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## Distribution of Submerged Aquatic Vegetation in the Chesapeake Bay and Tributaries - 1985

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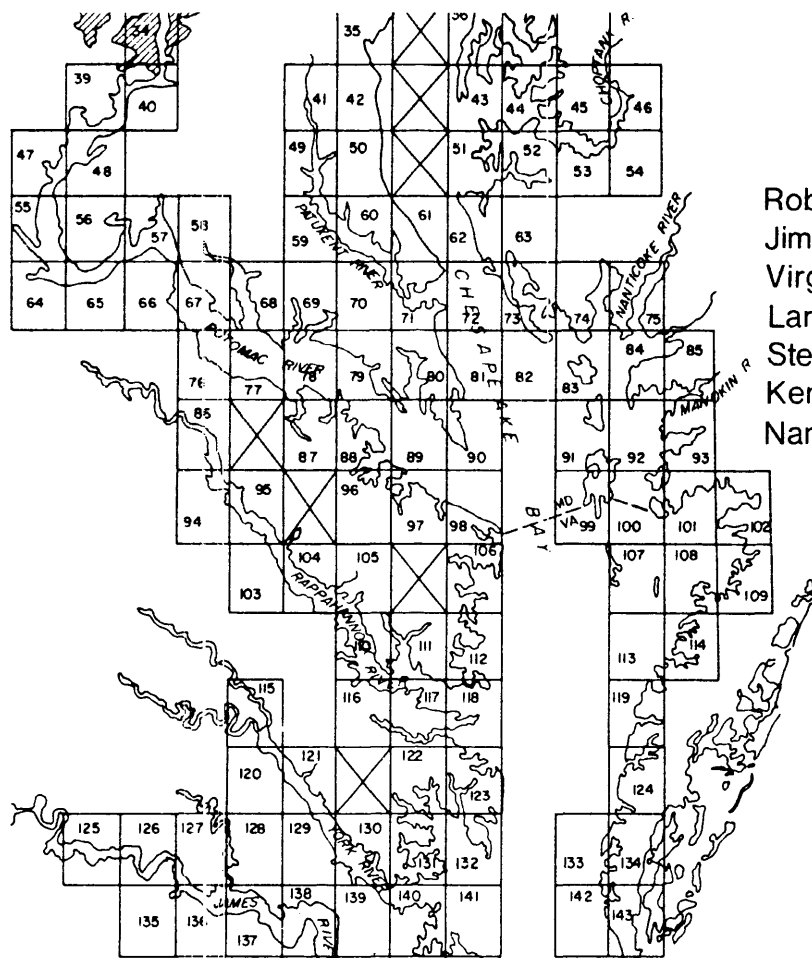
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Stephen Hodges  
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Distribution of Submerged Aquatic Vegetation in  
the Chesapeake Bay and Tributaries - 1985

by

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Acknowledgement would not be complete without high commendation for the citizens and Maryland charterboat captains who took part in an unusual pilot program to provide "groundtruthing" of SAV beds to be used in conjunction with interpretation of the 1985 photography.

The Citizens' Program for the Chesapeake Bay and the Chesapeake Bay Foundation, together with the U.S. Fish and Wildlife Service, organized nearly 150 citizens to report locations of grass beds around the Bay.

In addition, about fifteen members of the Maryland Charterboat Association, funded by Maryland DNR, participated in the ground truthing program and contributed valuable information on location of grassbeds. The entire 1985 program, though arranged on relatively short notice, promised great potential benefits (from both informational and participational standpoints) that an expanded 1986 ground truthing program was organized.

There are certain people who have made a project like this a real possibility. In addition, the production of such a report required the dedication of numerous technicians, artists and photographers. The following people deserve a note of thanks: Bert Brun, U.S. Fish and Wildlife Service (F&WS); Frank Dawson, Maryland Department of Natural Resources (Md.DNR); Woody Francis, Baltimore Corps of Engineers (COE); Michelle Feely, Mary Jo Shackelford, Harold Burrell, Kay Stubblefield, Sylvia Motley, Billy Jenkins, Adam Frisch and Maxine Butler, Virginia Institute of Marine Science (VIMS); Rich Batiuk, EPA Chesapeake Bay Program (USEPA-CBP); Ann Pesiri Swanson, Chesapeake Bay Foundation (CBF); Janet Hardy Harvey, Citizens Program for the Chesapeake Bay (CPCB); Stan Kollar, Harford Community College (HCC); Teresa Peters, Danny Elliot, Marianne Werz, Ernie Stone, Kristen Koehler, Evan Crow, Tom Crow, and John Brown, the Bionetics Corporation; Court Stevenson, University of Maryland Horn Point Laboratory (HPL). Catherine Carter, Walter Rhodes, William Perry, Jr., and David Wineholt should be recognized for conducting the field work associated with the Md.DNR ground survey.

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## ABSTRACT

In 1985, color aerial photography at a scale of 1:12,000 was used to map SAV in the Maryland section of the Chesapeake Bay, while black and white photography at a scale of 1:24,000 was used to map the Virginia section. Both areas had been photographed with 1:24,000 color photography in 1984. SAV beds detected on the aerial photography were traced onto mylar USGS topographic quadrangles, and areas of each bed were then digitized. Data were reported in square meters for each quadrangle. Ground information was available from USGS, Md.DNR, University of Maryland, Horn Point Laboratory, Harford Community College and VIMS. Citizen support via the Chesapeake Bay Foundation and Citizens Program for the Chesapeake Bay as well as Maryland's Charterboat Association via Maryland's DNR Watermen's Assistance Program provided additional ground support.

A total of 19,390 hectares of SAV was mapped in 1985, a 26% increase over that reported in 1984 (15,400 hectares). The Upper Bay zone had 3,025 hectares, a decrease of 4.5% (15.6% of the total SAV in the bay) from that reported in 1984. Sixty-six percent of the vegetation was located on the Susquehanna Flats. The Middle Bay zone had 4986 hectares of SAV (25.7% of the total SAV in the bay), which represents a 389% increase from that reported in 1984). Most of this increase was reported from Eastern Bay, Choptank River and the Middle Eastern Shore section. SAV beds in those areas of the main stem bay that showed the greatest increase consisted primarily of Ruppia maritima. The Upper Potomac River section continued to show improvement in SAV abundance with 1440 hectares in 1985. Although Hydrilla verticillata is the dominant species, fourteen other species coexist with H. verticillata. The Lower Bay zone had 11,379 hectares (58.7%

of the total SAV in the bay), an amount similar to that reported in 1984. Sixty-eight percent of the SAV in this zone is found along the bayside of the eastern shore, principally between Tangier and Smith Islands and the mouths of Cherrystone Inlet, Hungars Creek, Mattawoman Creek, Pungoteague Creek, Craddock Creek and Chesconessex Creek. Western shore SAV beds are concentrated at the mouth of York River, Plum Tree Island, Back River and along the shoreline of the Mobjack Bay.



## SECTION 1

### INTRODUCTION

Communities of submerged aquatic vegetation (SAV) are an integral part of the Chesapeake Bay ecosystem. They provide an important habitat for many species which use SAV either as a food source or as protection from predators, e.g., a nursery. They reduce currents and baffle waves, allowing for deposition of suspended material and enhanced water clarity. In addition, they bind sediments with their roots and rhizomes to prevent erosion of the underlying material. They are important in nutrient cycling both through the absorption and release of nitrogen and phosphorus (Thayer et al., 1975; Kemp et al., 1984; Orth et al., 1984; Ward et al., 1984).

The interest in SAV communities generated in the 1970's because of their dramatic baywide decline has continued to the 1980's. A key aspect of the research programs recently being funded in both Maryland and Virginia entails an annual monitoring of all SAV beds in the Chesapeake Bay and its tributaries.

The first baywide aerial survey of SAV beds was conducted in 1978 and resulted in two separate reports for the SAV distribution in Virginia and Maryland (Orth et al., 1979; Anderson and Macomber, 1980). Between 1979 and 1984, a number of field and aerial surveys were conducted by various state agencies in sections of the bay, but there was no single attempt to conduct or coordinate a baywide effort to monitor the SAV distribution.

The first coordinated effort to map all the SAV beds in the bay was attempted in 1984. In addition to the aerial surveys, any ground survey information available for 1984 was included to provide as detailed a picture as possible of the distribution of SAV that year (Orth et al., 1985).

Although some problems were experienced in acquiring the photography (poor weather, airspace restrictions, etc.), almost all areas were covered with photography. Ground surveys included efforts by the U.S. Geological Survey (USGS) and the Northern Virginia Community College (NVCC) in the Potomac River, Maryland's Department of Natural Resources (DNR) SAV station survey of the entire upper bay, the Virginia Institute of Marine Science (VIMS) surveys in the lower bay, and several sectional surveys conducted by Harford Community College (HCC) and the University of Maryland's Horn Point Laboratory (HPL).

A coordinated aerial photographic survey for SAV adjacent to the shoreline of the Chesapeake Bay and its tributaries was repeated in 1985. Ground survey information was available from USGS, DNR, HPL, HCC and VIMS. In addition to these scientific surveys, the Chesapeake Bay Foundation (CBF) and the Citizens Program for the Chesapeake Bay (CPCB) solicited help from citizen volunteers to help locate SAV beds and provide ground truth for the aerial photography. Maryland's Charterboat Association also participated in the SAV ground truthing through funding provided by Maryland's DNR Watermen's Assistance Program.

This final report again represents a unique effort to combine all the SAV information for 1985 into one cohesive baywide product.

SECTION 2  
SAV SPECIES

Ten species of submerged aquatic vegetation are commonly found in the Chesapeake Bay and its tributaries. Zostera marina (eelgrass) is dominant in the lower reaches of the bay. Myriophyllum spicatum (water milfoil), Potamogeton pectinatus (sago pondweed), P. perfoliatus (redhead grass), Zannichelia palustris (horned pondweed), Vallisneria americana (wild celery), Elodea canadensis (common elodea), Ceratophyllum demersum (coontail) and Najas guadalupensis (southern naiad) are less tolerant of high salinities and are found in the middle and upper reaches of the bay (Stevenson and Confer, 1978; Orth et al., 1979; Orth and Moore, 1981, 1983). Ruppia maritima (widgeongrass) is tolerant of a wide range of salinities and is found from the bay mouth to the Susquehanna Flats. Approximately ten other species are found less commonly and are present primarily in the middle and upper reaches of the bay and the rivers (Appendix A). One species presently found in the Potomac River and Susquehanna Flats, Hydrilla verticillata (hydrilla), has the potential for becoming one of the dominant species found there (Orth and Moore, 1984; Allaire et al., 1985; Rybicki et al., 1985). Data in this report confirm the rapid spread of H. verticillata in the Potomac River.

## SECTION 3

### METHODS

#### Aerial Photography

Aerial photography was the principal method used to assess the distribution of SAV in the Chesapeake Bay and its tributaries in the 1985 study. Predetermined flight lines for photographing areas that either had SAV or could potentially have SAV (i.e., all areas where water depths were less than 2 m at mean low water) were drawn on 1:250,000 scale USGS maps to ensure both complete coverage of SAV beds and inclusion of land features as control points for mapping accuracy (Figs. 1 and 2). The large number of flight lines in Maryland compared to Virginia corresponded to the different scale at which the photography was flown in the upper bay. In addition, additional flight lines were added in Maryland for emergent wetlands mapping. Some areas in Virginia were not included because of the known lack of SAV in those areas. All the shoreline areas in Maryland were photographed in 1985.

The general guidelines used for mission planning and execution are given in Table 1. These guidelines, which address tidal stage, plant growth, sun elevation, water and atmospheric transparency, turbidity, wind, sensor operation and plotting, allowed for acquisition of photographs under near-optimal conditions. The guidelines are critical because significant distortion of any one item could significantly decrease the ability to detect the SAV or to interpret the photography properly as to the presence or absence of SAV.



FLIGHT LINE INDEX FOR 1985  
MARYLAND SUBMERGED AQUATIC  
VEGETATION AND EASTERN SHORE  
COLOR AERIAL PHOTOGRAPHY  
SCALE 1:12,000

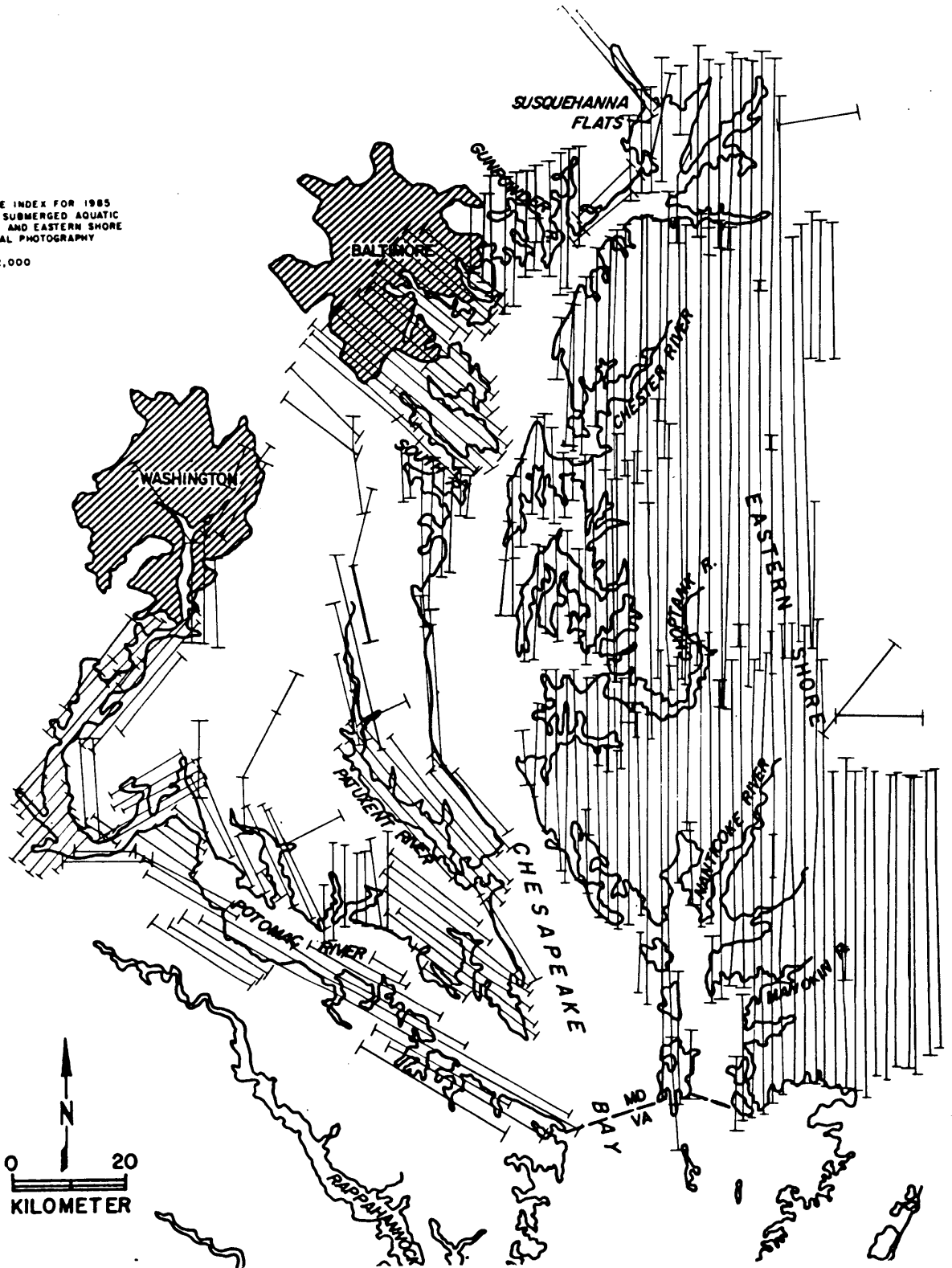


Figure 1. Flight lines used for acquisition of aerial photographs of SAV in 1985 for Maryland.

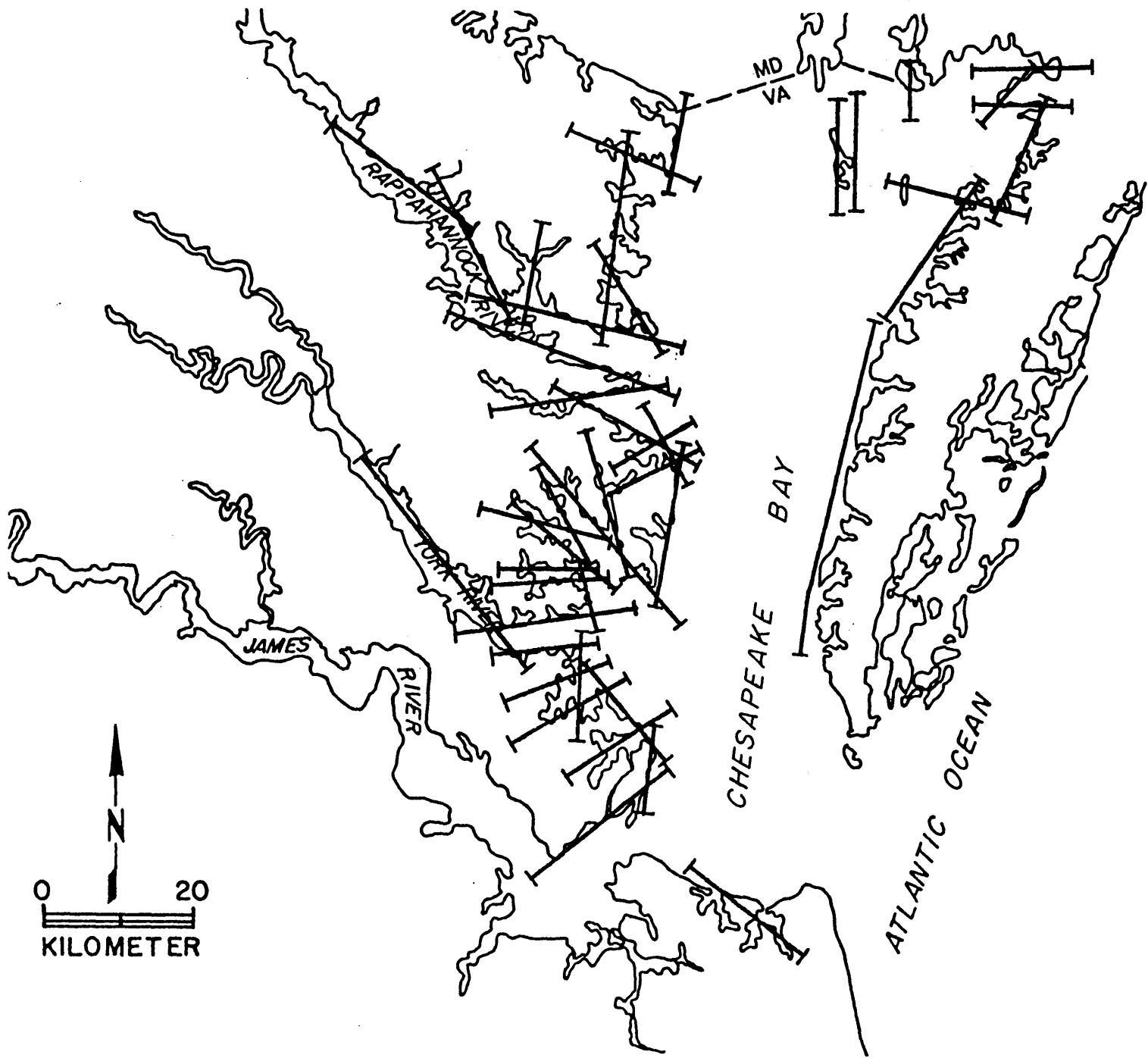


Figure 2. Flight lines used for acquisition of aerial photographs of SAV in 1985 for Virginia.

TABLE 1. GUIDELINES FOLLOWED DURING ACQUISITION OF AERIAL PHOTOGRAPHS.

---

1. Tidal Stage - Photography was acquired at low tide, +/- 0-1.5 ft., as predicted by the National Ocean Survey tables.
  2. Plant Growth - Imagery was acquired when growth stages ensured maximum delineation of SAV, and when phenologic stage overlap was greatest.
  3. Sun Angle - Photography was acquired when surface reflection from sun glint did not cover more than 30 percent of frame. Sun angle was generally between 20p and 40p to minimize water surface glitter. At least 60 percent line overlap and 20 percent side lap was used to minimize image degradation due to sun glint.
  4. Turbidity - Photography was acquired when clarity of water ensured complete delineation of grass beds. This was visually determined from the airplane to insure that SAV could be seen by the observer.
  5. Wind - Photography was acquired during periods of no or low wind. Off-shore winds were preferred over on-shore winds when wind conditions could not be avoided.
  6. Atmospherics - Photography was acquired during periods of no or low haze and/or clouds below aircraft. There could be no more than scattered or thin broken clouds, or thin overcast above aircraft, to ensure maximum SAV to bottom contrast.
  7. Sensor Operation - Photography was acquired in the vertical mode with less than 5 degrees tilt. Scale/altitude/film/focal length combination permitted resolution and identification of one square meter area of SAV (surface).
  8. Plotting - Each flight line included sufficient identifiable land area to assure accurate plotting of grass beds.
-

The acquisition of aerial photography for SAV in Virginia was contracted to Air Photographics, Inc. by the Bionetics Corporation, the on-site contractor to the U.S. EPA Environmental Photographic Interpretive Complex (EPA-EPIC). The camera used was a Wild RC 10 cartographic camera with a 152 mm (6 inch) focal length Aviogon lens. Film used was Kodak 24 cm (9 1/2 inch) square negative Double X Aerographic type 2405. The camera was mounted in a camera port in the bottom fuselage of Air Photographics, twin engine, fixed low wing Piper Aztec aircraft. A Wratten 1A haze filter was used inside the cone of the camera to reduce the degrading effect of atmospheric haze on image quality. Flights were conducted at an altitude of approximately 12,000 ft, yielding a scale of 1:24,000 for the photograph, approximating that of a standard USGS topographic quadrangle.

The SAV photography for the Maryland waters was obtained by Aero Eco under contract to the Bionetics Corporation (onsite contractor for EPA/EPIC). The camera used by Aero Eco was a Zeiss Jena LMK 15/2323 with a 153 mm (6 inch) focal length Zeiss Jena Lamegon PI/C lens. The film used was Kodak 24 cm (9 1/2 inch) squarepositive Aerochrome MS type 2448. The camera was mounted in the bottom fuselage of Aero Eco's Partenavia P68 Observer, a twin engine high wing reconnaissance aircraft. The photography was acquired at an approximate altitude of 6,000 feet, yielding a photographic scale of 1:12,000.

The only problem encountered during the acquisition of the 1985 aerial photography was getting permission to fly in the restricted airspace over Aberdeen Proving Ground. The delays caused acquisition to be pushed back to October 27, which was too late to get the SAV at its peak biomass, although much SAV was still visible.



## Mapping Process

Fig. 3 gives the location of the topographic quadrangles in the study area. This area includes all regions with a potential for SAV growth. The quadrangles are sequentially numbered to allow for more efficient access to the data. Table 2 gives the corresponding names of the 157 quadrangles shown in Fig. 3.

SAV beds were identified on the photographs using all available information, including knowledge of aquatic grass signatures on the film, areas of grass coverage from previous flights, ground information, and aerial visual surveys. Mylar topographic quadrangles (1:24,000 for Virginia, 1:12,000 for Maryland) were used as base maps in the mapping process. Delineation of SAV bed boundaries was facilitated by superimposing on a light table the appropriate mylar quadrangle with the transparent photograph. SAV boundaries were delineated on the mylar map with a pencil. Where minor scale differences were evident between the photograph and quadrangle or where significant shoreline erosion or accretion had occurred since production of the map, a best fit was obtained, or shoreline changes were noted on the quadrangle. Areas of SAV beds were derived from the topographic quadrangles. VIMS measurements were made on a Numonics Graphics Calculator, model 1224 for the lower bay, while EPIC utilized a Calma Graphic Interactive Image Analysis System based on a Data General Eclipse S230 minicomputer for upper bay areas. Each SAV bed was digitized three times and the area reported as the average of the three. Each of the three measurements was generally within 5% of the mean.

In addition to the boundaries of the SAV bed, an estimate of percent cover within each bed was made visually in comparison with an enlarged Crown



TABLE 2. LIST OF USGS 7.5-MINUTE QUADRANGLES IN CHESAPEAKE BAY SAV STUDY ARE AND CORRESPONDING CODE NUMBERS (SEE FIG. 3 FOR LOCATION OF QUADRANGLES. THOSE TOPOGRAPHIC QUADRANGLES WITH SAV BEDS CAN BE FOUND IN APPENDIX C).

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1. Conowingo Dam, Md.-Pa.	42. North Beach, Md.
2. Aberdeen, Md.	43. Tilghman, Md.
3. Havre de Grace, Md.	44. Oxford, Md.
4. NorthEast, Md.	45. Trappe, Md.
5. Elkton, Md.	46. Preston, Md.
6. White Marsh, Md.	47. Quantico, Va.-Md.
7. Edgewood, Md.	48. Indian Head, Va.-Md.
8. Perryman, Md.	49. Benedict, Md.
9. Spesutie, Md.	50. Prince Frederick, Md.
10. Earleville, Md.	51. Sharps Island, Md.
11. Cecilton, Md.	52. Church Creek, Md.
12. Baltimore East, Md.	53. Cambridge, Md.
13. Middle River, Md.	54. East New Market, Md.
14. Gunpowder Neck, Md.	55. Widewater, Va.-Md.
15. Hanesville, Md.	56. Nanjemoy, Md.
16. Betterton, Md.	57. Mathias Point, Md.-Va.
17. Galena, Md.	58. Popes Creek, Md.
18. Curtis Bay, Md.	59. Mechanicsville, Md.
19. Sparrows Point, Md.	60. Broomes Island, Md.
20. Swan Point, Md.	61. Cove Point, Md.
21. Rock Hall, Md.	62. Taylors Island, Md.
22. Chestertown, Md.	63. Golden Hill, Md.
23. Round Bay, Md.	64. Passapatanzy, Md.-Va.
24. Gibson Island, Md.	65. King George, Va.-Md.
25. Love Point, Md.	66. Dahlgren, Va.-Md.
26. Langford Creek, Md.	67. Colonial Beach North, Md.-Va.
27. Centreville, Md.	68. Rock Point, Md.
28. Washington West, Md.-D.C.-Va.	69. Leonardtown, Md.
29. Washington East, D.C.-Md.	70. Hollywood, Md.
30. South River, Md.	71. Solomons Island, Md.
31. Annapolis, Md.	72. Barren Island, Md.
32. Kent Island, Md.	73. Honga, Md.
33. Queenstown, Md.	74. Wingate, Md.
34. Alexandria, Va.-D.C.-Md.	75. Nanticoke, Md.
35. Deale, Md.	76. Colonial Beach South, Va.-Md.
36. Claiborne, Md.	77. Stratford Hall, Va.-Md.
37. St. Michaels, Md.	78. St. Clements Island, Va.-Md.
38. Easton, Md.	79. Piney Point, Md.-Va.
39. Fort Belvoir, Va.-Md.	80. St. Mary's City, Md.
40. Mt. Vernon, Md.-Va.	81. Point No Point, Md.
41. Lower Marlboro, Md.	82. Richland Point, Md.

continued

TABLE 2. (continued)

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83. Bloodsworth Island, Md.	124. Franktown, Va.
84. Deal Island, Md.	125. Westover, Va.
85. Monie, Md.	126. Charles City, Va.
86. Champlain, Va.	127. Brandon, Va.
87. Machodoc, Va.	128. Norge, Va.
88. Kinsale, Va.-Md.	129. Williamsburg, Va.
89. St. George Island, Va.-Md.	130. Clay Bank, Va.
90. Point Lookout, Md.	131. Achilles, Va.
91. Kedges Straits, Md.	132. New Point Comfort, Va.
92. Terrapin Sand Point, Md.	133. Cape Charles, Va.
93. Marion, Md.	134. Cheriton, Va.
94. Mount Landing, Va.	135. Savedge, Va.
95. Tappahannock, Va.	136. Claremont, Va.
96. Lottsburg, Va.	137. Surry, Va.
97. Heathsville, Va.-Md.	138. Hog Island, Va.
98. Burgess, Va.-Md.	139. Yorktown, Va.
99. Ewell, Va.-Md.	140. Poquoson West, Va.
100. Great Fox Island, Va.-Md.	141. Poquoson East, Va.
101. Crisfield, Va.-Md.	142. Elliotts Creek, Va.
102. Saxis, Va.-Md.	143. Townsend, Va.
103. Dunnsville, Va.	144. Bacons Castle, Va.
104. Morattico, Va.	145. Mulberry Island, Va.
105. Lively, Va.	146. Newport News North, Va.
106. Reedville, Va.	147. Hampton, Va.
107. Tangier Island, Va.	148. Benns Church, Va.
108. Chesconessex, Va.	149. Newport News South, Va.
109. Parksley, Va.	150. Norfolk North, Va.
110. Urbanna, Va.	151. Little Creek, Va.
111. Irvington, Va.	152. Cape Henry, Va.
112. Fleets Bay, Va.	153. Chuckatuck, Va.
113. Nandua Creek	154. Bowers Hill, Va.
114. Pungoteague, Va.	155. Norfolk South, Va.
115. West Point, Va.	156. Kempsville, Va.
116. Saluda, Va.	157. Princess Anne, Va.
117. Wilton, Va.	158. Wye Mills, Md.
118. Deltaville, Va.	159. Bristol, Md.
119. Jamesville, Va.	160. Fowling Creek, Md.
120. Toano, Va.	161. Port Tobacco, Md.
121. Gressitt, Va.	162. Charlotte Hall, Md.
122. Ware Neck, Va.	163. Mardela Springs, Md.
123. Mathews, Va.	164. Wetipquin, Md.

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Density Scale, similar to those developed for estimating of forest tree crown cover from aerial photography (Fig. 4). Bed density was classified into one of four categories based on a subjective comparison with the density scale. These were: 1. very sparse, <10%, 2. sparse, 10 to 40%; 3. moderate, 40 to 70%; or 4. dense, 70-100%. Either the entire bed, or subsections within the bed, were assigned a number (1 to 4) corresponding to the above density categories. In addition to the density scale, each distinct SAV unit was given a letter designation for proper identification for future comparisons.

In order to reduce interobserver variability in both the mapping and digitizing processes, steps were taken to ensure quality assurance. Sections from several areas in both Maryland and Virginia containing SAV were independently mapped and assigned a density classification. Results were compared for compatibility of the mapping effort. In addition, mapped sections were independently digitized for similar comparisons.

The discussion of the distribution of SAV has been organized into three zones as established by Orth and Moore (1982). The area between the mouth of the bay to a line stretching from the mouth of the Potomac River at Smith Point in Virginia to just above Smith Island and extending across to the north shore at the mouth of the Big Annessex River is referred to as the Lower Bay zone (Fig. 5). The area between the north shore of the Big Annessex River and the south shore of the Potomac River to the Chesapeake Bay bridge at Kent Island is referred to as the Middle Bay zone. The area between the Chesapeake Bay bridge and the Susquehanna Flats is referred to as the Upper Bay zone. The salinity within each zone roughly coincides with the major salinity zones of estuaries: polyhaline (18-25<sup>0</sup>/oo), Lower zone; mesohaline (5-18<sup>0</sup>/oo), Middle zone; oligohaline (0.5-5<sup>0</sup>/oo), Upper

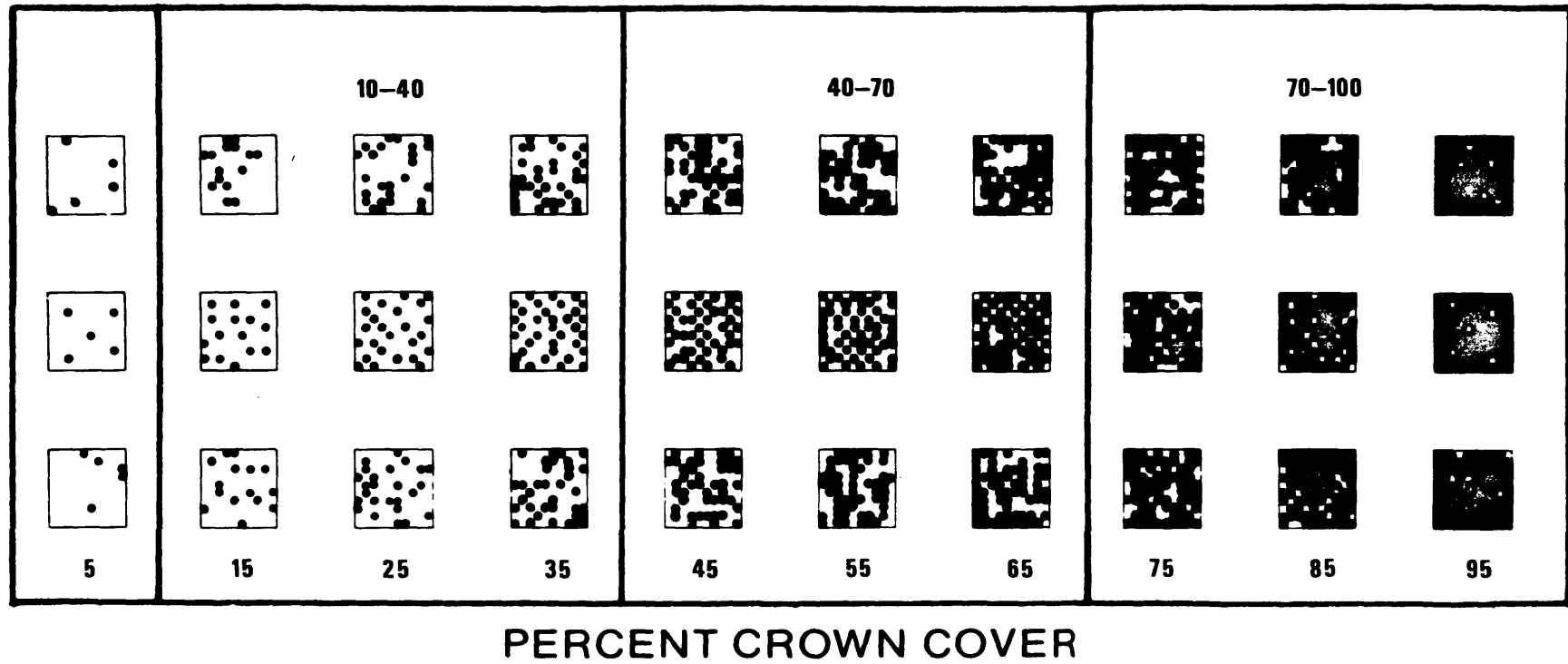


Figure 4. Crown density scale used for determining density of SAV beds:  
 very sparse (1), 0-10%; sparse (2), 10-40%; moderate (3), 40-70%;  
 dense (4), 70-100%.

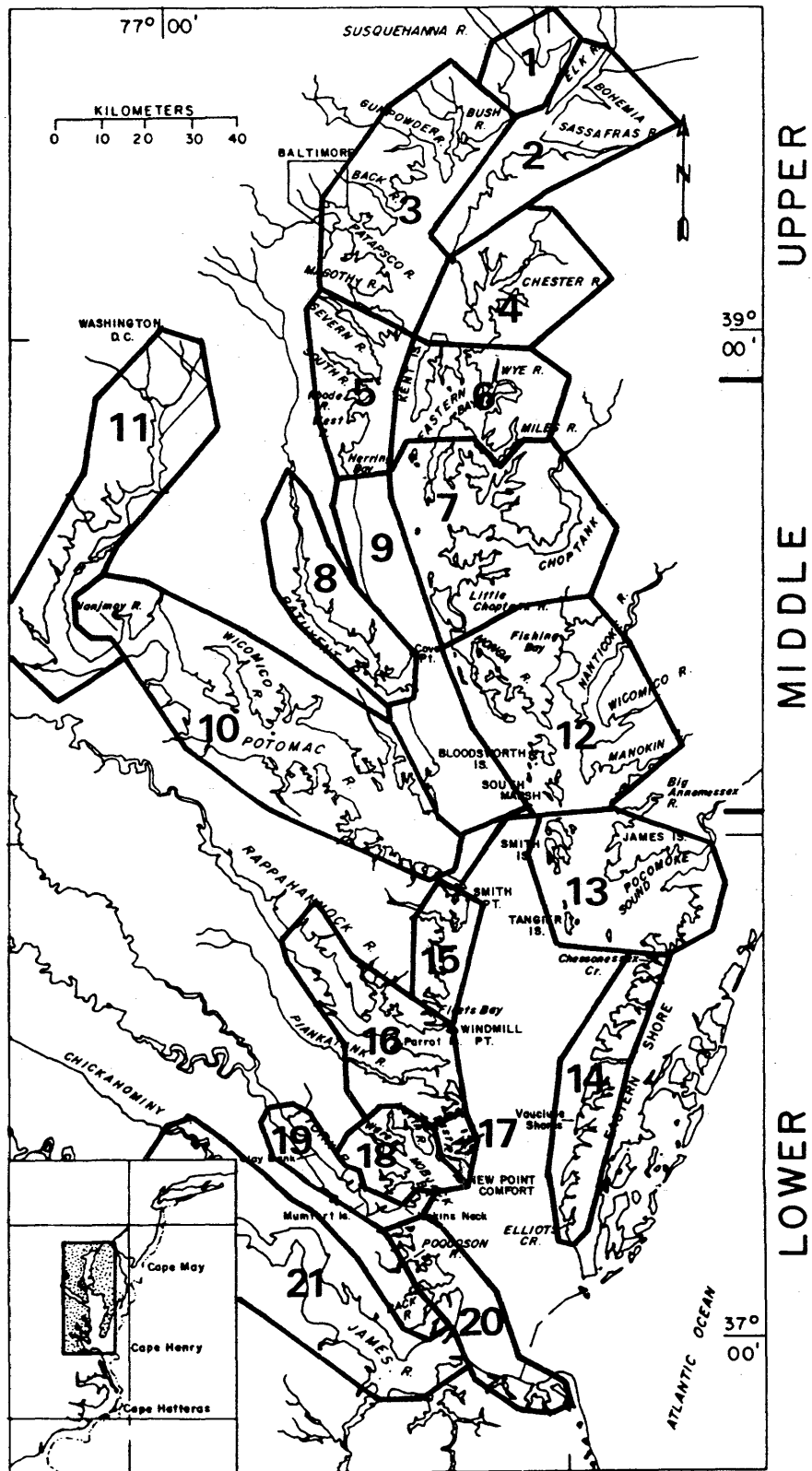


Figure 5. Location of upper, middle and lower zones of the Chesapeake Bay and the 21 major sections used for delineation of SAV distribution patterns (see Table 3 and text for exact boundaries).

zone. Although the major rivers and smaller tributaries of the bay have their own salinity regimes, the distributions of SAV in each river are discussed within the zone where it connects to the bay proper.

In addition, 21 major sections of the bay are identified for more detailed discussion of SAV distribution (Fig. 5, Table 3). These sections denote relatively distinct parts of the bay that are readily identifiable from a map. Sections 1 through 4 are located in the Upper Bay zone. Sections 5 through 12 are located in the Middle Bay zone, and sections 13 through 21 are located in the Lower Bay zone.

Orth et al. (1979) chose six sites in the Lower Bay zone to determine changes in SAV distribution starting in 1937. These sites are: Mumfort Island and Jenkins Neck in the York River; East River in the Mobjack Bay; Parrott Island in the Rappahannock River; Fleets Bay located between Windmill Point on the Rappahannock River and Smith Point on the Potomac River; and Vaucluse Shores, located on the bayside of the eastern shore just above Cape Charles (see Orth et al. (1979) for further details of these historical sites). Detailed mapping of each historical site was completed in this study similar to the earlier work to provide a 1985 update.

#### Ground Truth and Other Data Bases

For those areas in Virginia where aerial photographic evidence of SAV beds was inconclusive, photoverification was accomplished by ground truthing these sites. This was done principally by small boats and divers snorkeling over the area indicated from the photograph. Since SAV beds in this region contain primarily only one or two species that vary little from year to year, a great deal of ground truth information could be extrapolated from



TABLE 3. AREA DESCRIPTION FOR EACH OF 21 MAJOR SECTIONS IN THE CHESAPEAKE BAY HAVING SAV.

- 
- 
- Section 1. Susquehanna Flats - all areas between and including Spesutie Island and Turkey Point at the mouth of the Elk River to include the Northeast River.
- Section 2. Upper Eastern Shore - all areas in the Elk, Bohemia and Sassafras Rivers and SAV in areas on the eastern shore above the Swan Point quadrangle.
- Section 3. Upper Western Shore - all areas south of Spesutie Island and north of the bay bridge to include the Bush, Gunpowder, Middle, Patapsco and Magothy Rivers.
- Section 4. Chester River - includes all of the Chester River, Eastern Neck, areas north of the bay bridge on Kent Island and south of Swan Point but to include SAV on the Swan Pt. quadrangle.
- Section 5. Central Western Shore - all areas south of the bay bridge and north of Holland Point on Herring Bay to include the Severn, South and West Rivers and Herring Bay.
- Section 6. Eastern Bay - all areas south of the bay bridge on Kent Island and north of Tilghman Island from Green Marsh Point to include the Wye, East and Miles Rivers, Crab Alley Bay, Prospect Bay and Poplar, Jefferson and Coaches Islands.
- Section 7. Choptank River - all areas south of Tilghman Island from Green Marsh Point and north of Taylor Island to include the Choptank and Little Rivers.
- Section 8. Patuxent River - all areas in the Patuxent River.
- Section 9. Middle Western Shore - all areas south of Holland Point at Herring Bay and north of Point Lookout on the Potomac River but not the mouth of the Patuxent River.
- Section 10. Lower Potomac River - all areas between the mouth of the Potomac River to just above the 301 bridge at Nanjemoy Creek.
- Section 11. Upper Potomac River - all areas above Nanjemoy Creek to Washington D.C.
- Section 12. Middle Eastern Shore - all areas south of Taylor Island and north of but not including the Big Annemessex River to include the Honga, Nanticoke, Wicomico and Manokin Rivers, Fishing Bay, Bloodsworth and South Marsh Islands.

continued

TABLE 3. (continued)

- 
- 
- Section 13. Tangier Island Complex - all areas south of and including the Big Annessex River and north of but including the northern shore of Chesconessex Creek to include Smith and Tangier Islands, Little Annessex River and Pocomoke Sound.
- Section 14. Lower Eastern Shore - all areas south of but including the southern shore of Chesconessex Creek and north of Elliotts Creek to include Cherrystone Inlet, Hungars, Nassawadox, Occohannock, Nandua, Pungoteague and Onancock Creeks.
- Section 15. Reedville - includes the area between Windmill Point on the Rappahannock River and Smith Point at the mouth of the Potomac River.
- Section 16. Rappahannock River Complex - includes the entire Rappahannock River, Piankatank River and Milford Haven area.
- Section 17. New Point Comfort Region - includes the area fronting the bay from the lighthouse at New Point Comfort north to, but not including, the bay entrance to Milford Haven.
- Section 18. Mobjack Bay Complex - includes the East, North, Ware and Severn Rivers, the north shore of the Mobjack Bay from New Pt. Comfort lighthouse to the North River, and the area around Guinea Neck to include all the SAV around the Guinea Marsh area from the New Point Comfort quadrangle.
- Section 19. York River - all areas along the north shore from Clay Bank to the Guinea Marsh area and includes SAV from the Achilles quadrangle facing the York River and along the south shore to Goodwin Island.
- Section 20. Lower Western Shore - includes all areas south of Goodwin Island to Broad Bay off Lynnhaven Inlet, excluding the James River.
- Section 21. James River - all SAV in the James River including the Chickahominy River.
- 
-

earlier studies (Orth et al., 1979, 1982; Orth and Moore, 1982). In addition, VIMS is currently transplanting SAV (principally eelgrass) into different river systems. These areas are checked carefully for any SAV when transplant sites are examined by divers.

In Maryland, ground truth data were provided principally from two SAV surveys conducted in 1985, from an SAV transplanting project and an ongoing SAV research project. One field survey was conducted in the Potomac River. This survey was conducted by the USGS (Rybicki et al., 1986) and included the area from the Chain Bridge at Washington, D.C. to Quantico, Virginia (Fig. 6). Earlier surveys of the Potomac River by the USGS included sections of the river south of Quantico to the mouth of the Potomac River (Haramis and Carter, 1983; Carter et al., 1985a,b; Rybicki et al., 1985). The 1985 USGS objectives were: 1. to collect and identify all species of SAV found in the tidal river and larger tributaries, 2. to determine the distribution and abundance of SAV using shoreline surveys and transects, 3. to compare 1985 data on species composition, standing crop and water quality with previous USGS surveys, and 4. to monitor the spread of H. verticillata and to collect data on competition between H. verticillata and other SAV.

The shoreline survey was conducted in September and October, 1985, by boat, using rakes to collect samples for the presence or absence of SAV. In addition, sixty-two transects were sampled in June and again in September. Transects had sampling stations at 5 m, 15 m and then at 15 m intervals perpendicular to shore. Transects were terminated at five stations (60 m) from shore when no SAV was present or at two stations (30 m) beyond the last vegetated station. Where water depth exceeded 2.0 m at 60 m of linear distance, the fixed interval was not used, and samples were taken

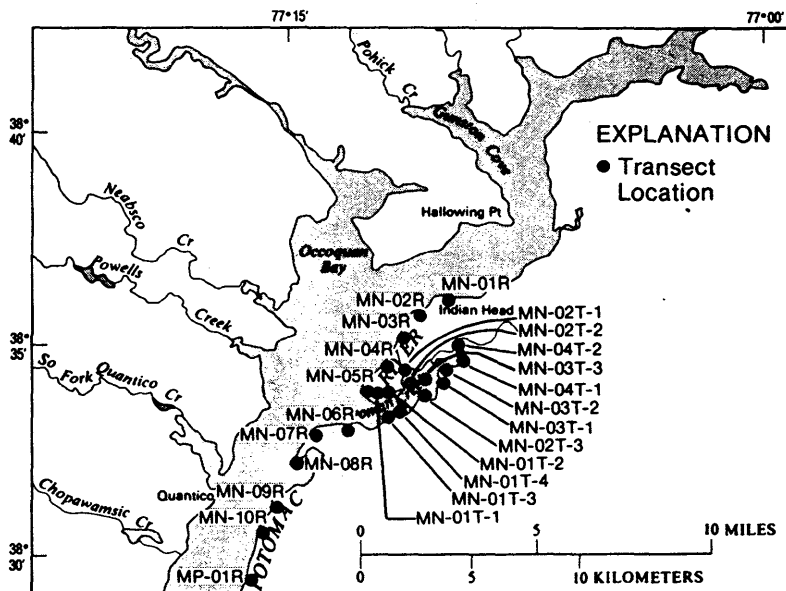
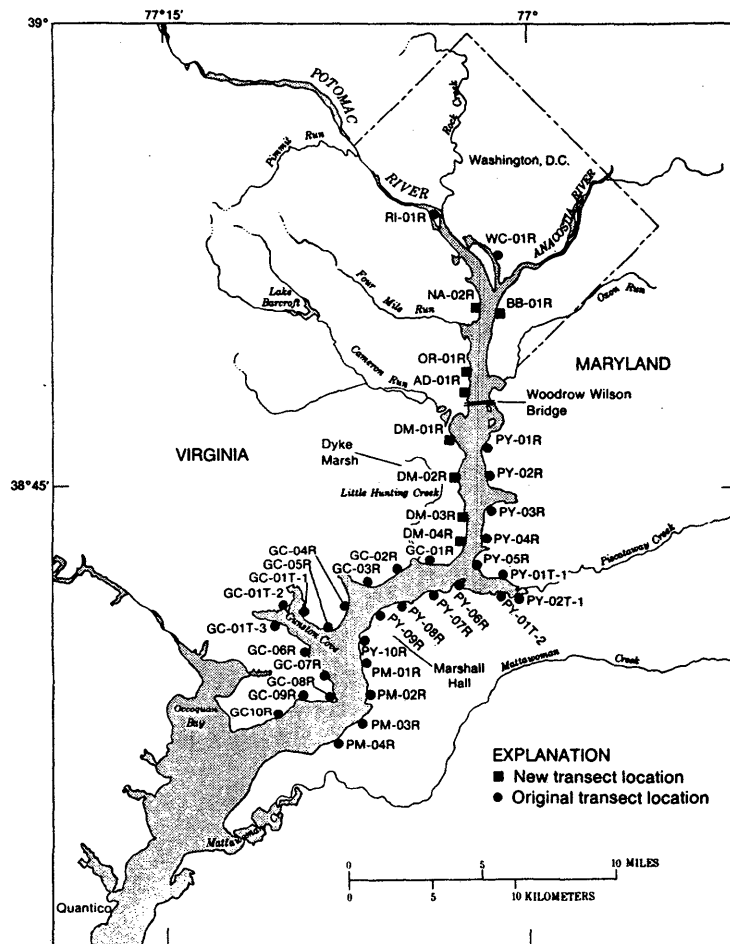


Figure 6. Location of vegetation sampling transects in the tidal freshwater portion of the Potomac River used by the U. S. Geological Survey for determining SAV distribution patterns. Codes for transects give location and tributary or river-mile for each location. (RI - Roosevelt Island; NA - National Airport; OR - Oronoco Bay; AD - Alexandria Dock; DM - Dyke Marsh; GC - Gunston Cove; BB - Bolling Air Force Base; PY - Piscataway Creek; PM - Pomonkey Creek; MN - Mattawoman; MP - 01R was not sampled) (from Rybicki, et al., 1986).

at four stations along the transect corresponding with the depths of 0.5, 1.0, 1.5 and 2.0 m.

Codes for the transects in Fig. 6 provide information on location and the river - or tributary mile for each location. For example, in MN-01T-2, MN is Mattawoman Creek, 01T is one nmi (nautical mile) up the tributary from the mouth, -2 is the second transect; in PY-06R, PY is Piscataway Creek, 06R is the sixth transect on the edge of the main river.

All stations were sampled three times using modified oyster tongs. The area sampled with each grab was 930 cm<sup>2</sup>. All species were identified. Samples were dried and standing crop expressed in g/sample and g/m<sup>2</sup> for each species. By fall, in many areas, the plants formed a tangled mass completely filling the water column; a grab area of 930 cm<sup>2</sup> resulted in a sample from a significantly larger area. For this reason, station dry weight (total dry weight of three grabs) greater than 100 g cannot be directly related to area and therefore was not calculated.

The third survey is the annual large scale multi-station survey conducted by the Md.DNR. This survey, conducted from July through August, samples 600+ randomly selected stations in certain areas of the bay from the Susquehanna Flats to Smith Island. At each station, samples are also collected with modified oyster tongs and species presence or absence, as well as standing crop, is recorded. Station locations were randomly generated and were limited to areas 2.4 m (8 ft) or less in depth on the western shore of the bay and 3.7 m (12 ft) or less on the eastern shore.

The SAV transplanting project is being conducted on the Susquehanna Flats by Stan Kollar of HCC. Information provided by his work is in the form of species presence by percentage, primarily by visual estimates.

A SAV research group at HPL headed by Court Stevenson also provided ground truth data. Maps of their study sites on the Choptank River were annotated on the maps for this report indicating the status of SAV for 1985.

In addition to the scientific surveys, private citizens participated in identifying SAV beds by checking areas in the bay for SAV. Two groups were responsible for looking for SAV under the sponsorship of separate organizations.

The Maryland Charterboat Association participated in the baywide effort, funded by the Md.DNR's Watermen's Assistance Program. Boat captains were provided with reduced SAV quadrangle maps and data sheets for each SAV bed identified on the maps. Sampling of sites with SAV were undertaken at low tide. Samples were taken by hand, net or rake. Plants were identified as to species onsite or placed in zip-lock plastic bags and sent to the DNR for identification.

Private citizens volunteered to assist in the SAV ground survey under guidance of the CBF, CPCB and F&WS. This program entailed identifying and recording the location of SAV in the bay. Volunteers were recruited through press releases, newsletters and personal letters. Volunteers, provided with an identification guide of SAV and maps of their area of interest, visited numerous sites around the bay. Each volunteer was asked to identify the location where SAV was sighted, as well as water conditions, how many and which kind of species, grassbed size, percentage area covered, and location description. All information was sent to EPIC for data storage.

All ground survey information was included on the topographic quadrangles to show positions of the survey stations in relation to the beds of SAV mapped from the aerial photographs. Each survey was designated by a unique symbol to eliminate confusion of the different methods. Where

species information was available, it was included on the map unless there was too much data or it was redundant.

### Data Presentation

SAV distribution data were analyzed by topographic quadrangle (Table 4), by section and zone (Table 5) and by quadrangles within a section (Table 6). Data for 1978 and 1984 by quadrangle, section and zone were included in Tables 5 for comparison. In addition, all the Md.DNR data for each river system from the first annual survey conducted in 1971 are included (Table 7).

TABLE 4. TOTAL AREA OF SAV IN HECTARES BY TOPOGRAPHIC QUADRANGLES FOR 1978, 1984 AND 1985.

QUADRANGLE	1978	1984	1985
1. Conowingo Dam, Md.-Pa.	-	-	0
2. Aberdeen, Md.	-	0	6.34
3. Havre de Grace, Md.	803.67	1741.85	1605.81
4. North East, Md.	5.62	13.31	29.46
5. Elkton, Md.	0.75	0	0
6. White Marsh, Md.	-	0	0
7. Edgewood, Md.	10.48	49.81+	6.31
8. Perryman, Md.	-	2.01	4.64
9. Spesutie, Md.	0.84	411.38	439.96
10. Earleville, Md.	4.67	3.47	11.60
11. Cecilton, Md.	-	0	0
12. Baltimore East, Md.	-	0	0
13. Middle River, Md.	90.06	0	74.80
14. Gunpowder Neck, Md.	200.71	183.99+	132.99
15. Hanesville, Md.	9.31	5.48	10.10
16. Betterton, Md.	6.40	5.74	12.89
17. Galena, Md.	1.46	11.88	0.61
18. Curtis Bay, Md.	33.40	0	0
19. Sparrows Pt., Md.	10.52	0	5.56
20. Swan Point, Md.	29.86	18.65	10.25
21. Rock Hall, Md.	127.25	30.13	14.71
22. Chestertown, Md.	12.31	0	1.92
23. Round Bay, Md.	137.15	0	0
24. Gibson Island, Md.	139.45	7.61	16.07
25. Love Point, Md.	11.81	0	3.94
26. Langford Creek, Md.	1255.20	599.72	586.06
27. Centreville, Md.	38.75	0	0
28. Washington West, Md.-DC-Va.	-	0++	0
29. Washington East, DC-Md.	-	0	0
30. South River, Md.	15.14	0	0
31. Annapolis, Md.	27.15	0	0.28
32. Kent Island, Md.	513.68	26.28	48.36
33. Queenstown, Md.	492.10	89.45	97.9
34. Alexandria, Va.-DC-Md.	-	160.40	512.70
35. Deale, Md.	61.51	0	2.43
36. Claiborne, Md.	421.08	52.25	346.69
37. St. Michaels, Md.	366.09	11.14	223.91
38. Easton, Md.	1.19	0	14.33
39. Fort Belvoir, Va.-Md.	-	0.91	1.73
40. Mt. Vernon, Md.-Va.	-	420.34	857.81
41. Lower Marlboro, Md.	-	0	0
42. North Beach, Md.	-	0	18.88

continued



TABLE 4. (continued)

43.	Tilghman, Md.	478.15	6.87	253.74
44.	Oxford, Md.	562.96	23.25	329.10
45.	Trappe, Md.	64.75	0	33.16
46.	Preston, Md.	-	0	0
47.	Quantico, Va.-Md.	-	0	6.67
48.	Indian Head, Va.-Md.	-	0++	0.21
49.	Benedict, Md.	1.58	0	0
50.	Prince Frederick, Md.	-	0	0
51.	Sharps Island, Md.	377.08	4.42	229.75
52.	Church Creek, Md.	208.94	9.00	322.63
53.	Cambridge, Md.	48.96	0	0
54.	East New Market, Md.	-	0	0.75
55.	Widewater, Va.-Md.	-	4.59	38.21
56.	Nanjemoy, Md.	28.03	30.92	106.68
57.	Mathias Pt., Md.-Va.	194.12	121.11	228.66
58.	Popes Creek, Md.	-	0	0
59.	Mechanicsville, Md.	13.62	0	0
60.	Broomes Island, Md.	4.94	4.37	24.71
61.	Cove Pt., Md.	2.97	3.75	2.46
62.	Taylor's Island, Md.	-	8.55	47.53
63.	Golden Hill, Md.	-	0.42	10.90
64.	Passapatanzy, Md.-Va.	-	0	0
65.	King George, Va.-Md.	2.25	13.44	22.15
66.	Dahlgren, Va.-Md.	8.32	2.67	1.97
67.	Colonial Beach North, Md.-Va.	87.44	25.63	15.66
68.	Rock Pt., Md.	22.85	0	0.27
69.	Leonardtown, Md.	2.44	0	0
70.	Hollywood, Md.	-	0	0
71.	Solomons Island, Md.	10.54	0.76	15.52
72.	Barren Island, Md.	-	0	264.99
73.	Honga, Md.	126.94	5.05	178.58
74.	Wingate, Md.	2.64	8.81	97.99
75.	Nanticoke, Md.	-	0	0
76.	Colonial Beach South, Va.-Md.	61.95	11.26	0
77.	Stratford Hall, Va.-Md.	5.53	2.16	0
78.	St. Clements Island, Va.-Md.	0.13	0	0
79.	Piney Point, Md.-Va.	-	-	0.51
80.	St. Marys City, Md.	-	-	19.01
81.	Point No Point, Md.	-	-	16.50
82.	Richland Pt., Md.	0.73	0.38	24.28
83.	Bloodsworth Island, Md.	66.07	18.29	285.53
84.	Deal Island, Md.	3.01	0	16.65
85.	Monie, Md.	9.15	0	1.93
86.	Champlain, Va.	-	-	0
87.	Machodoc, Va.	-	-	0
88.	Kinsale, Va.-Md.	-	-	0

continued

TABLE 4. (continued)

89.	St. George Island, Va.-Md.	-	-	8.82
90.	Point Lookout, Md.	-	-	5.76
91.	Kedges Straits, Md.	156.09	366.42	474.91
92.	Terrapin Sand Point, Md.	314.48	187.00	180.48
93.	Marion, Md.	289.33	0	200.29
94.	Mount Landing, Va.	-	-	-
95.	Tappahannock, Va.	-	-	-
96.	Lottsburg, Va.	-	-	-
97.	Heathsville, Va.-Md.	-	-	-
98.	Burgess, Va.-Md.	-	-	-
99.	Ewell, Va.-Md.	1483.30	2308.58	2129.67
100.	Great Fox Island, Va.-Md.	540.65	807.81	1074.25
101.	Crisfield, Va.-Md.	7.48	113.01	79.22
102.	Saxis, Va.-Md.	-	-	-
103.	Dunnsville, Va.	-	-	-
104.	Morattico, Va.	-	-	0
105.	Lively, Va.	-	-	0
106.	Reedville, Va.	230.40	108.56	51.17
107.	Tangier Island, Va.	405.06	614.44	613.55
108.	Chesconessex, Va.	482.54	808.61	827.28
109.	Parkley, Va.	80.35	264.80	241.16
110.	Urbanna, Va.	-	-	-
111.	Irrington, Va.	5.31	9.33	8.26
112.	Fleets Bay, Va.	133.23	155.45	120.91
113.	Nandua Creek, Va.	184.86	345.10	350.51
114.	Pungoteague, Va.	401.63	716.76	691.94
115.	West Point, Va.	-	-	-
116.	Saluda, Va.	-	-	-
117.	Wilton, Va.	10.43	0	0
118.	Deltaville, Va.	59.43	6.62	0.70
119.	Jamesville, Va.	406.04	367.36	327.20
120.	Toano, Va.	-	-	-
121.	Gressitt, Va.	-	-	-
122.	Ware Neck, Va.	256.00	203.15	171.91
123.	Mathews, Va.	63.88	30.32	37.39
124.	Franktown, Va.	504.49	395.26	419.66
125.	Westover, Va.	-	-	-
126.	Charles City, Va.	-	-	-
127.	Brandon, Va.	-	-	-
128.	Norge, Va.	46.48	46.48**	46.48**
129.	Williamsburg, Va.	-	-	-
130.	Clay Bank, Va.	-	-	-
131.	Achilles, Va.	797.92	741.50	710.16
132.	New Point Comfort, Va.	1096.31	1092.71	1154.55
133.	Cape Charles, Va.	321.42	308.32	329.48
134.	Cheriton, Va.	85.20	55.99	63.58

continued

TABLE 4. (continued)

135.	Savage, Va.	-	-	-
136.	Claremont, Va.	-	-	-
137.	Surry, Va.	-	-	-
138.	Hog Island, Va.	-	-	-
139.	Yorktown, Va.	1.92	0.23	0.21
140.	Poquoson West, Va.	210.44	216.93	237.70
141.	Poquoson East, Va.	516.63	687.16	784.53
142.	Elliot's Creek, Va.	44.58	14.48	8.41
143.	Townsend, Va.	42.70	4.80	17.72
144.	Bacons Castle, Va.	-	-	-
145.	Mulberry Island, Va.	-	-	-
146.	Newport News North, Va.	-	-	-
147.	Hampton, Va.	218.25	233.15	287.10
148.	Benns Church, Va.	-	-	-
149.	Newport News South, Va.	1.87	0	0
150.	Norfolk North, Va.	-	-	-
151.	Little Creek, Va.	-	0	0
152.	Cape Henry, Va.	*	37.87	36.76
153.	Chuckatuck, Va.	-	-	-
154.	Bowers Hill, Va.	-	-	-
155.	Norfolk South, Va.	-	-	-
156.	Kempsville, Va.	-	-	-
157.	Princess Anne, Va.	-	-	-
158.	Wye Mills, Md.	-	-	1.10
159.	Bristol, Md.	-	-	2.08
160.	Fowling Creek, Md.	-	-	0
161.	Port Tobacco, Md.	-	-	0
162.	Charlotte Hall, Md.	-	-	0
163.	Mardela Springs, Md.	-	-	0
164.	Wetipquin, Md.	-	-	0
	TOTAL	16,622.40	15,399.70	19,390.64

NOTES: - indicates quadrangle not photographed and assumed to have no SAV  
0 indicates quadrangle photographed and no SAV noted  
\* area not flown in 1978 but most likely had SAV in 1978 based on data collected in subsequent years  
\*\* area not photographed in 1984. Area known to still have SAV. We made the assumption that the 1984 distribution would be similar to the 1978 distribution.  
+ Information on SAV distribution taken from 1983 aerial photographs provided by Willie Burton of Martin Marietta Corp.  
++ Presence of SAV beds not detected from 1984 aerial photography. Information provided by Virginia Carter of the USGS for the 1984 Potomac River Shoreline Survey indicated presence of SAV.

TABLE 5. NUMBERS OF HECTARES OF BOTTOM COVERED WITH SUBMERGED AQUATIC VEGETATION IN 1978, 1984 AND 1985 FOR DIFFERENT SECTIONS WITHIN THE THREE ZONES IN THE CHESAPEAKE BAY (DATA FOR 1978 FROM ORTH et al. 1979, AND ANDERSON AND MACOMBER 1980. DATA FOR 1984 FROM ORTH ET AL. 1985).

Section	1978		1984		1985	
	Hectares	Zone	Hectares	Zone	Hectares	Zone
1. Susquehanna Flats	804+		2150		2011	
2. Upper Eastern Shore	29	Upper	43	Upper	105	Upper
3. Upper Western Shore	484	2792	244	3168	239	3025
4. Chester River	1475	hectares	731	hectares	671	hectares
5. Central Western Shore	241		0		26	
6. Eastern Bay	1800		66		356	
7. Choptank River	1740	Middle	82	Middle	1528	Middle
8. Patuxent River	34	4446	9	984	44	4986
9. Middle Western Shore	11	hectares	0	hectares	23	hectares
10. Lower Potomac River	410		194		381	
11. Upper Potomac River	0*		600		1439	
12. Middle Eastern Shore	210		33		1188	
13. Tangier Island Complex	3759		5447		5504	
14. Lower Eastern Shore	1991		2232		2227	
15. Reedville	364		264		172	
16. Rappahannock River Complex	93	Lower	23	Lower	20	Lower
17. New Point Comfort Region	271	9399	299	11,248	332	11,379
18. Mobjack Bay Complex	1785	hectares	1550	hectares	1505	hectares
19. York River	157		238		258	
20. Lower Western Shore	925		1149		1315	
21. James River	54		46		46	
TOTAL	16,637		15,400		19,390	

+1978 data for Susquehanna Flats remapped and digitized to allow for greater compatibility to 1984 data.

\*No aerial photography was taken of this area in 1978 and that the absence of SAV is based on ground survey observations by the USGS.

TABLE 6. NUMBER OF SQUARE METERS OF SAV IN EACH QUADRANGLE CONTAINED WITHIN THE 21 SECTIONS FOR 1985

<u>SECTION</u>	<u>QUADRANGLE</u>	<u>AREA</u>
Susquehanna Flats - 1	Conowingo Dam (1)	0
	Aberdeen (2)	63,429
	Havre de Grace (3)	16,058,064
	North East (4)	0
	Perryman (8)	0
	Spesutie (9)	<u>3,987,200</u>
		20,108,693 sq.m = 2010.87 hectares = 4966.85 acres
Upper Eastern Shore - 2	North East (4)	294,551
	Elkton (5)	0
	Perryman (8)	0
	Spesutie (9)	383,800
	Earleville (10)	115,996
	Cecilton (11)	0
	Gunpowder Neck (14)	0
	Hanesville (15)	100,989
	Betterton (16)	128,909
	Galena (17)	6,072
	Swan Point (20)	0
Rock Hall (21)	<u>19,175</u>	
	1,049,492 sq.m = 104.95 hectares 259.23 acres	
Upper Western Shore - 3	White Marsh (6)	0
	Edgewood (7)	63,136
	Perryman (8)	46,352
	Spesutie (9)	28,606
	Baltimore East (12)	0
	Middle River (13)	748,043
	Gunpowder Neck (14)	1,329,904
	Hanesville (15)	0
	Curtis Bay (18)	0
	Sparrows Point (19)	55,562
Round Bay (23)	0	
Gibson Island (24)	<u>113,509</u>	
	2,385,112 sq.m = 238.51 hectares 589.12 acres	

continued

TABLE 6. (continued)

Chester River - 4	Swan Point (20)	102,452	
	Rock Hall (21)	127,903	
	Chestertown (22)	19,193	
	Love Point (25)	39,355	
	Langford Creek (26)	5,860,579	
	Centreville (27)	0	
	Kent Island (32)	137,647	
	Queenstown (33)	408,774	
	Wye Mills (158)	<u>11,019</u>	
			6,706,922 sq.m =
		670.69 hectares	
		1656.60 acres	
Central Western Shore - 5	Round Bay (23)	0	
	Gibson Island (24)	47,161	
	South River (30)	0	
	Annapolis (31)	2,840	
	Deale (35)	24,271	
	North Beach (42)	<u>188,828</u>	
		263,100 sq.m =	
		26.31 hectares	
		64.99 acres	
Eastern Bay - 6	Love Point (25)	0	
	Annapolis (31)	0	
	Kent Island (32)	345,923	
	Queenstown (33)	570,181	
	Claiborne (36)	1,376,808	
	St. Michaels (37)	1,231,688	
	Easton (38)	<u>31,153</u>	
		3,555,753 sq.m =	
		355.58 hectares =	
		878.28 acres	
Choptank River - 7	Claiborne (36)	2,090,125	
	St. Michaels (37)	1,007,415	
	Easton (38)	112,121	
	Tilghman (43)	2,537,448	
	Oxford (44)	3,290,979	
	Trappe (45)	331,626	
	Preston (46)	0	
	Sharps Island (51)	2,297,458	
	Church Creek (52)	3,226,275	
	Cambridge (53)	0	
	East New Market (54)	7,462	
	Taylors Island (62)	381,584	
	Fowling Creek (160)	<u>0</u>	
		15,282,493 sq.m =	
		1528.25 hectares	
		3774.78 acres	

continued

TABLE 6. (continued)

Patuxent River - 8	Lower Marlboro (41)	0
	Benedict (49)	0
	Mechanicsville (59)	0
	Broomes Island (60)	247,133
	Cove Point (61)	24,610
	Hollywood (70)	0
	Solomons Island (71)	152,289
	Bristol (159)	<u>20,836</u>
	444,868 sq.m =	
	44.49 hectares	
	109.89 acres	
Middle Western Shore - 9	North Beach (42)	0
	Prince Frederick (50)	0
	Broomes Island (60)	0
	Cove Point (61)	0
	Solomons Island (71)	2,873
	St. Marys City (80)	21,659
	Point No Point (81)	165,023
	Point Lookout (90)	<u>41,595</u>
	231,150 sq.m =	
	23.12 hectares	
	57.11 acres	
Lower Potomac River - 10	Nanjemoy (56)	1,066,807
	Mathias Point (57)	2,286,617
	Popes Creek (58)	0
	Dahlgren (66)	19,719
	Colonial Beach North (67)	156,640
	Rock Point (68)	2,709
	Leonardtwn (69)	0
	Colonial Beach South (76)	0
	Stratford Hall (77)	0
	St. Clements Island (78)	0
	Piney Point (79)	5,079
	St. Marys City (80)	168,452
	Machodoc (87)	0
	Kinsale (88)	0
	St. George Island (89)	88,182
	Point Lookout (90)	15,976
	Lottsburg (96)	0
	Heathsville (97)	0
	Burgess (98)	0
Charlotte Hall (162)	<u>0</u>	
	3,810,181 sq.m =	
	381.02 hectares	
	941.12 acres	

continued

TABLE 6. (continued)

Upper Potomac River - 11	Washington West (28)	0
	Washington East (29)	0
	Alexandria (34)	5,126,963
	Fort Belvoir (39)	17,281
	Mt. Vernon (40)	8,578,090
	Quantico (47)	66,687
	Indian Head (48)	2,054
	Widewater (55)	382,062
	Passapatanzy (64)	0
	King George (65)	221,510
	Port Tobacco (161)	0
	14,394,647 sq.m =	
	1,439.46 hectares	
	3,555.47 acres	
Middle Eastern Shore - 12	Taylors Island (62)	93,724
	Golden Hill (63)	108,977
	Barren Island (72)	2,649,854
	Honga (73)	1,785,831
	Wingate (74)	979,879
	Nanticoke (75)	0
	Richland Point (82)	242,779
	Bloodsworth Island (83)	2,855,339
	Deal Island (84)	166,495
	Monie (85)	19,253
	Kedges Straits (91)	942,584
	Terrapin Sand Point (92)	33,150
	Marion (93)	2,002,883
	Mardela Springs (163)	0
	Wetipquin (164)	0
	11,880,748 sq.m =	
	1188.07 hectares	
	2934.53 acres	
Tangier Island Complex - 13	Chesconessex (108)	8,088,214
	Parksley (109)	2,411,621
	Tangier Island (107)	6,135,481
	Ewell (99)	21,296,660
	Great Fox Island(100)	10,742,470
	Kedges Straits (91)	3,806,519
	Terrapin Sand Point (92)	1,771,649
	Crisfield (101)	792,226
	Marion (93)	0
	Saxis (102)	0
	55,044,840 sq.m =	
	5,504.48 hectares =	
	13,596.06 acres	

continued



TABLE 6. (continued)

Lower Eastern Shore - 14	Elliotts Creek (142)	84,133	
	Townsend (143)	177,200	
	Cape Charles (133)	3,294,759	
	Cheriton (134)	635,815	
	Franktown (124)	4,196,556	
	Jamesville (119)	3,271,989	
	Nandua Creek (113)	3,505,141	
	Pungoteague (114)	6,919,414	
	Chesconessex (108)	<u>184,564</u>	
			22,269,571 sq.m =
		2,226.96 hectares =	
		5,500.58 acres	
Reedville - 15	Fleets Bay (112)	1,209,077	
	Reedville (106)	511,707	
	Burgess (98)	<u>0</u>	
			1,720,784 sq.m =
		172.08 hectares =	
		425.04 acres	
Rappahannock River Complex - 16	Mathews (123)	106,536	
	Wilton (117)	0	
	Deltaville (118)	7,016	
	Irvington (111)	82,576	
	Urbanna (110)	0	
	Champlain (86)	0	
	Mount Landing (94)	0	
	Tappahannock (95)	0	
	Dunnsville (103)	0	
	Morattico (104)	0	
	Lively (105)	0	
	Saluda (116)	<u>0</u>	
		196,128 sq.m =	
		19.61 hectares =	
		48.44 acres	
New Point Comfort Region - 17	Mathews (123)	0	
	New Point		
	Comfort (132)	<u>3,316,851</u>	
		3,316,851 sq.m =	
		331.69 hectares =	
		819.27 acres	

continued

TABLE 6. (continued)

Mobjack Bay Complex - 18	Achilles (131)	4,837,348	
	New Point		
	Comfort (132)	8,228,629	
	Ware Neck (122)	1,719,058	
	Mathews (123)	<u>267,377</u>	
		15,052,412 sq.m =	
		1,505.24 hectares =	
		3,717.94 acres	
York River - 19	Poquoson West (140)	311,790	
	Yorktown (139)	2,134	
	Clay Bank (130)	0	
	Achilles (131)	2,264,289	
	West Point (115)	0	
	Toano (120)	0	
	Gressitt (121)	0	
	Williamsburg (129)	<u>0</u>	
		2,578,213 sq.m =	
		257.82 hectares =	
		636.82 acres	
Lower Western Shore - 20	Cape Henry (152)	367,567	
	Hampton (147)	2,871,000	
	Poquoson East (141)	7,845,321	
	Poquoson West (140)	2,065,254	
	Norfolk North (150)	0	
	Little Creek (151)	0	
	Kempsville (156)	0	
	Princess Anne (157)	<u>0</u>	
		13,149,142 sq.m =	
		1,314.91 hectares =	
		3,247.84 acres	
James River - 21	Hampton (147)	0	
	Newport News		
	South (149)	0	
	Westover (125)	0	
	Charles City (126)	0	
	Brandon (127)	0	
	Norge (128)	464,766	
	Savedge (135)	0	
	Claremont (136)	0	
	Surry (137)	0	
Hog Island (138)	0		

continued

TABLE 6. (continued)

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Yorktown (139)	0
Bacons Castle (144)	0
Mulberry Island (145)	0
Newport News	
North (146)	0
Benns Church (148)	0
Norfolk North (150)	0
Chuckatuck (153)	0
Bowers Hill (154)	0
Norfolk South (155)	0
Kempsville (156)	0

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464,766 sq.m =  
46.48 hectares  
114.81 acres

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TABLE 7. FREQUENCY OF STATIONS WITH ROOTED SUBMERGED AQUATIC VEGETATION ON THE CHESAPEAKE BAY SYSTEM, 1971-85

RIVER SYSTEM	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Elk & Bohemia Rivers	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sassafras	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0
Howell-Swan Points	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chester River	61.1	36.1	26.5	23.5	25.0	25.7	38.9	44.4	33.3	38.9	13.9	0.0	1.1	19.4	22.0
Love-Kent Points	0.0	0.0	0.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eastern Bay	34.0	46.5	34.0	36.2	21.7	42.2	28.3	26.1	17.3	34.8	4.4	4.3	17.4	6.5	17.4
Choptank River	35.0	39.7	19.3	27.6	1.7	39.0	25.8	28.3	26.7	25.0	1.7	6.7	5.0	1.7	11.7
Little Choptank River	21.0	21.0	0.0	0.0	0.0	15.8	5.3	5.3	5.3	0.0	0.0	0.0	0.0	0.0	0.0
James-Barren Islands	44.1	35.3	2.9	5.9	8.8	2.9	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	2.9
Honga River	50.0	40.0	13.3	16.7	10.3	17.2	3.3	3.3	0.0	0.0	0.0	3.3	3.3	0.0	3.3
Fishing Bay	8.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nanticoke-Wicomico River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Manokin River	40.0	46.7	13.3	20.0	7.1	6.7	20.0	0.0	0.0	0.0	6.7	13.3	0.0	6.7	13.3
Little & Big Annemessex R.	70.0	60.0	30.0	57.9	33.3	30.0	30.0	15.0	0.0	5.0	5.0	10.0	0.0	10.0	18.8
Pocomoke Sound	18.2	10.0	4.8	**	15.0	9.1	10.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	4.8
Bloodsworth-Sound Marsh Is.	37.5	22.7	10.9	11.6	7.0	2.2	4.4	0.0	0.0	2.2	11.1	2.2	4.3	0.0	2.4
Smith Island	64.7	45.5	25.0	35.3	22.2	35.3	23.5	5.8	17.6	47.1	47.1	41.2	35.3	29.4	23.5
Total Eastern Shore	36.4	28.5	13.3	18.0	9.7	17.7	13.9	11.6	9.0	12.4	5.4	4.5	5.6	4.5	8.3
Susquehanna Flats	44.4	2.7	0.0	13.5	11.1	8.1	11.1	2.7	8.1	0.0	2.7	13.5	5.4	0.0	2.7
Gunpowder-Bush Rivers	11.1	0.0	0.0	0.0	**	0.0	11.1	0.0	11.1	22.2	11.1	11.1	11.1	0.0	11.0
Back-Middle Rivers	13.6	4.6	4.6	4.6	9.1	4.6	9.1	4.5	4.5	9.1	4.5	0.0	19.0	17.6	19.0
Patapsco River	0.0	5.0	4.8	9.5	**	9.5	14.2	9.5	9.5	0.0	9.5	0.0	4.8	0.0	0.0
Magothy River	33.3	0.0	16.7	16.7	**	16.7	25.0	8.3	16.7	16.7	8.3	0.0	0.0	16.7	0.0
Severn River	40.0	20.0	26.7	26.7	0.0	46.2	20.0	26.7	20.0	13.3	6.6	0.0	6.7	0.0	0.0
South-West-Rhode River	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Curtis-Cove Points	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0
Patuxent River	2.0	4.3	0.0	4.0	0.0	2.1	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Western Shore	6.8	4.2	4.1	8.3	5.0	8.4	8.8	5.0	7.2	4.0	3.7	3.6	4.6	2.7	3.1
Percent of stations vegetated	28.5	21.0	10.5	14.9	8.7	14.9	12.4	9.5	8.4	9.7	4.9	4.2	5.3	4.0	5.7
Number of areas with no SAV recorded	5.0	9.0	12.0	9.0	11.0	8.0	8.0	12.0	13.0	16.0	12.0	16.0	15.0	17.0	13.0

\*\*no stations sampled for this location

## RESULTS

### 1. SUSQUEHANNA FLATS

The distribution of SAV in this section decreased by 6.5% in 1985, from 2150 hectares in 1984 to 2011 hectares in 1985 (Tables 4-6). Mapping of SAV in this section was accomplished both by the use of aerial photography and information provided by Stan Kollar, HCC, where the SAV was too sparse to be detected from the aerial photos. Seven species of SAV were found in 1985 with M. spicatum the most abundant. Other species of importance which appear to be increasing in abundance along the Susquehanna River and in the Havre de Grace area were H. dubia, V. americana, H. verticillata.

The Md.DNR survey found SAV (M. spicatum) at one of the 37 stations they sample annually in the Susquehanna Flats (Table 7). No stations are located in the Susquehanna River, where SAV occurs as far north as Robert Island.

### 2. UPPER EASTERN SHORE

This section showed a 142% increase in SAV from 1984 to 1985. A total of 104 hectares were mapped in 1985 as compared to 43 in 1984 (Tables 4-6). Most of the increase in SAV in 1985 occurred along the Elk, Bohemia and Sassafras Rivers. Of the 7 quadrangles mapped in this section, only Galena showed a decrease in SAV. Fifteen stations were sampled by the Md.DNR in the Elk and Bohemia Rivers, with no vegetation recorded at any of the stations (Table 7). Similarly, no vegetation was found at the 10 stations sampled by the Md.DNR survey on the Sassafras River or the 5 stations on

Stillpond Creek. Other field surveys conducted by citizens and charterboat captains and SAV drift observed by Md.DNR field crews indicate that M. spicatum is the most prevalent species in this section. Seven stations sampled by Md.DNR in the southern portion of the section from Howell to Swan Points also had no SAV.

### 3. UPPER WESTERN SHORE

The 1985 aerial survey indicated there were 238 hectares of SAV, a decrease of 2.4% from that estimated in 1984 (Tables 4-6). Aerial coverage of this section was complete in 1985, thus the estimated 1984 coverage may have been fairly accurate, since little increase or decrease was generally seen on the Western Shore in 1985. Aerial photos indicated that SAV was present in all river systems (Gunpowder, Bush, Back, Middle and Magothy) in the section. Generally, most of the SAV was present along the lower sections of these rivers.

A total of 4 of 27 Md.DNR stations on the Gunpowder, Bush, Back and Middle Rivers had rooted SAV in 1985, an increase of 1 station over 1984 (Table 7). Species present in these samples were M. spicatum, Chara sp., V. americana, P. perfoliatus, and N. guadalupensis. No rooted SAV was found by Md.DNR at the 12 Magothy River stations.

### 4. CHESTER RIVER

In 1985, 671 hectares of SAV were mapped in the Chester River Section, a decrease of 8.2% from the 731 hectares mapped in 1984 (Tables 4-6). Again, most of the SAV mapped (87%) occurred on the Langford Creek

quadrangle. In all, 8 of the 9 quadrangles in the section had SAV present in 1985. Five species of SAV were reported by citizen and Md.DNR field surveys. These species were R. maritima, P. pectinatus, P. perfoliatus, Z. palustris and M. spicatum, with P. perfoliatus and R. maritima reported most often. Aerial coverage of this area was complete in 1985.

The Md.DNR Survey found 8 (22.2%) of their 35 stations in the Chester River vegetated in 1985, as compared to 7 (19.4%) in 1984 (Table 7).

## 5. CENTRAL WESTERN SHORE

A total of 26.3 hectares of SAV was mapped in this section in 1985, while none was seen in 1984 (Tables 4-6). Seventy-two percent of the SAV reported was located in Herring Bay on the North Beach quadrangle. No SAV was mapped in any of the river systems in this section except for a small bed near the mouth of the West River.

The Md.DNR survey found no rooted SAV in the Severn, South, West and Rhode River sections (Table 7).

## 6. EASTERN BAY

In 1985, 356 hectares of SAV were noted on the aerial photography, an increase of 441% over the 66 hectares reported in 1984 (Tables 4-6). R. maritima was the most abundant species reported in field surveys by citizens and Md.DNR personnel. P. pectinatus and P. perfoliatus were also reported, but other species reported in 1978, such as M. spicatum, E. canadensis, and Z. palustris were not seen.

The Md.DNR survey, as in 1984, found no SAV at the stations from Love Point to Kent Point, while an increase of 3 (6.5%) to 8 (17.4%) of 46 stations in Eastern Bay were vegetated (Table 7). R. maritima was the only species found in the survey.

## 7. CHOPTANK RIVER

In 1985, 1528 hectares of SAV were noted on the aerial photography, as compared to 82 hectares seen in 1984 (Tables 4-6). This represents a 1760% increase over the previous year. Ten of the 13 quadrangles in the section had SAV in 1985, compared to only 6 in 1984, and 6 had over 100 hectares of SAV. A total of 6 species were reported to occur in this section. R. maritima was by far the most abundant species reported in field surveys. Other species found were P. perfoliatus, P. pectinatus, Z. palustris, N. guadalupensis, and V. americana.

The Md.DNR survey found rooted SAV at 7 of 60 stations on the Choptank River in 1985 (Table 7), while none of the 19 stations on the Little Choptank River had SAV. All SAV found was R. maritima.

Studies by the University of Maryland Center for Environmental and Estuarine Studies at the Horn Point Laboratory (HPL) also confirmed the increases in SAV seen on the aerial photography. Dr. Court Stevenson, who coordinates the SAV research at the HPL, reported that there was a strong resurgence of SAV in the lower Choptank River, with Z. palustris seedlings evident at many sites in May, while R. maritima replaced it was the dominant species in July. Plants were found in areas where no grass had existed for the past five years. The main study site at Chapel Creek had dense stands of SAV in 1985 where only vestigial populations existed in 1984. Visual



reconnaissance during low level aerial flights indicated that SAV was present mostly in protected coves of the lower Choptank River. No grass was sighted above the Cambridge Bridge. Although a resurgence in R. maritima was seen in 1985, other species such as P. perfoliatus, P. pectinatus and M. spicatum, once common in the Choptank River, were not observed (Stevenson et al., 1986).

The UMd.HPL is also conducting SAV transplant studies in the Choptank River. Their six study sites (Horn Point, Chapel Creek, Todd's Cove, Boone Creek, Foxhole Creek, Irish Creek) are all located along the lower Choptank River. All the selected sites had SAV in the 1970's, which had declined substantially in the 1980's.

Because of the relatively low runoff associated with the dry spring and summer of 1985, salinities were much higher (12-17 ppt) (Table 8) than normal (they can be as low as 8 ppt in wet summers). Because of this, R. maritima (a species with high salinity tolerance) was able to colonize a wide range of habitats. Mean dissolved nitrogen levels are just under 10 uM (Table 8) while dissolved inorganic phosphorus was well under 1.0 uM (Table 8). High turbidity, which has been implicated as one the major reasons for the SAV decline, is somewhat reflected by the seston values (Table 8). In relation to this, average light measurements of the study sites (Table 8) show a wide fluctuation, which most likely impacts the potential for reestablishment of SAV at sites such as Todd's Cove (Stevenson, et. al., 1986). In support of this reasoning, the study site with the lowest mean seston and lowest mean light attenuation values (Irish Creek) had the greatest amount of SAV (69.8 ha) mapped from the aerial photography.

TABLE 8. HECTARES OF SAV; MEAN SALINITY (PPT), SESTON (MG/L), Kd\*, DISSOLVED INORGANIC NITROGEN (DIN) AND PHOSPHORUS (DIP) AND NITROGEN: PHOSPHORUS RATIO AT TRANSPLANT SITES IN CHOPTANK RIVER DURING THE 1985 GROWING SEASON. ALL DATA EXCEPT HECTARES OF SAV FROM STEVENSON ET. AL., 1986.

<u>Site</u>	<u>Hectares of SAV**</u>		<u>Salinity</u>	<u>Seston</u>	<u>Kd</u>	<u>DIN (uM)</u>	<u>DIP (uM)</u>	<u>N:P</u>
	<u>1984</u>	<u>1985</u>	(mean ± SE)	(mean ± SE)	(mean ± SE)	(mean ± SE)	(mean ± SE)	
Horn Point	0.0	0.0	14.6 ± 0.42	17.2 ± 4.6	1.16 ± 1.41	9.4 ± 1.1	0.27 ± 0.05	35
Chapel Creek	3.3	55.7	15.7 ± 0.18	16.2 ± 2.9	1.05 ± 0.20	8.5 ± 1.8	0.37 ± 0.21	23
Todd's Cove	0.0	68.5	15.1 ± 0.30	29.2 ± 3.8	2.88 ± 0.84	8.8 ± 3.6	0.17 ± 0.04	51
Boone Creek	0.0	0.8	14.9 ± 0.34	18.2 ± 3.7	1.63 ± 0.38	4.4 ± 0.4	0.15 ± 0.07	29
Foxhole Creek	0.0	4.8	14.6 ± 0.46	33.9 ± 11.0	1.08 ± 0.02	7.0 ± 1.2	0.53 ± 0.18	13
Irish Creek	0.0	69.8	15.0 ± 0.29	10.6 ± 1.7	0.82 ± 0.07	7.9 ± 1.4	0.95 ± 0.57	8

\*Kd - attenuation coefficient, calculated from photosynthetically active radiation measured at surface and bottom. Kd of 4 is considered beyond the light compensation ability of the most species of SAV.

\*\*Hectares of SAV as measured from 1984 and 1985 aerial photographic surveys.

## 8. PATUXENT RIVER

In 1985, 44 hectares of SAV were noted on the aerial photography, as compared to only 9 in 1984 (Tables 4-6). SAV was noted on 4 of the 5 quadrangles in this section.

The Md.DNR survey found no SAV at the 43 stations they surveyed (Table 7).

## 9. MIDDLE WESTERN SHORE

A total of 23 hectares of SAV was noted on the aerial photography in this section in 1985 (Tables 4-6). Ninety-nine percent of their SAV occurred in areas where aerial photography was not available in 1984. Four of the eight quadrangles in this section had vegetation, with 71% of it occurring on the Point No Point quadrangle. Most of the mapped SAV in this section occurred in small marsh ponds that drain into the bay. The Md.DNR survey found no SAV at 8 sampled stations from Curtis to Cove Points (Table 7). This section is a very exposed region, with little habitat suitable for SAV; thus it would not be expected to support significant stands of SAV.

## 10. LOWER POTOMAC RIVER

In 1985 there were 381 hectares of SAV in the Lower Potomac River, as compared to 194 mapped in 1984 (Tables 4-6). This represents a 69% increase, of which 9% is accounted for by quadrangles that were not mapped in 1984 because of a lack of photographic coverage. Only 9 of the 20 quadrangles in the section had SAV, and 2 that had SAV in 1984 (Colonial

Beach South and Stratford Hall) had none in 1985. Seventy-four percent of the SAV mapped in 1985 occurred on the Mathias Point quadrangle.

The Md.DNR survey sampled 88 stations in the lower section, and found vegetation at 4 stations, all at the very northern end of the section near Upper Cedar Point, and in the Nanjemoy River. Species located at these stations were P. perfoliatus, V. americana, Z. palustris, M. spicatum and N. quadilupensis.

## 11. UPPER POTOMAC RIVER

Once again in 1985 the Upper Potomac River exhibited a significant increase in abundance of SAV (Tables 4-6). In 1985, 1440 hectares of SAV were noted on the aerial photography as compared to 600 in 1984. This represents a 140% increase. The vegetation is still largely confined to the upper reaches of the section between Alexandria, Virginia and Marshall Hall, Maryland (Figure 6). Ninety-five percent of the mapped SAV occurred on the Alexandria and Mount Vernon quadrangles, which cover the upper reaches previously described. Ten species were found in this reach during the USGS monitoring program in which 62 transects were sampled in spring and fall and a shoreline survey is made in fall. Tables 9, 10, and 11 present data for macrophyte species found on individual vegetated transects, the relative occurrence of vegetated transects, stations and grabs, and total sampled dry weight and biomass of all species of SAV for the spring and fall, respectively.

In 1985, USGS estimated that areal coverage of SAV in their study area was approximately 3600 acres, based on shoreline survey information and aerial photographs. The aerial mapping effort for the same area, calculated

TABLE 9. SPECIES OF SUBMERSED AQUATIC PLANTS FOUND ON VEGETATED TRANSECTS IN THE TIDAL POTOMAC RIVER, 1985.

Transect	Species <sup>1/</sup>	
	Spring	Fall
OR-1R	Hydr, P. pect, Zann	Heter, Hydr, Myrio, Najas m, Zann
AD-1R	Hydr	Cerat, Heter, Hydr, Myrio
DM-1R	Cerat, Hydr	Cerat, Heter, Hydr, Myrio
DM-2R	Hydr	Cerat, Heter, Hydr, Myrio, Vall
DM-3R	Cerat, Hydr, Myrio Nitella	Cerat, Heter, Hydr, Najas g, Myrio
DM-4R	Cerat, Heter, Hydr, Myrio, Najas g, Nitella, P. pect, Vall, Zann,	Cerat, Heter, Hydr, Najas g, Myrio, Najas m, Vall, Zann
GC-1R	Hydr, Myrio	Cerat, Heter, Hydr, Myrio, Vall
GC-2R	Cerat, Hydr, Myrio, Vall	Cerat, Heter, Hydr, Myrio, Vall
GC-3R	Myrio, Vall	Myrio, Vall
GC-4R	Cerat, Hydr, Myrio, Vall	Heter, Myrio
GC-5R		Myrio
GC-7R	Myrio	Myrio
WC-1R	Vall, Zann	Hydr, Vall
PY-1R	Hydr, Najas g	Cerat, Heter, Hydr, Myrio, Najas g, Najas m, Vall
PY-2R	Cerat, Heter, Hydr, Myrio, Najas g, Nitella, Vall	Cerat, Heter, Hydr, Myrio, Najas g, Vall
PY-3R	Hydr, Myrio, Najas g	Cerat, Heter, Hydr, Myrio, Najas g, Vall
PY-4R	Zann	Cerat, Heter, Hydr, Myrio, Vall
PY-5R		Heter, Myrio, Vall
PY-6R	Cerat, Myrio, Vall	Cerat, Heter, Hydr, Myrio, Vall
PY-7R	Cerat, Heter, Hydr, Myrio, Nitella, Vall, Zann	Cerat, Heter, Hydr, Myrio, Najas g, Najas m, Vall
PY-8R	Cerat, Heter, Hydr, Myrio, Najas g, Vall, Zann	Cerat, Heter, Hydr, Myrio, Najas g, Najas m, Vall

Continued

TABLE 9. CONTINUED.

Transect	Species <sup>1/</sup>	
	Spring	Fall
PY-9R	Heter, Myrio	Heter, Hydr, Myrio
PY-10R	Cerat, Hydr, Najas g, Myrio	
PY-1T-2	Cerat, Myrio	Cerat, Hydr, Myrio
PY-2T-1	Cerat, Hydr, Myrio	Cerat, Hydr, Myrio
MN-10R	Vall	Vall
MN-4T-2	Vall	Cerat, Myrio, Vall

<sup>1/</sup>Cerat = Ceratophyllum demersum, Heter = Heteranthera dubia,  
 Hydr = Hydrilla verticillata, Myrio = Myriophyllum spicatum,  
 Najas g = Najas guadalupensis, Najas m = Najas minor  
 Nitella = Nitella flexilis, P. pect = Potamogeton pectinatus  
 Vall = Vallisneria americana, Zann = Zannichellia palustris

TABLE 10. RELATIVE OCCURRENCE OF VEGETATED TRANSECTS, STATIONS, AND GRABS FOR THE TIDAL POTOMAC RIVER, 1985. (RELATIVE OCCURRENCE AS NUMBER VEGETATED/TOTAL NUMBER)

Study areas	Sampling unit	1985	
		Spring	Fall
Roosevelt Island to Wilson Bridge	Transects	3/6	3/6
	Stations	13/32	12/33
	Grabs	33/96	24/99
Dyke Marsh	Transects	4/4	4/4
	Stations	29/38	48/55
	Grabs	56/114	127/165
Gunston Cove	Transects	5/13	6/13
	Stations	19/71	24/79
	Grabs	32/213	38/237
Piscataway Creek	Transects	11/13	11/13
	Stations	54/95	65/101
	Grabs	116/285	167/303
Pomonkey Creek	Transects	0/4	0/4
	Stations	0/20	0/20
	Grabs	0/60	0/60
Mattawoman Creek	Transects	2/22	2/22
	Stations	7/112	3/111
	Grabs	15/336	7/333

TABLE 11. TOTAL SAMPLED DRY WEIGHT AND BIOMASS OF ALL SPECIES OF SUBMERSED AQUATIC VEGETATION IN THE TIDAL POTOMAC RIVER, 1985. (DRY WEIGHT IN GRAMS; BIOMASS IN GRAMS PER SQUARE METER; TR, TRACE (LESS THAN 1 GRAM); A, NO BIOMASS CALCULATED--SEE TEXT).

Transect	Spring 1985			Fall 1985		
	Vegetated stations	Dry weight	Biomass	Vegetated stations	Dry weight	Biomass
OR-1R	6	10	6	7	138	71
AD-1R	4	36	32	4	100	90
DM-1R	11	44	14	14	3238	a
DM-2R	2	Tr	Tr	6	1663	a
DM-3R	6	128	76	12	1622	a
DM-4R	11	39	13	16	423	a
GC-1R	12	66	20	15	350	a
GC-2R	3	7	8	3	92	110
GC-3R	3	8	10	3	22	26
GC-4R	2	13	70	1	79	283
GC-5R	0	0	0	3	21	25
GC-7R	1	Tr	Tr	3	5	6
WC-1R	3	17	20	2	258	a
PY-1R	3	Tr	Tr	7	104	53
PY-2R	11	391	127	11	1849	a
PY-3R	3	Tr	Tr	4	261	234
PY-4R	2	Tr	Tr	2	38	68
PY-5R	0	0	0	3	41	49
PY-6R	4	3	3	3	130	155
PY-7R	4	12	11	11	1071	a
PY-8R	16	157	35	17	1562	a
PY-9R	2	1	18	2	43	77
PY-10R	5	12	9	0	0	0
PY-1T-2	1	1	4	4	Tr	Tr
PY-2T-1	3	19	34	3	552	a
MN-10R	2	8	14	1	96	344
MN-4T-2	0	0	0	1	8	29



3557 acres of SAV which, without the benefit of a ground truth survey, is only 1.2% different than the USGS estimate. Since 1984, the vegetation has spread almost 2 kilometers further downriver. Almost all areas less than 2 meters deep were vegetated with SAV. The most abundant and most widely occurring species were H. verticillata, M. spicatum, H. dubia, C. demersum, V. americana and N. quadilupensis. H. verticillata, M. spicatum and C. demersum occurred in 79%, 55% and 47% of the vegetated transect samples in the fall of 1985 (Figure 7). H. verticillata dominated Hunting Creek, Swan Creek and the Dyke Marsh area (Figure 8). Results of the USGS shoreline survey show that H. verticillata was more abundant than all other species in 25% of the vegetated areas, accounting for 62% of the total fall dry weight.

As mean secchi disk readings above Marshall Hall ( $87 \text{ cm} \pm 31$ ) were significantly better than below Marshall Hall ( $55 \text{ cm} \pm 19$ ), poor light penetration may partially account for the lack of vegetation below Marshall Hall in this section. Other factors may also be involved because light measurements with an underwater spectroradiometer in 1985 suggest that sufficient light reaches the bottom for plant growth in less than 1.5 meters of water.

The Md.DNR survey sampled 52 stations in this section, with a total of 3 stations yielding SAV. Rooted SAV species found at these stations were M. spicatum, H. verticillata and C. demersum.

