmer

Harpers Cr.

Antiposion Cr.

Mosquito Island

Mosquito Pt.

Mosquito Cr.

Grinels

Woods Cr.

Bush Park Cr.

Duck Pond

Parrott Island

Camps Mill Pond

Norris Prong

Quarter Cove

Browns Cr.

Punches Cove

Eastern Branch

Dunton Cove

Sams Cove

Eastern Branch

Sharon Church

Bridge Cove

IRVINGTON

Yopps Cove

West Irvington

Dead and Bones Cove

Cherry Pt.

Carter Cove

WEEMS

Orchard Pt.

John Neck

Moran Cr.

Taylors Cr.

Iberis

Bells Cr.

Hills Cr.

Moran Whf.

CORROTOMAN RIVER

Corrotoman Pt.

West Pt.

Bar Pt.

Ball Pt.

Yankee Pt.

Merry Pt.

Johns Cr.

Ottoman Whf.

Myer Cr.

Town Cr.

Slabtown

Millenbeck

Millenbeck Prong

Ewells Prong

Bertland

Towles Pt.

Whitehouse Cr.

Davis Cr.

Lowrey Cr.

Western Branch

Little Branch

Senior Cr.

Griffins Ldg.

Grey Pt.

Locklies

Locklies Cr.

Mill Cr.

Meachim Cr.

Whiting Cr.

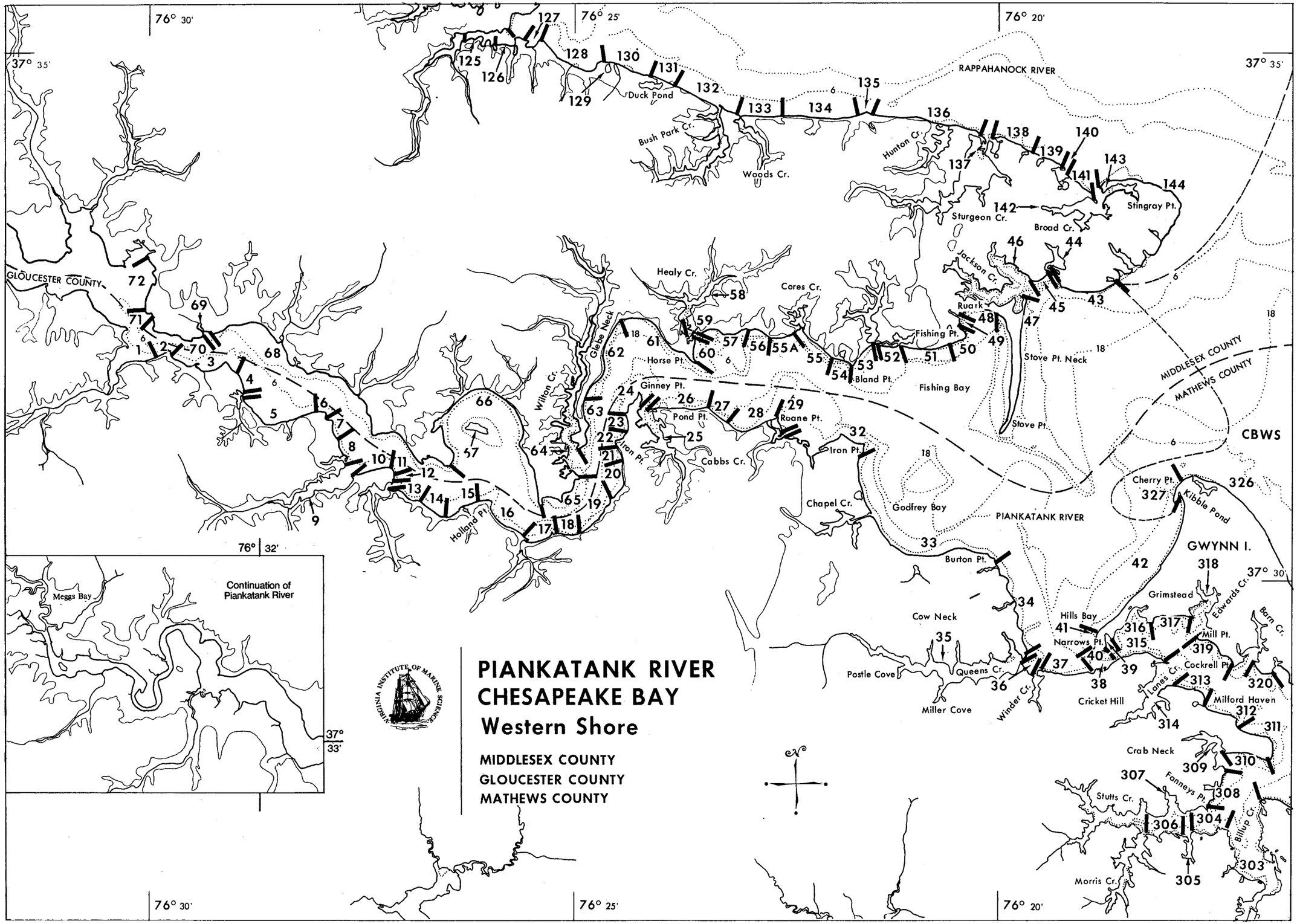
Cooper

Locust Hill

Burhan Whf.