## 12. MIDDLE EASTERN SHORE

In 1985, there was 1188 hectares of SAV in this section, as compared to only 33 hectares in 1984 (Tables 4-6). This represents a 3504% increase, the largest increase seen in any section of the bay. Twelve of the fifteen

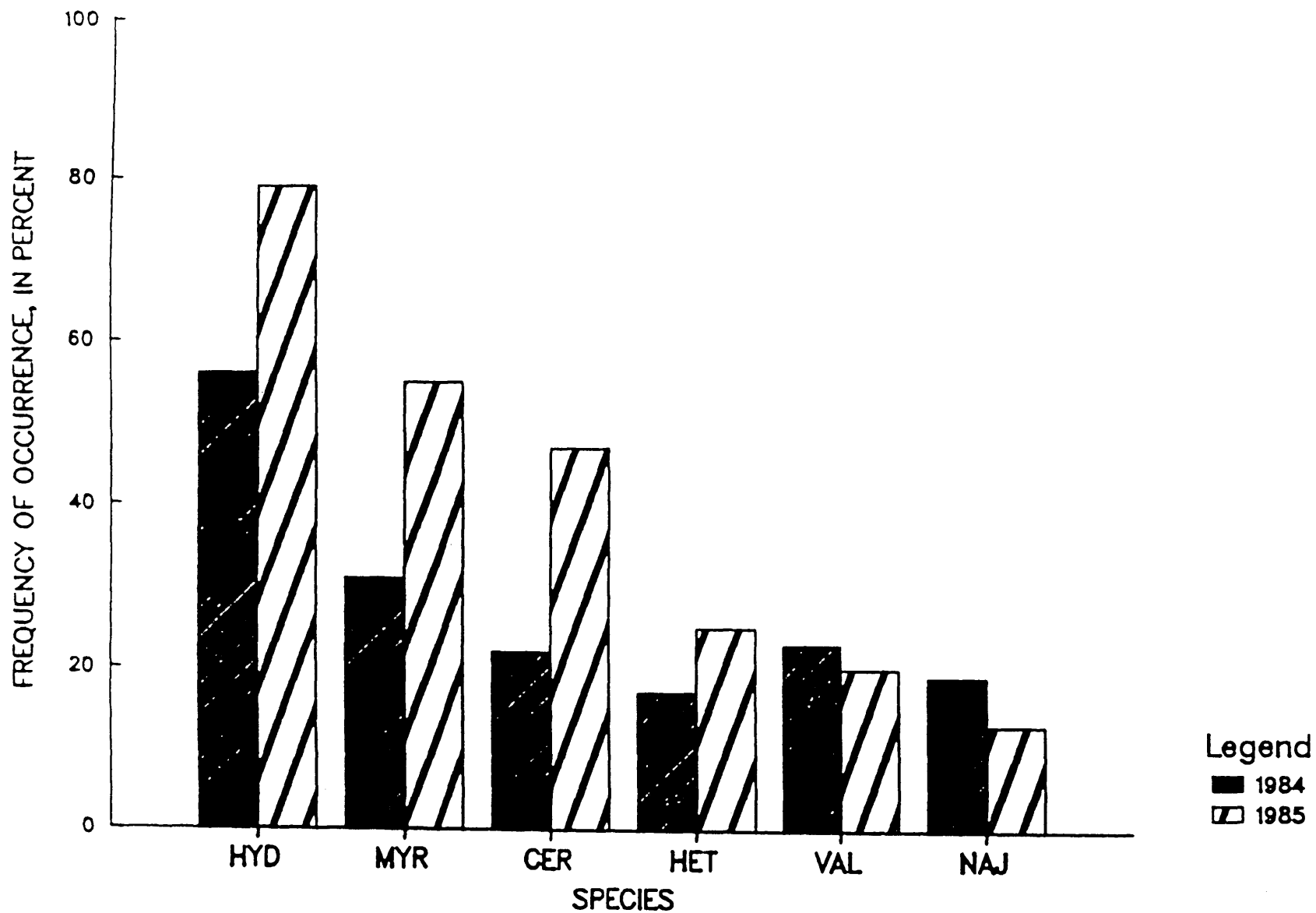


Figure 7. Frequency of occurrence of five major SAV species in the Potomac River between Washington, D.C. and Quantico, VA, 1984 and 1985 (MYR - Myriophyllum spicatum; HYD - Hydrilla verticillata; CER - Ceratophyllum demersum; HET - Heteranthera dubia; NAJ - Najas quadalupensis).

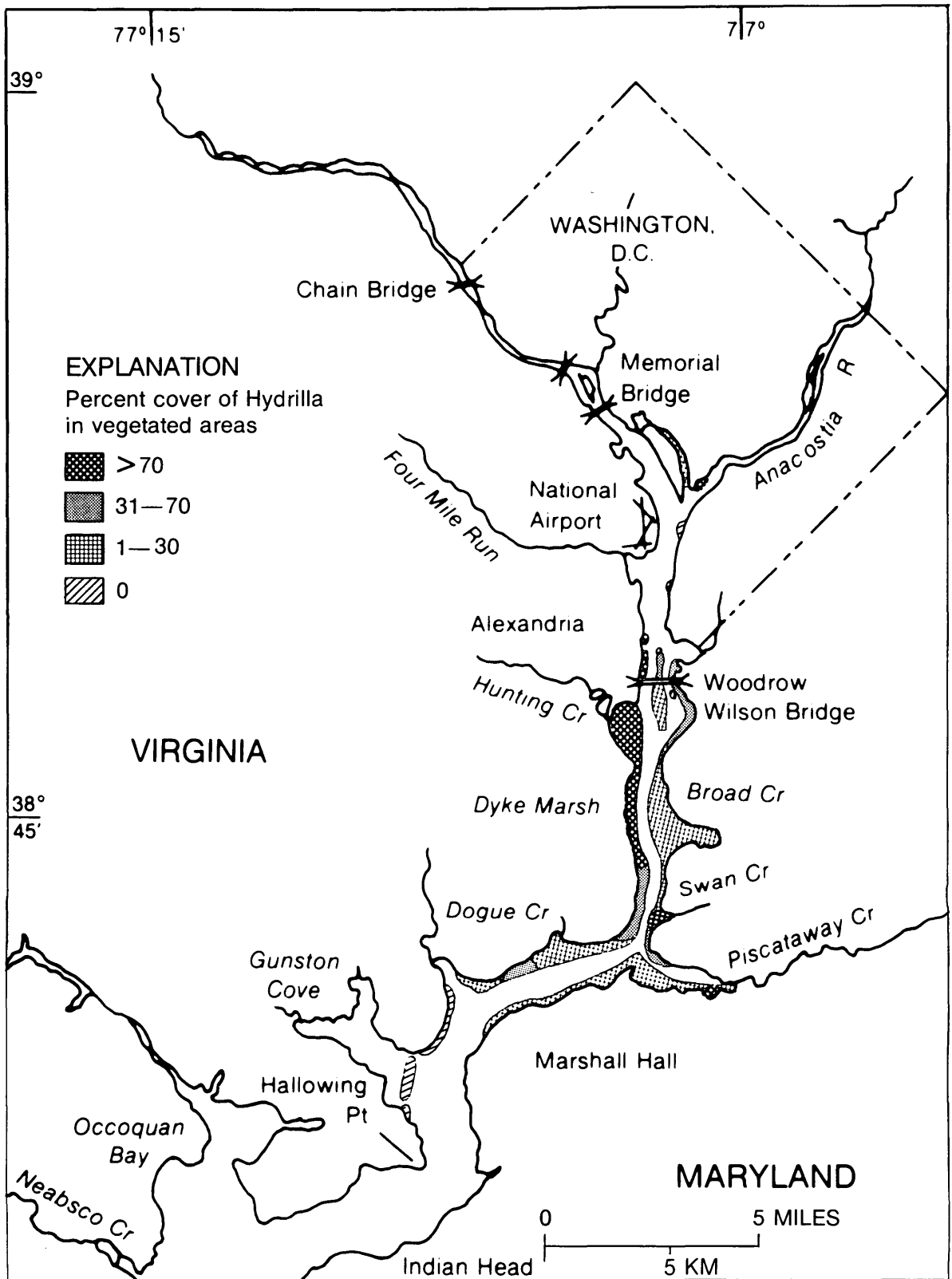


Figure 8. Percent cover of Hydrilla in vegetated areas in the tidal Potomac River in the fall, 1985 (from Rybicki, et al., 1986).

quadrangles in the section had vegetation in 1985, while only 5 had vegetation in 1984. One of the most significant increases was the 265 hectares, mostly occurring in one large bed, in the Barren Island Gap region, where no SAV was seen in 1984.

The Md.DNR survey sampled 169 stations in this section examining sites in the James-Barren Island system, Honga River, Fishing Bay, Barren Island/South Marsh Island, Nanticoke-Wicomico River, Manokin River and Big Annemessex River (Table 7). SAV was found at one station each in the James-Barren Island system, Honga and Bloodsworth Island/South Marsh Island sections, while 2 stations in the Manokin River, and 3 stations in the Big/Little Annemessex River sections had SAV. No SAV was found in the other sections sampled by the Md.DNR survey. R. maritima was found at 7 of the 8 sample points with SAV, while Z. palustris was located at the other site.

### 13. TANGIER ISLAND COMPLEX

This section contains the greatest amount of SAV in the Lower Bay zone (5,504 ha or 49% of the total for this zone) and is similar to the amount reported for 1984 (5447 ha).

SAV beds are concentrated in distinct areas in the section: adjacent to Big Marsh between Chesconessex Creek and Deep Creek, on the west side of Webb and Halfmoon Island, on the east side of Great Fox Island and in the areas between Tangier and Smith Island. Dominant species in this section are Z. marina and R. maritima. Although this section has significant stands of SAV, and data indicates that SAV has been increasing in abundance here, the MD.DNR survey found SAV in only 8 of 57 stations in this section (Table 7). The DNR survey indicated that SAV abundance decreased to 23.5% of the

surveyed stations in the Smith Island portion and has been continually declining from 47.1% of the stations in 1980, contrary to the findings of the aerial survey. An examination of the 57 stations visited by DNR scientists indicated most stations were in waters too deep or occurred just outside SAV beds delineated from aerial photographs. Where survey stations indicated presence of SAV, six of the eight stations occurred in SAV beds mapped from aerial photographs.

Observations from citizens indicated SAV in 3 of the 6 mapped SAV beds, with Z. marina being observed at 5 of the 6 stations.

#### 14. LOWER EASTERN SHORE

This section contained 20% of the SAV in the Lower Bay zone with 2,227 hectares present in dense to scattered, patchy beds from Chesconessex Creek to Elliotts Creek (Tables 4-6). Large beds of Z. marina and R. maritima were present around Cape Charles, and at the mouths of Cherrystone Inlet, Hungars Creek, Mattawoman Creek, Occahannock Creek, Craddock Creek, Pungoteague Creek and Onancock Creek. The areas between these creek systems are sparsely vegetated or unvegetated because of the exposed and dynamic nature of these broad flats.

SAV in the Vaucluse Shore historical area was reduced slightly (6%) from 1984 (Table 12). The SAV at the site has been gradually declining in the last 50 years principally due to the migrating nature of the sand bars and spits which cover existing SAV and eliminate the area from potential SAV growth.

TABLE 12. AREAS OF SAV AT HISTORICAL MAPPING SITES (LOWER BAY ZONE) 1937-1985

Parrott Islands					
Date	Area m <sup>2</sup>				Total
	<10%	10-40%	40-70%	70-100%	
1937	0	297,024	1,598,268	0	1,895,292
1951	394,797	778,146	1,222,410	1,158,384	3,553,737
1960	411,306	631,566	547,014	1,947,372	3,537,258
1968	92,064	1,354,110	1,205,628	124,374	2,776,176
1974	0	2,922	7,710	0	10,632
1978	0	22,872	0	0	22,872
1980	0	0	0	0	0
1981	0	0	0	0	0
1984	0	0	0	0	0
1985	0	0	0	0	0

Fleets Bay					
Date	Area m <sup>2</sup>				Total
	<10%	10-40%	40-70%	70-100%	
1937	0	1,385,424	548,076	744,864	2,678,364
1953	1,488,258	597,354	591,018	284,232	2,960,862
1961	1,572,612	1,330,140	1,643,892	884,280	5,430,924
1969	1,436,403	1,938,660	1,592,170	270,372	5,237,605
1974	105,714	1,624,884	1,325,040	0	3,055,638
1978	167,688	528,918	33,592	0	730,198
1980	0	121,890	26,040	2,472	150,402
1981	0	683,250	9,816	13,986	707,052
1984	232,164	730,680	33,318	14,556	1,010,718
1985	436,989	377,019	44,733	0	858,741

Mumfort Islands					
Date	Area m <sup>2</sup>				Total
	<10%	10-40%	40-70%	70-100%	
1937	0	495,060	397,368	23,832	916,260
1953	151,728	699,252	106,356	1,461,846	2,419,182
1960	0	258,210	1,880,238	0	2,138,448
1971	0	685,536	1,088,976	0	1,774,512
1974	0	127,488	23,826	0	151,314
1978	0	0	0	0	0
1980	0	0	0	0	0
1981	0	0	0	0	0
1984	0	0	0	0	0
1985	0	0	0	0	0

continued

TABLE 12. (continued)

Jenkins Neck					
Date	Area m <sup>2</sup>				Total
	<10%	10-40%	40-70%	70-100%	
1937	0	1,180,200	820,612	32,520	2,033,332
1953	426,480	647,112	717,180	1,811,832	3,602,604
1960	140,448	794,178	639,012	2,067,948	3,641,586
1971	0	278,586	2,350,380	33,792	2,662,758
1974	93,972	303,804	1,599,228	93,912	2,090,916
1978	132,714	299,760	671,616	162,408	1,266,498
1980	60,810	191,605	690,968	179,589	1,122,972
1981	0	0	763,194	309,012	1,072,206
1984	72,876	289,388	563,268	954,360	1,879,892
1985	32,988	247,934	496,543	1,416,525	2,193,991

East River					
Date	Area m <sup>2</sup>				Total
	<10%	10-40%	40-70%	70-100%	
1937	1,024,010	809,770	1,357,790	85,530	3,277,100
1953	591,840	1,158,490	1,394,740	1,742,050	4,887,120
1963	31,032	1,916,530	2,340,480	0	4,288,042
1971	0	2,007,460	2,253,080	96,620	4,357,160
1974	509,730	348,820	1,955,130	0	2,813,680
1978	47,860	515,000	1,864,850	0	2,427,710
1980	191,520	451,351	808,842	158,634	1,610,347
1981	0	96,174	1,183,542	198,474	1,478,190
1984	181,626	633,012	1,050,666	139,326	2,004,630
1985	0	535,308	829,212	0	1,364,520

Vaucluse Shores					
Date	Area m <sup>2</sup>				Total
	<10%	10-40%	40-70%	70-100%	
1938	0	1,120,284	1,451,392	1,480,128	4,051,804
1948	506,706	1,171,884	1,715,556	0	3,994,146
1955	1,938,258	0	528,996	1,238,124	3,705,378
1966	452,940	402,324	2,534,178	604,176	3,993,618
1972	286,554	364,764	2,515,740	391,770	3,558,828
1978	187,728	507,054	80,872	2,036,526	2,812,180
1980	359,551	7,098	697,842	1,783,938	2,848,429
1981	327,786	97,950	355,344	1,852,392	2,633,472
1984	0	15,792	1,137,882	1,731,678	2,885,352
1985	0	715,404	522,273	1,459,126	2,696,803

## 15. REEDVILLE

The Reedville section (Tables 4-6) contained 172 hectares in 1985, a reduction of 35% from 1984. This reduction was also evident in the Fleets Bay historical area which declined in areal coverage by 15% (Table 12). Most of the SAV beds in this section are small and sparse, they are susceptible to disturbance and can undergo rapid changes in short periods of time. Much of the decline observed between 1984 and 1985 occurred in the patchy beds designated with a density class of 1.

## 16. RAPPAHANNOCK RIVER COMPLEX

Only 20 hectares of SAV were found in this section in 1985, similar to the total area found in 1984 (Tables 4-6). The SAV stands found in the Milford Haven area, consisting of Z. marina and R. maritima, are still present and very dense. Direct observations indicate the persistence and the very healthy nature of these beds. There were no SAV beds in the Parrott Island historical area (Table 12). Transplanting of Z. marina near Parrott Island has not been successful, while some of the transplanted Z. marina in the Piankatank River off Burton's Point in 1984 has survived and is still present in the summer of 1986. The patches of transplanted grass are very small ( $<1\text{m}^2$ ) and were not apparent in the photographs.



## 17. NEW POINT COMFORT REGION

SAV beds in this section are concentrated in the area between New Point Comfort Lighthouse and Horn Harbor (Tables 4-6). This section contained 332 hectares of SAV, consisting of Z. marina and R. maritima, and represents an 11% increase in areal coverage from 1984.

## 18. MOBJACK BAY COMPLEX

This section contains the greatest amount of SAV along the entire western shore with 1505 hectares present in 1985 (Tables 4-6). This is a 3% decrease from 1984. SAV beds, consisting of Z. marina and R. maritima, are present along the shorelines of the entire Mobjack Bay and three of four tributaries: the Severn, Ware and North Rivers. Little SAV is found in the East River.

SAV in the East River historical area decreased 32% from 1984 (Table 12).

## 19. YORK RIVER

This section contained 258 hectares of SAV in 1958 (Tables 4-6) an increase of 8% over that found in 1984. SAV beds (Z. marina and R. maritima) are present from Gloucester Point to the mouth of the river and are principally found along the north shore. No SAV beds are found above Gloucester Point, although a number of previously vegetated sites have been used for transplant experiments by VIMS scientists. Transplanted SAV beds

(Z. marina only) at Gloucester Point are thriving and individual planted units are rapidly expanding. The bed planted in 1982 on 1.0 and 0.5 m centers is now one cohesive unit while individual units planted on 2.0 m centers in 1983 in an area adjacent to the 1982 plantings are growing. Individual sods, 225 cm<sup>2</sup>, have now increased in areal coverage to 11,000 cm<sup>2</sup> in less than 3 years. The patches are more elliptical in shape, with the long axis occurring parallel to the beach. These patches average 131 by 106 cm. Success rate with transplanted Z. marina at Mumfort Island has been much less than at the Gloucester Point area. Z. marina transplanted to Clay Bank, the previous upriver limits of the species, in the past, never survived through the summer.

SAV in the Jenkins Neck historical area increased 17% from 1984, but is still 150 ha below levels found during the years when SAV was very abundant (Table 12). SAV continues to be absent from the Mumfort Island historical area (Table 12).

## 20. LOWER WESTERN SHORE

There were 1315 hectares of SAV in this section in 1985 (Tables 4-6), an increase of 14% from 1984. These beds, consisting of both Z. marina and R. maritima, are still concentrated in Broad Bay, Back River, Drum Island Flats adjacent to Plumtree Island and on the south side of Goodwin Island. The beds found on Drum Island Flats represent one of the more extensive and densely vegetated areas along the western shore today.

## 21. JAMES RIVER

There are no SAV beds in the James River that have been identified from the aerial photography or ground surveys (Tables 4-6). Many of the tributaries of the James River most likely contain scattered, but small beds of SAV that are principally located along the marsh banks or headwaters of the tributaries. The concentration of SAV in the Chickahominy River still persists (46 hectares) and represents the most distinct beds found in the entire section. The species found in these upriver and marsh creek areas are fresh to brackish water species such as C. demersum, E. canadensis and Najas spp.

## SUMMARY

The distribution and abundance of submerged aquatic vegetation (SAV) was mapped for the entire Chesapeake Bay in 1985. Color aerial photography at a scale of 1:12,000 was used to map the Upper and Middle Bay zones, while black and white photography at a scale of 1:24,000 was used to map the Lower Bay zone. As a whole, the Chesapeake Bay had 19,390 hectares of SAV in 1985, a 26% increase over the 15,400 hectares in 1984.

The Upper Bay zone had 3,025 hectares of SAV in 1985 (15.6% of the total SAV in the bay). This represents a decrease of 4.5% from that reported in 1984. Sixty-six percent of the SAV in this zone was located in the Susquehanna Flats section. Three of the four sections in this zone showed a slight decrease in SAV abundance, while a 142% increase was seen in the sparsely vegetated (104 ha) Upper Eastern Shore section, principally along the Elk and Sassafras Rivers. SAV beds in the Upper Bay zone consisted of 13 species. Dominant species in the Susquehanna Flats were Myriophyllum spicatum, Hydrilla verticillata, and Vallisneria americana, while the Chester River was dominated by Potamogeton perfoliatus and Ruppia maritima.

The Middle Bay zone had 4986 hectares of SAV in 1985 (25.7% of the total SAV in the bay), which represents a 389% increase from that reported in 1984. All sections in the zone showed an increase in SAV, with the vast majority (3,072 ha) of the SAV and the greatest percent changes occurring in the Eastern Bay (441%), Choptank River (1760%), and Middle Eastern Shore (3504%) sections, located on the Eastern Shore of the mainstem of the bay. The Patuxent River, although sparsely vegetated, showed a 401% increase in SAV, from 9 hectares in 1984 to 44 hectares in 1985. Both Potomac River

sections increased in SAV in 1985, with the largest increase (140%) occurring in the Upper Potomac River section. A portion of the 59% increase documented in the Lower Potomac River is most likely the result of more complete aerial photographic coverage than was obtained in 1984.

SAV beds in the mainstem of the Middle Bay zone consisted principally of Ruppia maritima, with about six other species being reported. The Potomac River SAV bed consisted of fourteen different species, with the most prevalent being Myriophyllum spicatum and Hydrilla verticillata.

The return of SAV in the Upper Potomac River continues to be of significance with regard to its rapid spread in a short time frame. In less than five years, SAV has increased from almost nothing to 1440 hectares. Although H. verticillata is one of the dominant species, other species coexist and, in some areas, share the dominant role with H. verticillata.

The Lower Bay zone had 11,379 hectares of SAV in 1985 (58.7% of the total SAV in the bay). This amount was similar to that reported for 1984. Sixty-eight percent of the SAV in this zone is found along the bayside of the Eastern Shore, with the major beds being located on the broad, shallow flats in and adjacent to Tangier and Smith Islands. SAV beds are concentrated at the mouths of the major bayside creeks, principally Cherrystone Inlet, Hungars Creek, Mattawoman Creek, Occahannock Creek, Craddock Creek, Pungoteague Creek and Onancock Creek. Along the western shore of the zone, SAV beds are found in the Back River, Drum Island Flats adjacent to Plum Tree Island, the mouth of the York River adjacent to the Guinea Marshes, along the shoreline of the Mobjack Bay and in a small band from New Point Comfort to Horn Harbor. There were no major changes in SAV distribution in the nine sections in this zone. The largest change occurred in the Reedville section where SAV distribution decreased 34% from 1984.

SAV beds consist of principally two species, Zostera marina and Ruppia maritima. Zannichelia palustris has also been found in small isolated patches, but is not considered a dominant species here.

SAV was still absent in two of the six historical areas from the lower Bay Zone (Mumfort Island and Parrott Island). SAV increased in the Jenkins Neck area (17%) but decreased in the East River (33%), Fleets Bay (15%) and Vaucluse Shores (6%) areas from that reported in 1984. Changes in the Vaucluse Shore area are related to the dynamic nature of the sand bars and sand spits that continually alter the available area for SAV growth. Changes in the East River and Fleets Bay distribution occurred in beds that were very patchy. These types of beds are more susceptible to physical damage from storms and can easily change in time periods of less than one year.

Zostera marina transplanted to unvegetated areas in the Piankatank and York Rivers between 1982 and 1985 have persisted, and in some cases, are rapidly expanding. These areas are being closely monitored by VIMS' scientists to assess overall changes in distribution of these transplants with time.

SECTION 6  
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APPENDIX A

SPECIES OF SUBMERGED AQUATIC PLANTS FOUND IN THE CHESAPEAKE BAY AND TRIBUTARIES (MODIFIED FROM CARTER, ET AL., 1985)

Family	Species	Common name
Characeae (muskgrass)	<u>Chara braunii</u> Gm. <u>Chara zeylanica</u> Km. ex Wild <u>Nitella flexilis</u> (L). Ag.	Muskgrass
Najadaceae (pondweed)	<u>Potamogeton perfoliatus</u> L. <u>Potamogeton pectinatus</u> L. <u>Potamogeton crispus</u> L. <u>Potamogeton pusillus</u> L. <u>Ruppia maritima</u> L. <u>Zannichellia palustris</u> L. <u>Najas quadalupensis</u> (Spreng.) Morong <u>Najas gracillima</u> Magnus <u>Najas minor</u> All	Redhead grass Sago pondweed Curly pondweed Slender pondweed Widgeongrass Horned pondweed Southern naiad  Naiad
Hydrocharitaceae (frogbit)	<u>Vallisneria americana</u> Michx. <u>Elodea canadensis</u> (Michx.) Planch. <u>Egeria densa</u> Planch. <u>Hydrilla verticillata</u> (L.f.) Caspary	Wild celery Common elodea  Water-weed Hydrilla
Ceratophyllaceae (coontail)	<u>Ceratophyllum demersum</u> L.	Coontail
Haloragidaceae (watermilfoil)	<u>Myriophyllum spicatum</u> L.	Eurasian watermilfoil
Ponderariceae (pickerelweed)	<u>Heteranthera dubia</u> (Jacqin) MacM.	Water stargrass
Potamogetonaceae	<u>Zostera marina</u> (L.)	eelgrass

APPENDIX B

PERCENT COVER FOR SAV SPECIES PRESENT IN BEDS IDENTIFIED IN THE HAVRE DE GRACE QUADRANGLE (NW AND SW SECTIONS) BASED ON FIELD OBSERVATIONS MADE BY STAN KOLLAR (HARFORD COMMUNITY COLLEGE) (MS - MYRIOPHYLLUM SPICATUM; VA - VALLISNERIA AMERICANA; HV - HYDRILLA VERTICILLATA; HD - HETERANTHERA DUBIA; CD - CERATOPHYLLUM DEMERSUM; N - NAIAD SPP.

Bed #	Havre de Grace NW Species Present	Percent Cover
J04	Ms	70
	Hd	5
	Va	<10
	Cd	<5
M03	Ms	70-75
	Hd	5-10
	Va	<10
	Hv	<1
	Cd	<1
L04, N02, 003 P04	Ms	80
	Hd	5
	Va	<5
	Cd	<5
R04	Ms	70
	Hd	5
	Va	<10
	Hv	<5
	Cd	5
S03, J04, Q03	Ms	60
	Hd	20
	Va	5
	Cd	5
	N	<1
	Hv	<1

continued

APPENDIX B. (continued)

Bed #	Havre de Grace SW Species Present	Percent Cover
A04	Ms Hd Va Cd	80 5 <5 <5
B03, C04, F03	Ms Hd Va Cd N Hv	60 20 5 5 <1 <1
H04	Ms Hv Hd Cd	70 10 5 5
G03, J04, M03	Ms Va Hv Hd Cd	50 20 15 5 5
N03, O04, P03	Ms Va Hv Hd Cd N	65 15-25 10 5 5 1
K03	Ms Hv Hd Cd Va	70 10 5 <5 10
R02	Va Ms	40-60 10
S02, T01	Va	10-15

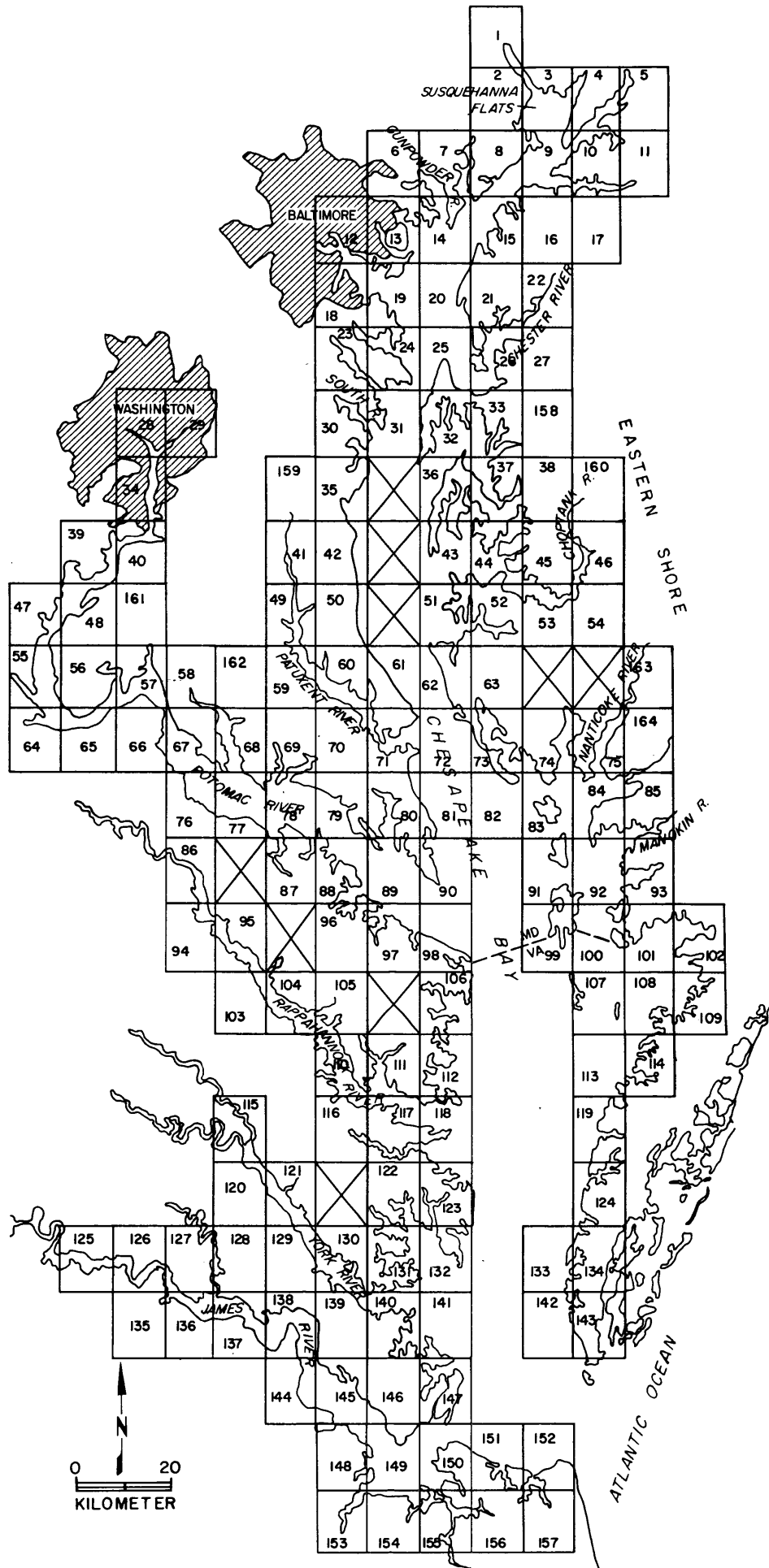
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APPENDIX B. (continued)

Bed #	Havre de Grace SW (cont'd) Species Present	Percent Cover
X02, V03	Ms	40-60
	Va	25
	Hv	10-20
	Hd	5
	Cd	<5
	N	<1
U04	Ms	30
	Hv	50
W03 (North half)	Ms	20
	Hv	60-70
W03 (South half) Y03	Ms	60
	Hv	10
	Va	5
Z02	Ms	70-80
	Va	<5
	Hv	<1
AA3	Ms	80
	Va	5
FA2	Ms	80

## APPENDIX C

TOPOGRAPHIC QUADRANGLES SHOWING THE DISTRIBUTION AND ABUNDANCE OF SAV (BOUNDARIES OF INDIVIDUAL SAV BEDS ARE DELINEATED BY SOLID LINES. EACH BED IS IDENTIFIED WITH A LETTER (A-Z) AND A NUMBER (1-4). THESE NUMBERS REPRESENT THE DENSITY CLASSIFICATION DISCUSSED IN THE TEXT, I.E., 1 = <10%; 2 = 10-40%; 3 = 40-70%; 4 = 70-100%).



- 
1. Conowingo Dam, Md.-Pa.
  2. Aberdeen, Md.
  3. Havre de Grace, Md.
  4. NorthEast, Md.
  5. Elkton, Md.
  6. White Marsh, Md.
  7. Edgewood, Md.
  8. Perryman, Md.
  9. Spesutie, Md.
  10. Earleville, Md.
  11. Cecilton, Md.
  12. Baltimore East, Md.
  13. Middle River, Md.
  14. Gunpowder Neck, Md.
  15. Hanesville, Md.
  16. Betterton, Md.
  17. Galena, Md.
  18. Curtis Bay, Md.
  19. Sparrows Point, Md.
  20. Swan Point, Md.
  21. Rock Hall, Md.
  22. Chestertown, Md.
  23. Round Bay, Md.
  24. Gibson Island, Md.
  25. Love Point, Md.
  26. Langford Creek, Md.
  27. Centreville, Md.
  28. Washington West, Md.-D.C.-Va.
  29. Washington East, D.C.-Md.
  30. South River, Md.
  31. Annapolis, Md.
  32. Kent Island, Md.
  33. Queenstown, Md.
  34. Alexandria, Va.-D.C.-Md.
  35. Deale, Md.
  36. Claiborne, Md.
  37. St. Michaels, Md.
  38. Easton, Md.
  39. Fort Belvoir, Va.-Md.
  40. Mt. Vernon, Md.-Va.
  41. Lower Marlboro, Md.
  42. North Beach, Md.
  43. Tilghman, Md.
  44. Oxford, Md.
  45. Trappe, Md.
  46. Preston, Md.
  47. Quantico, Va.-Md.
  48. Indian Head, Va.-Md.
  49. Benedict, Md.
  50. Prince Frederick, Md.
  51. Sharps Island, Md.
  52. Church Creek, Md.
  53. Cambridge, Md.
  54. East New Market, Md.
  55. Widewater, Va.-Md.
  56. Nanjemoy, Md.
  57. Mathias Point, Md.-Va.
  58. Popes Creek, Md.
  59. Mechanicsville, Md.
  60. Broomes Island, Md.
  61. Cove Point, Md.
  62. Taylors Island, Md.
  63. Golden Hill, Md.
  64. Passapatanzy, Md.-Va.
  65. King George, Va.-Md.
  66. Dahlgren, Va.-Md.
  67. Colonial Beach North, Md.-Va.
  68. Rock Point, Md.
  69. Leonardtown, Md.
  70. Hollywood, Md.
  71. Solomons Island, Md.
  72. Barren Island, Md.
  73. Honga, Md.
  74. Wingate, Md.
  75. Nanticoke, Md.
  76. Colonial Beach South, Va.-Md.
  77. Stratford Hall, Va.-Md.
  78. St. Clements Island, Va.-Md.
  79. Piney Point, Md.-Va.
  80. St. Mary's City, Md.
  81. Point No Point, Md.
  82. Richland Point, Md.



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- |                                |                              |
|--------------------------------|------------------------------|
| 83. Bloodsworth Island, Md.    | 124. Franktown, Va.          |
| 84. Deal Island, Md.           | 125. Westover, Va.           |
| 85. Monie, Md.                 | 126. Charles City, Va.       |
| 86. Champlain, Va.             | 127. Brandon, Va.            |
| 87. Machodoc, Va.              | 128. Norge, Va.              |
| 88. Kinsale, Va.-Md.           | 129. Williamsburg, Va.       |
| 89. St. George Island, Va.-Md. | 130. Clay Bank, Va.          |
| 90. Point Lookout, Md.         | 131. Achilles, Va.           |
| 91. Kedges Straits, Md.        | 132. New Point Comfort, Va.  |
| 92. Terrapin Sand Point, Md.   | 133. Cape Charles, Va.       |
| 93. Marion, Md.                | 134. Cheriton, Va.           |
| 94. Mount Landing, Va.         | 135. Savedge, Va.            |
| 95. Tappahannock, Va.          | 136. Claremont, Va.          |
| 96. Lottsburg, Va.             | 137. Surry, Va.              |
| 97. Heathsville, Va.-Md.       | 138. Hog Island, Va.         |
| 98. Burgess, Va.-Md.           | 139. Yorktown, Va.           |
| 99. Ewell, Va.-Md.             | 140. Poquoson West, Va.      |
| 100. Great Fox Island, Va.-Md. | 141. Poquoson East, Va.      |
| 101. Crisfield, Va.-Md.        | 142. Elliotts Creek, Va.     |
| 102. Saxis, Va.-Md.            | 143. Townsend, Va.           |
| 103. Dunnsville, Va.           | 144. Bacons Castle, Va.      |
| 104. Morattico, Va.            | 145. Mulberry Island, Va.    |
| 105. Lively, Va.               | 146. Newport News North, Va. |
| 106. Reedville, Va.            | 147. Hampton, Va.            |
| 107. Tangier Island, Va.       | 148. Bennis Church, Va.      |
| 108. Chesconessex, Va.         | 149. Newport News South, Va. |
| 109. Parksley, Va.             | 150. Norfolk North, Va.      |
| 110. Urbanna, Va.              | 151. Little Creek, Va.       |
| 111. Irvington, Va.            | 152. Cape Henry, Va.         |
| 112. Fleets Bay, Va.           | 153. Chuckatuck, Va.         |
| 113. Nandua Creek              | 154. Bowers Hill, Va.        |
| 114. Pungoteague, Va.          | 155. Norfolk South, Va.      |
| 115. West Point, Va.           | 156. Kempsville, Va.         |
| 116. Saluda, Va.               | 157. Princess Anne, Va.      |
| 117. Wilton, Va.               | 158. Wye Mills, Md.          |
| 118. Deltaville, Va.           | 159. Bristol, Md.            |
| 119. Jamesville, Va.           | 160. Fowling Creek, Md.      |
| 120. Toano, Va.                | 161. Port Tobacco, Md.       |
| 121. Gressitt, Va.             | 162. Charlotte Hall, Md.     |
| 122. Ware Neck, Va.            | 163. Mardela Springs, Md.    |
| 123. Mathews, Va.              | 164. Wetipquin, Md.          |
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# SUBMERGED AQUATIC VEGETATION 1985



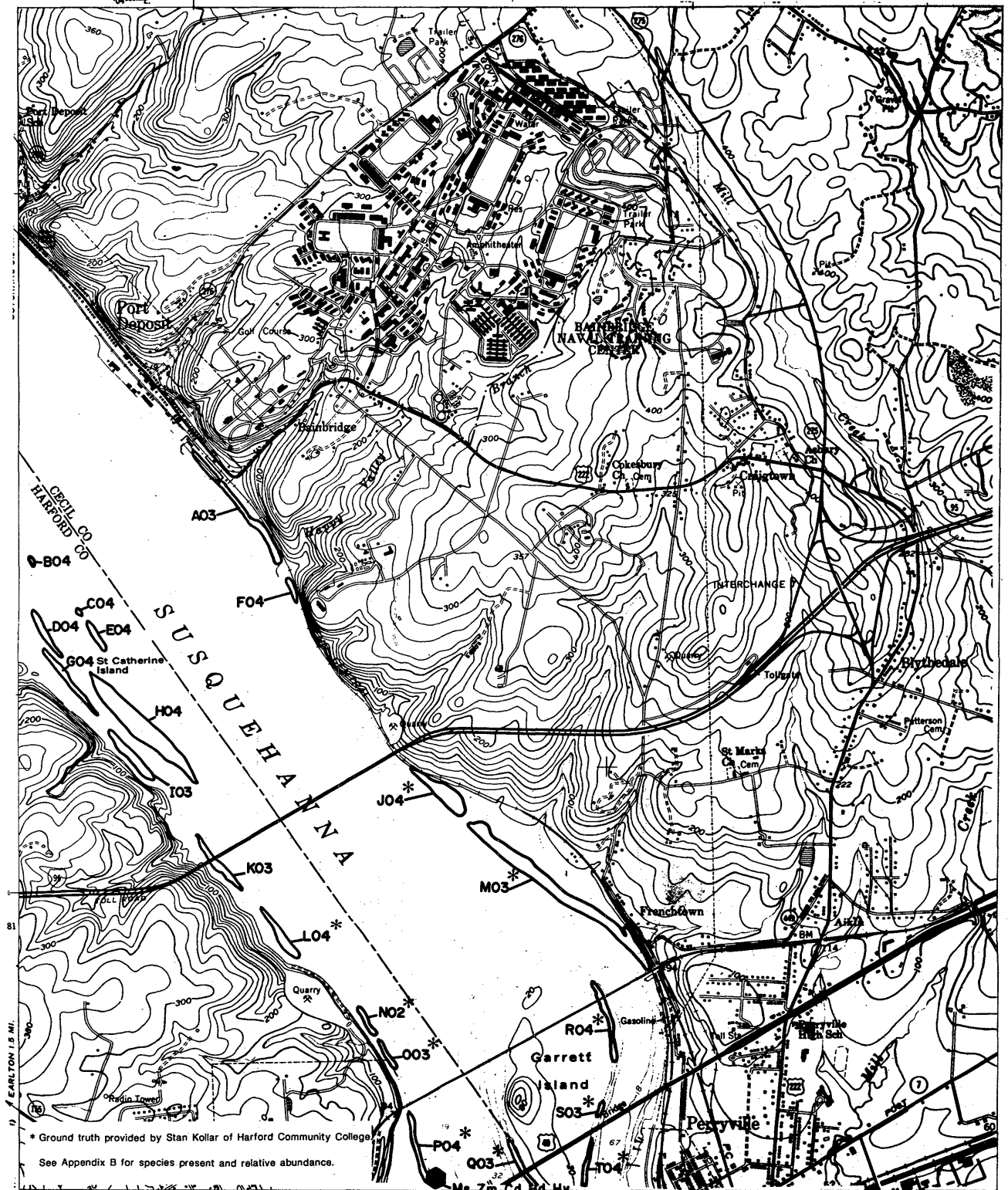
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	○	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Nojas guadalupensis</i> (southern naiad)		
Ngr	<i>Nojas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

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**ABERDEEN, MD**  
**Northeast Quarter**  
**# 2**



# SUBMERGED AQUATIC VEGETATION 1985



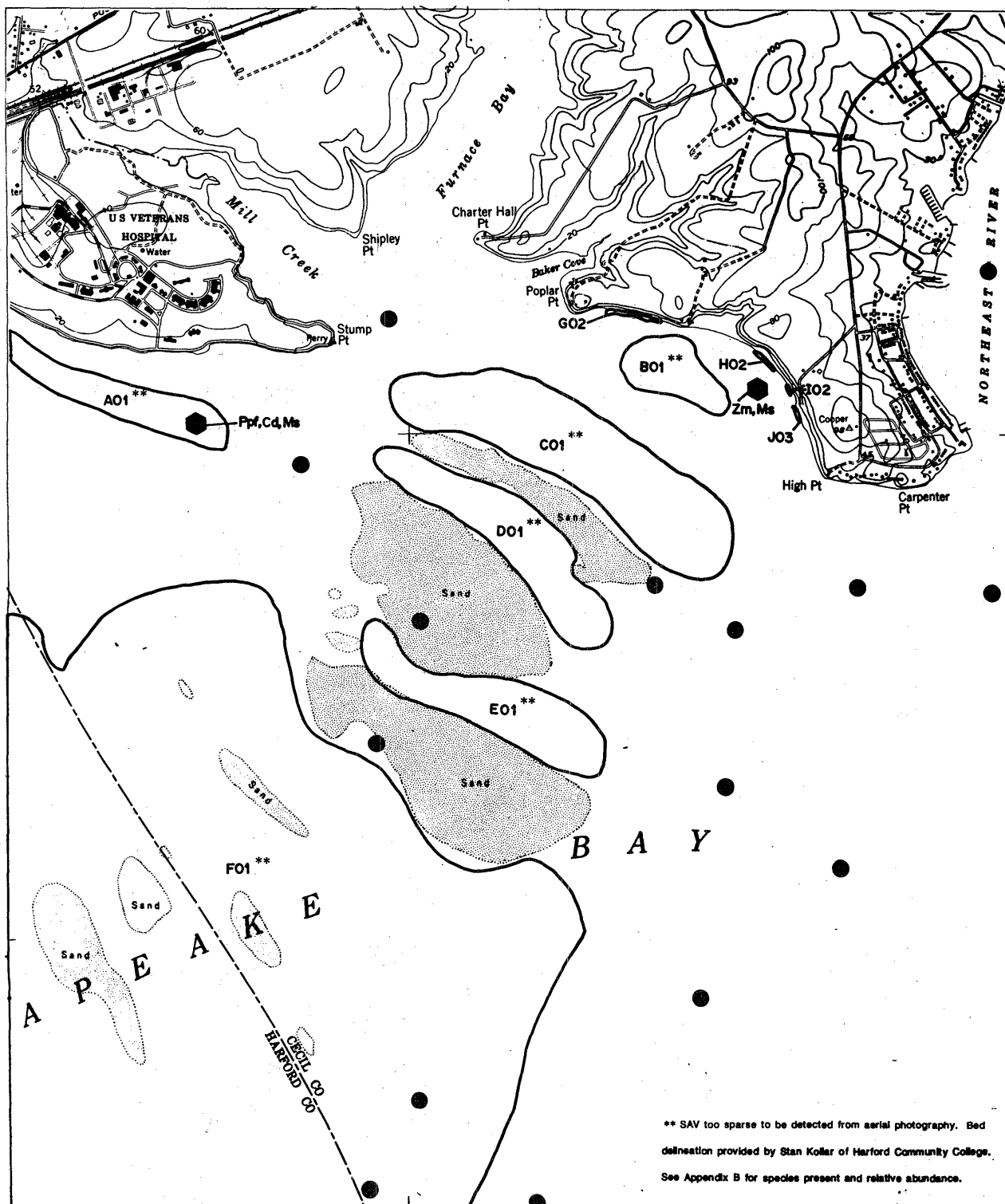
\* Ground truth provided by Stan Kollar of Harford Community College  
 See Appendix B for species present and relative abundance.

SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracilima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

**HAVRE DE GRACE, MD**  
**Northwest Quarter**  
**# 3**

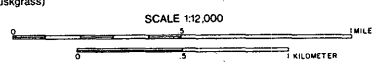


# SUBMERGED AQUATIC VEGETATION 1985



\*\* SAV too sparse to be detected from aerial photography. Bed delineation provided by Stan Kollar of Harford Community College. See Appendix B for species present and relative abundance.

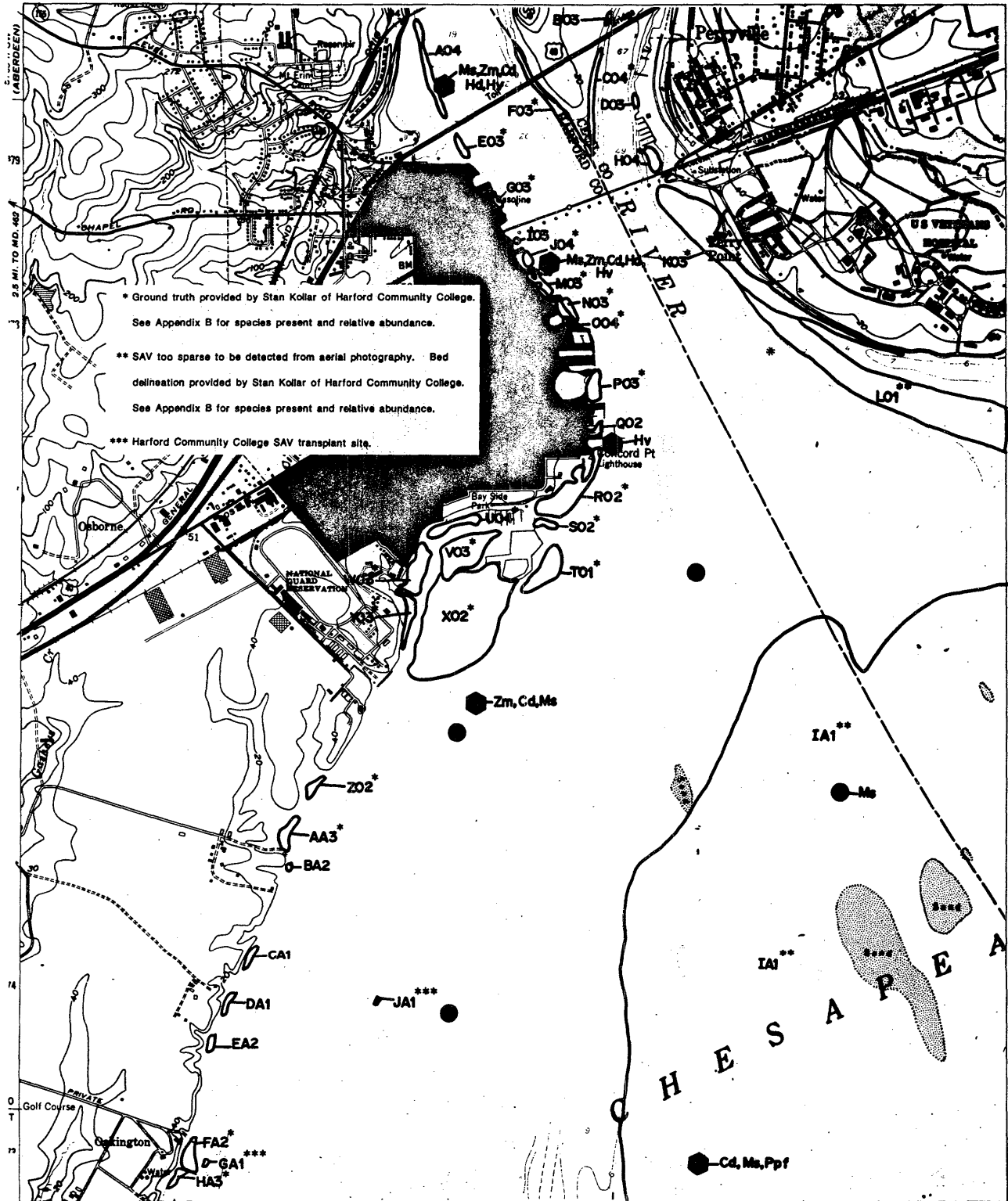
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	○	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas spp.</i> (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara sp.</i> (muskgrass)		



HAVRE DE GRACE, MD  
Southeast Quarter  
# 3



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngd	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

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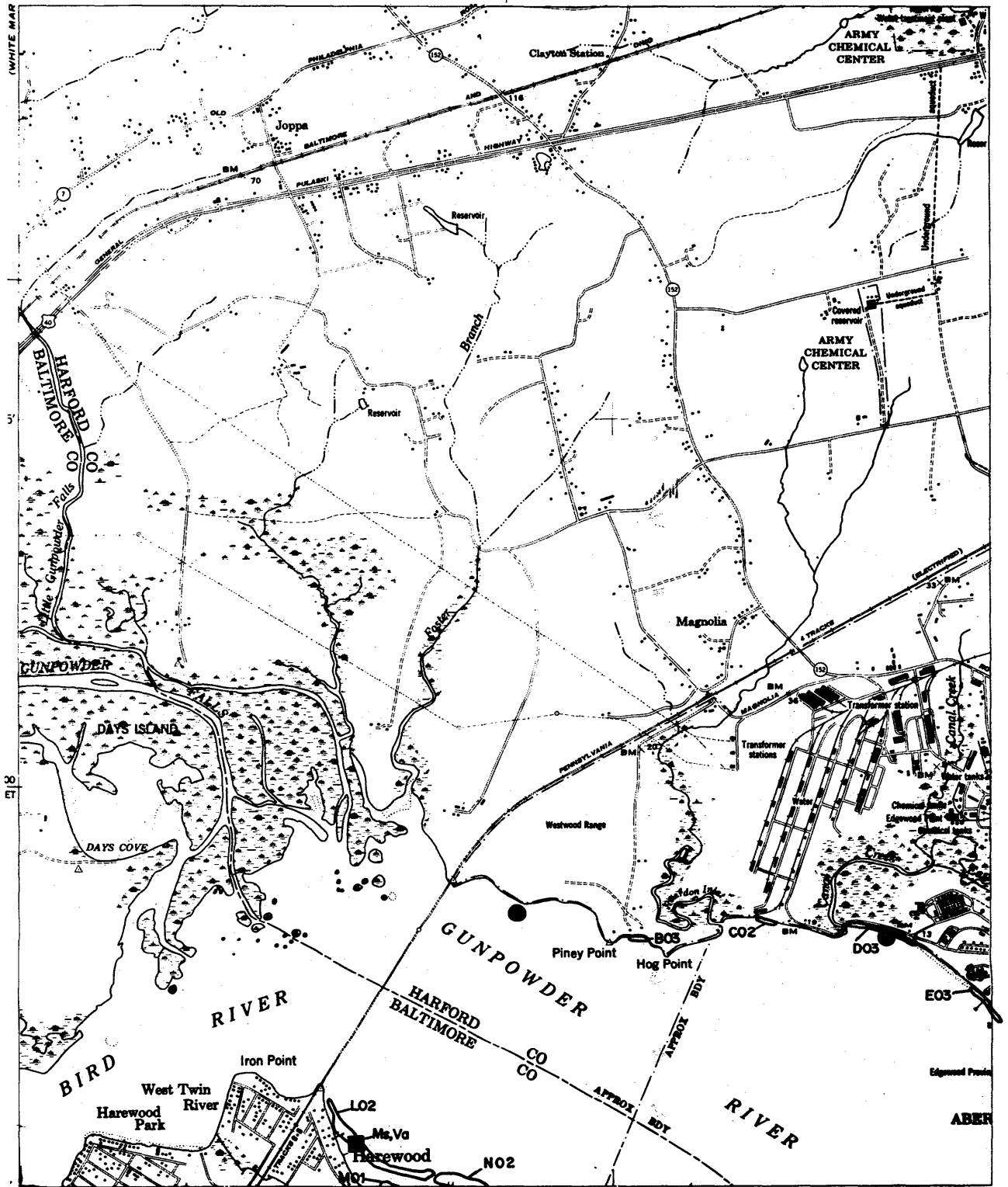
HAVRE DE GRACE, MD  
Southwest Quarter

#3





# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		↑	SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	↑	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)		■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)		●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)		▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)		◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)			
N	<i>Najas</i> spp. (naiad)			
Ec	<i>Elodea canadensis</i> (common elodea)			
Va	<i>Vallisneria americana</i> (wild celery)			
Hv	<i>Hydrilla verticillata</i> (hydrilla)			
Hd	<i>Heteranthera dubia</i> (water stargrass)			
Pcr	<i>Potamogeton crispus</i> (curly pondweed)			
Cd	<i>Ceratophyllum demersum</i> (coontail)			
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)			
Ngu	<i>Najas guadalupensis</i> (southern naiad)			
Ngr	<i>Najas gracillima</i> (naiad)			
C	<i>Chara</i> sp. (muskgrass)			

SCALE 1:12,000

**EDGEWOOD, MD**  
**Southwest Quarter**

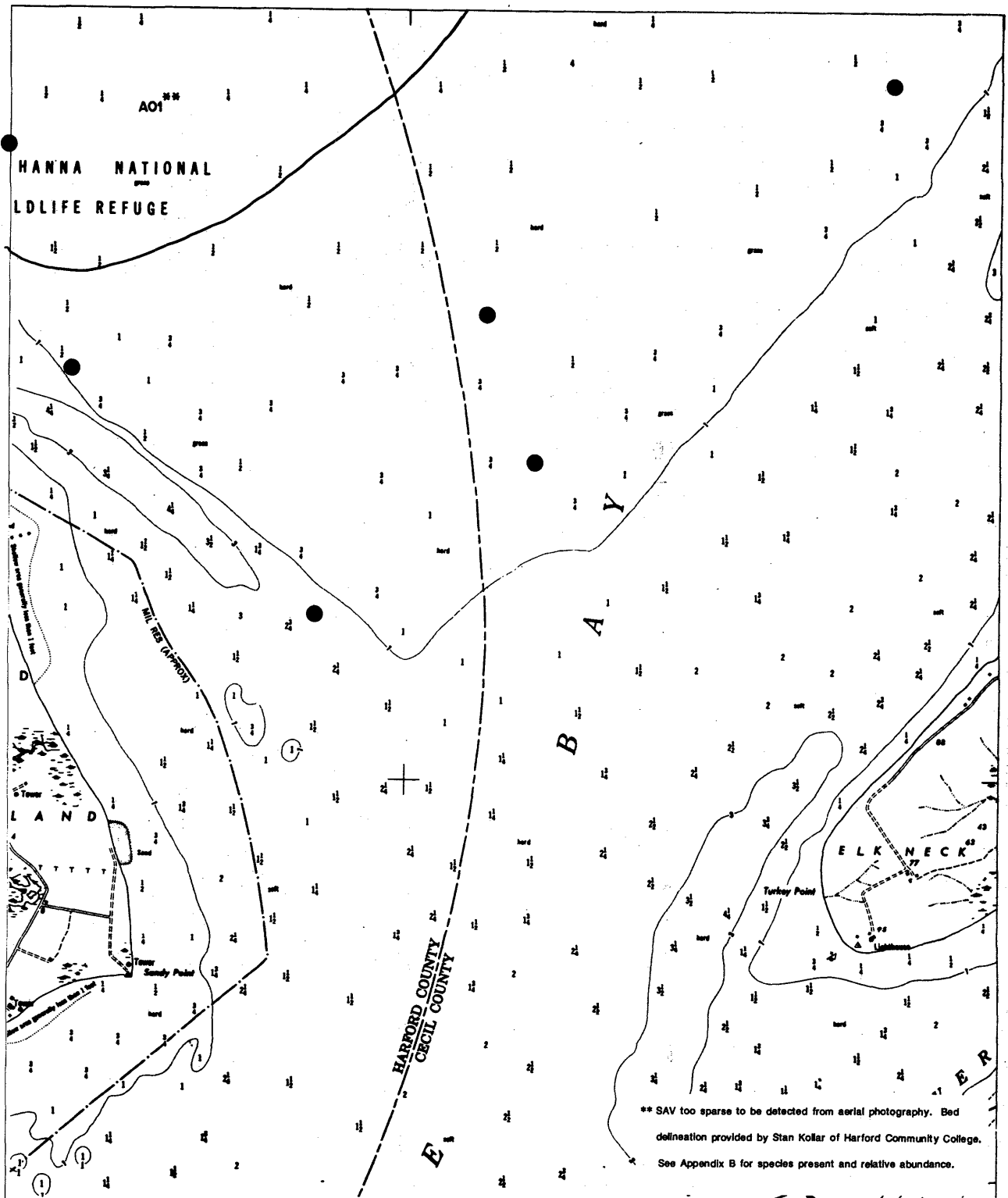
# 7







# SUBMERGED AQUATIC VEGETATION 1985



\*\* SAV too sparse to be detected from aerial photography. Bed delineation provided by Stan Kollar of Harford Community College. See Appendix B for species present and relative abundance.

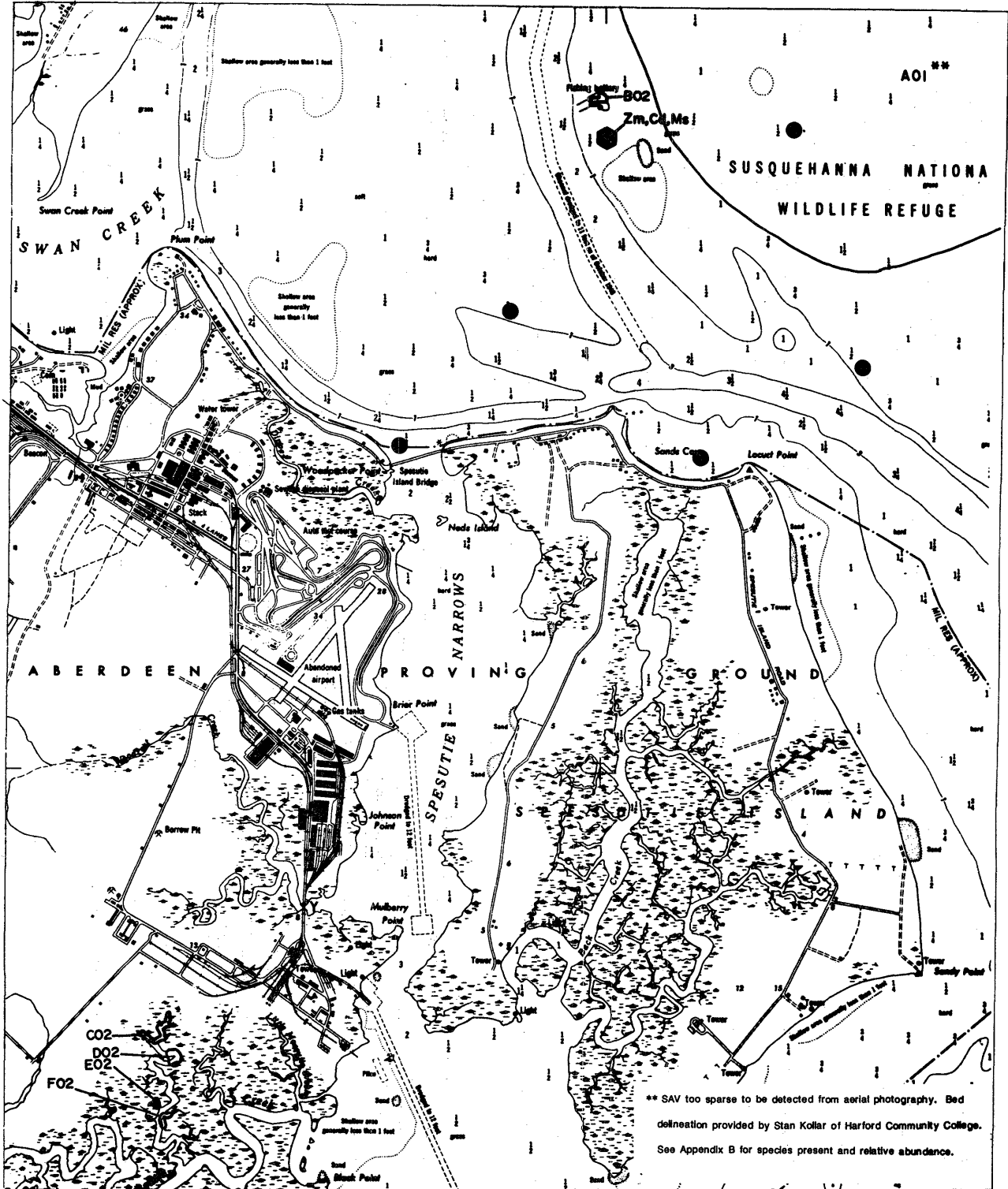
SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass)	Hv <i>Hydrilla verticillata</i> (hydrilla)	● MD-DNR Survey Station
Rm <i>Ruppia maritima</i> (widgeon grass)	Hd <i>Heteranthera dubia</i> (water stargrass)	■ MD Charter Boat Field Survey
Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr <i>Potamogeton crispus</i> (curly pondweed)	● Citizens Field Observation
Ppl <i>Potamogeton perfoliatus</i> (redhead-grass)	Cd <i>Ceratophyllum demersum</i> (coontail)	▲ VIMS Field Survey
Ppc <i>Potamogeton pectinatus</i> (sago pondweed)	Ppu <i>Potamogeton pusillus</i> (slender pondweed)	◆ U.S.G.S.
Zp <i>Zannichellia palustris</i> (horned pondweed)	Ngu <i>Najas guadalupensis</i> (southern naiad)	
N <i>Najas</i> spp. (naiad)	Ngr <i>Najas gracillima</i> (naiad)	
Ec <i>Elodea canadensis</i> (common elodea)	C <i>Chara</i> sp. (muskgrass)	
Va <i>Vallisneria americana</i> (wild celery)		

SCALE 1:12,000

**SPESUTIE, MD**  
**Northeast Quarter**  
**# 9**



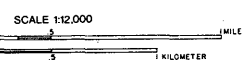
# SUBMERGED AQUATIC VEGETATION 1985



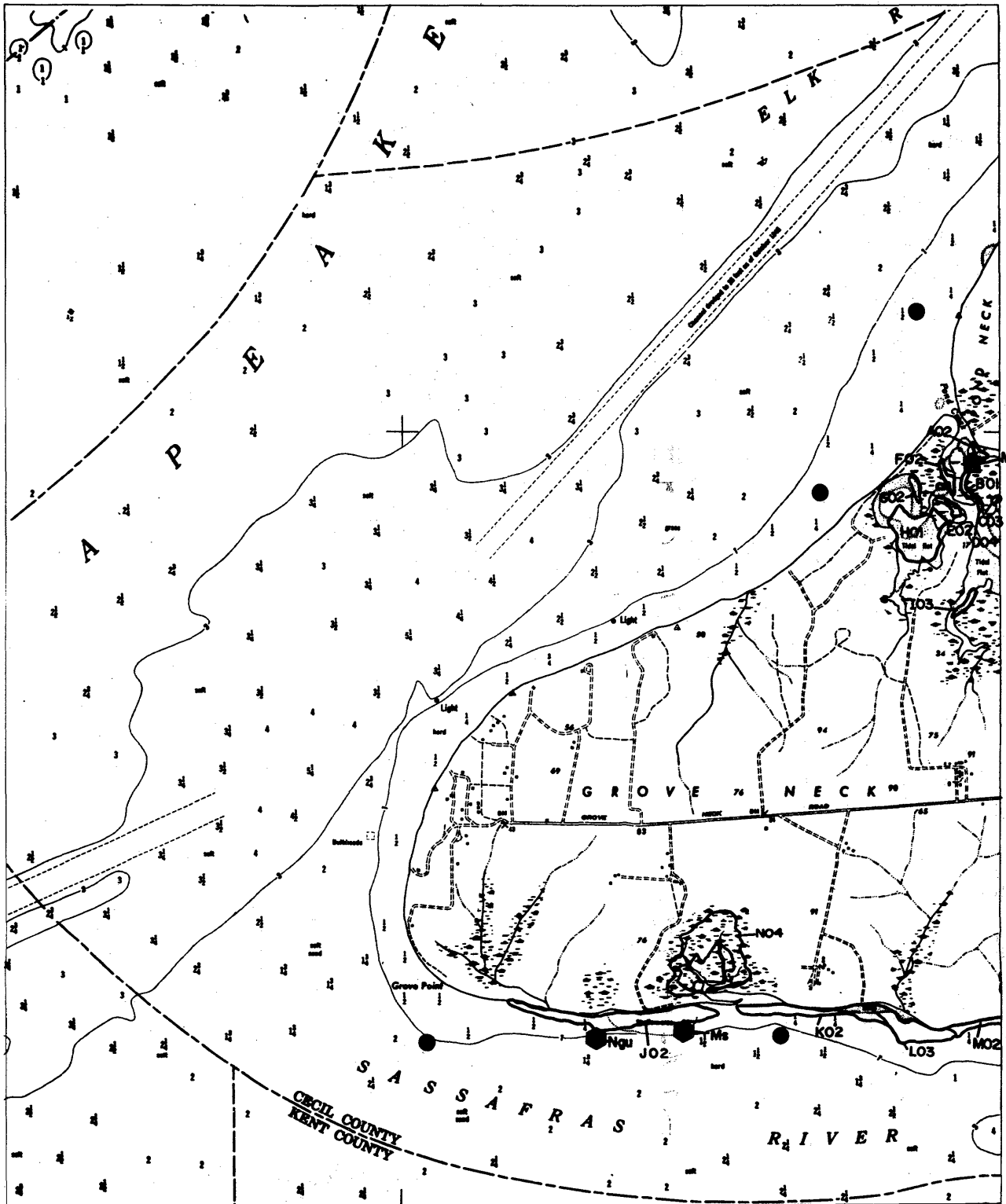
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

**SPESUTIE, MD**  
**Northwest Quarter**

# 9



# SUBMERGED AQUATIC VEGETATION 1985



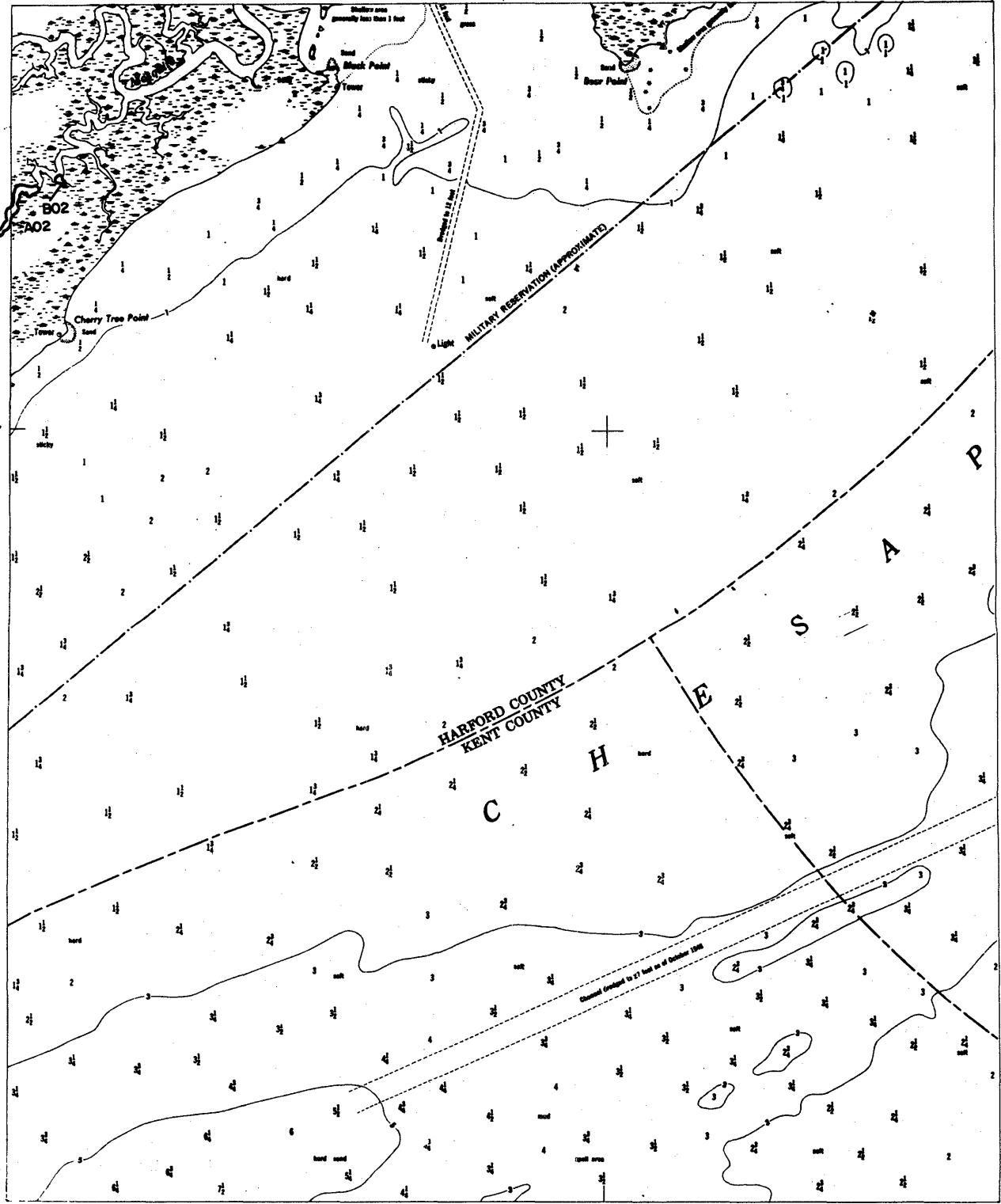
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:2,000

**SPESUTIE, MD**  
**Southeast Quarter**  
**# 9**



# SUBMERGED AQUATIC VEGETATION 1985



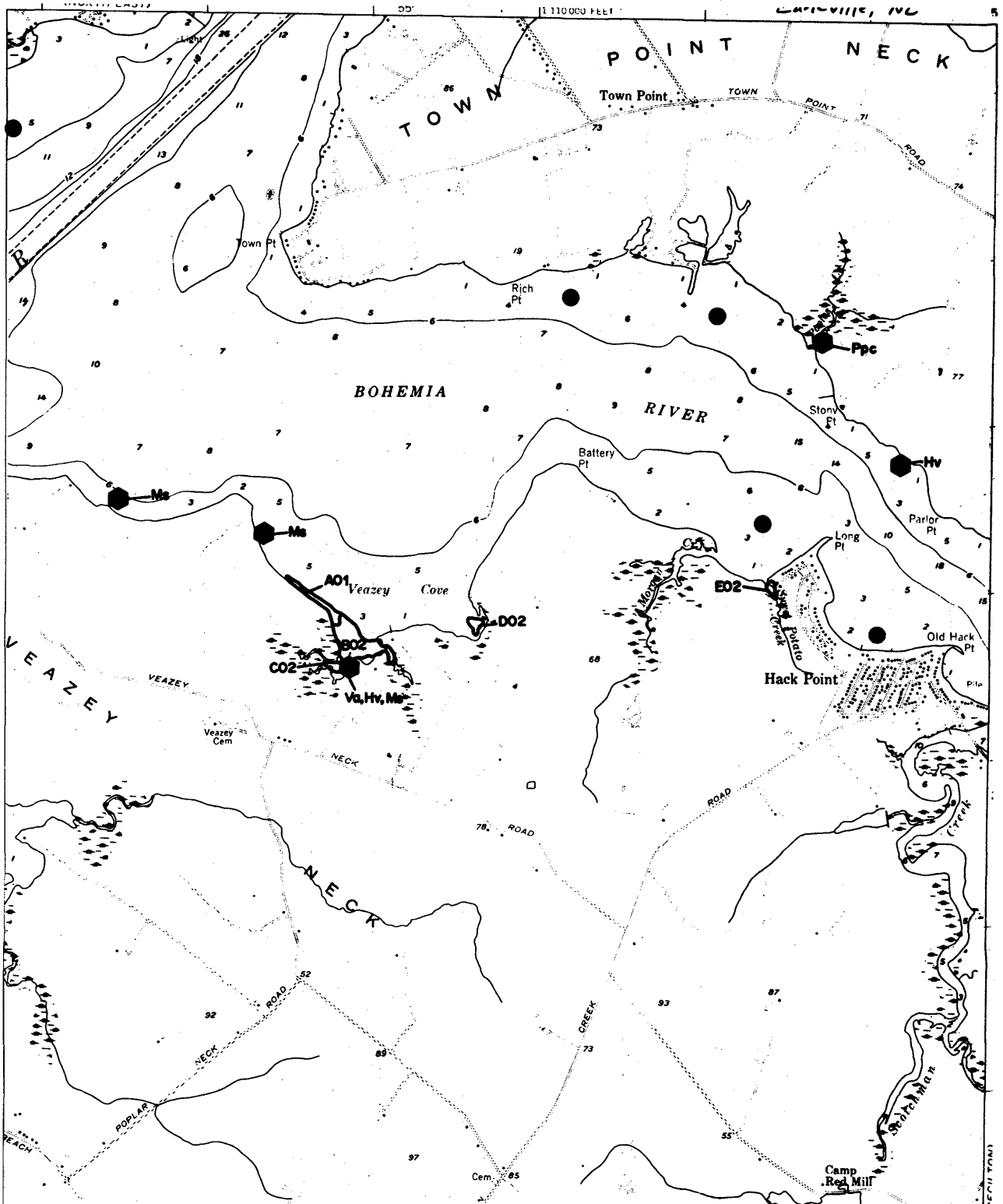
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppl	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
EC	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

**SPESUTIE, MD**  
**Southwest Quarter**  
**# 9**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppl	<i>Potamogeton perfoliatus</i> (red-head-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngd	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

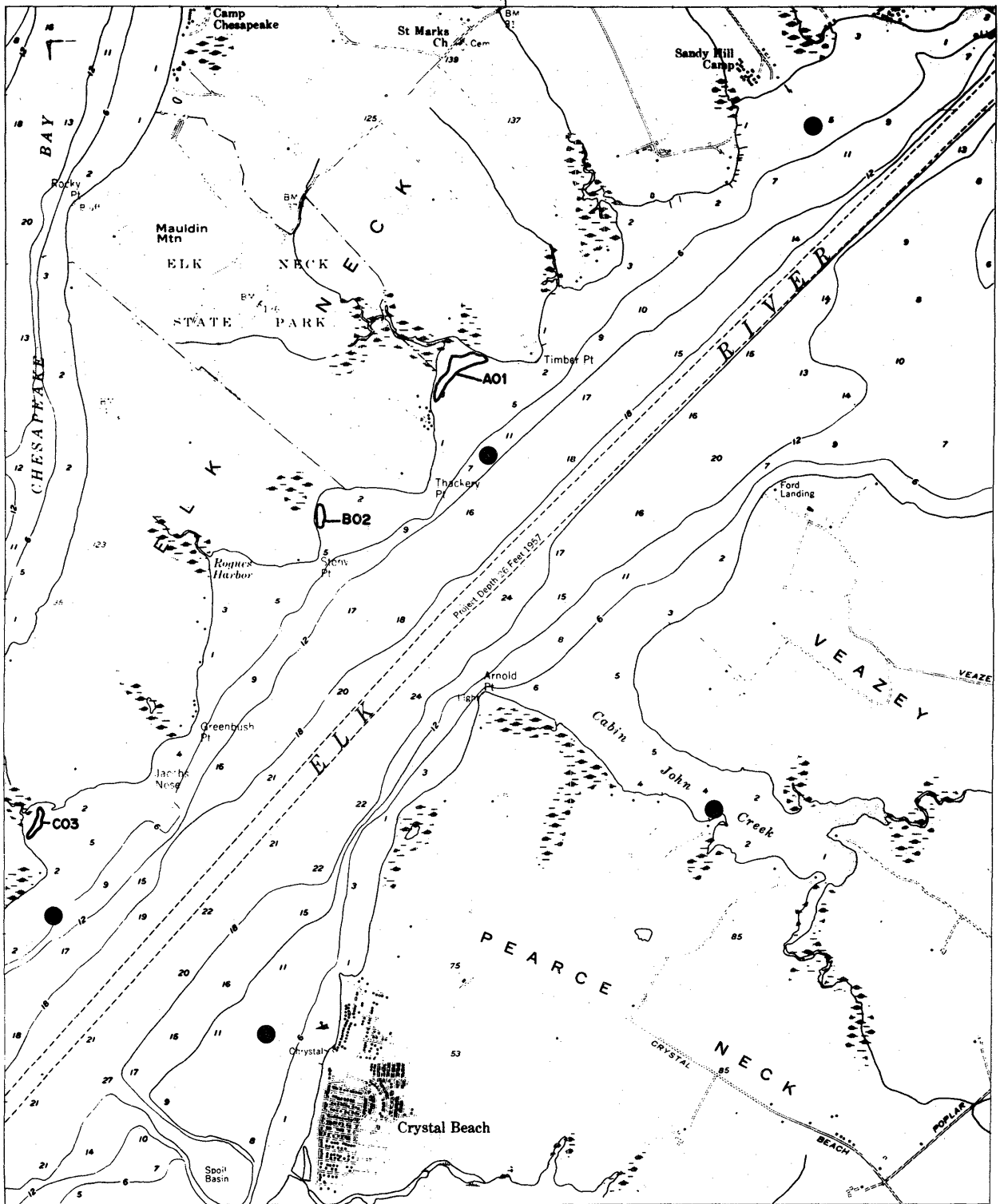
MILE  
KILOMETER

EARLEVILLE, MD  
Northeast Quarter

# 10



# SUBMERGED AQUATIC VEGETATION 1985



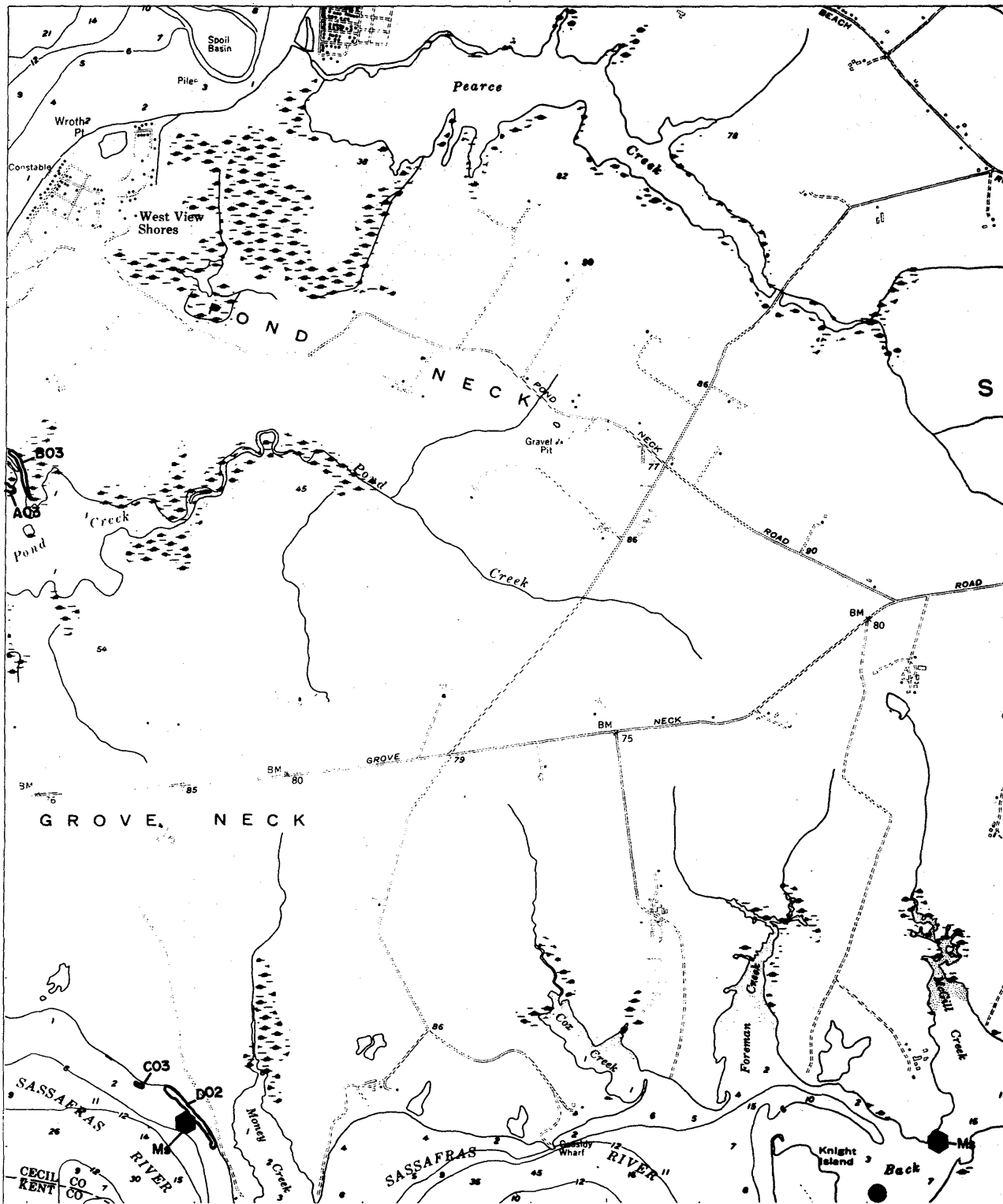
SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass)	Hv <i>Hydrilla verticillata</i> (hydrilla)	● MD-DNR Survey Station
Rm <i>Ruppia maritima</i> (widgeon grass)	Hd <i>Heteranthera dubia</i> (water stargrass)	■ MD Charter Boat Field Survey
Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr <i>Potamogeton crispus</i> (curly pondweed)	● Citizens Field Observation
Ppf <i>Potamogeton perfoliatus</i> (redhead-grass)	Cd <i>Ceratophyllum demersum</i> (coontail)	▲ VMS Field Survey
Ppc <i>Potamogeton pectinatus</i> (sago pondweed)	Ppu <i>Potamogeton pusillus</i> (slender pondweed)	◆ U.S.G.S.
Zp <i>Zannichella palustris</i> (horned pondweed)	Ngu <i>Najas guadalupensis</i> (southern naiad)	
N <i>Najas</i> spp. (naiad)	Ngr <i>Najas gracillima</i> (naiad)	
Ec <i>Elodea canadensis</i> (common elodea)	C <i>Chara</i> sp. (muskgrass)	
Va <i>Vallisneria americana</i> (wild celery)		

SCALE 1:12,000

**EARLEVILLE, MD**  
**Northwest Quarter**  
**# 10**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

1 MILE

5 KILOMETER

**EARLEVILLE, MD**

**Southwest Quarter**

**# 10**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

**MIDDLE RIVER, MD**

**Northeast Quarter**

**# 13**





# SUBMERGED AQUATIC VEGETATION 1985



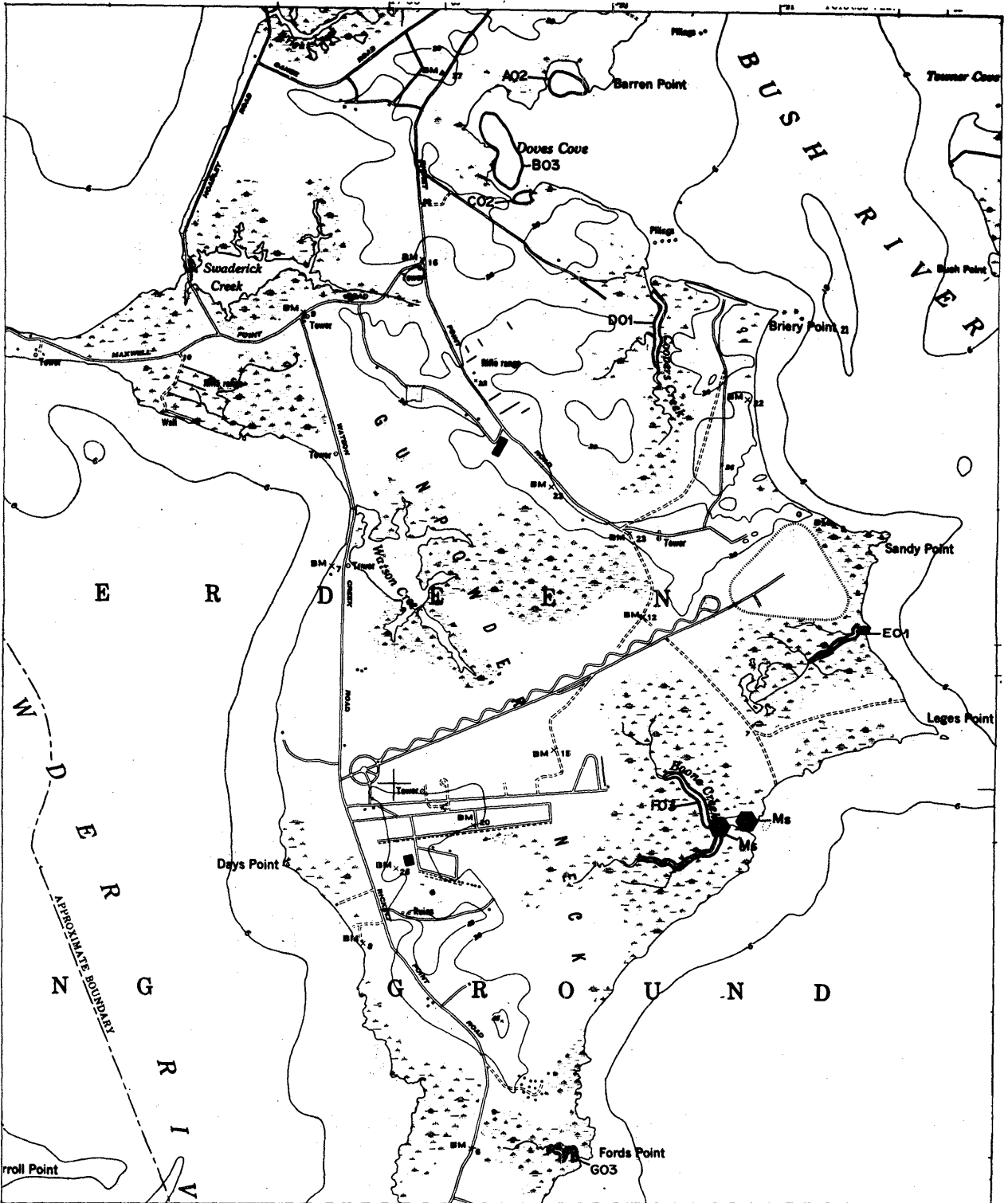
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (wideopen grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zanichellia palustris</i> (horned pondweed)	Ngu	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas</i> spp. (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara</i> sp. (muskgrass)
Va	<i>Vallisneria spiralis</i> (wild celery)		
		●	MD-DNR Survey Station
		■	MD Charter Boat Field Survey
		●	Citizens Field Observation
		▲	VIMS Field Survey
		◆	U.S.G.S.