LANCASTER COUNTY

MIDDLESEX COUNTY



PIANKATANK RIVER
CHESAPEAKE BAY
Western Shore

MIDDLESEX COUNTY
GLOUCESTER COUNTY
MATHEWS COUNTY

YORK RIVER

KING WILLIAM COUNTY
KING & QUEEN COUNTY
NEW KENT COUNTY
JAMES CITY COUNTY
GLOUCESTER COUNTY

VIRGINIA INSTITUTE OF MARINE SCIENCE

76° 45'
37° 30'
76° 40'
37° 25'

Burnt Mill Cr.
Mattaponi
Brookeshire
Bakers Cr.
Hockley Cr.
Goff Pt.
WEST POINT
KING WILLIAM COUNTY
Plum Pt.
Terrapin Pt.
NEW KENT COUNTY
Ware Cr.
Sycamore Lndg.
Poropotank River
Morris Bay
Poropotank Bay
KING & QUEEN COUNTY
Adams Cr.
GLOUCESTER COUNTY
Purtan Cr.
Purtan Bay
Bland Cr.
Borren Pt.
Allmondsville
JAMES CITY COUNTY
Christensons Corner
Skimino Cr.

122 121 120 119 118 117 116 115 114 113 112 111 110 109 108 107 106 105 104 103 101 100 102 99 98 97 10 A 10 9 8 7 6 5 4 3 2 1

18 6

YORK RIVER

GLOUCESTER COUNTY
YORK COUNTY

VIRGINIA INSTITUTE OF MARINE SCIENCE

76° 35'
76° 30'
37° 20'
37° 15'
76° 40'
37° 10'

Allmondsville
Jones Cr.
Aberdeen Cr.
Clay Bank
Carter Cr.
Cedarbush Cr.
Timberneck Cr.
Gum Pt.
Green Pt.
Poplar Cr.
CATLETT I.
MUMFORT I.
CARMINES I.
Gloucester Pt.
GLOUCESTER COUNTY
YORK COUNTY
Sandy Pt.
Stony Pt.
Ferry Pt.
Skimino Cr.
Queens Cr.
King Cr.
Penniman Spit
Poley Pt.
Felgates Cr.

97 96 95 94 93 92 91 90 89 88 87 86 85 84 83 82 81 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 65 A 24 23 22 21 20 19 18 17 16 15 14 13 12 11

18 6

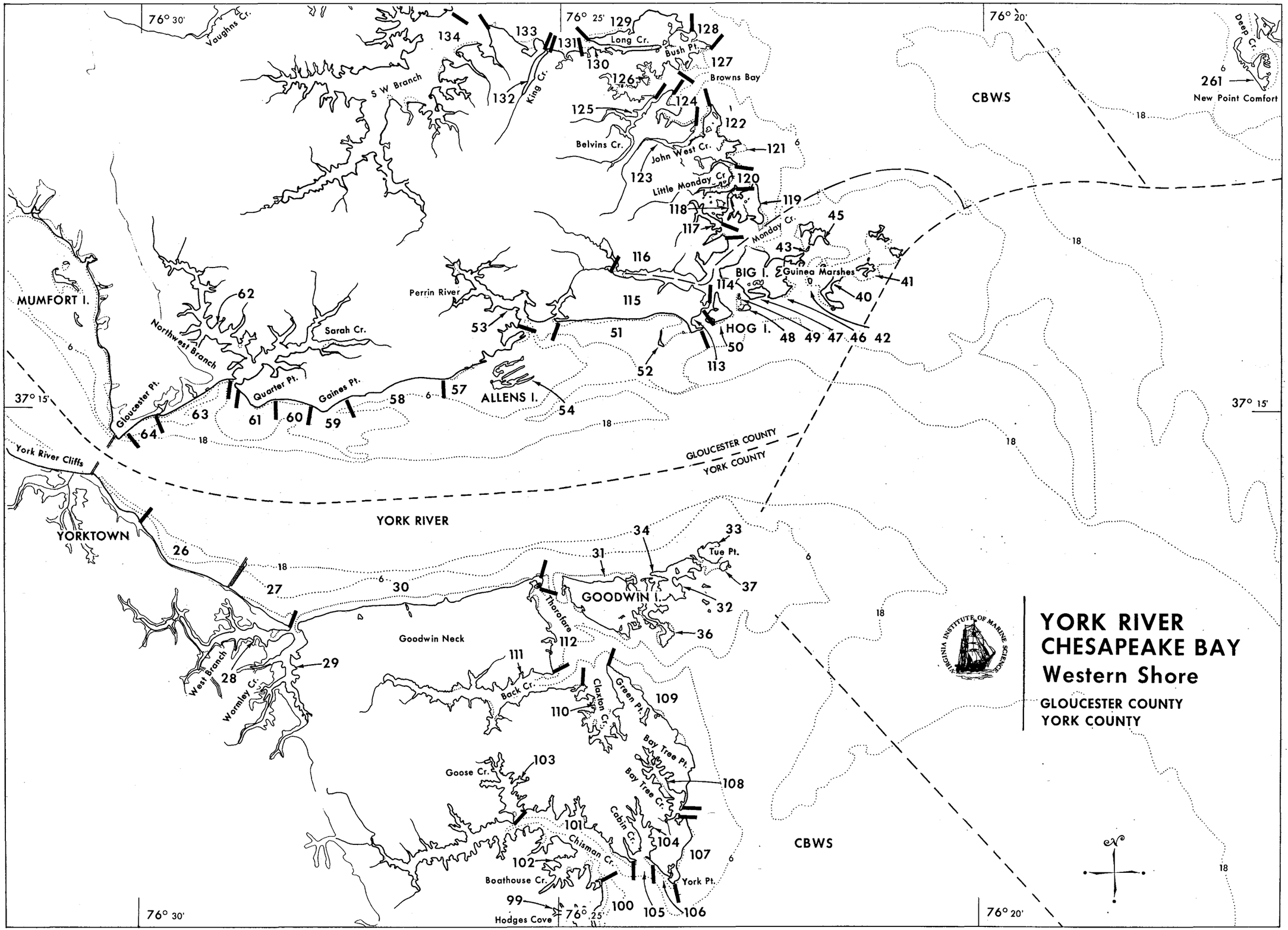
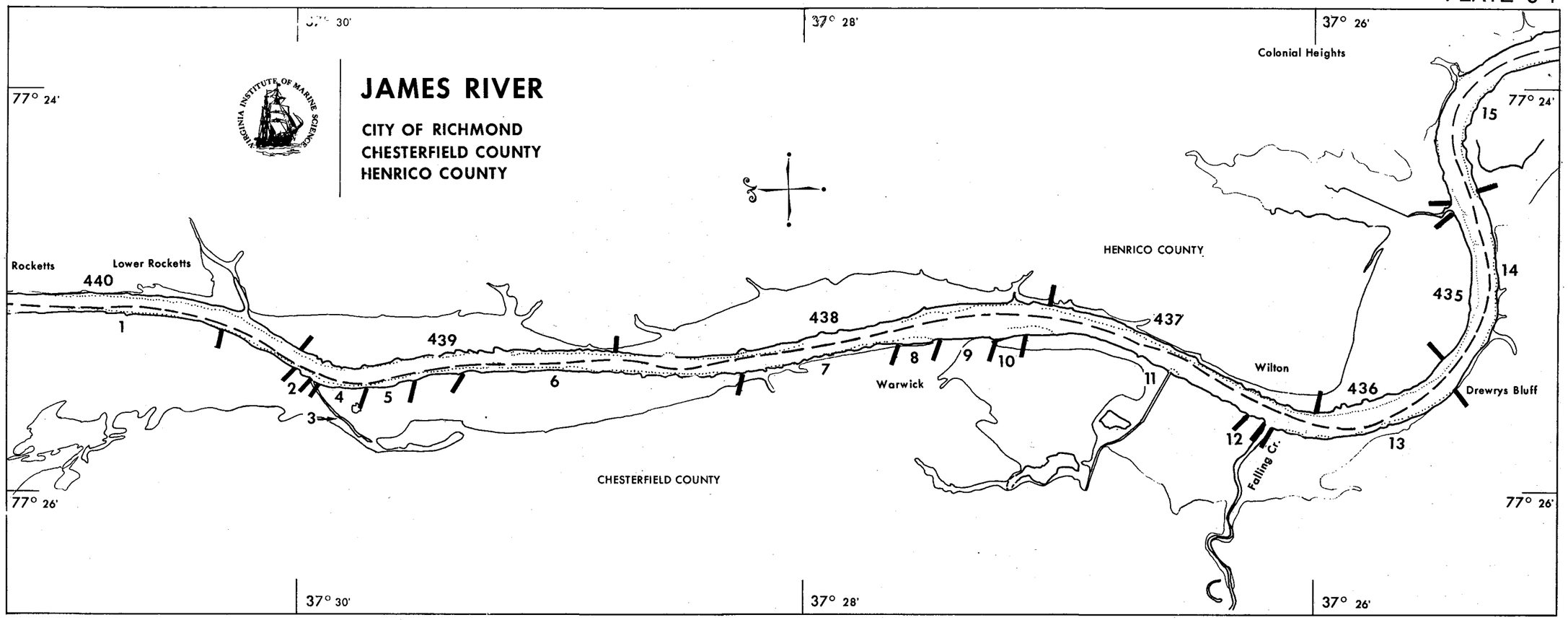

76° 30'
76° 25'
76° 20'
37° 15'
Vaughns Cr.
S W Branch
King Cr.
Long Cr.
Bush Pt.
Browns Bay
Belvins Cr.
John West Cr.
Little Monday Cr.
Monday Cr.
Deep Cr.
261
New Point Comfort
CBWS
MUMFORT I.
Northwest Branch
Sarah Cr.
Perrin River
BIG I.
Guinea Marshes
HOG I.
Gloucester Pt.
Quarter Pt.
Gaines Pt.
ALLENS I.
York River Cliffs
GLOUCESTER COUNTY
YORK COUNTY
YORK RIVER
YORKTOWN
GOODWIN I.
Tue Pt.
Goodwin Neck
Thorofare
West Branch
Wormley Cr.
Back Cr.
Claxton Cr.
Green Pt.
Bay Tree Pt.
Bay Tree Cr.
Goose Cr.
Cabin Cr.
Chisman Cr.
Boathouse Cr.
York Pt.
Hodges Cove
CBWS
YORK RIVER
CHESAPEAKE BAY
Western Shore
GLOUCESTER COUNTY
YORK COUNTY
VIRGINIA INSTITUTE OF MARINE SCIENCE

PLATE J-1


37° 30'
37° 28'
37° 26'
77° 24'
77° 26'
JAMES RIVER
CITY OF RICHMOND
CHESTERFIELD COUNTY
HENRICO COUNTY
Colonial Heights
Rocketts
Lower Rocketts
440
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438
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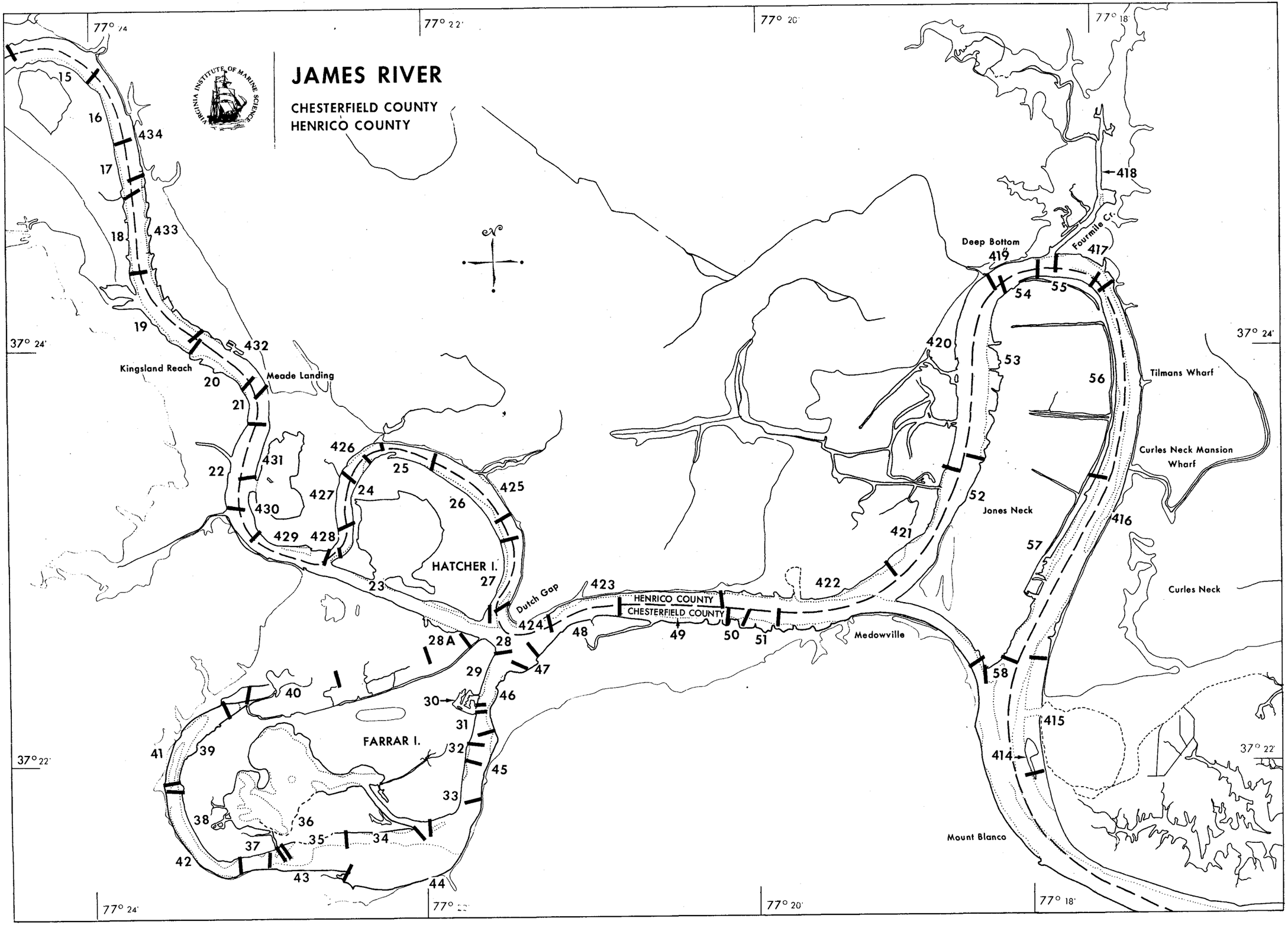
437
Warwick
Wilton
436
12
13
Falling Cr.
435
14
15
Drewrys Bluff
HENRICO COUNTY
CHESTERFIELD COUNTY


JAMES RIVER
CHESTERFIELD COUNTY
HENRICO COUNTY
VIRGINIA INSTITUTE OF MARINE SCIENCE
77° 24'
77° 22'
77° 20'
77° 18'
37° 24'
37° 22'
Kingsland Reach
Meade Landing
HATCHER I.
FARRAR I.
Dutch Gap
HENRICO COUNTY
CHESTERFIELD COUNTY
Medowville
Deep Bottom
Fourmile Cr.
Tilmans Wharf
Curles Neck Mansion Wharf
Jones Neck
Curles Neck
Mount Blanco
15
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434

JAMES RIVER

CHARLES CITY COUNTY
CHESTERFIELD COUNTY
HENRICO COUNTY
PRINCE GEORGE COUNTY

37° 22'
37° 20'
37° 18'
77° 14'
77° 16'
77° 18'

Haxall
Hardens Bluff
Turkey I. Cr.
TURKEY I.
Upper Shirley
Shirley
EPPES I.
Eppes Cr.
Hopewell Airport
Jordan Pt.
Packs Pt.
Bailey Cr.
Presque Isle
Pt. Bremo
Curles Swamp Cr.
Bermuda Hundred
CHARLES CITY COUNTY
PRINCE GEORGE COUNTY
CHESTERFIELD COUNTY
HOPEWELL
Johnson Cr.

400 399 65 393 67 A 392 391 390 389 388 387 386 385 384 383 382 381 380 379 378
401 402 64 63 66 403 62 404 405 406 411 410 409 407 408 412 413 61 59 60 67 68 71 69 72 73 70 74 76 77 78 121 122 123 124 125 131 130 129 128 126 127

Introduction to Computer Science

Lecture 1: Introduction to Computer Science

Instructor: Ahmed Ibrahim

Slides adapted from Harvard CS50

Agenda

- Welcome and Course Overview
- What is Computer Science?
- Problem Solving
- Algorithms
- Pseudocode
- Flowcharts
- Introduction to Scratch

Welcome!

- Welcome to Introduction to Computer Science
- This course is designed for students with no prior programming experience
- We will learn how to think like computer scientists
- By the end of this course, you will be able to write simple programs

---

Course Overview

- Lectures: Tuesday and Thursday, 10:00 AM – 11:30 AM
- Labs: Friday, 2:00 PM – 4:00 PM
- Office Hours: Monday, 3:00 PM – 5:00 PM
- Textbook: "Introduction to Computer Science" by John Smith
- Assignments: 5 programming assignments and 1 final project
- Grading: 40% assignments, 20% midterm, 30% final exam, 10% participation

---

What is Computer Science?