SCALE 1:12,000

MIDDLE RIVER, MD  
Southeast Quarter  
# 13



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		↑	SURVEY STATIONS		
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)	●	Citizens Field Observation
Pdf	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	◆	U.S.G.S.
Zp	<i>Zanichellia palustris</i> (horned pondweed)	Ngu	<i>Najas guadalupensis</i> (southern naiad)		
N	<i>Najas</i> spp. (naiad)	Ngr	<i>Najas gracillima</i> (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara</i> sp. (muskgrass)		
Va	<i>Vallisneria spiralis</i> (wild celery)				

SCALE 1:12,000

0 1 2 3 4 5 MILE

0 1 2 3 4 5 KILOMETER

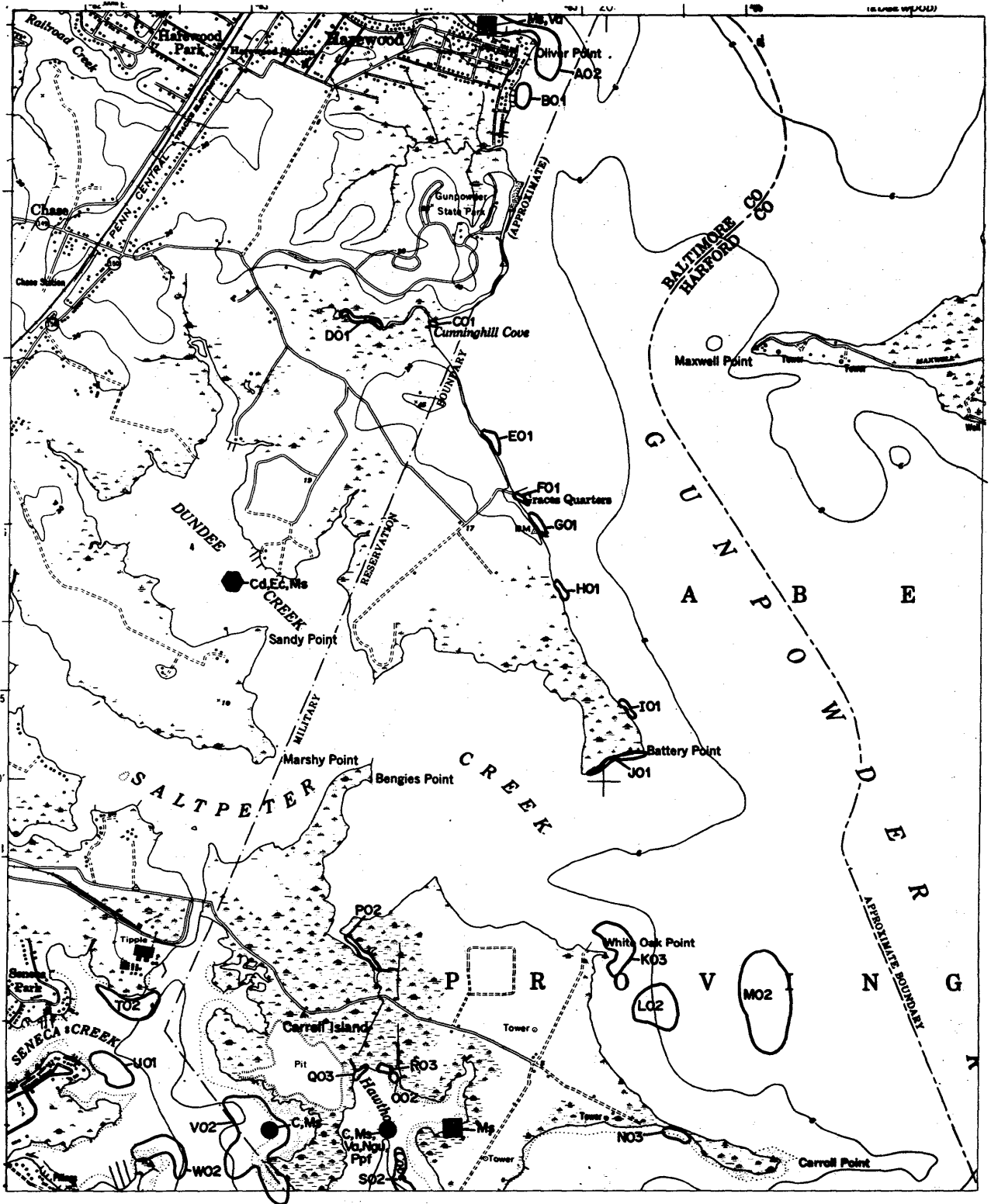
GUNPOWDER NECK, MD

Northeast Quarter

# 14



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngd	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

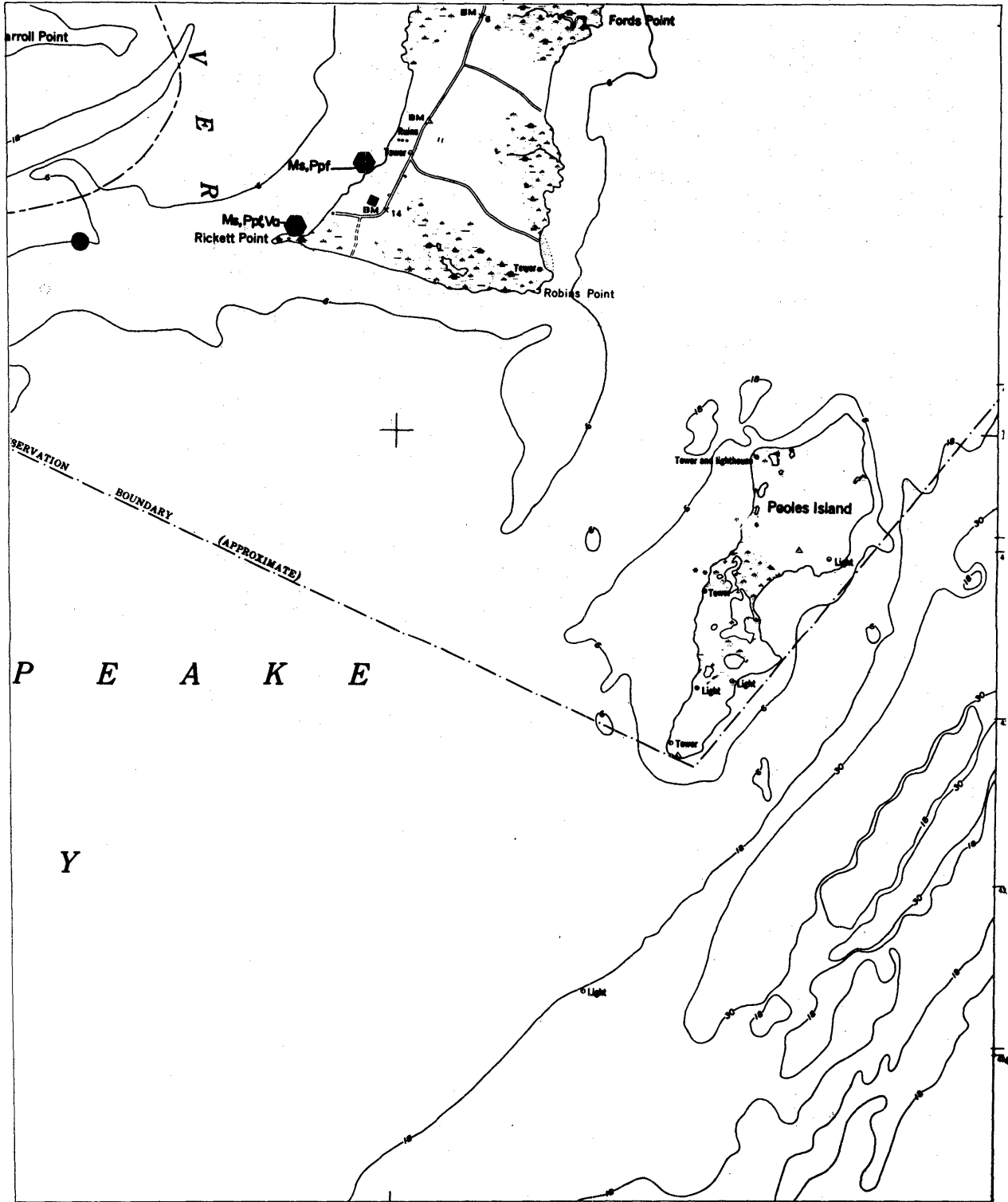
**GUNPOWDER NECK, MD**

**Northwest Quarter**

**# 14**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		↑	SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	↑	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)		■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)		● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)		▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)		◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

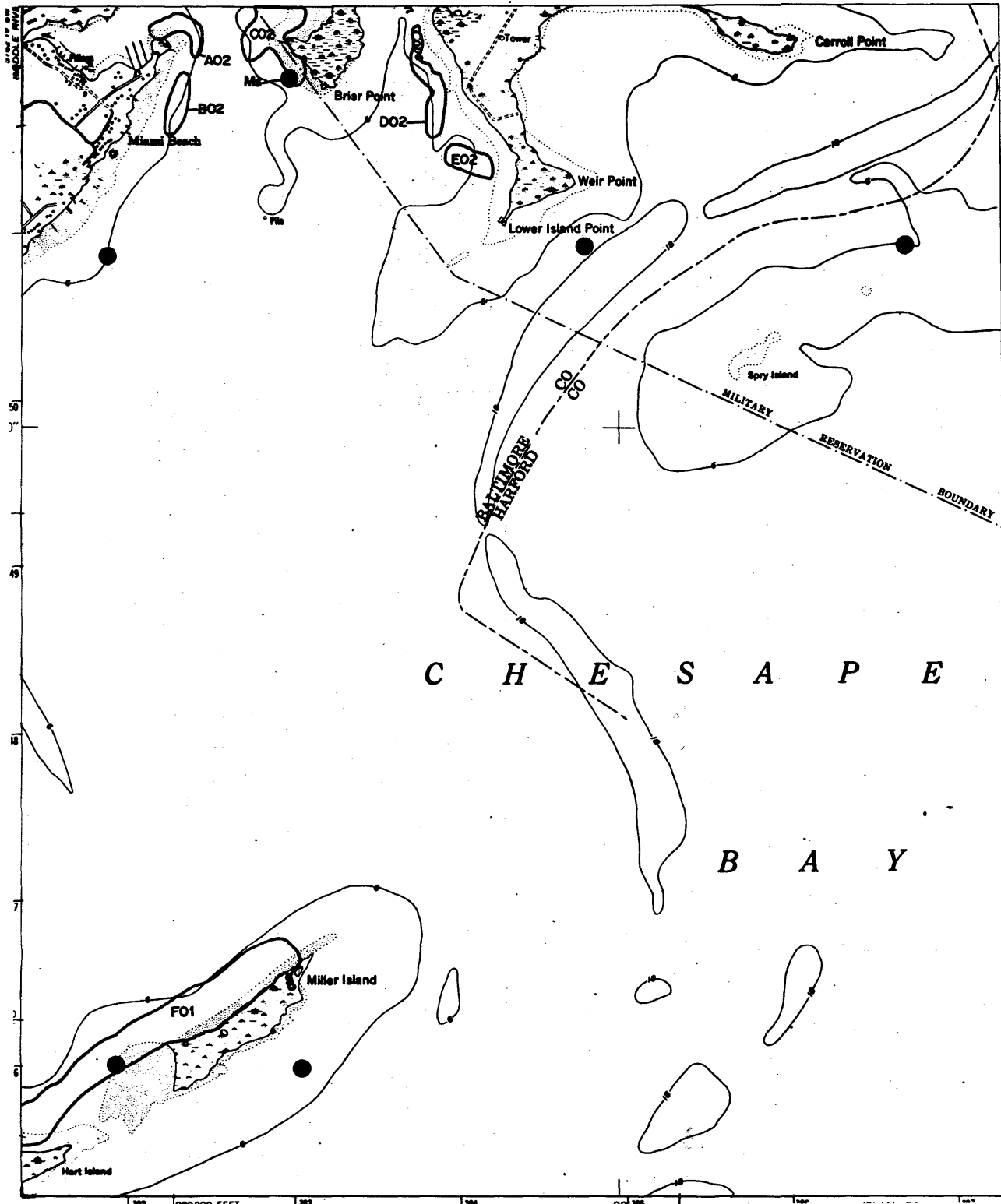
**GUNPOWDER NECK, MD**

**Southeast Quarter**

**# 14**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

**GUNPOWDER NECK, MD**  
**Southwest Quarter**  
**# 14**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichella palustris</i> (horned pondweed)	Ngu	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas</i> spp. (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara</i> sp. (muskgrass)
Va	<i>Vallisneria americana</i> (wild celery)		

SCALE 1:12,000

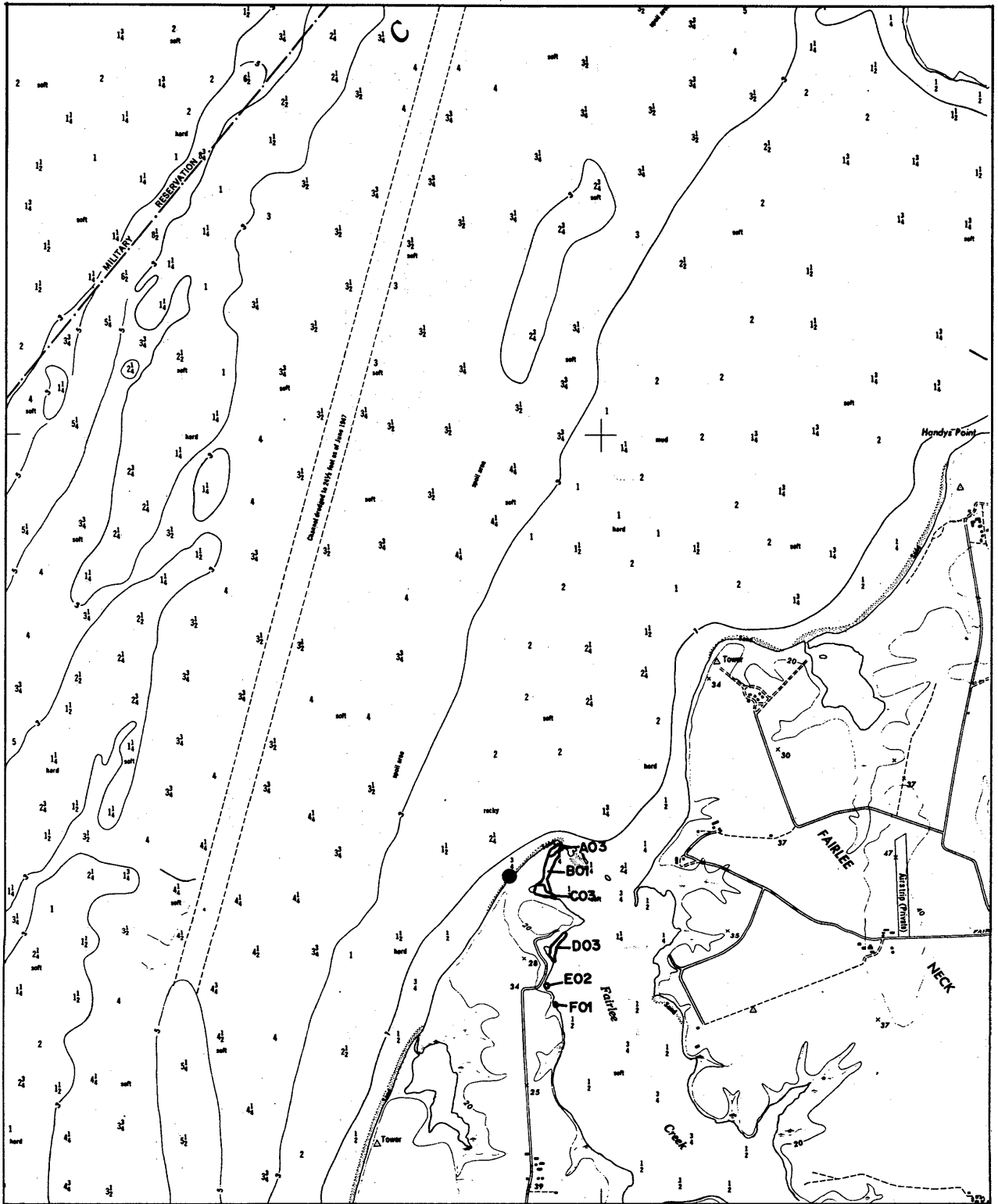
0 1 2 3 4 5 6 7 8 9 10 MILE

0 1 2 3 4 5 KILOMETER

**HANESVILLE, MD**  
**Northeast Quarter**  
**# 15**



# SUBMERGED AQUATIC VEGETATION 1985



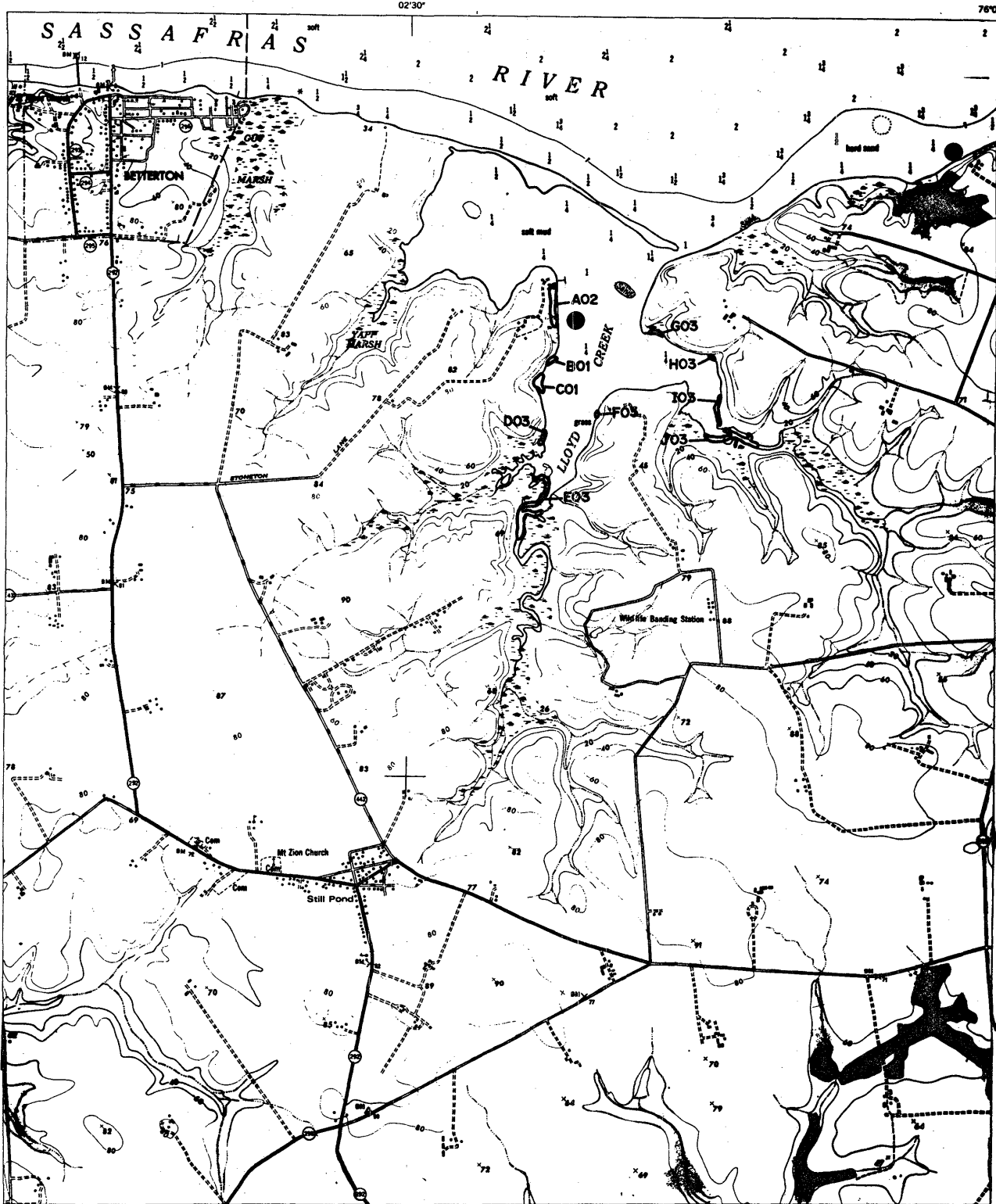
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

**HANESVILLE, MD**  
**Southwest Quarter**  
**# 15**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass)	Hv <i>Hydrilla verticillata</i> (hydrilla)	● MD-DNR Survey Station
Rm <i>Ruppia maritima</i> (widgeon grass)	Hd <i>Heteranthera dubia</i> (water stargrass)	■ MD Charter Boat Field Survey
Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr <i>Potamogeton crispus</i> (curly pondweed)	● Citizens Field Observation
Ppf <i>Potamogeton perfoliatus</i> (redhead-grass)	Cd <i>Ceratophyllum demersum</i> (coontail)	▲ VIMS Field Survey
Ppc <i>Potamogeton pectinatus</i> (sago pondweed)	Ppu <i>Potamogeton pusillus</i> (slender pondweed)	◆ U.S.G.S.
Zp <i>Zannichellia palustris</i> (horned pondweed)	Ngv <i>Najas guadalupensis</i> (southern naiad)	
N <i>Najas</i> spp. (naiad)	Ngr <i>Najas gracillima</i> (naiad)	
Ec <i>Elodea canadensis</i> (common elodea)	C <i>Chara</i> sp. (muskgrass)	
Va <i>Vallisneria americana</i> (wild celery)		

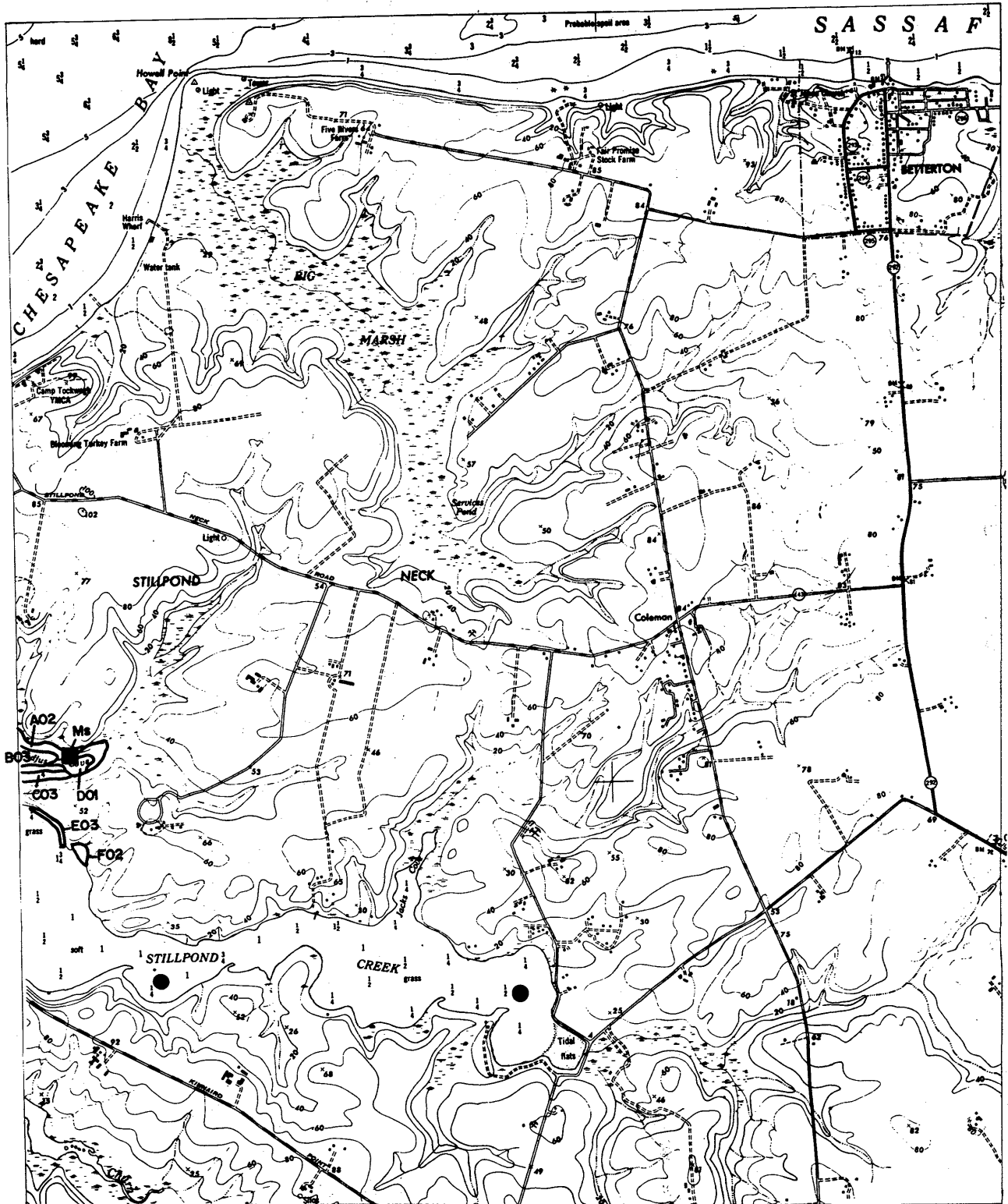
SCALE 1:12,000

**BETTERTON, MD**  
**Northeast Quarter**  
**# 16**





# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas spp.</i> (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara sp.</i> (muskgrass)		

SCALE 1:12,000

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MILE

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

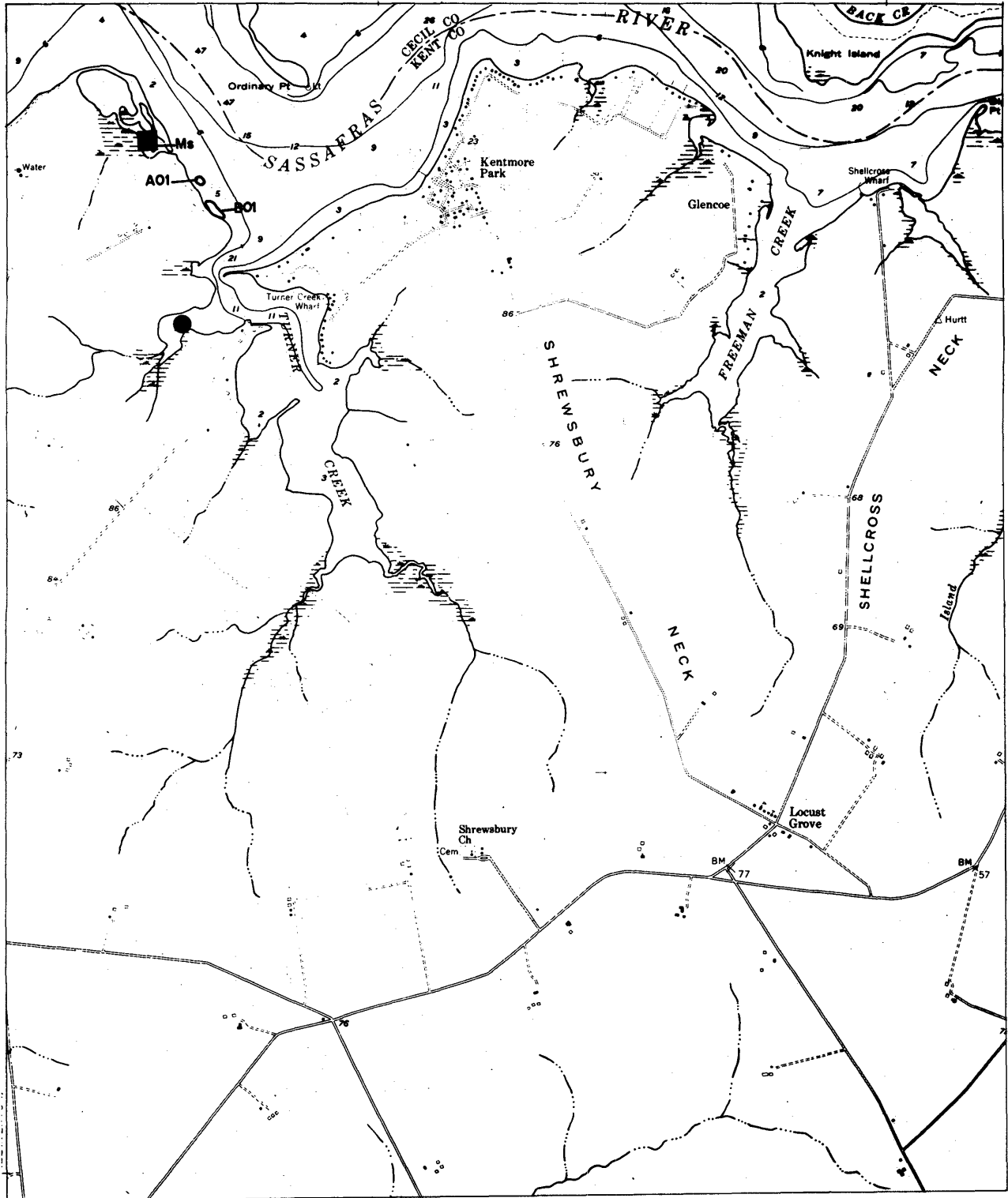
KILOMETER

**BETTERTON, MD**  
**Northwest Quarter**

# 16



# SUBMERGED AQUATIC VEGETATION 1985



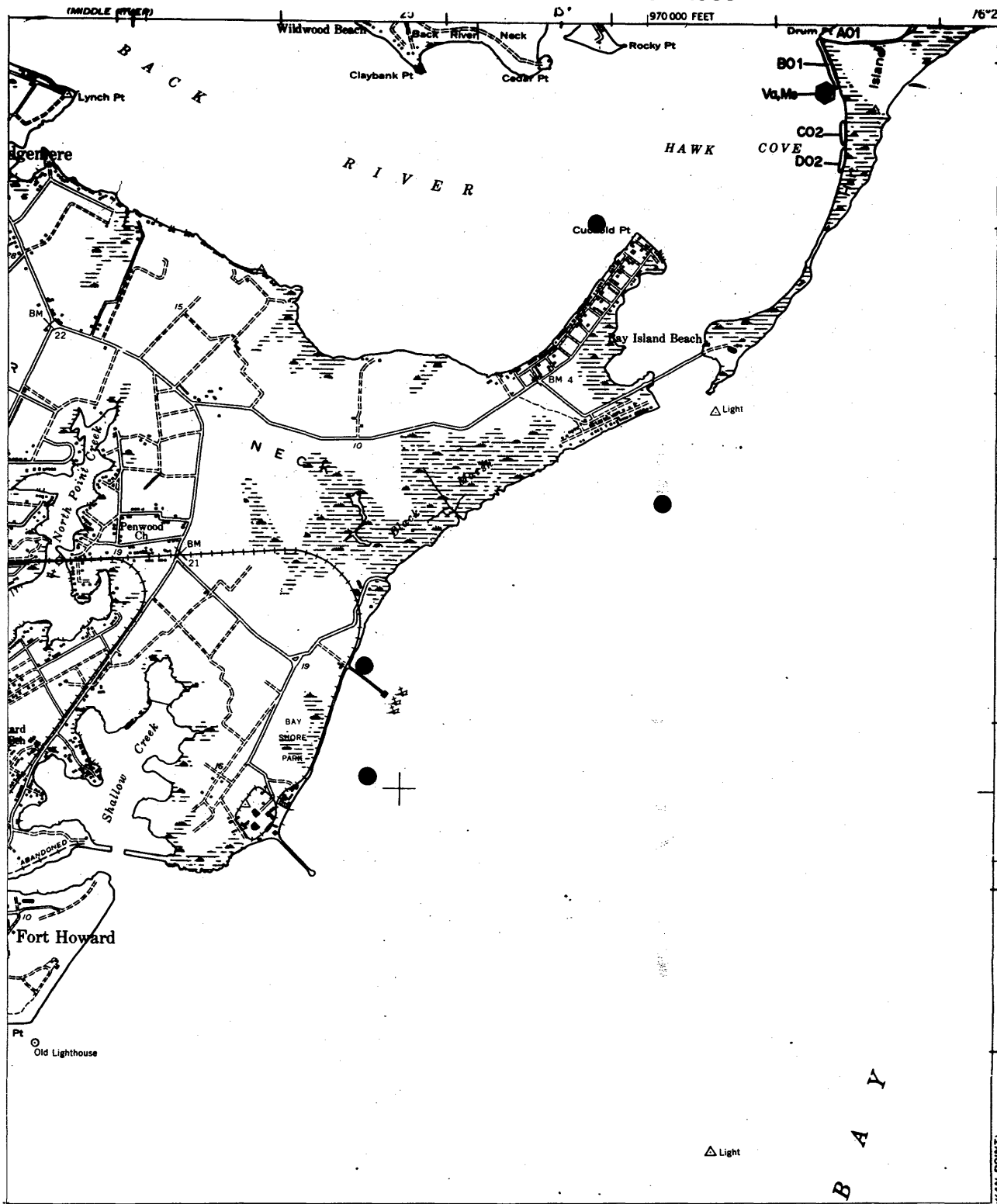
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	○ Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas spp.</i> (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngv	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara sp.</i> (muskgrass)	

SCALE 1:12,000

**GALENA, MD**  
**Northwest Quarter**  
**# 17**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

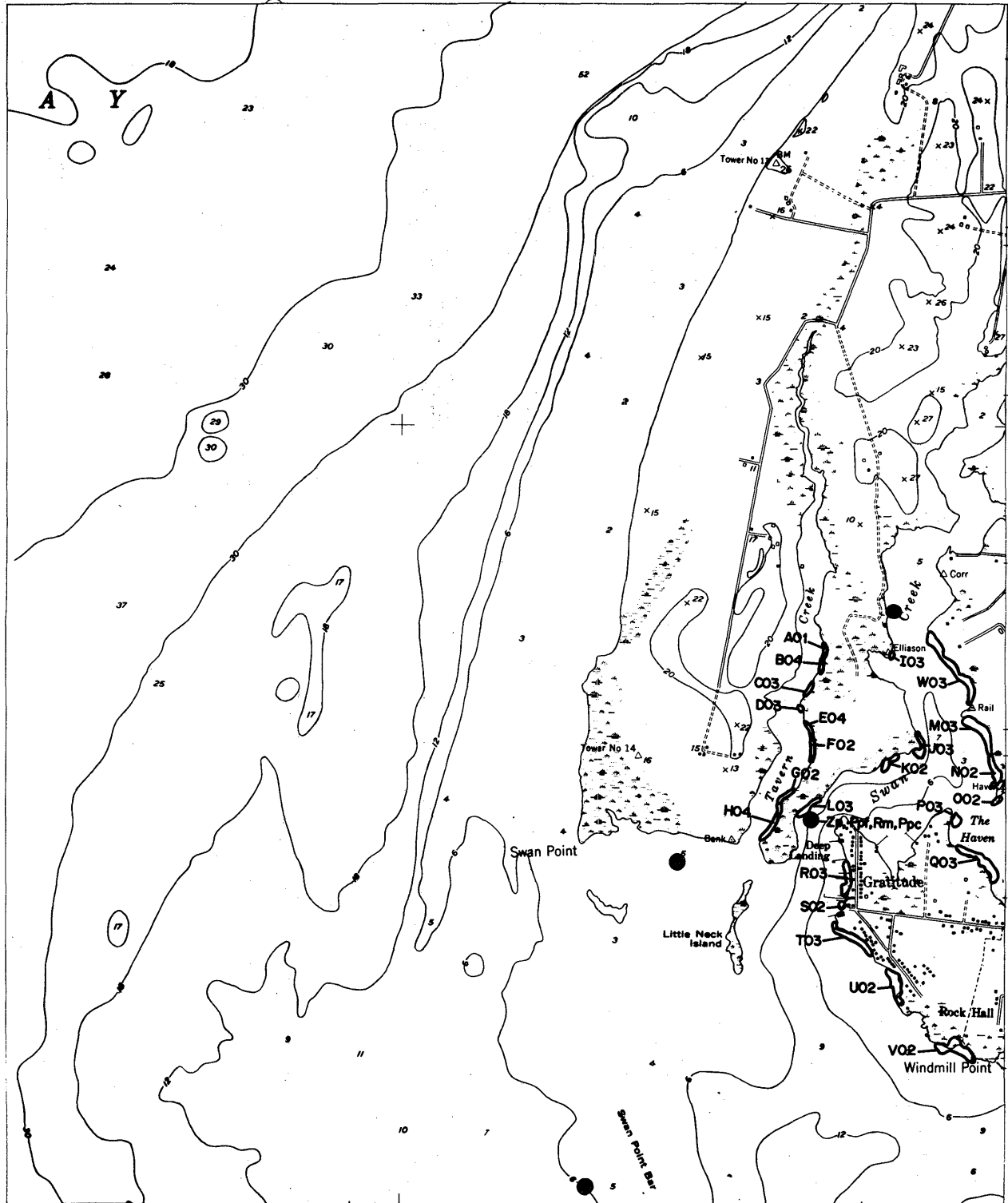
SPARROWS POINT, MD

Northeast Quarter

# 19



# SUBMERGED AQUATIC VEGETATION 1985



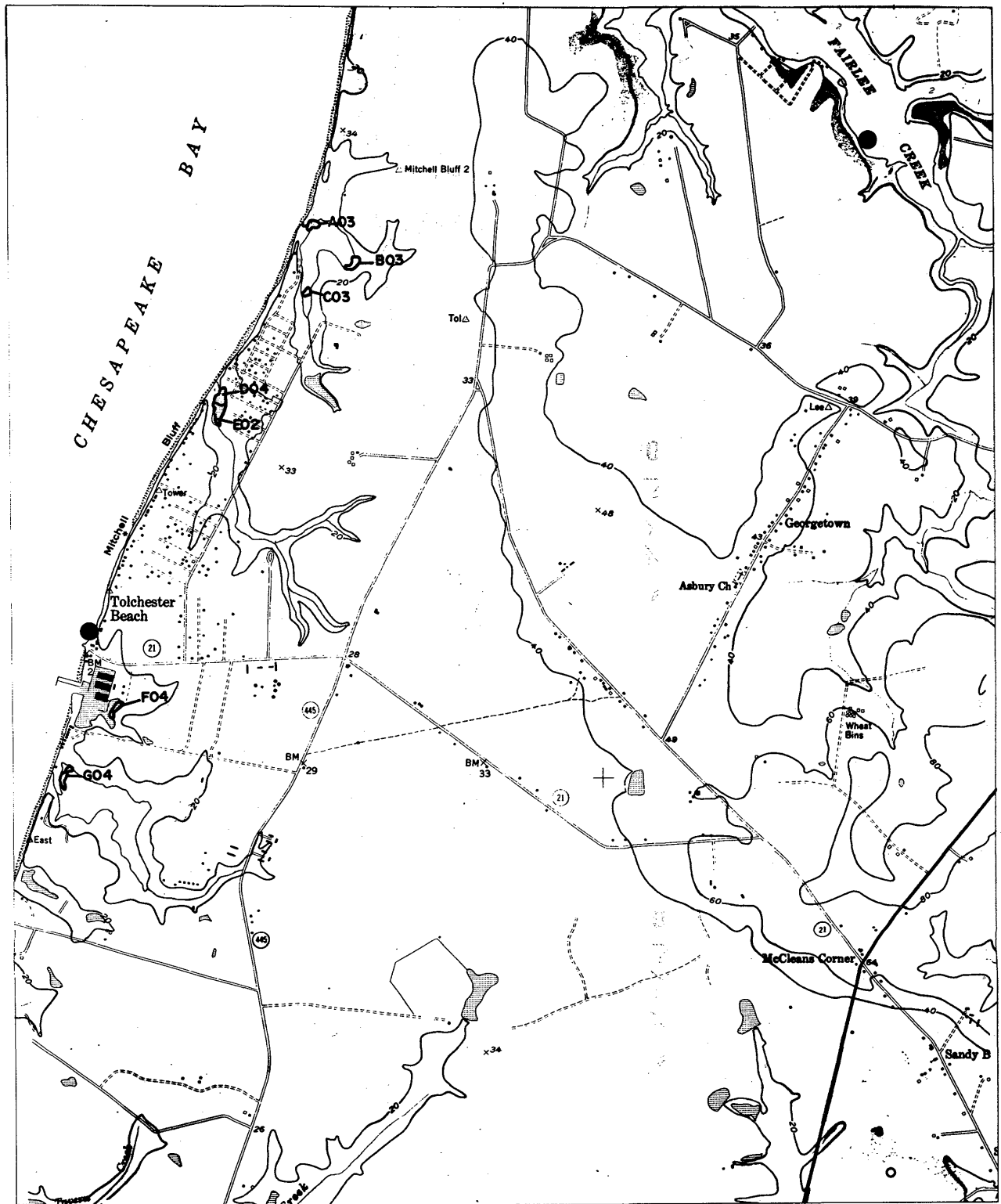
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppl	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngd	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

**SWAN POINT, MD**  
**Southeast Quarter**  
**# 20**



# SUBMERGED AQUATIC VEGETATION 1985



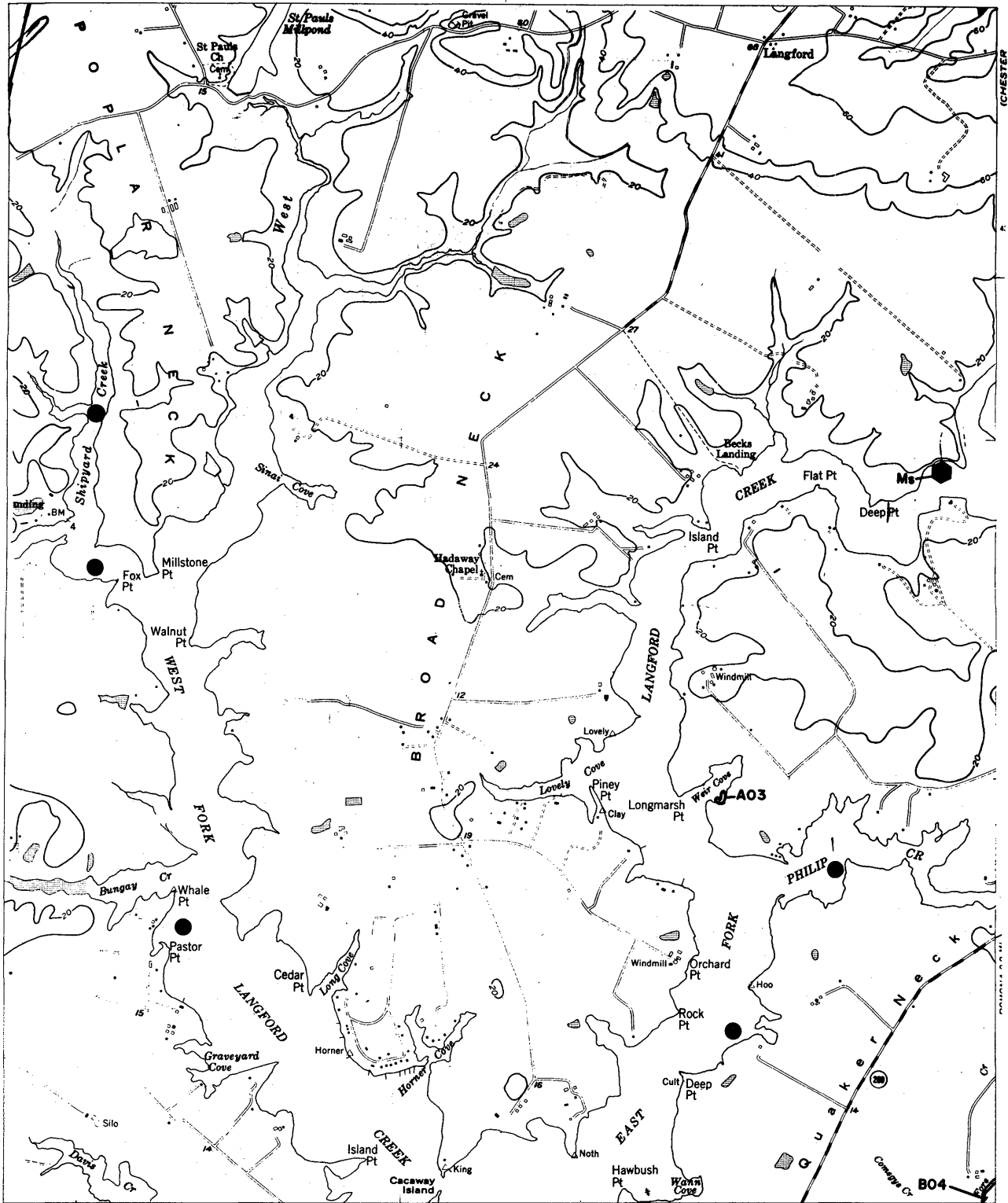
SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass) Rm <i>Ruppia maritima</i> (widgeon grass) Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil) Ppf <i>Potamogeton perfoliatus</i> (redhead-grass) Ppc <i>Potamogeton pectinatus</i> (sago pondweed) Zp <i>Zannichella palustris</i> (horned pondweed) N <i>Najas</i> spp. (naiad) Ec <i>Elodea canadensis</i> (common elodea) Va <i>Vallisneria americana</i> (wild celery)	Hv <i>Hydrilla verticillata</i> (hydrilla) Hd <i>Heteranthera dubia</i> (water stargrass) Pcr <i>Potamogeton crispus</i> (curly pondweed) Cd <i>Ceratophyllum demersum</i> (coontail) Ppu <i>Potamogeton pusillus</i> (slender pondweed) Ngu <i>Najas guadalupensis</i> (southern naiad) Ngr <i>Najas gracillima</i> (naiad) C <i>Chara</i> sp. (muskgrass)	● MD-DNR Survey Station ■ MD Charter Boat Field Survey ◆ Citizens Field Observation ▲ VIMS Field Survey ◇ U.S.G.S.

SCALE 1:12,000

**ROCK HALL, MD**  
**Northwest Quarter**  
**# 21**



# SUBMERGED AQUATIC VEGETATION 1985



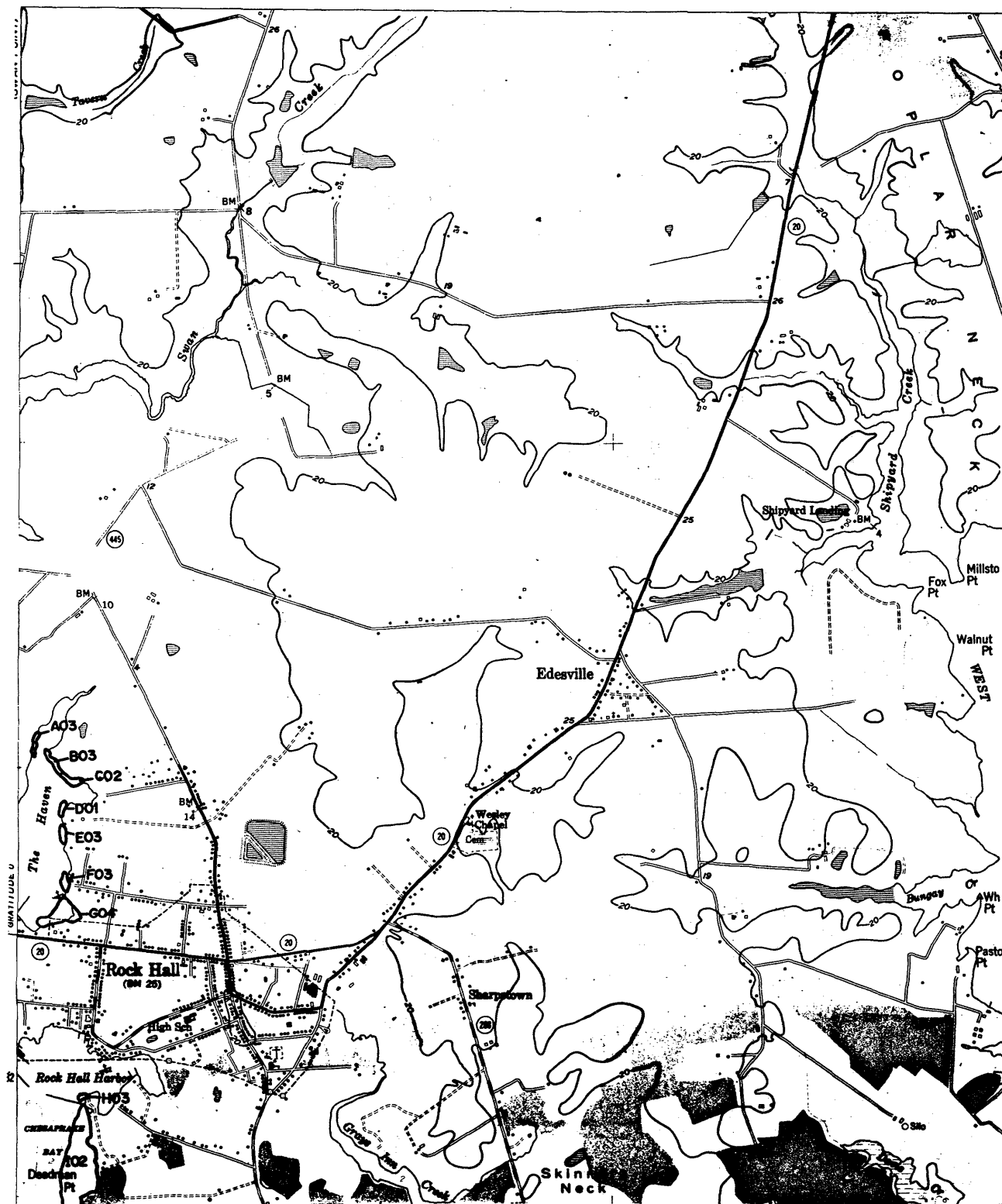
SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass)	Hv <i>Hydrilla verticillata</i> (hydrilla)	● MD-DNR Survey Station
Rm <i>Ruppia maritima</i> (widgeon grass)	Hd <i>Heteranthera dubia</i> (water stargrass)	■ MD Charter Boat Field Survey
Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr <i>Potamogeton crispus</i> (curly pondweed)	● Citizens Field Observation
Ppf <i>Potamogeton perfoliatus</i> (redhead-grass)	Cd <i>Ceratophyllum demersum</i> (coontail)	▲ VIMS Field Survey
Ppc <i>Potamogeton pectinatus</i> (sago pondweed)	Ppu <i>Potamogeton pusillus</i> (slender pondweed)	◆ U.S.G.S.
Zp <i>Zannichellia palustris</i> (horned pondweed)	Ngu <i>Najas guadalupensis</i> (southern naiad)	
N <i>Najas</i> spp. (naiad)	Ngr <i>Najas gracillima</i> (naiad)	
Ec <i>Elodea canadensis</i> (common elodea)	C <i>Chara</i> sp. (muskgrass)	
Va <i>Vallisneria americana</i> (wild celery)		

SCALE 1:12,000

**ROCK HALL, MD**  
**Southeast Quarter**  
**# 21**



# SUBMERGED AQUATIC VEGETATION 1985



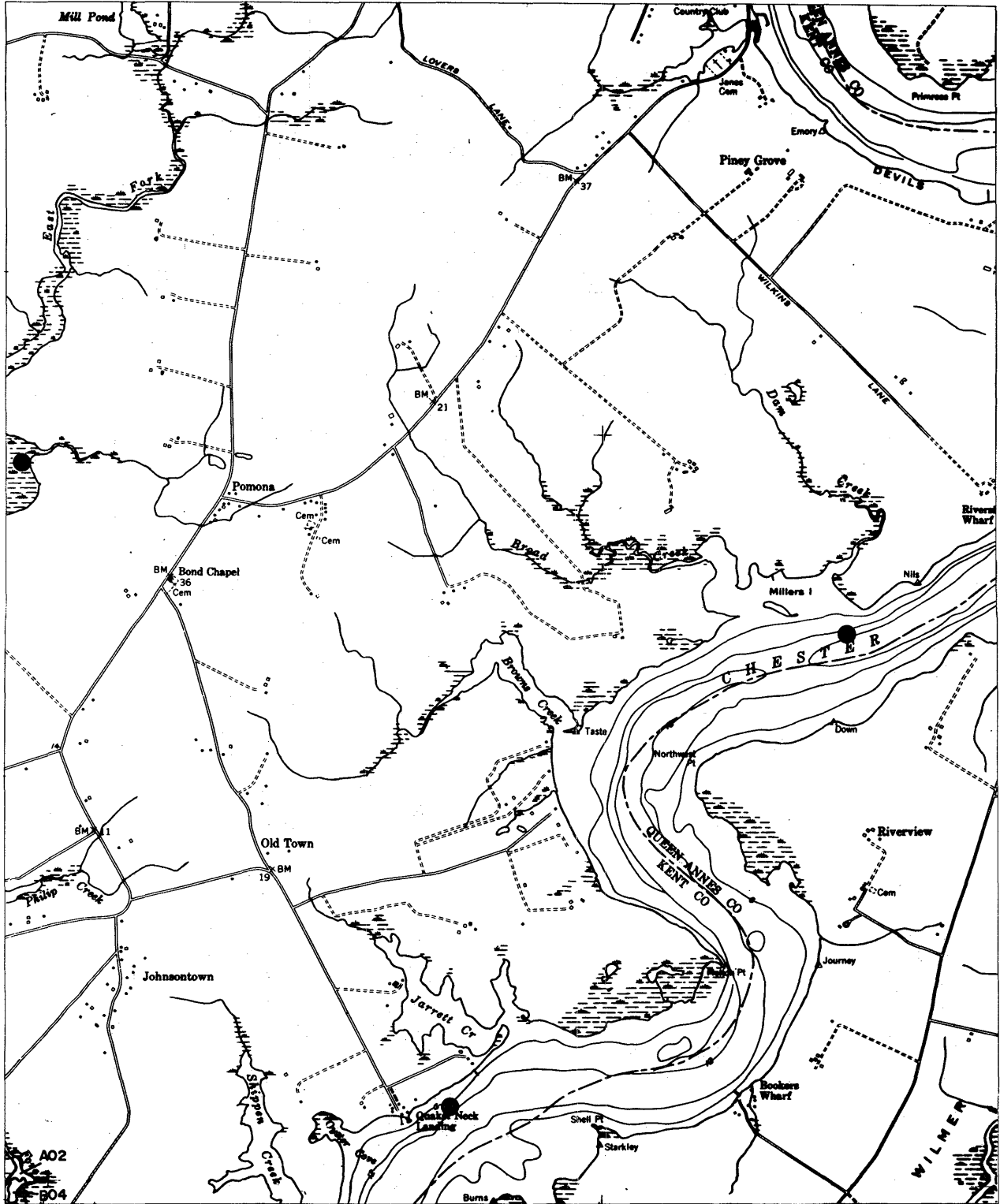
SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass) Rm <i>Ruppia maritima</i> (widgeon grass) Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil) Pof <i>Potamogeton perfoliatus</i> (redhead-grass) Ppc <i>Potamogeton pectinatus</i> (sago pondweed) Zp <i>Zanichella palustris</i> (horned pondweed) N <i>Najas</i> spp. (naiad) Ec <i>Elodea canadensis</i> (common elodea) Va <i>Vallisneria americana</i> (wild celery)	Hv <i>Hydrilla verticillata</i> (hydrilla) Hd <i>Heteranthera dubia</i> (water stargrass) Pcr <i>Potamogeton crispus</i> (curly pondweed) Cd <i>Ceratophyllum demersum</i> (coontail) Ppu <i>Potamogeton pusillus</i> (slender pondweed) Ngu <i>Najas guadalupensis</i> (southern naiad) Ngr <i>Najas gracillima</i> (naiad) C <i>Chara</i> sp. (muskgrass)	● MD-DNR Survey Station ■ MD Charter Boat Field Survey ◆ Citizens Field Observation ▲ VIMS Field Survey ◆ U.S.G.S.

SCALE 1:12,000

**ROCK HALL, MD**  
**Southwest Quarter**  
**# 21**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pdf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ng	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

**CHESTERTOWN, MD**  
**Southwest Quarter**

# 22





# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria spiralis</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

**GIBSON ISLAND, MD**  
**Northeast Quarter**  
**# 24**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngp	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

GIBSON ISLAND, MD

Northwest Quarter

# 24



# SUBMERGED AQUATIC VEGETATION 1985



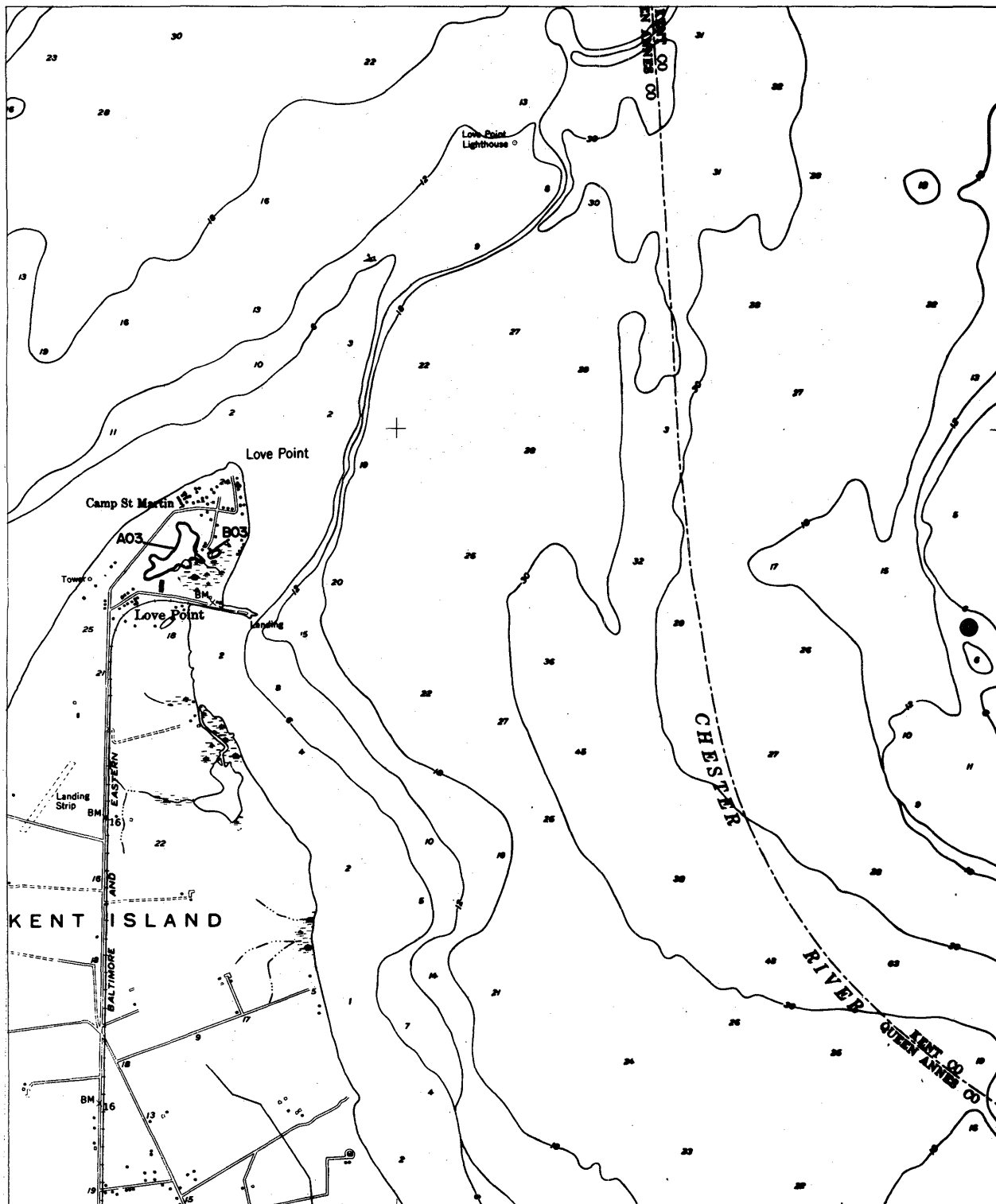
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	◆ Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngd	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

GIBSON ISLAND, MD  
Southeast Quarter  
# 24



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	◆	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

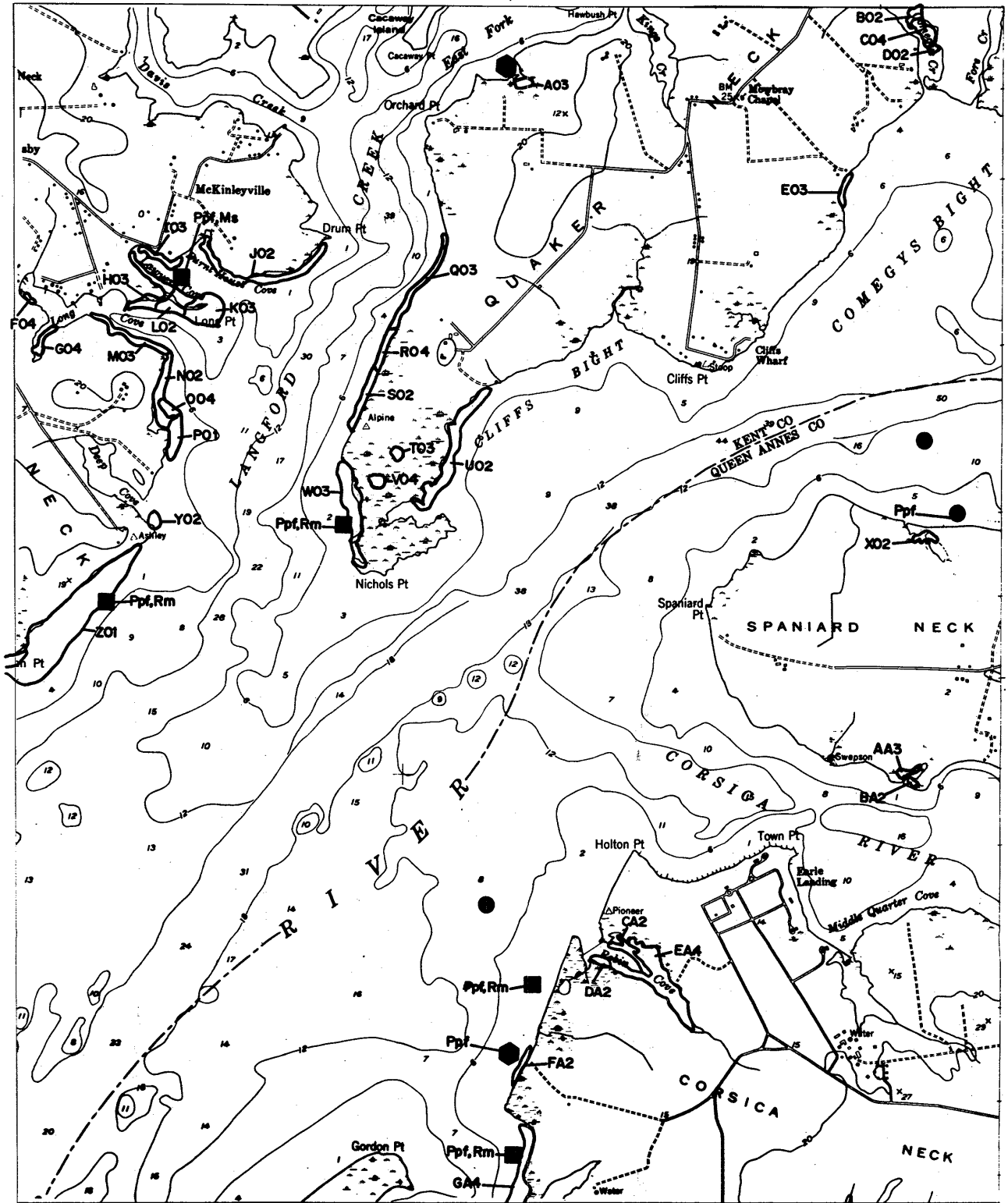
SCALE 1:12,000

LOVE POINT, MD  
Southeast Quarter

# 25



# SUBMERGED AQUATIC VEGETATION 1985



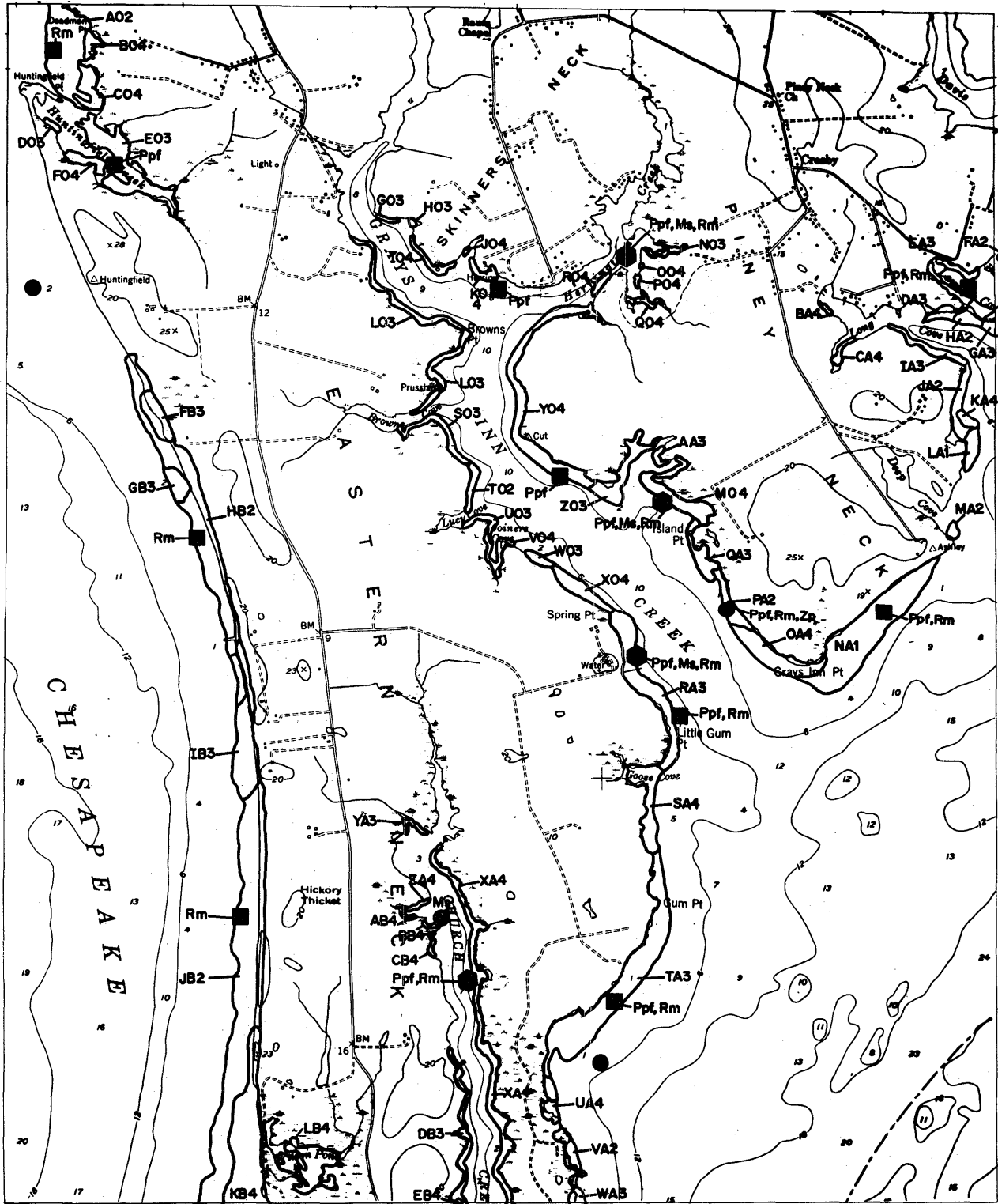
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000  
0 1 MILE  
0 1 KILOMETER

**LANGFORD CREEK, MD**  
Northeast Quarter  
# 26



# SUBMERGED AQUATIC VEGETATION 1985

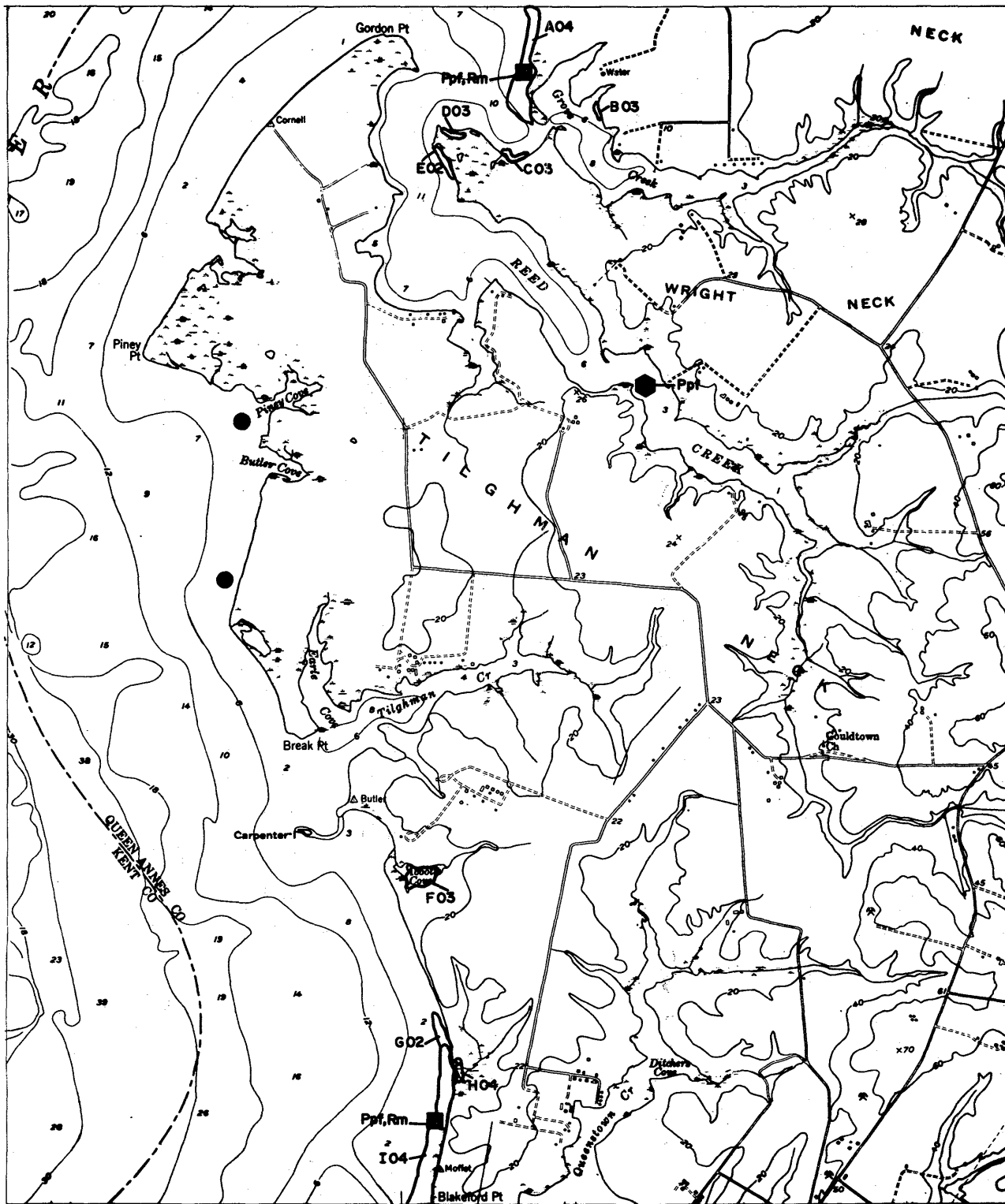


SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton pectinatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

LANGFORD CREEK, MD  
Northwest Quarter  
# 26



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass)	Hv <i>Hydrilla verticillata</i> (hydrilla)	● MD-DNR Survey Station
Rm <i>Ruppia maritima</i> (widgeon grass)	Hd <i>Heteranthera dubia</i> (water stargrass)	■ MD Charter Boat Field Survey
Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr <i>Potamogeton crispus</i> (curly pondweed)	● Citizens Field Observation
Ppf <i>Potamogeton perfoliatus</i> (redhead-grass)	Cd <i>Ceratophyllum demersum</i> (coontail)	▲ VIMS Field Survey
Ppc <i>Potamogeton pectinatus</i> (sago pondweed)	Ppu <i>Potamogeton pusillus</i> (slender pondweed)	◆ U.S.G.S.
Zp <i>Zannichella palustris</i> (horned pondweed)	Ngv <i>Najas guadalupensis</i> (southern naiad)	
N <i>Najas</i> spp. (naiad)	Ngr <i>Najas gracillima</i> (naiad)	
Ec <i>Elodea canadensis</i> (common elodea)	C <i>Chara</i> sp. (muskgrass)	
Va <i>Vallisneria americana</i> (wild celery)		

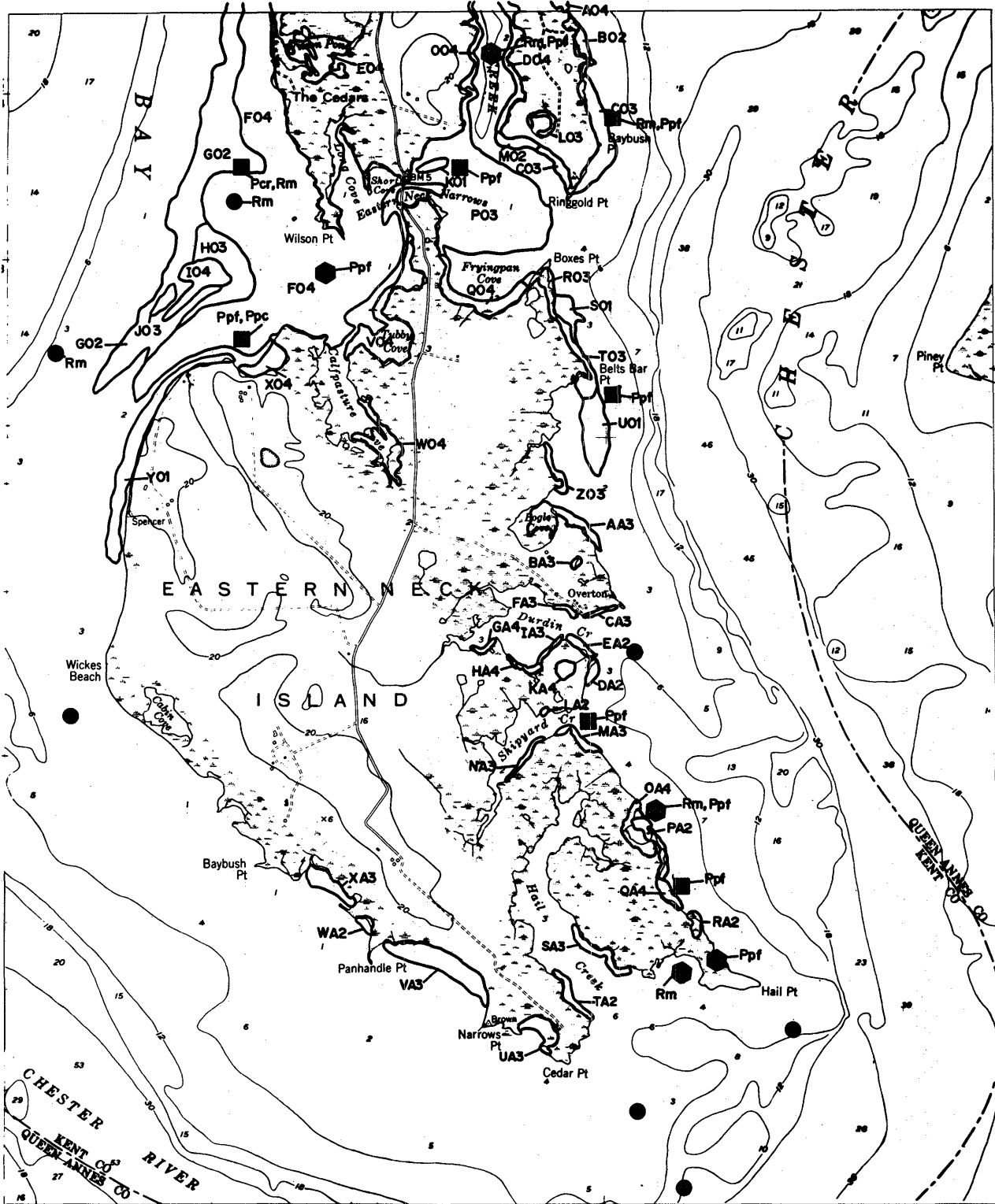
SCALE 1:12,000

**LANGFORD CREEK, MD**  
Southeast Quarter

# 26



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas spp.</i> (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara sp.</i> (muskgrass)	

SCALE 1:12,000

0 1 2 3 4 5 MILE

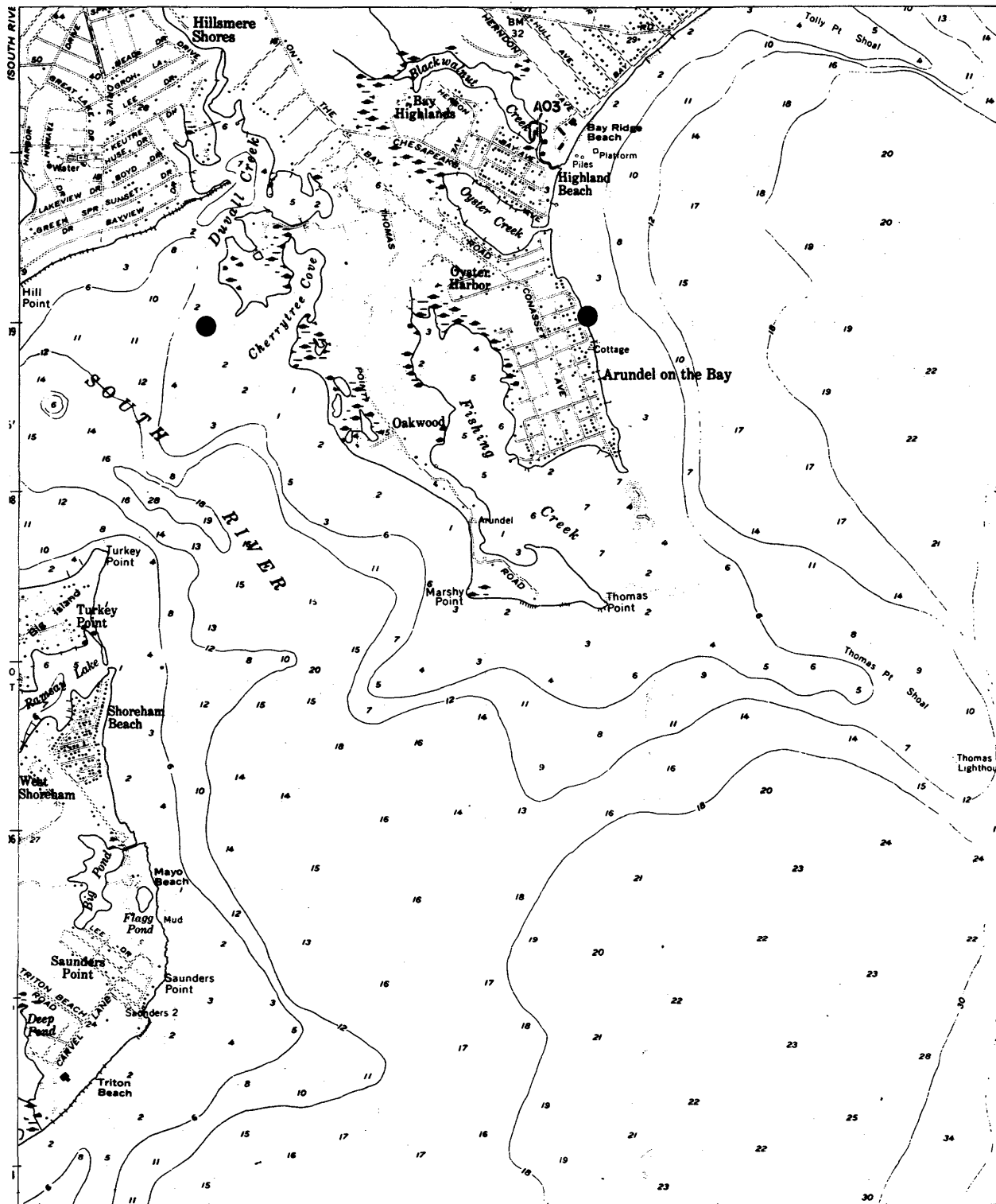
0 1 2 3 4 5 KILOMETER

**LANGFORD CREEK, MD**  
**Southwest Quarter**  
**# 26**





# SUBMERGED AQUATIC VEGETATION 1985



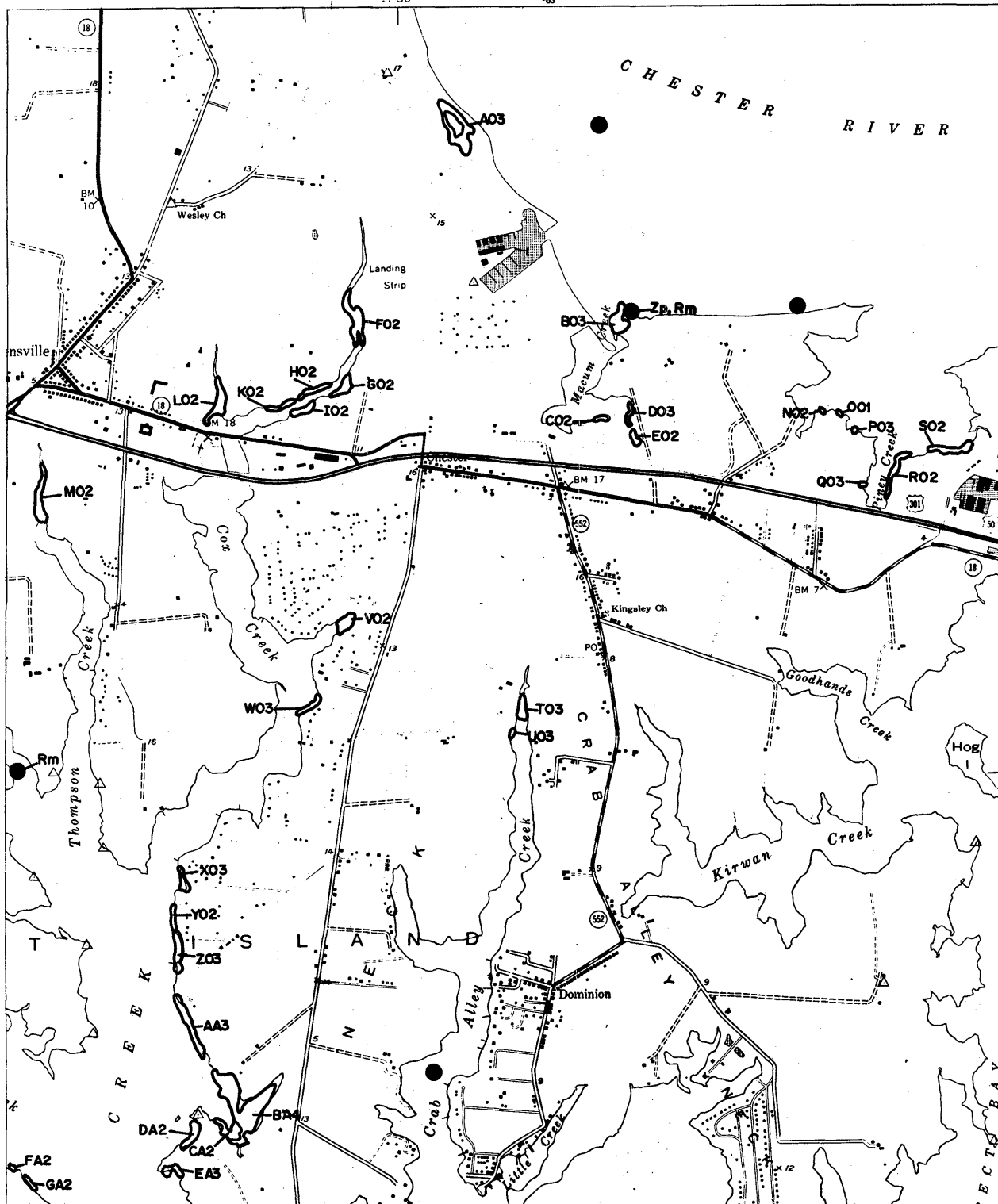
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngp	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

ANNAPOLIS, MD  
Southwest Quarter  
# 31



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas spp.</i> (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara sp.</i> (muskgrass)		

SCALE 1:12,000

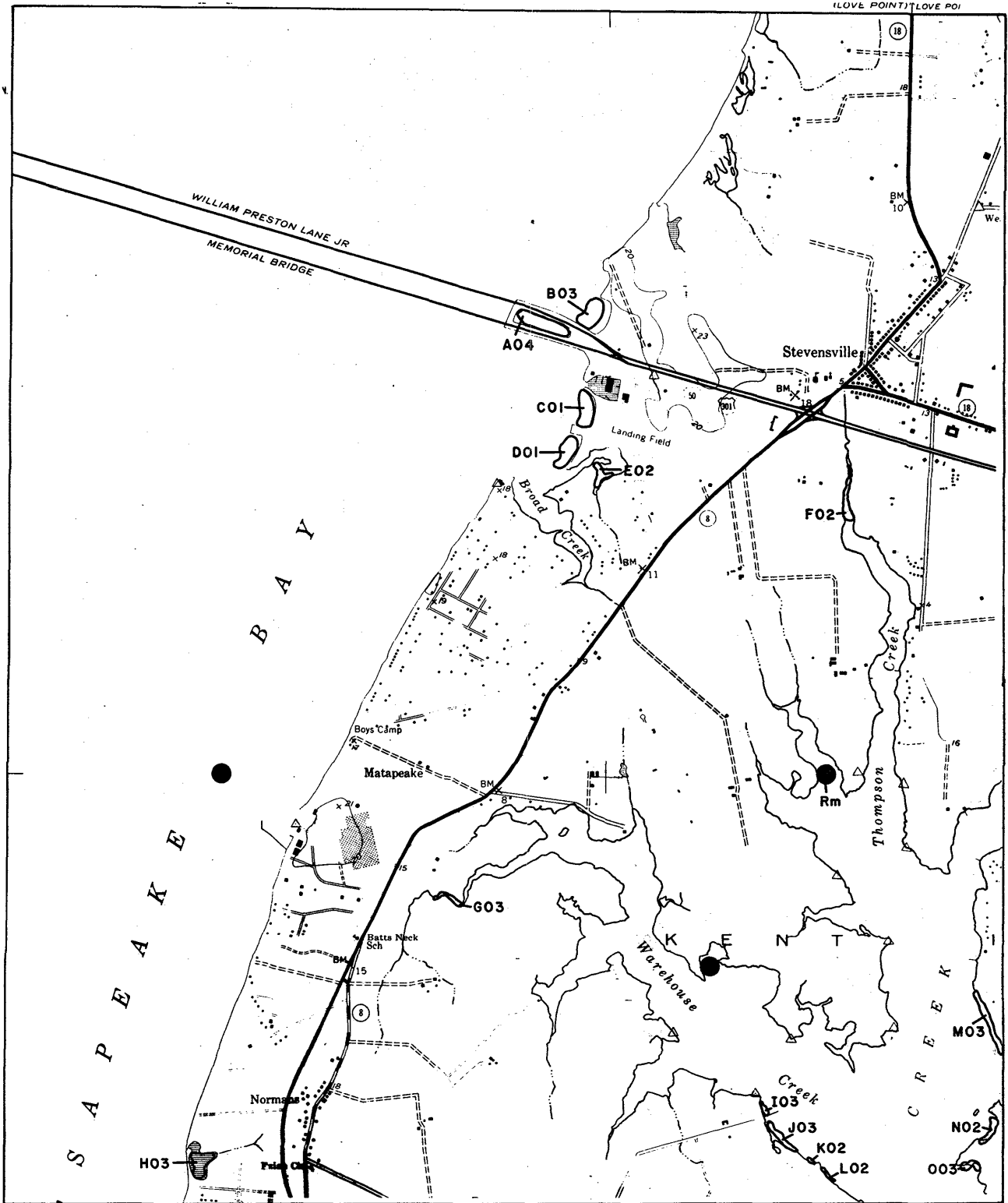
KENT ISLAND, MD

Northeast Quarter

# 32

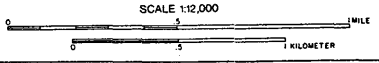


# SUBMERGED AQUATIC VEGETATION 1985

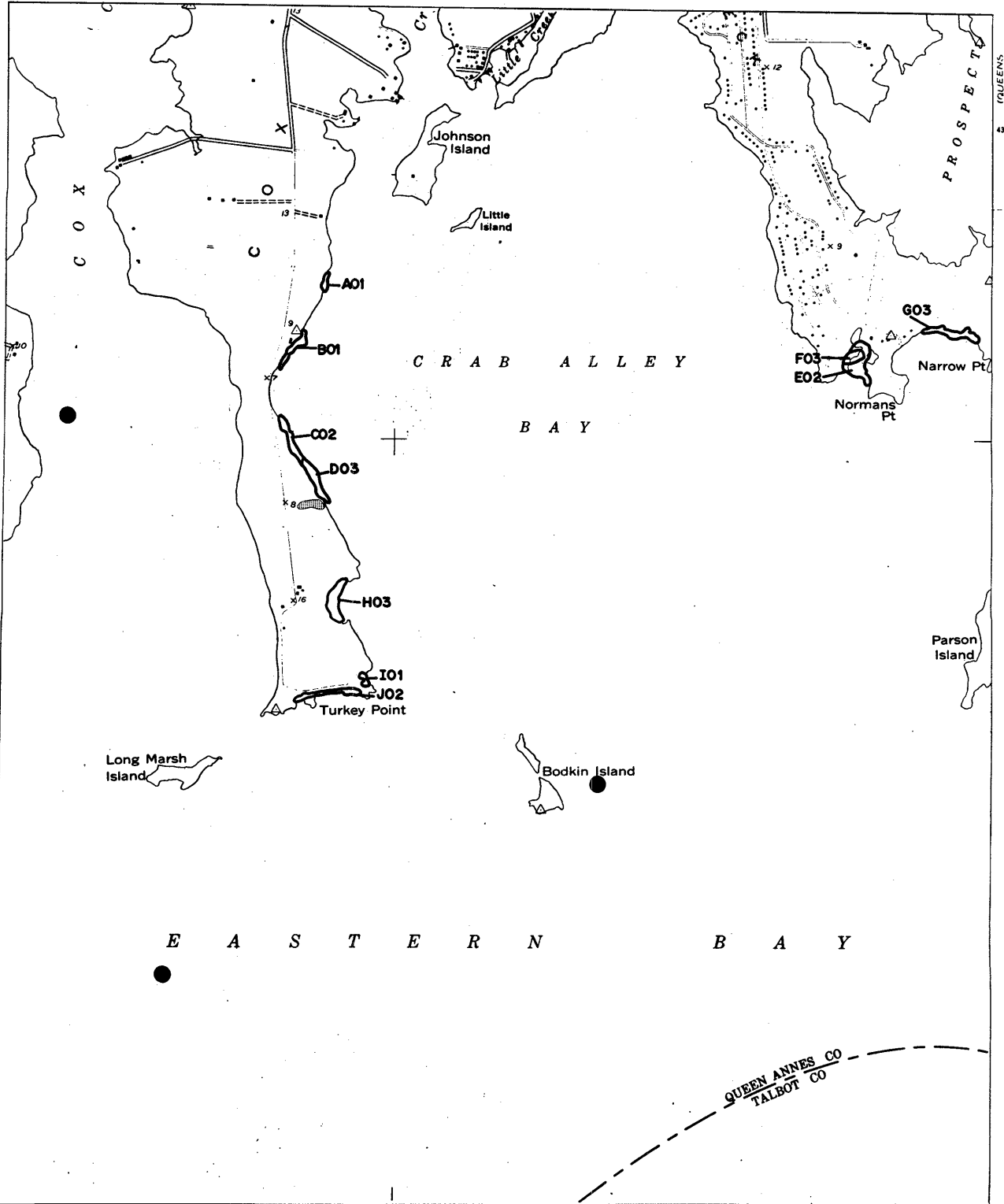


SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppl	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas spp.</i> (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ng	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara sp.</i> (muskgrass)		

KENT ISLAND, MD  
Northwest Quarter  
# 32



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

0 5 1 MILE  
0 5 1 KILOMETER

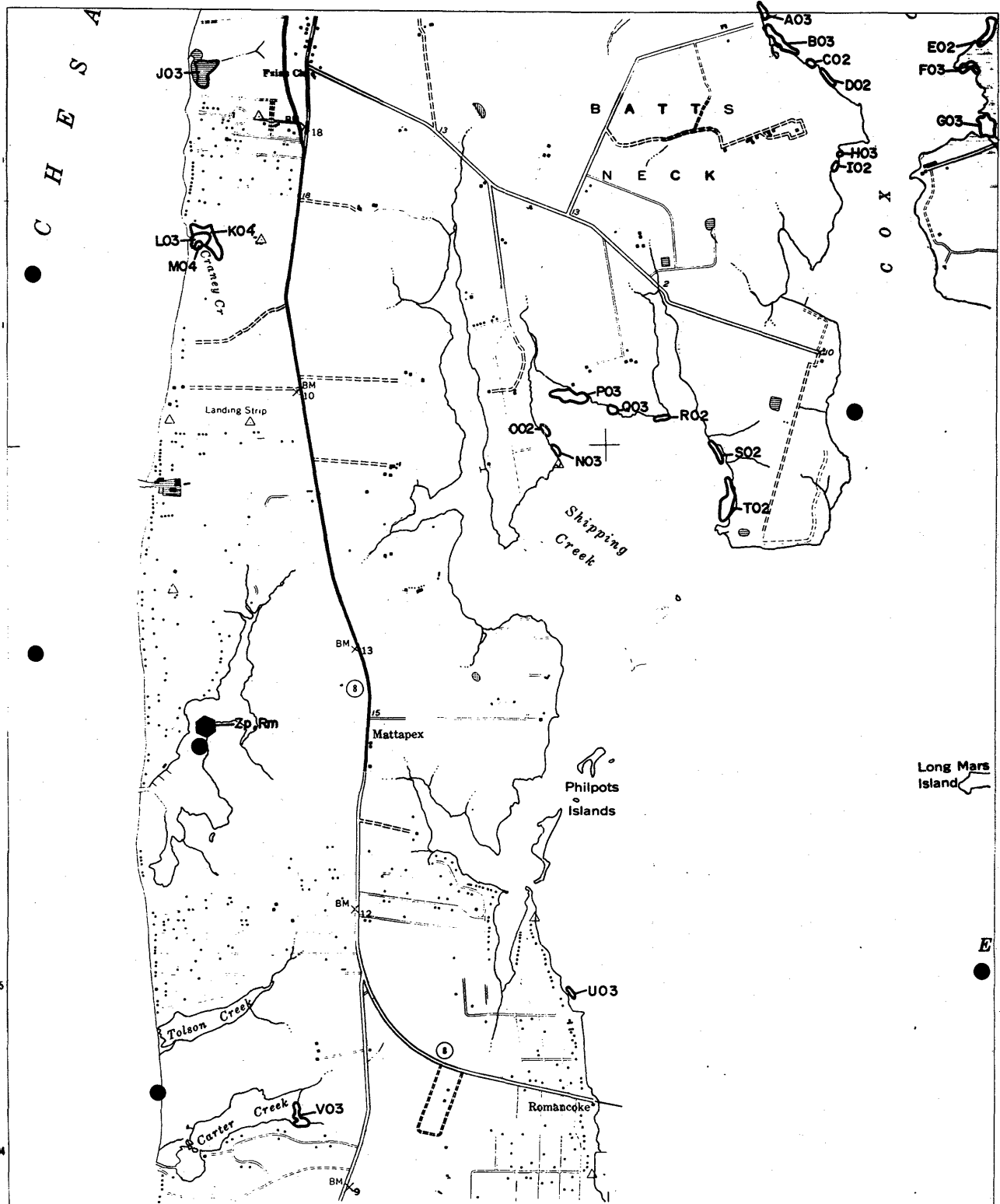
KENT ISLAND, MD

Southeast Quarter

# 32



# SUBMERGED AQUATIC VEGETATION 1985



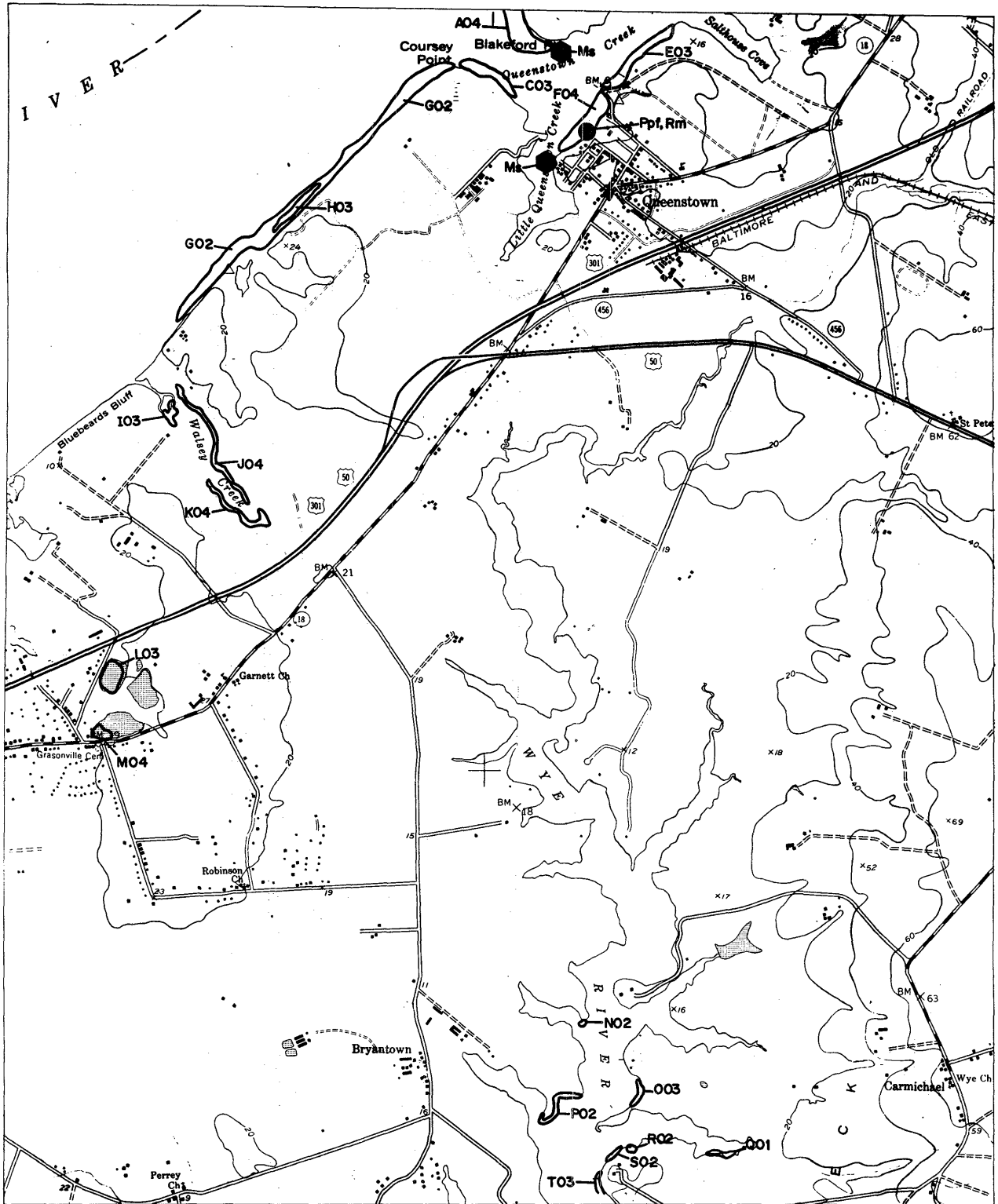
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

KENT ISLAND, MD  
Southwest Quarter

# 32



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria spiralis</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

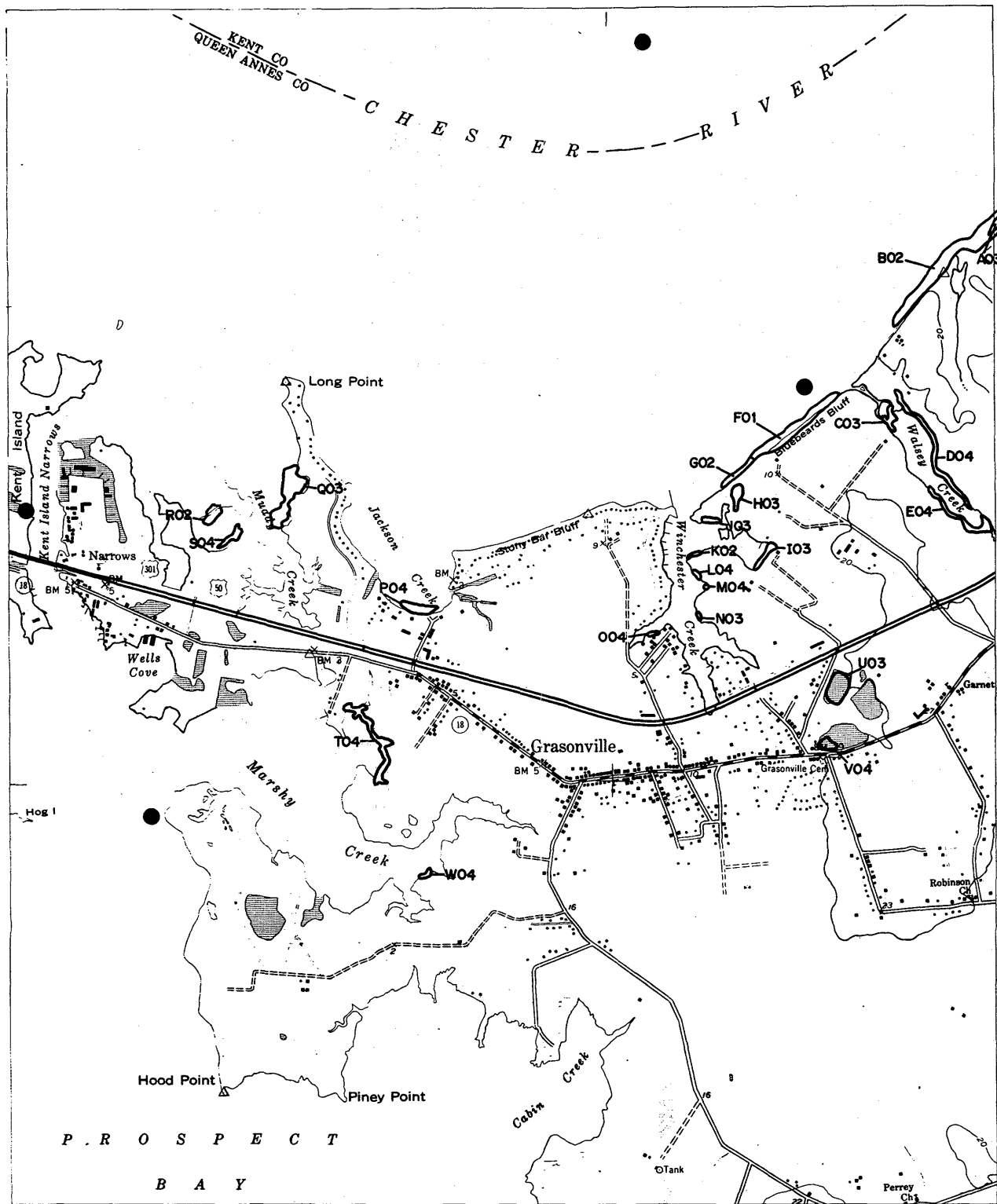
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**QUEENSTOWN, MD**  
Northeast Quarter

# 33



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (thorned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngd	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

0 5 1 MILE

0 5 1 KILOMETER

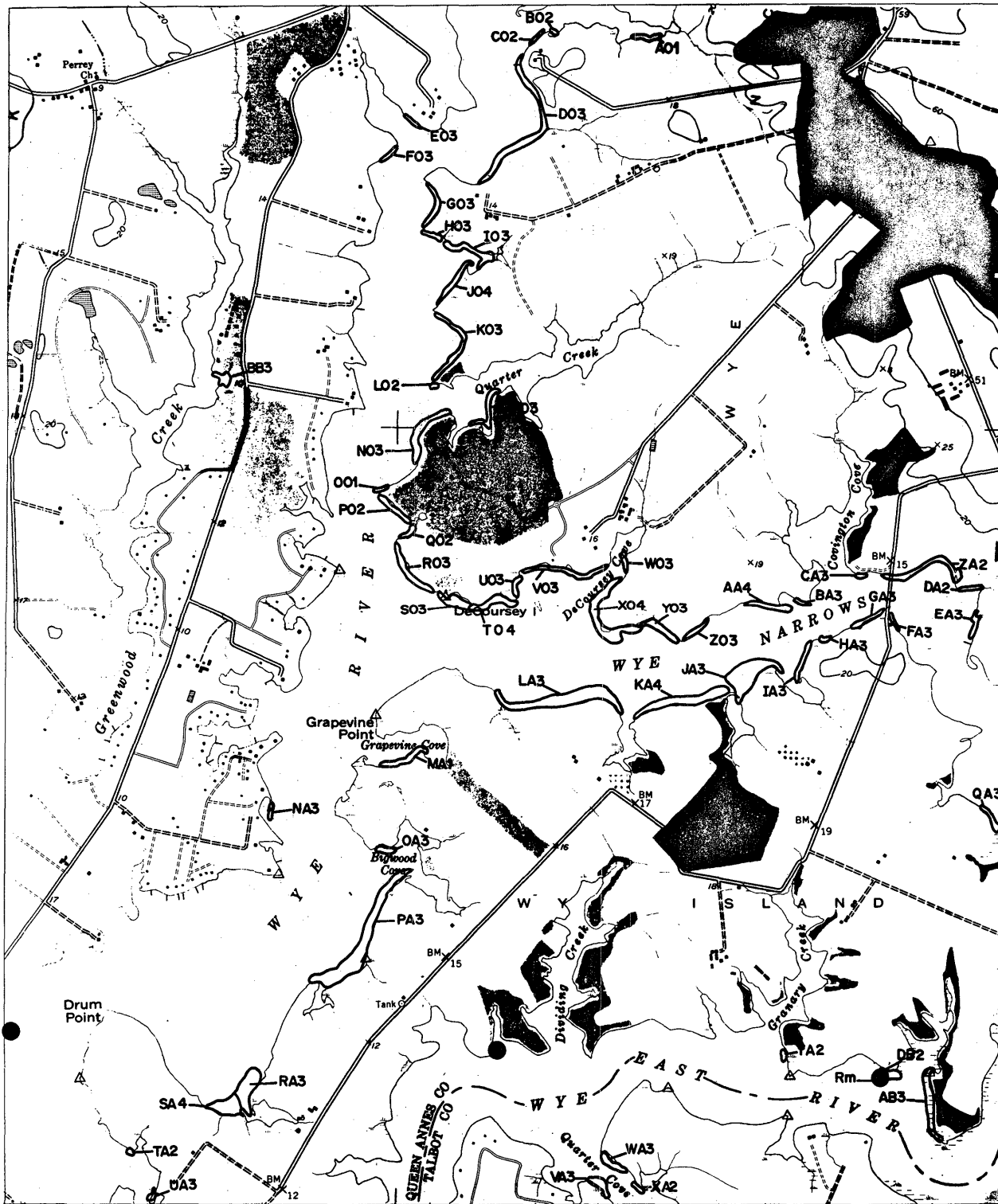
QUEENSTOWN, MD

Northwest Quarter

# 33



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass) Rm <i>Ruppia maritima</i> (widgeon grass) Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil) Pof <i>Potamogeton perfoliatus</i> (redhead-grass) Ppc <i>Potamogeton pectinatus</i> (sago pondweed) Zp <i>Zamichelia palustris</i> (horned pondweed) N <i>Najas</i> spp. (naiad) Ec <i>Elodea canadensis</i> (common elodea) Va <i>Vallisneria americana</i> (wild celery)	Hv <i>Hydrilla verticillata</i> (hydrilla) Hd <i>Heteranthera dubia</i> (water stargrass) Pcr <i>Potamogeton crispus</i> (curly pondweed) Cd <i>Ceratophyllum demersum</i> (coontail) Ppu <i>Potamogeton pusillus</i> (slender pondweed) Ngu <i>Najas guadalupensis</i> (southern naiad) Ngr <i>Najas gracillima</i> (naiad) C <i>Chara</i> sp. (muskgrass)	<ul style="list-style-type: none"> <li>● MD-DNR Survey Station</li> <li>■ MD Charter Boat Field Survey</li> <li>● Citizens Field Observation</li> <li>▲ VIMS Field Survey</li> <li>◆ U.S.G.S.</li> </ul>

SCALE 1:12,000

0 1 2 3 4 5 6 7 8 9 10 MILE

0 1 2 3 4 5 KILOMETER

QUEENSTOWN, MD

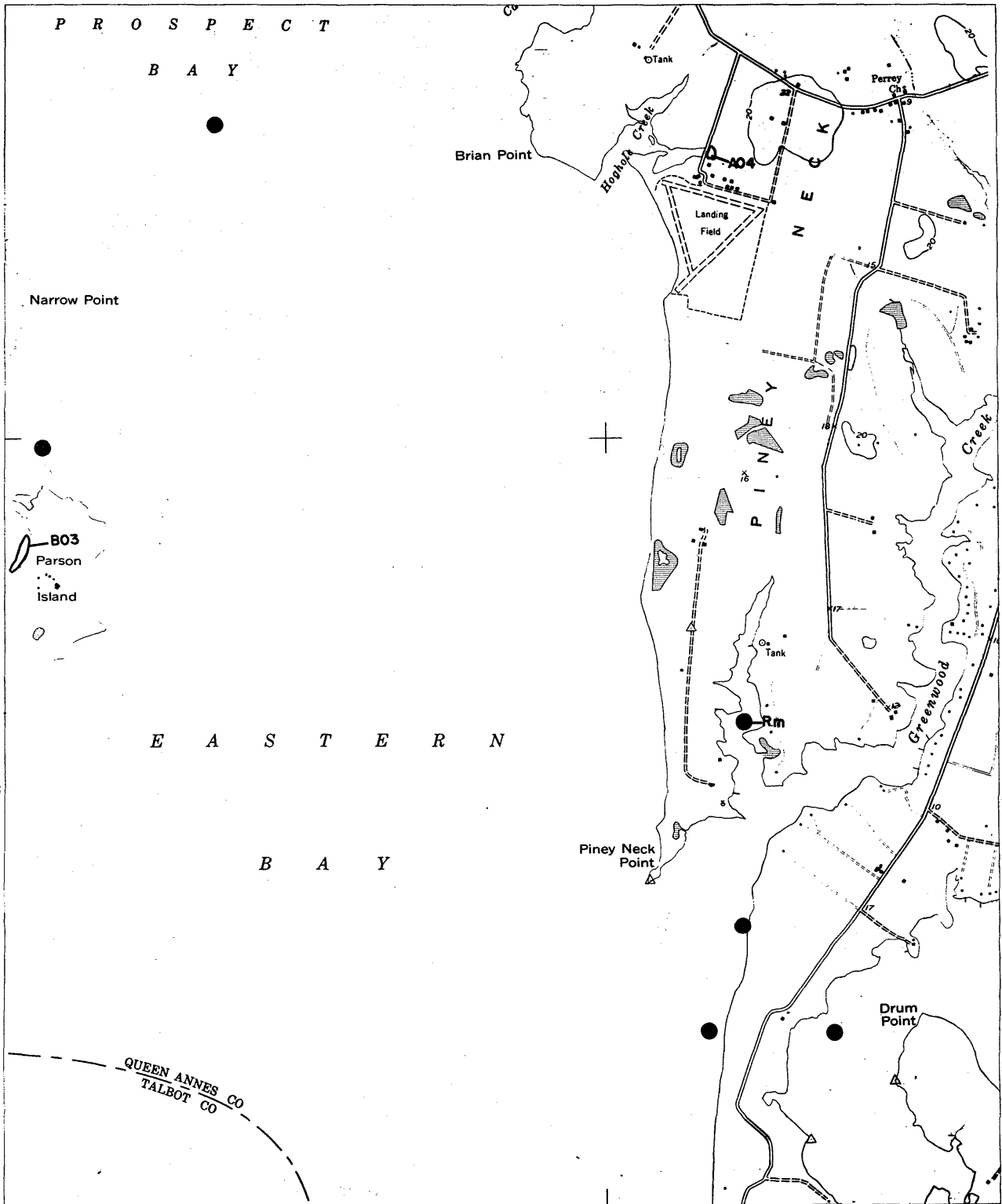
Southeast Quarter

# 33





# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	◆ Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

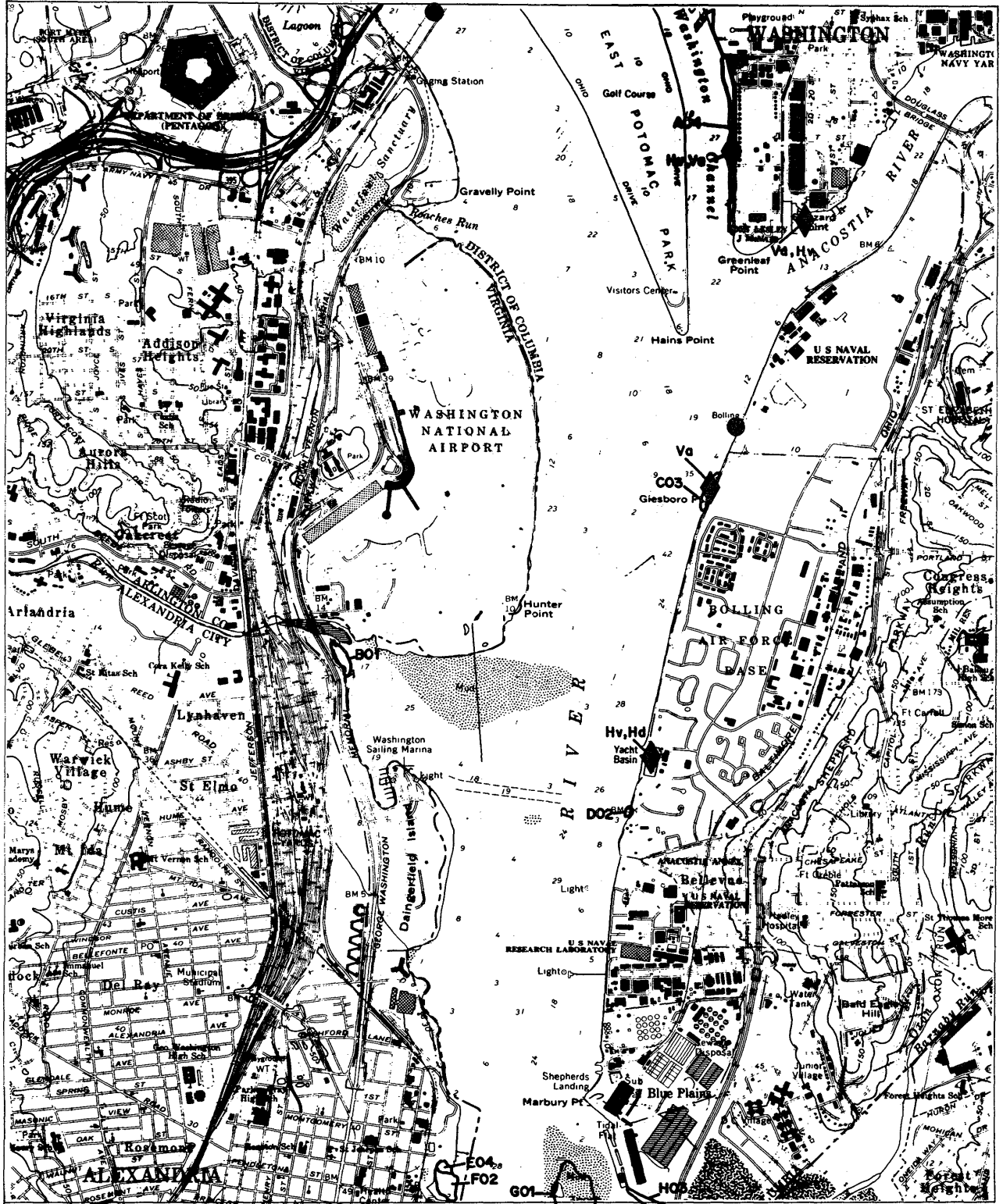
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**QUEENSTOWN, MD**  
**Southwest Quarter**  
**# 33**





# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Pm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Pd	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichella palustris</i> (horned pondweed)	Ngu	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas</i> spp. (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara</i> sp. (muskgrass)
Va	<i>Vallisneria americana</i> (wild celery)		

●	MD-DNR Survey Station
■	MD Charter Boat Field Survey
●	Citizens Field Observation
▲	VMS Field Survey
◆	U.S.G.S.