- Computer Science is the study of computers and computational systems
- It is not just about programming
- It is about problem solving, algorithms, and data structures
- Computer Science is used in many fields, such as medicine, finance, and entertainment

---

Problem Solving

- Problem solving is the process of finding a solution to a problem
- The first step in problem solving is to understand the problem
- The second step is to devise a plan
- The third step is to carry out the plan
- The fourth step is to look back and evaluate the solution

Algorithms

- An algorithm is a step-by-step procedure for solving a problem
- Algorithms can be written in many languages, such as English, pseudocode, or a programming language
- Algorithms can be represented using flowcharts
- Algorithms can be analyzed for their efficiency

Pseudocode

- Pseudocode is a way of writing algorithms in a language that is similar to English
- Pseudocode is not a programming language
- Pseudocode is used to describe algorithms in a way that is easy to understand
- Pseudocode is used to plan programs before they are written

---

Flowcharts

- Flowcharts are a way of representing algorithms using diagrams
- Flowcharts use symbols to represent different types of steps
- Flowcharts use arrows to show the flow of control
- Flowcharts are used to plan programs before they are written

---

Introduction to Scratch

- Scratch is a visual programming language
- Scratch is used to create interactive stories, games, and animations
- Scratch is used to learn the basics of programming
- Scratch is used to create projects that can be shared with others

---

Scratch Demo

- Let's create a simple program in Scratch
- We will create a program that makes a cat move around the screen
- We will create a program that makes a cat say "Hello, world!"
- We will create a program that makes a cat change its costume

---

Scratch Exercise

- Create a program that makes a cat move around the screen
- Create a program that makes a cat say "Hello, world!"
- Create a program that makes a cat change its costume
- Share your projects with the class

Summary

- Welcome and Course Overview
- What is Computer Science?
- Problem Solving
- Algorithms
- Pseudocode
- Flowcharts
- Introduction to Scratch

Next Lecture

- Next lecture: Variables and Data Types
- Please read Chapter 2 of the textbook before the next lecture
- Please complete the Scratch exercise before the next lecture

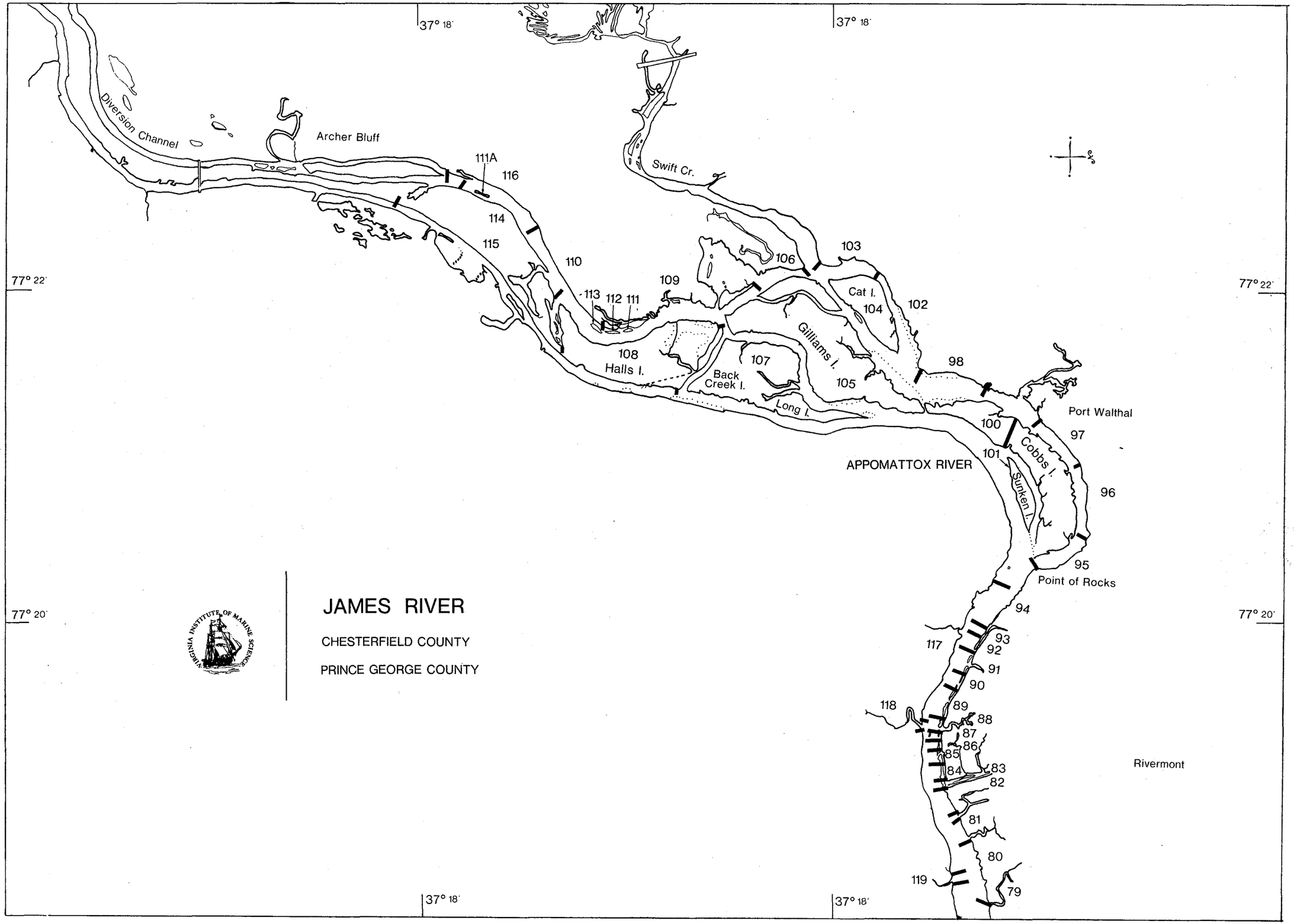
---

Questions?