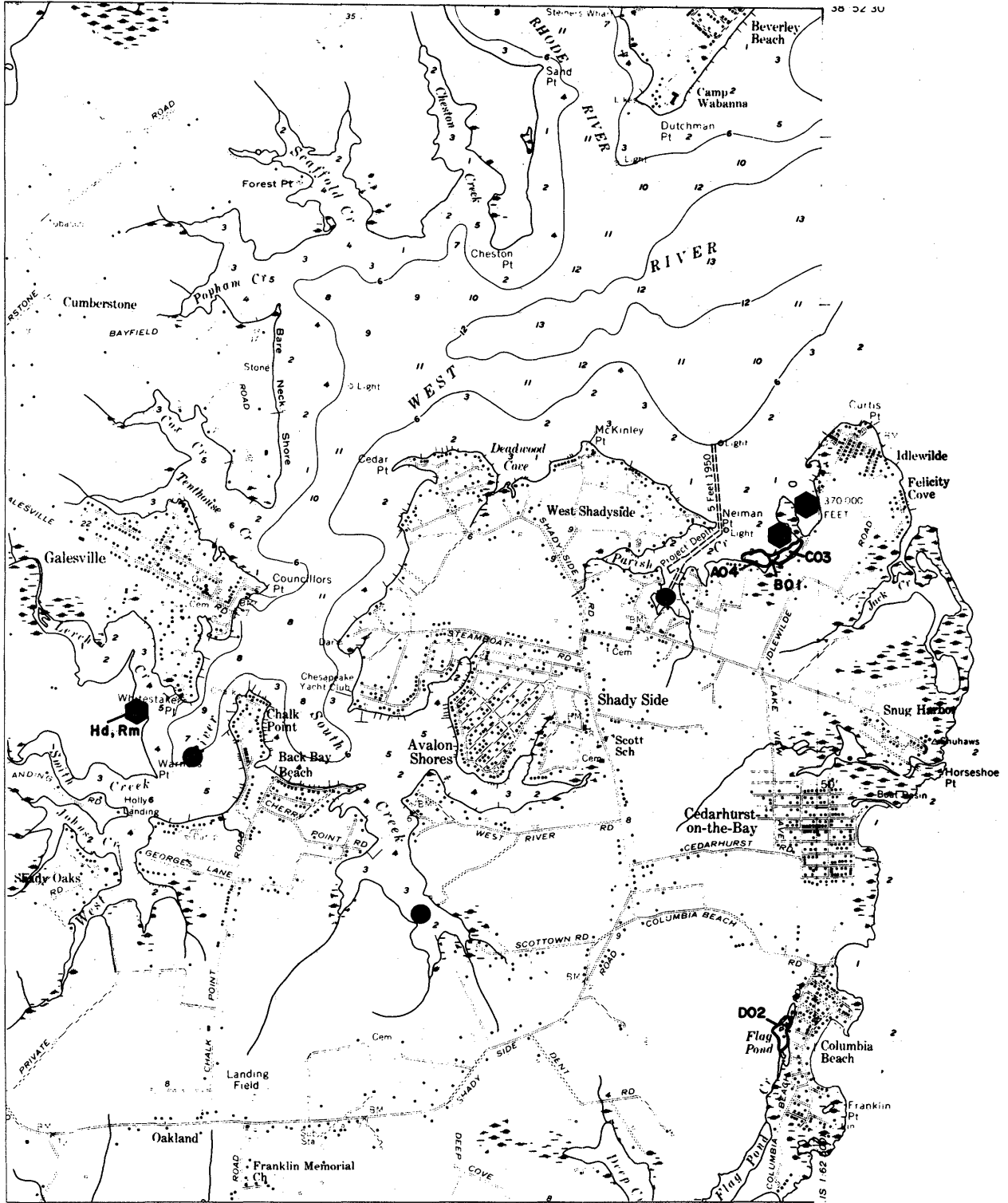
ALEXANDRIA, VA-DC-MD

Northeast Quarter

# 34



# SUBMERGED AQUATIC VEGETATION 1985

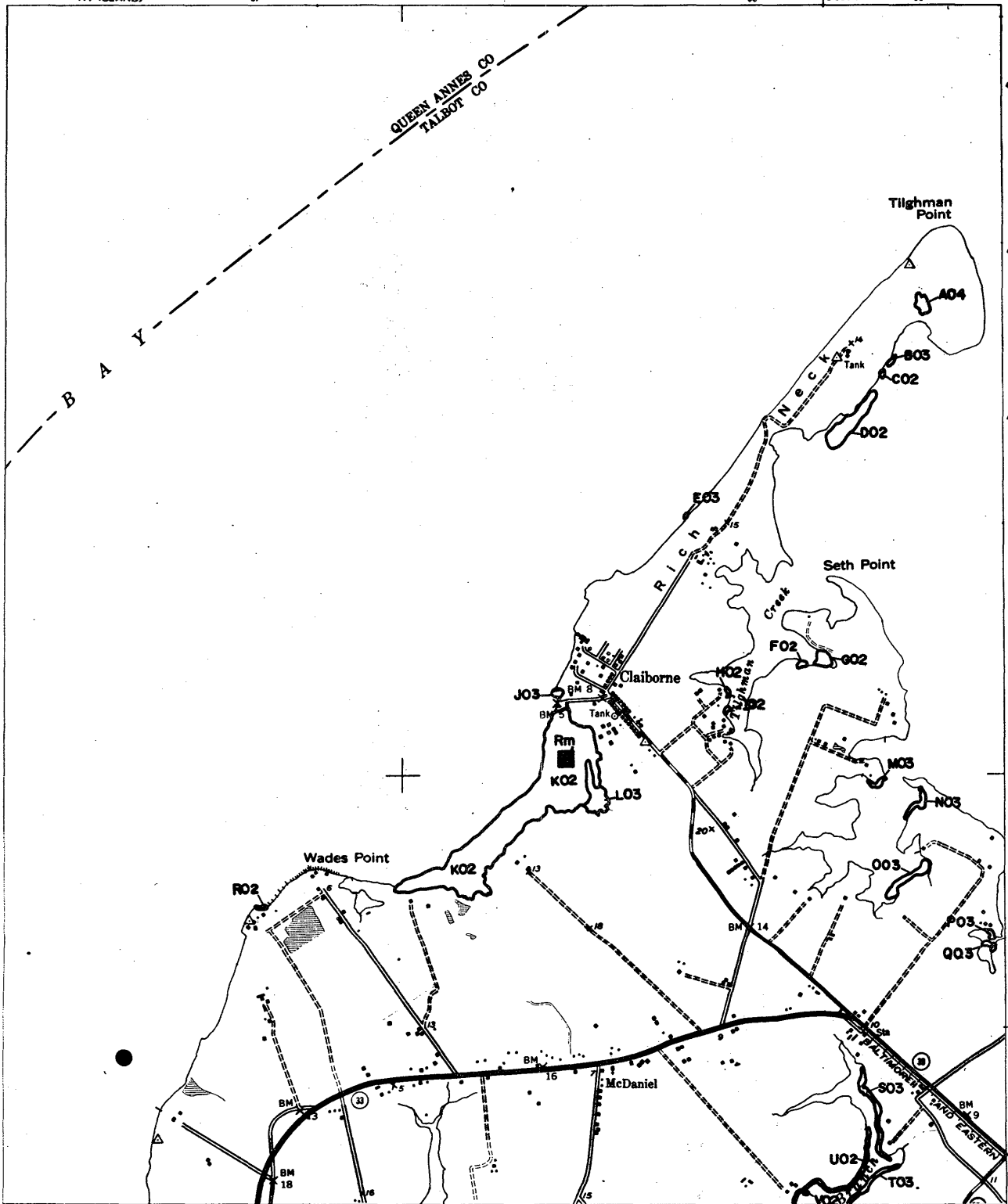


SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas spp.</i> (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara sp.</i> (muskgrass)		

DEALE, MD  
 Northeast Quarter  
 # 35



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass)	Hv <i>Hydrilla verticillata</i> (hydrilla)	● MD-DNR Survey Station
Zr <i>Ruppia maritima</i> (widgeon grass)	Hd <i>Heteranthera dubia</i> (water stargrass)	■ MD Charter Boat Field Survey
Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr <i>Potamogeton crispus</i> (curly pondweed)	● Citizens Field Observation
Pof <i>Potamogeton perfoliatus</i> (redhead-grass)	Cd <i>Ceratophyllum demersum</i> (coontail)	▲ VMS Field Survey
Ppc <i>Potamogeton pectinatus</i> (sago pondweed)	Ppu <i>Potamogeton pusillus</i> (slender pondweed)	◆ U.S.G.S.
Zp <i>Zannichellia palustris</i> (horned pondweed)	Ngv <i>Najas guadalupensis</i> (southern naiad)	
N <i>Najas</i> spp. (naiad)	Ngr <i>Najas gracillima</i> (naiad)	
Ec <i>Elodea canadensis</i> (common elodea)	C <i>Chara</i> sp. (muskgrass)	
Va <i>Vallisneria americana</i> (wild celery)		

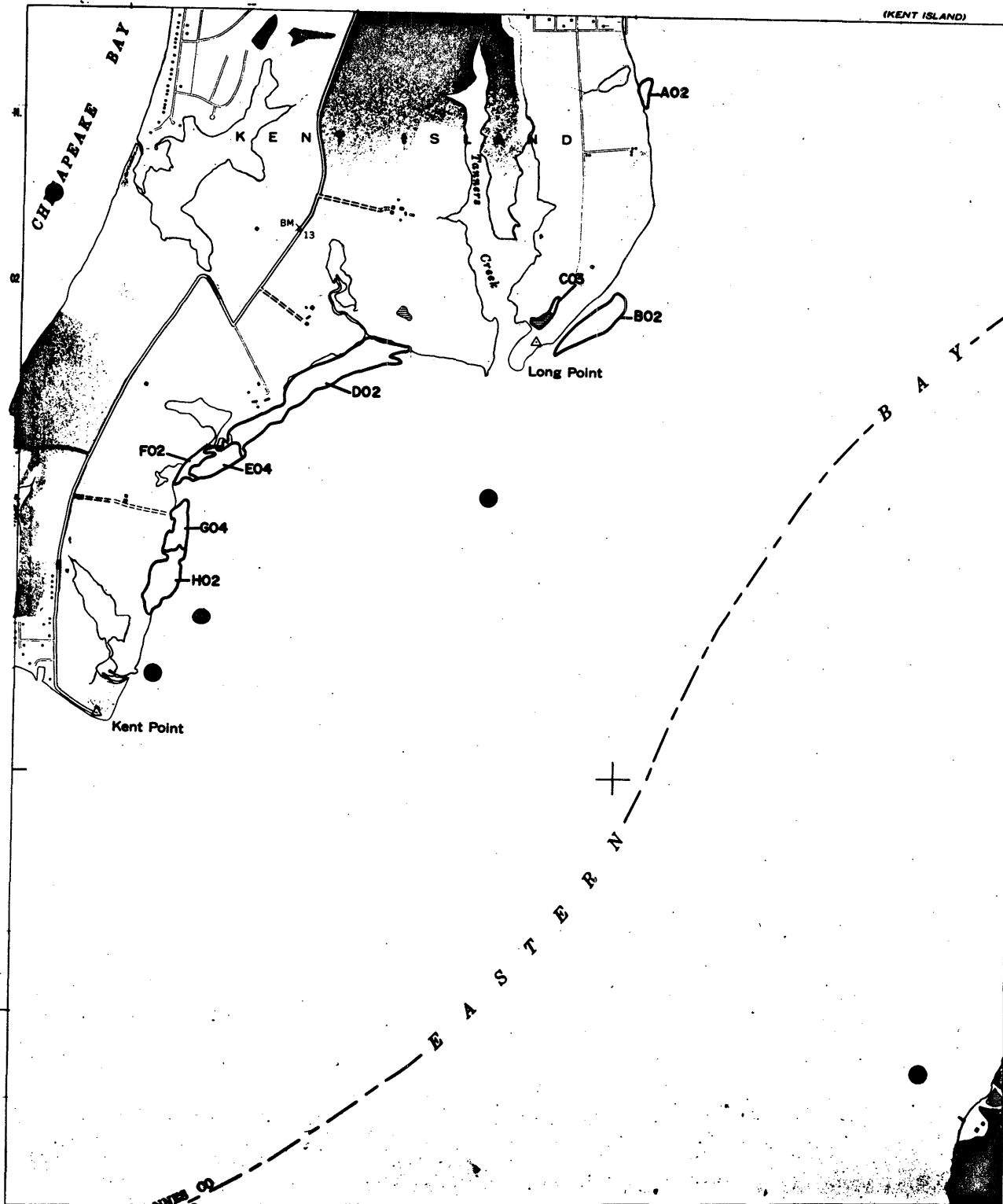
SCALE 1:12,000

**CLAIBORNE, MD**  
**Northeast Quarter**  
**# 36**



# SUBMERGED AQUATIC VEGETATION 1985

(KENT ISLAND)



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

0 1 2 3 4 5 MILE

0 1 2 3 4 5 KILOMETER

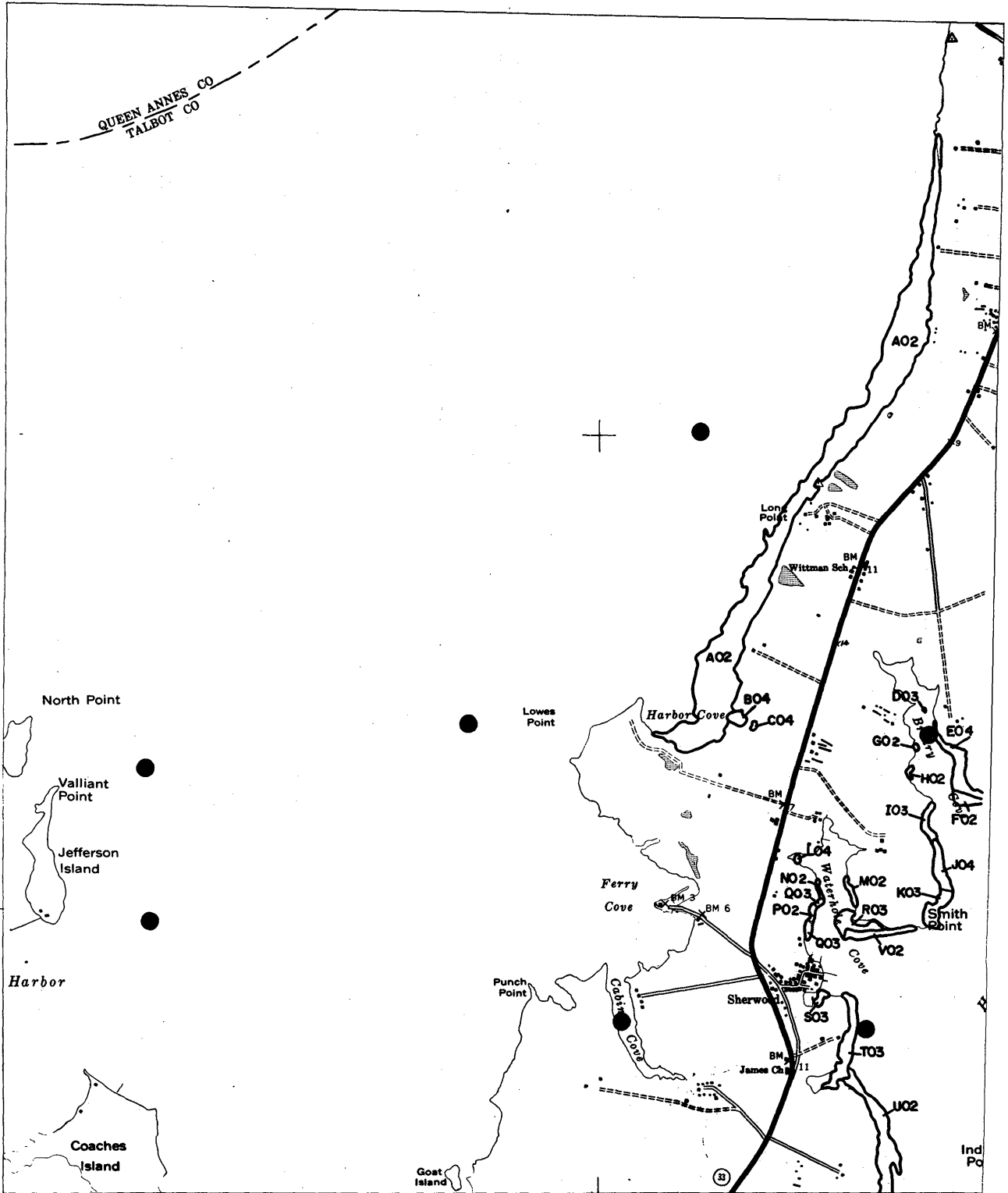
CLAIBORNE, MD  
Northwest Quarter

# 36





# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	⊕	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngv	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

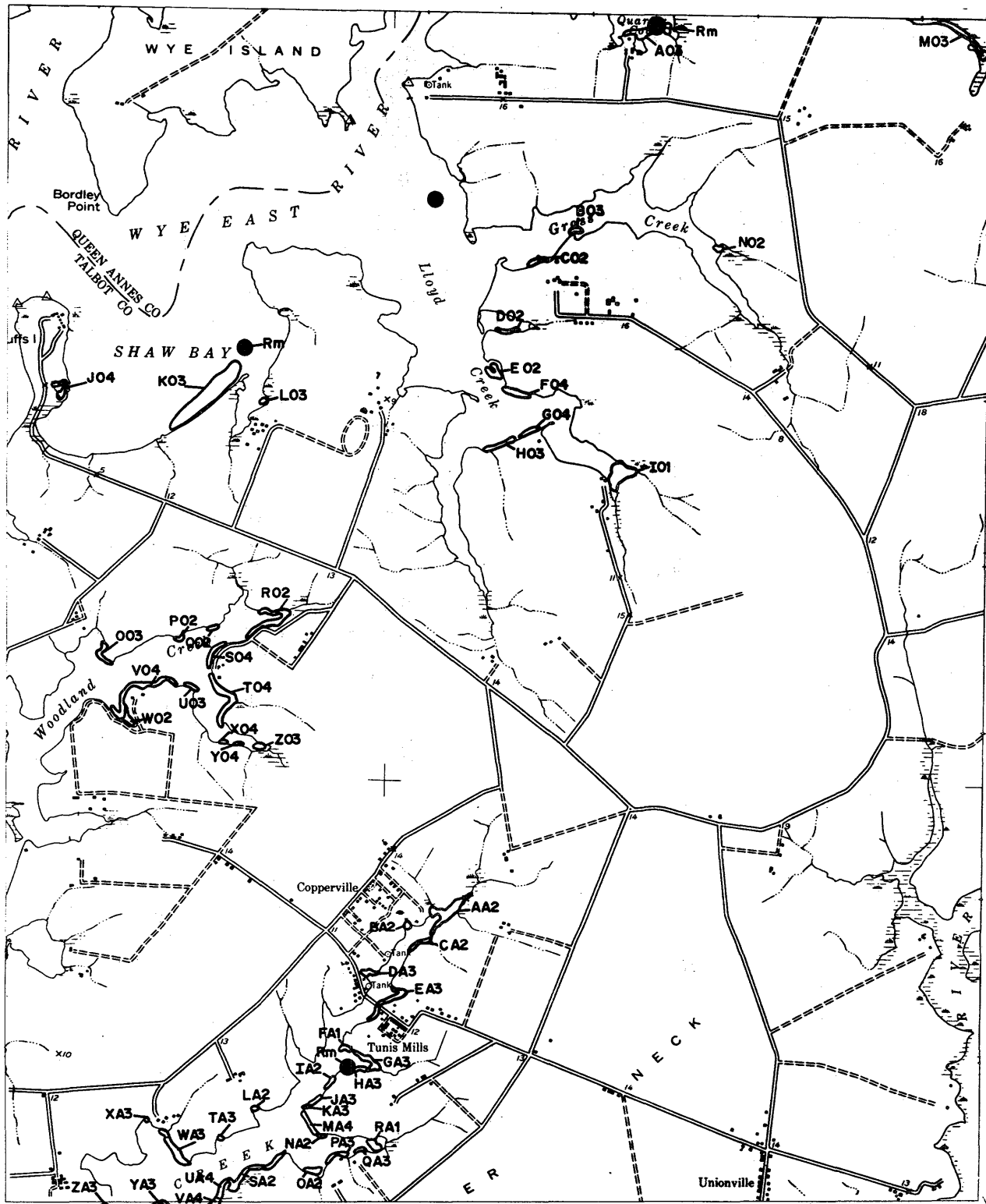
SCALE 1:12,000

CLAIBORNE, MD  
Southwest Quarter  
#36





# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichellia palustris</i> (horned pondweed)	Ngd	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas spp.</i> (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara sp.</i> (muskgrass)
Va	<i>Vallisneria americana</i> (wild celery)		

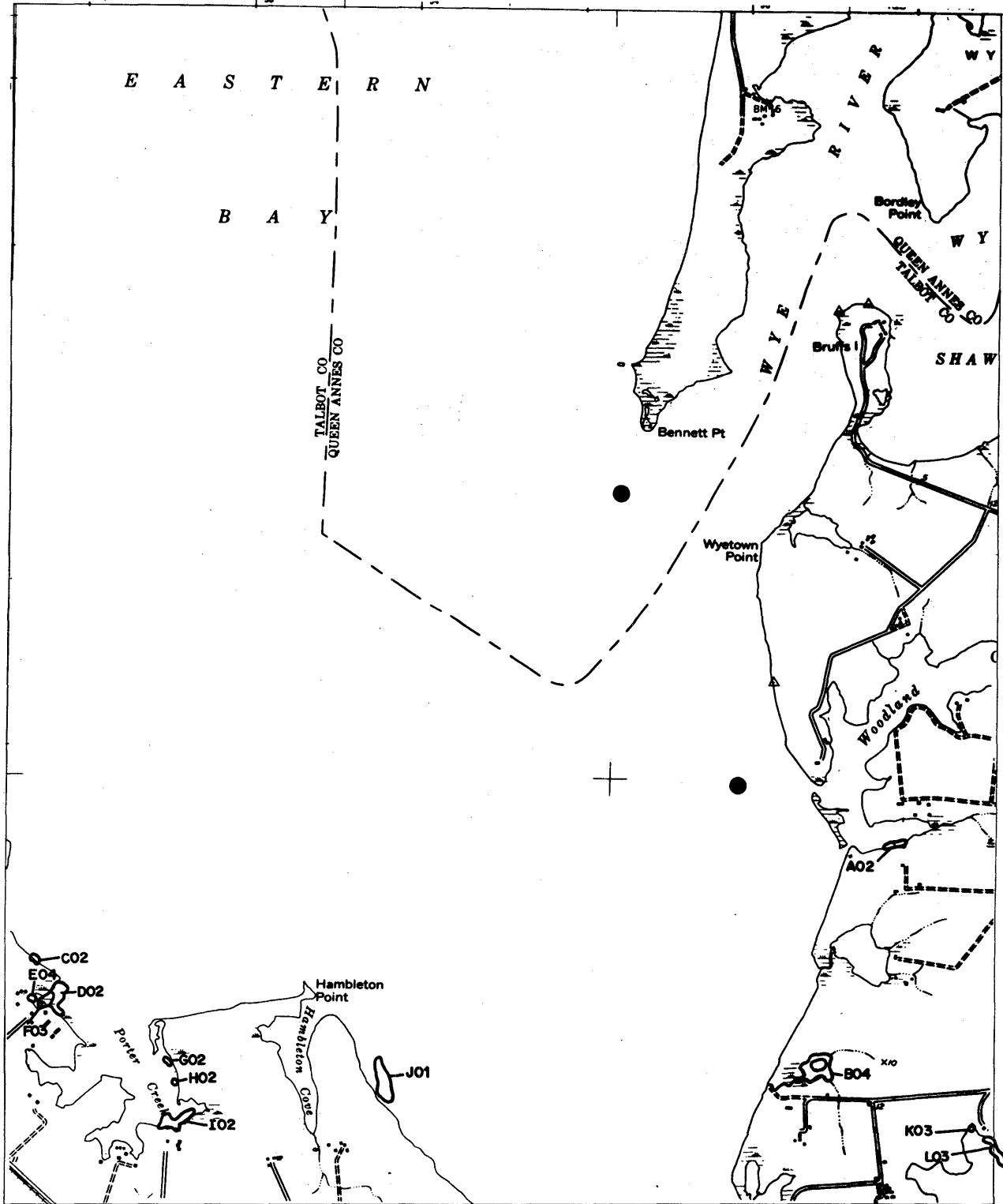
  

SURVEY STATIONS	
●	MD-DNR Survey Station
■	MD Charter Boat Field Survey
●	Citizens Field Observation
▲	VIMS Field Survey
◆	U.S.G.S.

ST MICHAELS, MD  
 Northeast Quarter  
 # 37



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass)	Hv <i>Hydrilla verticillata</i> (hydrilla)	● MD-DNR Survey Station
Rm <i>Ruppia maritima</i> (widgeon grass)	Hd <i>Heteranthera dubia</i> (water stargrass)	■ MD Charter Boat Field Survey
Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr <i>Potamogeton crispus</i> (curly pondweed)	● Citizens Field Observation
Ppf <i>Potamogeton perfoliatus</i> (redhead-grass)	Cd <i>Ceratophyllum demersum</i> (coontail)	▲ VMS Field Survey
Ppc <i>Potamogeton pectinatus</i> (sago pondweed)	Ppu <i>Potamogeton pusillus</i> (slender pondweed)	◆ U.S.G.S.
Zp <i>Zannichellia palustris</i> (horned pondweed)	Ngv <i>Najas guadalupensis</i> (southern naiad)	
N <i>Najas</i> spp. (naiad)	Ngr <i>Najas gracillima</i> (naiad)	
Ec <i>Elodea canadensis</i> (common elodea)	C <i>Chara</i> sp. (muskgrass)	
Va <i>Vallisneria spiralis</i> (wild celery)		

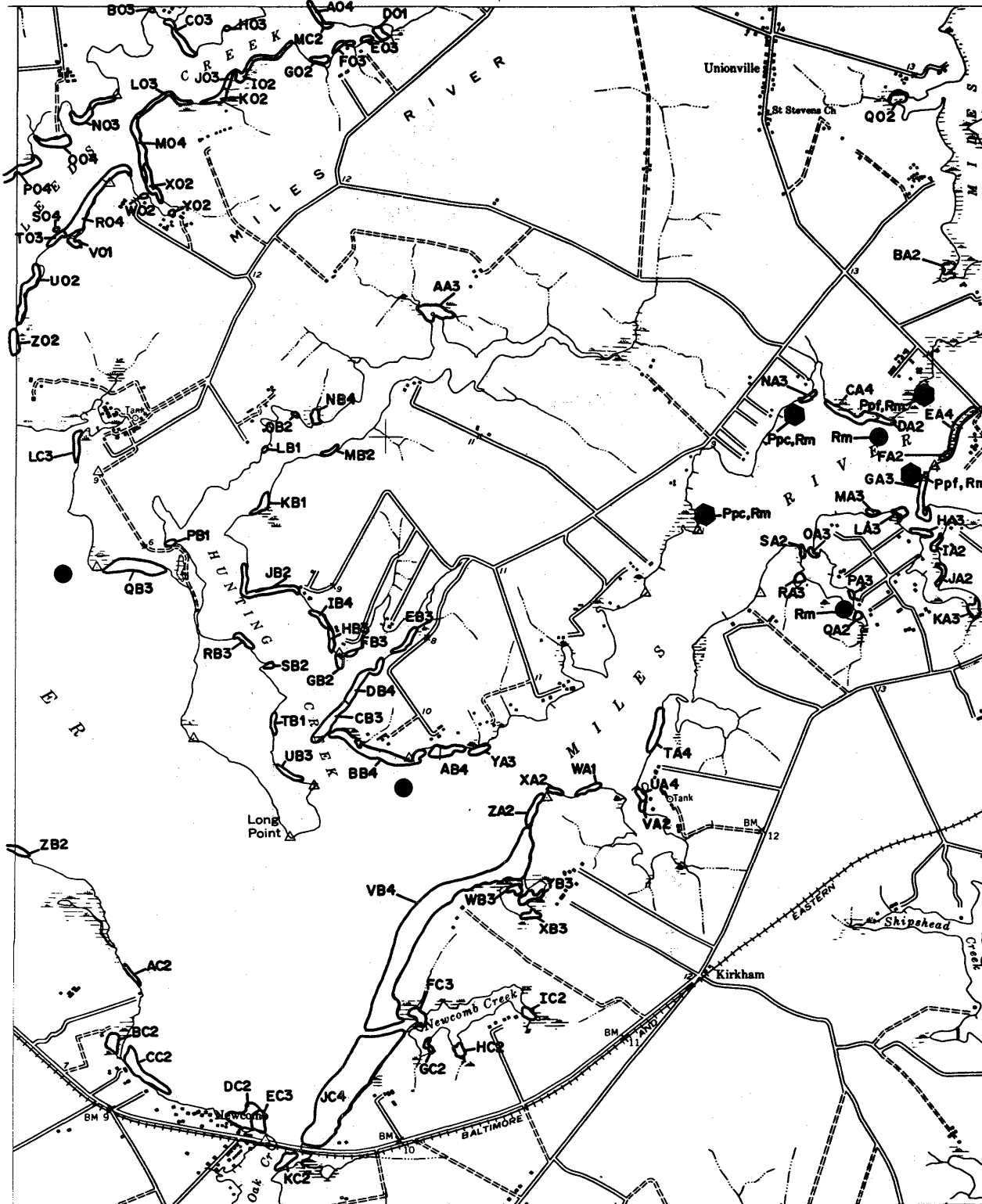
SCALE 1:12,000

**ST MICHAELS, MD**  
Northwest Quarter

# 37



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

0 5 1 MILE

0 5 1 KILOMETER

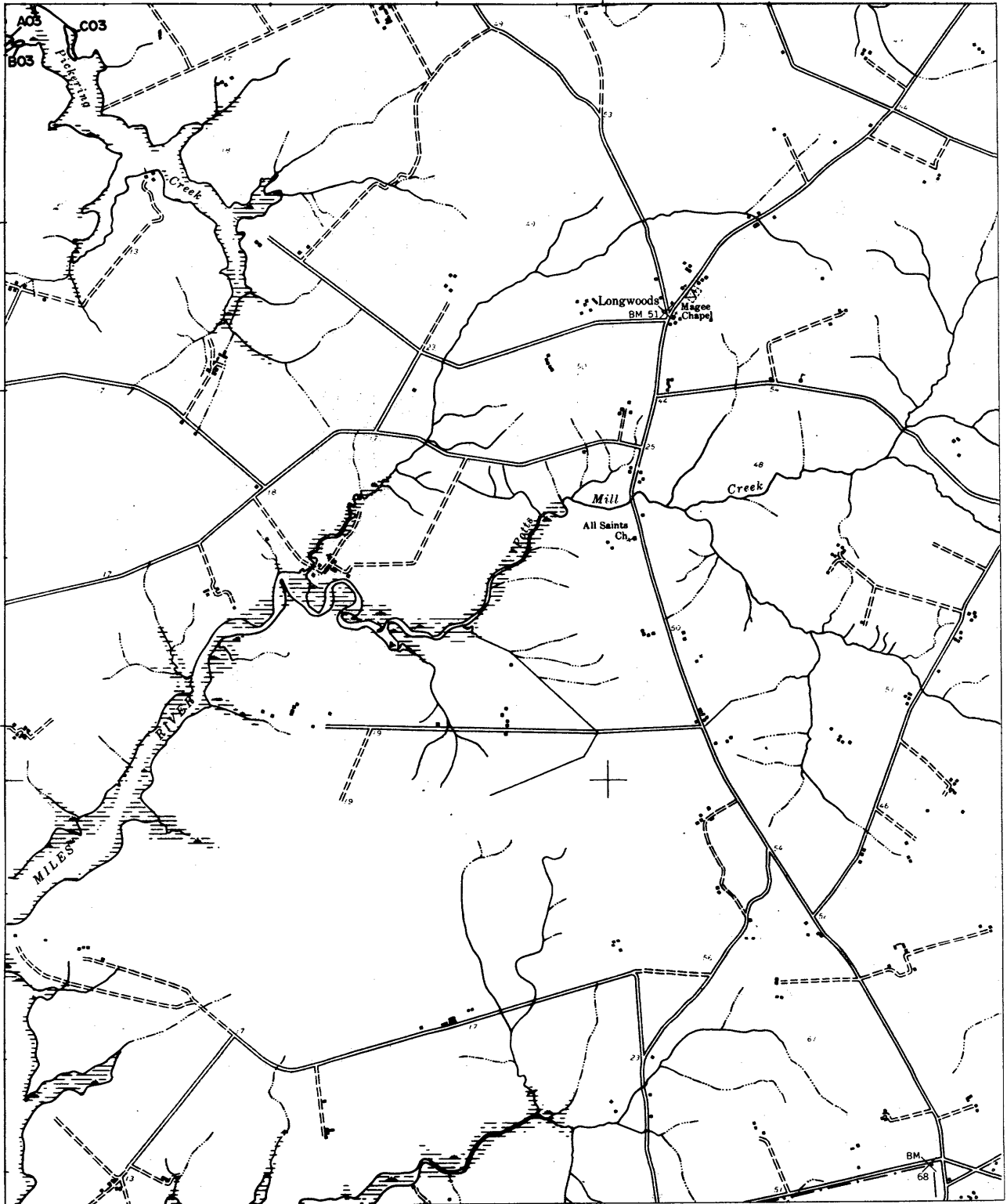
**ST. MICHAELS, MD**  
**Southeast Quarter**

# 37





# SUBMERGED AQUATIC VEGETATION 1985



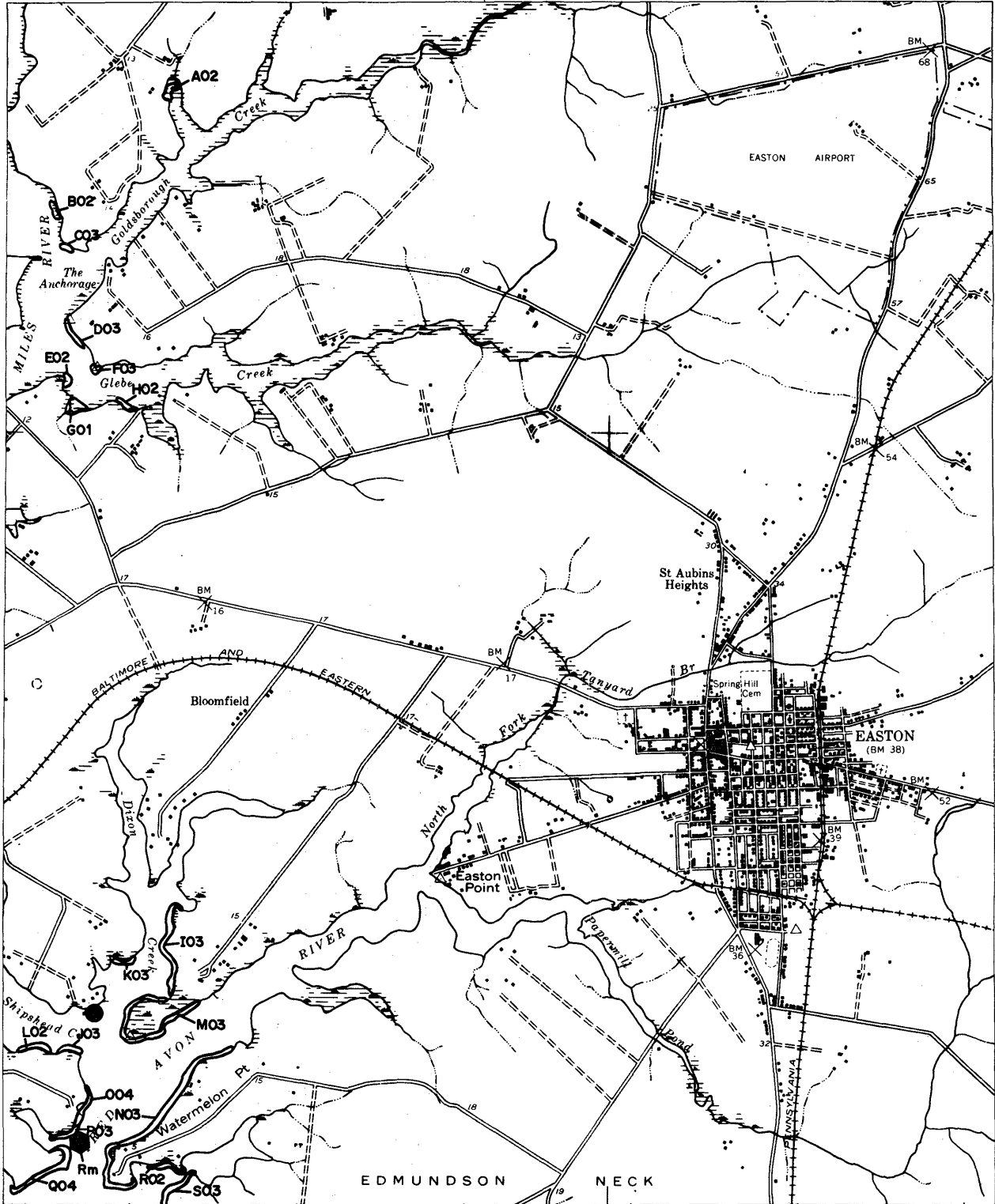
SPECIES		↑	SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)		● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)		■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)		● Citizens Field Observation
Ppl	<i>Potamogeton perfoliatus</i> (redhead-grass)		▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)		◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngd	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

**EASTON, MD**  
**Northwest Quarter**  
**# 38**



# SUBMERGED AQUATIC VEGETATION 1985



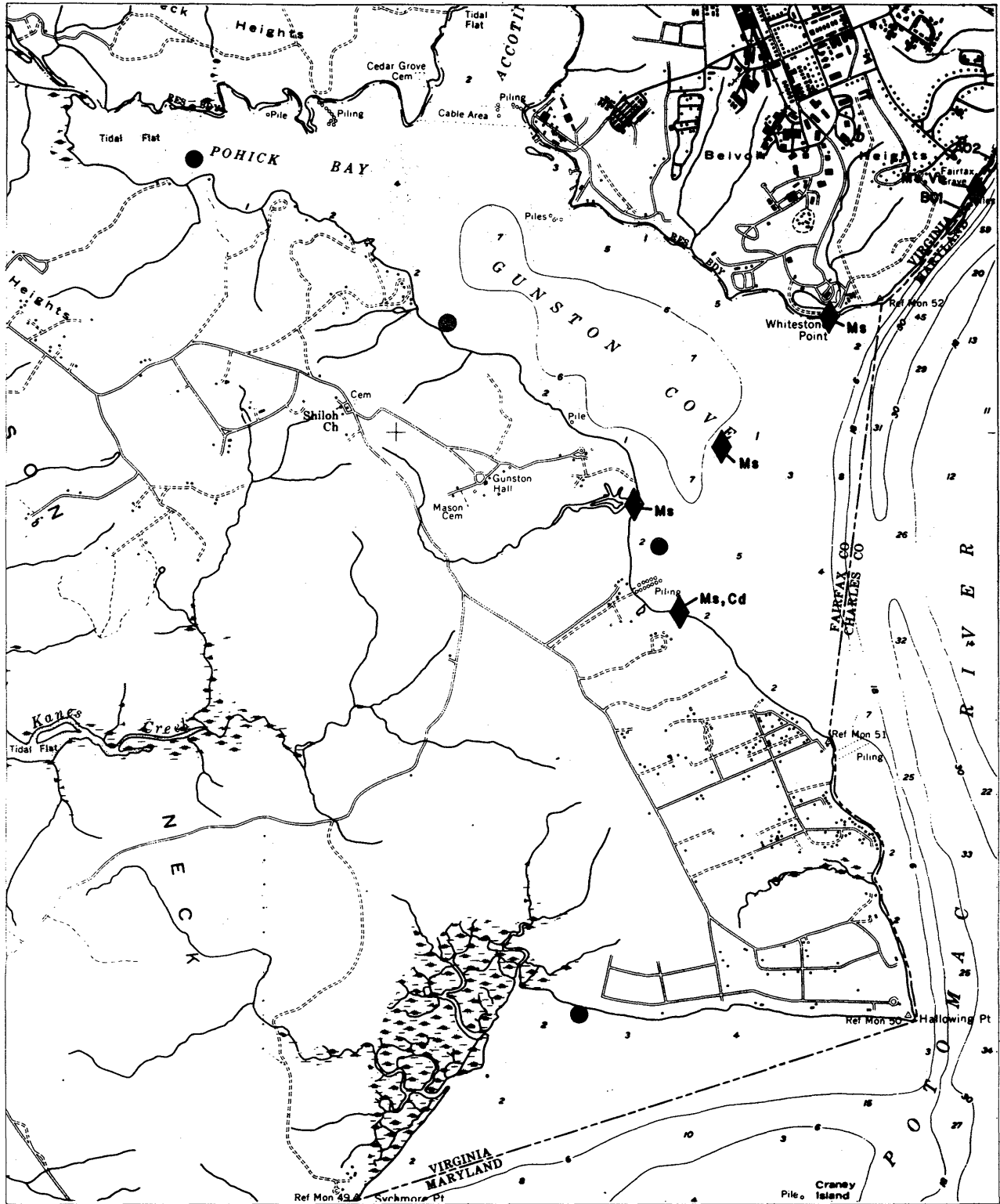
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Pd1	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

**EASTON, MD**  
**Southwest Quarter**  
**# 38**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngp	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

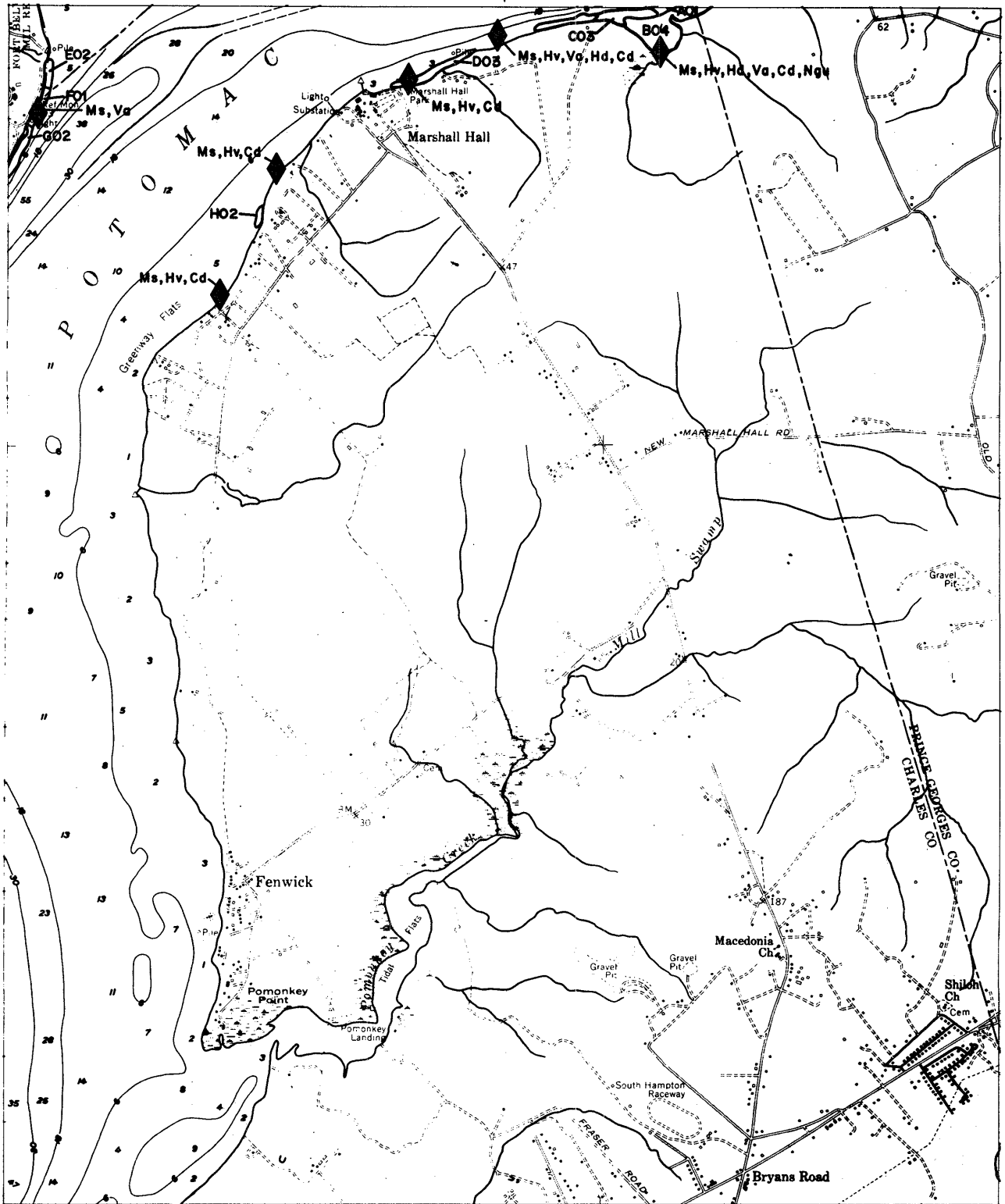
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KILOMETER

**FORT BELVOIR, VA-MD**  
**Southeast Quarter**  
**# 39**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
PdF	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
PpC	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

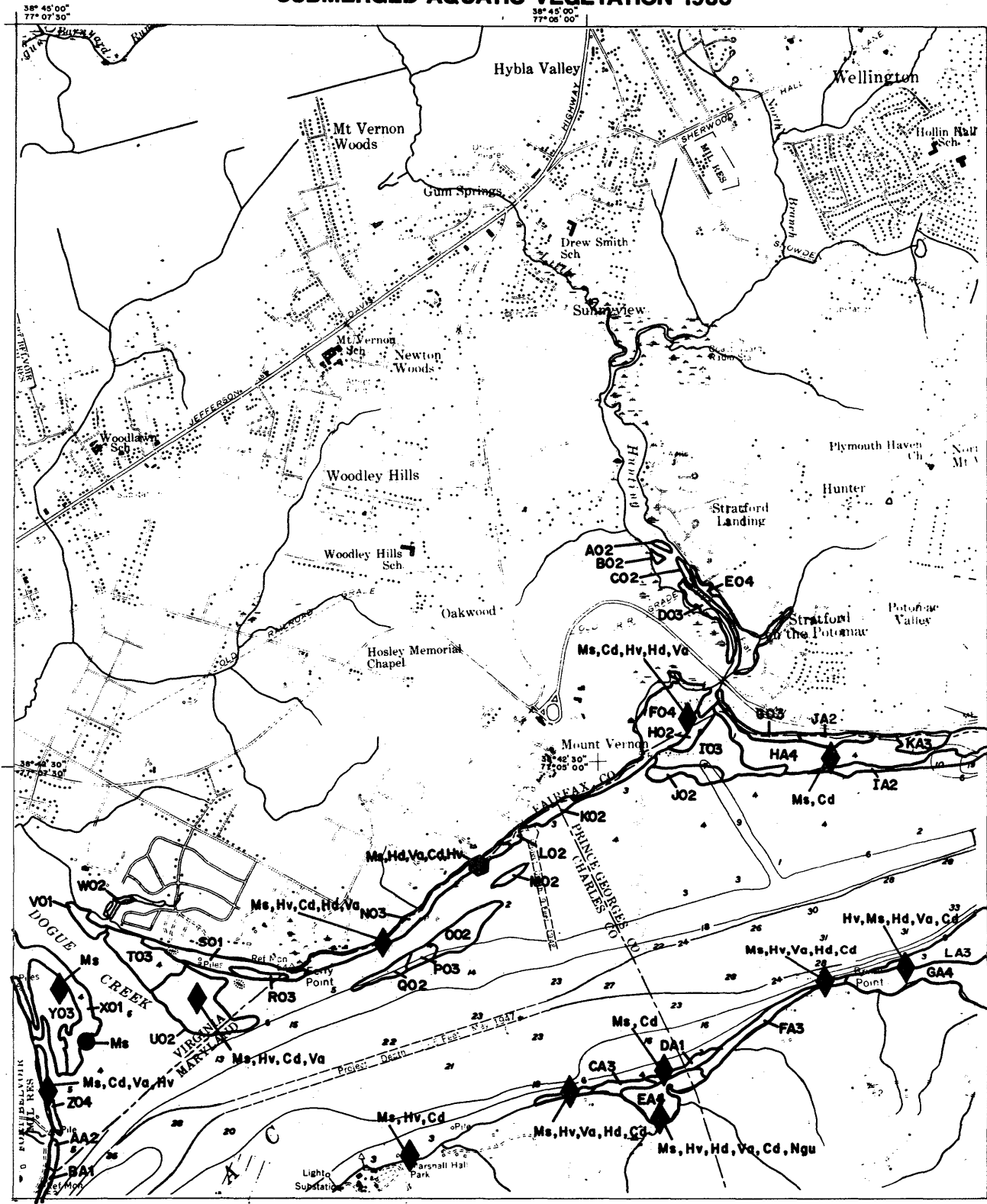
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**MOUNT VERNON, MD-VA**  
**Southwest Quarter**  
**# 40**





# SUBMERGED AQUATIC VEGETATION 1985



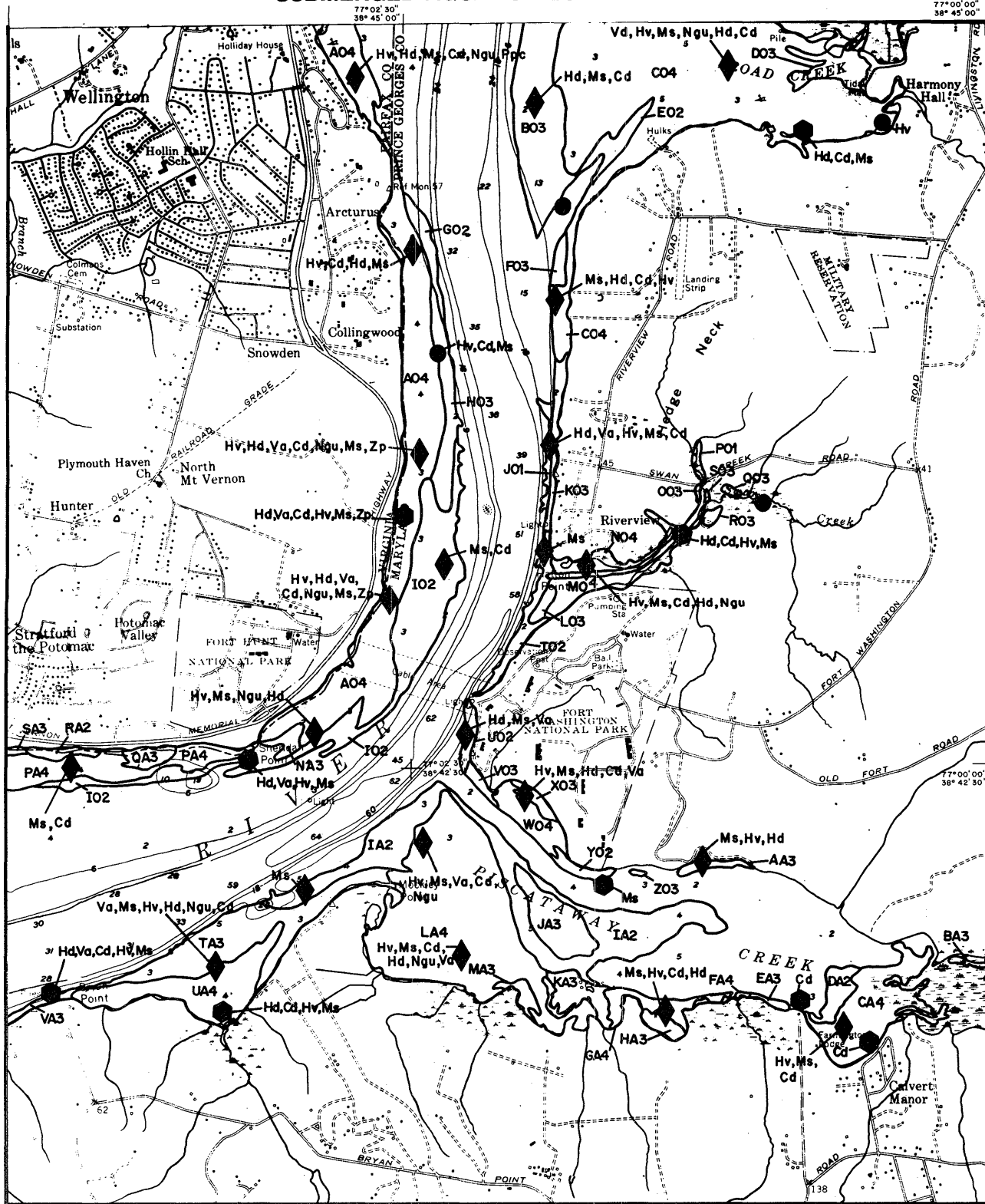
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (wideopen grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracilima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

**MOUNT VERNON, MD-VA**  
**Northwest Quarter**  
**# 40**



# SUBMERGED AQUATIC VEGETATION 1985



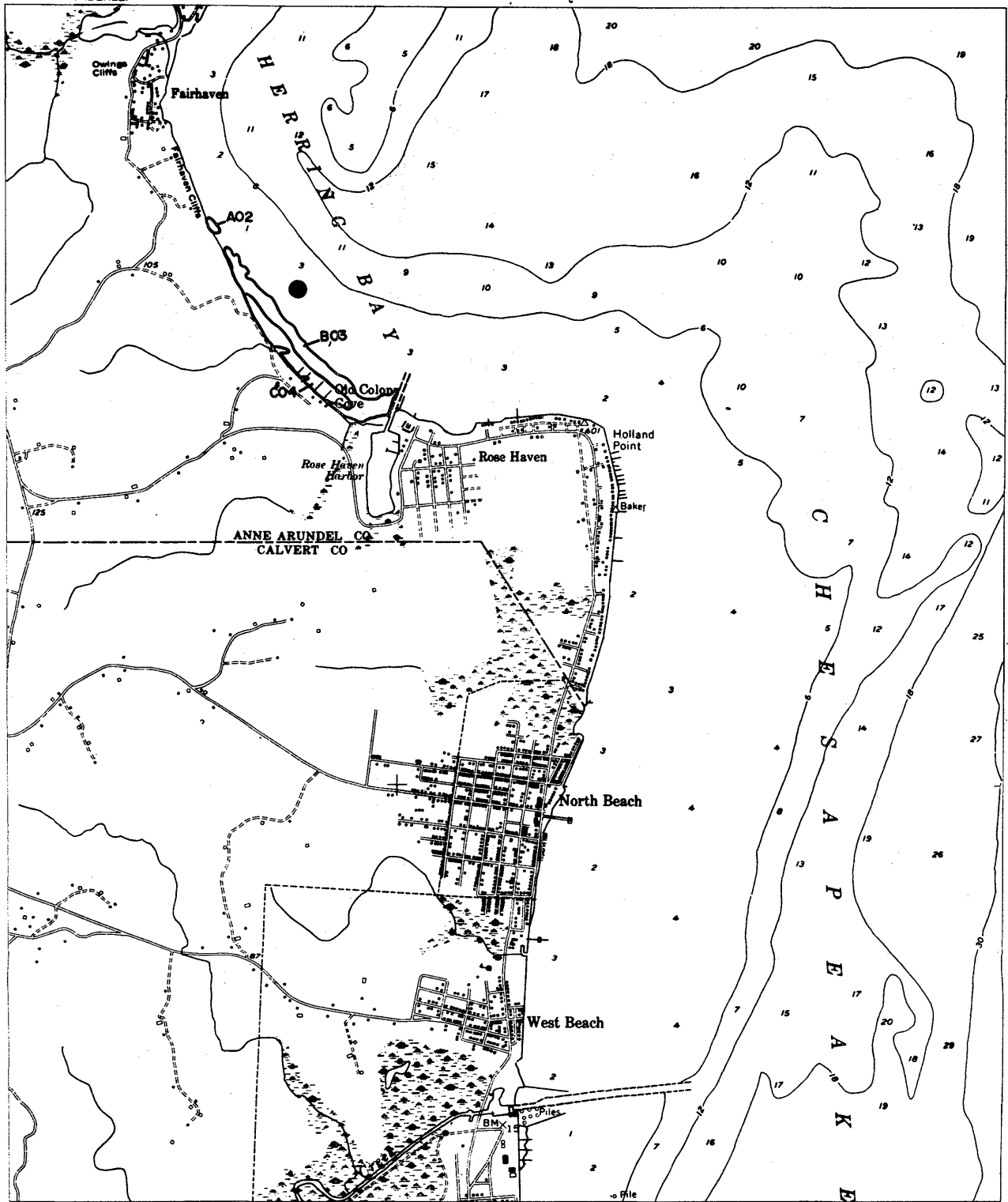
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (cutty pondweed)
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichellia palustris</i> (horned pondweed)	Ngu	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas spp.</i> (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara sp.</i> (muskgrass)
Va	<i>Vallisneria americana</i> (wild celery)		

SCALE 1:12,000

MOUNT VERNON, MD-VA  
 Northeast Quarter  
 # 40



# SUBMERGED AQUATIC VEGETATION 1985



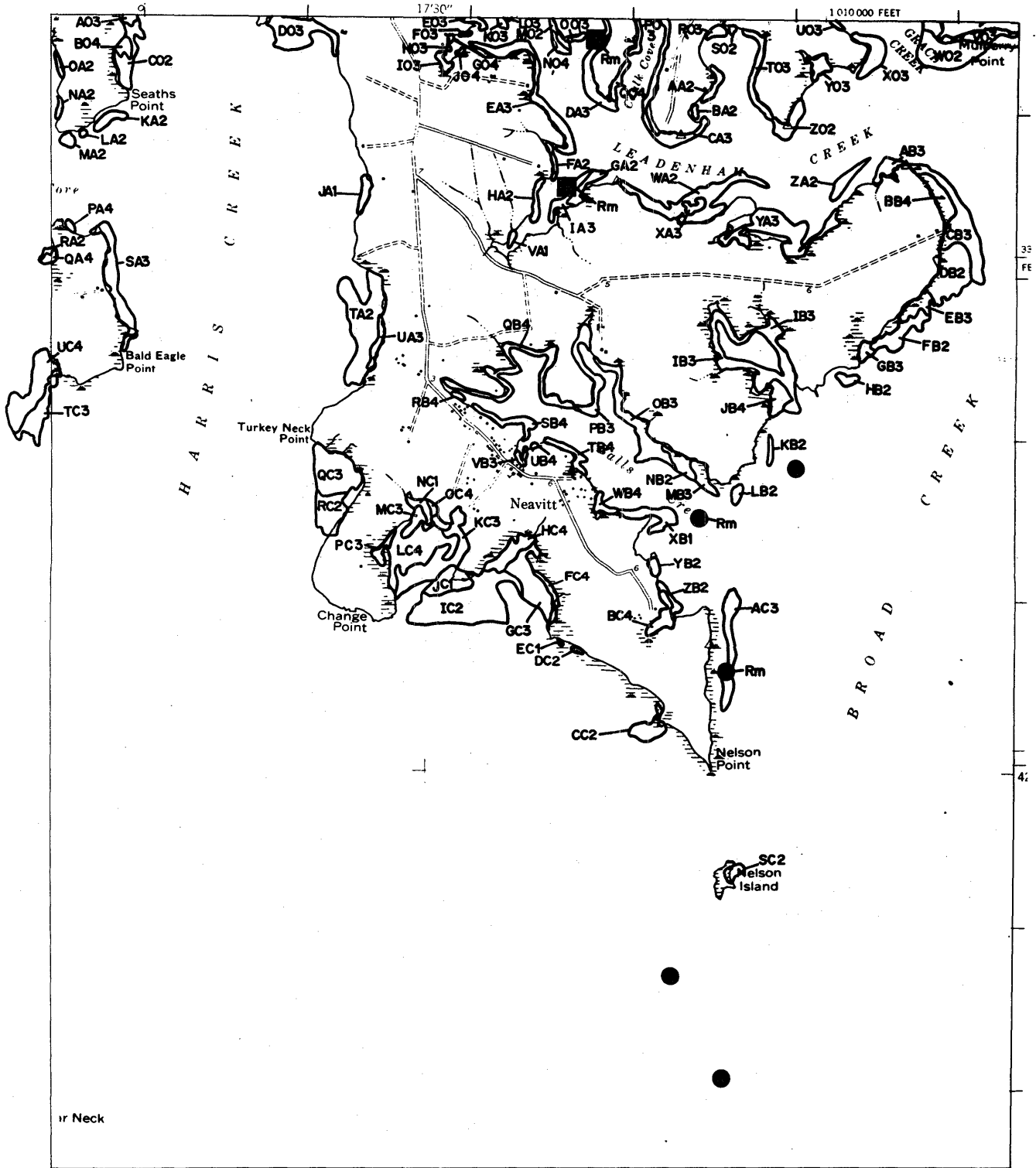
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria spiralis</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

**NORTH BEACH, MD**  
**Northeast Quarter**  
**# 42**



# SUBMERGED AQUATIC VEGETATION 1985



ir Neck

SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria spiralis</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

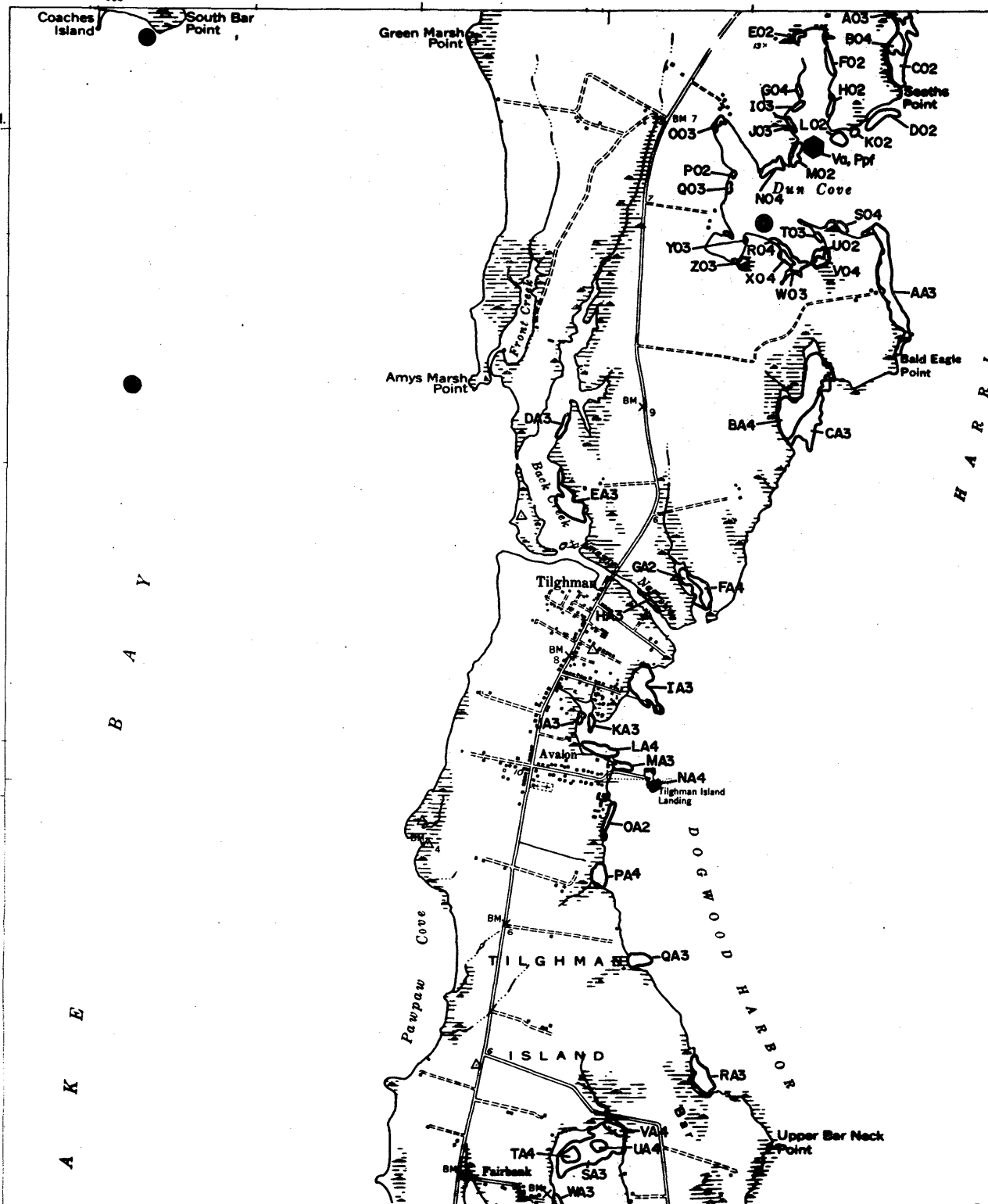
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0 1 MILE  
0 1 KILOMETER

**TILGHMAN, MD**  
**Northeast Quarter**  
**# 43**



# SUBMERGED AQUATIC VEGETATION 1985



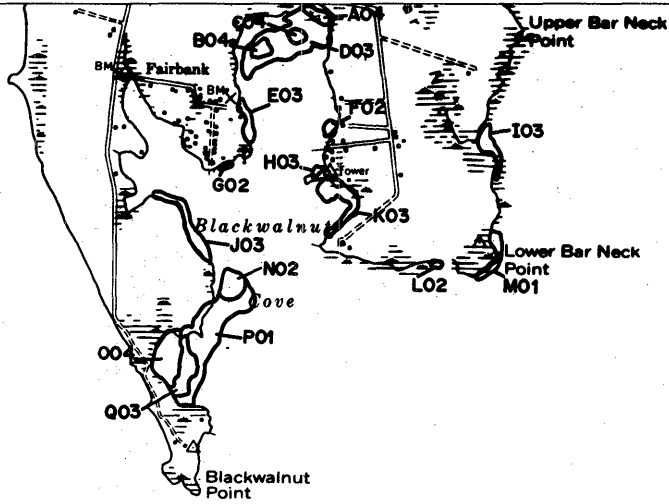
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngv	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

TILGHMAN, MD  
Northwest Quarter  
# 43



# SUBMERGED AQUATIC VEGETATION 1985

C  
H  
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P  
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A



TALBOT CO  
DORCHESTER CO

TILGHMAN, MD  
Southwest Quarter  
# 43

SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichellia palustris</i> (horned pondweed)	Ngd	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas</i> spp. (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara</i> sp. (muskgrass)
Va	<i>Vallisneria spiralis</i> (wild celery)		

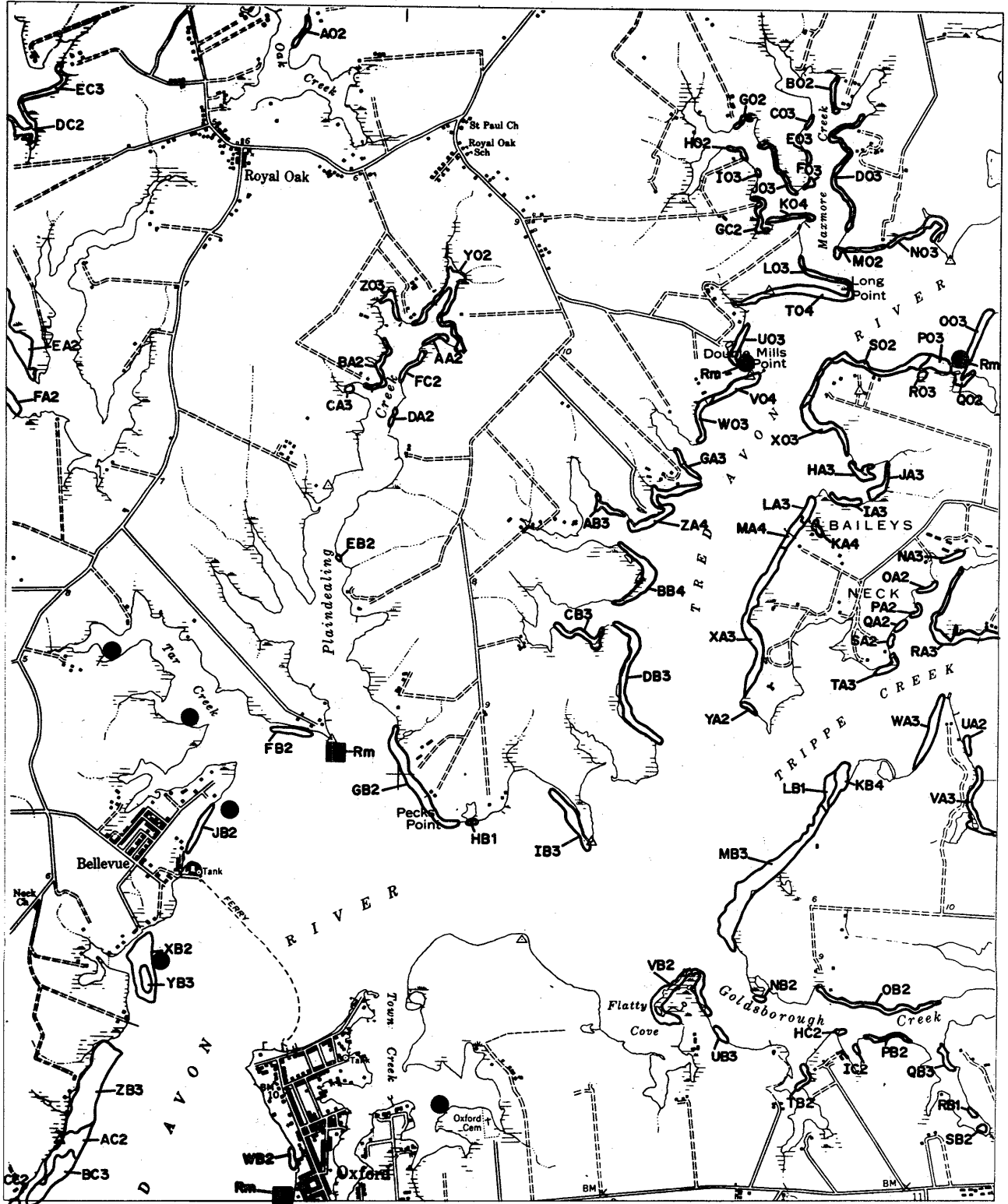
●	MD-DNR Survey Station
■	MD Charter Boat Field Survey
●	Citizens Field Observation
▲	VIMS Field Survey
◆	U.S.G.S.

SCALE 1:12,000

0 5 1 MILE  
0 5 1 KILOMETER



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

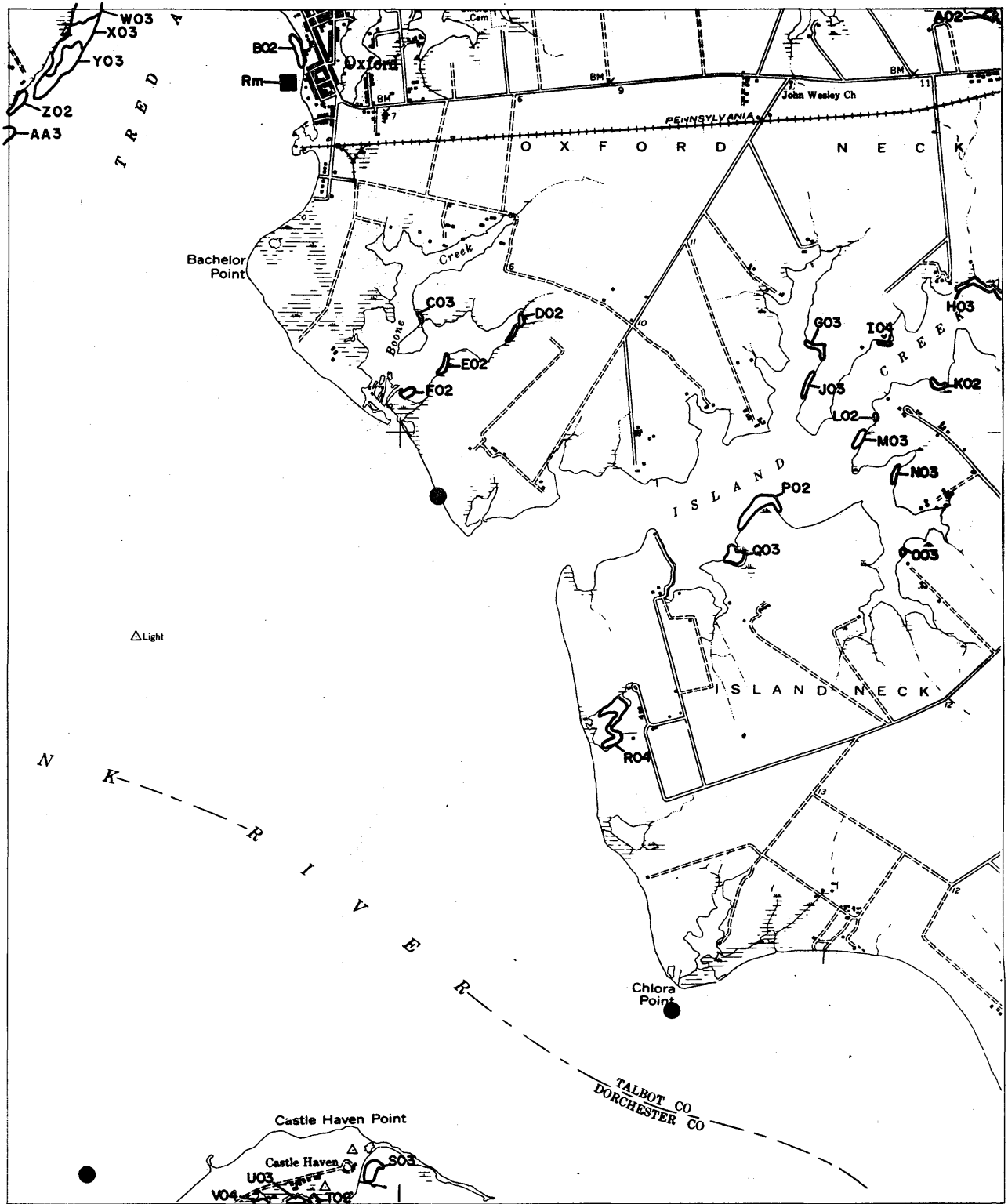
OXFORD, MD  
 Northeast Quarter  
 # 44







# SUBMERGED AQUATIC VEGETATION 1985

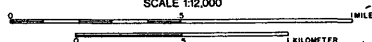


SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pdf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

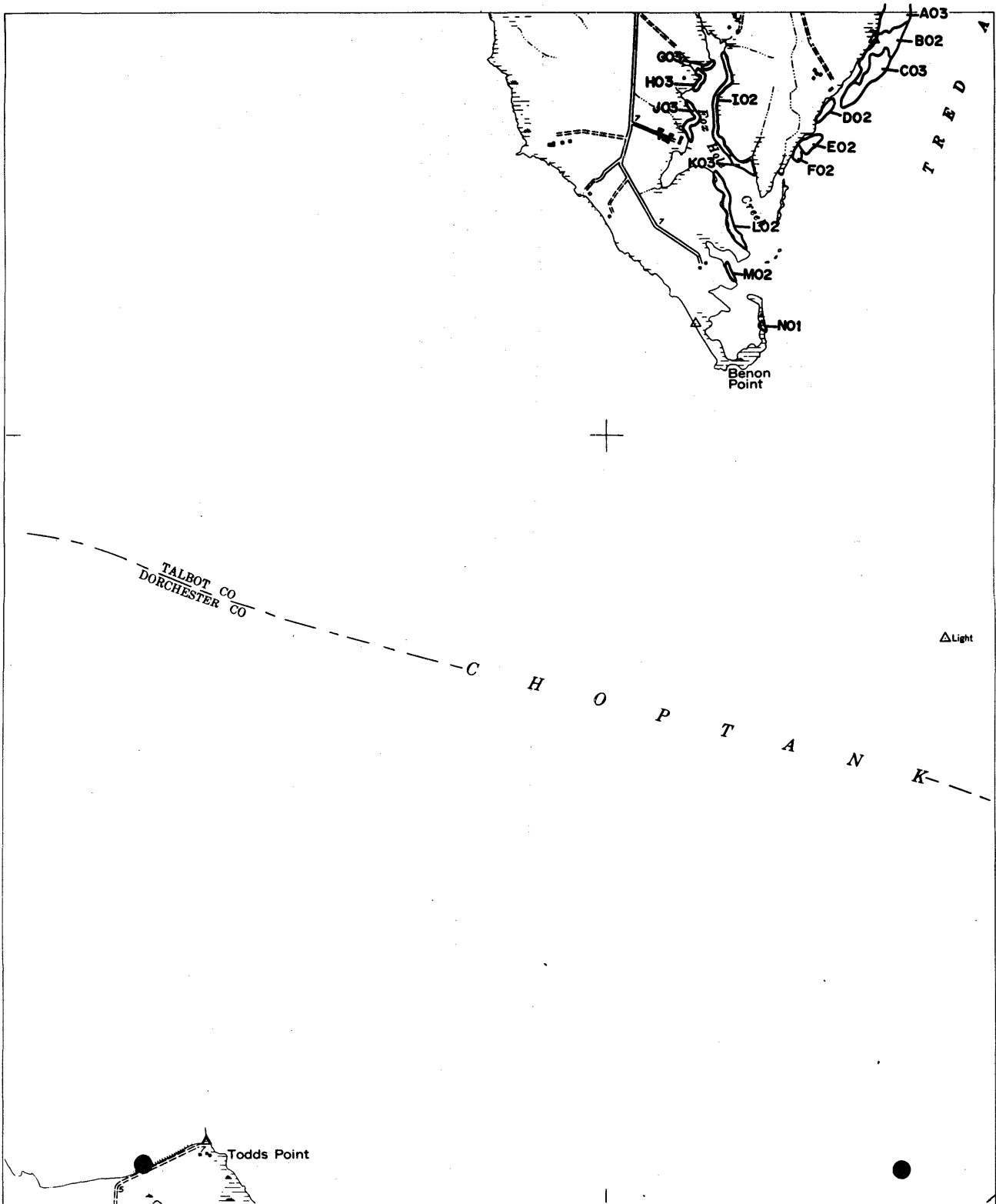
**OXFORD, MD**  
**Southeast Quarter**

# 44

SCALE 1:12,000



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		↑	SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)		● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)		■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)		● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)		▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)		◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

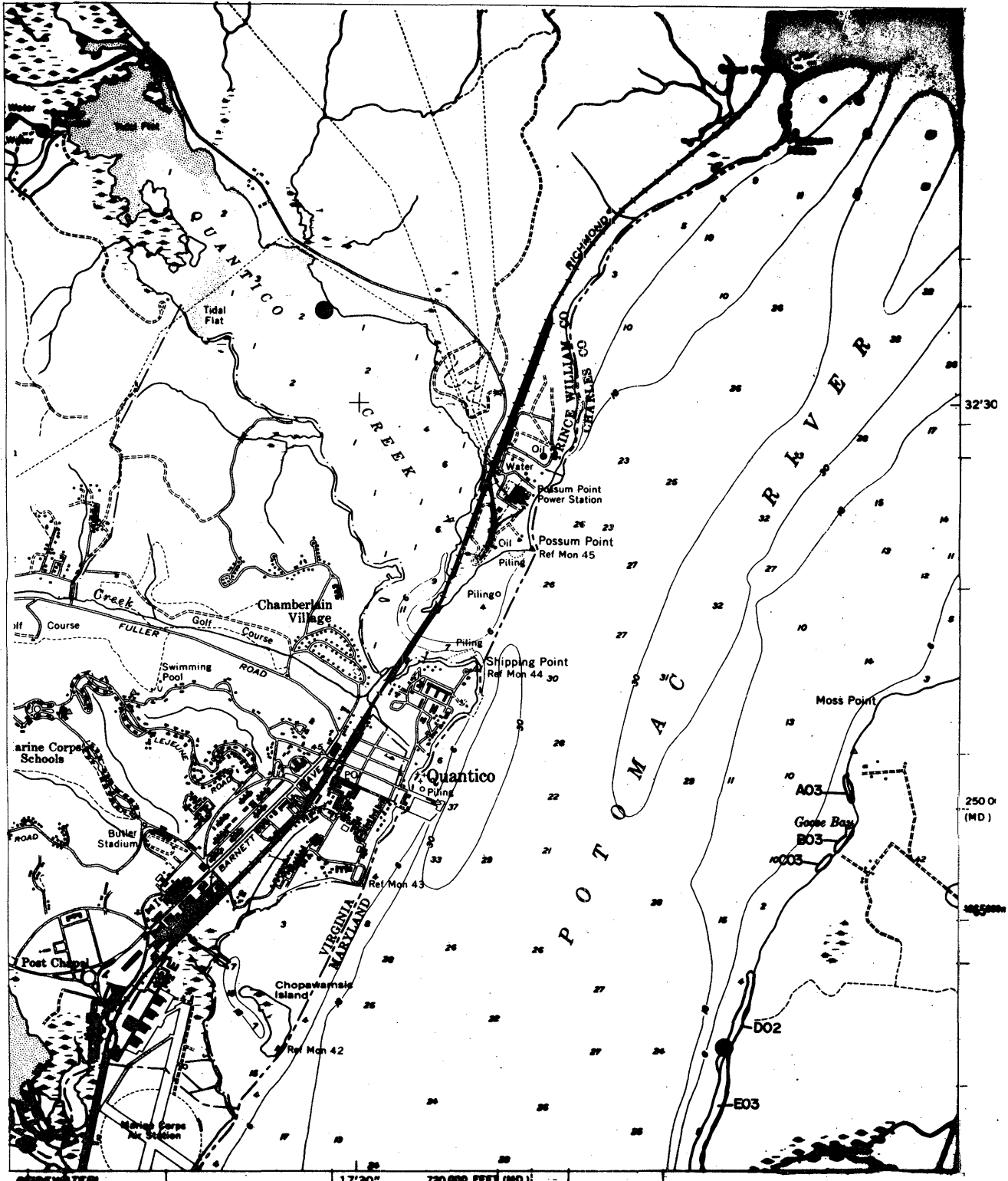
SCALE 1:12,000

OXFORD, MD  
 Southwest Quarter  
 # 44





# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	○	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

**QUANTICO, VA-MD**  
**Southeast Quarter**  
**# 47**



# SUBMERGED AQUATIC VEGETATION 1985



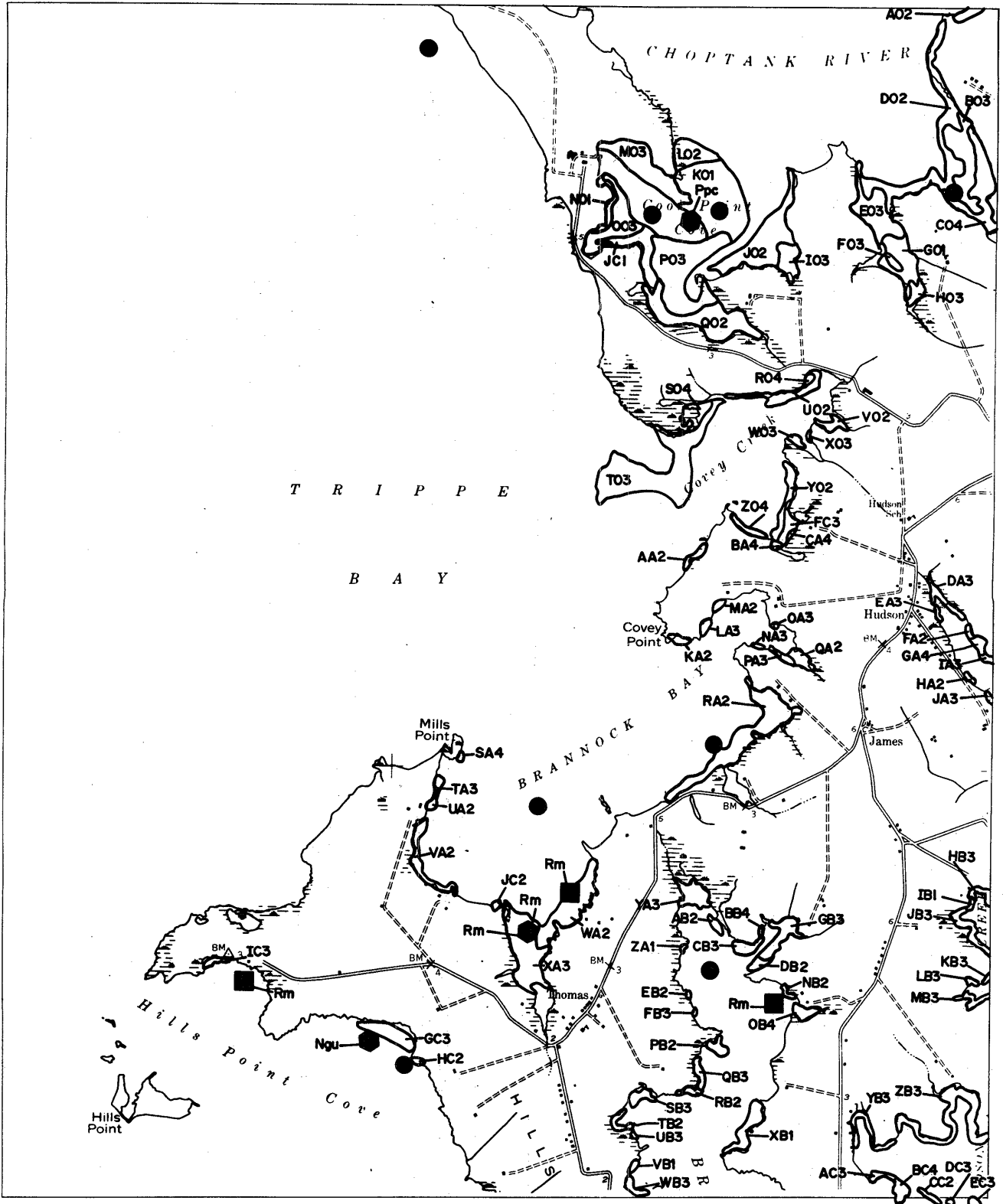
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naïad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngd	<i>Najas guadalupensis</i> (southern naïad)		
Ngr	<i>Najas gracillima</i> (naïad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

INDIAN HEAD, MD-VA  
Northeast Quarter  
# 48



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngd	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

SHARPS ISLAND, MD  
Northeast Quarter  
# 51



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

0 1 2 3 4 5

KILOMETER

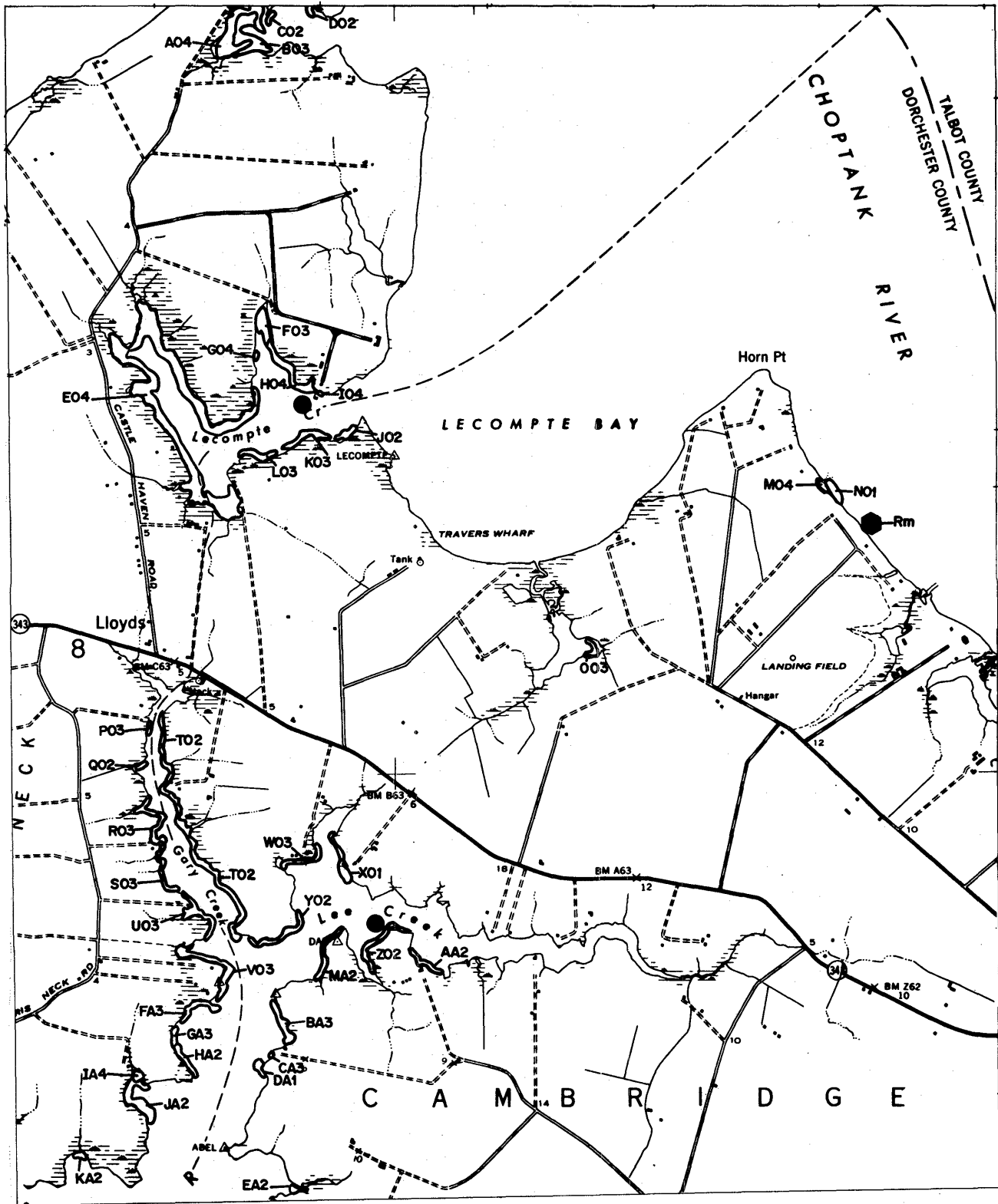
0 1 2 3 4 5

MILE

**SHARPS ISLAND, MD**  
**Southeast Quarter**  
**# 51**

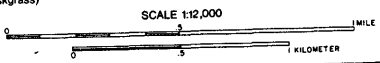


# SUBMERGED AQUATIC VEGETATION 1985



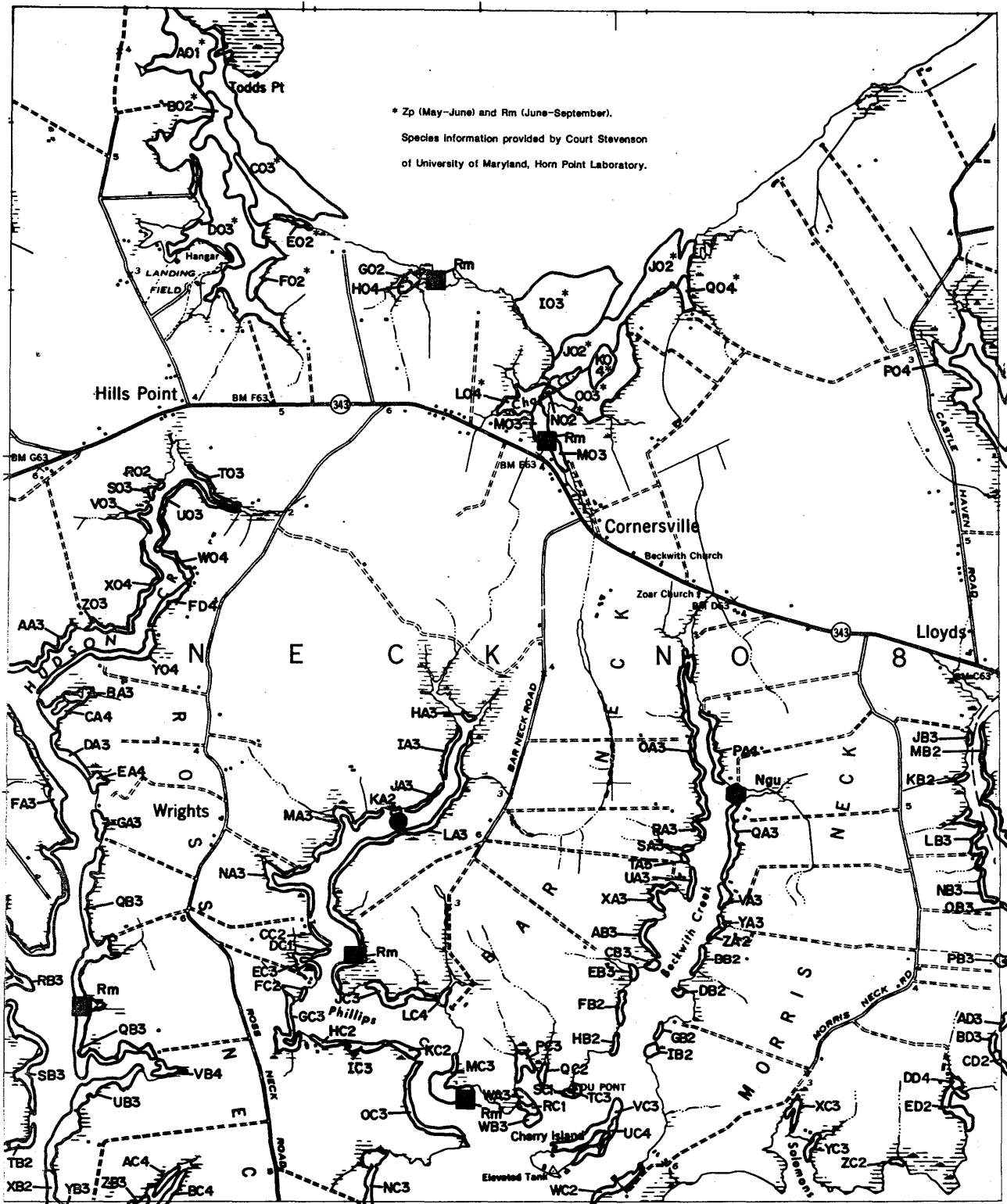
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

CHURCH CREEK, MD  
Northeast Quarter  
# 52





# SUBMERGED AQUATIC VEGETATION 1985



\* Zp (May-June) and Rm (June-September).  
 Species information provided by Court Stevenson  
 of University of Maryland, Horn Point Laboratory.

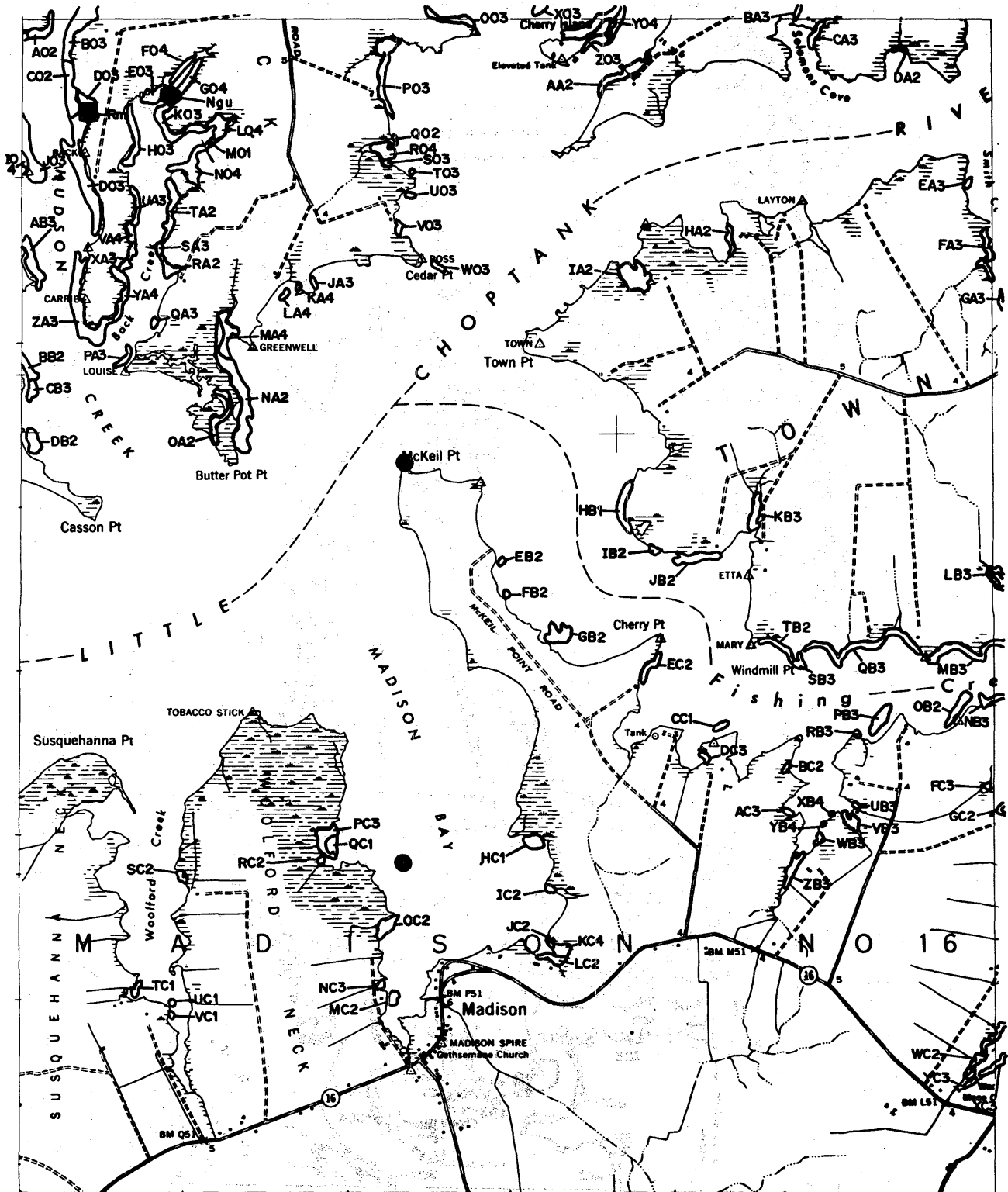
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria spiralis</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Nojas guadalupensis</i> (southern naiad)	
Ngr	<i>Nojas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

CHURCH CREEK, MD  
 Northwest Quarter  
 # 52



# SUBMERGED AQUATIC VEGETATION 1985



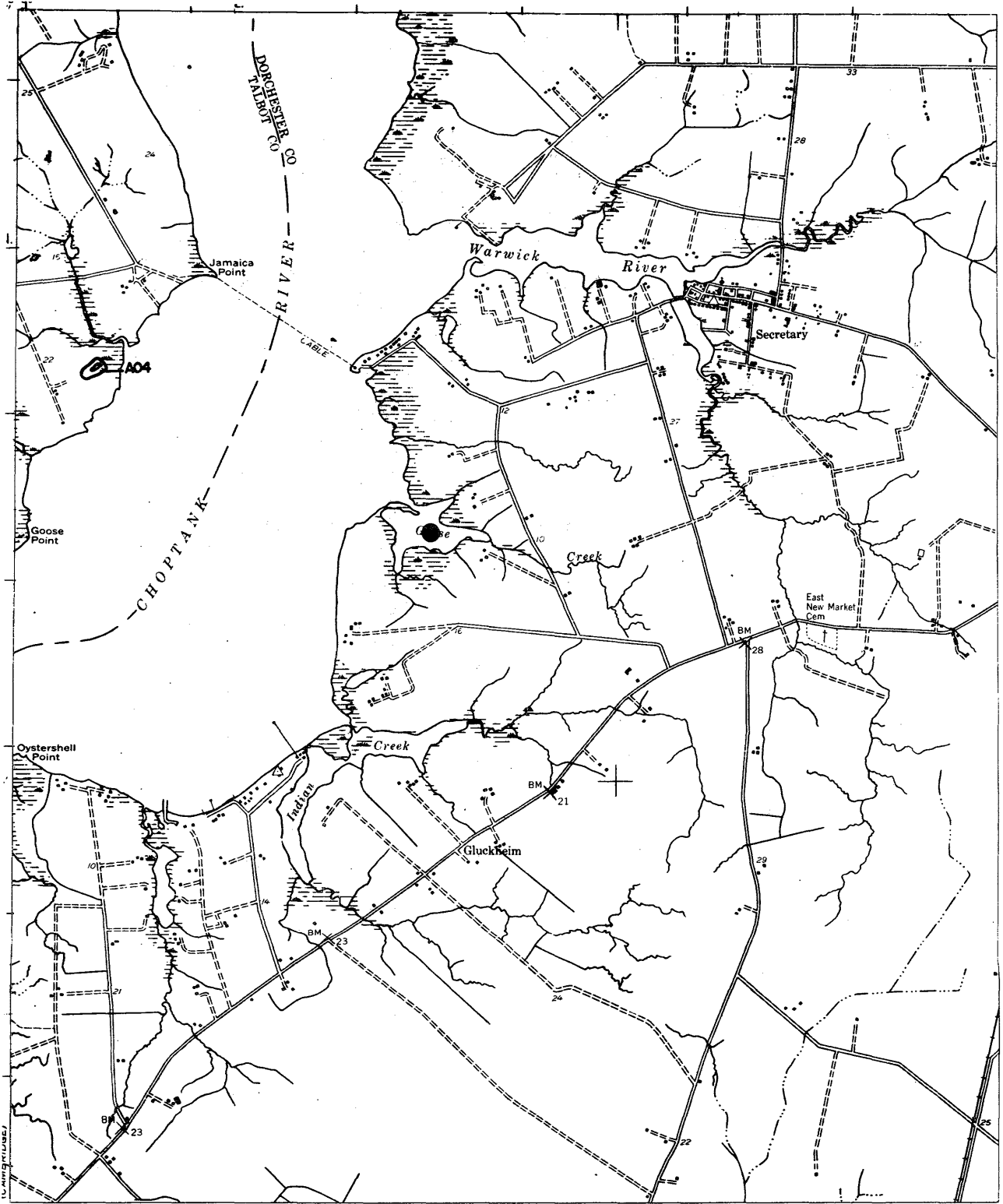
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widegon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	○ Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

**CHURCH CREEK, MD**  
 Southwest Quarter  
 # 52



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ng	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

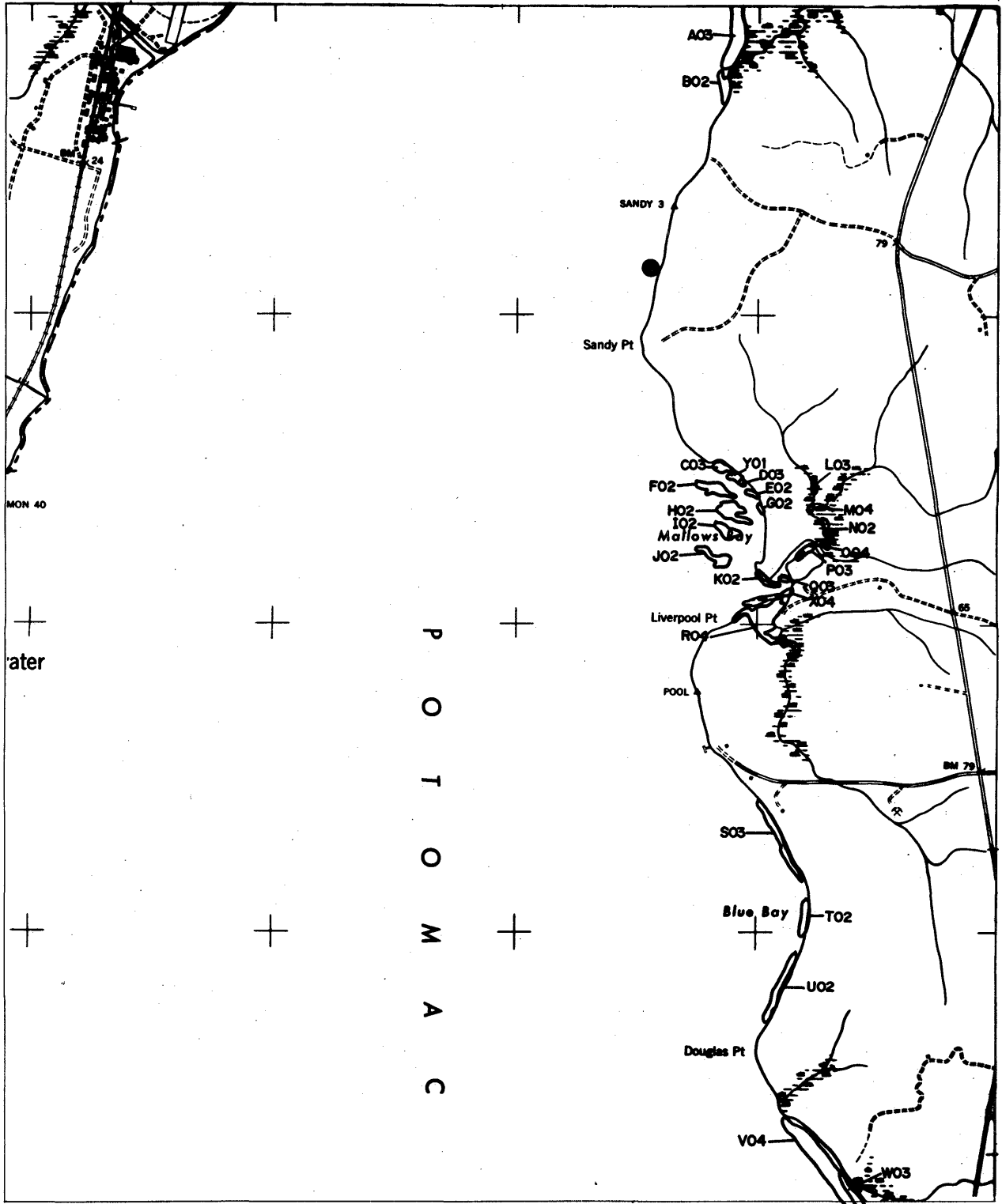
**EAST NEW MARKET, MD**

Northwest Quarter

# 54



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

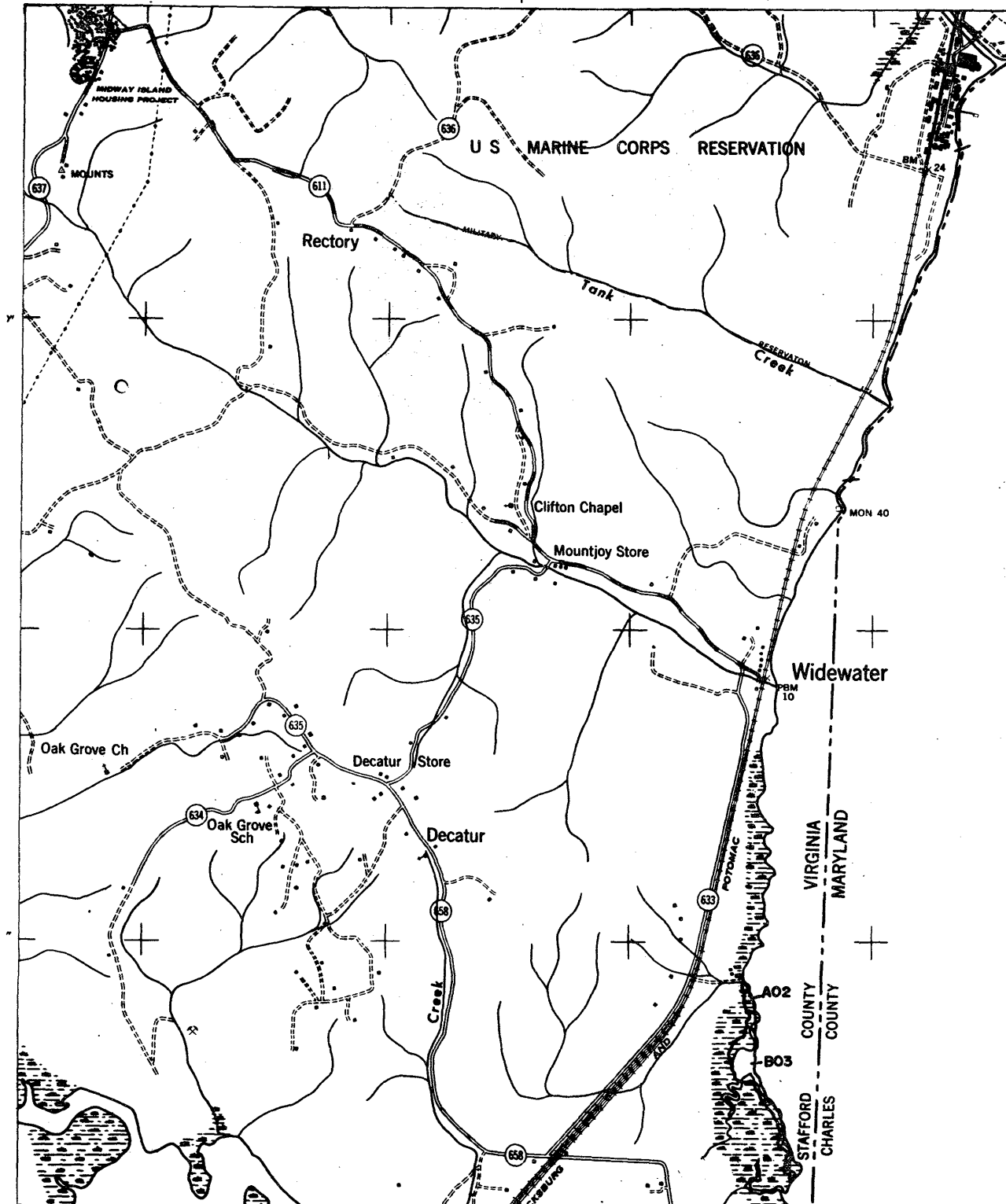
WIDEWATER, VA-MD

Northeast Quarter

# 55



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria spiralis</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngd	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

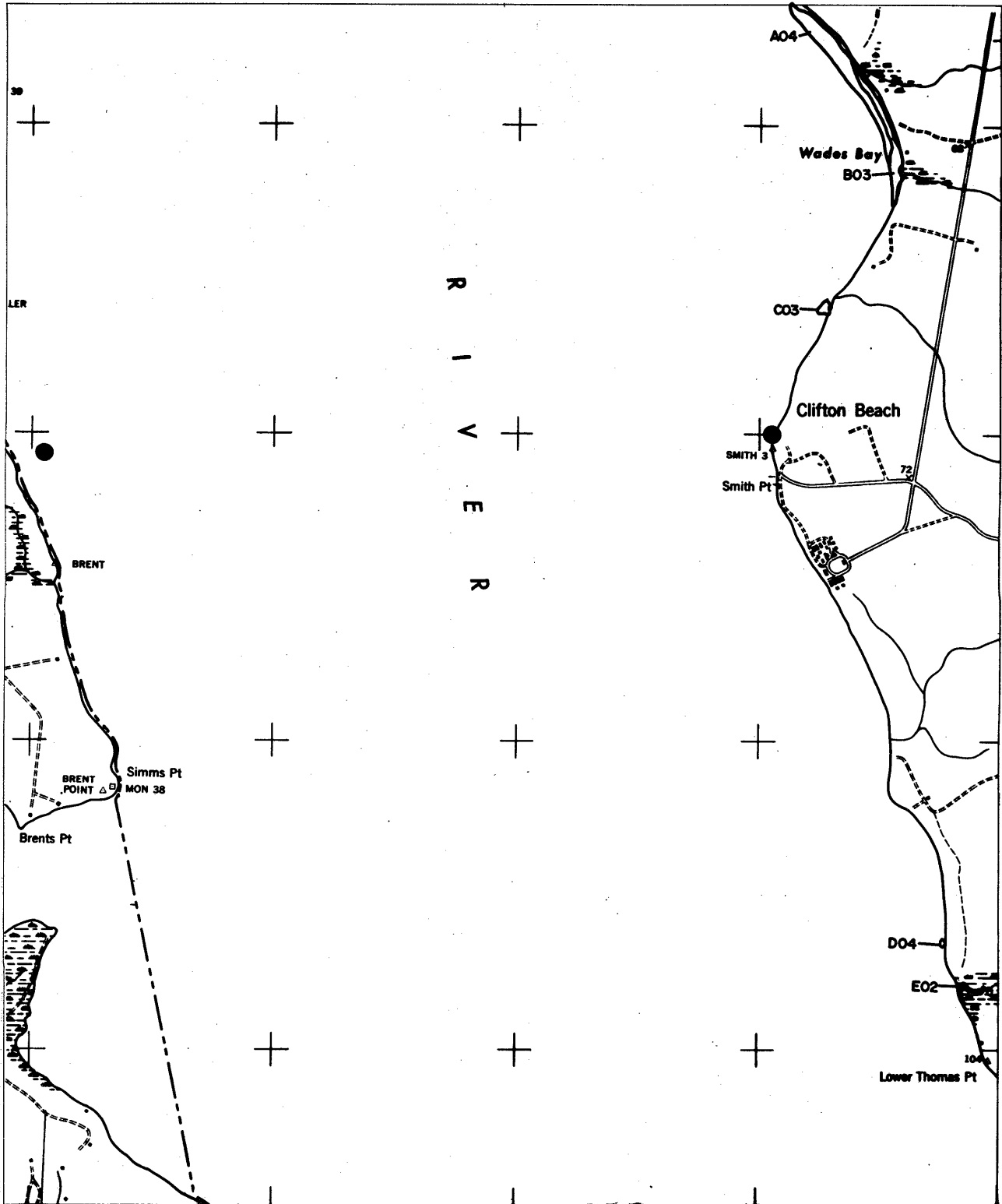
WIDEWATER, VA-MD

Northwest Quarter

# 55



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		↑	SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)		● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)		■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)		● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)		▲ VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)		◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngd	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

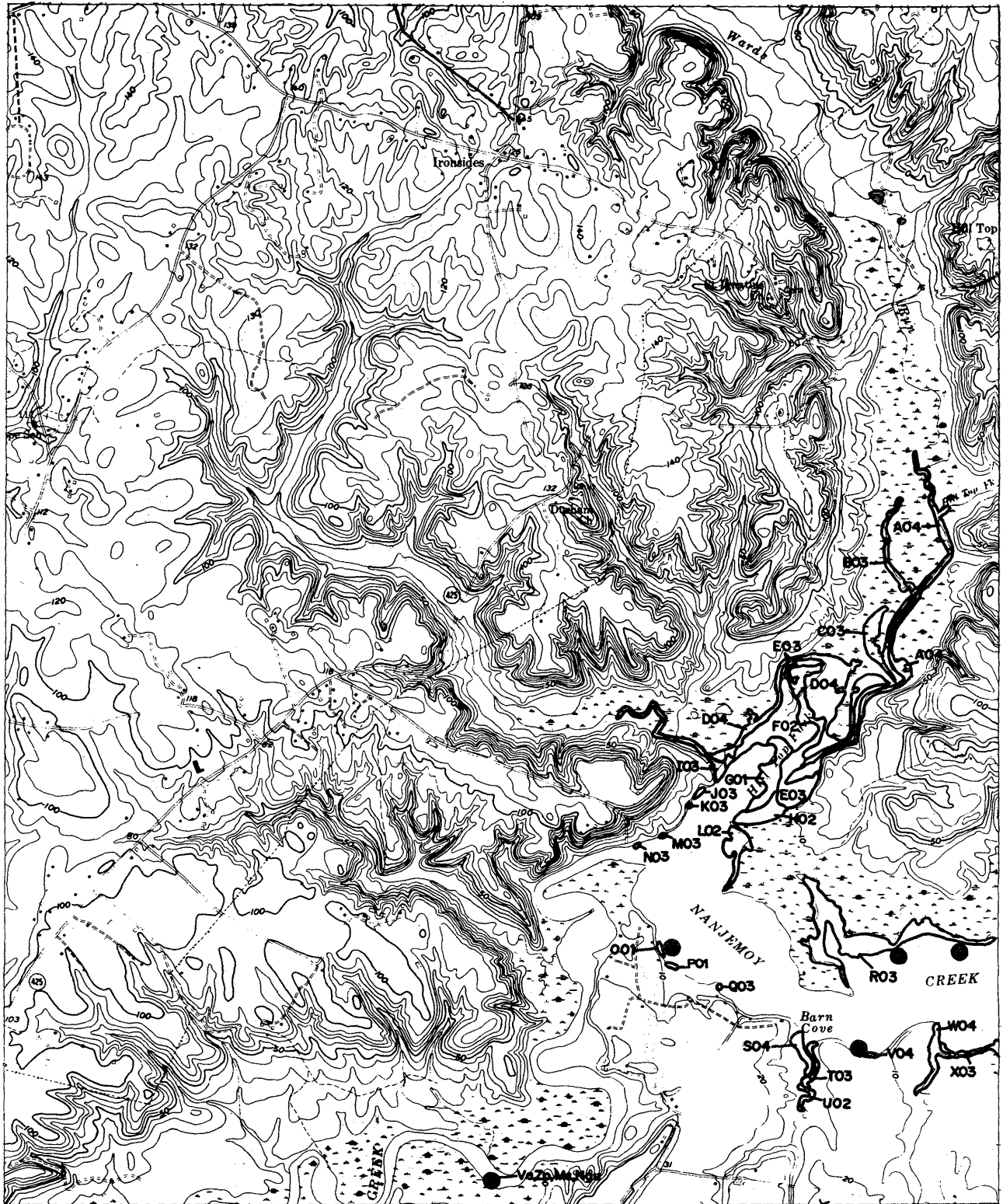
WIDEWATER, VA-MD

Southeast Quarter

# 55



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (wiidgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

**NANJEMOY, MD**  
**Northeast Quarter**  
**# 56**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichella palustris</i> (horned pondweed)	Ngd	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas</i> spp. (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara</i> sp. (muskgrass)
Va	<i>Vallisneria americana</i> (wild celery)		

●	MD-DNR Survey Station
■	MD Charter Boat Field Survey
●	Citizens Field Observation
▲	VIMS Field Survey
◆	U.S.G.S.

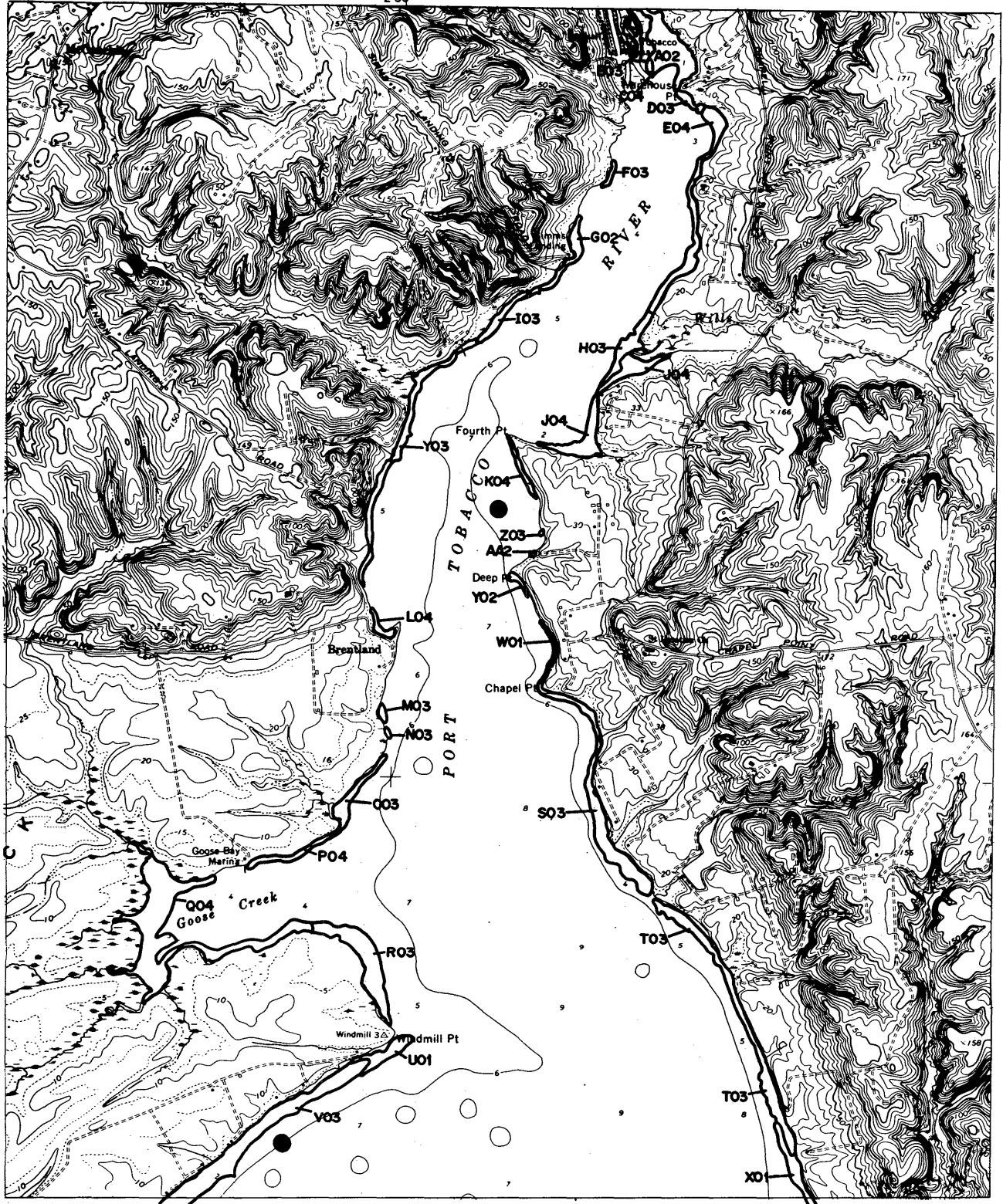
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**NANJEMOY, MD**  
**Southeast Quarter**  
**# 56**





# SUBMERGED AQUATIC VEGETATION 1985



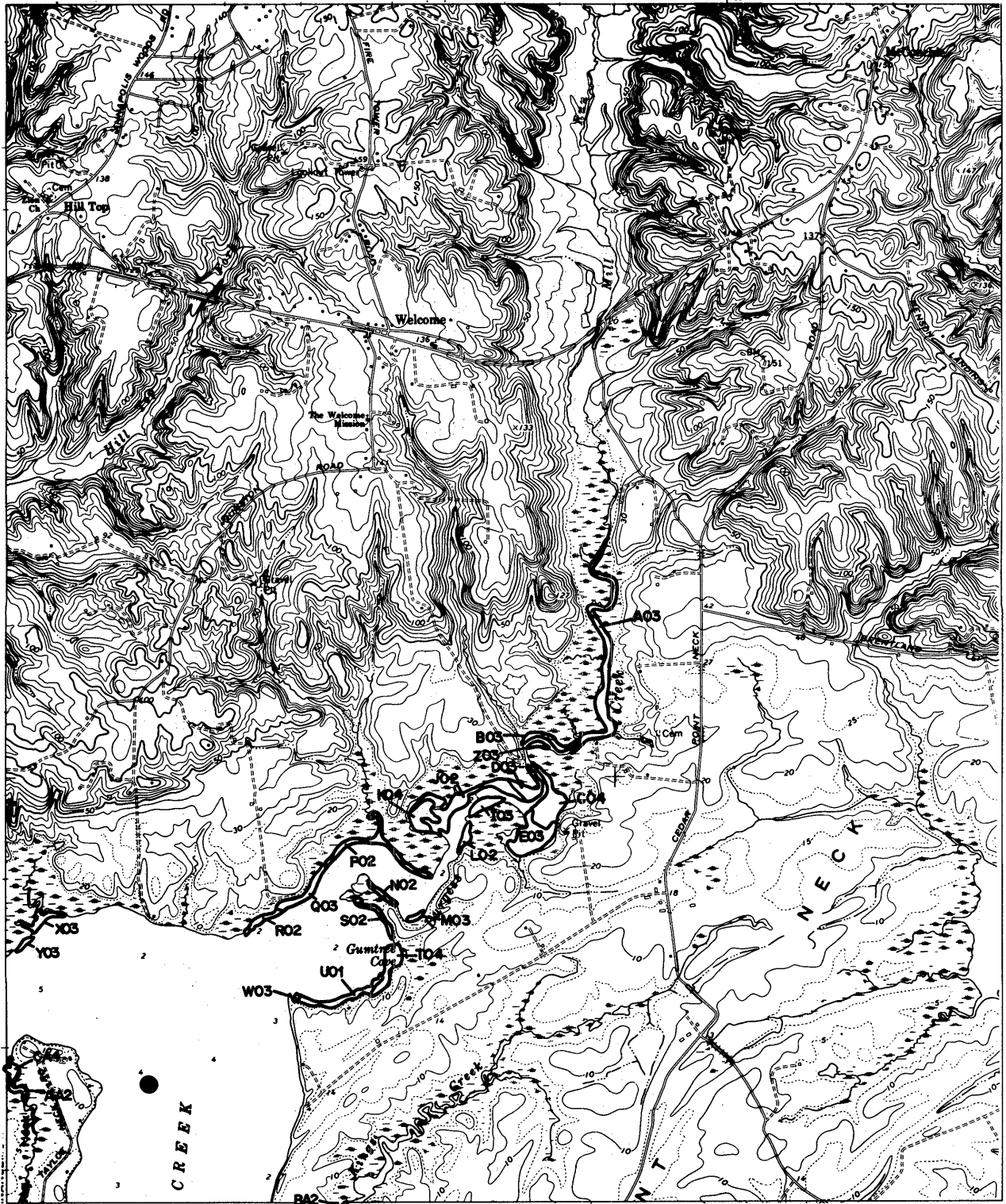
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ma	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria spiralis</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

**MATHIAS POINT, MD-VA**  
 Northeast Quarter  
 # 57



# SUBMERGED AQUATIC VEGETATION 1985



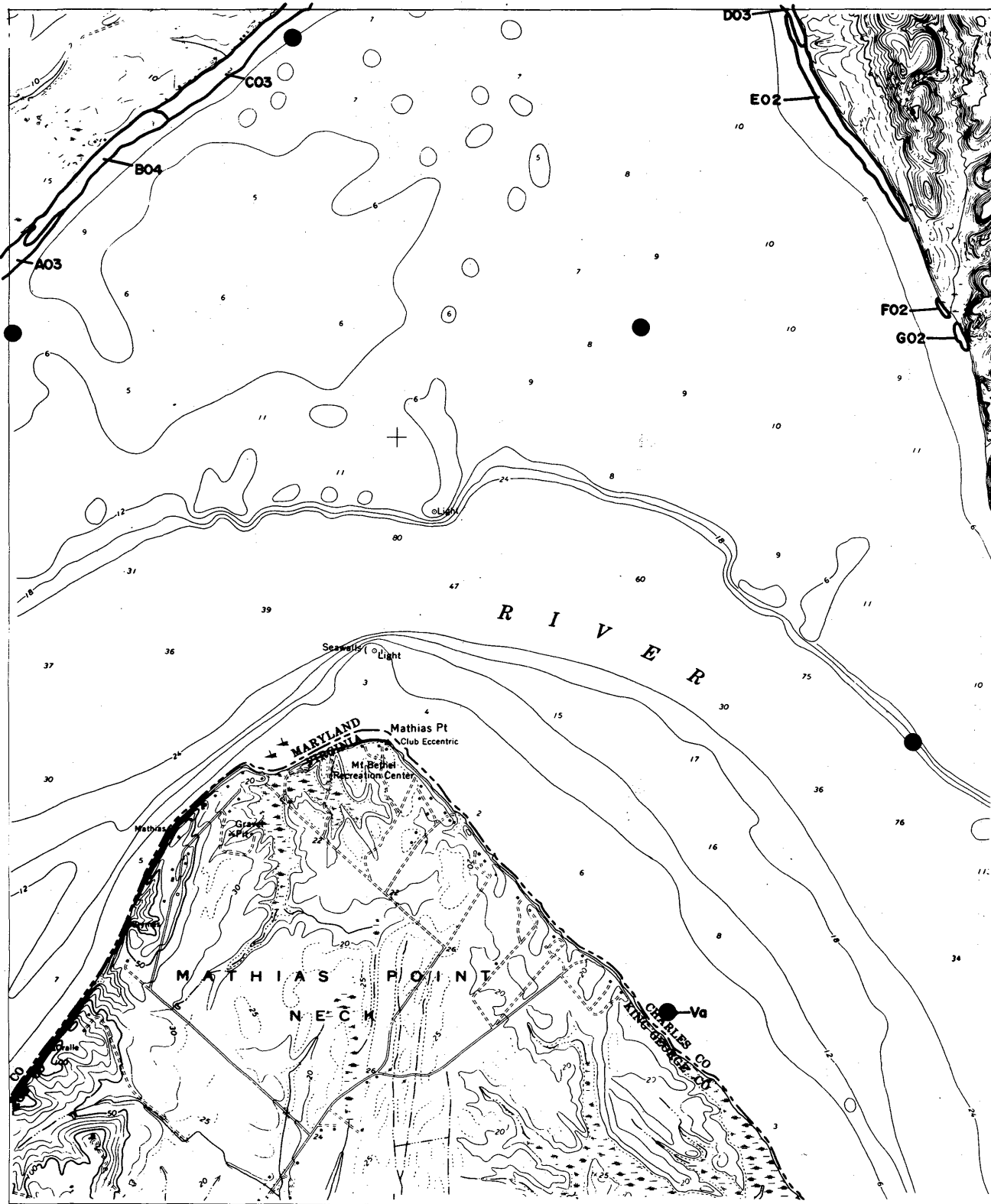
SPECIES		↑	SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	↑	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)		■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)		●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)		▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)		◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)			
N	<i>Najas</i> spp. (naiad)			
Ec	<i>Elodea canadensis</i> (common elodea)			
Va	<i>Vallisneria americana</i> (wild celery)			
Hv	<i>Hydrilla verticillata</i> (hydrilla)			
Hd	<i>Heteranthera dubia</i> (water stargrass)			
Pcr	<i>Potamogeton crispus</i> (curly pondweed)			
Cd	<i>Ceratophyllum demersum</i> (coontail)			
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)			
Ngu	<i>Najas guadalupensis</i> (southern naiad)			
Ngr	<i>Najas gracillima</i> (naiad)			
C	<i>Chara</i> sp. (muskgrass)			

SCALE 1:12,000

**MATHIAS POINT, MD-VA**  
**Northwest Quarter**  
**# 57**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichellia palustris</i> (horned pondweed)	Ngu	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas</i> spp. (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara</i> sp. (muskgrass)
Va	<i>Vallisneria americana</i> (wild celery)		

●	MD-DNR Survey Station
■	MD Charter Boat Field Survey
●	Citizens Field Observation
▲	VMS Field Survey
◆	U.S.G.S.

SCALE 1:12,000

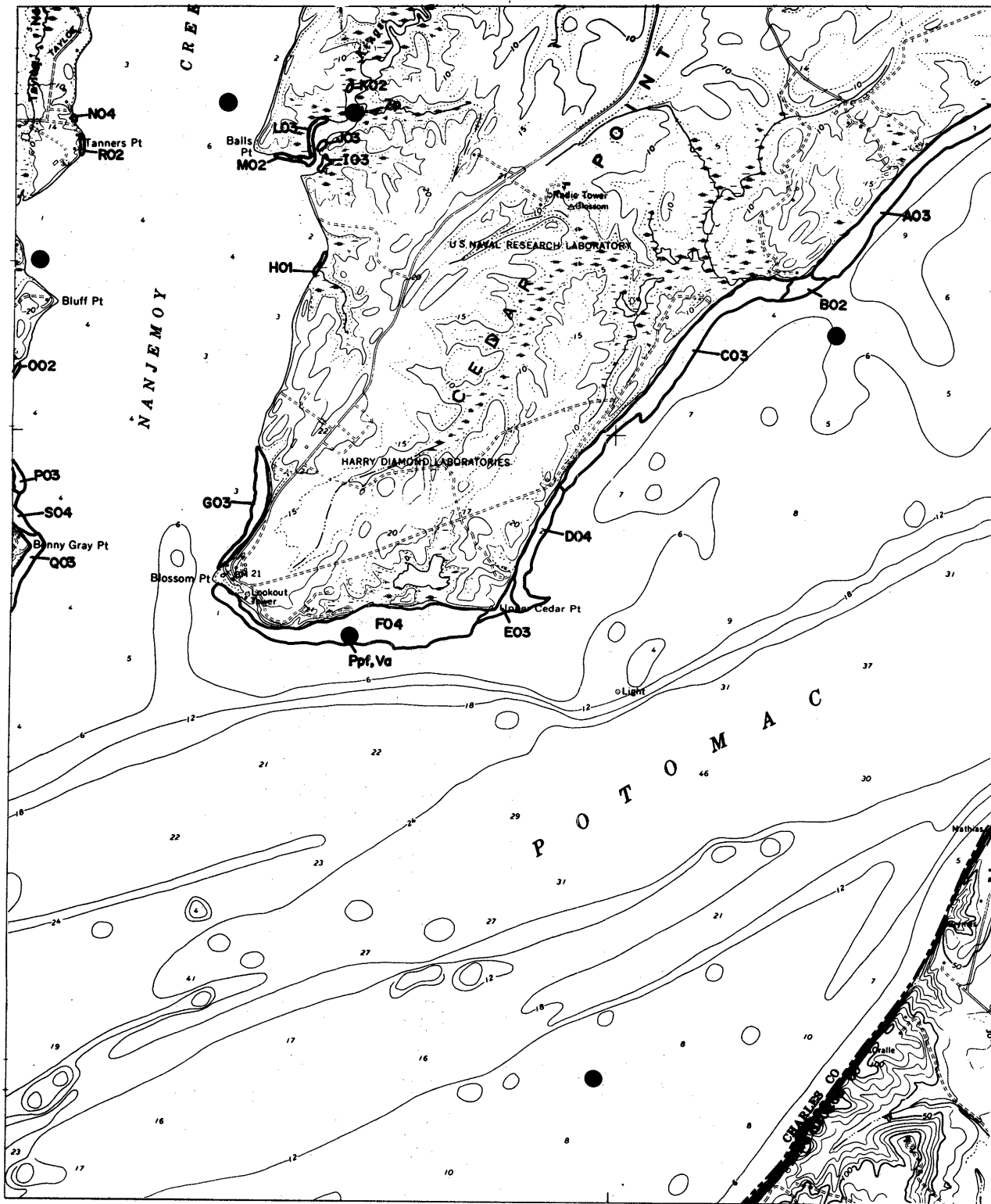
**MATHIAS POINT, MD-VA**

Southeast Quarter

# 57



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	○	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngd	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

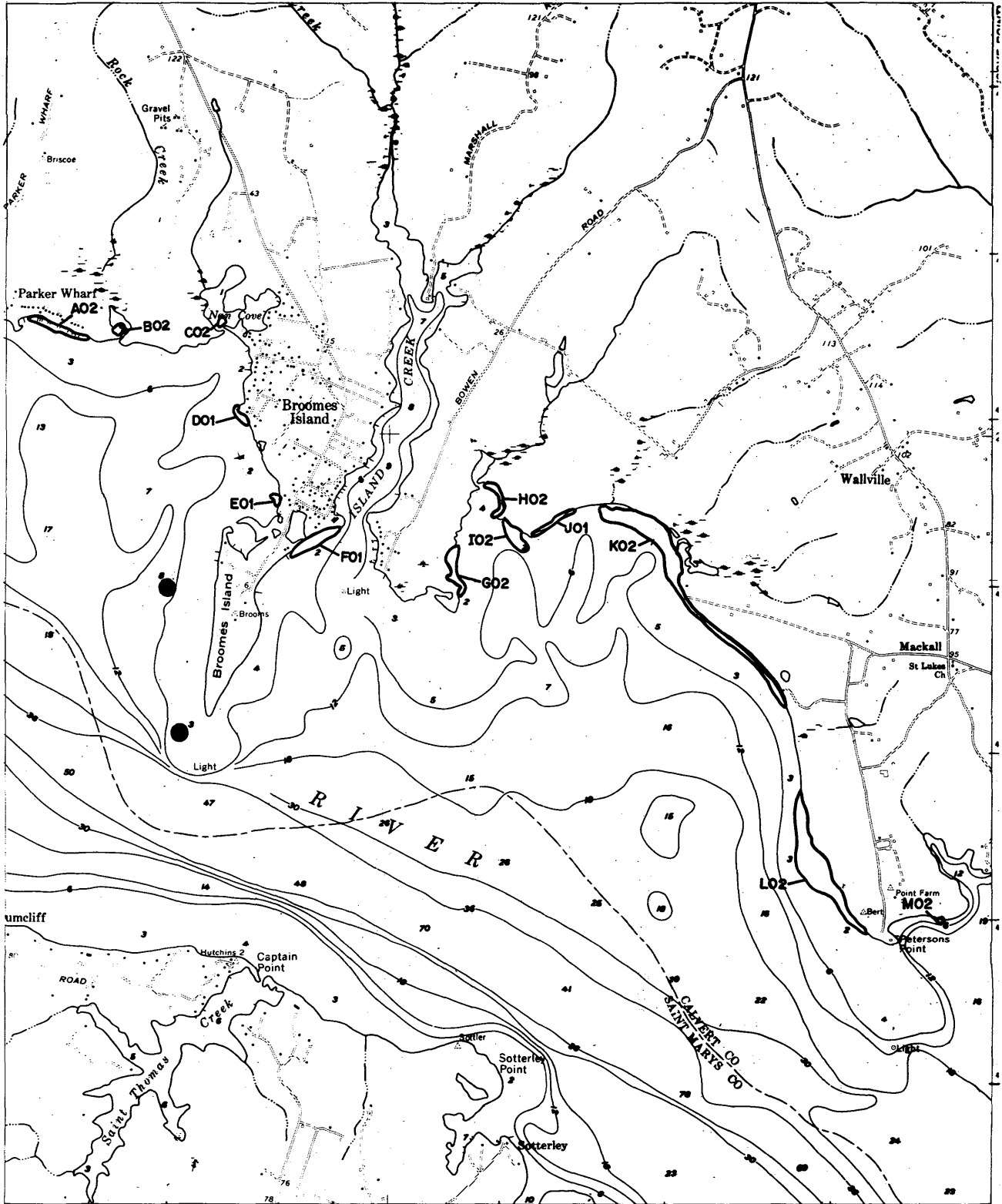
**MATHIAS POINT, MD-VA**

**Southwest Quarter**

**# 57**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widegeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria spiralis</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

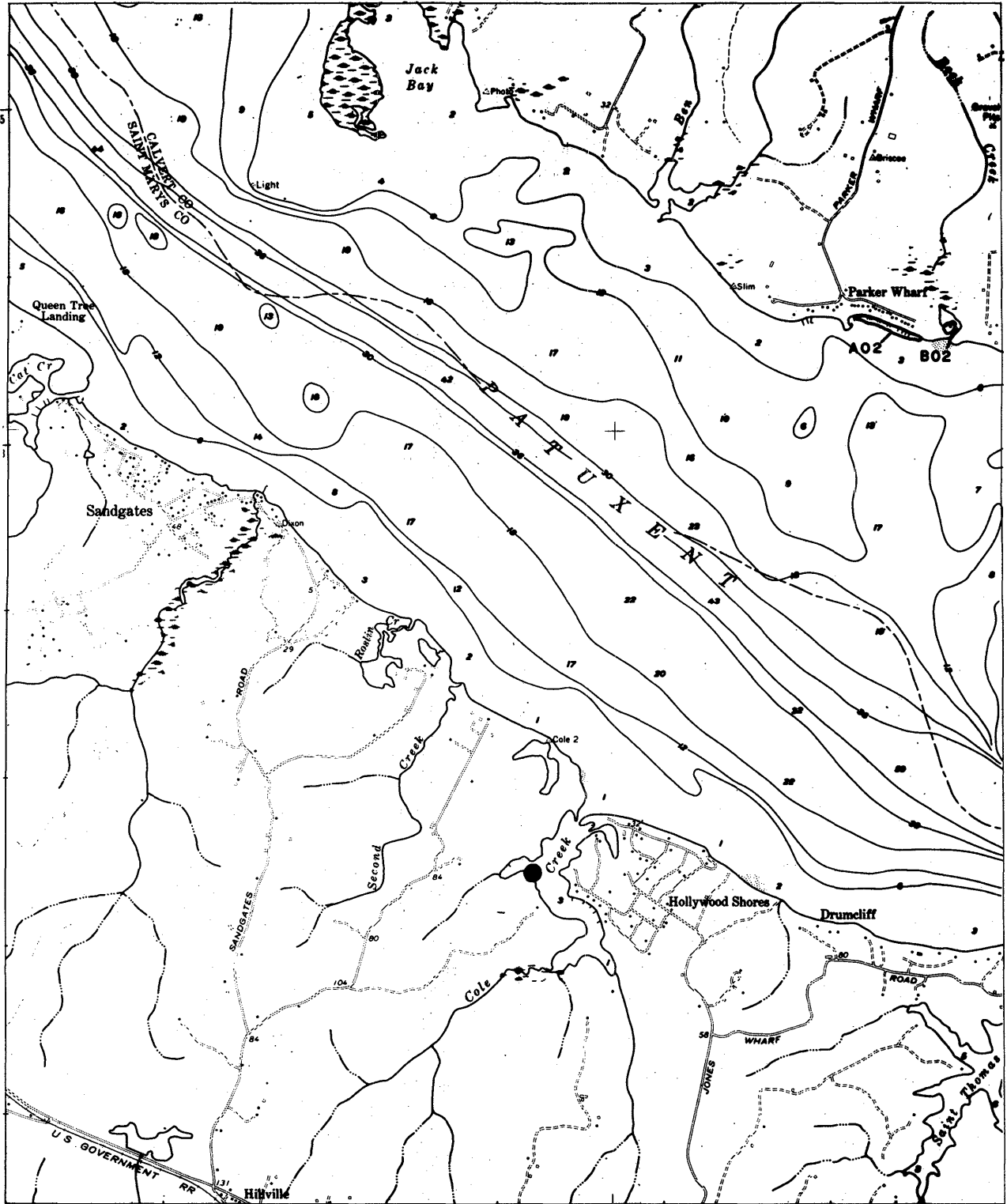
**BROOMES ISLAND, MD**

Southeast Quarter

# 60



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	○	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

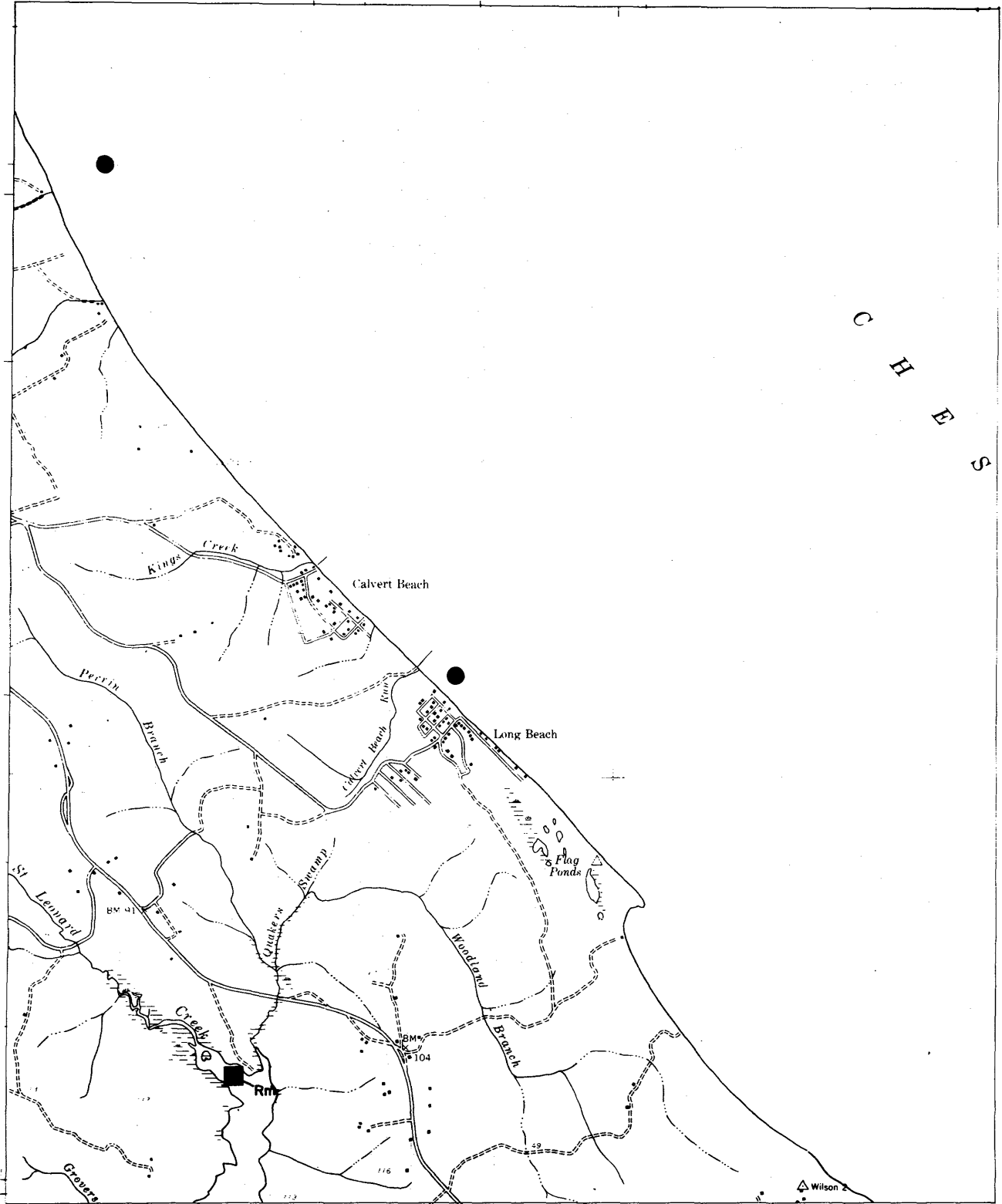
BROOMES ISLAND, MD

Southwest Quarter

# 60



# SUBMERGED AQUATIC VEGETATION 1985



C  
H  
E  
S

SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	◆ Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

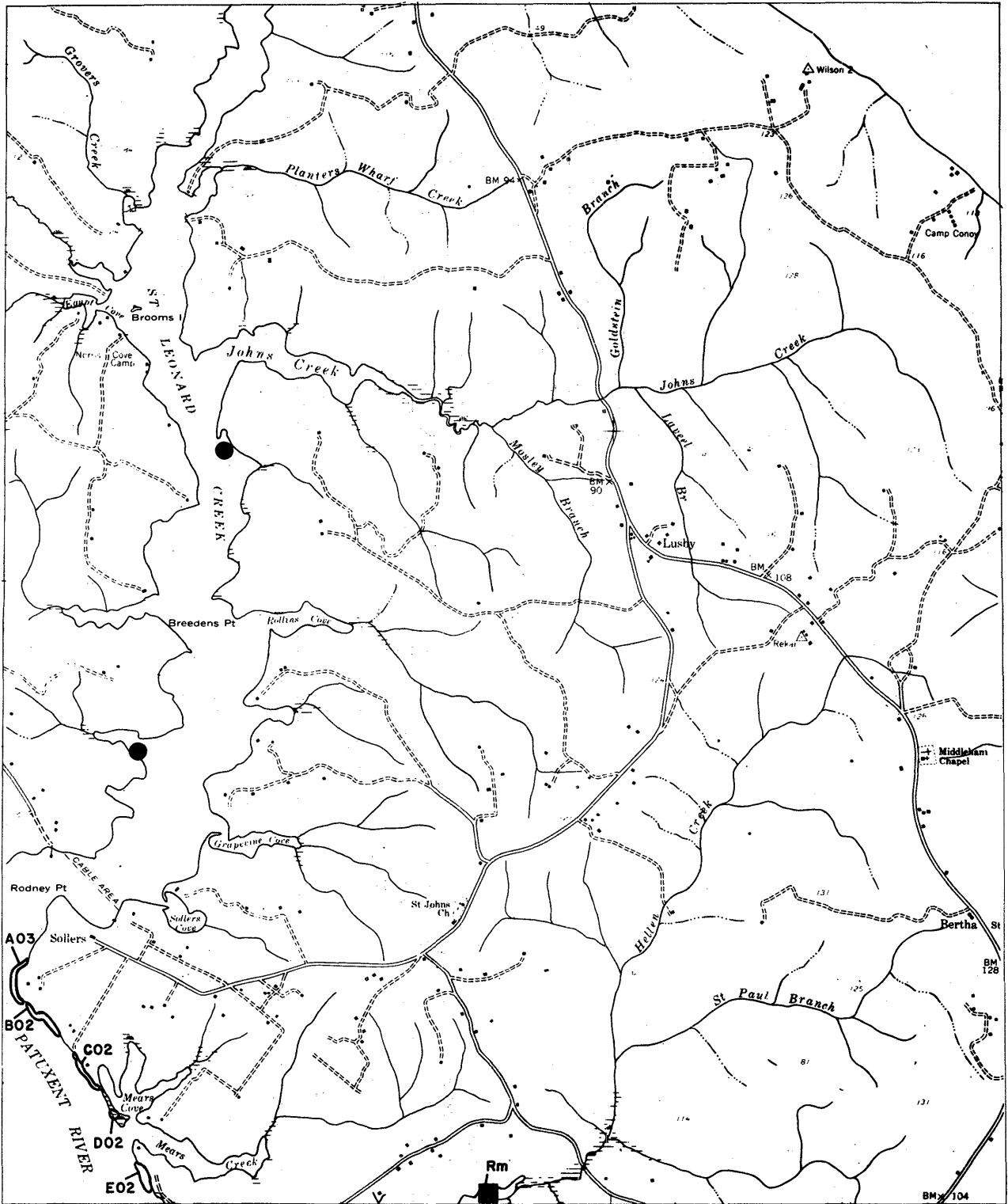
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COVE POINT, MD  
Northwest Quarter

# 61



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

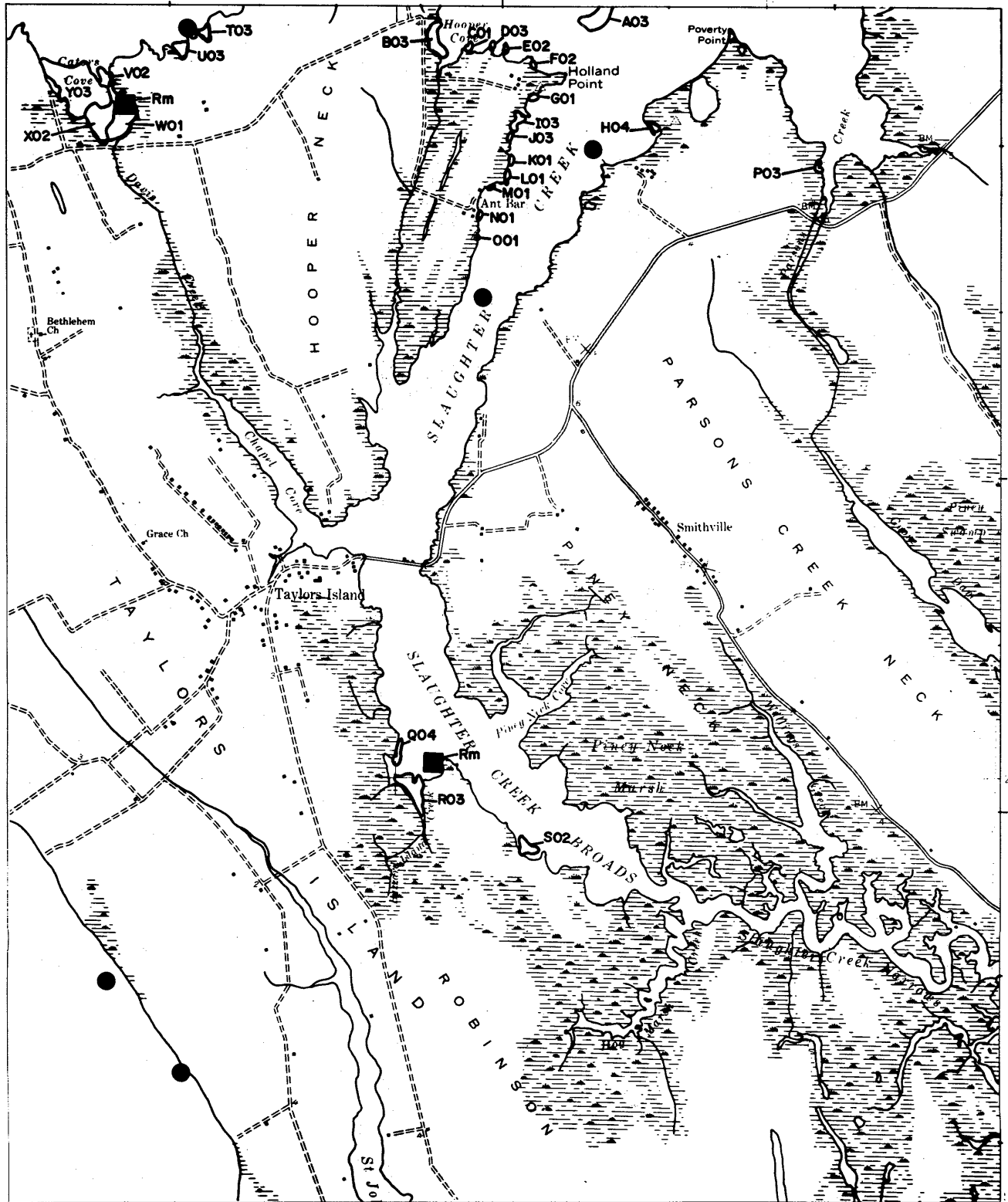
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**COVE POINT, MD**  
Southwest Quarter  
**# 61**





# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass) Rm <i>Ruppia maritima</i> (widgeon grass) Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil) Pof <i>Potamogeton perfoliatus</i> (redhead-grass) Ppc <i>Potamogeton pectinatus</i> (sago pondweed) Zp <i>Zannichellia palustris</i> (horned pondweed) N <i>Najas</i> spp. (naiad) Ec <i>Elodea canadensis</i> (common elodea) Va <i>Vallisneria americana</i> (wild celery)	Hv <i>Hydrilla verticillata</i> (hydrilla) Hd <i>Heteranthera dubia</i> (water stargrass) Pcr <i>Potamogeton crispus</i> (curly pondweed) Cd <i>Ceratophyllum demersum</i> (coontail) Ppu <i>Potamogeton pusillus</i> (slender pondweed) Ngu <i>Najas guadalupensis</i> (southern naiad) Ngr <i>Najas gracillima</i> (naiad) C <i>Chara</i> sp. (muskgrass)	● MD-DNR Survey Station ■ MD Charter Boat Field Survey ● Citizens Field Observation ▲ VIMS Field Survey ◆ U.S.G.S.

SCALE 1:12,000

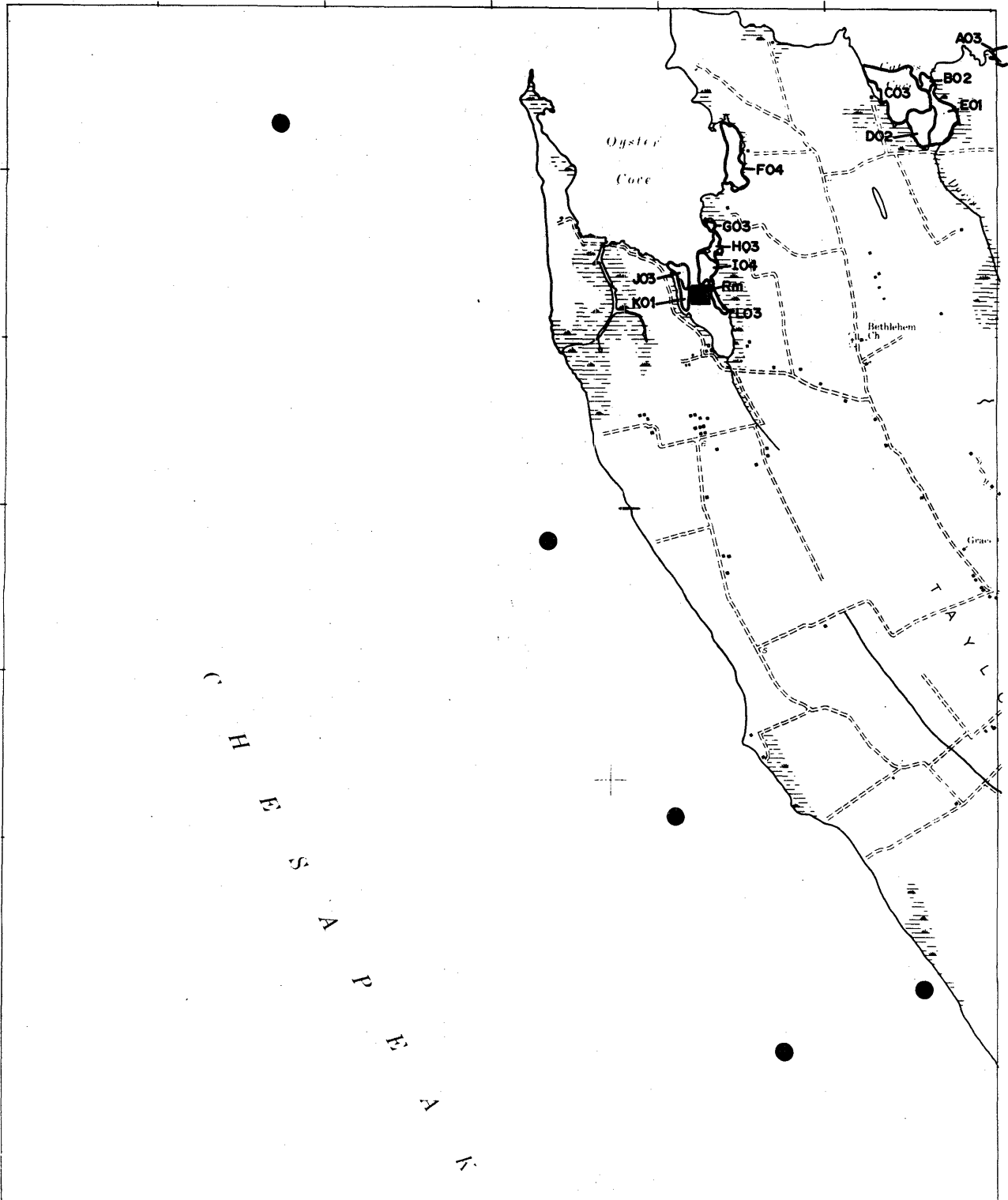
TAYLORS ISLAND, MD

Northeast Quarter

# 62



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	○	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas spp.</i> (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara sp.</i> (muskgrass)		

SCALE 1:12,000

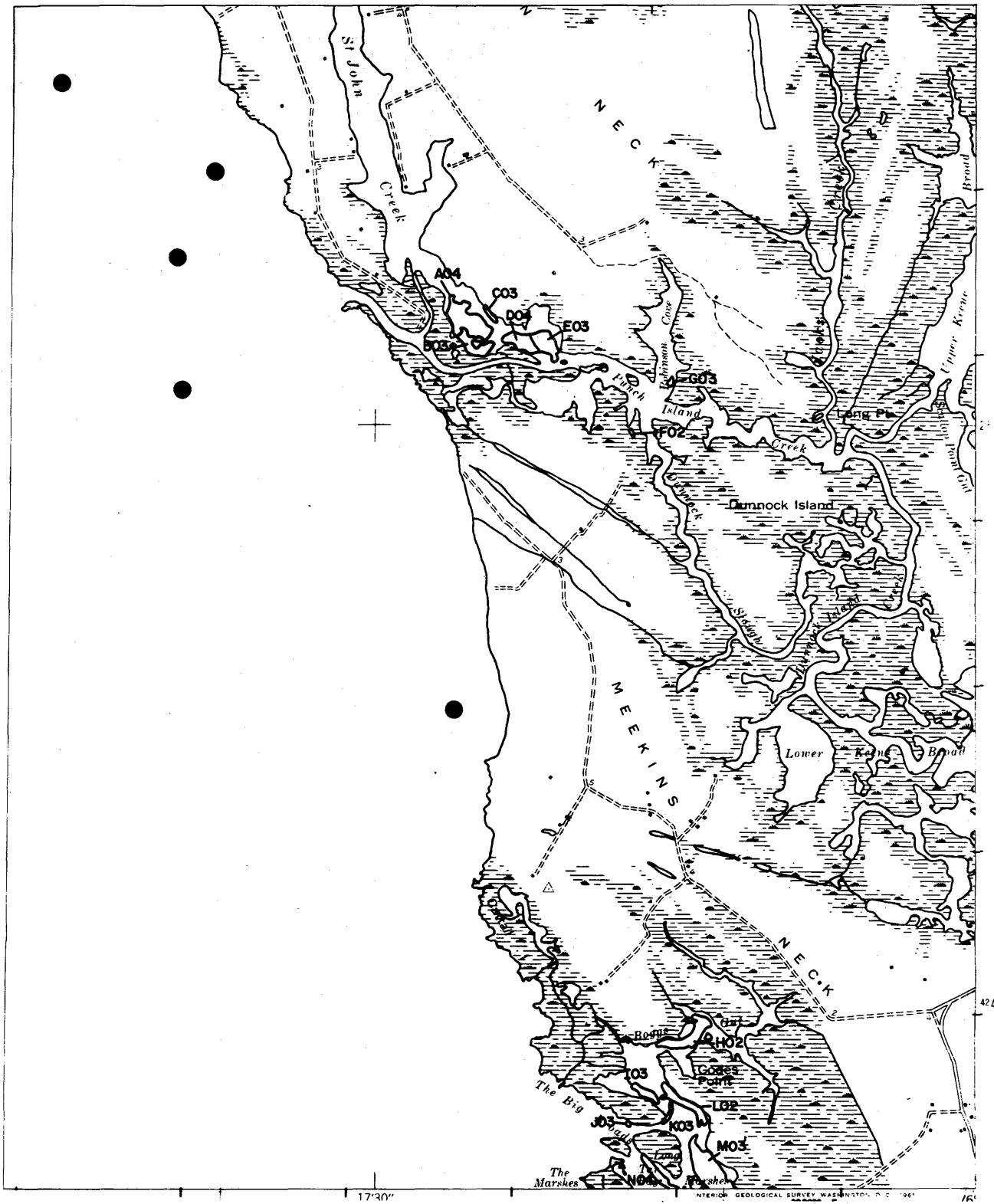
TAYLORS ISLAND, MD

Northwest Quarter

# 62



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES			
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichellia palustris</i> (horned pondweed)	Ngu	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas</i> spp. (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara</i> sp. (muskgrass)
Va	<i>Vallisneria americana</i> (wild celery)		

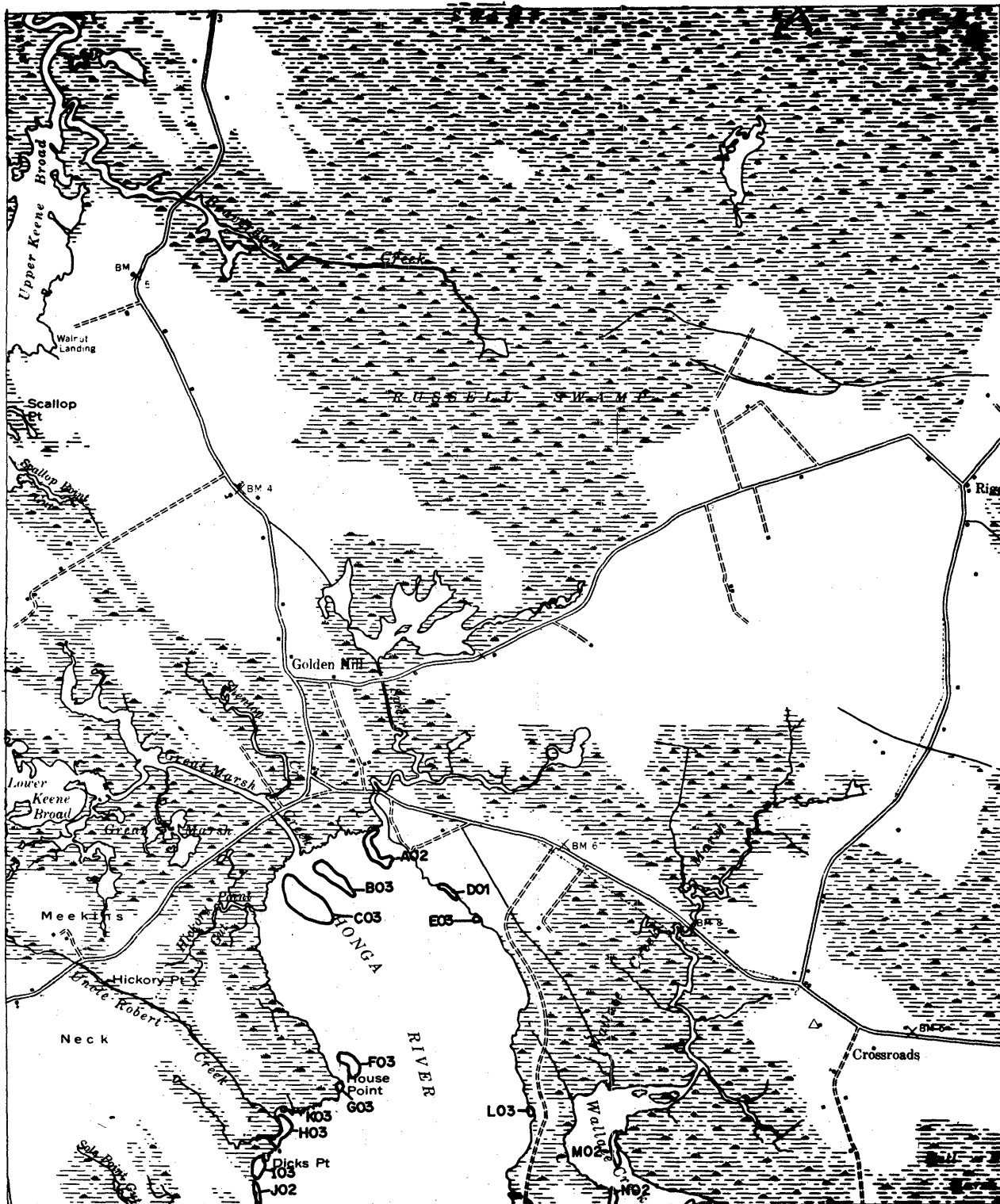
  

SURVEY STATIONS	
●	MD-DNR Survey Station
■	MD Charter Boat Field Survey
●	Citizens Field Observation
▲	VMS Field Survey
◆	U.S.G.S.

**TAYLORS ISLAND, MD**  
**Southeast Quarter**  
**# 62**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

0 5 1 MILE

0 5 1 KILOMETER

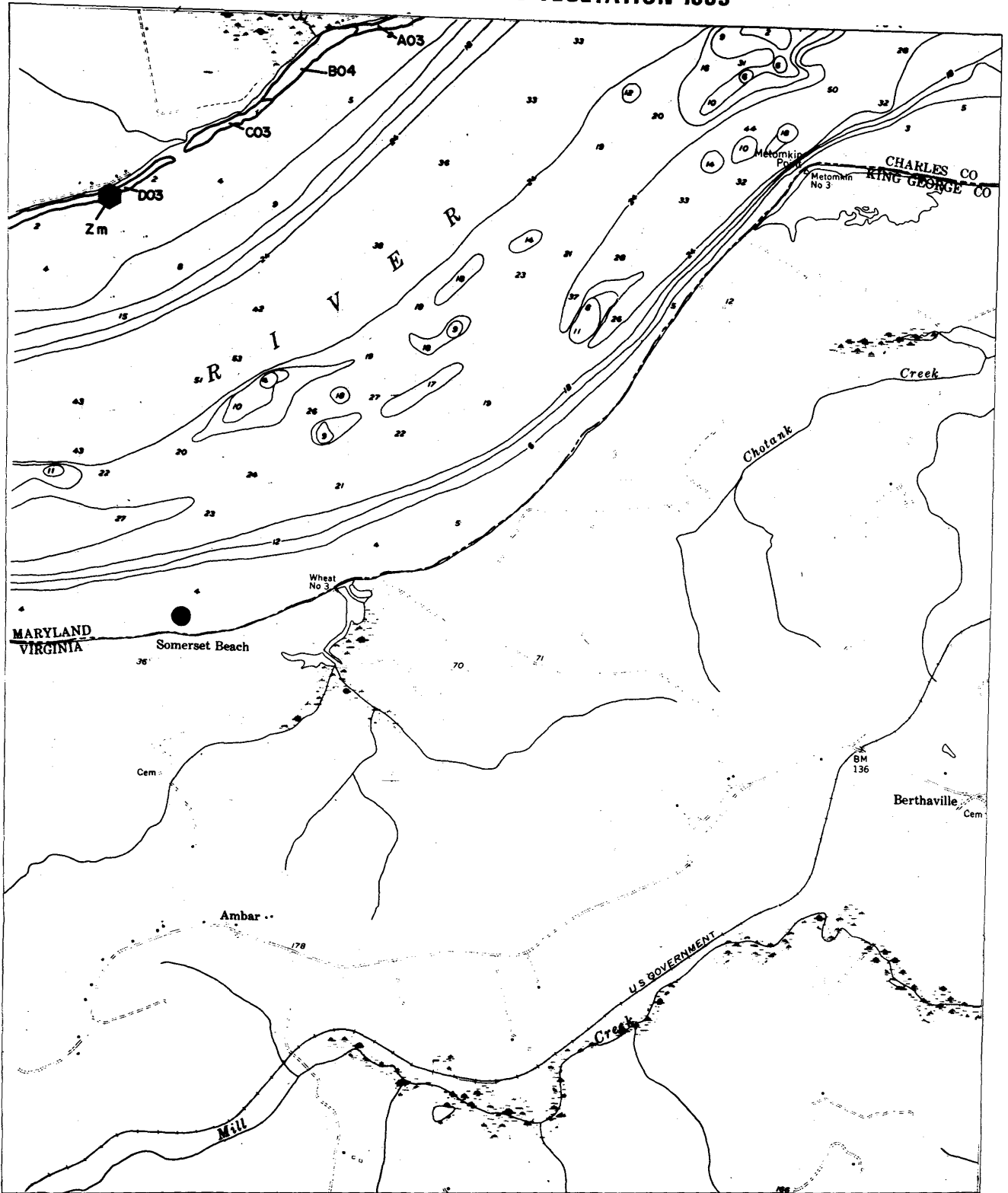
GOLDEN HILL, MD

Southwest Quarter

# 63



# SUBMERGED AQUATIC VEGETATION 1985



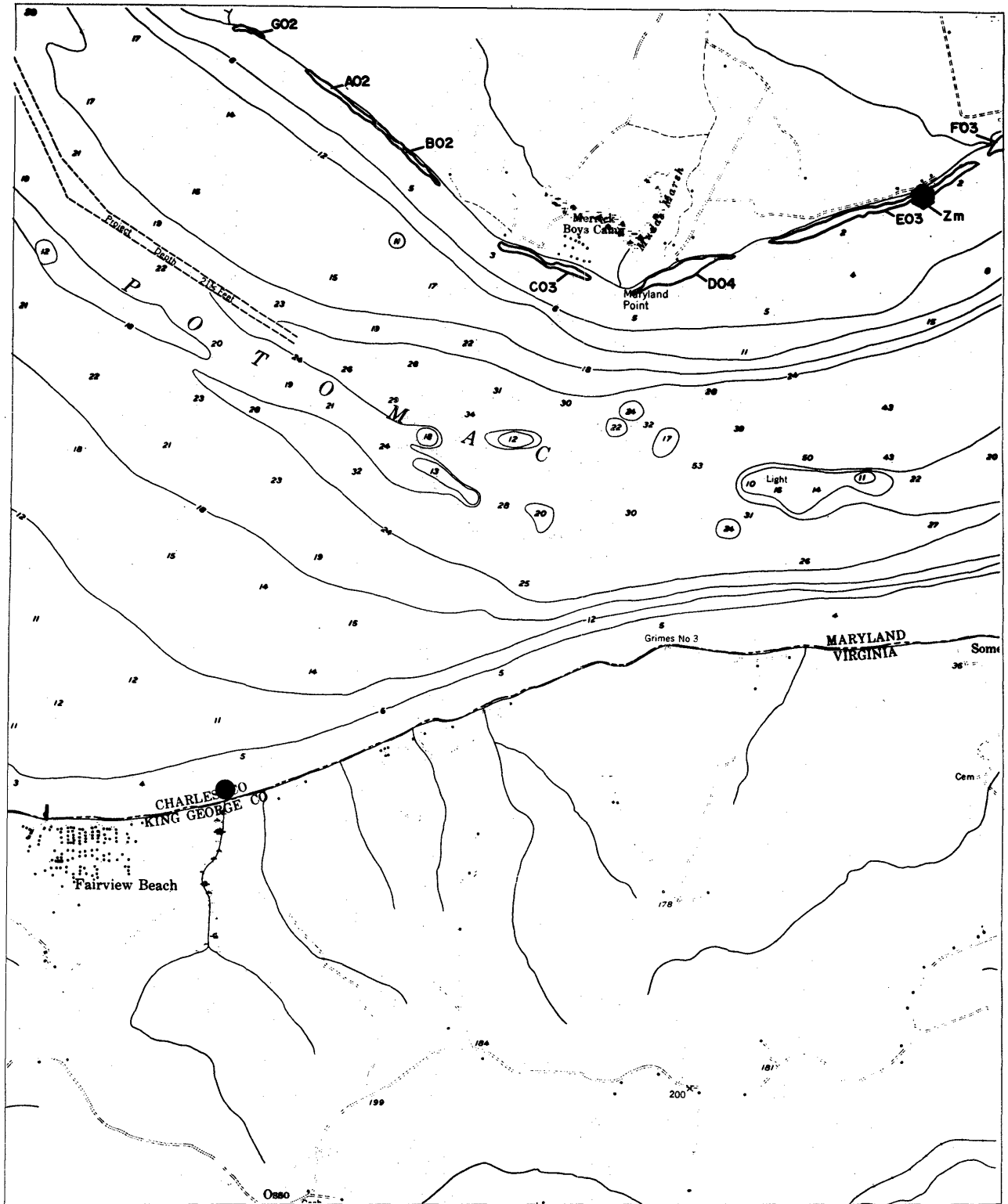
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria spiralis</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

**KING GEORGE, VA-MD**  
**Northeast Quarter**  
**# 65**



# SUBMERGED AQUATIC VEGETATION 1985



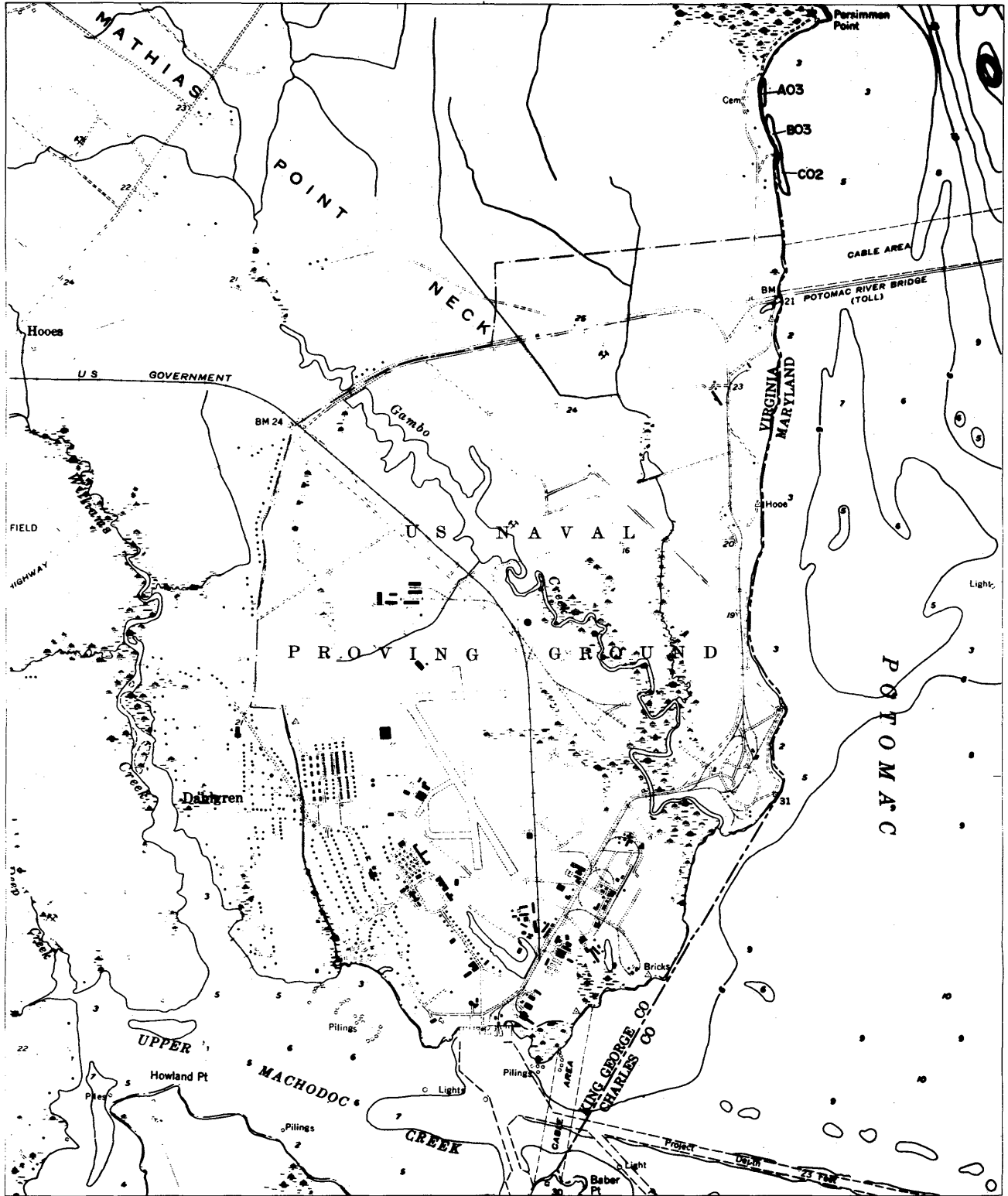
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widegon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

**KING GEORGE, VA-MD**  
**Northwest Quarter**  
**# 65**



# SUBMERGED AQUATIC VEGETATION 1985

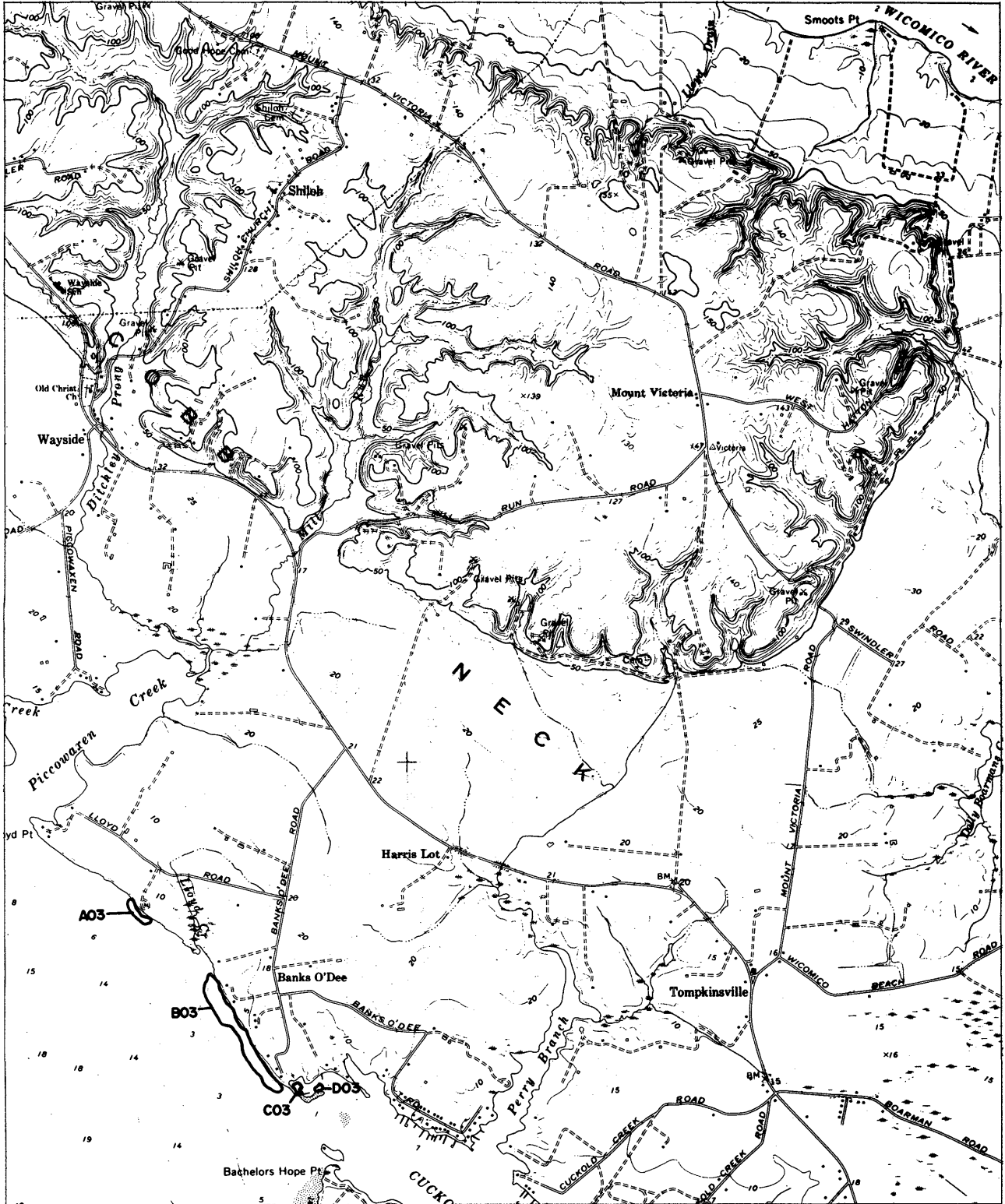


SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ng	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

**DAHLGREN, VA**  
**Northeast Quarter**  
**# 66**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-NR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

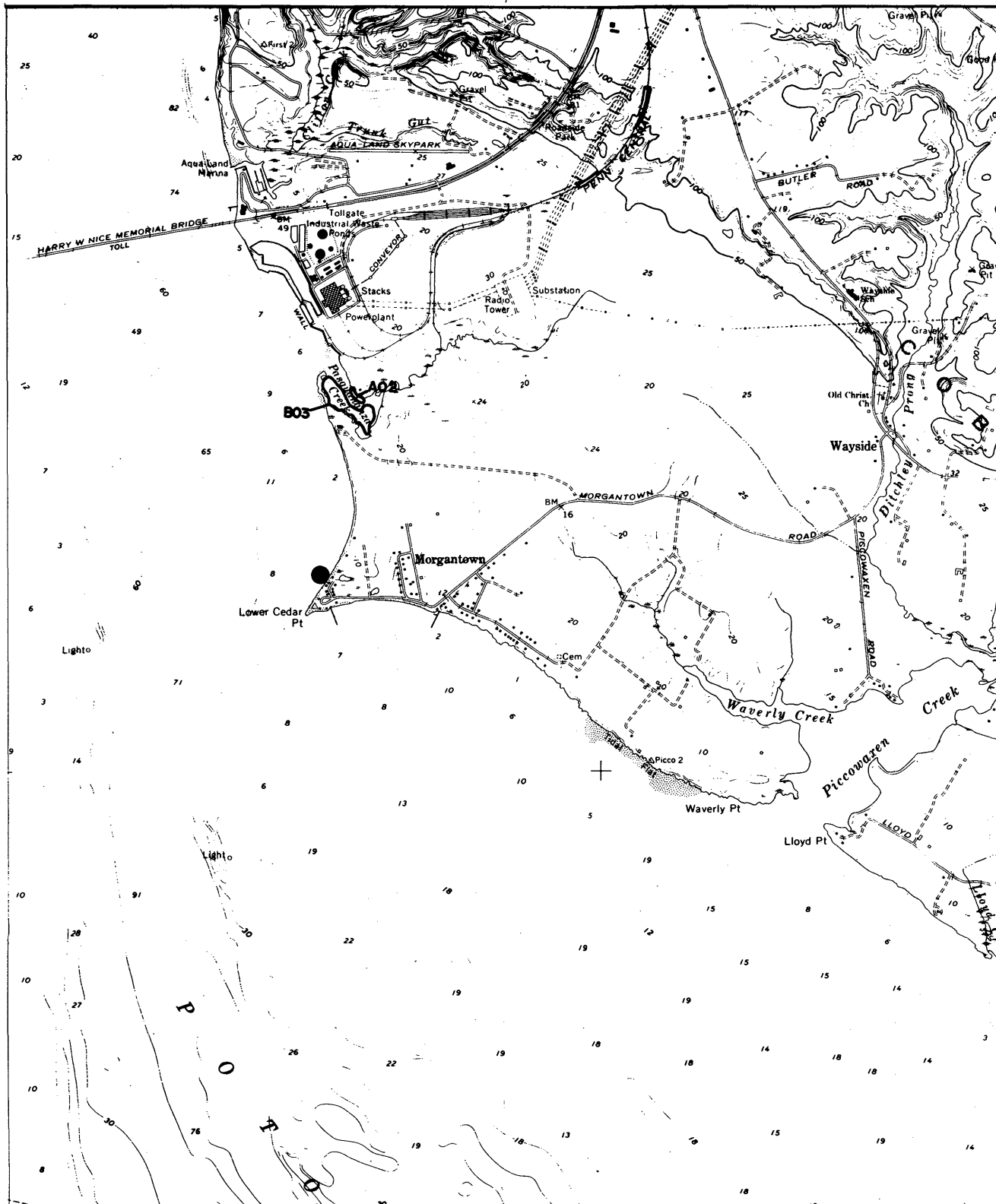
**COLONIAL BEACH  
NORTH, MD-VA  
Northeast Quarter**

# 67





# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass)	Hv <i>Hydrilla verticillata</i> (hydrilla)	● MD-DNR Survey Station
Rm <i>Ruppia maritima</i> (widegon grass)	Hd <i>Heteranthera dubia</i> (water stargrass)	■ MD Charter Boat Field Survey
Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr <i>Potamogeton crispus</i> (curly pondweed)	● Citizens Field Observation
Ppf <i>Potamogeton perfoliatus</i> (redhead-grass)	Cd <i>Ceratophyllum demersum</i> (coontail)	▲ VIMS Field Survey
Ppc <i>Potamogeton pectinatus</i> (sago pondweed)	Ppu <i>Potamogeton pusillus</i> (slender pondweed)	◆ U.S.G.S.
Zp <i>Zannichetia palustris</i> (horned pondweed)	Ngu <i>Najas guadalupensis</i> (southern naiad)	
N <i>Najas</i> spp. (naiad)	Ngr <i>Najas gracillima</i> (naiad)	
Ec <i>Elodea canadensis</i> (common elodea)	C <i>Chara</i> sp. (muskgrass)	
Va <i>Vallisneria americana</i> (wild celery)		