- Any questions?
- Please ask questions during the lecture
- Please ask questions during office hours
- Please ask questions on the course forum

Thank You!

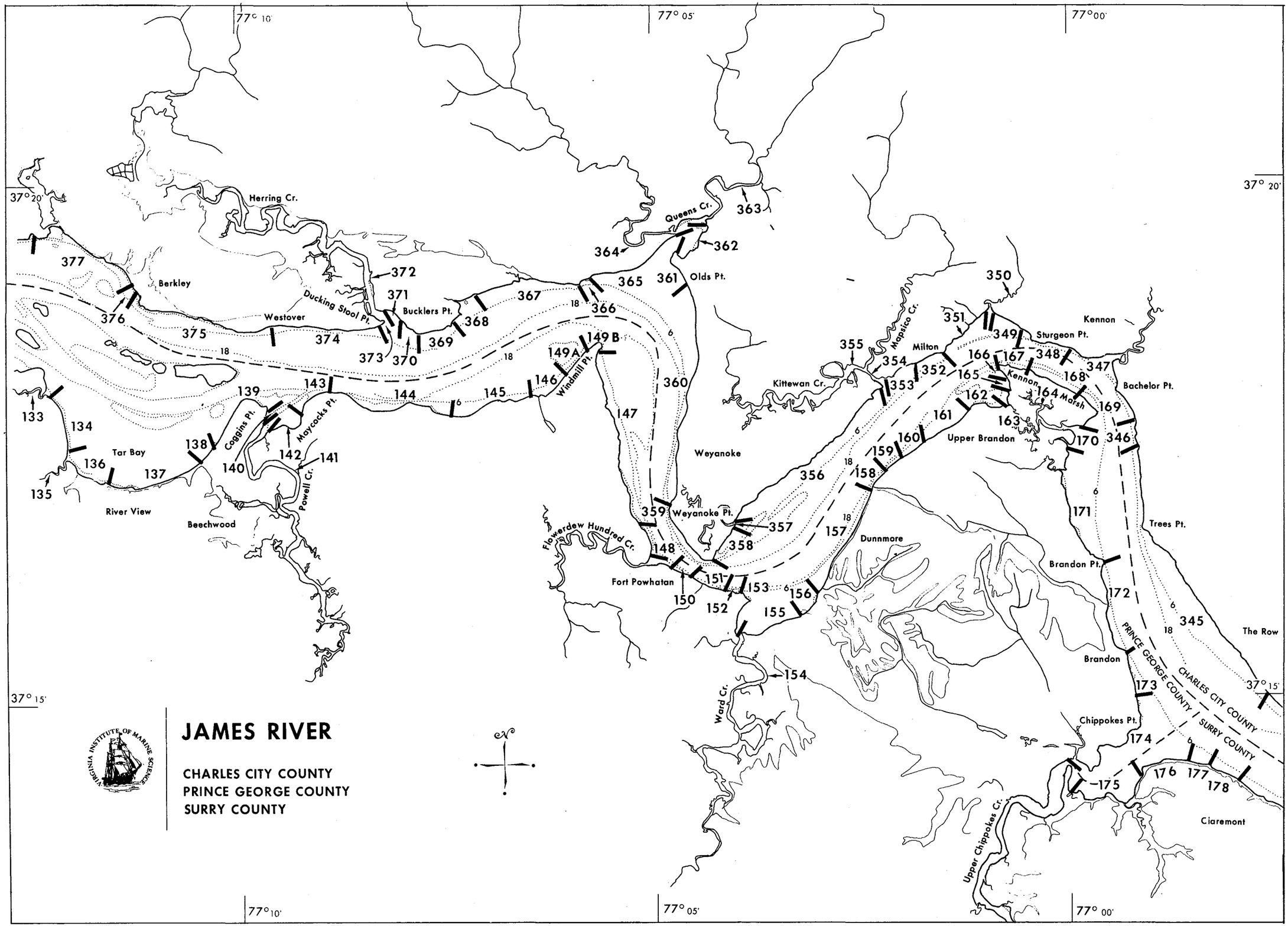
- Thank you for attending the lecture
- See you next lecture!
- Have a great day!



JAMES RIVER

CHESTERFIELD COUNTY

PRINCE GEORGE COUNTY


77° 10'
77° 05'
77° 00'
37° 20'
37° 15'
Herring Cr.
Berkley
Westover
Ducking Stool Pt.
Bucklers Pt.
Queens Cr.
Olds Pt.
Windmill Pt.
Weyanoke
Weyanoke Pt.
Tar Bay
Coggins Pt.
Maycocks Pt.
Powell Cr.
River View
Beechwood
Flowerdew Hundred Cr.
Fort Powhatan
Ward Cr.
Upper Chippokes Cr.
Mapsico Cr.
Milton
Kennon
Sturgeon Pt.
Kittewan Cr.
Kennon Marsh
Bachelor Pt.
Upper Brandon
Dunnmore
Brandon Pt.
Trees Pt.
Brandon
The Row
Chippokes Pt.
Ciaremont
PRINCE GEORGE COUNTY / SURRY COUNTY
CHARLES CITY COUNTY
JAMES RIVER
CHARLES CITY COUNTY
PRINCE GEORGE COUNTY
SURRY COUNTY
VIRGINIA INSTITUTE OF MARINE SCIENCE

JAMES RIVER

CHARLES CITY COUNTY
JAMES CITY COUNTY
SURRY COUNTY

37°20'
37°15'
76°50'
76°55'
Glass House Pt.
Pleasant Pt.
Scotland
Grays Cr.
Swanns Pt.
Mt Pleasant
Barrets Pt.
Gordons Cr.
Nettles Cr.
Blackstump Cr.
Yarmouth Cr.
Shipyard Cr.
Lobbs Cr.
Shields Pt.
Old Neck
Sunken Marsh
Big Marsh Pt.
Mt. Airy
Blank Pt.
Pig Pt.
Ferry Pt.
CHICKAHOMINY RIVER
CHARLES CITY COUNTY
JAMES CITY COUNTY
SURRY COUNTY
Morris Cr.
Tomahund Cr.
Daring Pt.
Dancing Pt.
Guilford Heights
Sunken Meadow Beach
Sunken Meadow Pond
Sandy Pt.
Tettington
Sloop Pt.
The Row
307
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309 A
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JAMES RIVER