SCALE 1:12,000

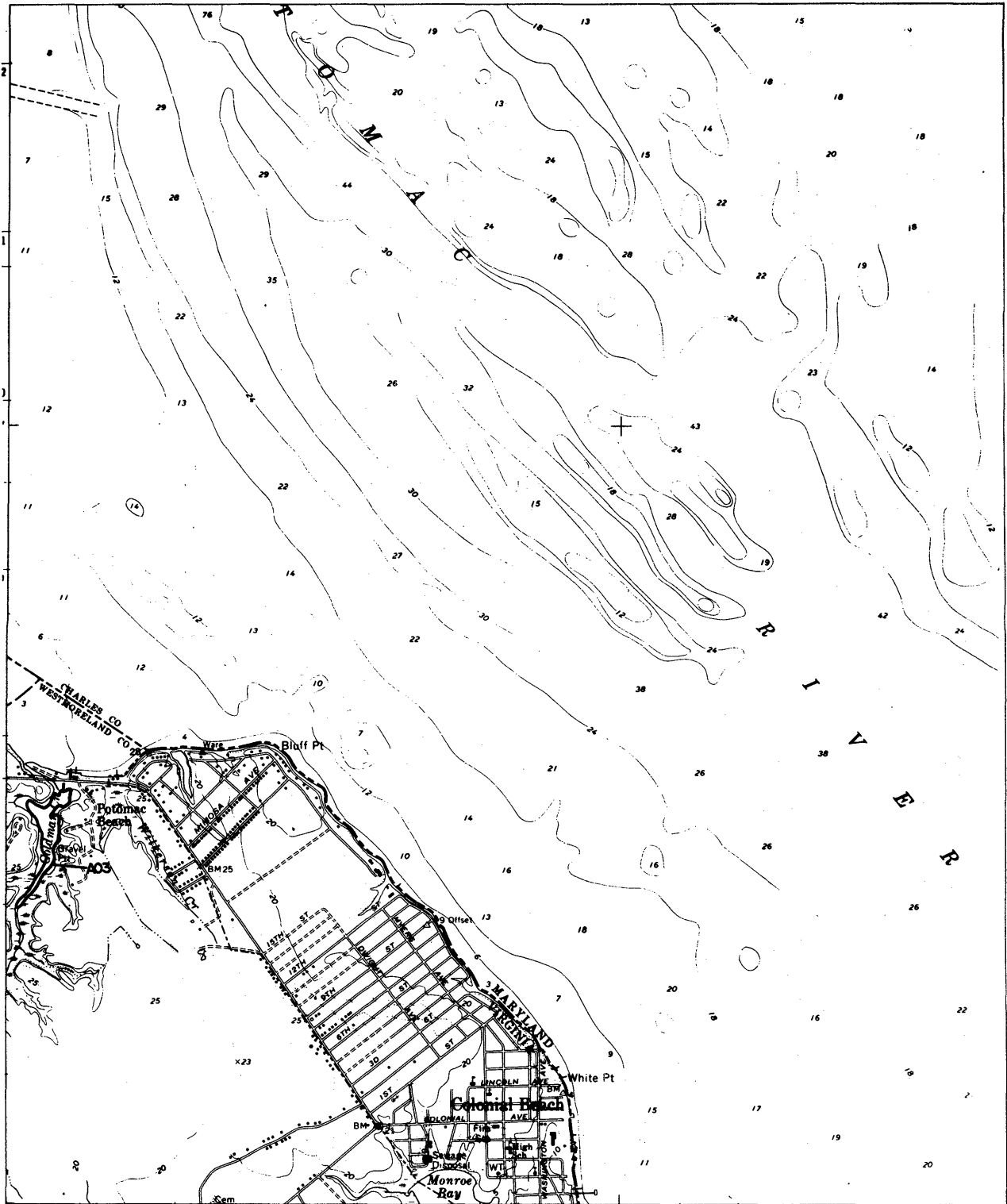
**COLONIAL BEACH  
NORTH, MD-VA**

**Northwest Quarter**

**# 67**



# SUBMERGED AQUATIC VEGETATION 1985



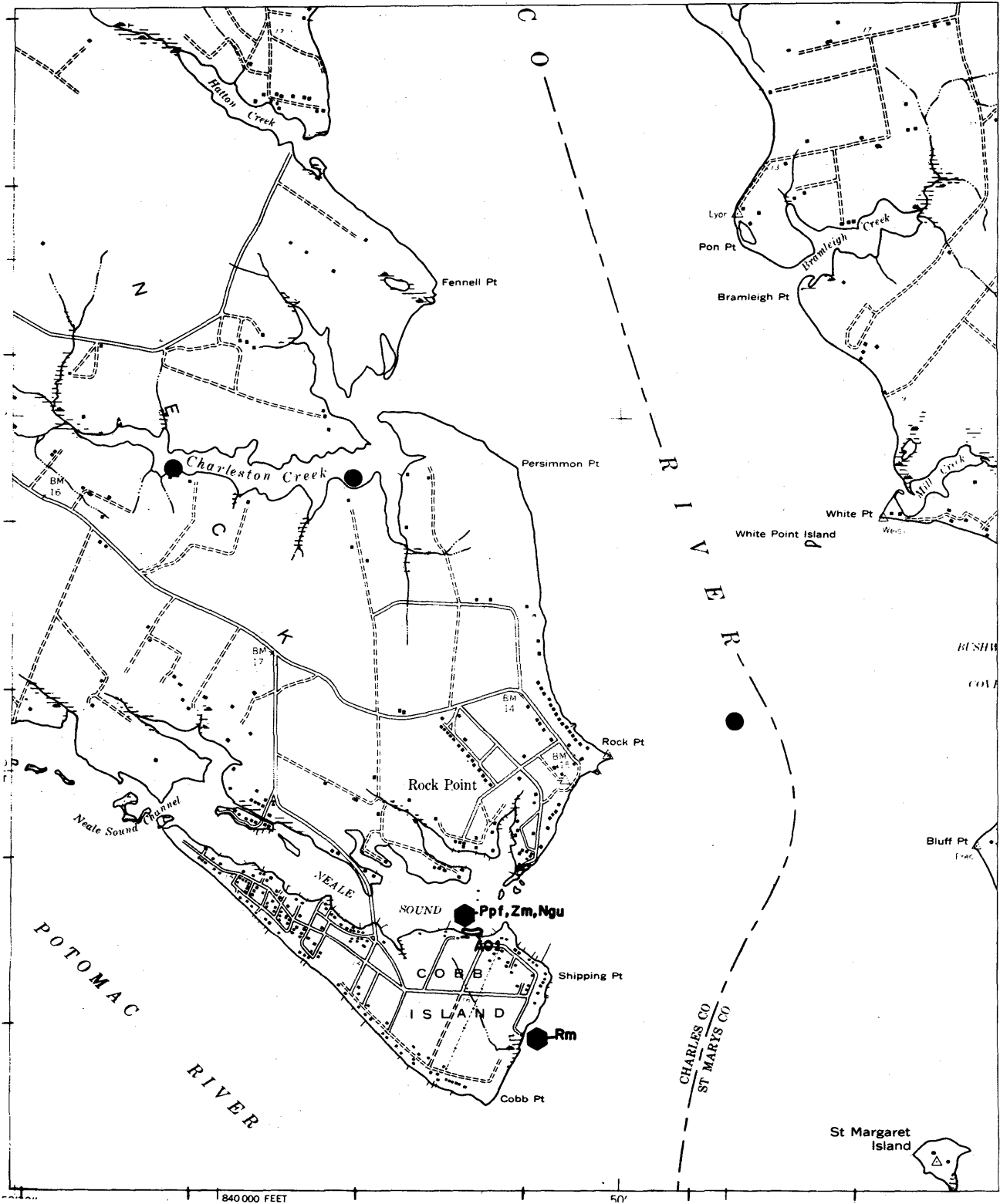
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichetia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

**COLONIAL BEACH  
NORTH, MD-VA  
Southwest Quarter  
# 67**



# SUBMERGED AQUATIC VEGETATION 1985

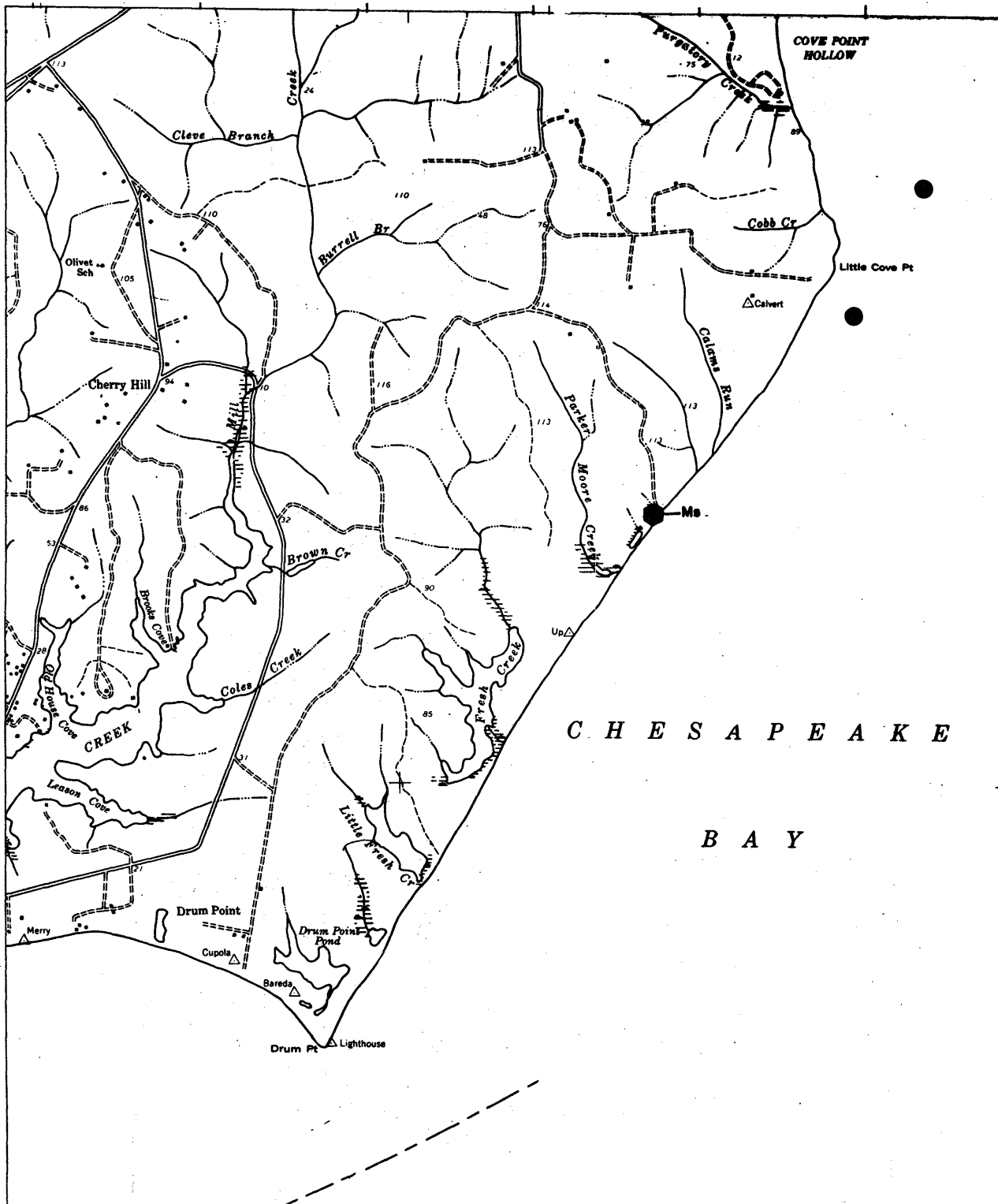


SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (wideopen grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pct	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

**ROCK POINT, MD**  
**Southwest Quarter**  
**# 68**



# SUBMERGED AQUATIC VEGETATION 1985



C H E S A P E A K E  
B A Y

SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass)	Hv <i>Hydrilla verticillata</i> (hydrilla)	● MD-DNR Survey Station
Rm <i>Ruppia maritima</i> (widgeon grass)	Hd <i>Heteranthera dubia</i> (water stargrass)	■ MD Charter Boat Field Survey
Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr <i>Potamogeton crispus</i> (curly pondweed)	○ Citizens Field Observation
Pof <i>Potamogeton perfoliatus</i> (redhead-grass)	Cd <i>Ceratophyllum demersum</i> (coontail)	▲ VMS Field Survey
Ppc <i>Potamogeton pectinatus</i> (sago pondweed)	Ppu <i>Potamogeton pusillus</i> (slender pondweed)	◆ U.S.G.S.
Zp <i>Zannichella palustris</i> (horned pondweed)	Ngu <i>Najas guadalupensis</i> (southern naiad)	
N <i>Najas</i> spp. (naiad)	Ngr <i>Najas gracillima</i> (naiad)	
Ec <i>Elodea canadensis</i> (common elodea)	C <i>Chara</i> sp. (muskgrass)	
Va <i>Vallisneria americana</i> (wild celery)		

SCALE 1:12,000

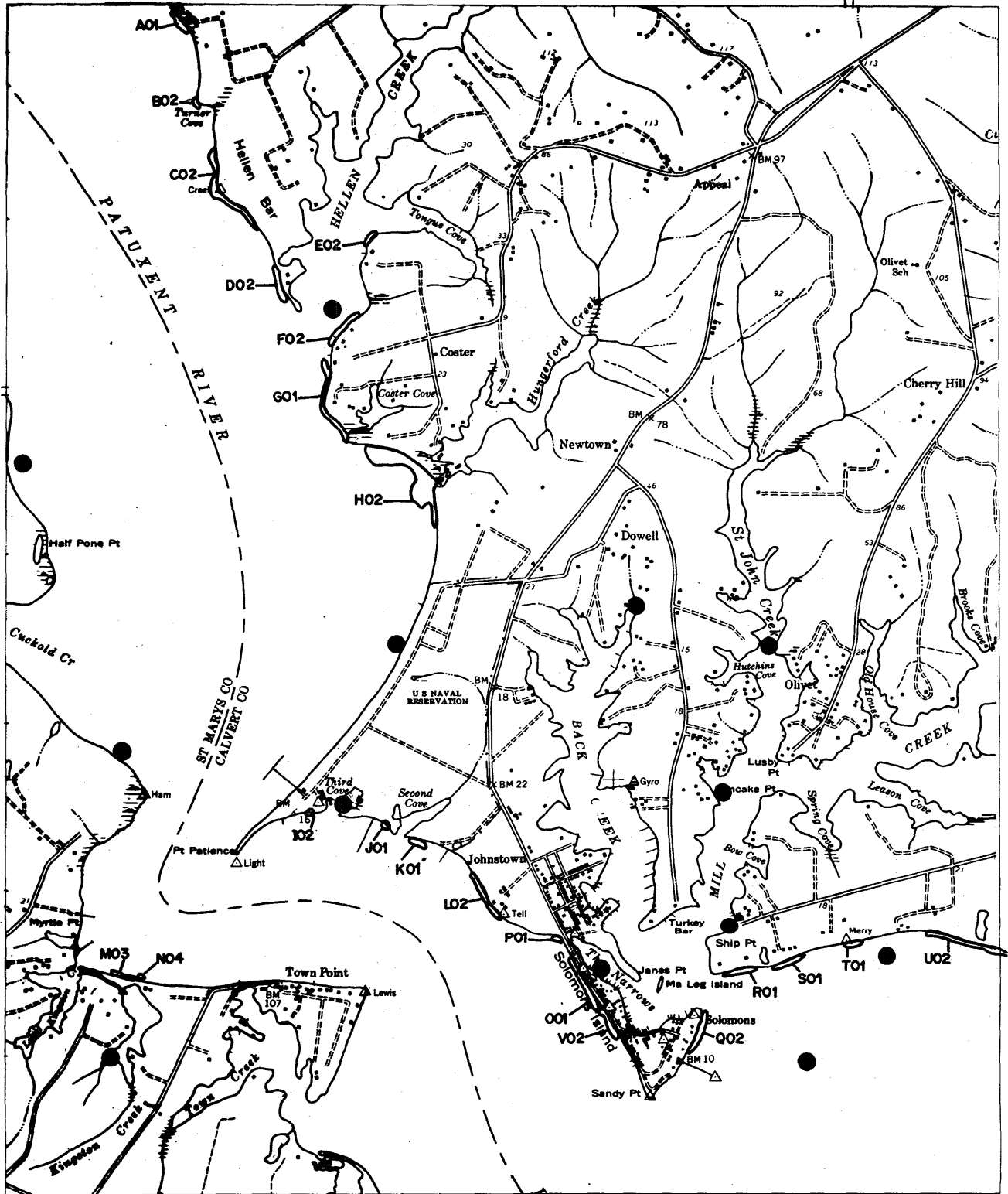
SOLOMONS ISLAND, MD

Northeast Quarter

# 71



# SUBMERGED AQUATIC VEGETATION 1985



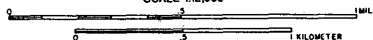
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SOLOMONS ISLAND, MD

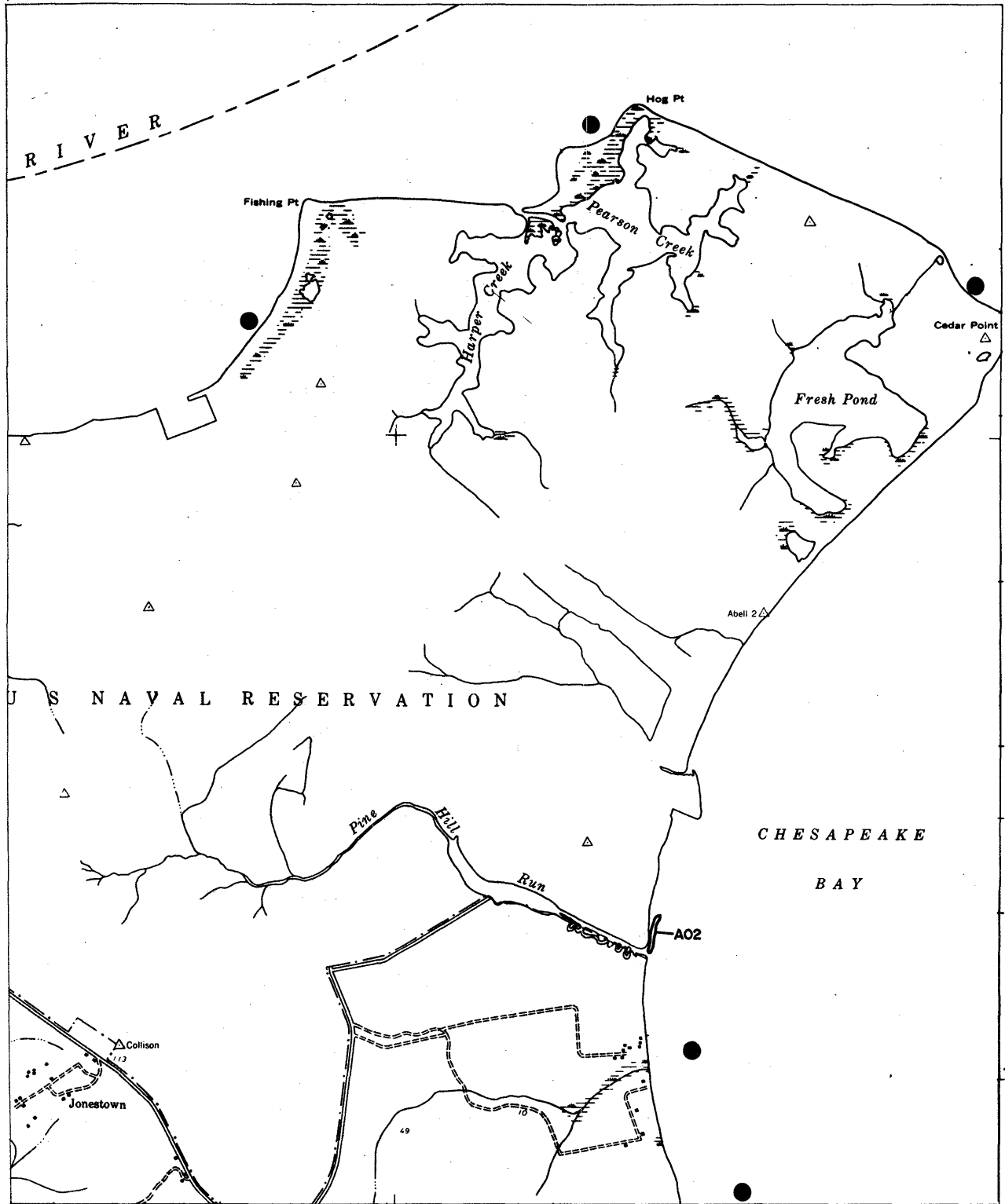
Northwest Quarter

# 71

SCALE 1:12,000



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

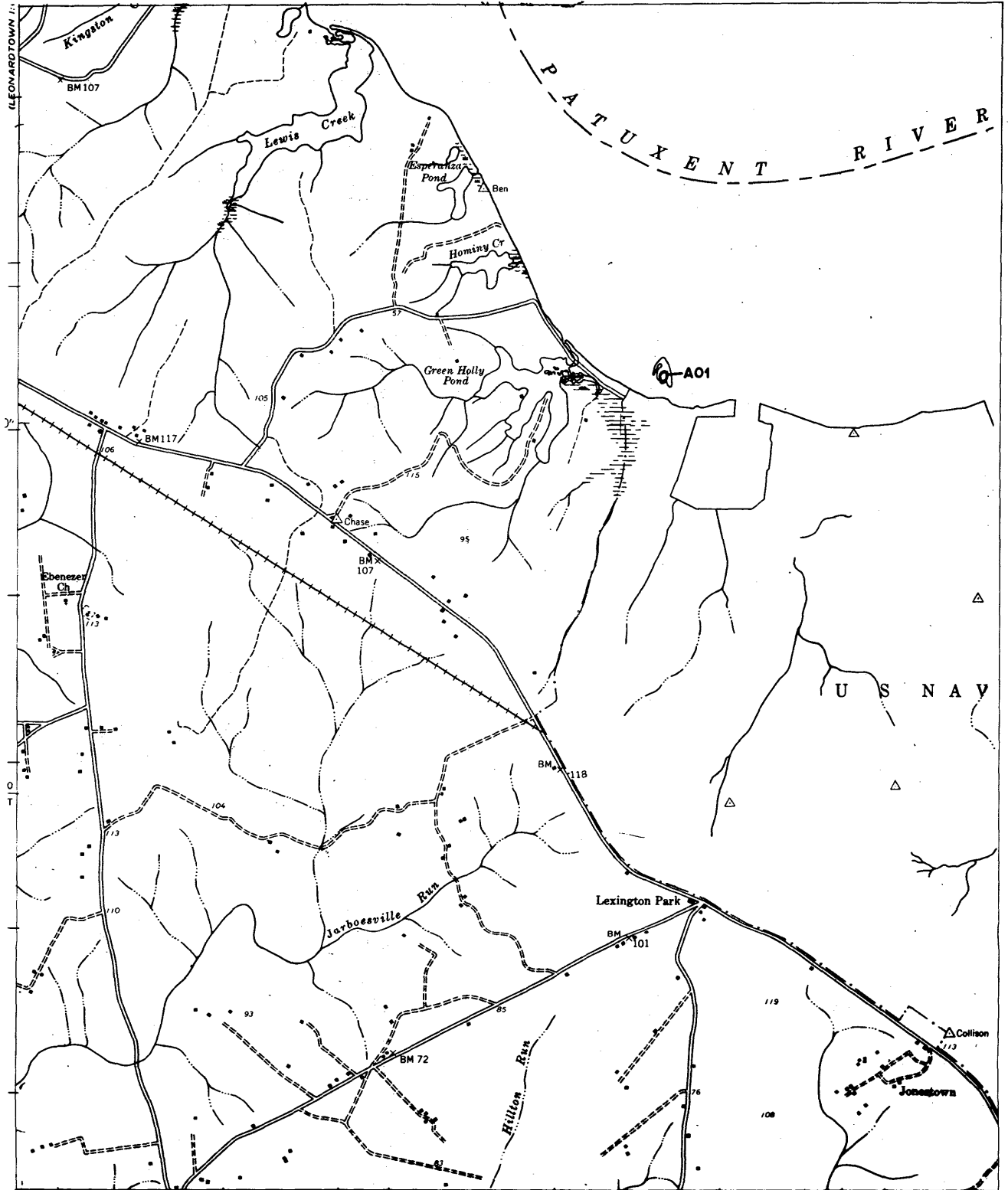
SCALE 1:12,000

**SOLOMONS ISLAND, MD**  
Southeast Quarter

# 71



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

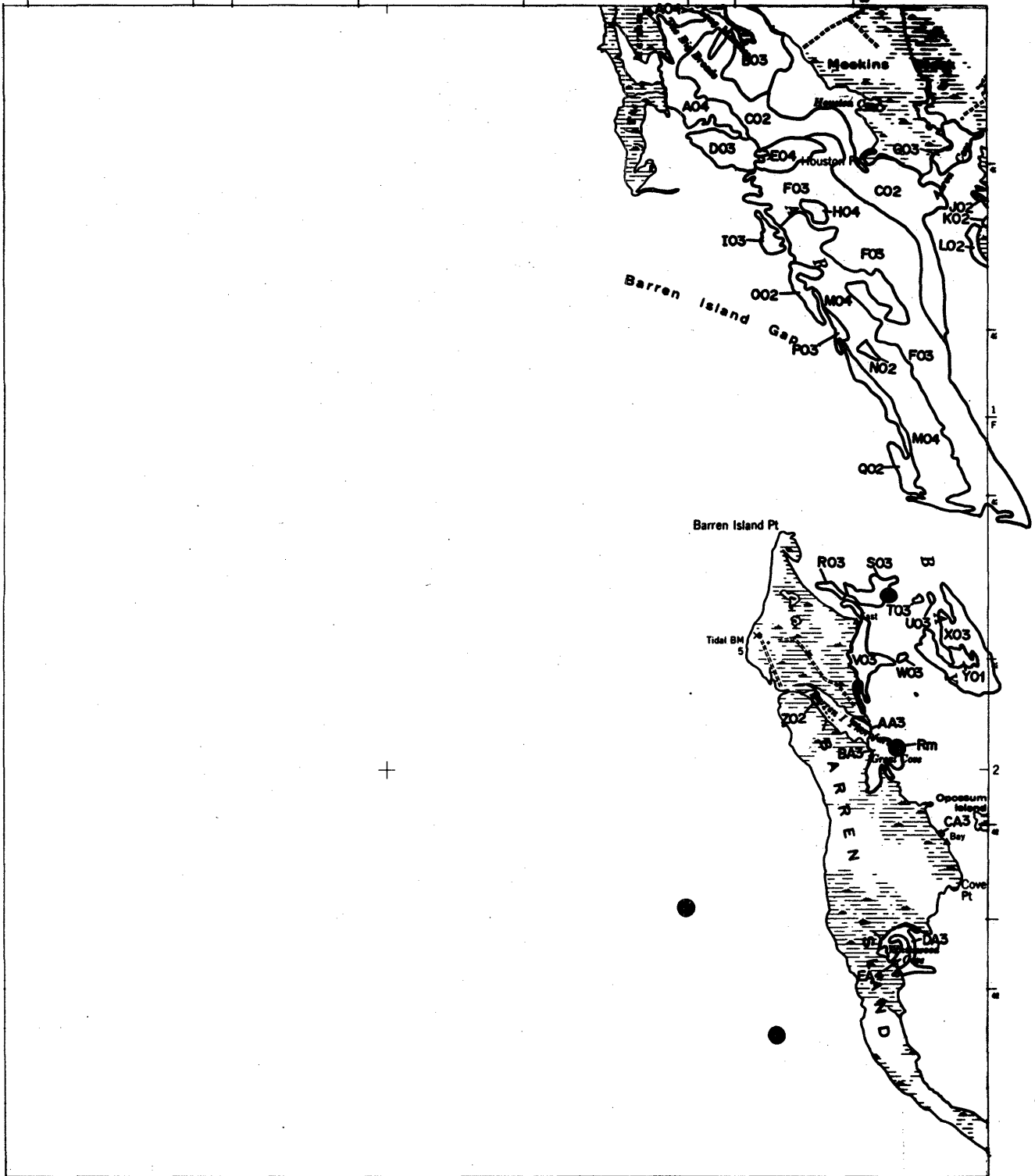
SOLOMONS ISLAND, MD

Southwest Quarter

# 71



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm <i>Zostera marina</i> (eelgrass)	Hv <i>Hydrilla verticillata</i> (hydrilla)	● MD-DNR Survey Station	■ MD Charter Boat Field Survey
Rm <i>Ruppia maritima</i> (widgeon grass)	Hd <i>Heteranthera dubia</i> (water stargrass)	● Citizens Field Observation	▲ VIMS Field Survey
Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr <i>Potamogeton crispus</i> (curly pondweed)	◆ U.S.G.S.	
Ppf <i>Potamogeton perfoliatus</i> (redhead-grass)	Cd <i>Ceratophyllum demersum</i> (coontail)		
Ppc <i>Potamogeton pectinatus</i> (sago pondweed)	Ppu <i>Potamogeton pusillus</i> (slender pondweed)		
Zp <i>Zannichella palustris</i> (horned pondweed)	Ngu <i>Najas guadalupensis</i> (southern naiad)		
N <i>Najas spp.</i> (naiad)	Ngr <i>Najas gracillima</i> (naiad)		
Ec <i>Elodea canadensis</i> (common elodea)	C <i>Chara sp.</i> (muskgrass)		
Va <i>Vallisneria spiralis</i> (wild celery)			

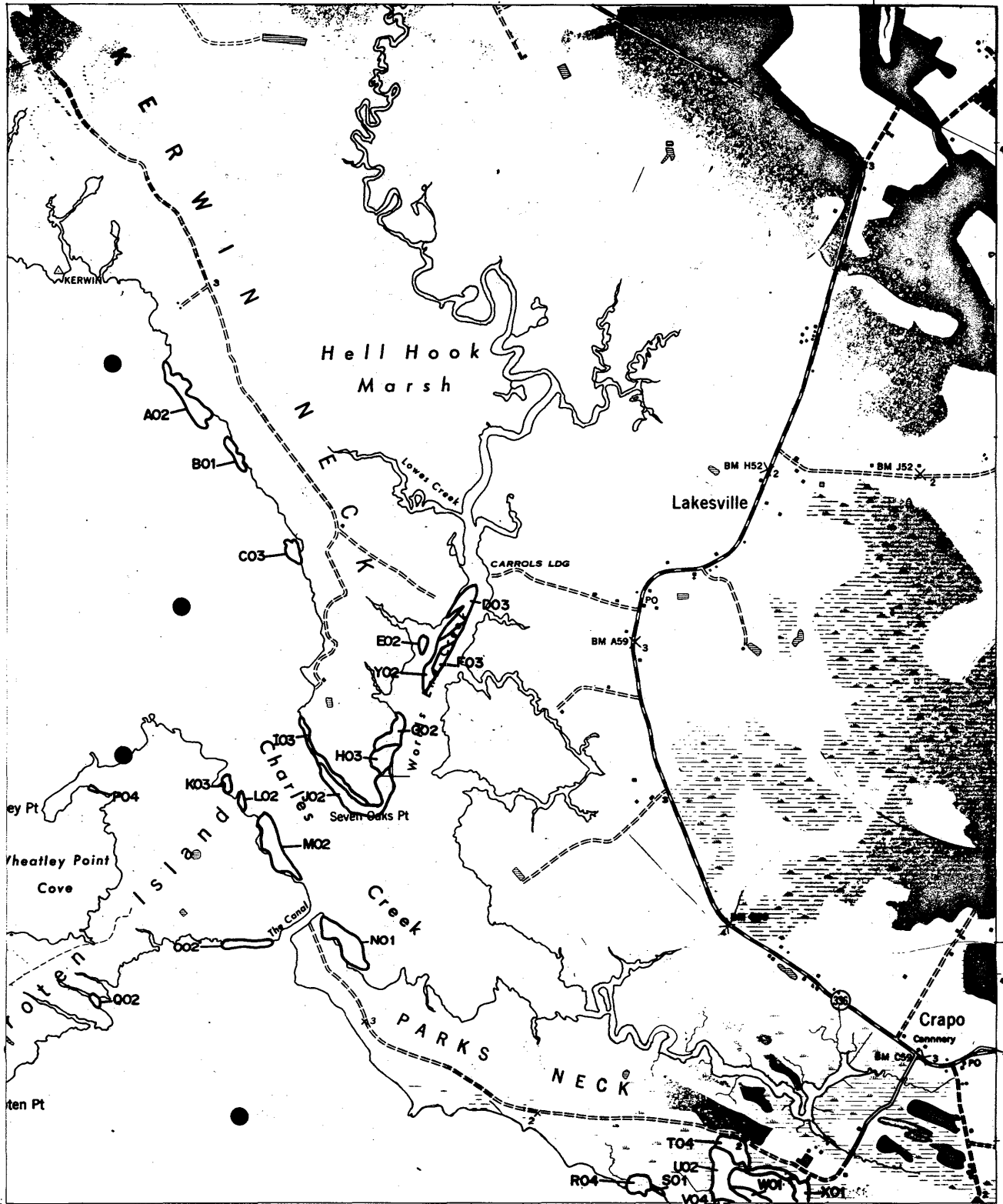
SCALE 1:12,000

**BARREN ISLAND, MD**  
 Northeast Quarter  
 # 72





# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichella palustris</i> (horned pondweed)	Ngu	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas spp.</i> (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara sp.</i> (muskgrass)
Va	<i>Vallisneria americana</i> (wild celery)		

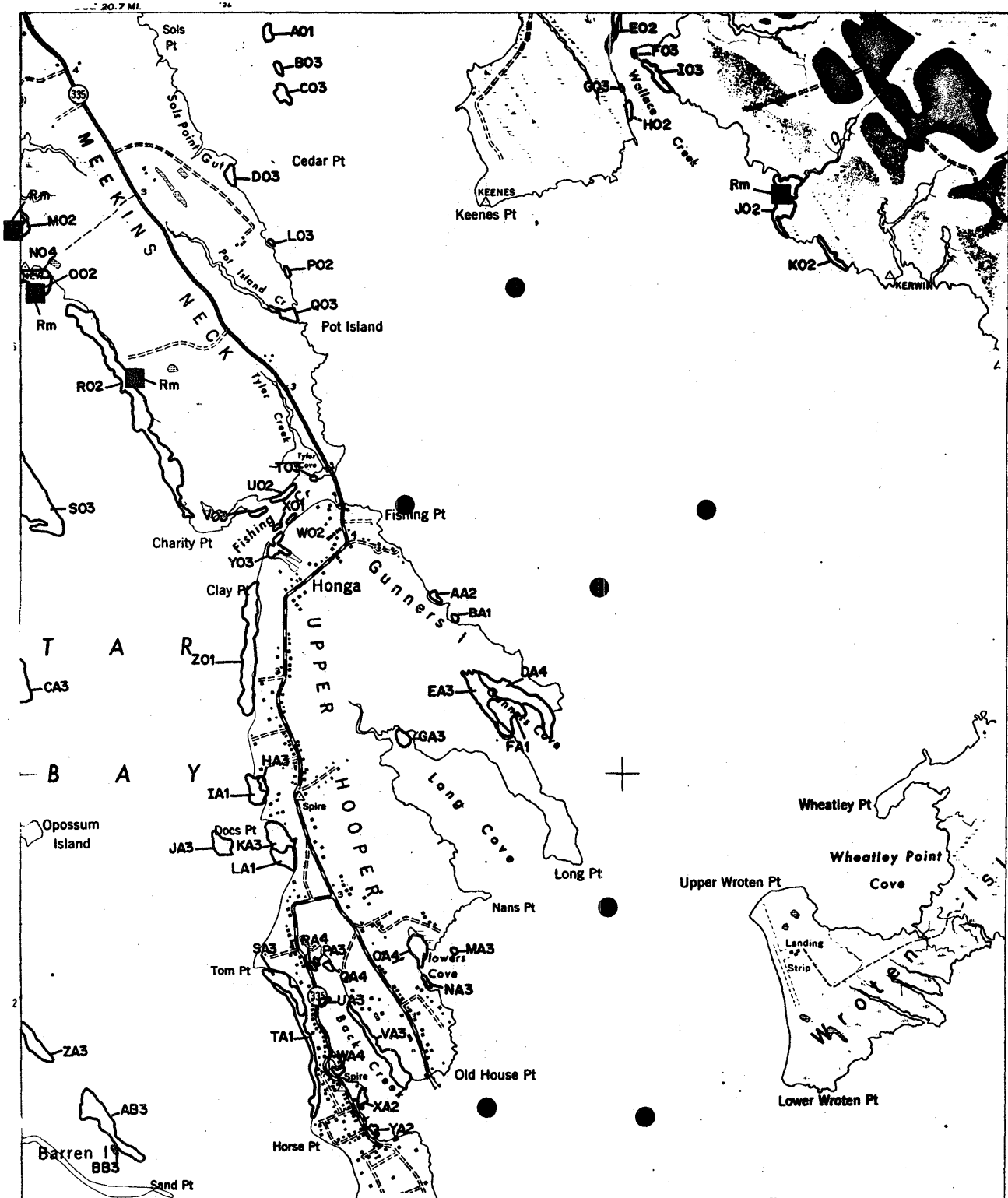
  

●	MD-DNR Survey Station
■	MD Charter Boat Field Survey
●	Citizens Field Observation
▲	VIMS Field Survey
◆	U.S.G.S.

**HONGA, MD**  
 Northeast Quarter  
 # 73



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

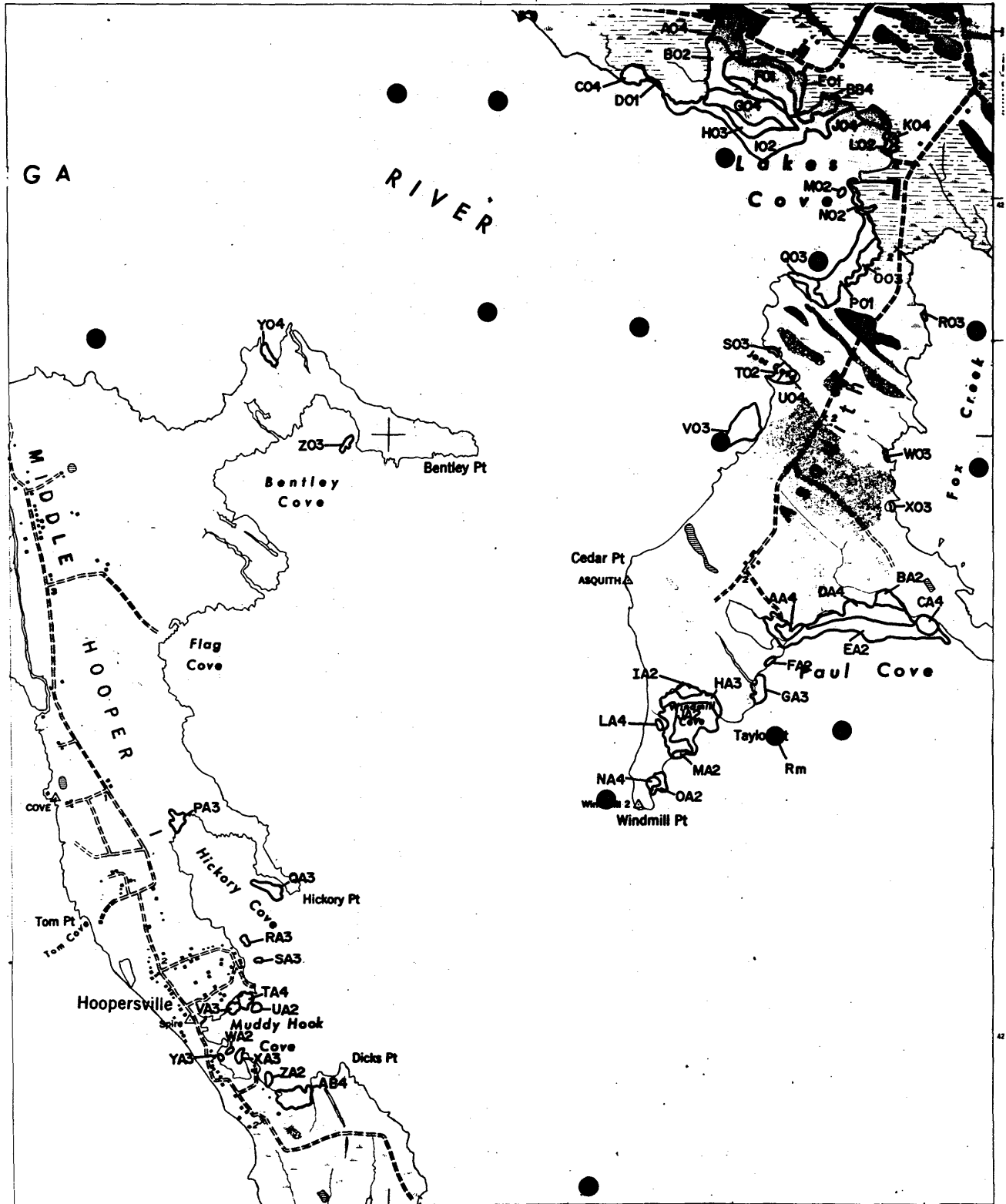
0 1 MILE

0 1 KILOMETER

**HONGA, MD**  
Northwest Quarter  
# 73



# SUBMERGED AQUATIC VEGETATION 1985



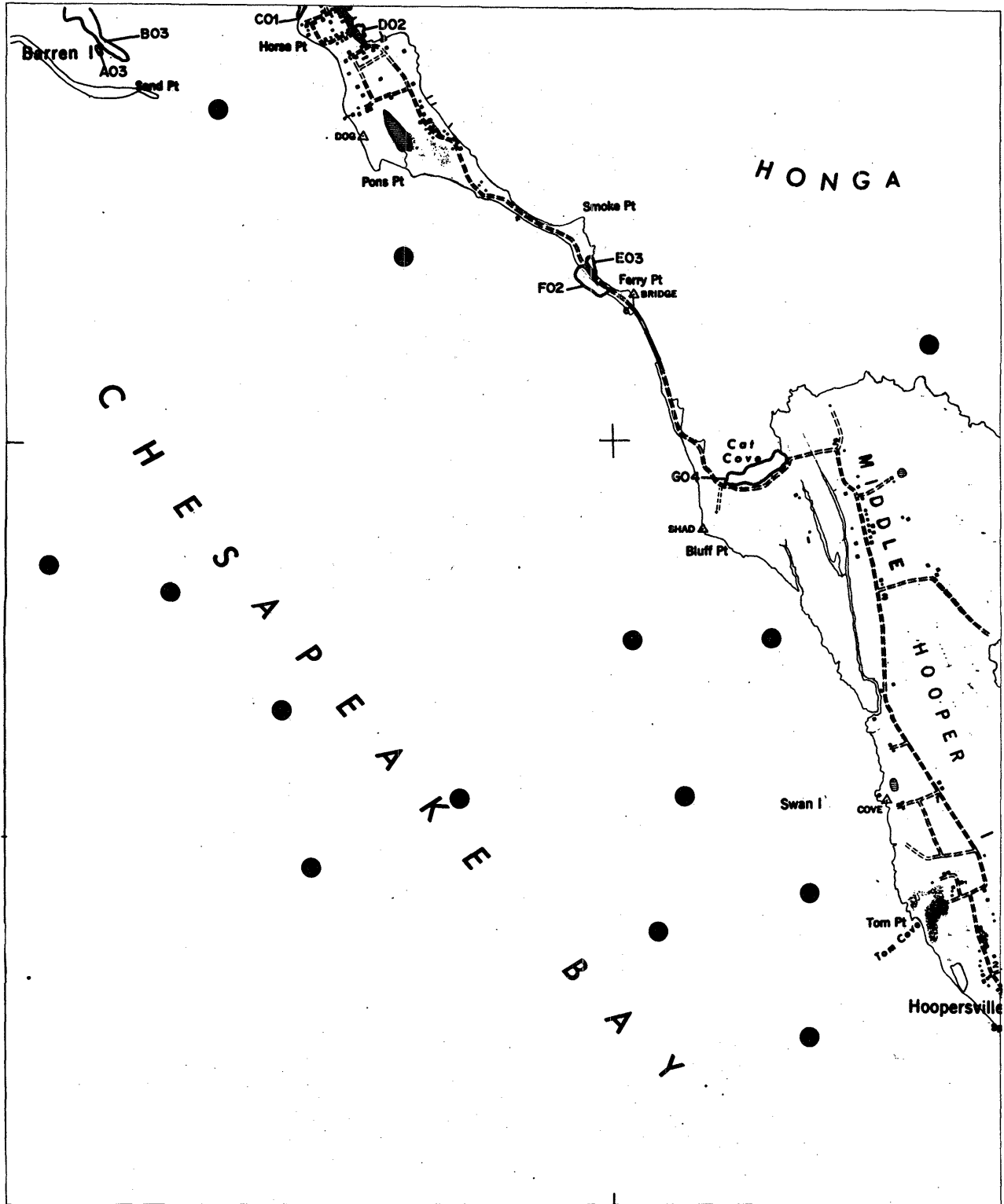
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngd	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

**HONGA, MD**  
**Southeast Quarter**  
**# 73**



# SUBMERGED AQUATIC VEGETATION 1985



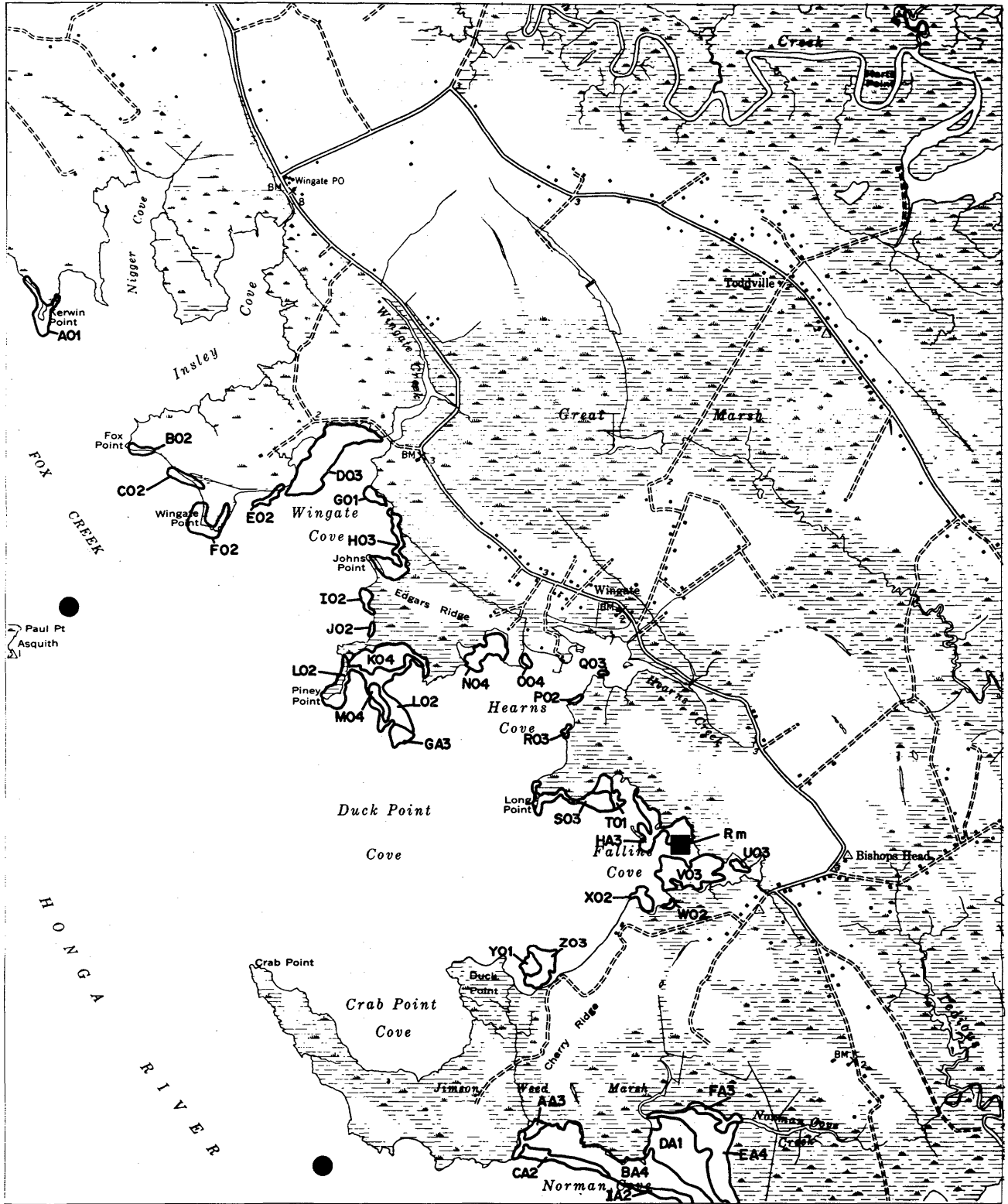
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

**HONGA, MD**  
**Southwest Quarter**  
**# 73**



# SUBMERGED AQUATIC VEGETATION 1985



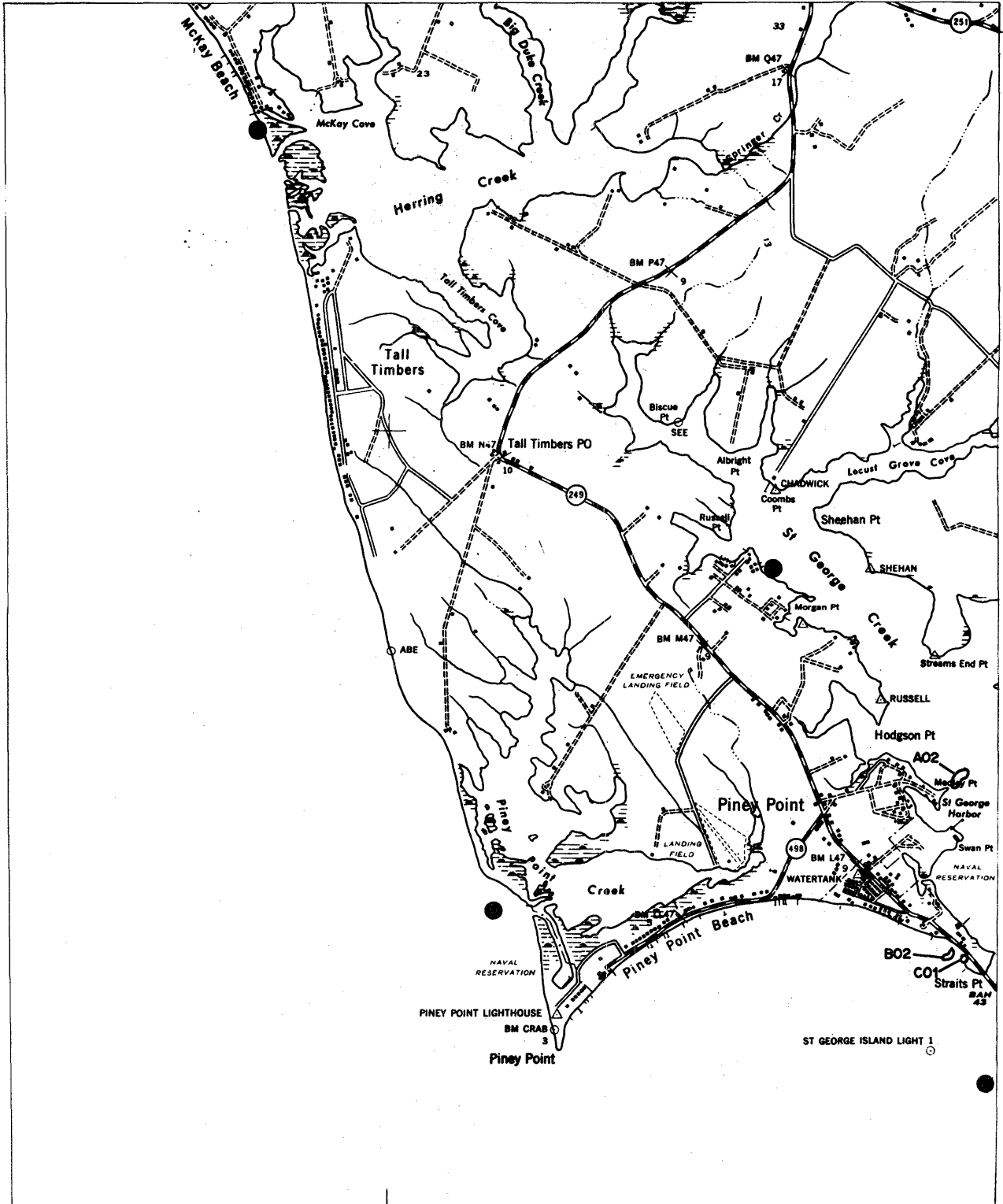
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngd	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

WINGATE, MD  
Southwest Quarter  
# 74



# SUBMERGED AQUATIC VEGETATION 1985



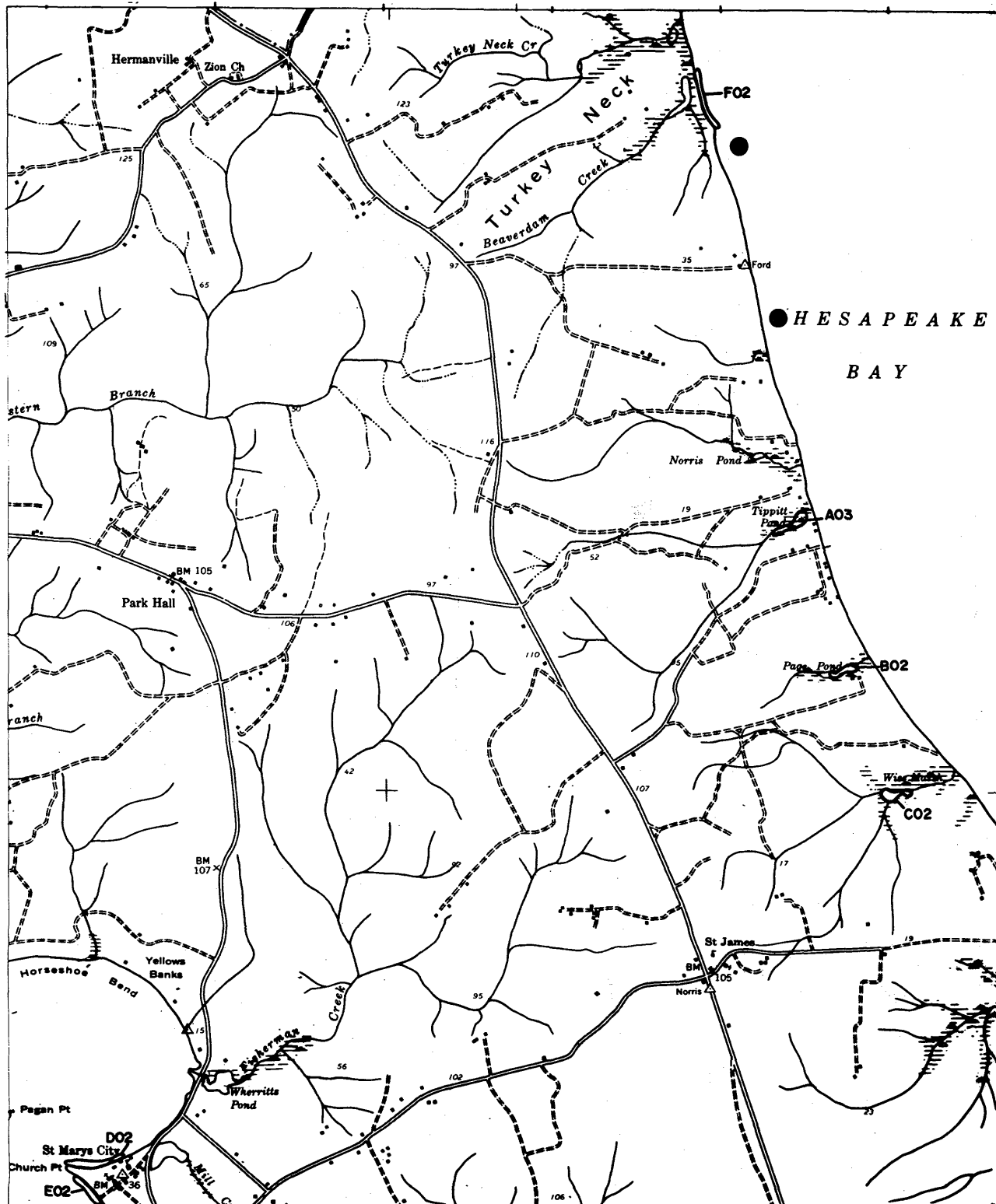
SPECIES		↑	SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)		●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)		■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)		●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)		▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)		◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)			
N	<i>Najas</i> spp. (naiad)			
Ec	<i>Elodea canadensis</i> (common elodea)			
Va	<i>Vallisneria americana</i> (wild celery)			
Hv	<i>Hydrilla verticillata</i> (hydrilla)			
Hd	<i>Heteranthera dubia</i> (water stargrass)			
Pcr	<i>Potamogeton crispus</i> (curly pondweed)			
Cd	<i>Ceratophyllum demersum</i> (coontail)			
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)			
Ngu	<i>Najas guadalupensis</i> (southern naiad)			
Ngr	<i>Najas gracillima</i> (naiad)			
C	<i>Chara</i> sp. (muskgrass)			

SCALE 1:12,000

**PINEY POINT, MD-VA**  
**Southeast Quarter**  
**# 79**



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria spiralis</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngd	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

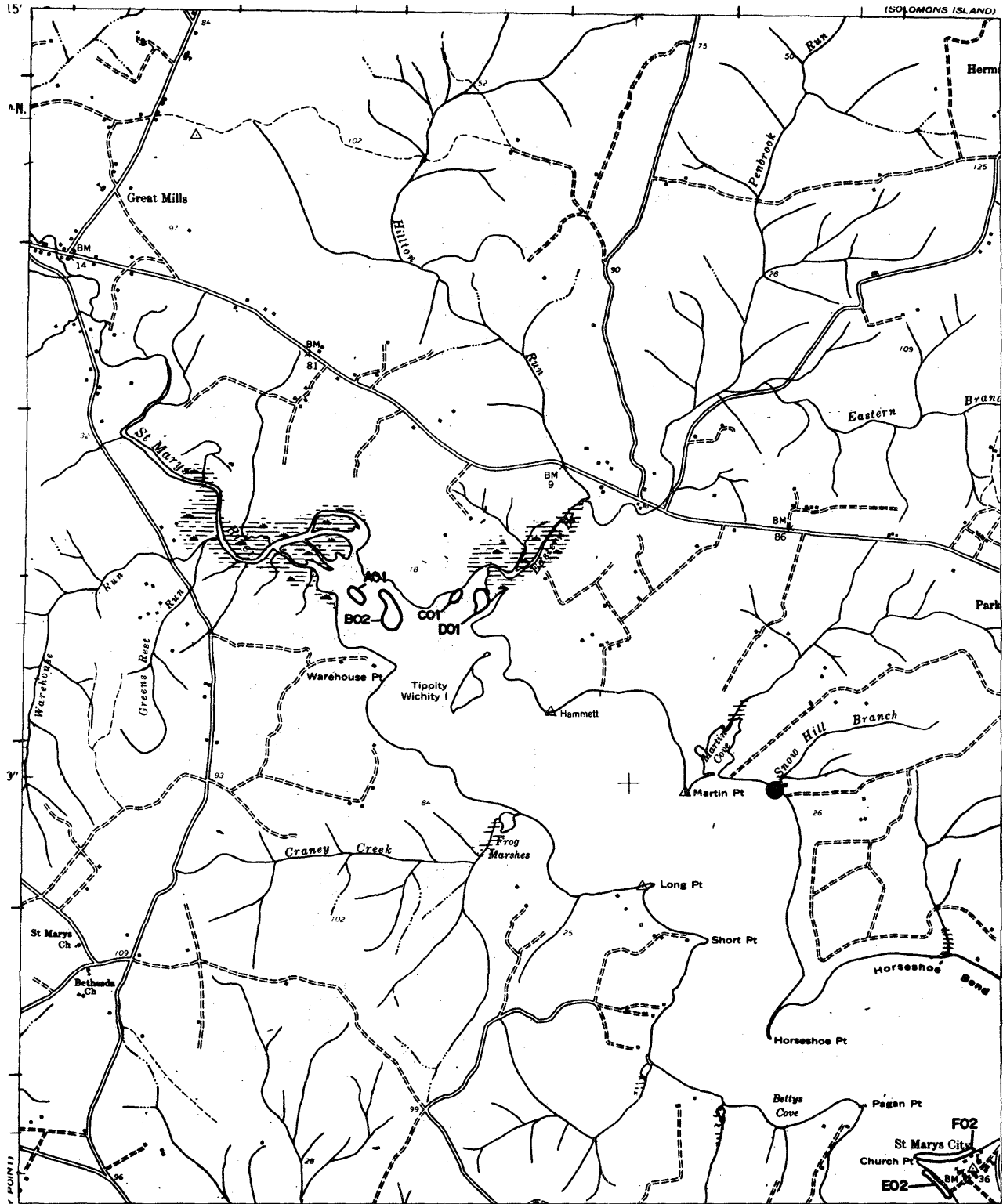
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**ST. MARY'S CITY, MD**  
Northeast Quarter

# 80



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas spp.</i> (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara sp.</i> (muskgrass)		

SCALE 1:12,000  
0 1 2 3 4 5 MILE  
0 1 2 3 4 5 KILOMETER

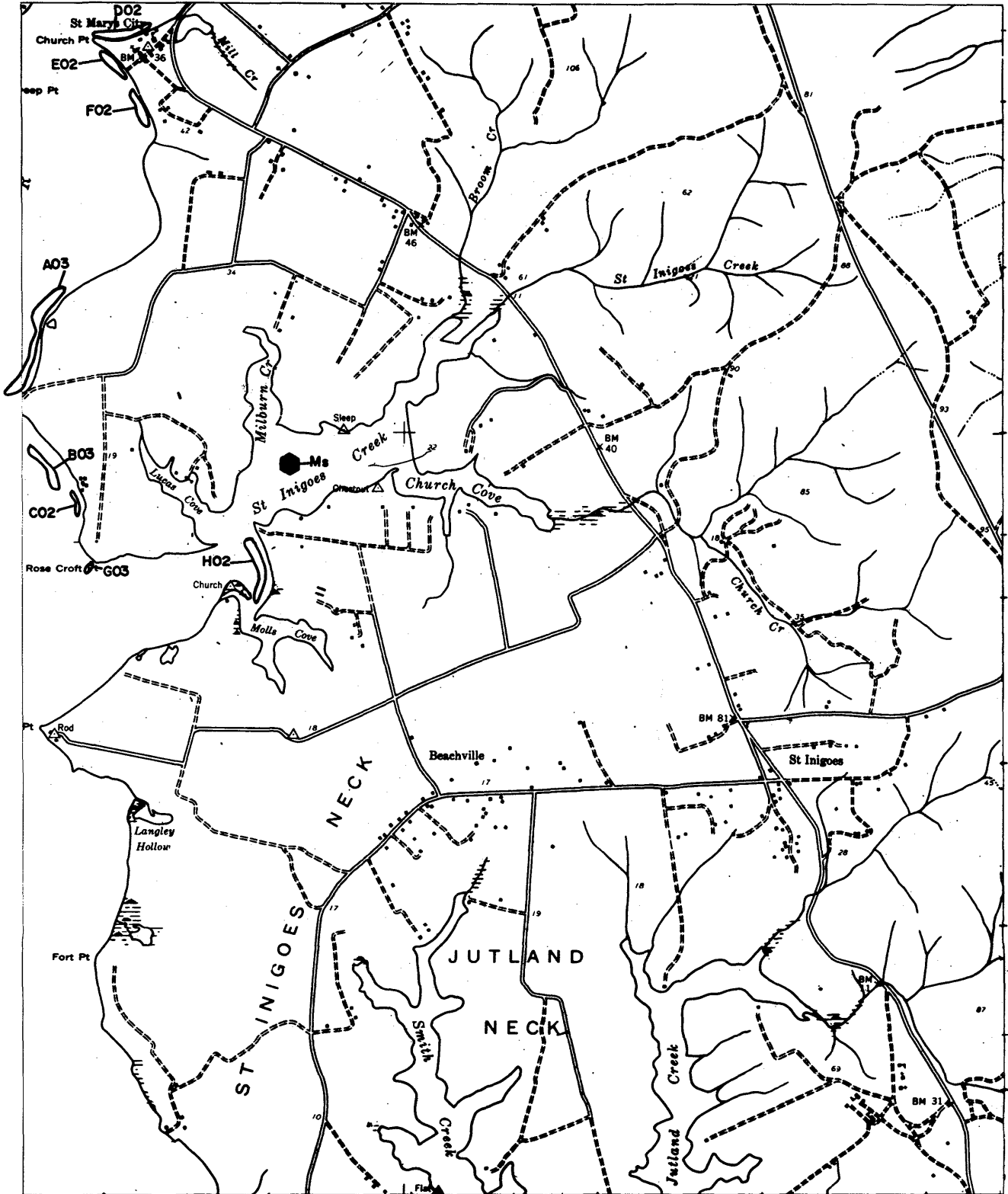
ST. MARY'S CITY, MD  
Northwest Quarter

# 80





# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass) Rm <i>Ruppia maritima</i> (widgeon grass) Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil) Ppf <i>Potamogeton perfoliatus</i> (redhead-grass) Ppc <i>Potamogeton pectinatus</i> (sago pondweed) Zp <i>Zannichellia palustris</i> (horned pondweed) N <i>Najas</i> spp. (naiad) Ec <i>Elodea canadensis</i> (common elodea) Va <i>Vallisneria americana</i> (wild celery)	Hv <i>Hydrilla verticillata</i> (hydrilla) Hd <i>Heteranthera dubia</i> (water stargrass) Pcr <i>Potamogeton crispus</i> (curly pondweed) Cd <i>Ceratophyllum demersum</i> (coontail) Ppu <i>Potamogeton pusillus</i> (slender pondweed) Ngu <i>Najas guadalupensis</i> (southern naiad) Ngr <i>Najas gracillima</i> (naiad) C <i>Chara</i> sp. (muskgrass)	● MD-DNR Survey Station ■ MD Charter Boat Field Survey ● Citizens Field Observation ▲ VIMS Field Survey ◆ U.S.G.S.

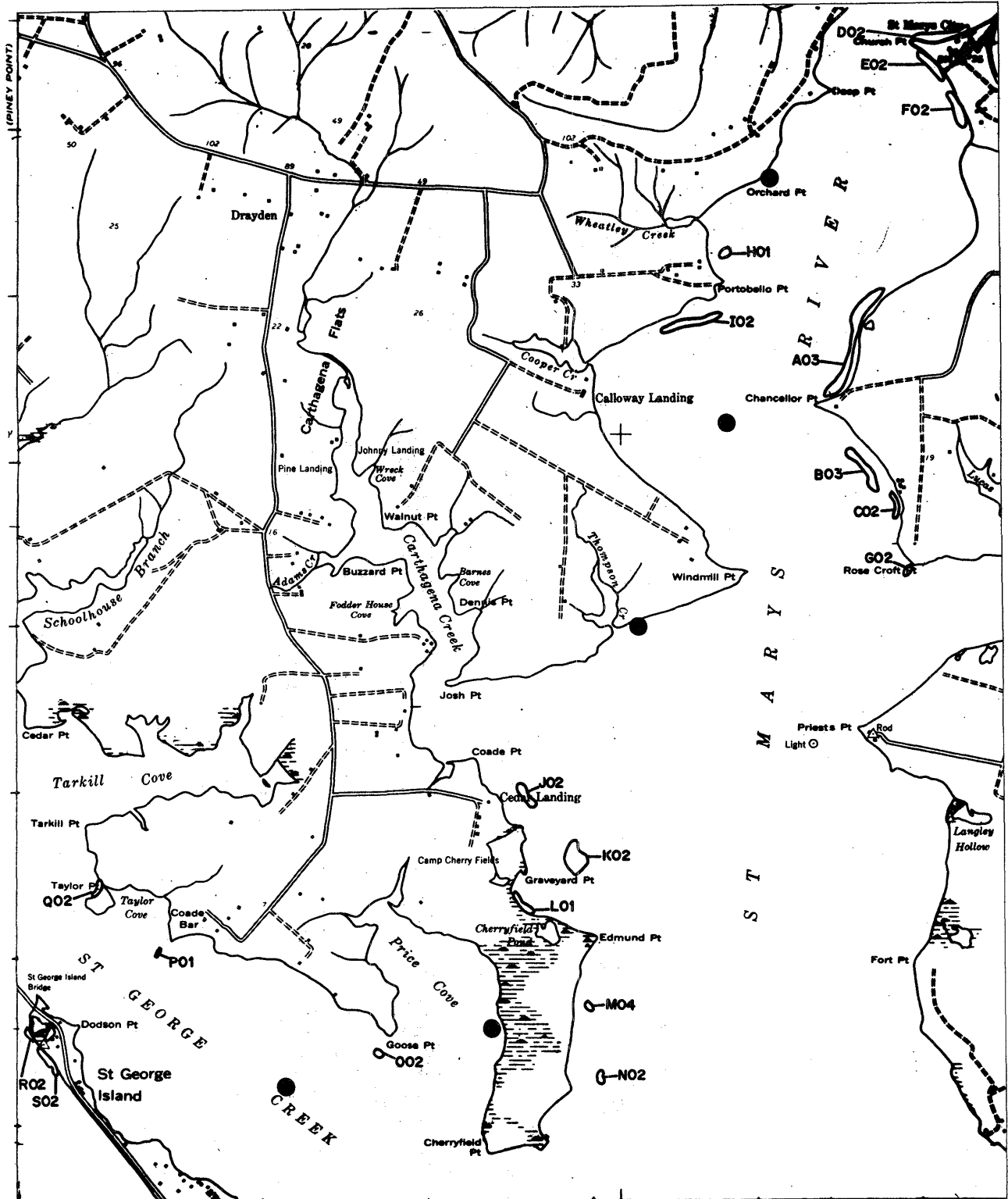
SCALE 1:12,000

**ST. MARY'S CITY, MD**  
Southeast Quarter

# 80



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass)	Hv <i>Hydrilla verticillata</i> (hydrilla)	● MD-DNR Survey Station
Rm <i>Ruppia maritima</i> (widgeon grass)	Hd <i>Heteranthera dubia</i> (water stargrass)	■ MD Charter Boat Field Survey
Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr <i>Potamogeton crispus</i> (curly pondweed)	● Citizens Field Observation
Ppf <i>Potamogeton perfoliatus</i> (redhead-grass)	Cd <i>Ceratophyllum demersum</i> (coontail)	▲ VMS Field Survey
Ppc <i>Potamogeton pectinatus</i> (sago pondweed)	Ppu <i>Potamogeton pusillus</i> (slender pondweed)	◆ U.S.G.S.
Zp <i>Zannichella palustris</i> (horned pondweed)	Ngu <i>Najas guadalupensis</i> (southern naiad)	
N <i>Najas</i> spp. (naiad)	Ngr <i>Najas gracillima</i> (naiad)	
Ec <i>Elodea canadensis</i> (common elodea)	C <i>Chara</i> sp. (muskgrass)	
Va <i>Vallisneria americana</i> (wild celery)		

SCALE 1:12,000

ST. MARY'S CITY, MD

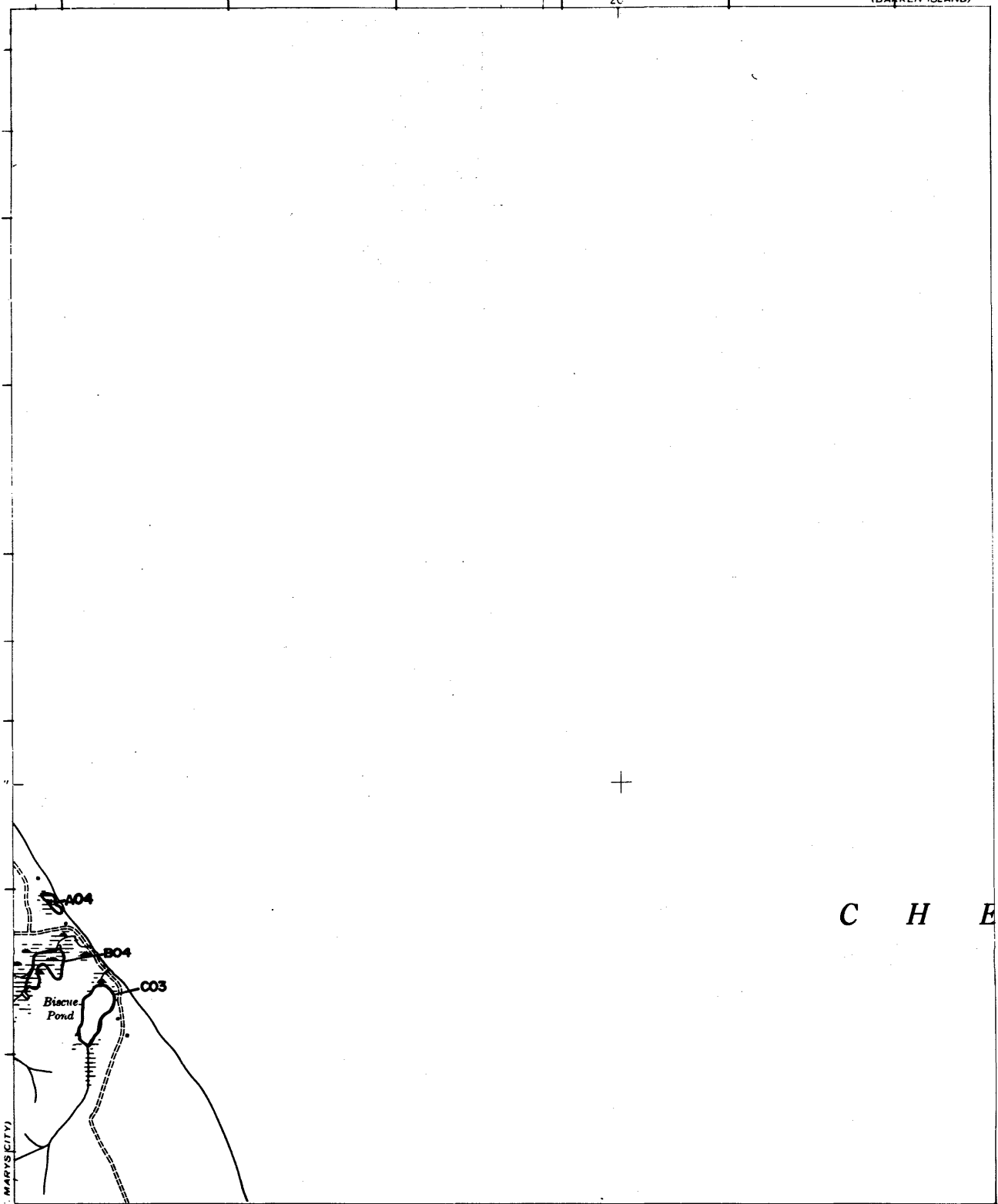
Southwest Quarter

# 80



# SUBMERGED AQUATIC VEGETATION 1985

(BAREN ISLAND)



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	⬢	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
NgU	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

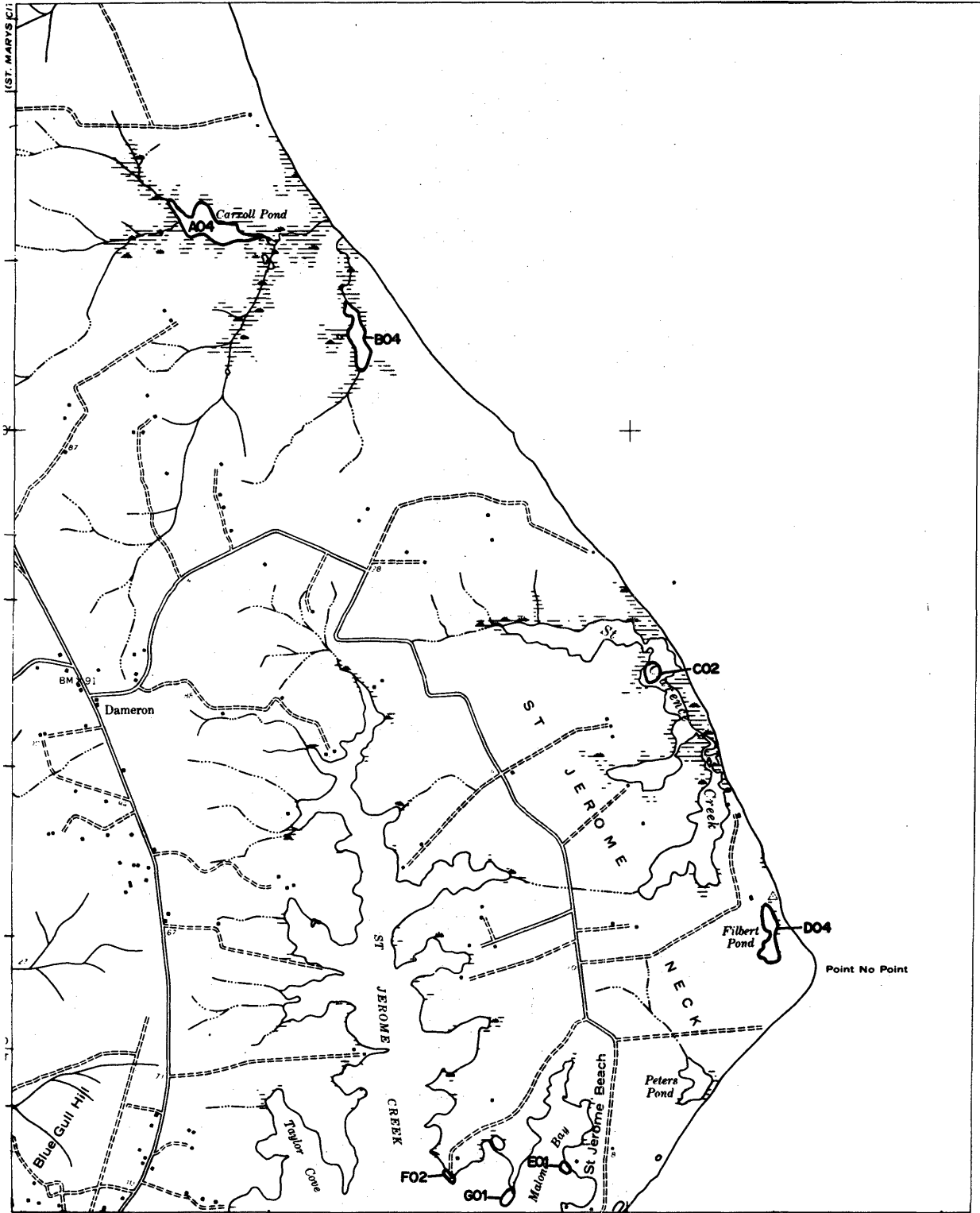
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0 1 2 3 4 5 MILE  
0 1 2 3 4 5 KILOMETER

POINT NO POINT, MD  
Northwest Quarter  
# 81



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

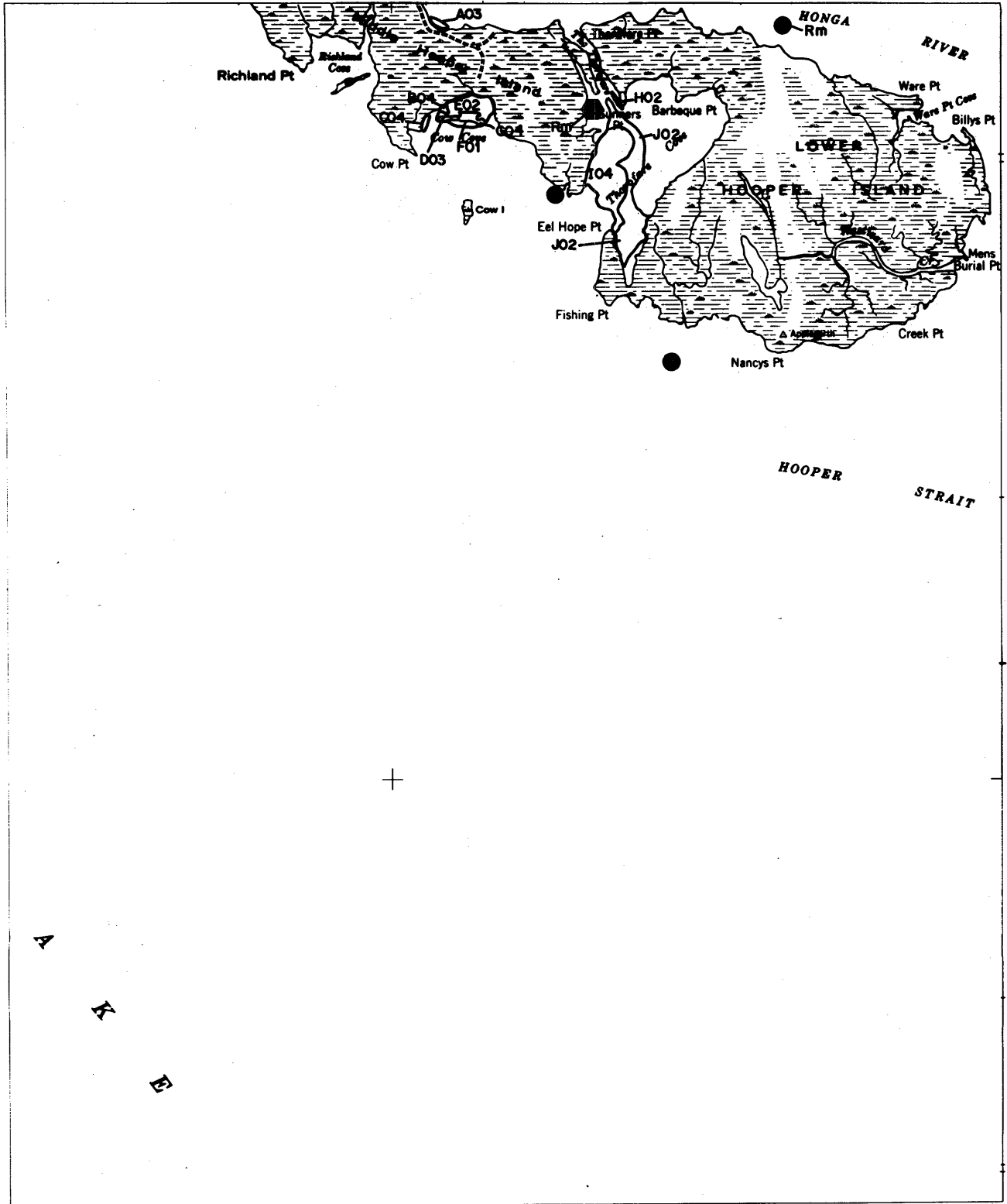
POINT NO POINT, MD

Southwest Quarter

# 81



# SUBMERGED AQUATIC VEGETATION 1985



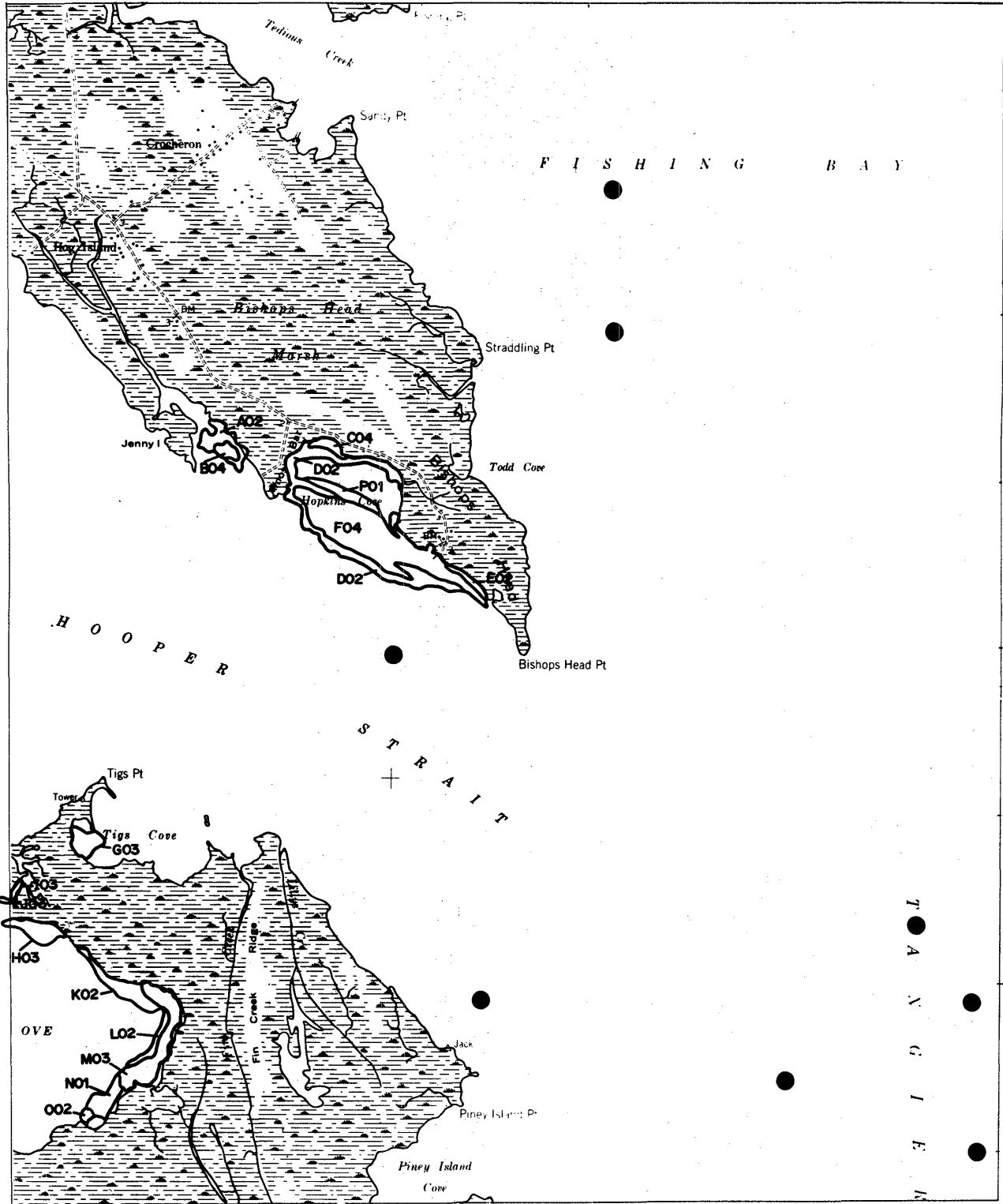
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Pdc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S. ..
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
PCR	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngv	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

**RICHLAND POINT, MD**  
 Northeast Quarter  
 # 82



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

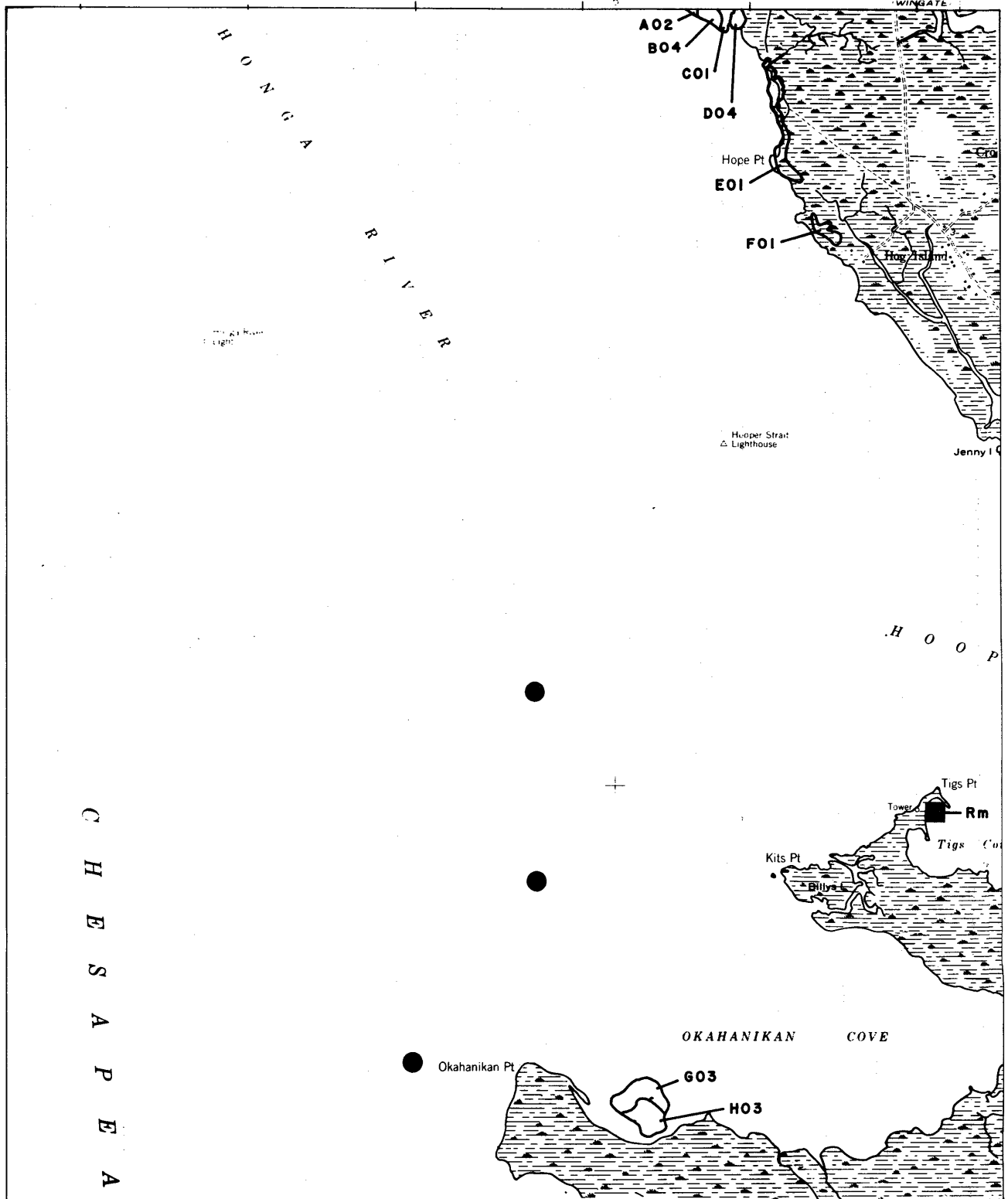
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**BLOODSWORTH ISLAND, MD**  
**Northeast Quarter**

# 83



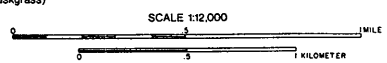
# SUBMERGED AQUATIC VEGETATION 1985



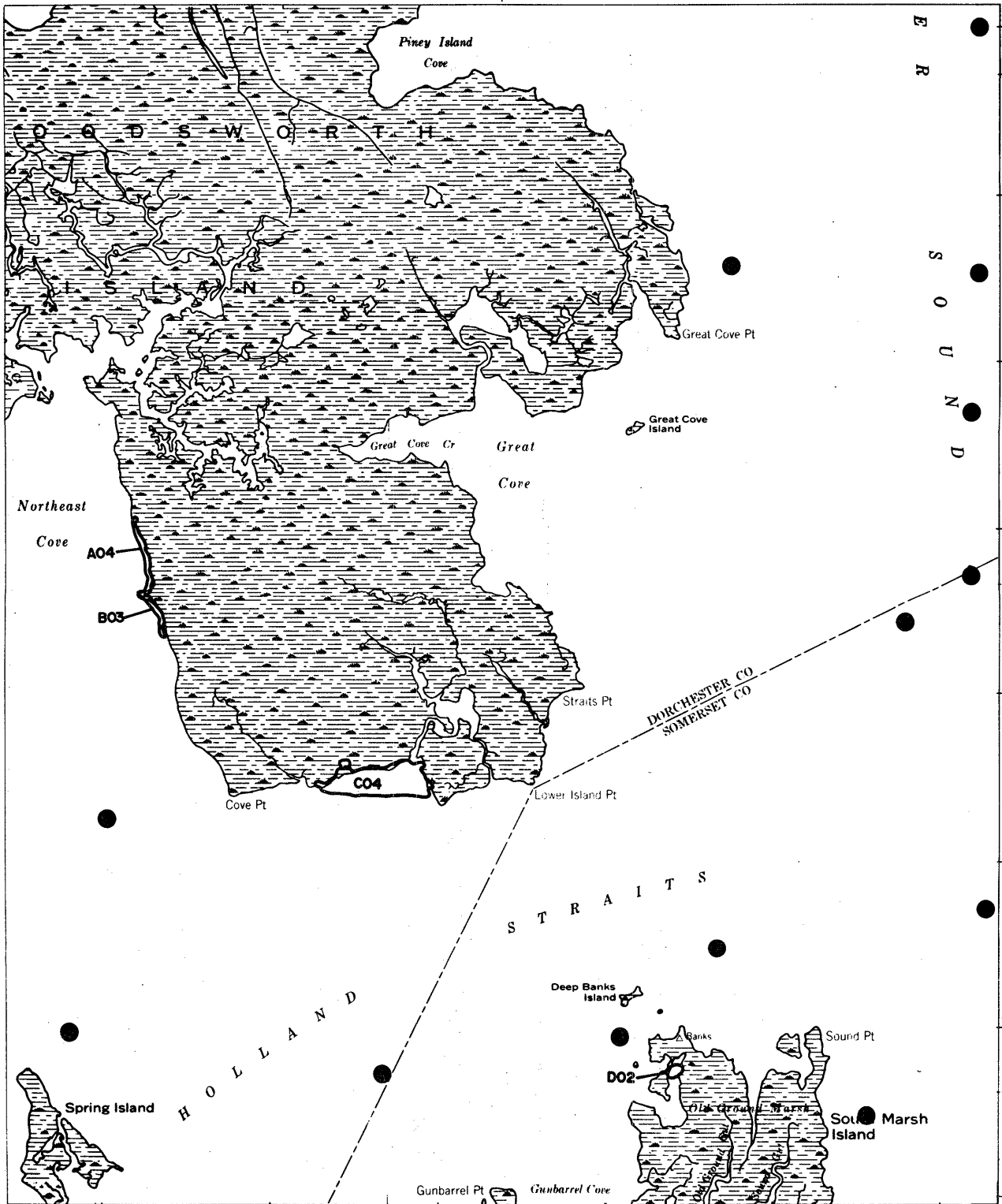
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

**BLOODSWORTH  
ISLAND, MD  
Northwest Quarter**

# 83



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass)	Hv <i>Hydrilla verticillata</i> (hydrilla)	● MD-DNR Survey Station
Rm <i>Ruppia maritima</i> (widgeon grass)	Hd <i>Heteranthera dubia</i> (water stargrass)	■ MD Charter Boat Field Survey
Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr <i>Potamogeton crispus</i> (curly pondweed)	◆ Citizens Field Observation
Ppl <i>Potamogeton perfoliatus</i> (redhead-grass)	Cd <i>Ceratophyllum demersum</i> (coontail)	▲ VIMS Field Survey
Ppc <i>Potamogeton pectinatus</i> (sago pondweed)	Ppu <i>Potamogeton pusillus</i> (slender pondweed)	◆ U.S.G.S.
Zp <i>Zannichella palustris</i> (horned pondweed)	Ngv <i>Najas guadalupensis</i> (southern naiad)	
N <i>Najas</i> spp. (naiad)	Ngr <i>Najas gracillima</i> (naiad)	
Ec <i>Elodea canadensis</i> (common elodea)	C <i>Chara</i> sp. (muskgrass)	
Va <i>Vallisneria americana</i> (wild celery)		

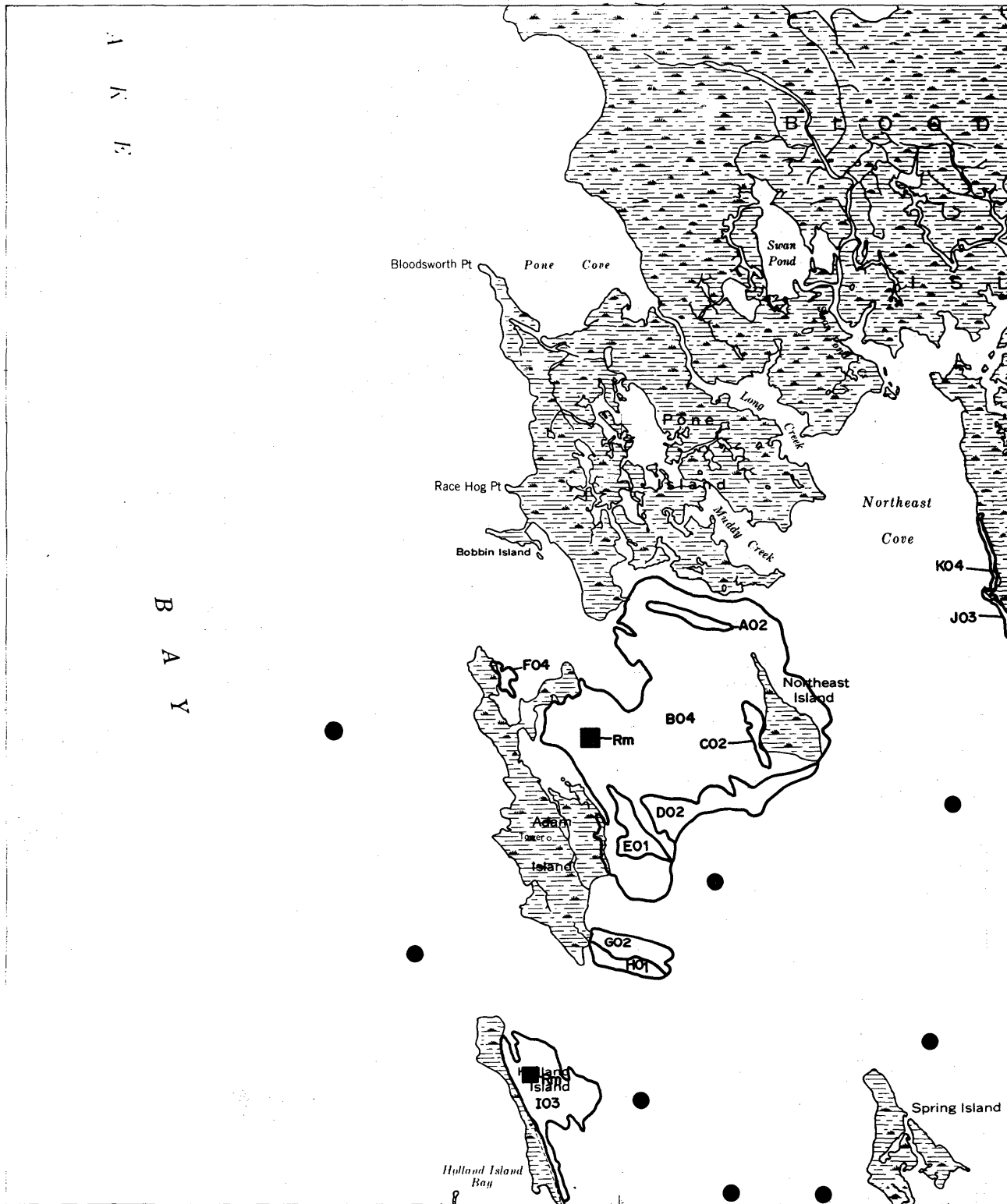
SCALE 1:12,000

**BLOODSWORTH ISLAND, MD**  
**Southeast Quarter**  
**# 83**





# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ng	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracilima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

**BLOODSWORTH ISLAND, MD**  
**Southwest Quarter**  
**# 83**



# SUBMERGED AQUATIC VEGETATION 1985



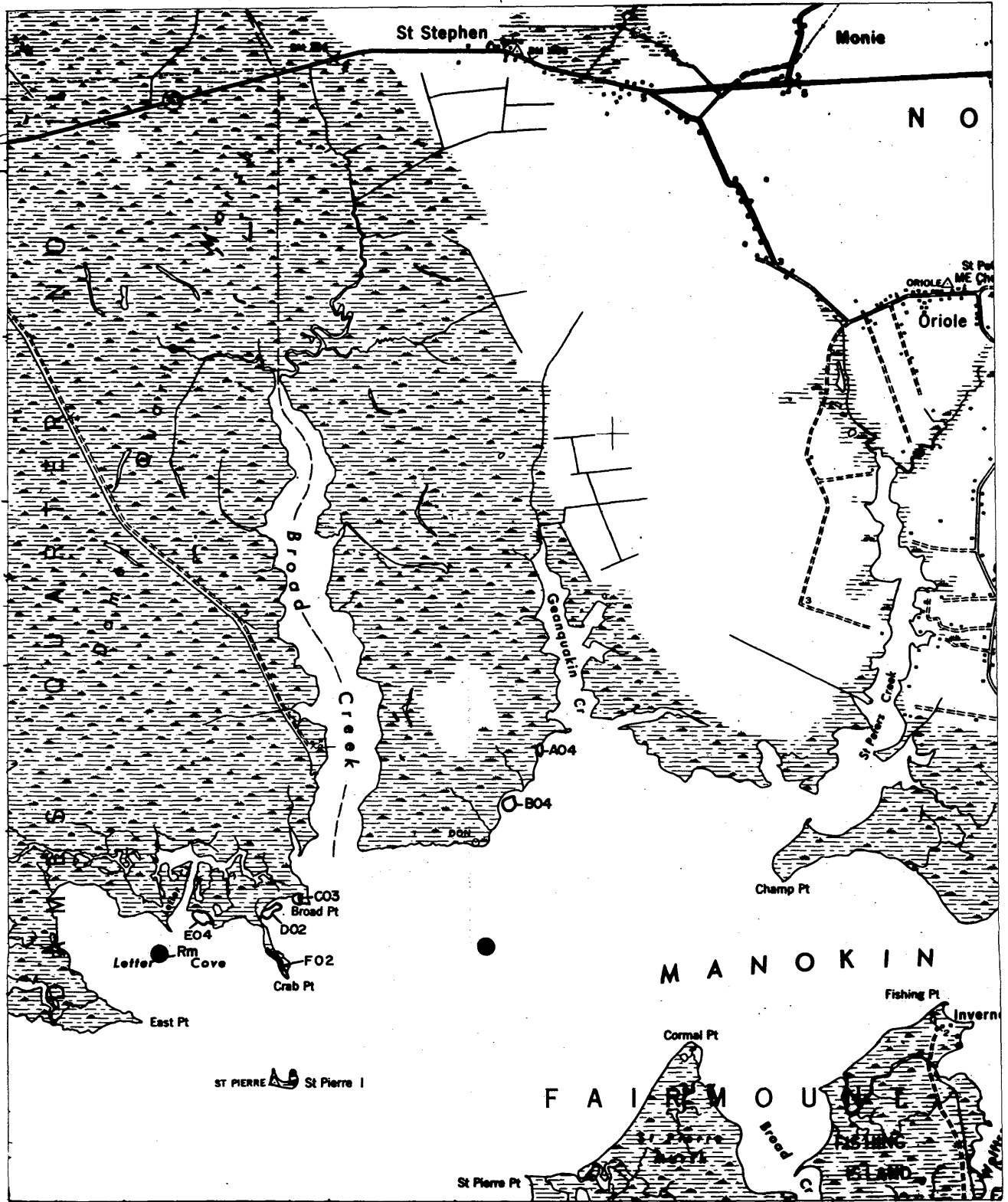
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pdfl	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskrass)		

SCALE 1:12,000

DEAL ISLAND, MD  
Southeast Quarter  
# 84



# SUBMERGED AQUATIC VEGETATION 1985



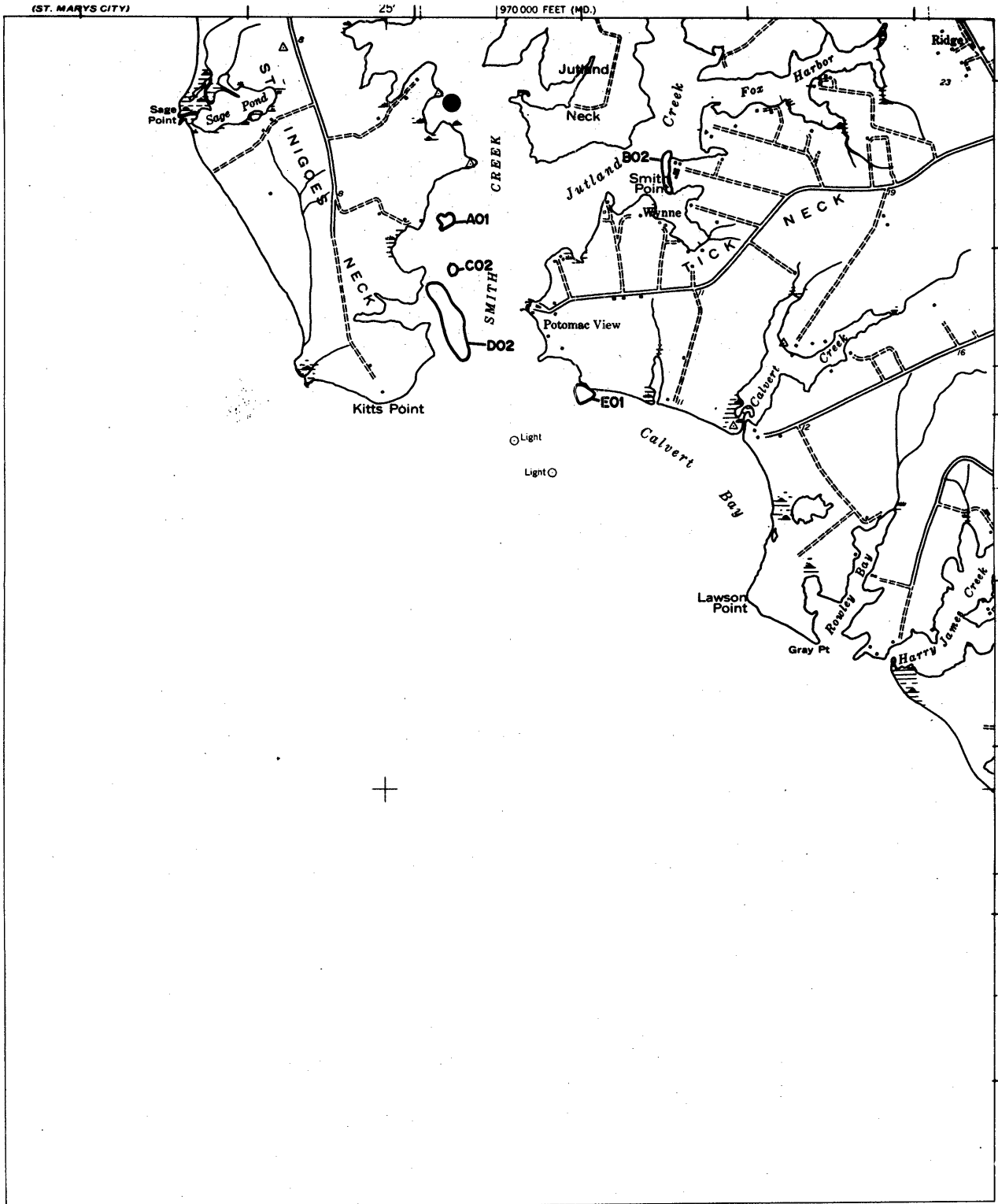
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	◆ Citizens Field Observation
Ppl	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichetia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

MONIE, MD  
Southwest Quarter  
# 85



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichellia palustris</i> (horned pondweed)	Ngu	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas spp.</i> (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara sp.</i> (muskgrass)
Va	<i>Vallisneria americana</i> (wild celery)		

●	MD-DNR Survey Station
■	MD Charter Boat Field Survey
●	Citizens Field Observation
▲	VIMS Field Survey
◆	U.S.G.S.

SCALE 1:12,000

**ST GEORGE ISLAND, MD**

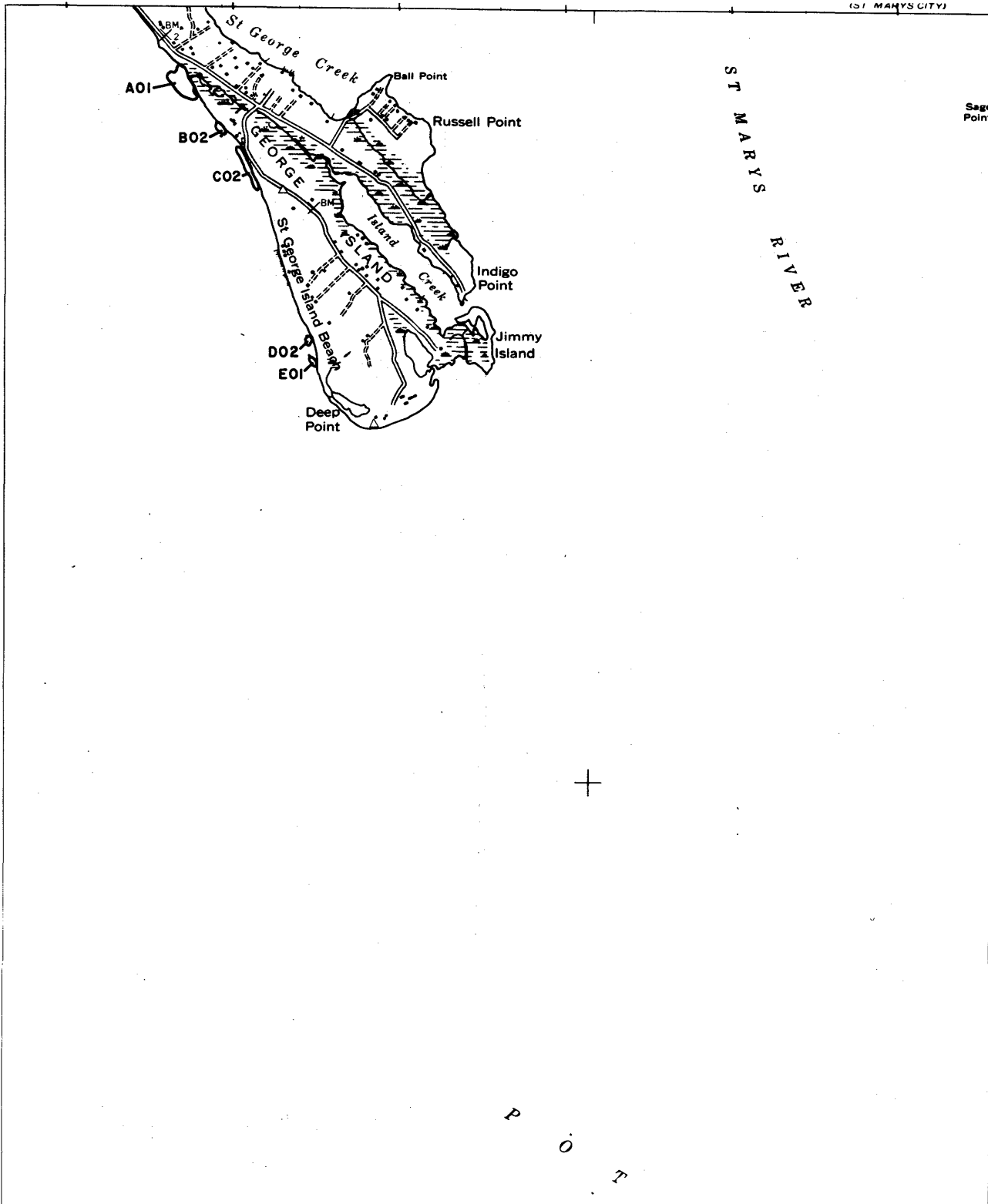
**Northeast Quarter**

**# 89**



# SUBMERGED AQUATIC VEGETATION 1985

(ST. MARYS CITY)



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

0 5 1 MILE  
0 5 1 KILOMETER

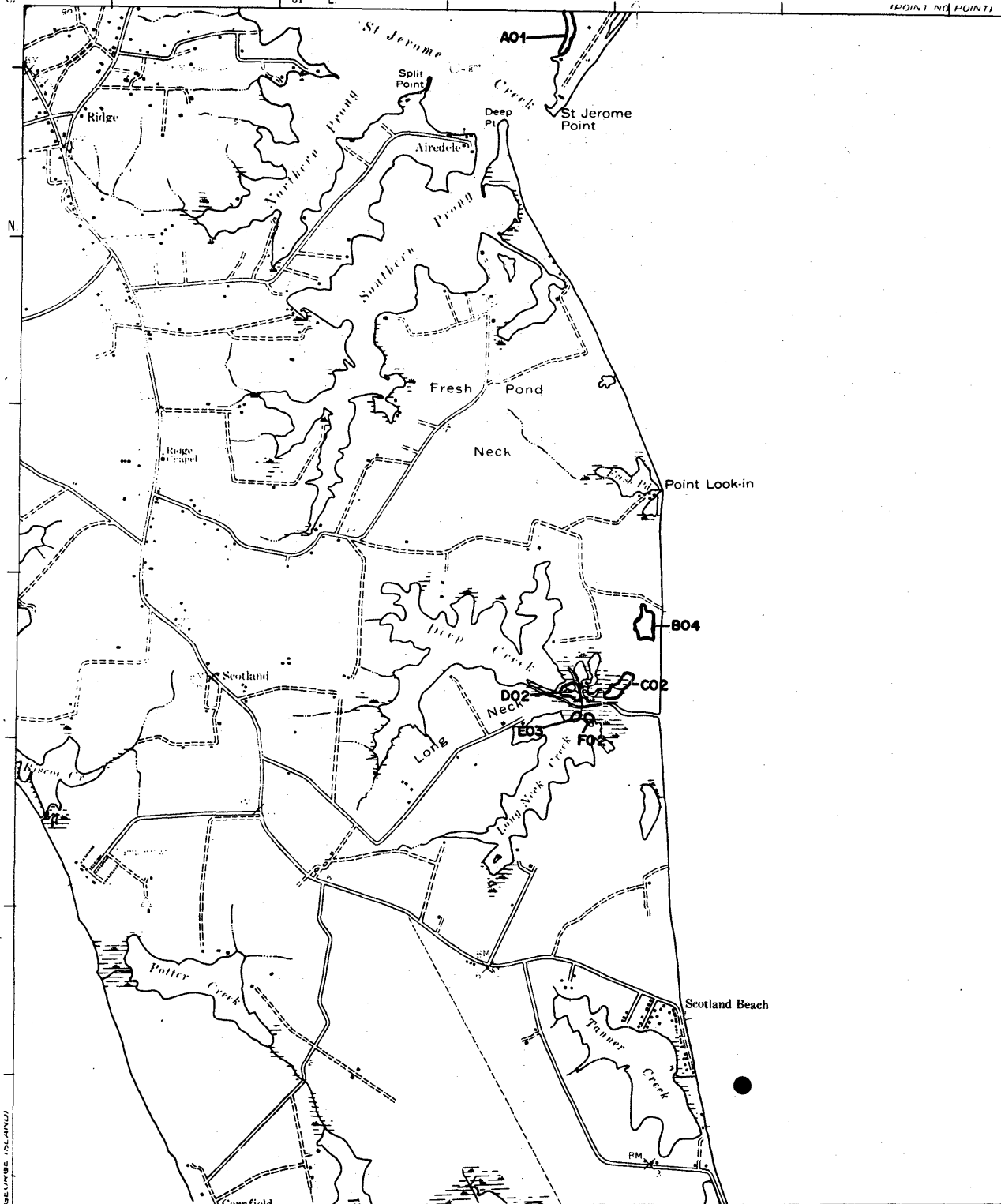
ST. GEORGE ISLAND, MD  
Northwest Quarter

# 89



# SUBMERGED AQUATIC VEGETATION 1985

(POINT NO POINT)

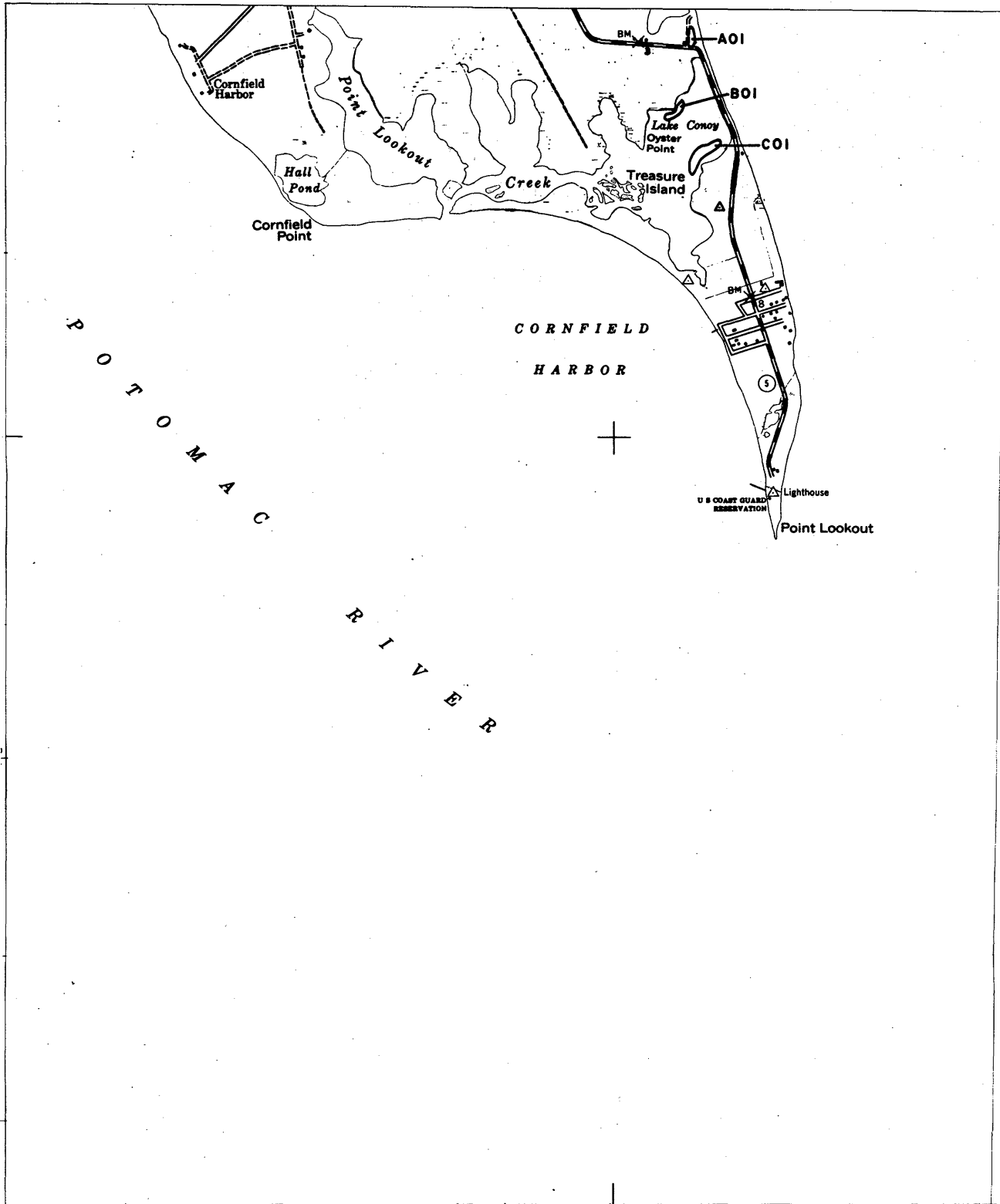


SPECIES		↑	SURVEY STATIONS		
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	Ngv	<i>Najas guadalupensis</i> (southern naiad)		
N	<i>Najas</i> spp. (naiad)	Ngr	<i>Najas gracillima</i> (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara</i> sp. (muskgrass)		
Va	<i>Vallisneria americana</i> (wild celery)				

POINT LOOKOUT, MD  
Northwest Quarter  
# 90



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		↑	SURVEY STATIONS		
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)	●	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	Ngd	<i>Najas guadalupensis</i> (southern naiad)		
N	<i>Najas</i> spp. (naiad)	Ngr	<i>Najas gracillima</i> (naiad)		
Ec	<i>Elydea canadensis</i> (common elodea)	C	<i>Chara</i> sp. (muskgrass)		
Va	<i>Vallisneria americana</i> (wild celery)				

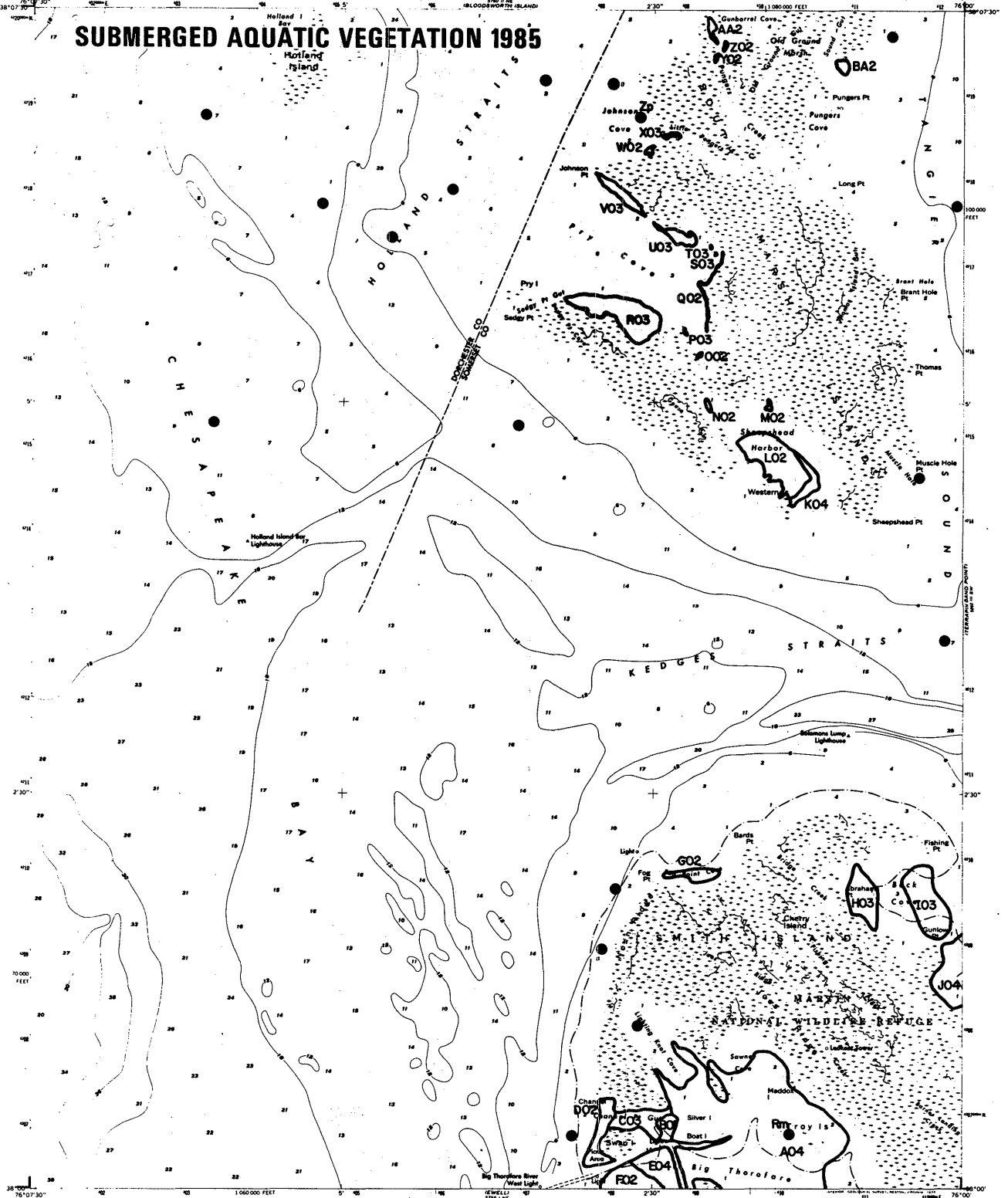
SCALE 1:12,000

**POINT LOOKOUT, MD**  
**Southwest Quarter**

# 90



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:24,000

ROAD CLASSIFICATION  
No roads or trails in this area

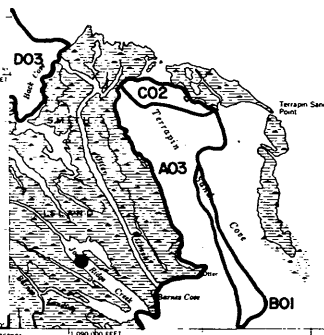
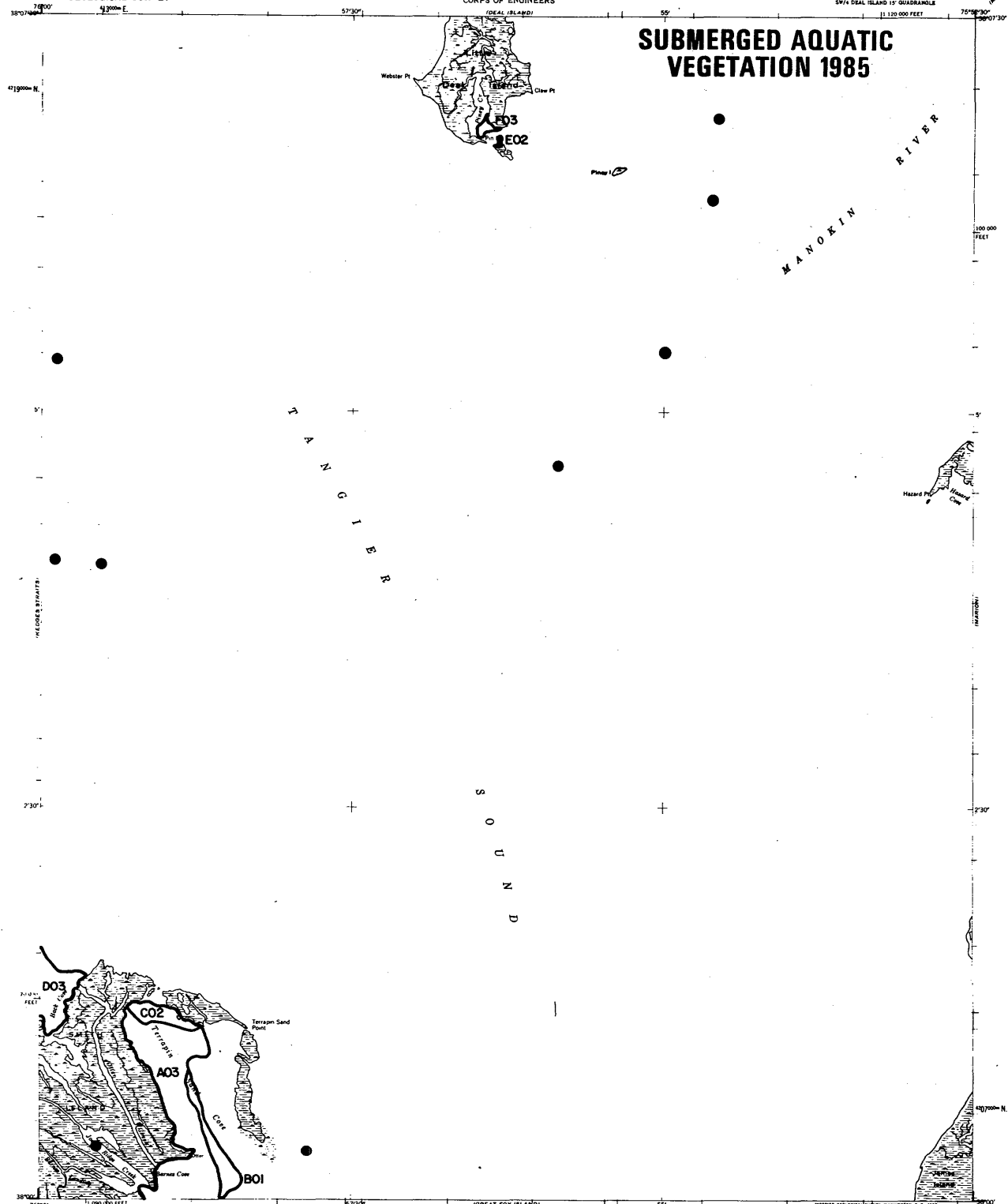
**KEDGES STRAITS, MD.** KEDGES STRAITS, MD. N1800-W7600/7.5  
91  
ANS 5760 1 ES V830

208

WIMS



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngd	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:24,000

1 MILE  
1 KILOMETER

ROAD CLASSIFICATION  
**TERRAPIN SAND POINT, MD.**  
N3800-W7552.5/7.5  
**92**

**VIMS**

# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm <i>Zostera marina</i> (eelgrass) Rm <i>Ruppia maritima</i> (widgeon grass) Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil) Ppf <i>Potamogeton perfoliatus</i> (redhead-grass) Ppc <i>Potamogeton pectinatus</i> (sago pondweed) Zp <i>Zannichellia palustris</i> (horned pondweed) N <i>Najas</i> spp. (naiad) Ec <i>Elodea canadensis</i> (common elodea) Va <i>Vallisneria americana</i> (wild celery)	Hv <i>Hydrilla verticillata</i> (hydrilla) Hd <i>Heteranthera dubia</i> (water stargrass) Pcr <i>Potamogeton crispus</i> (curly pondweed) Cd <i>Ceratophyllum demersum</i> (coontail) Ppu <i>Potamogeton pusillus</i> (slender pondweed) Ngu <i>Najas guadalupensis</i> (southern naiad) Ngr <i>Najas gracillima</i> (naiad) C <i>Chara</i> sp. (muskgrass)	● MD-DNR Survey Station ■ MD Charter Boat Field Survey ● Citizens Field Observation ▲ VIMS Field Survey ◆ U.S.G.S.

SCALE 1:12,000

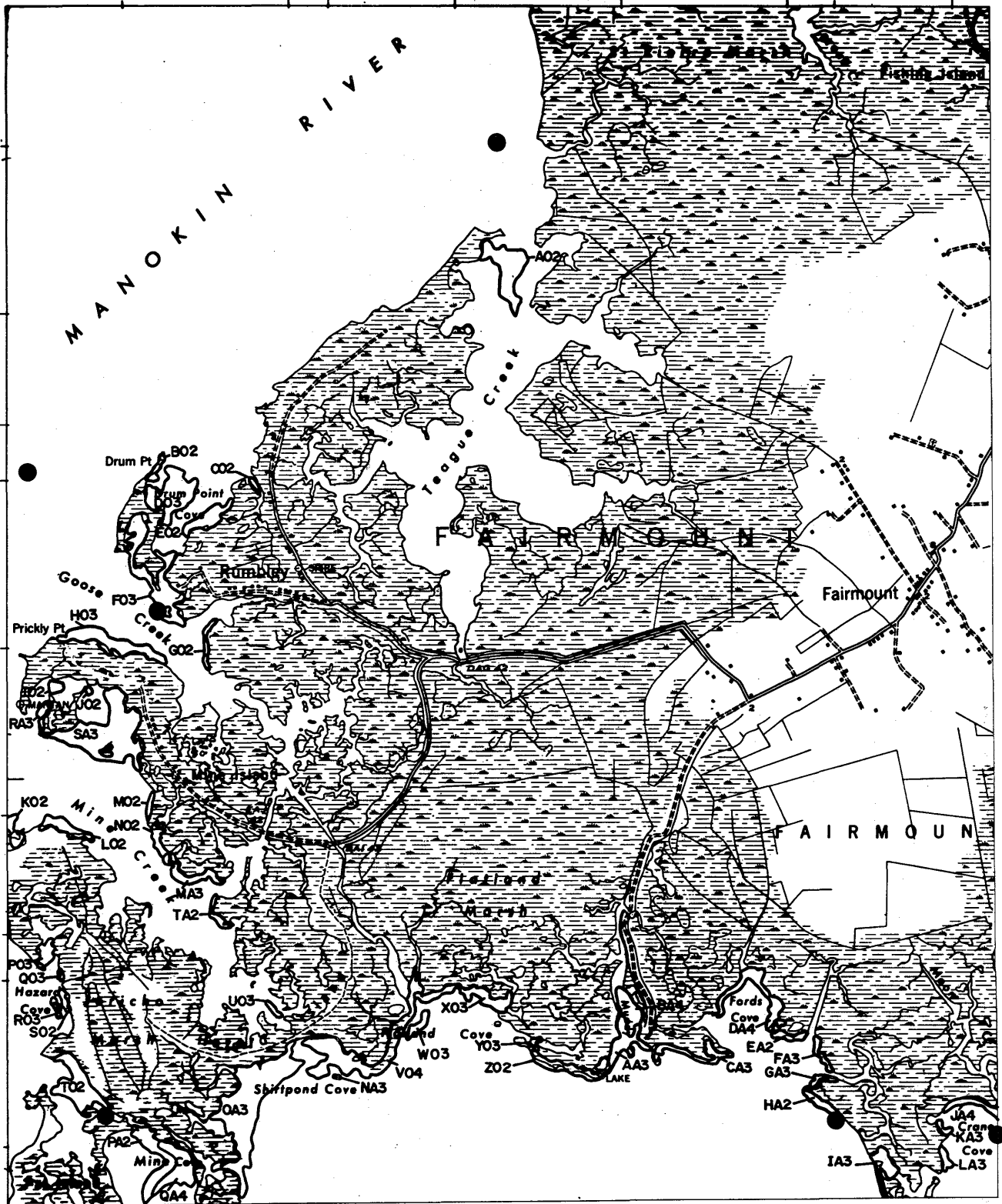
0 1 2 3 4 5 MILE

0 1 2 3 4 5 KILOMETER

MARION, MD  
 Northeast Quarter  
 # 93



# SUBMERGED AQUATIC VEGETATION 1985



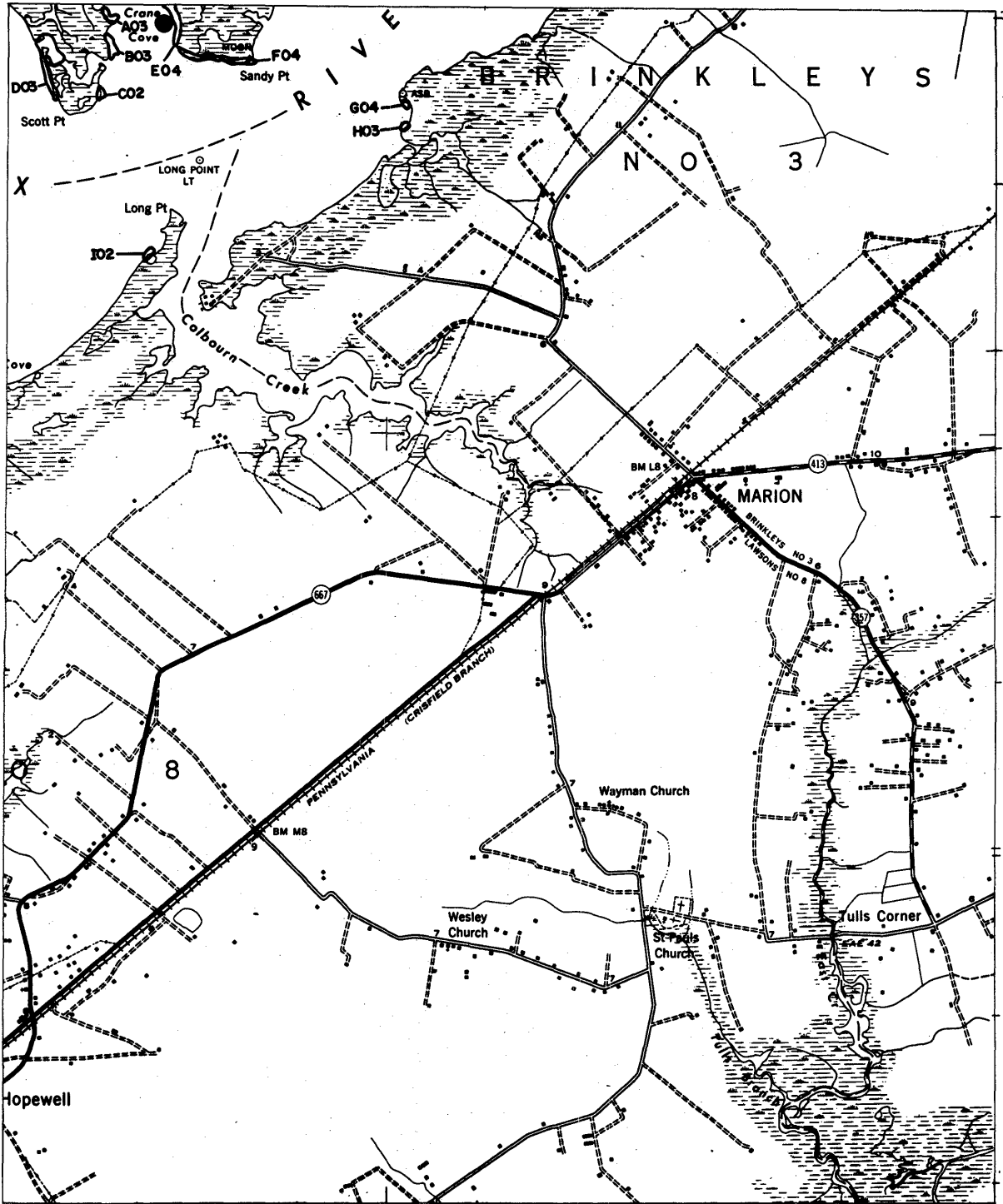
SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:12,000

MARION, MD  
Northwest Quarter  
# 93



# SUBMERGED AQUATIC VEGETATION 1985

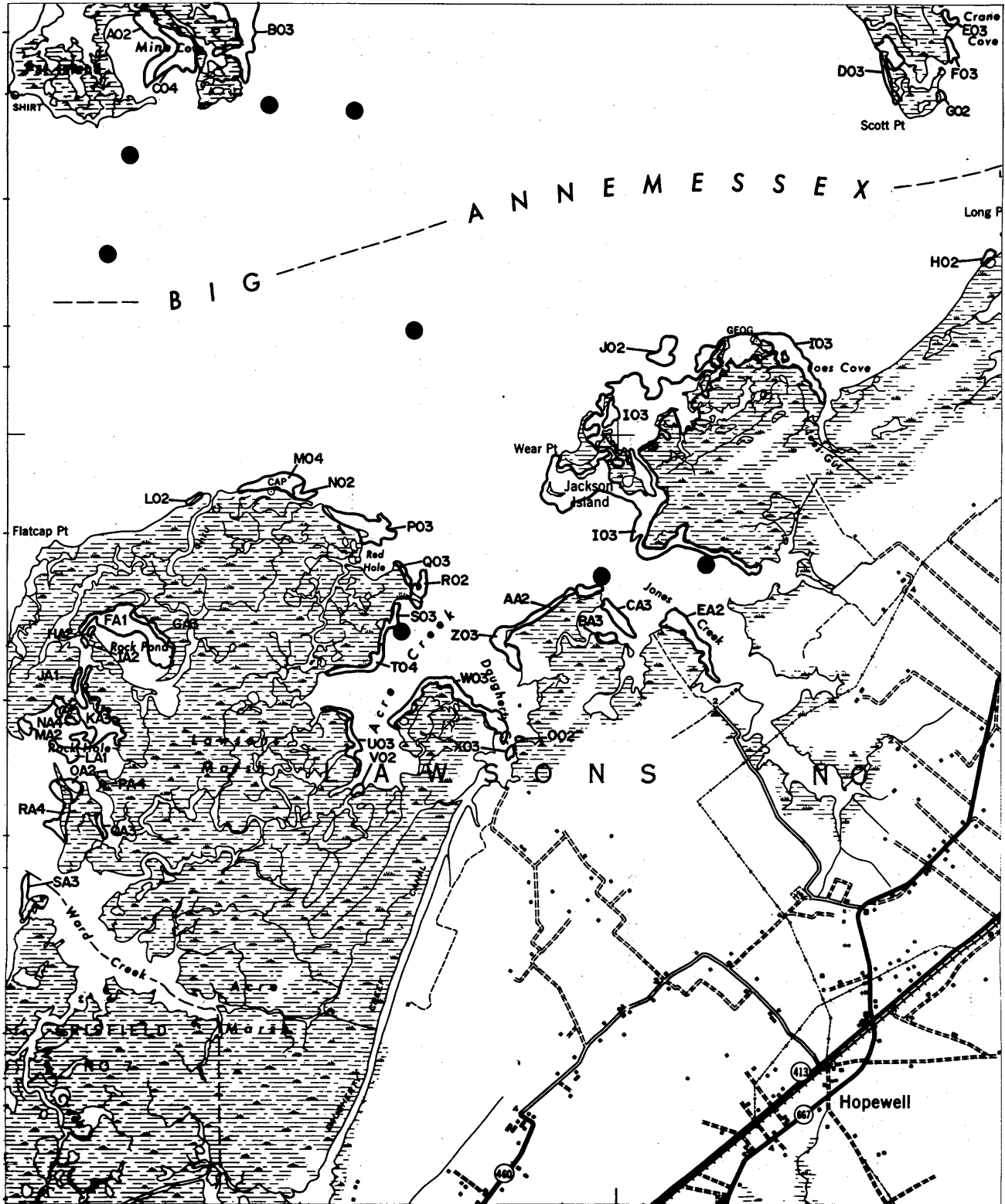


SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichella palustris</i> (horned pondweed)	Ngv	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas</i> spp. (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara</i> sp. (muskgrass)
Va	<i>Vallisneria americana</i> (wild celery)		

**MARION, MD**  
**Southeast Quarter**  
**# 93**



# SUBMERGED AQUATIC VEGETATION 1985



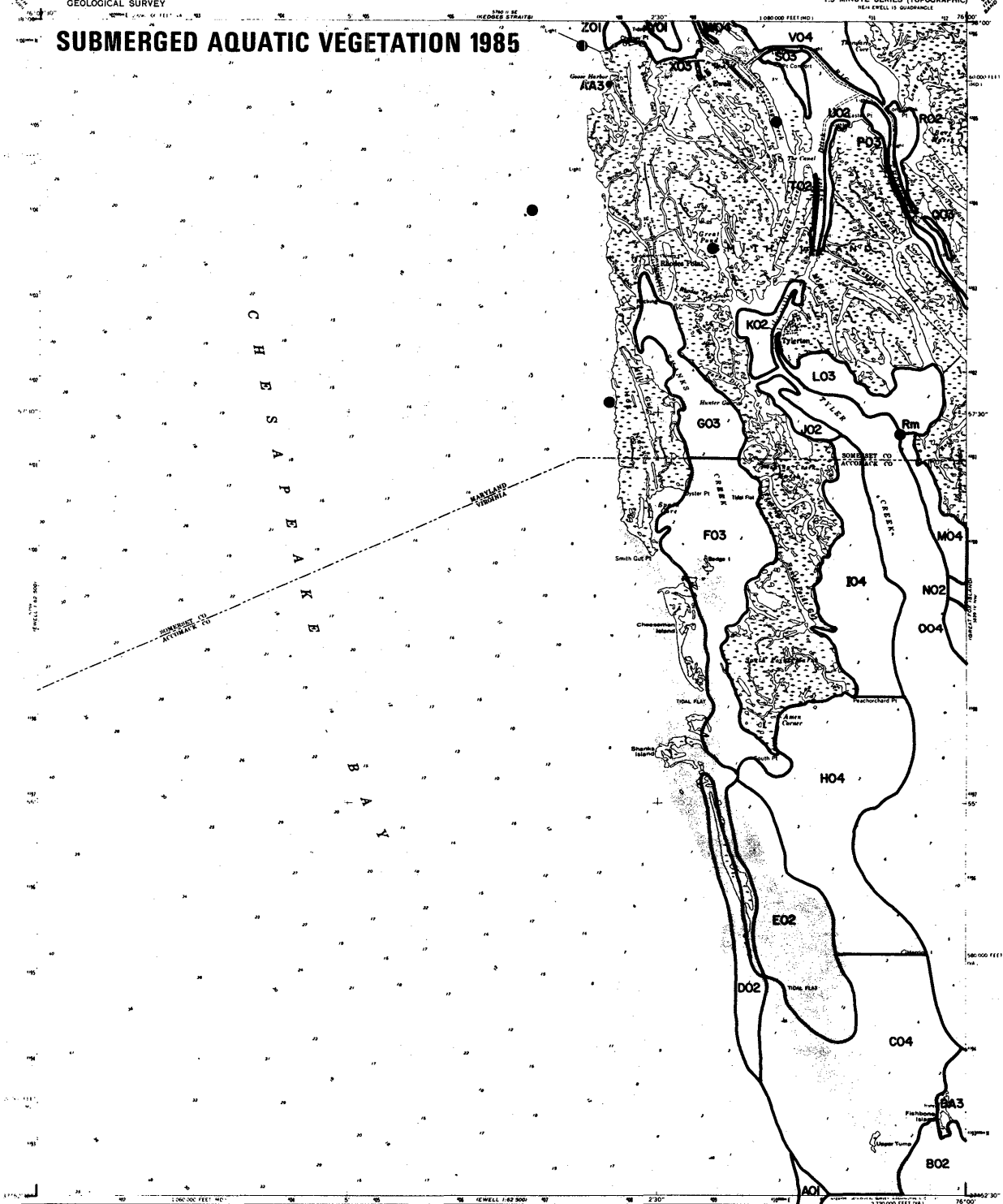
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ng	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

MARION, MD  
Southwest Quarter  
# 93



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngv	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:24,000

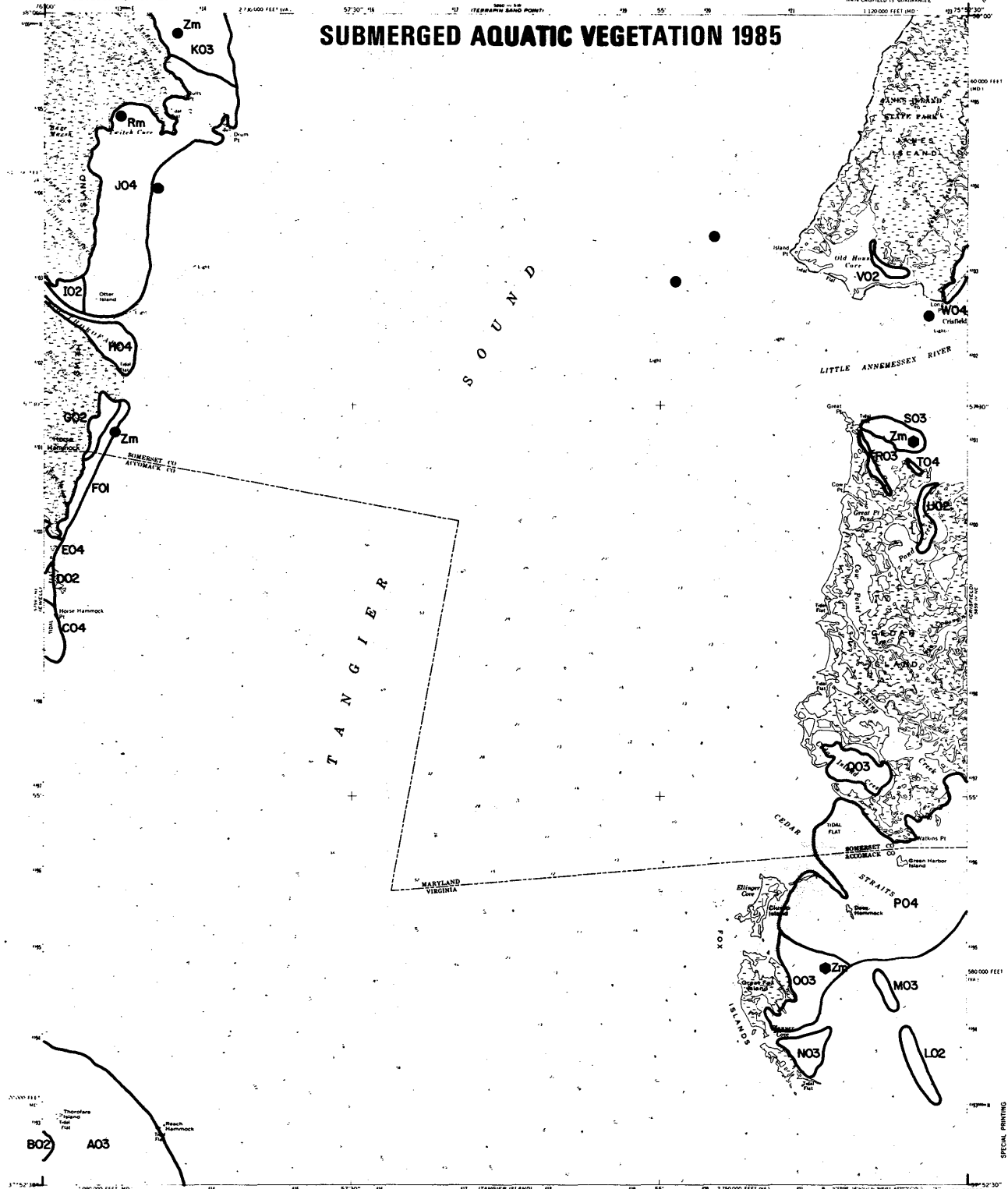
1 MILE / 1 KILOMETER

**VIMS**

ROAD CLASSIFICATION  
Light-duty road all weather improved surface

**EWELL, VA-MD.**  
NEAR EWELL 15 QUADRANGLE  
14375' E. 14375' N. 7.5  
**99**  
ANS 3759-1 MC SERIES V&M

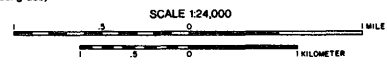
# SUBMERGED AQUATIC VEGETATION 1985



- SPECIES**
- Zm *Zostera marina* (eelgrass)
  - Rm *Ruppia maritima* (widgeon grass)
  - Mf *Myriophyllum spicatum* (Eurasian watermilfoil)
  - Ppf *Potamogeton perfoliatus* (redhead-grass)
  - Ppc *Potamogeton pectinatus* (sago pondweed)
  - Zp *Zannichella palustris* (horned pondweed)
  - N *Najas* spp. (naiad)
  - Ec *Elodea canadensis* (common elodea)
  - Va *Vallisneria americana* (wild celery)
  - Hv *Hydrilla verticillata* (hydrilla)
  - Hd *Heteranthera dubia* (water stargrass)
  - Pcr *Potamogeton crispus* (curly pondweed)
  - Cd *Ceratophyllum demersum* (coontail)
  - Ppu *Potamogeton pusillus* (slender pondweed)
  - Ngv *Najas guadalupensis* (southern najad)
  - Ngr *Najas gracillima* (naiad)
  - C *Chara* sp. (muskgrass)

215

- SURVEY STATIONS**
- MD-DNR Survey Station
  - MD Charter Boat Field Survey
  - Citizens Field Observation
  - ▲ VIMS Field Survey
  - ◆ U.S.G.S.



ROAD CLASSIFICATION  
No roads or trails in this area

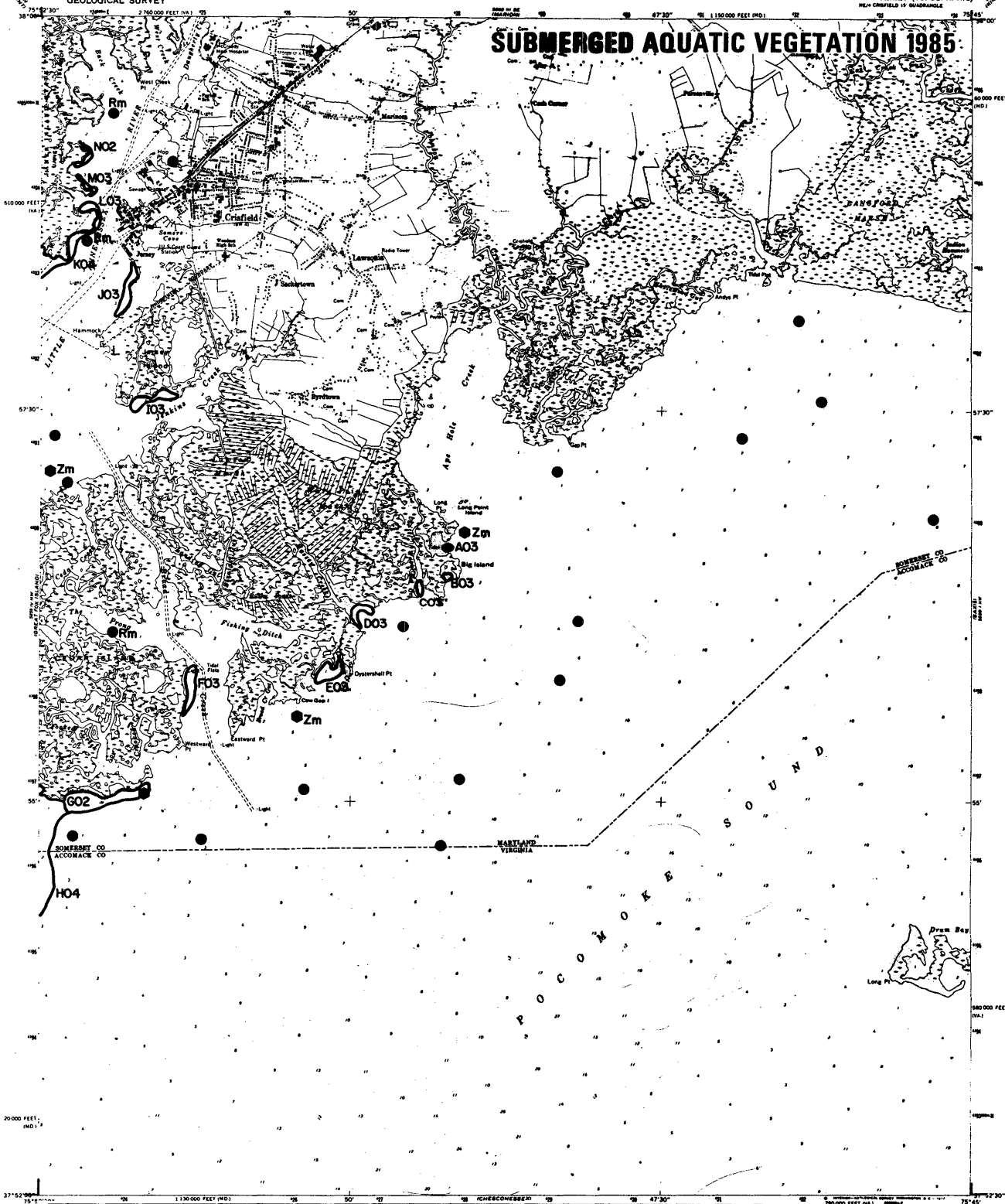
**GREAT FOX ISLAND, MD.-VA.**

100

AMS 5895 100 3 1984

SPECIAL PRINTING  
Contours and spotline symbols omitted

# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:24,000

1 MILE  
1 KILOMETER

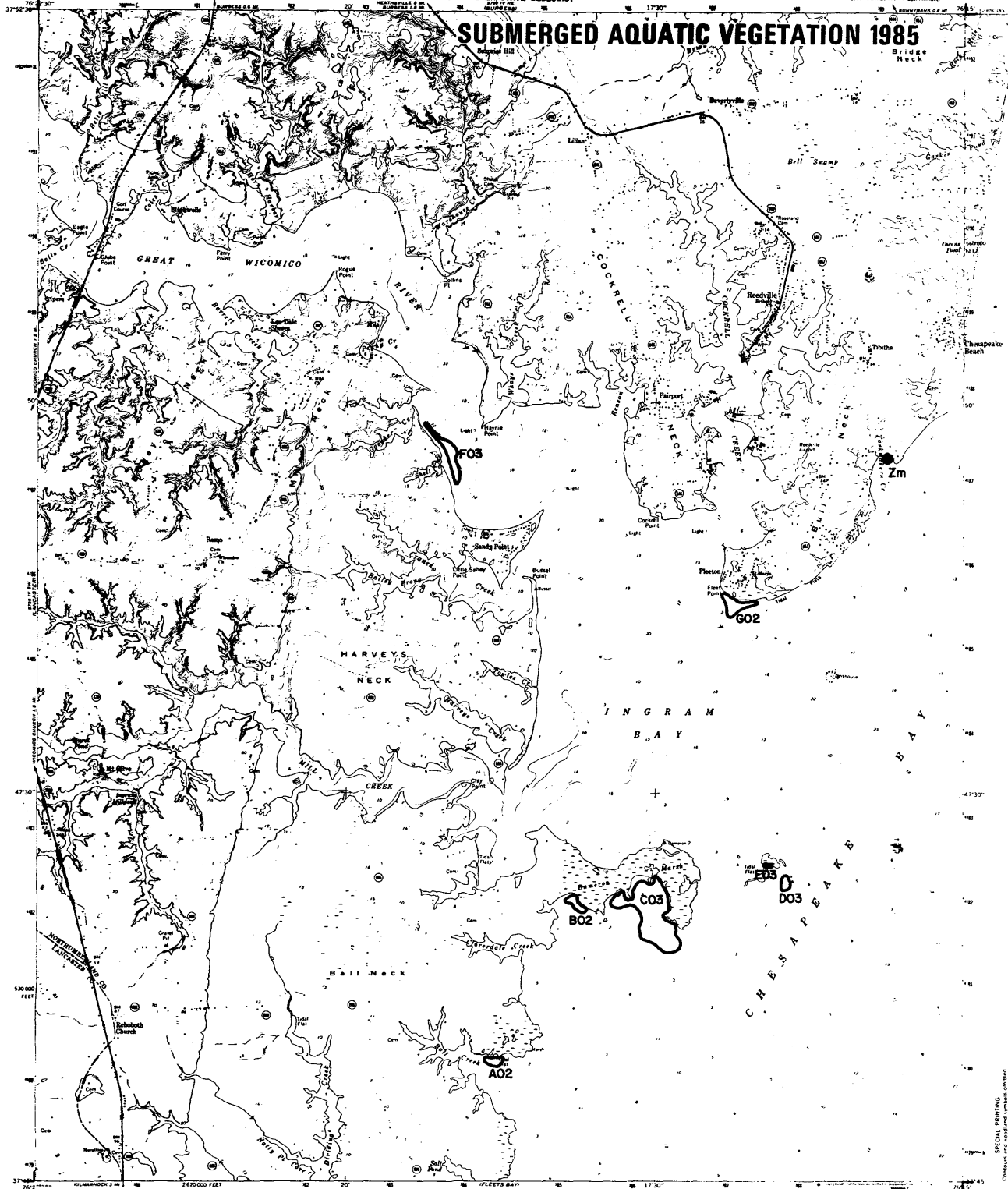
**VIMS**

ROAD CLASSIFICATION  
 Highway, all weather. Light-duty road, all weather.  
 Road, all weather. Improved surface.  
 Unimproved road, bar or dry.

**CRISFIELD, VA.-MD.** U.S. GEOLOGICAL SURVEY  
 1:24,000  
 101



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichellia palustris</i> (horned pondweed)	Ngu	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas</i> spp. (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara</i> sp. (muskgrass)
Va	<i>Vallisneria spiralis</i> (wild celery)		

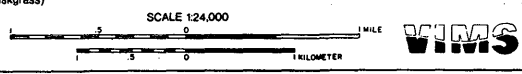
  

ROAD CLASSIFICATION	
—	Highway all weather
—	Light duty road all weather
—	Light duty road fair or dry weather
—	Unimproved road fair or dry weather
—	U.S. Route
—	State Route

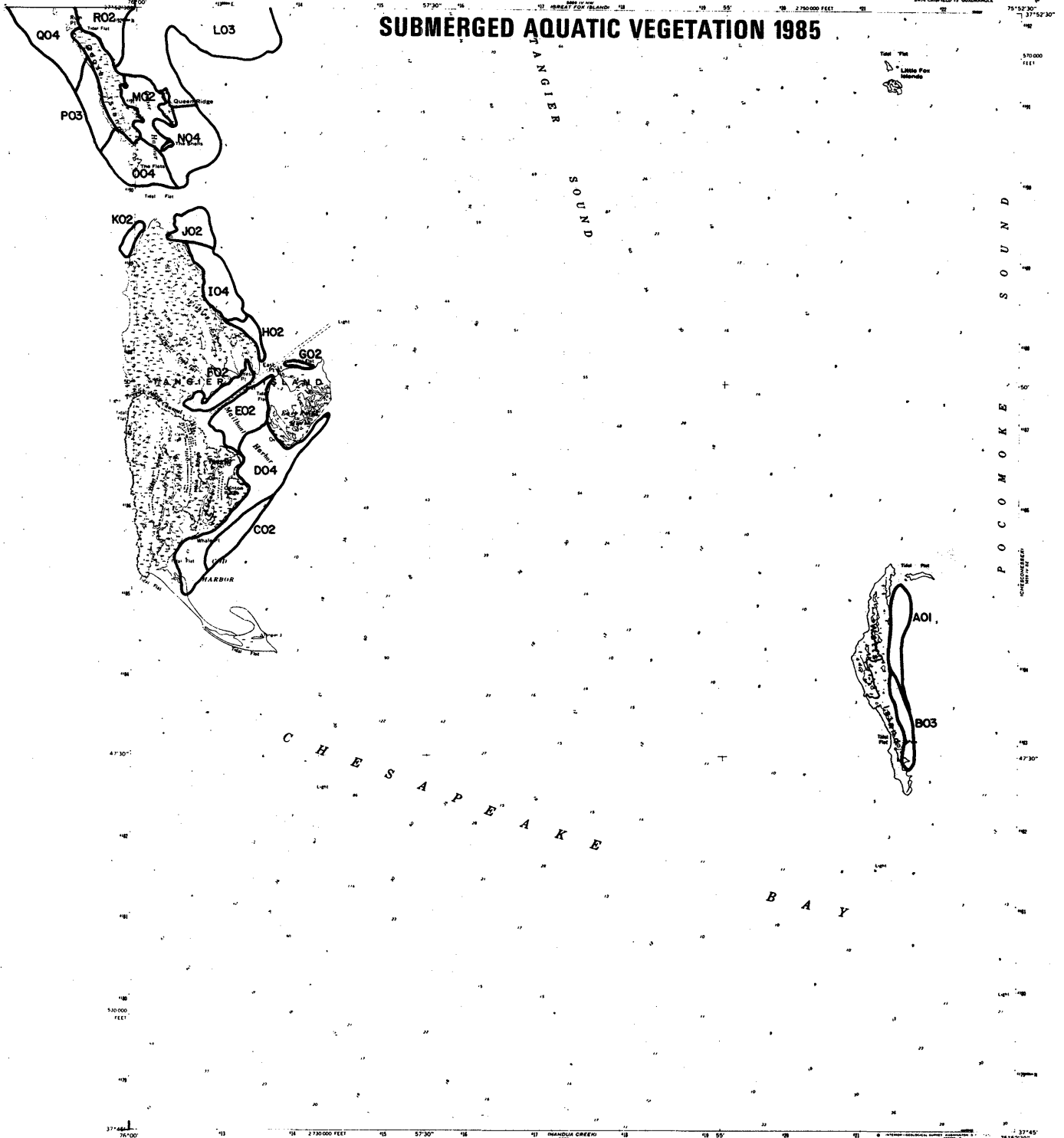
●	MD-DNR Survey Station
■	MD Charter Boat Field Survey
●	Citizens Field Observation
▲	VIMS Field Survey
◆	U.S.G.S.

REEDVILLE, VA.  
106 968  
7.5 MINUTE SERIES (TOPOGRAPHIC)



SPECIAL PRINTING  
CONTOUR AND VEGETATION SYMBOLS ADAPTED

# SUBMERGED AQUATIC VEGETATION 1985



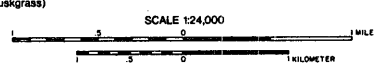
**SPECIES**

Zm <i>Zostera marina</i> (eelgrass)	Hv <i>Hydrilla verticillata</i> (hydrilla)
Rm <i>Ruppia maritima</i> (widgeon grass)	Hd <i>Heteranthera dubia</i> (water stargrass)
Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr <i>Potamogeton crispus</i> (curly pondweed)
Ppf <i>Potamogeton perfoliatus</i> (redhead-grass)	Cd <i>Ceratophyllum demersum</i> (coontail)
Ppc <i>Potamogeton pectinatus</i> (sago pondweed)	Ppu <i>Potamogeton pusillus</i> (slender pondweed)
Zp <i>Zannichella palustris</i> (horned pondweed)	Ngv <i>Najas guadalupensis</i> (southern naiad)
N <i>Najas</i> spp. (naiad)	Ngr <i>Najas gracillima</i> (naiad)
Ec <i>Elodea canadensis</i> (common elodea)	C <i>Chara</i> sp. (muskgrass)
Va <i>Vallisneria americana</i> (wild celery)	

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**SURVEY STATIONS**

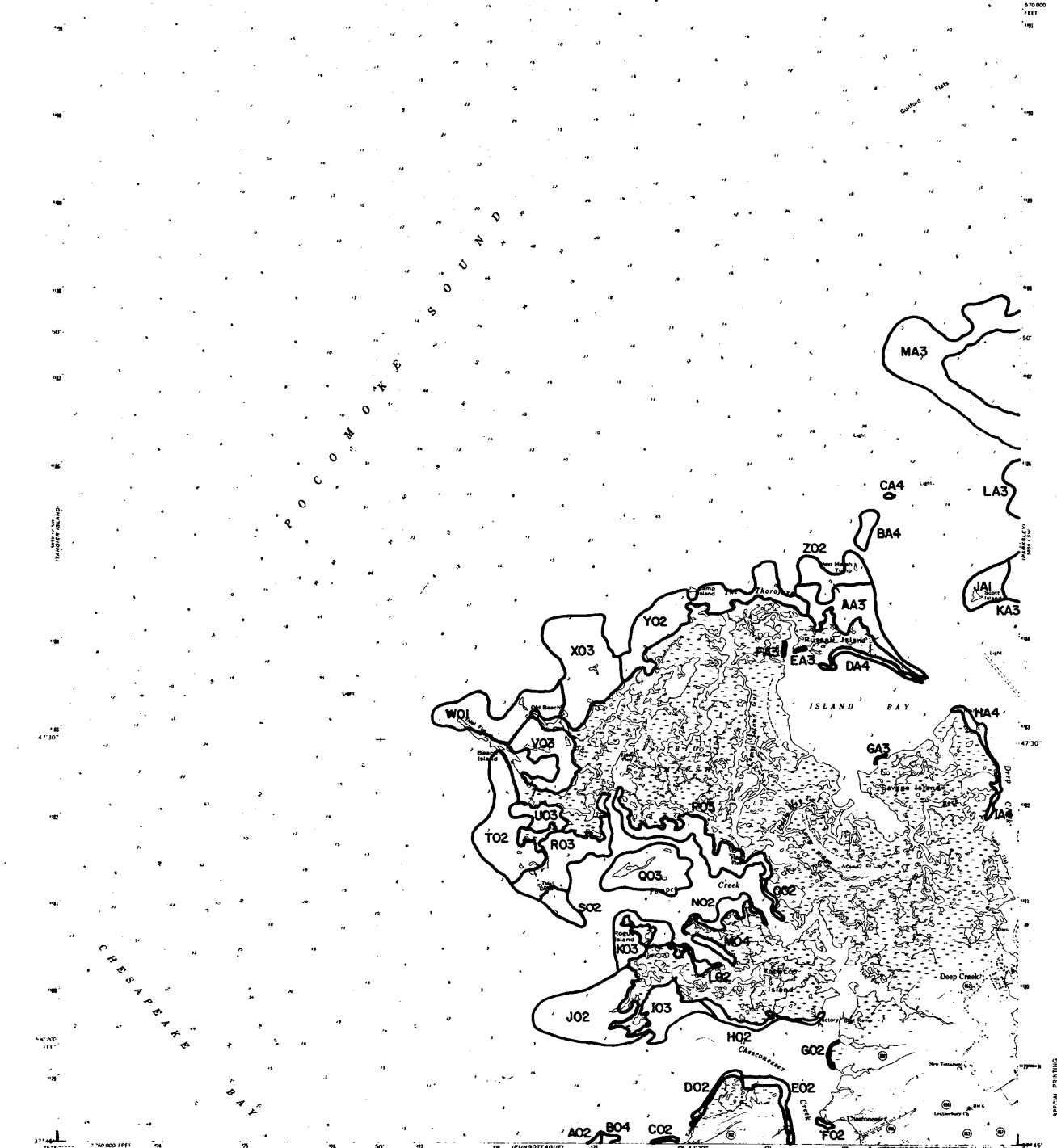
●	MD-DNR Survey Station
■	MD Charter Boat Field Survey
●	Citizens Field Observation
▲	VIMS Field Survey
◆	U.S.G.S.



ROAD CLASSIFICATION  
Light duty road, all weather-improved surface

**TANGIER ISLAND, VA.**  
107  
AMS 58 ES 1984

# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (wideon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ng	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

ROAD CLASSIFICATION  
 by road, all weather. Unimproved road, fair or dry weather. 3 surface.

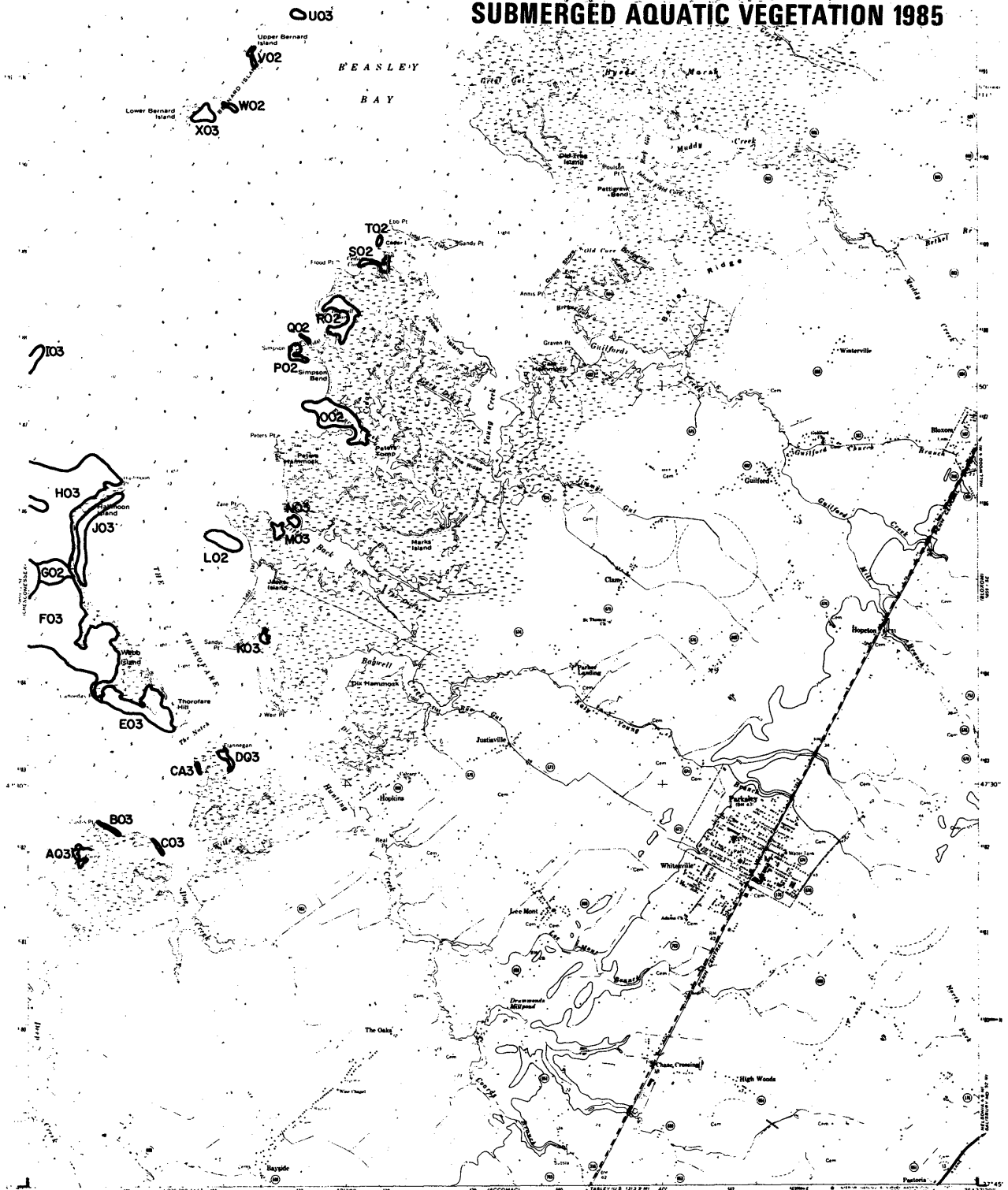
**CHESCONESSEX, VA.**  
 CHESCONESSEX, VA.  
 SEA CHSFIELD 19 QUADRANGLE  
 7 750 000 1111  
 AM 108 SERIES 9434

SCALE 1:24,000  
 MILE  
 KILOMETER

WIMS

SPECIAL PRINTING  
 Contours and spot heights symbols omitted

# SUBMERGED AQUATIC VEGETATION 1985



**SPECIES**

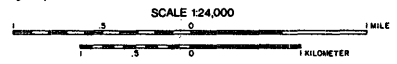
Zm	<i>Zostera marina</i> (eelgrass)
Rm	<i>Ruppia maritima</i> (widgeon grass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)
Zp	<i>Zannichellia palustris</i> (horned pondweed)
N	<i>Najas</i> spp. (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)
Va	<i>Vallisneria spiralis</i> (wild celery)
Hv	<i>Hydrilla verticillata</i> (hydrilla)
Hd	<i>Heteranthera dubia</i> (water stargrass)
Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Ngu	<i>Najas guadalupensis</i> (southern naiad)
Ngr	<i>Najas gracillima</i> (naiad)
C	<i>Chara</i> sp. (muskgrass)

**SURVEY STATIONS**

●	MD-DNR Survey Station
■	MD Charter Boat Field Survey
○	Citizens Field Observation
▲	VIMS Field Survey
◆	U.S.G.S.

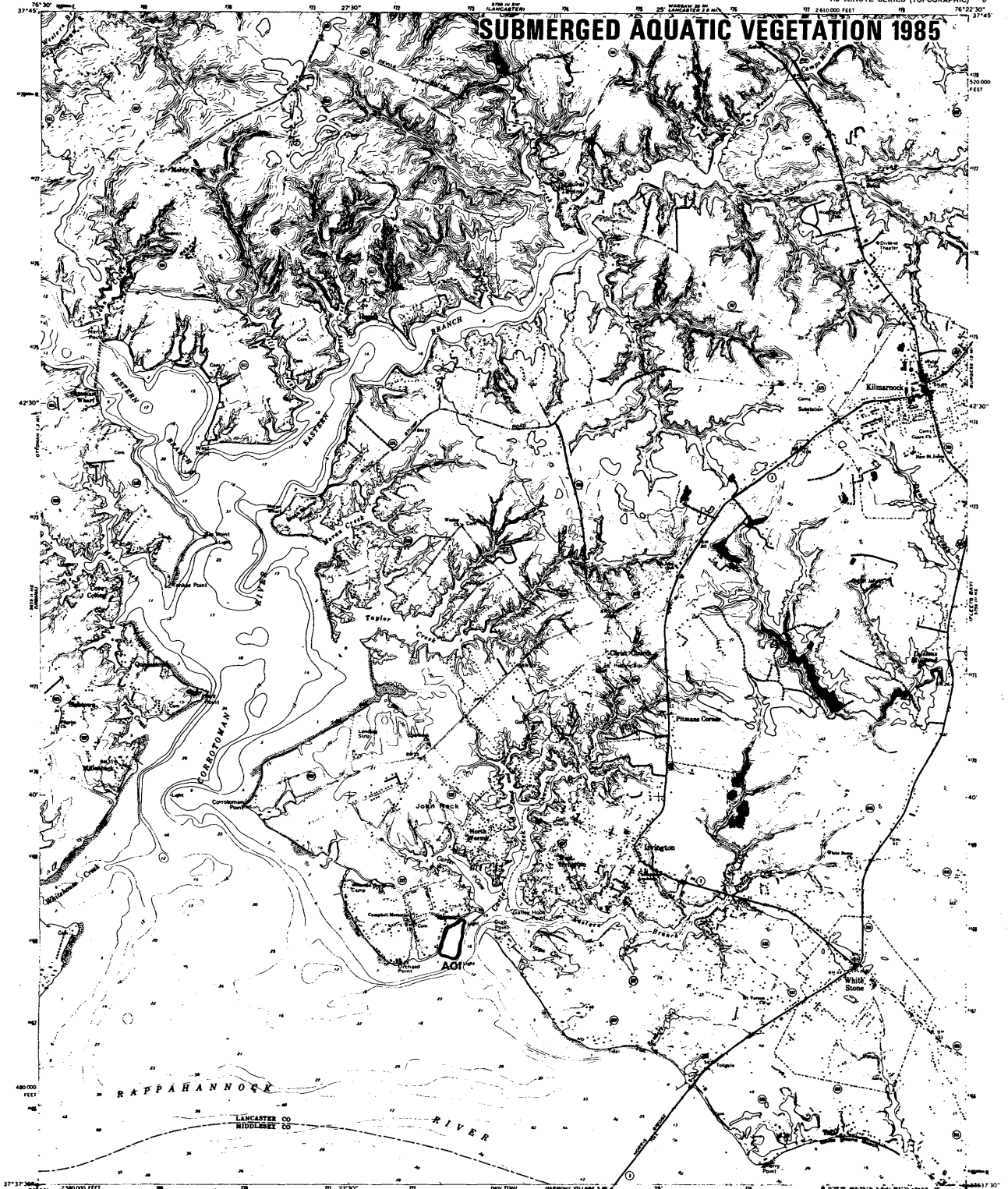
ROAD CLASSIFICATION  
 highway all weather Light duty road all weather  
 R-1 highway all weather unpaved surface  
 R-2 highway all weather Unimproved road fair or dry weather  
 R-3

U.S. Route State Route  
**PARKSLEY, VA.**  
 PARKSLEY, VA.  
 N3745-W7537 5 7.5  
**109**  
 1:25,000 SERIES V84



SPECIAL PRINTING  
 Contours and unshaded areas omitted

# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:24,000

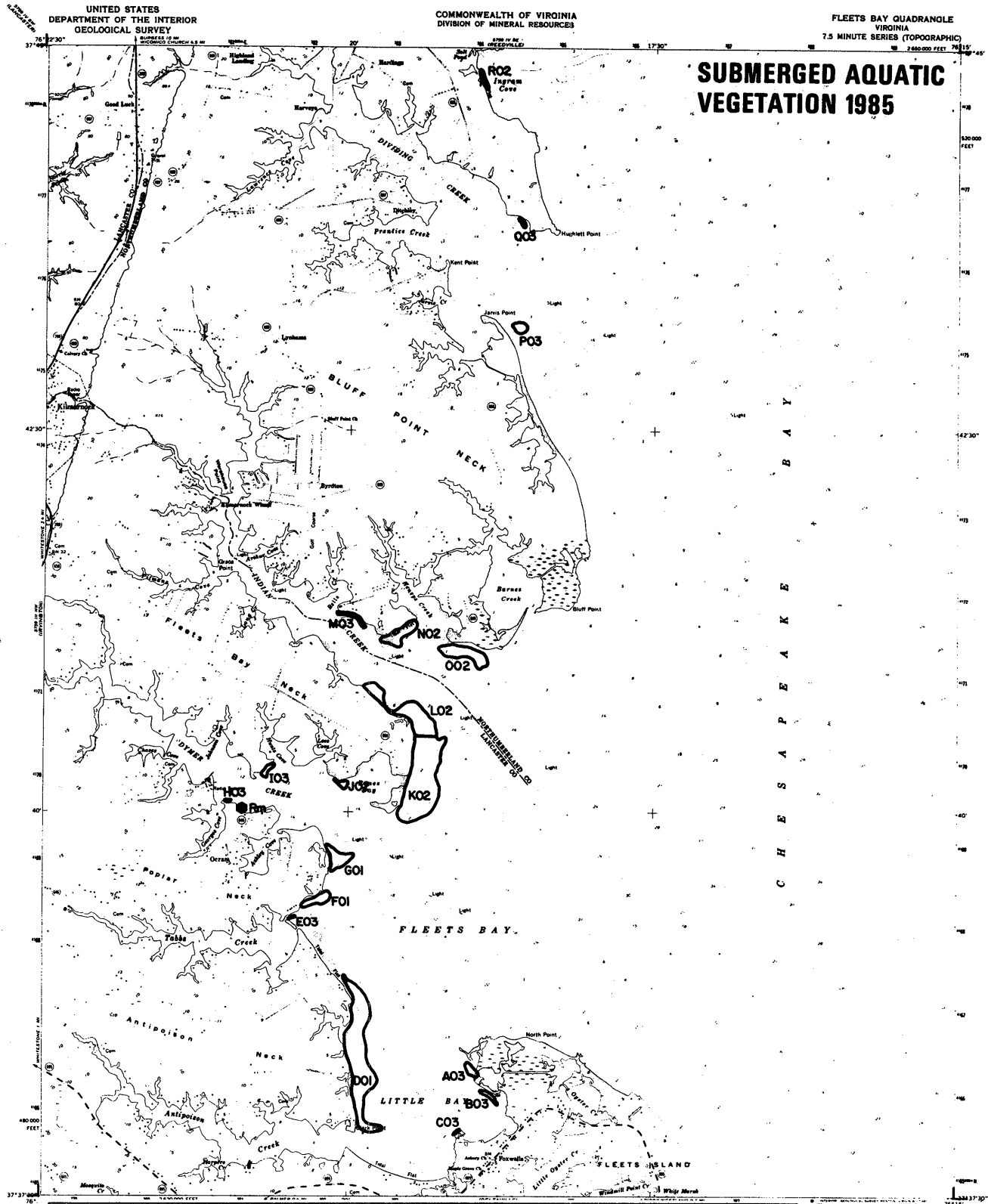
1 MILE  
1 KILOMETER

**WIMS**

**IRVINGTON, VA.**  
111  
1985  
7.5 MINUTE SERIES 1954

**ROAD CLASSIFICATION**  
 dry highway all weather    Light duty road all weather  
 surface    unpaved surface  
 heavy highway all weather    Unimproved road for or dry  
 surface    all weather  
 State Route

# SUBMERGED AQUATIC VEGETATION 1985

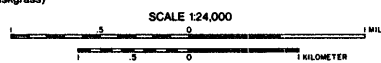


**SPECIES**

Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichellia palustris</i> (horned pondweed)	Ngu	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas</i> spp. (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara</i> sp. (muskgrass)
Va	<i>Vallisneria americana</i> (wild celery)		

222

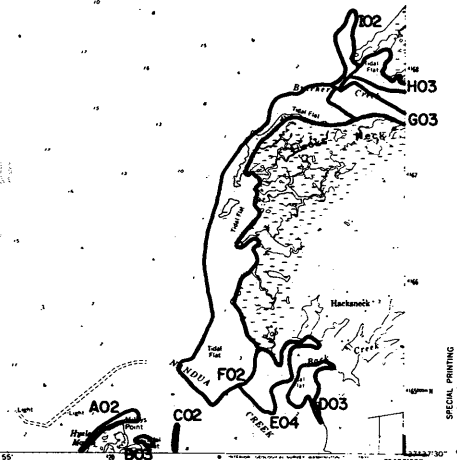
- SURVEY STATIONS**
- MD-DNR Survey Station
  - MD Charter Boat Field Survey
  - Citizens Field Observation
  - ▲ VIMS Field Survey
  - ◆ U.S.G.S.



**FLEETS BAY, VA.**  
1:250,000 FEET  
N37375-W761575  
12 1986  
PECTED 1978  
12-16265-1024

# SUBMERGED AQUATIC VEGETATION 1985

C H E S A P E A K E  
B A Y



**SPECIES**

Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichellia palustris</i> (horned pondweed)	Ngd	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas</i> spp. (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara</i> sp. (muskgrass)
Va	<i>Vallisneria americana</i> (wild celery)		

**SURVEY STATIONS**

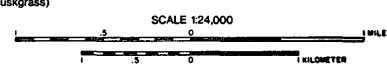
- MD-DNR Survey Station
- MD Charter Boat Field Survey
- Citizens Field Observation
- ▲ VIMS Field Survey
- ◆ U.S.G.S.

ROAD CLASSIFICATION  
utv road, all weather, Unimproved road, bar or dry

**NANDUA CREEK, VA.**

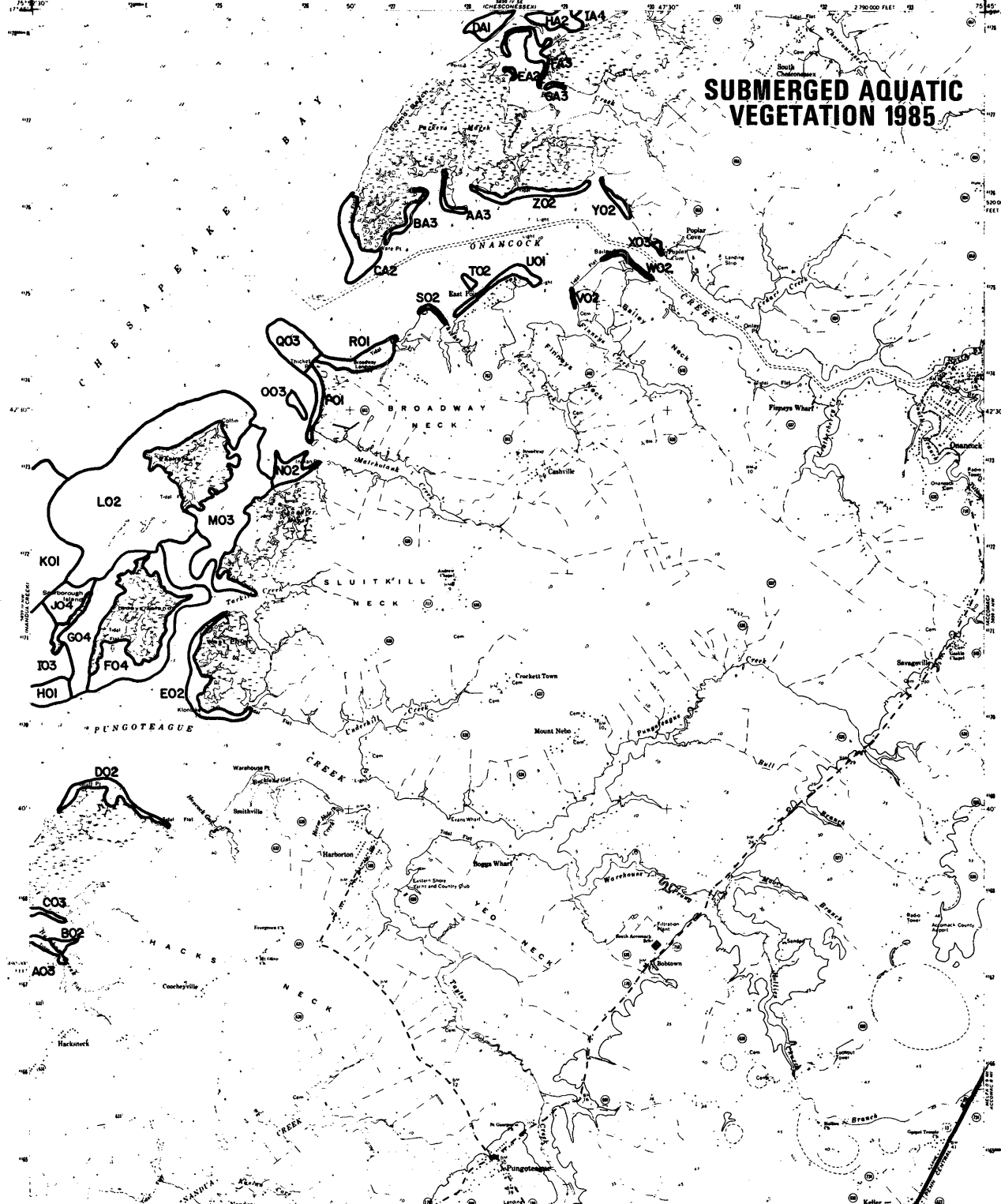
NANDUA CREEK, VA.  
N37375-87552-5-7.5  
AN 113-7 SERIES 1984

223



REPRODUCE THIS MAP BY ANY MEANS  
 WITHOUT PERMISSION OF THE GEOLOGICAL SURVEY

# SUBMERGED AQUATIC VEGETATION 1985



**SPECIES**

Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	Ppu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichella palustris</i> (horned pondweed)	Ngv	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas spp.</i> (naiad)	Ngr	<i>Najas gracillima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara sp.</i> (muskgrass)
Va	<i>Vallisneria americana</i> (wild celery)		

**SURVEY STATIONS**

- MD-DNR Survey Station
- MD Charter Boat Field Survey
- Citizens Field Observation
- ▲ VIMS Field Survey
- ◆ U.S.G.S.

SCALE 1:24,000

0 1 2 3 4 5 MILE  
0 1 2 3 4 5 KILOMETER

**ROAD CLASSIFICATION**

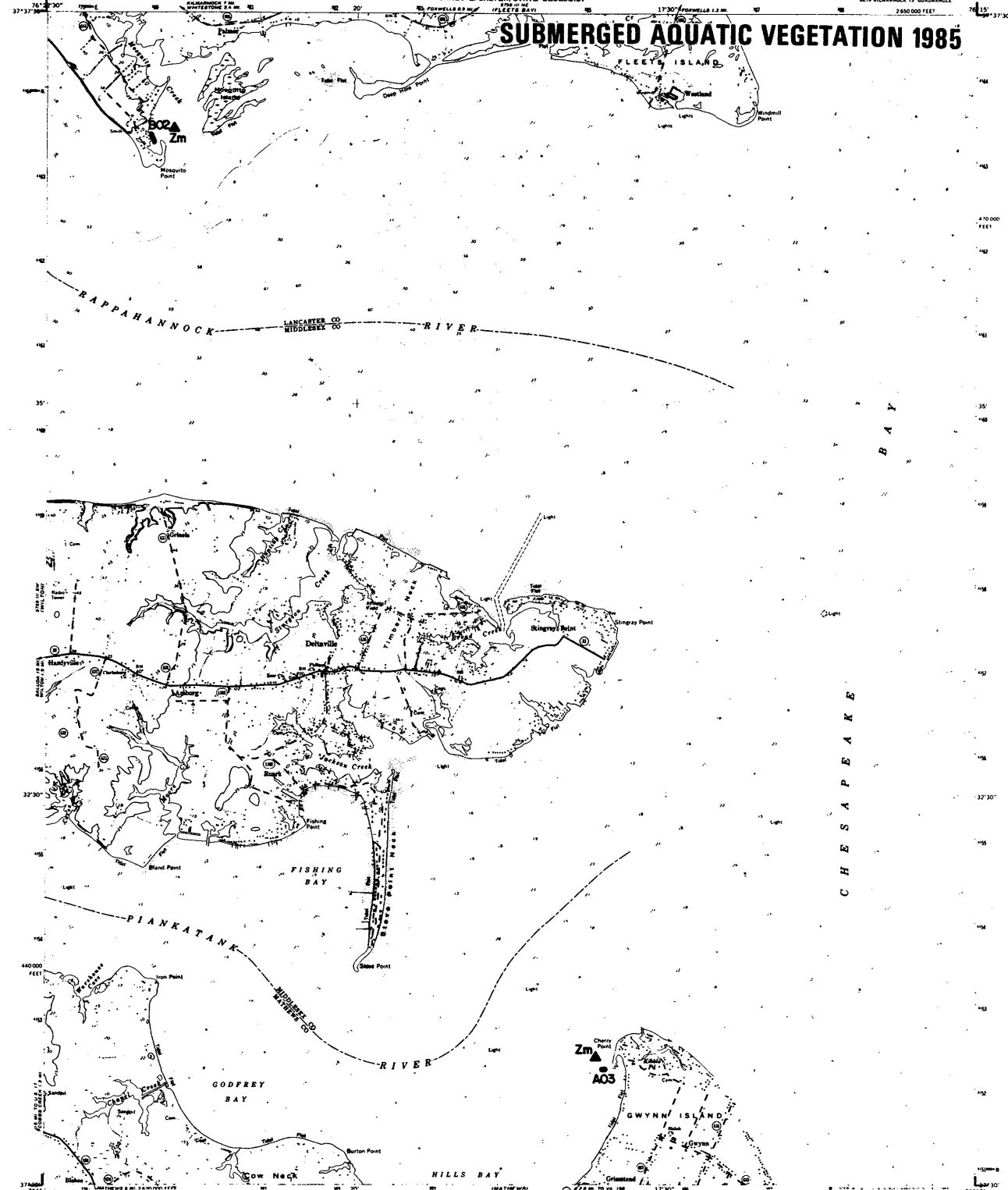
- highway surface
- lightly road hard or improved surface
- dry-highway surface
- unimproved road
- Interstate Route
- U.S. Route
- State Route

**PUNGOTEAGUE, VA.**  
1437375-147545/7.5  
**114**  
AMS 3859 III PL-7/85ES 1254





# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngv	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:24,000

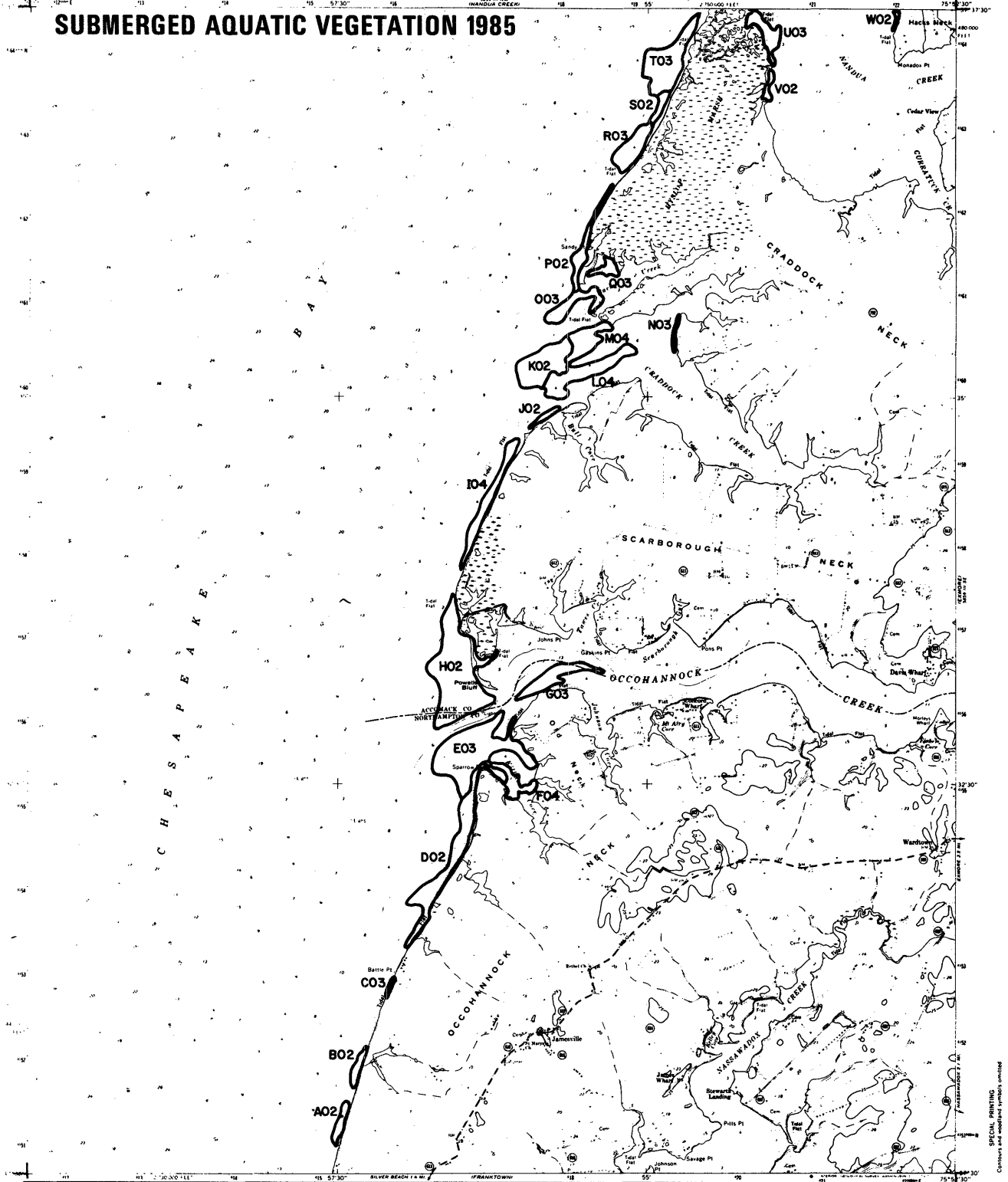
0 1 MILE  
0 1 KILOMETER

ROAD CLASSIFICATION  
 --- Light duty  
 - - - - - Unimproved dirt  
 ○ State Route

**DELTAVILLE, VA.**  
 SEA LEVEL DATUM 1985 QUADRANGLE  
 118 1964  
 SE-SERIES V834



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

ROAD CLASSIFICATION:  
 - - - - - ordinary highway, all weather  
 - - - - - light duty road, all weather  
 - - - - - improved surface  
 - - - - - unpaved road, fair or dry weather  
 ○ State Route

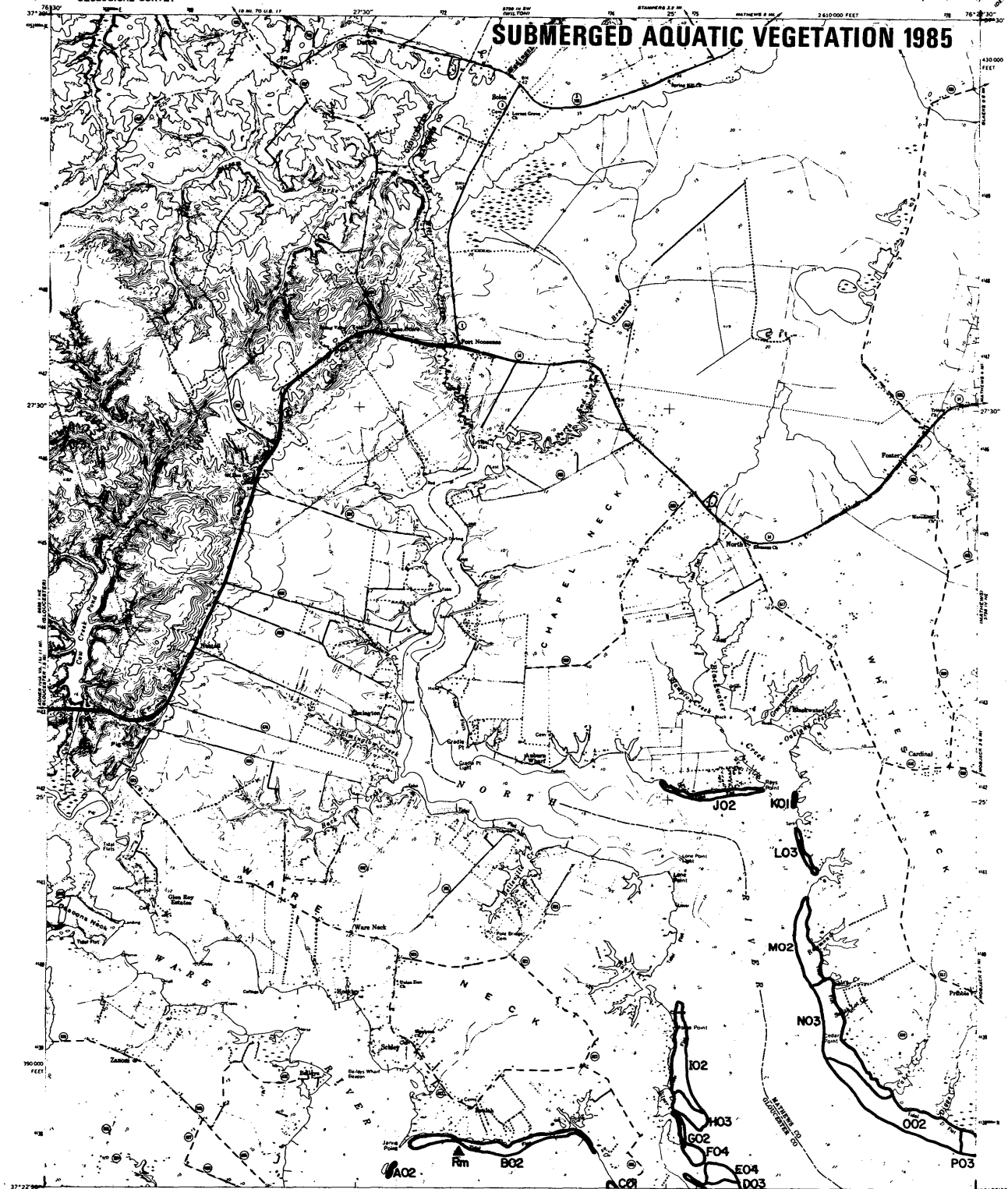
SCALE 1:24,000

MILE  
KILOMETER

**VIMS**

**JAMESVILLE, VA.**  
 119 1968  
 U.S. GEOLOGICAL SURVEY

# SUBMERGED AQUATIC VEGETATION 1985

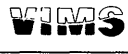


SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zanosthetia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

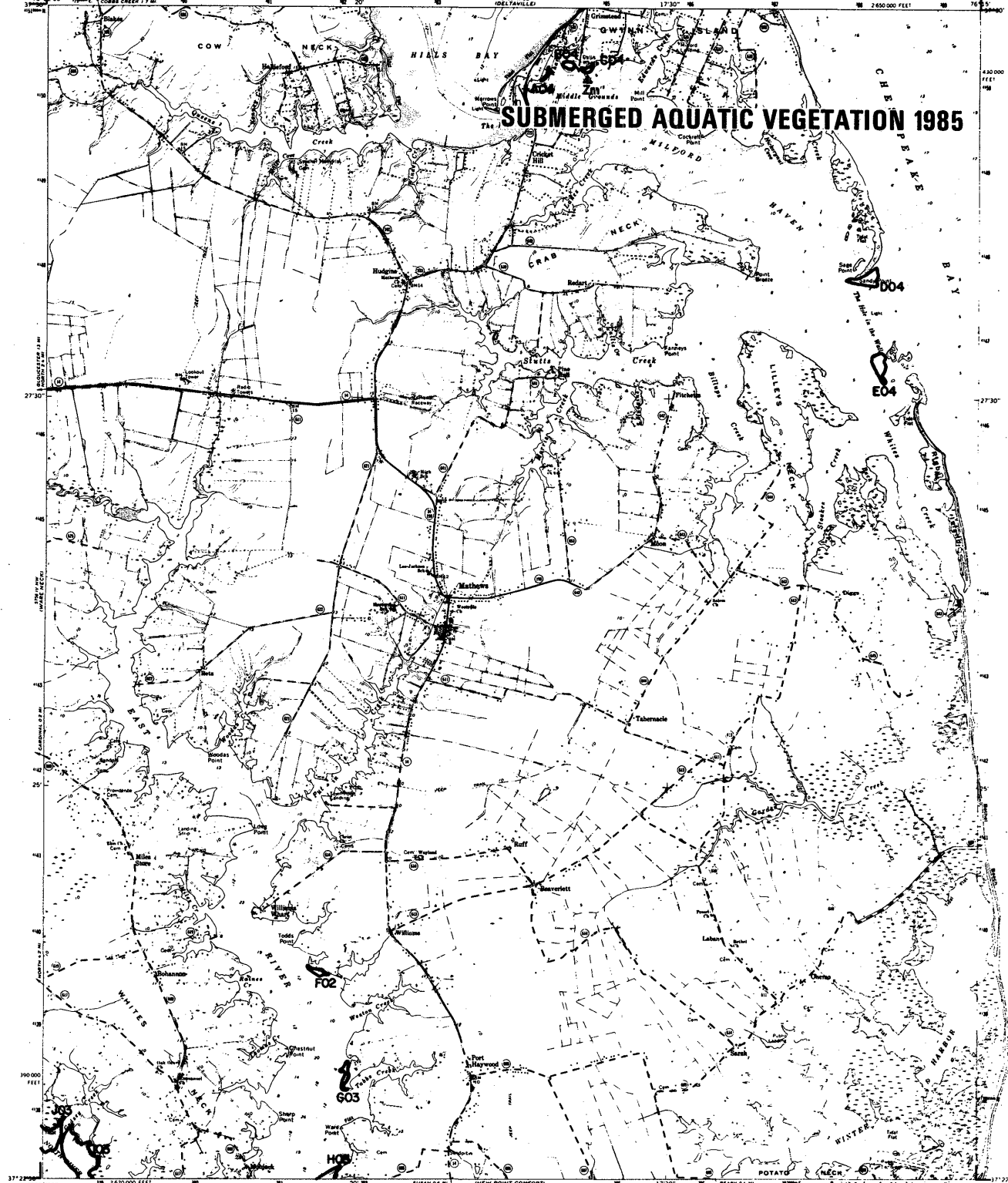
ROAD CLASSIFICATION  
 Heavy duty ——— Light duty  
 Medium duty - - - - - Unimproved dirt  
 ○ State Route

SCALE 1:24,000  
 1 MILE  
 1 KILOMETER

**WARE NECK, VA.**  
 N3722 5-W7622 5/7.5  
 122 1985  
 REVISED 1980  
 7.5-MINUTE SERIES



# SUBMERGED AQUATIC VEGETATION 1985



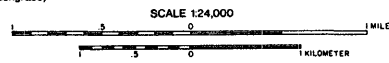
- SPECIES**
- Zm *Zostera marina* (eelgrass)
  - Rm *Ruppia maritima* (widgeon grass)
  - Ms *Myriophyllum spicatum* (Eurasian watermilfoil)
  - Ppf *Potamogeton perfoliatus* (redhead-grass)
  - Ppc *Potamogeton pectinatus* (sago pondweed)
  - Zp *Zannichella palustris* (horned pondweed)
  - N *Najas* spp. (naiad)
  - Ec *Elodea canadensis* (common elodea)
  - Va *Vallisneria americana* (wild celery)

- Hv *Hydrilla verticillata* (hydrilla)
- Hd *Heteranthera dubia* (water stargrass)
- Pcr *Potamogeton crispus* (curly pondweed)
- Cd *Ceratophyllum demersum* (coontail)
- Ppu *Potamogeton pusillus* (slender pondweed)
- Ngv *Najas guadalupensis* (southern naiad)
- Ngr *Najas gracillima* (naiad)
- C *Chara* sp. (muskgrass)

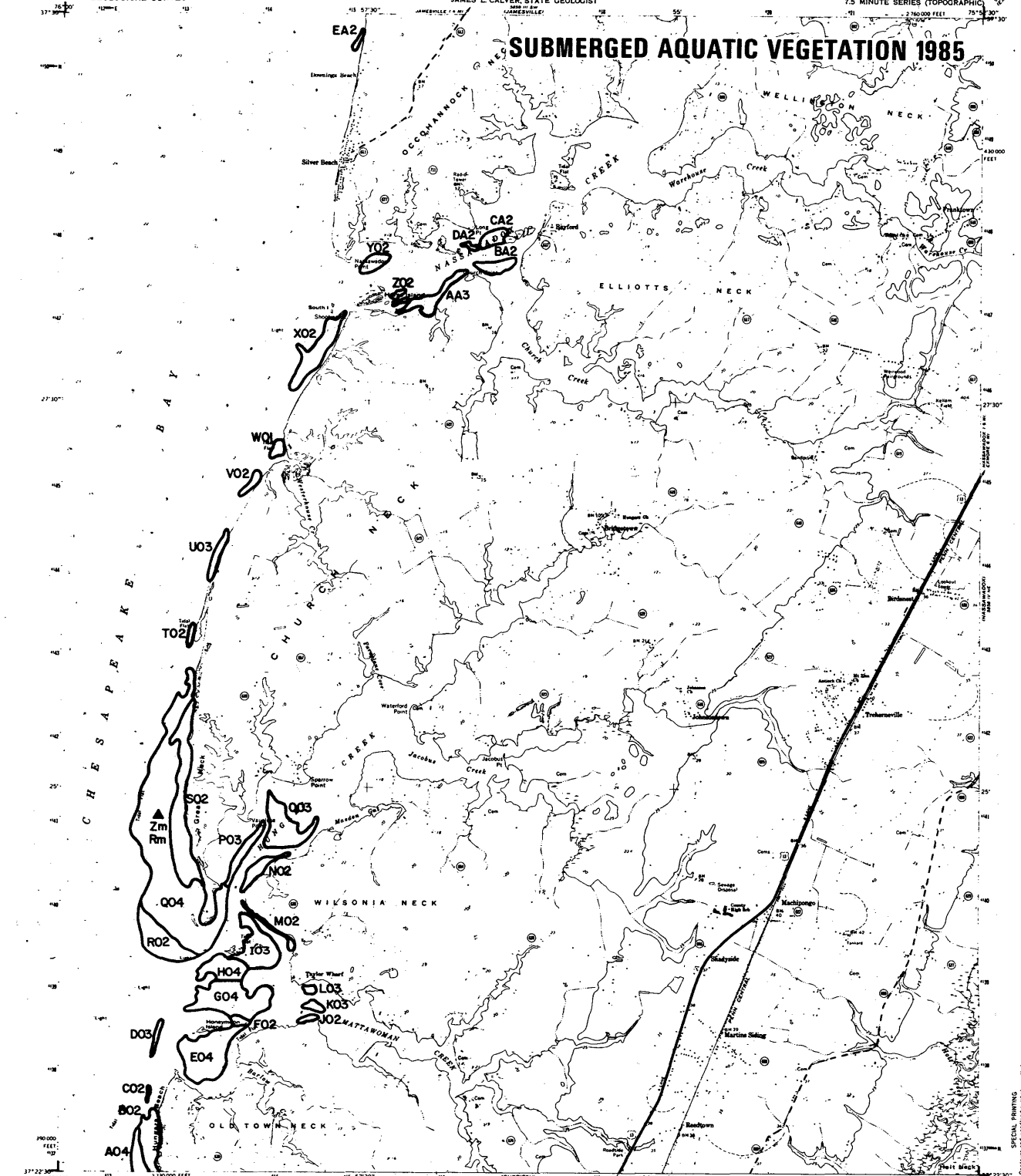
- SURVEY STATIONS**
- MD-DNR Survey Station
  - MD Charter Boat Field Survey
  - Citizens Field Observation
  - ▲ VIMS Field Survey
  - ◆ U.S.G.S.