SURRY COUNTY
JAMES CITY COUNTY
ISLE OF WIGHT COUNTY
CITY OF NEWPORT NEWS
(WARWICK COUNTY)

VIRGINIA INSTITUTE OF MARINE SCIENCE

286 287 288 289 290 285 282 281 284 283 280 Fort Eustis 279 291 292 293 278 277 276 275 274 273 272 271 Swash Hole 266 267 268 269 270 295 294 296 297 298 299 300 301 302 303 197 198 199 200 201 196 194 195 193 192 191 190 189 188 202 203

Skiffes Cr.
WARWICK RIVER
MULBERRY I.
Mulberry Pt.
Marshy Pt.
Swash Hole Islands
JAMES CITY COUNTY
SURRY COUNTY
CITY OF NEWPORT NEWS (WARWICK COUNTY)
ISLE OF WIGHT COUNTY
Hog Pt.
HOG I.
College Cr.
Gravel Neck
Lawnes Pt.
Lawnes Neck
Lawnes Cr.
Lower Chippokes Cr.
Tylers Beach
Rushmere
Burwell Bay
Mill Cr.
The Thorofare
Black Pt.
JAMESTOWN I.
Lower Pt.
Jamestown
Church Pt.
Chestnut Bluffs
Pleasant Pt.

76°35' 37°10' 76°45' 37°05'

JAMES RIVER

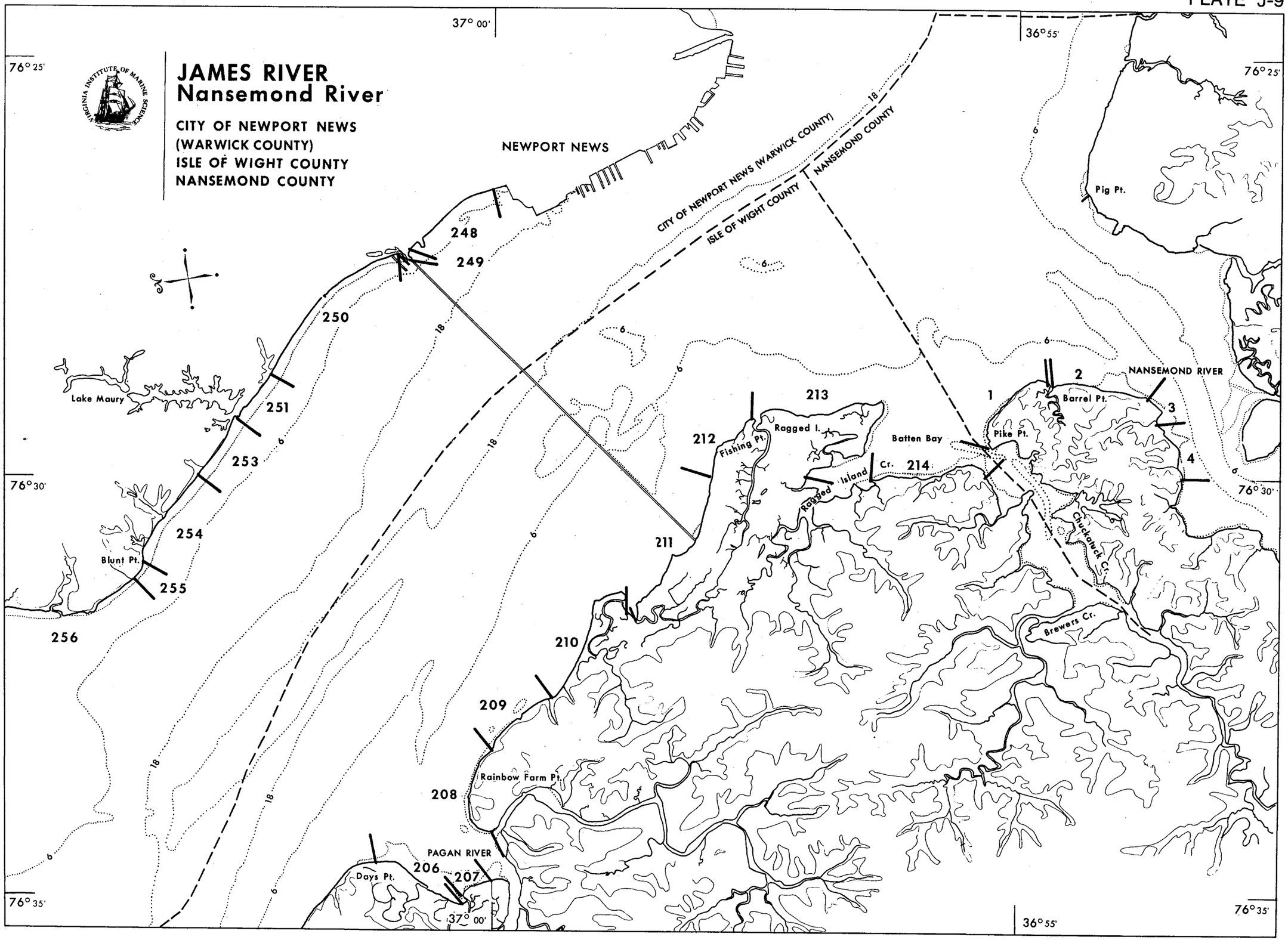
CITY OF NEWPORT NEWS
(WARWICK COUNTY)
ISLE OF WIGHT COUNTY

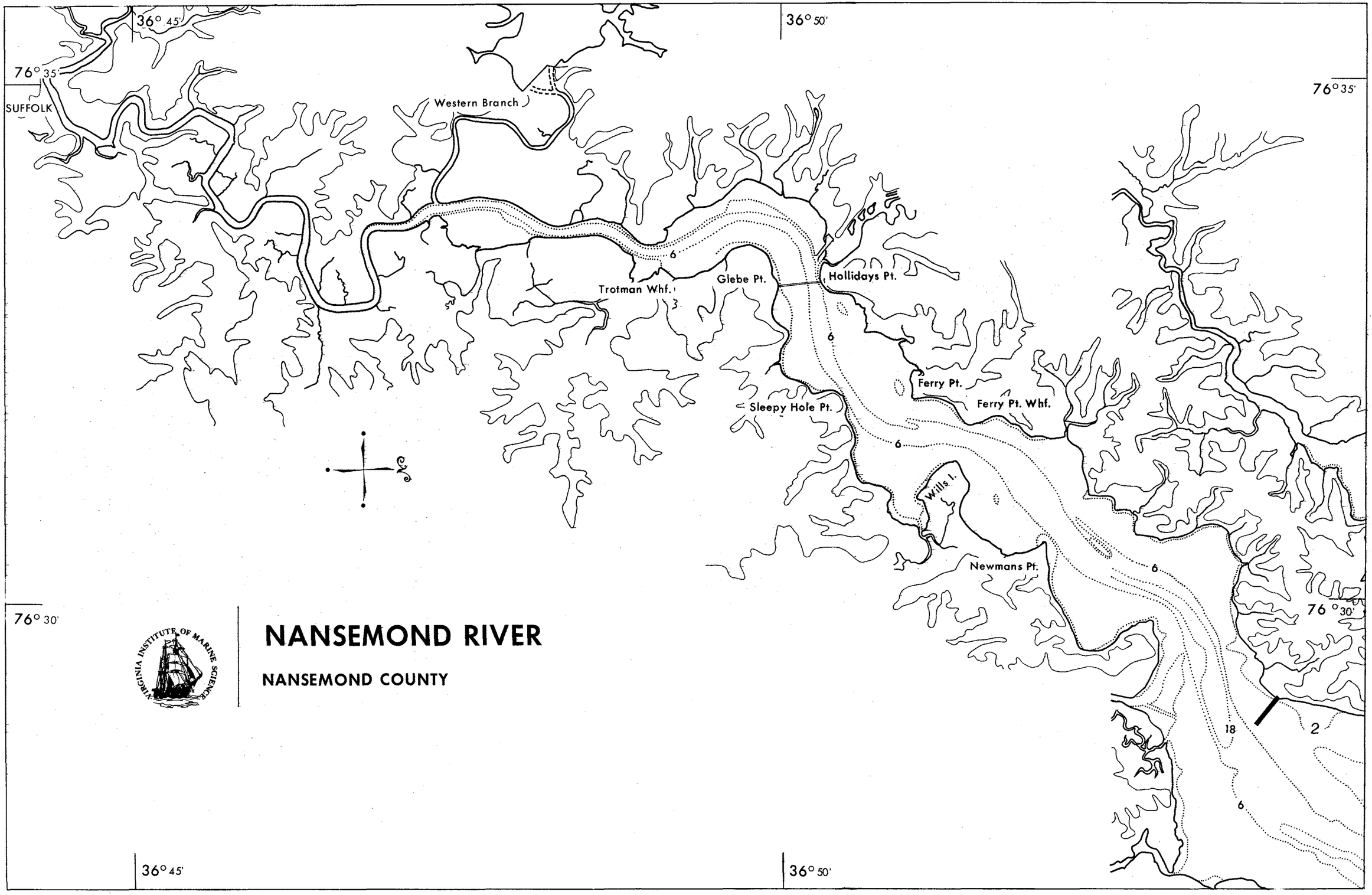
VIRGINIA INSTITUTE OF MARINE SCIENCE

76° 35'
76° 30'
37° 05'
37° 00'
76° 40'
36° 55'

259
WARWICK RIVER
Menchville
Deep Cr.
258
257
260
261
262
MULBERRY I.
Lands End
Jail Cr.
263
256
252
Lake Maury
Blunt Pt.
255
254
253
251
250
249
248
271
266
267
268
270
269
265
264
6
18
CITY OF NEWPORT NEWS (WARWICK COUNTY)
ISLE OF WIGHT COUNTY
205
Days Pt.
206
207
208
209
210
211
212
Fishing Pt.
213
Ragged I.
Ragged Island Cr.
214
Rainbow Farm Pt.
Burwell Bay
Pagan River
Chalmers Pt.

PLATE J-9


JAMES RIVER
Nansemond River
CITY OF NEWPORT NEWS
(WARWICK COUNTY)
ISLE OF WIGHT COUNTY
NANSEMOND COUNTY
NEWPORT NEWS
CITY OF NEWPORT NEWS (WARWICK COUNTY)
ISLE OF WIGHT COUNTY
NANSEMOND COUNTY
Lake Maury
Blunt Pt.
Pig Pt.
Barrel Pt.
Pike Pt.
Batten Bay
Ragged I.
Fishing Pt.
Ragged Island Cr.
Chuckatuck Cr.
Brewers Cr.
Rainbow Farm Pt.
Days Pt.
PAGAN RIVER
NANSEMOND RIVER
1
2
3
4
206
207
208
209
210
211
212
213
214
248
249
250
251
253
254
255
256
37° 00'
36° 55'
76° 25'
76° 30'
76° 35'



NANSEMOND RIVER

NANSEMOND COUNTY

References

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