ROAD CROSS SECTION  
RAILROAD  
DRAINAGE CANAL  
DRAINAGE CANAL

**MATHEWS, VA.**  
N3729 E - W7555 7.5  
123 (MS)  
HE. SERIES 1984



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	Hv	<i>Hydrilla verticillata</i> (hydrilla)
Rm	<i>Ruppia maritima</i> (widgeon grass)	Hd	<i>Heteranthera dubia</i> (water stargrass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Pdf	<i>Potamogeton perfoliatus</i> (redhead-grass)	Cd	<i>Ceratophyllum demersum</i> (coontail)
PPC:	<i>Potamogeton pectinatus</i> (sago pondweed)	PPu	<i>Potamogeton pusillus</i> (slender pondweed)
Zp	<i>Zannichetia palustris</i> (horned pondweed)	Ngu	<i>Najas guadalupensis</i> (southern naiad)
N	<i>Najas</i> spp. (naiad)	Ngr	<i>Najas gracilima</i> (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)	C	<i>Chara</i> sp. (muskgrass)
Va	<i>Vallisneria americana</i> (wild celery)		

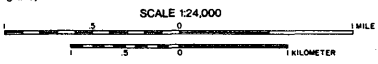
  

ROAD CLASSIFICATION	
highway, all weather	light-duty road, all weather
improved surface	unimproved surface
highway, all weather	unimproved road, lar or dry weather

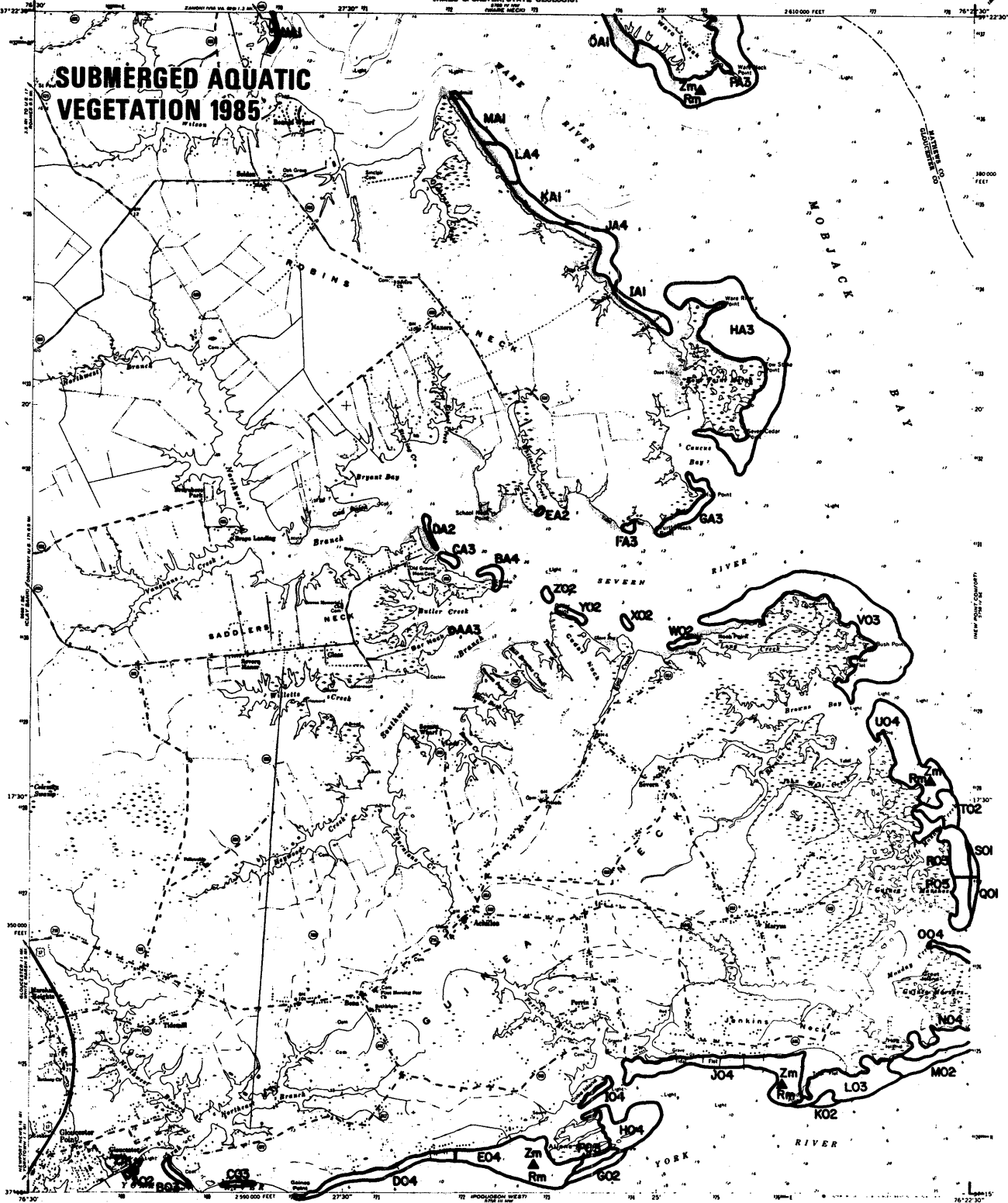
SURVEY STATIONS	
●	MD-DNR Survey Station
■	MD Charter Boat Field Survey
●	Citizens Field Observation
▲	VIMS Field Survey
◆	U.S.G.S.

**FRANKTOWN, VA.**  
FRANKTOWN, VA.  
N3722 5 - W7552 5 / 7.5  
124 1968  
NW-SERIES V434



SPECIAL PRINTING  
Contours and additional symbols omitted

# SUBMERGED AQUATIC VEGETATION 1985



- SPECIES**
- Zm *Zostera marina* (eelgrass)
  - Rm *Ruppia maritima* (widgeon grass)
  - Ms *Myriophyllum spicatum* (Eurasian watermilfoil)
  - Ppf *Potamogeton perfoliatus* (redhead-grass)
  - Ppc *Potamogeton pectinatus* (sago pondweed)
  - Zp *Zannichella palustris* (horned pondweed)
  - N *Najas* spp. (naked)
  - Ec *Elodea canadensis* (common elodea)
  - Va *Vallisneria americana* (wild celery)
  - Hv *Hydrilla verticillata* (hydrilla)
  - Hd *Heteranthera dubia* (water stargrass)
  - Pcr *Potamogeton crispus* (curly pondweed)
  - Cd *Ceratophyllum demersum* (coontail)
  - Ppu *Potamogeton pusillus* (slender pondweed)
  - Ngu *Najas guadalupensis* (southern nald)
  - Ngr *Najas gracillima* (nald)
  - C *Chara* sp. (muskgrass)

- SURVEY STATIONS**
- MD-DNR Survey Station
  - MD Charter Boat Field Survey
  - Citizens Field Observation
  - ▲ VIMS Field Survey
  - ◆ U.S.G.S.

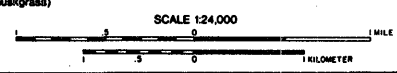
**ROAD CLASSIFICATION**

- Heavy-duty
- Medium-duty
- U.S. Route
- State Route
- Light duty
- Unimproved dirt

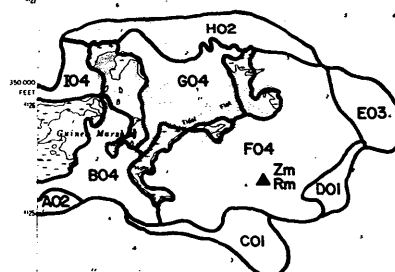
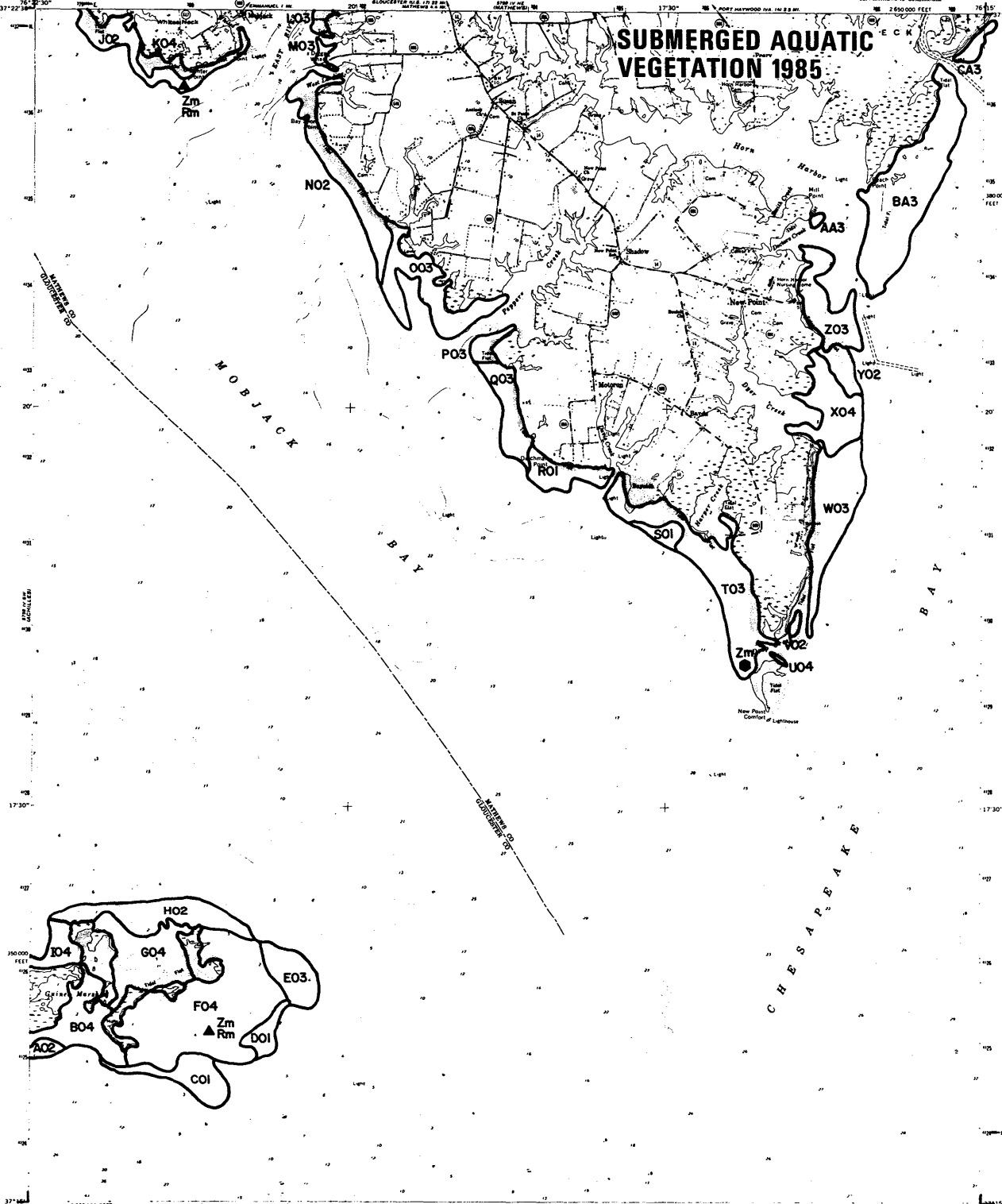
**ACHILLES, VA.**

N3715 - W7622 S 7.5

131 1985 INSPECTED 1993 19 54 SERIES 1984



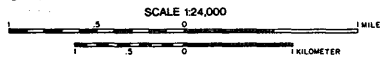
# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pol	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

ROAD CLASSIFICATION  
 Solid line Light duty  
 Dashed line Unimproved dirt

**NEW POINT COMFORT, VA.**  
 N3715—W7615/75  
 132<sup>64</sup>  
 E-SERIES V84



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

ROAD CLASSIFICATION  
 Heavy highway, all weather — Light-duty road, all weather  
 Surface — Improved surface —  
 Unimproved road, fair or dry

**CAPE CHARLES, VA.**  
 133 1985  
 7515—W7600-7.5  
 85-SERIES 1984

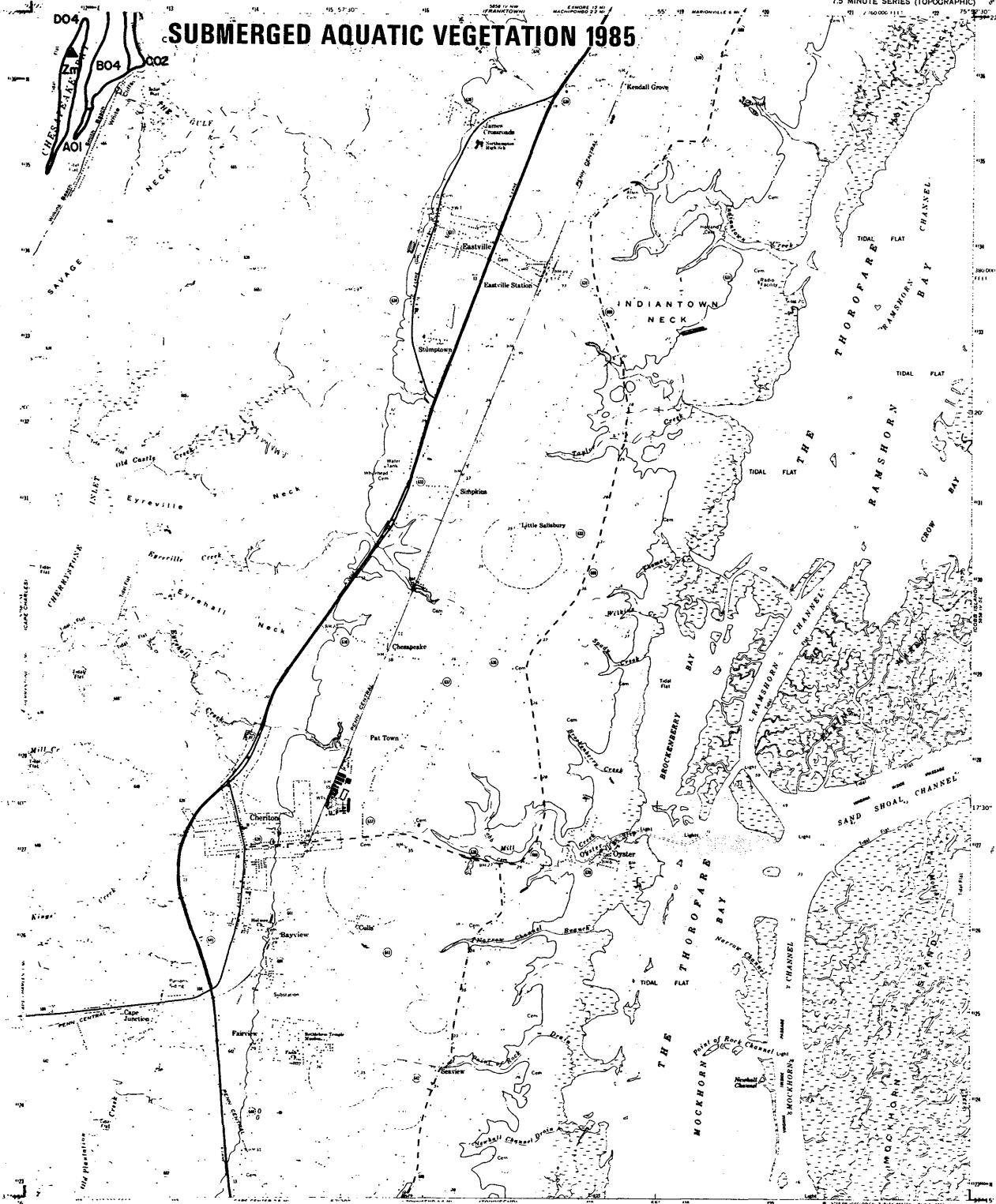
SCALE 1:24,000  
 1 MILE  
 1 KILOMETER

WIMS

SPECIAL PRINTING  
Colors and modified symbols omitted



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngv	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:24,000

1 MILE / 1 KILOMETER

ROAD CLASSIFICATION

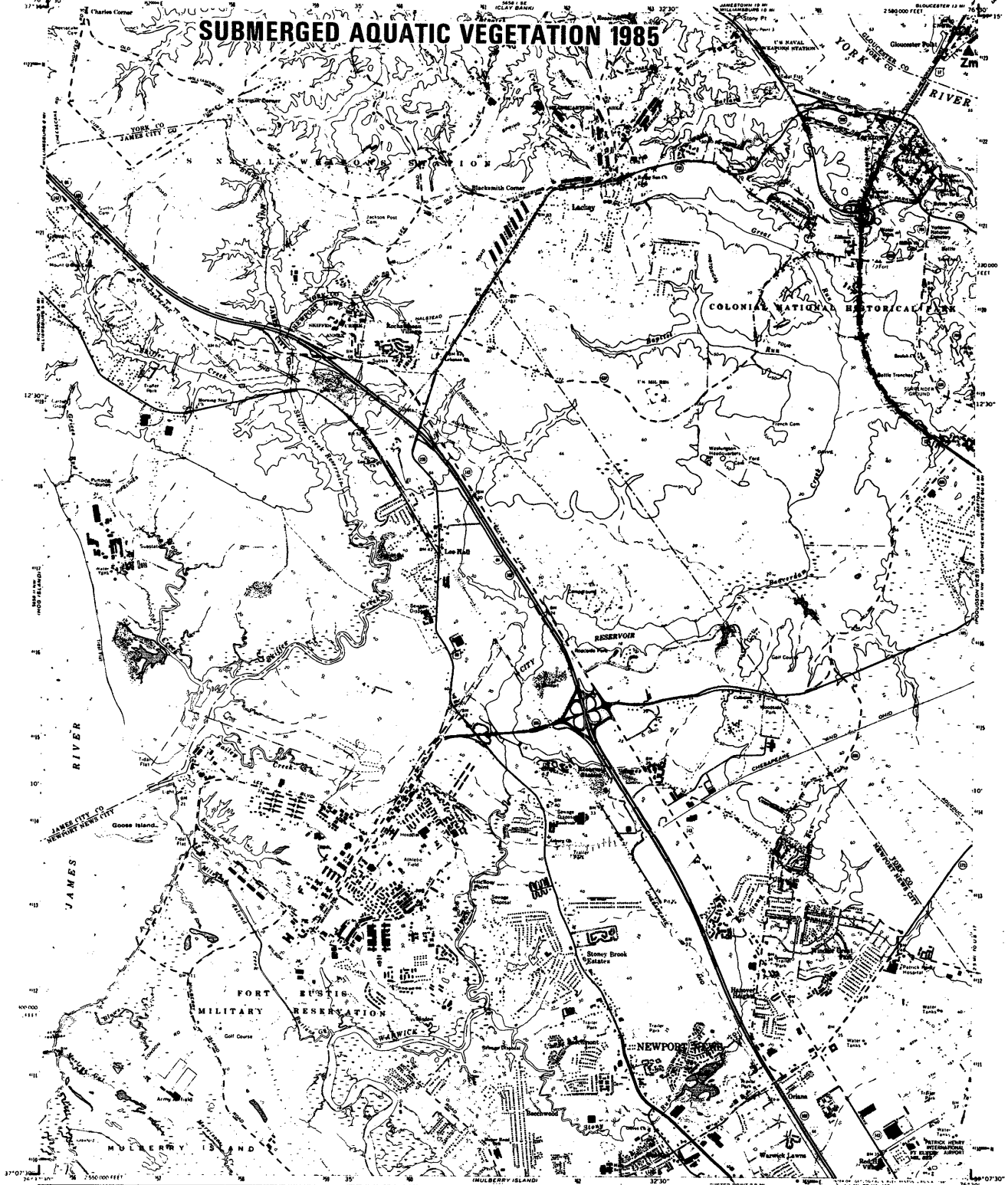
highway, all weather. Light duty road, all weather  
face  
improved surface  
unimproved road, fair or dry  
weather

U.S. Route      State Route

**CHERITON, VA.**  
N3715-W7552/5/7.5  
ED 1973  
**134** ERW 1984



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	○	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngd	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

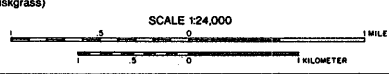
ROAD CLASSIFICATION

Heavy-duty      Light-duty  
Medium-duty      Unimproved dirt

○ Interstate Route      □ U.S. Route      ○ State Route

**YORKTOWN, VA.**  
N37°07.5' - W76°30'7.5"

PHD 139 1880  
DMA 563 1880 ES 934



# SUBMERGED AQUATIC VEGETATION 1985



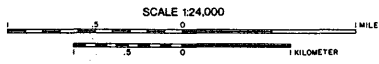
**SPECIES**

Zm <i>Zostera marina</i> (eelgrass)	Hv <i>Hydrilla verticillata</i> (hydrilla)
Rm <i>Ruppia maritima</i> (widgeon grass)	Hd <i>Heteranthera dubia</i> (water stargrass)
Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	Pcr <i>Potamogeton crispus</i> (curly pondweed)
Ppf <i>Potamogeton perfoliatus</i> (redhead-grass)	Cd <i>Ceratophyllum demersum</i> (coontail)
Ppc <i>Potamogeton pectinatus</i> (sago pondweed)	Ppu <i>Potamogeton pusillus</i> (slender pondweed)
Zp <i>Zannichella palustris</i> (horned pondweed)	Ngv <i>Najas guadalupensis</i> (southern naiad)
N <i>Najas</i> spp. (naiad)	Ngr <i>Najas gracillima</i> (naiad)
Ec <i>Elodea canadensis</i> (common elodea)	C <i>Chara</i> sp. (muskgrass)
Va <i>Vallisneria americana</i> (wild celery)	

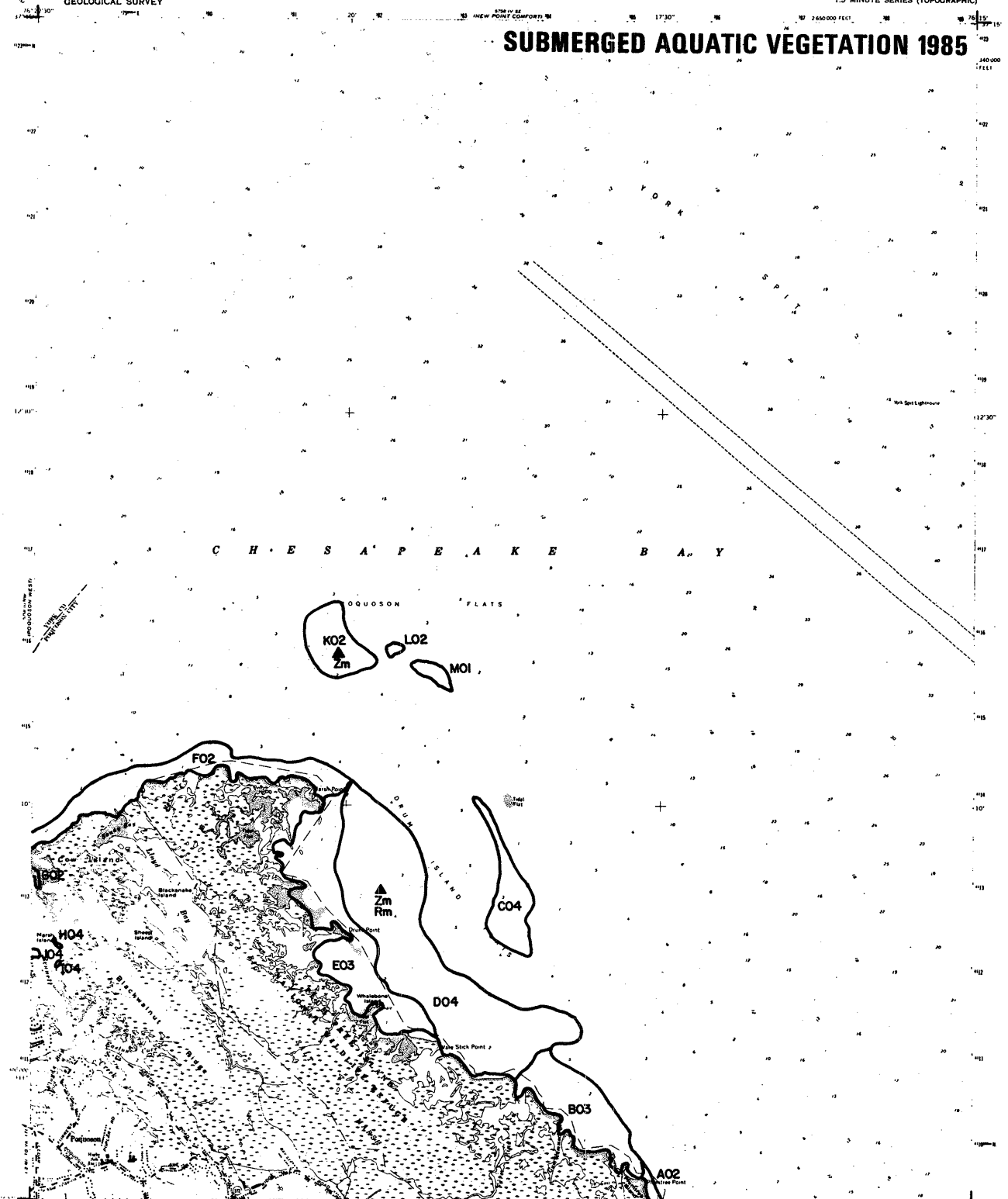
**SURVEY STATIONS**

- MD-DNR Survey Station
- MD Charter Boat Field Survey
- Citizens Field Observation
- ▲ VMS Field Survey
- ◆ U.S.G.S.

**POQUOSON WEST VA.**  
 1:25,000  
 PHOTOREVISED 1974  
 DATA FROM 11 W-SERIES 1964



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas</i> spp. (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngu	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara</i> sp. (muskgrass)		

SCALE 1:24,000

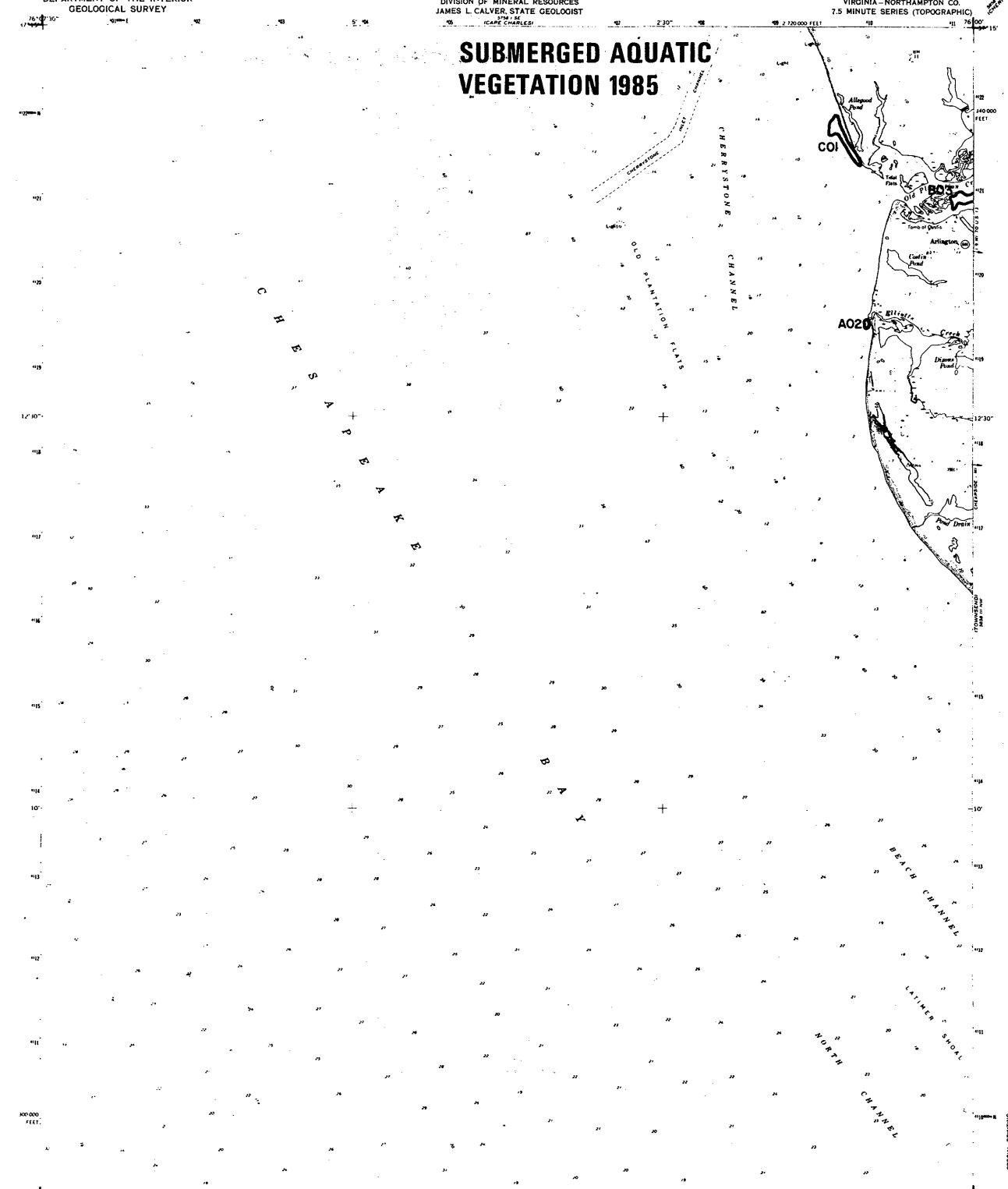
1 MILE / 1 KILOMETER

ROAD CLASSIFICATION:  
 Solid line: Road-duty  
 Dashed line: Light-duty  
 Dotted line: Unimproved dirt

**POQUOSON EAST, VA.**  
 N37075-W7615-7.5  
 1979 141 1964 REVISED 1979  
 1 NE-SERIES 1434



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)		
N	<i>Najas spp.</i> (naiad)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria americana</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngd	<i>Najas guadalupensis</i> (southern naiad)		
Ngr	<i>Najas gracillima</i> (naiad)		
C	<i>Chara sp.</i> (muskgrass)		

SCALE 1:24,000

MILE  
KILOMETER

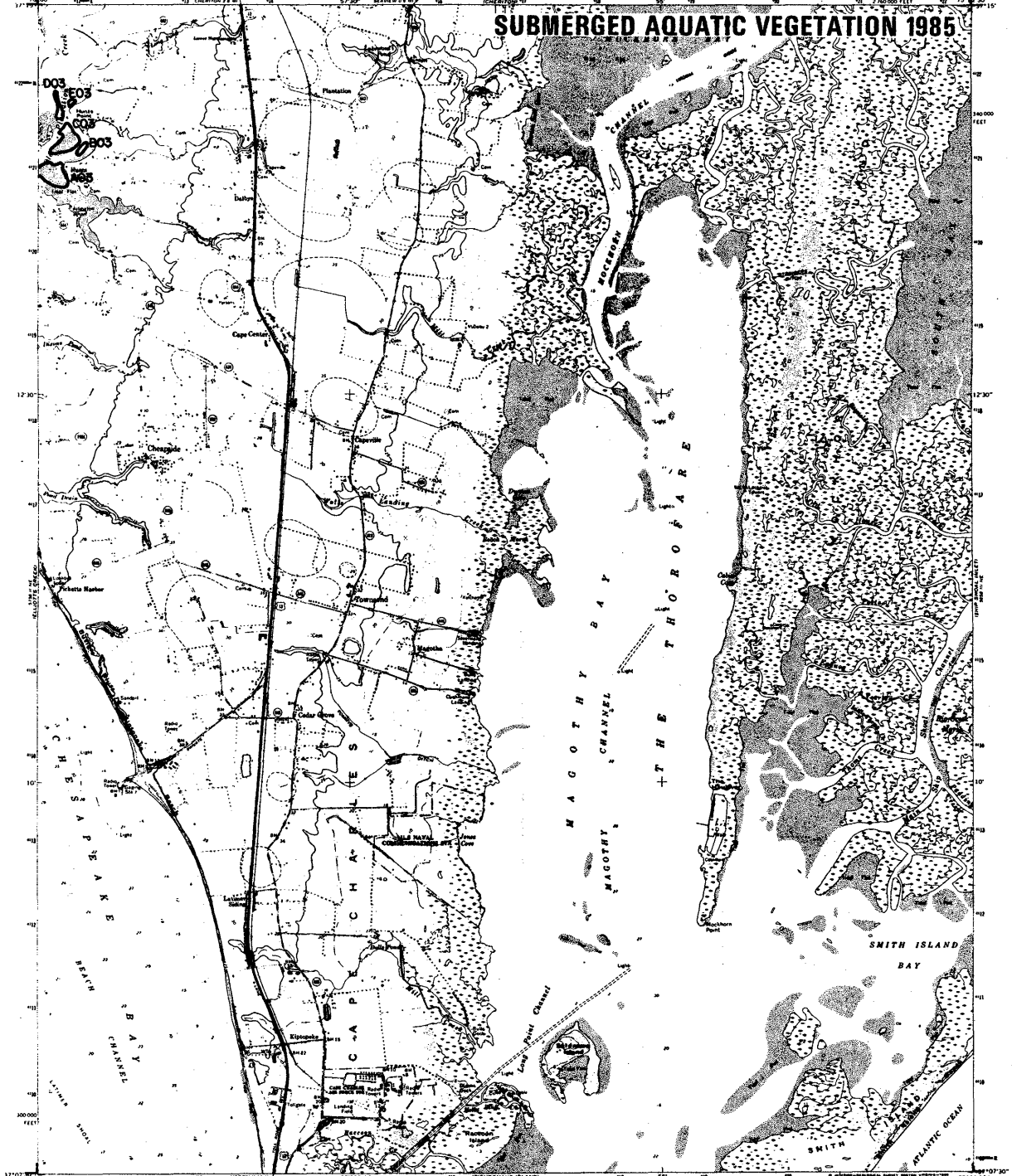
VIMS

237

**ELLIOTTS  
CREEK, VA.**  
ELLIOTTS CREEK, VA.  
N37° 5' - W76° 0' / 7.5  
**142**<sup>1965</sup>  
7.5-MINUTE SERIES 7504

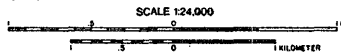
SPECIAL PRINTING  
Contact your nearest office

# SUBMERGED AQUATIC VEGETATION 1985

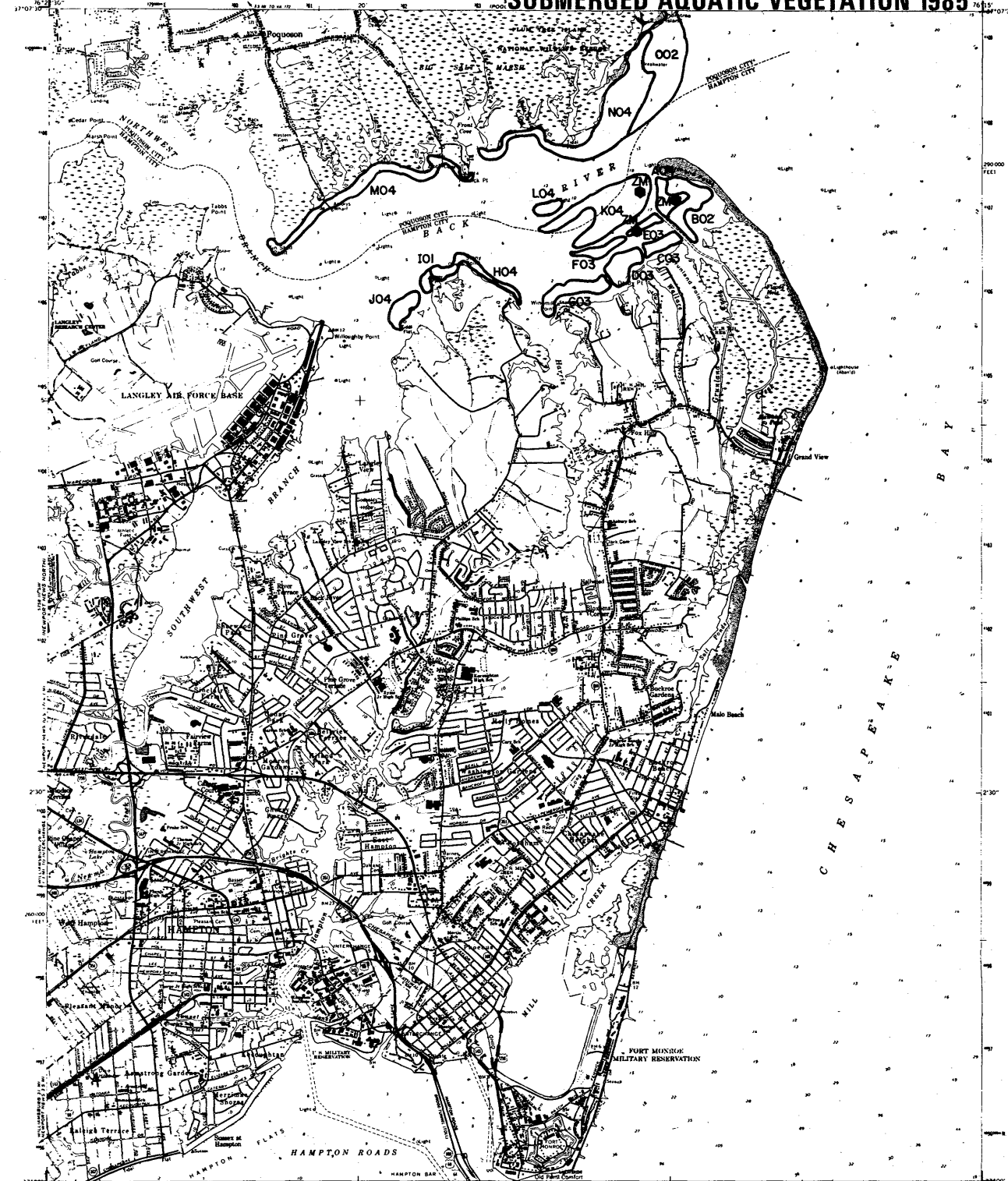


<b>SPECIES</b>		<b>SURVEY STATIONS</b>	
Zm <i>Zostera marina</i> (eelgrass)	Hv <i>Hydrilla verticillata</i> (hydrilla)	● MD-DNR Survey Station	○ MD Charter Boat Field Survey
Rm <i>Ruppia maritima</i> (widgeon grass)	Hd <i>Heteranthera dubia</i> (water stargrass)	■ Citizens Field Observation	▲ VMS Field Survey
Ms <i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	PCR <i>Potamogeton crispus</i> (curly pondweed)	◆ U.S.G.S.	
Ppl <i>Potamogeton perfoliatus</i> (redhead-grass)	Cd <i>Ceratophyllum demersum</i> (coontail)		
Ppc <i>Potamogeton pectinatus</i> (sago pondweed)	Ppu <i>Potamogeton pusillus</i> (slender pondweed)		
Zp <i>Zannichella palustris</i> (horned pondweed)	Ngv <i>Najas guadalupensis</i> (southern naiad)		
N <i>Najas</i> spp. (naiad)	Ngr <i>Najas gracillima</i> (naiad)		
Ec <i>Elodea canadensis</i> (common elodea)	C <i>Chara</i> sp. (muskgrass)		
Va <i>Vallisneria americana</i> (wild celery)			

**TOWNSEND, VA.**  
TOWNSEND, VA.  
N3707 5 - W7552 5 / 7.5  
143  
REVISED 1980  
7.5-MINUTE SERIES



**SUBMERGED AQUATIC VEGETATION 1985**



**SPECIES**

Zm	<i>Zostera marina</i> (eelgrass)
Rm	<i>Ruppia maritima</i> (widgeon grass)
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)
Zp	<i>Zannichellia palustris</i> (horned pondweed)
N	<i>Najas</i> spp. (naiad)
Ec	<i>Elodea canadensis</i> (common elodea)
Va	<i>Vallisneria americana</i> (wild celery)

Hv	<i>Hydrilla verticillata</i> (hydrilla)
Hd	<i>Heteranthera dubia</i> (water stargrass)
Pcr	<i>Potamogeton crispus</i> (curly pondweed)
Cd	<i>Ceratophyllum demersum</i> (coontail)
Pdu	<i>Potamogeton pusillus</i> (slender pondweed)
Ngu	<i>Najas guadalupensis</i> (southern naiad)
Ngr	<i>Najas gracillima</i> (naiad)
C	<i>Chara</i> sp. (muskgrass)

**SURVEY STATIONS**

- MD-DNR Survey Station
- MD Charter Boat Field Survey
- Citizens Field Observation
- ▲ VIMS Field Survey
- ◆ U.S.G.S.

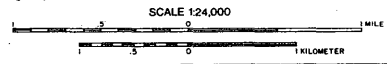
**ROAD CLASSIFICATION**

Heavy-duty      Light-duty  
Medium-duty      Unimproved dirt

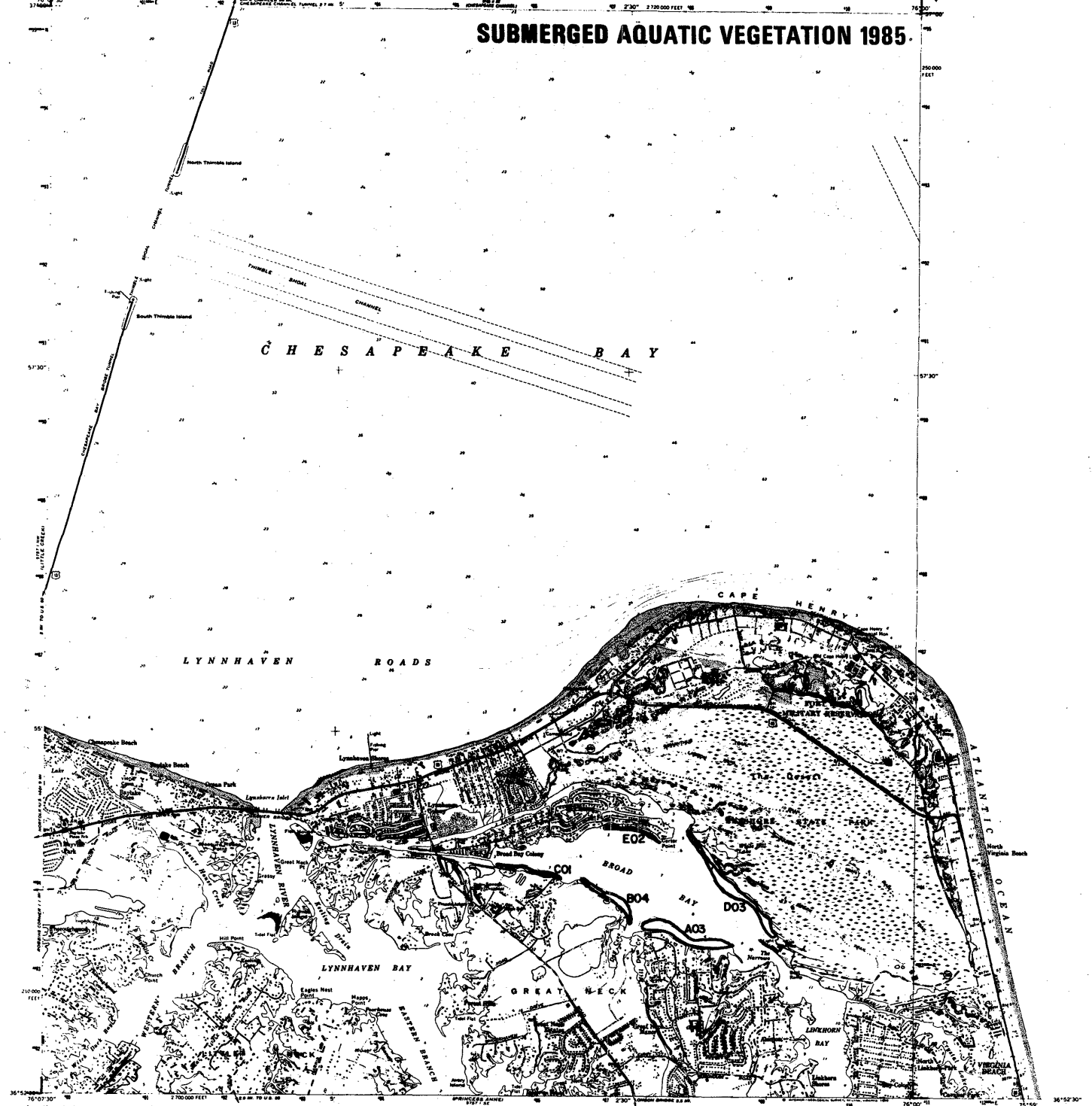
○ Interstate Route      ○ U.S. Route      ○ State Route

**HAMPTON, VA.**

N3700—W7615/7.5  
147  
REVISED 1980  
SERIES 14A



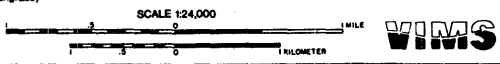
# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS	
Zm	<i>Zostera marina</i> (eelgrass)	●	MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■	MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	●	Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲	VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆	U.S.G.S. ...
Zp	<i>Zannickella palustris</i> (horned pondweed)		
N	<i>Najas spp.</i> (naisid)		
Ec	<i>Elodea canadensis</i> (common elodea)		
Va	<i>Vallisneria spiralis</i> (wild celery)		
Hv	<i>Hydrilla verticillata</i> (hydrilla)		
Hd	<i>Heteranthera dubia</i> (water stargrass)		
Pcr	<i>Potamogeton crispus</i> (curly pondweed)		
Cd	<i>Ceratophyllum demersum</i> (coontail)		
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)		
Ngd	<i>Najas guadalupensis</i> (southern naisid)		
Ngr	<i>Najas gracillima</i> (naisid)		
C	<i>Chara sp.</i> (muskgrass)		

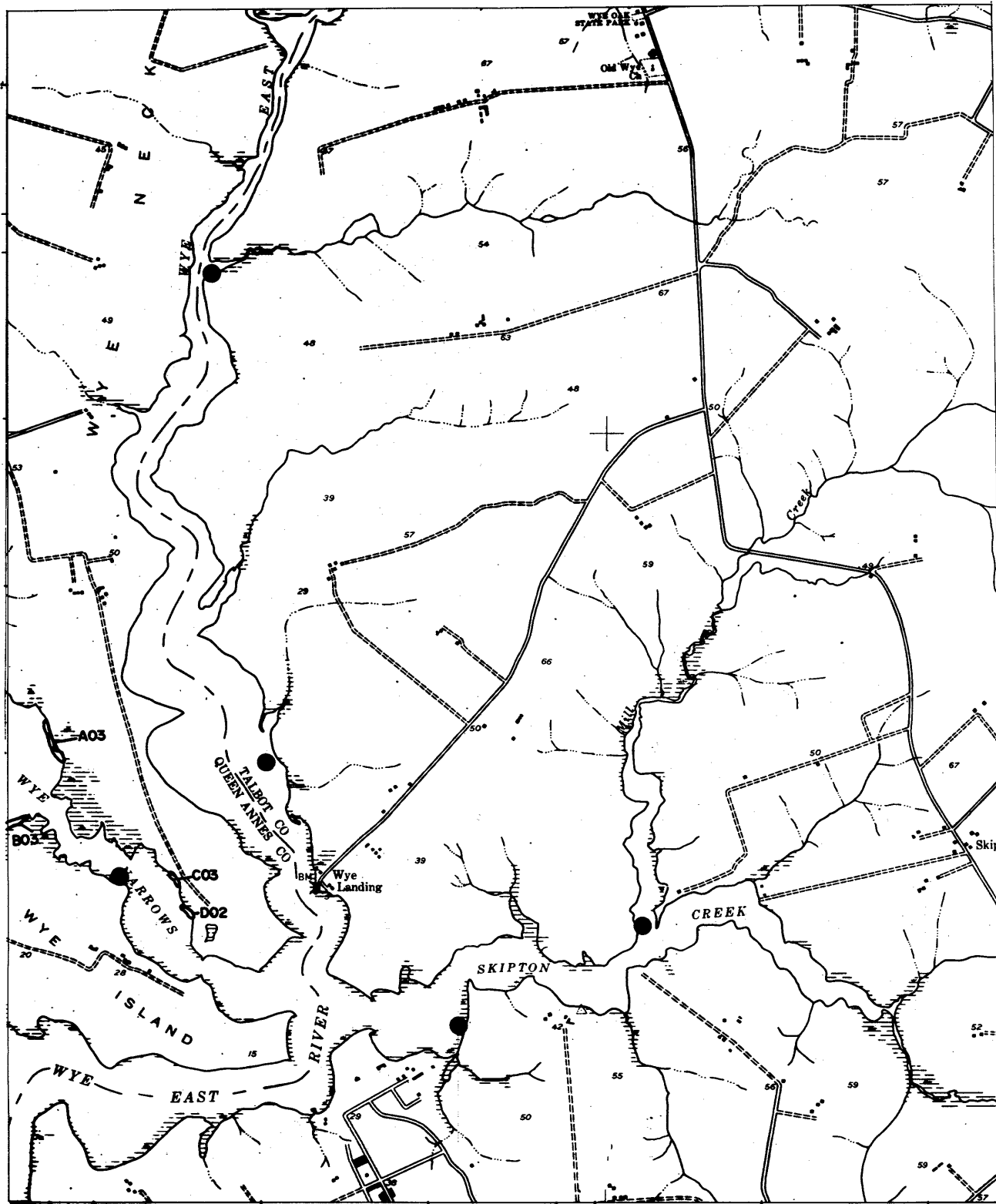
ROAD CLASSIFICATION  
 Heavy-duty ——— Light-duty  
 Medium-duty ——— Unimproved dirt  
 U.S. Route □ State Route ○

**CAPE HENRY, VA.**  
 N3552.5-W7600/7.5  
 152 1964 REVISION 1978  
 HC-508585-VIS





# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngu	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

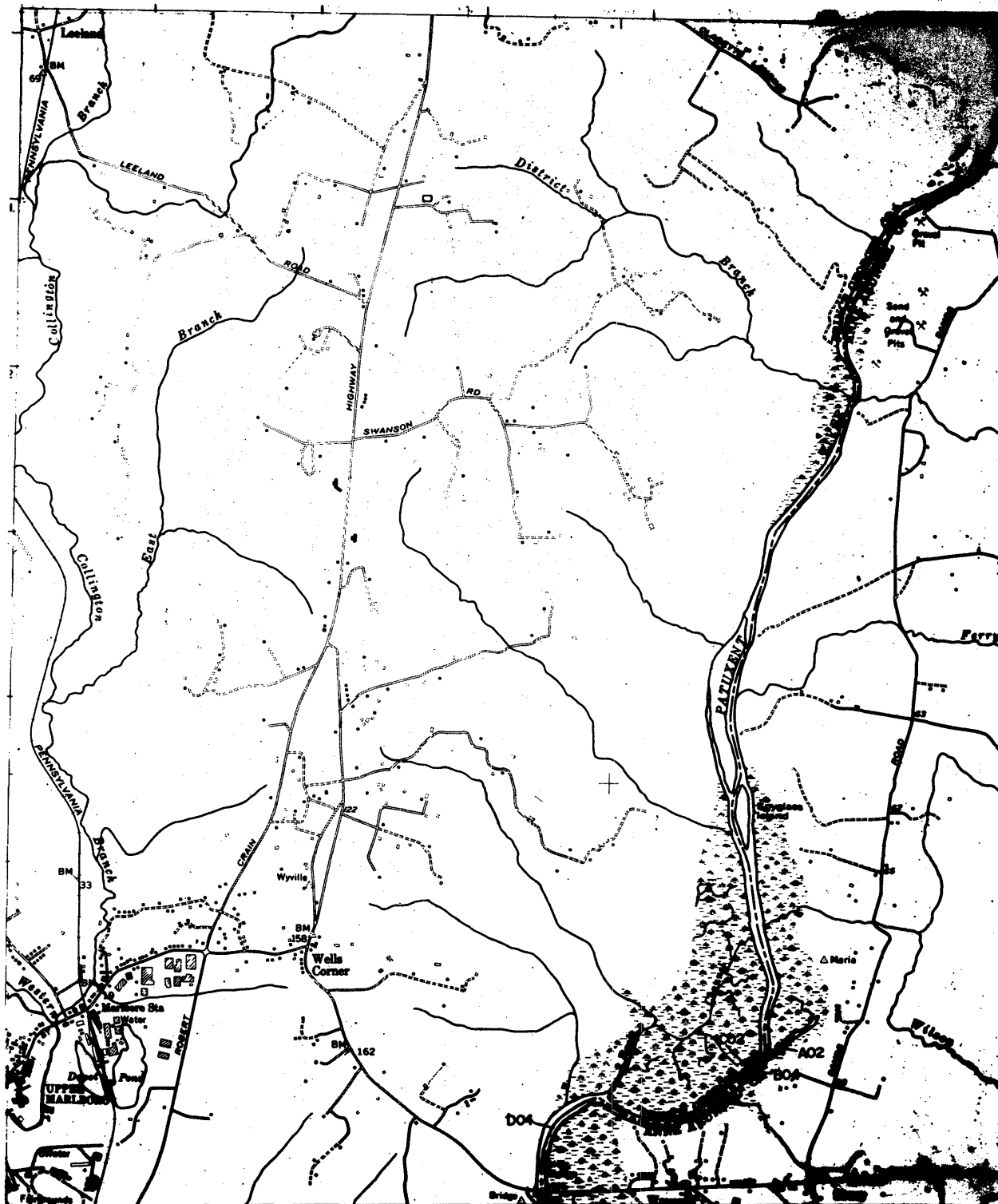
0 5 1 MILE

0 5 1 KILOMETER

**WYE MILLS, MD**  
**Southwest Quarter**  
**# 158**



# SUBMERGED AQUATIC VEGETATION 1985



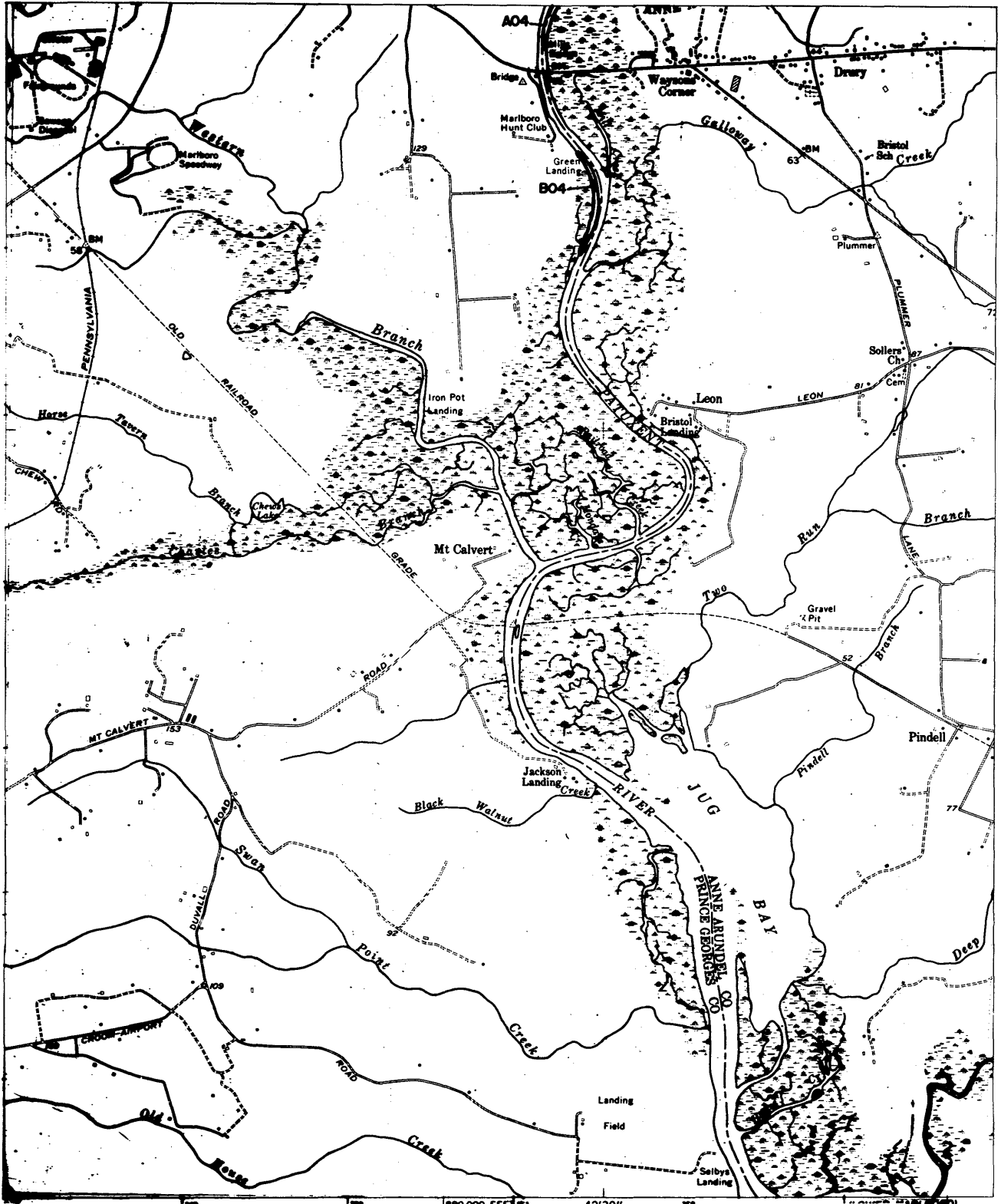
SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (European watermilfoil)	● Citizens Field Observation
Pof	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VIMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichella palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria spiralis</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngd	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

BRISTOL, MD  
Northwest Quarter  
# 159



# SUBMERGED AQUATIC VEGETATION 1985



SPECIES		SURVEY STATIONS
Zm	<i>Zostera marina</i> (eelgrass)	● MD-DNR Survey Station
Rm	<i>Ruppia maritima</i> (widgeon grass)	■ MD Charter Boat Field Survey
Ms	<i>Myriophyllum spicatum</i> (Eurasian watermilfoil)	● Citizens Field Observation
Ppf	<i>Potamogeton perfoliatus</i> (redhead-grass)	▲ VMS Field Survey
Ppc	<i>Potamogeton pectinatus</i> (sago pondweed)	◆ U.S.G.S.
Zp	<i>Zannichellia palustris</i> (horned pondweed)	
N	<i>Najas</i> spp. (naiad)	
Ec	<i>Elodea canadensis</i> (common elodea)	
Va	<i>Vallisneria americana</i> (wild celery)	
Hv	<i>Hydrilla verticillata</i> (hydrilla)	
Hd	<i>Heteranthera dubia</i> (water stargrass)	
Pcr	<i>Potamogeton crispus</i> (curly pondweed)	
Cd	<i>Ceratophyllum demersum</i> (coontail)	
Ppu	<i>Potamogeton pusillus</i> (slender pondweed)	
Ngd	<i>Najas guadalupensis</i> (southern naiad)	
Ngr	<i>Najas gracillima</i> (naiad)	
C	<i>Chara</i> sp. (muskgrass)	

SCALE 1:12,000

BRISTOL, MD  
Southwest Quarter  
# 159



#### APPENDIX D

NUMBER OF SQUARE METERS OF SAV FOR INDIVIDUAL BEDS BY TOPOGRAPHIC QUADRANGLE OR QUARTER QUADRANGLE (SEE MAPS IN APPENDIX C FOR LOCATION OF EACH BED. QUADRANGLES ARE LISTED ALPHABETICALLY).

ABERDEEN, MD.-NE (002)

A04	923
B03	977
C03	7,443
D03	22,335
E04	5,771
F04	1,039
G04	4,128
H04	739
I04	4,624
J02	2,335
K03	9,597
L04	1,026
M03	2,492

ACHILLES, VA. (131)

A02	19,659
B03	29,300
C03	22,368
D04	181,840
E04	467,509
F03	51,043
G02	69,550
H04	275,241
I04	37,017
J04	443,390
K02	39,532
L03	333,729
M02	138,850
N04	155,254
004	38,112
P03	111,770
Q01	32,988
R03	210,375
S01	27,194
T02	125,686
U04	466,638
V03	1,060,695
W02	31,312
X02	14,713
Y02	36,681
Z02	17,776
AA3	2,551
BA4	42,372
CA3	23,833
DA2	20,200
EA2	6,753
FA3	13,564
GA3	132,338
HA3	1,169,456
IA1	85,160
JA4	160,809
KA1	88,691
LA4	97,758
MA1	75,075
NA1	20,488
OA1	100,819
PA3	623,525

ALEXANDRIA, VA.-DC.-MD.-NE (034)

A04	22,102
B01	10,663
C03	6,748
D02	1,442
E04	4,265
F02	18,067
G01	54,588
H03	10,856

TOTAL AREA

DENSITY 1 =	0	30,419	65,251
DENSITY 2 =	2,335	520,718	19,509
DENSITY 3 =	42,844	3,784,554	17,604
DENSITY 4 =	18,250	2,365,945	26,367
TOTAL =	63,429	7,101,637	128,731

ALEXANDRIA, VA.-DC.-MD.-  
SE (034)

ANNAPOLIS, MD.-SW (031)

BARREN IS., MD.-NE (072)

A04 3,874  
 B02 17,679  
 C03 14,035  
 D01 223,013  
 E02 9,895  
 F03 920  
 G03 5,075  
 H02 267,105  
 I01 8,568  
 J02 1,681  
 K02 430  
 L02 4,173  
 M04 1,926  
 N03 2,336  
 O01 1,072  
 P03 3,405  
 Q02 5,997  
 R04 14,924  
 S02 3,976  
 T03 6,109  
 U03 230,426  
 V02 109,941  
 W02 664  
 X02 240  
 Y04 783,039  
 Z02 348,668  
 AA4 438,881  
 BA2 187,747  
 CA4 1,577,155  
 DA2 23,429  
 EA3 13,392  
 FA3 9,281  
 GA4 5,493  
 HA4 28,192  
 IA4 47,913  
 JA4 1,449  
 KA4 756  
 LA4 49,264  
 MA4 36,404  
 NA4 359,148  
 OA3 149,599  
 PA4 28,089  
 QA1 60,013

A03 2,840

A04 164,383  
 B03 142,153  
 C02 465,561  
 D03 60,825  
 E04 54,956  
 F03 757,409  
 G03 42,660  
 H04 15,516  
 I03 18,804  
 J02 2,252  
 K02 918  
 L02 12,531  
 M04 464,362  
 N02 6,563  
 O02 32,752  
 P03 10,809  
 Q02 66,742  
 R03 5,539  
 S03 31,036  
 T03 1,534  
 U03 1,679  
 V03 54,042  
 W03 1,589  
 X03 129,685  
 Y01 14,022  
 Z02 822  
 AA3 5,814  
 BA3 41,214  
 CA3 344  
 DA3 30,357  
 EA4 12,981

TOTAL AREA

DENSITY 1 =	292,666	0	14,022
DENSITY 2 =	981,625	0	588,141
DENSITY 3 =	434,578	2,840	1,335,493
DENSITY 4 =	3,376,507	0	712,198
TOTAL =	5,085,376	2,840	2,649,854

## BETTERTON, MD.-NE (016)

A2	6,890
B1	1,511
C1	3,007
D3	1,130
E3	12,433
F3	403
G3	1,180
H3	438
I3	1,712
J3	7,412

## BETTERTON, MD.-NW (016)

A2	32,441
B3	17,770
C3	13,884
D1	16,432
E3	5,819
F2	6,447

## BLOODSWORTH IS., MD.-NE (083)

A02	26,773
B04	10,134
C04	9,608
D02	117,330
E02	9,124
F04	213,094
G03	23,197
H03	29,062
I03	2,050
J03	1,398
K02	34,596
L02	12,701
M03	75,894
N01	25,199
002	4,403

TOTAL AREA

DENSITY 1 =	4,518	16,432	49,382
DENSITY 2 =	6,890	38,888	204,927
DENSITY 3 =	24,708	37,473	131,601
DENSITY 4 =	0	0	232,836
TOTAL =	36,116	92,793	618,746

## BLOODSWORTH IS., MD.-NW (083)

A02	1,937
B04	11,807
C01	7,237
D04	9,145
E01	35,518
F01	11,411
G03	41,388
H02	33,594

## BLOODSWORTH IS., MD.-SE (083)

A04	9,296
B03	4,451
C04	96,085
D02	4,339

## BLOODSWORTH IS., MD.-SW (083)

A02	27,162
B04	1,405,213
C02	26,735
D02	136,615
E01	60,402
F04	11,323
G02	63,965
H01	37,766
I03	200,447
J03	5,894
K04	8,610

TOTAL AREA

DENSITY 1 =	54,166	0	98,168
DENSITY 2 =	35,531	4,339	254,477
DENSITY 3 =	41,388	4,451	206,341
DENSITY 4 =	20,952	105,381	1,425,146
TOTAL =	152,037	114,171	1,984,132

## BRISTOL, MD.-NW (159)

A02	1,213
B04	2,977
C02	3,229
D04	5,407

## BRISTOL, MD.-SW (159)

A04	2,656
B04	8,010

## BROOMES IS., MD.-SE (060)

A02	10,893
B02	2,905
C02	1,391
D01	3,806
E01	1,444
F01	14,877
G02	12,161
H02	5,608
I02	12,494
JO1	9,041
K02	81,161
L02	77,137
M02	380

TOTAL AREA

DENSITY 1 =	0	0	29,168
DENSITY 2 =	4,442	0	204,130
DENSITY 3 =	0	0	0
DENSITY 4 =	8,384	10,666	0
TOTAL =	12,826	10,666	233,298

## BROOMES IS., MD.-SW (060)

A02	10,436
B02	3,399

## CAPE CHARLES, VA. (133)

A01	46,154
B04	20,810
C01	237,039
D04	127,967
E04	556,475
F02	73,038
G02	148,915
H02	65,901
I02	14,360
JO2	5,875
K02	97,376
L03	69,335
MO1	1,183,205
NO3	648,301

## CAPE HENRY, VA. (152)

A03	121,454
B04	48,981
C01	24,167
D03	141,432
E02	31,531

TOTAL AREA

DENSITY 1 =	0	1,466,400	24,167
DENSITY 2 =	13,835	405,467	31,531
DENSITY 3 =	0	717,638	262,886
DENSITY 4 =	0	705,254	48,981
TOTAL =	13,835	3,294,759	367,567



CHERITON, VA. (134)

A01 19,711  
 B04 290,120  
 C02 90,081  
 D04 235,900

CHESCONESSEX, VA. (108)

A02 13,710  
 B04 18,913  
 C02 11,995  
 D02 43,930  
 E02 96,014  
 F02 11,338  
 G02 11,276  
 H02 92,043  
 I03 266,355  
 J02 655,335  
 K03 233,912  
 L02 46,678  
 M04 41,948  
 N02 121,069  
 O02 21,542  
 P03 395,222  
 Q03 429,683  
 R03 446,997  
 S02 123,326  
 T02 566,206  
 U03 133,349  
 V03 349,397  
 W01 485,512  
 X03 712,801  
 Y02 675,536  
 Z02 233,353  
 AA3 413,774  
 BA4 77,926  
 CA4 6,095  
 DA4 67,398  
 EA3 4,781  
 FA3 7,128  
 GA3 4,544  
 HA4 52,694  
 IA4 41,091  
 JA1 185,108  
 KA3 67,902  
 LA3 74,538  
 MA3 1,032,340

CHESTERTOWN, MD.-SW (022)

A02 10,181  
 B04 9,012

TOTAL AREA

DENSITY 1 =	19,711	670,621	0
DENSITY 2 =	90,081	2,723,359	10,181
DENSITY 3 =	0	4,572,732	0
DENSITY 4 =	526,021	306,068	9,012
TOTAL =	635,815	8,272,778	19,193

## CHURCH CR., MD.-NE (052)

A04	31,400
B03	25,302
C02	1,367
D02	1,412
E04	169,433
F03	10,706
G04	986
H04	13,086
I04	467
J02	4,432
K03	8,772
L03	8,473
M04	1,625
N01	6,755
O03	3,463
P03	901
Q02	1,327
R03	10,935
S03	4,286
T02	34,553
U03	10,610
V03	15,109
W03	4,837
X01	8,793
Y02	7,774
Z02	7,988
AA2	3,422
BA3	8,853
CA3	445
DA1	3,416
EA2	2,158
FA3	7,425
GA3	2,520
HA2	5,418
IA4	2,699
JA2	15,795
KA2	936
MA2	5,357

## CHURCH CR., MD.-NW (052)

A01	86,895
B02	86,639
C03	189,082
D03	302,926
E02	2,931
F02	16,545
G02	5,262
H04	3,696
I03	189,544
J02	162,091
K04	24,810
L04	36,959
M03	30,175
N02	2,651
O03	100,598
P04	93,312
Q04	10,475
R02	746
S03	1,340
T03	6,569
U03	12,870
V03	4,406
W04	5,351
X04	11,446
Y04	27,444
Z03	4,145
AA3	11,540
BA3	8,895
CA4	14,776
DA3	13,884
EA4	6,032
FA3	60,740
GA3	8,960
HA3	1,382
IA3	5,015
JA3	3,719
KA2	968
LA3	54,810
MA3	18,059
NA3	17,987
OA3	26,778
PA4	15,850
QA3	20,730
RA3	2,336
SA3	960
TA3	1,193
UA3	3,027
VA3	4,844
WA3	5,548
XA3	6,411
YA3	1,299
ZA2	1,869

## CHURCH CR., MD.-SW (052)

A02	9,334
B03	25,993
C02	19,092
D03	64,532
E03	10,025
F04	5,954
G04	13,259
H03	12,177
I04	2,155
J03	23,617
L04	11,294
M01	999
N04	19,149
O03	8,256
P03	21,739
Q02	897
S03	1,522
T03	384
U03	1,082
V03	2,278
W03	2,236
X03	3,145
Y04	6,441
Z03	29,005
AA2	14,250
BA3	1,431
CA3	4,662
DA2	1,010
EA3	805
FA3	7,894
GA3	1,274
HA2	2,792
IA2	21,031
JA3	859
KA4	922
LA4	1,537
MA4	14,584
NA2	44,952
OA2	9,847
PA3	4,135
QA3	2,187
TA2	14,945
UA3	6,310
VA4	3,851
XA3	6,121
YA4	11,453
ZA3	42,348
AB3	16,796
BB2	6,037
CB3	5,297
DB2	8,967
EB2	1,331

## CHURCH CR., - NE (cont'd)

## CHURCH CR., - NW (cont'd)

## CHURCH CR., - SW (cont'd)

AB3	6,929
BB2	3,944
CB3	3,349
DB2	1,590
EB3	2,714
FB2	4,242
GB2	1,790
HB2	2,090
IB2	4,311
JB3	712
KB2	1,367
LB3	10,246
MB2	13,028
NB3	3,425
OB3	318
PB3	3,531
QB3	104,531
RB3	11,490
SB3	29,806
TB2	7,470
UB3	55,162
VB4	6,680
WB3	4,849
XB2	12,654
YB3	2,091
ZB3	6,247
AC4	4,888
BC4	9,524
CC2	2,988
DC1	1,758
EC3	6,325
FC2	998
GC3	14,990
HC2	4,026
IC3	8,976
JC3	17,484
KC2	7,329
LC4	3,175
MC3	27,751
NC3	18,741
OC3	13,451
PC3	7,973
QC2	2,795
RC1	5,096
SC1	1,548
TC3	1,773
UC4	5,843
VC3	33,024
WC2	12,564
XC3	5,356
YC3	4,159

FB2	1,033
GB2	11,362
HB1	11,026
IB2	1,695
JB2	12,410
LB3	3,595
MB3	19,238
NB3	4,389
OB2	9,726
PB3	11,203
QB3	29,311
RB3	631
SB3	4,598
TB2	5,182
UB3	675
VB3	5,838
WB3	2,014
XB4	209
YB4	208
ZB3	7,505
AC3	1,321
BC2	1,384
CC1	2,580
DC3	1,669
EC2	5,545
FC3	855
GC2	1,330
HC1	7,444
IC2	1,567
JC2	821
KC4	6,702
LC2	4,860
MC2	3,826
NC3	1,799
OC2	9,784
PC3	11,951
QC1	6,201
RC2	1,076
SC2	1,990
TC1	2,676
UC1	760
VC1	663
WC2	10,274
XC3	4,476
YC3	1,279
KO3	18,231
RA2	6,066
SA3	2,053
KB3	7,898

## CHURCH CR., ~ NE (cont'd)

## CHURCH CR., ~ NW (cont'd)

## CHURCH CR., ~ SW (cont'd)

AC2	885
AD3	2,039
BD3	2,325
CD2	3,772
DD4	2,798
ED2	14,470
FD4	10,652

TOTAL AREA

DENSITY 1 =	18,964	92,297	32,349
DENSITY 2 =	91,939	385,015	244,416
DENSITY 3 =	122,637	1,529,539	446,639
DENSITY 4 =	219,706	293,711	106,682
TOTAL =	453,246	2,208,265	830,086

## CLAIBORNE, MD.-NE (036)

## CLAIBORNE, MD.-NW (036)

## CLAIBORNE, MD.-SW (036)

A04	6,613
B03	791
C02	613
D02	28,632
E03	398
F02	1,396
G02	6,276
H02	416
I02	436
J03	1,979
K02	332,200
L03	20,835
M03	2,362
N03	5,521
O03	11,906
P03	1,442
Q03	1,928
R02	745
S03	10,387
T03	5,690
U02	9,289
V02	241

A02	7,986
B02	49,812
C03	7,716
D02	144,892
E04	35,581
F02	16,739
G04	28,308
H02	53,615

A02	587,899
B04	8,055
C04	1,088
D03	176
E04	30,519
F02	10,297
G02	764
H02	1,607
I03	8,406
J04	17,155
K03	18,583
L04	1,235
M02	4,037
N02	1,970
O03	1,742
P02	3,173
Q03	3,792
R03	18,073
S03	3,573
T03	35,576
U02	58,567
V02	14,174

TOTAL AREA

DENSITY 1 =	0	0	0
DENSITY 2 =	380,244	273,044	682,488
DENSITY 3 =	63,239	7,716	8,992
DENSITY 4 =	6,613	63,889	58,052
TOTAL =	450,096	344,649	749,532

## CLAIBORNE, MD.~SE (036)

A03	826
B04	3,523
C03	69,585
D02	222
E02	11,168
F03	17,493
G02	313,938
H03	636
I03	4,591
J02	7,391
K03	5,711
L03	4,305
N04	22,202
004	13,773
P03	7,506
Q04	23,543
R03	28,046
S04	9,946
T04	90,755
U02	1,047
V04	49,036
W03	392
X03	939
Y03	337
Z03	973
AA4	666
BA4	659
CA3	11,748
DA3	32,562
EA2	13,114
FA3	9,446
GA2	33,590
HA3	12,722
IA3	39,724
JA3	4,047
KA3	920
LA2	4,643
MA4	17,182
NA3	17,620
OA2	1,317
PA3	2,488
QA3	5,131
RA4	2,435
SA3	841
TA3	10,120
UA3	2,203
VA3	6,486
WA3	1,293
XA3	2,770
YA2	1,424
ZA3	6,038

## CLAIBORNE - SE (cont'd)

AB3	17,752
BB3	33,919
CB4	2,272
DB4	10,243
EB4	15,031
FB3	4,467
GB3	1,244
HB3	13,807
IB3	6,598
JB2	3,005
KB2	14,777
LB3	7,376
MB3	22,651
NB2	2,774
OB1	2,231
PB2	3,603
QB3	6,992
RB3	47,522
SB2	20,617
TB4	31,952
UB3	119
VB2	693
WB2	1,683
XB3	8,549
YB4	16,944
ZB3	18,531
AC3	10,683
BC2	19,719
CC4	18,560
DC3	4,396
EC2	919
FC3	19,713
GC3	5,973
HC3	38,275
IC4	22,642
JC2	11,496
KC3	70,296
LC4	21,195
MC4	1,110
NC2	7,898
OC3	14,704
PC4	6,166
QC4	6,583
RC3	12,356
SC4	3,542
TC2	3,441
UC4	18,457
VC2	35,658
WC3	7,006
XC3	6,186
YC3	24,149

CLAIBORNE - SE (cont'd)

ZC3	18,664
AD2	11,840
BD2	3,352
CD2	20,994
DD4	11,671
ED3	91
FD2	892
GD3	1,844
HD3	7,952
ID4	7,669
JD2	42,346
KD4	10,020
LD2	1,752
MD3	1,607
ND2	3,101
OD3	3,694
PD2	4,055
QD3	16,781
RD2	15,066
SD2	53,385
TD3	2,949
UD3	1,052
VD3	2,542
WD3	2,243
XD3	7,019
YD2	749
ZD2	421
AE3	6,595
BE3	140,175
CE3	5,130
EE3	53,984
FE3	10,934
GE2	1,852
HE4	9,544
IE3	17,652
JE3	7,776
KE3	11,110
LE2	1,421
ME3	5,948
NE3	10,971
OE3	2,049
PE4	16,426
QE3	4,965
RE3	5,765
SE4	10,578
TE2	73,211
UE3	4,155
VE1	8,464

CLAIBORNE - SE (cont'd)

WE2	10,380
YE3	3,404
ZE3	34,297
AF2	37,107

TOTAL AREA

DENSITY 1 =	0
DENSITY 2 =	796,061
DENSITY 3 =	1,105,634
DENSITY 4 =	470,802
TOTAL =	2,379,497

COLONIAL BEACH N., MD.-VA.-  
NE (067)

A03 6,002  
B03 50,392  
C03 2,165  
D03 672

COLONIAL BEACH N., MD.-VA.-  
NW (067)

A02 1,536  
B03 32,567  
C02 3,054  
D02 5,478  
E01 7,262

COLONIAL BEACH N., MD.-VA.-  
SW (067)

A03 47,512

TOTAL AREA

DENSITY 1 =	0	7,262	0
DENSITY 2 =	0	10,068	0
DENSITY 3 =	59,231	32,567	47,512
DENSITY 4 =	0	0	0
TOTAL =	59,231	49,897	47,512

COVE PT., MD.-SW (061)

A03 5,297  
B02 6,185  
C02 3,938  
D02 1,854  
E02 7,336

CRISFIELD, MD.-VA. (101)

A03 7,532  
B03 7,584  
C03 11,496  
D03 31,585  
E03 46,390  
F03 53,143  
G02 148,402  
H04 235,786  
I03 48,742  
J03 57,122  
K04 94,427  
L03 17,838  
M03 13,224  
N02 18,948

DAHLGREN, VA.-MD.-NE (066)

A03 3,178  
B03 8,244  
C02 8,297

TOTAL AREA

DENSITY 1 =	0	0	0
DENSITY 2 =	5,297	167,351	8,297
DENSITY 3 =	19,313	294,661	11,422
DENSITY 4 =	0	330,214	0
TOTAL =	24,610	792,226	19,719

DEAL IS., MD.-SE (084)

A03 7,352  
 B03 42,600  
 C03 1,330  
 D01 7,207  
 E03 37,886  
 F02 6,205  
 G02 14,391  
 H02 1,902  
 I04 1,123  
 J03 4,338  
 K02 4,712  
 L03 17,077  
 M03 10,758  
 N02 6,393  
 O04 3,217

DEALE, MD.-NE (035)

A04 8,392  
 B01 1,088  
 C03 5,616  
 D02 9,175

DELTAVILLE, VA. (118)

A03 3,484  
 B02 3,532

TOTAL AREA

DENSITY 1 =	7,207	1,088	0
DENSITY 2 =	33,607	9,175	3,532
DENSITY 3 =	121,341	5,616	3,484
DENSITY 4 =	4,340	8,392	0
TOTAL =	166,495	24,271	7,017

EAST NEW MARKET, MD.-NW (054)

A04 7,462

EASTON, MD.-NW (038)

A03 738  
 B03 808  
 C03 5,853

EASTON, MD.-SW (038)

A02 4,342  
 B02 2,060  
 C03 1,866  
 D03 3,496  
 E02 2,338  
 F03 1,787  
 G01 5,636  
 H02 2,229  
 I03 14,345  
 J03 3,570  
 K03 1,881  
 L02 4,407  
 M03 20,093  
 N03 35,455  
 O04 5,305  
 P03 3,773  
 Q04 12,911  
 R02 3,824  
 S03 6,557

TOTAL AREA

DENSITY 1 =	0	0	5,636
DENSITY 2 =	0	0	19,200
DENSITY 3 =	0	7,399	92,823
DENSITY 4 =	7,462	0	18,216
TOTAL =	7,462	256	7,399
			135,875



## EARLEVILLE, MD.-NE (010)

A01	10,131
B02	44,134
C02	4,203
D02	4,225
E02	2,908

TOTAL AREA

DENSITY 1 =	10,131
DENSITY 2 =	55,470
DENSITY 3 =	0
DENSITY 4 =	0

TOTAL =	65,601
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## EARLEVILLE, MD.-NW (010)

A01	24,444
B02	5,067
C03	4,983

24,444
5,067
4,983
0

34,494
--------

## EARLEVILLE, MD.-SW (010)

A03	2,198
B03	3,075
C03	398
D02	10,230

0
10,230
5,671
0

15,901
--------

## EDGEWOOD, MD.-SW (007)

B03	1,299
C02	1,657
D03	4,236
E03	3,178
L02	35,861
M01	1,281
N02	15,624

TOTAL AREA

DENSITY 1 =	1,281
DENSITY 2 =	53,142
DENSITY 3 =	8,713
DENSITY 4 =	0

TOTAL =	63,136
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## ELLIOTS CREEK, VA. (142)

A02	6,411
B03	20,880
C01	56,840

56,840
6,411
20,880
0

84,133
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## EWELL, MD.-VA. (099)

A01	203,266
B02	567,327
C04	4,516,964
D02	714,527
E02	2,104,881
F03	2,490,956
G03	1,004,111
H04	3,604,417
I04	1,893,827
J02	235,196
K02	319,461
L03	871,589
M04	455,935
N02	59,680
O04	150,095
P03	226,574
Q03	31,768
R02	208,496
S03	181,974
T02	40,423
U02	134,241
V04	583,227
W04	17,372
X03	238,927
Y01	89,333
Z01	79,039
AA3	4,023
BA3	269,061

371,599
4,384,237
5,318,988
11,221,840

21,296,660
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FLEETS BAY, VA. (112)

A03 15,268  
 B03 9,634  
 C03 2,633  
 D01 352,837  
 E03 2,550  
 F01 34,655  
 G01 49,495  
 H03 3,047  
 I03 11,597  
 J02 9,579  
 K02 367,439  
 L02 156,906  
 M03 12,555  
 N02 59,289  
 O02 86,849  
 P03 20,040  
 Q03 5,485  
 R02 9,209

FRANKTOWN, VA. (124)

A04 55,530  
 B02 131,630  
 C02 5,349  
 D03 25,802  
 E04 301,183  
 F02 19,742  
 G04 305,627  
 H04 137,058  
 I03 212,892  
 J02 12,385  
 K03 21,482  
 L03 14,664  
 M02 24,461  
 N02 69,137  
 O03 194,435  
 P03 78,796  
 Q04 1,322,067  
 R02 223,739  
 S02 385,679  
 T02 17,804  
 U03 56,973  
 V02 30,187  
 W01 30,987  
 X02 178,926  
 Y02 62,619  
 Z02 23,208  
 AA3 105,105  
 BA2 64,223  
 CA2 49,563  
 DA2 11,322  
 EA2 15,965

TOTAL AREA

DENSITY 1 = 436,989  
 DENSITY 2 = 689,273  
 DENSITY 3 = 82,815  
 DENSITY 4 = 0  
 TOTAL = 1,209,077

FT. BELVOIR, VA.-MD.-SE (039)

A02 2,570  
 B01 14,711

TOTAL AREA

DENSITY 1 = 14,711  
 DENSITY 2 = 2,570  
 DENSITY 3 = 0  
 DENSITY 4 = 0  
 TOTAL = 17,281

GALENA, MD.-NW (017)

A01 1,435  
 B01 4,637

6,072  
 0  
 0  
 0  
 6,072

GIBSON IS., MD.-NE (024)		GIBSON IS., MD.-NW (024)		GIBSON IS., MD.-SE (024)	
A02	1,303	A03	2,114	A02	21,664
B04	3,654	B03	20,683	B04	88,122
C03	13,485			C03	3,723

TOTAL AREA

DENSITY 1 =	0	0	0
DENSITY 2 =	1,303	0	21,664
DENSITY 3 =	13,485	22,797	3,723
DENSITY 4 =	3,654	0	88,122
TOTAL =	18,442	22,797	113,509

GIBSON IS., MD.-SW (024)		GOLDEN HILL, MD.-SW (063)		GREAT FOX ISLAND, MD-VA. (100)	
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A02	5,922	A02	11,240	A03	1,883,281
		B03	14,989	B02	24,654
		C03	44,701	C04	125,801
		D01	2,446	D02	42,323
		E03	589	E04	54,717
		F03	8,491	F01	222,343
		G03	1,037	G02	127,370
		H03	9,771	H04	270,518
		I03	5,727	I02	114,387
		J02	1,362	J04	2,317,310
		K03	207	K03	539,607
		L03	685	L02	167,205
		M02	4,998	M03	64,326
		N02	2,734	N03	189,831
				003	564,975
				P04	3,253,879
				Q03	270,405
			2,446	R03	53,929
			20,334	S03	188,726
			86,197	T04	13,236
			0	U02	103,710
				V02	56,697
			108,977	W04	93,227

TOTAL AREA

DENSITY 1 =	0	2,446	
DENSITY 2 =	5,922	20,334	222,344
DENSITY 3 =	0	86,197	636,350
DENSITY 4 =	0	0	3,755,084
TOTAL =	5,922	108,977	6,128,692
			10,742,470

GUNPOWDER NECK, MD.-NE (014)

A02	24,316
B03	59,802
C02	4,752
D01	10,506
E01	5,159
F03	26,372
G03	3,520

GUNPOWDER NECK, MD.-NW (014)

A02	68,955
B01	9,796
C01	657
D01	9,621
E02	4,870
F01	1,663
G01	5,172
H01	2,383
I01	2,865
J01	6,631
K03	43,651
L02	54,543
M02	148,907
N03	7,276
O02	2,117
P02	5,150
Q03	2,740
R03	3,236
S02	15,087
T02	31,389
U01	32,048
V02	148,155
W02	36,916

GUNPOWDER NECK, MD.-SW (014)

A02	36,820
B02	34,093
C02	99,929
D02	55,524
E02	38,033
F01	439,086

TOTAL AREA

DENSITY 1 =	15,665	70,836	439,086
DENSITY 2 =	29,068	516,089	264,399
DENSITY 3 =	89,694	56,903	0
DENSITY 4 =	0	0	0
TOTAL =	134,427	643,828	703,485

HAMPTON, VA. (147)

A04 91,794  
 B02 180,763  
 C03 65,741  
 D03 128,655  
 E03 36,682  
 F03 62,150  
 G03 145,747  
 H04 105,102  
 I01 25,673  
 J04 92,667  
 K04 457,980  
 L04 46,227  
 M04 295,863  
 N04 650,671  
 O02 485,278

HANESVILLE, MD.-NE (015)

A02 16,347  
 B03 52,789  
 C03 1,161  
 D02 1,874  
 E03 3,388  
 F03 5,080

HANESVILLE, MD.-SW (015)

A03 2,230  
 B01 8,729  
 C03 4,364  
 D03 4,247  
 E02 515  
 F01 265

TOTAL AREA

DENSITY 1 = 25,673  
 DENSITY 2 = 666,041  
 DENSITY 3 = 438,977  
 DENSITY 4 = 1,740,308

0  
 18,221  
 62,418  
 0

8,994  
 515  
 10,841  
 0

TOTAL = 2,871,000

80,639

20,350

HAVRE DE GRACE, MD.-NW (003)      HAVRE DE GRACE, MD.-SE (003)      HAVRE DE GRACE, MD.-SW (003)

A03	24,144	A01	282,789	A04	14,118
B04	588	B01	176,968	B03	1,115
C04	750	C01	974,434	C04	8,248
D04	8,283	D01	502,230	D03	1,443
E04	5,262	E01	461,370	E03	4,882
F04	2,971	F01	9,432,632	F03	20,640
G04	9,668	G02	3,946	G03	1,786
H04	81,855	H02	2,060	H04	8,281
I03	16,867	I02	571	I03	348
J04	25,918	J03	1,186	J04	2,964
K03	11,021			K03	148,529
L04	14,346			L01	302,140
M03	88,007			M03	6,114
N02	4,673			N03	5,505
O03	2,856			004	3,865
P04	9,133			P03	10,761
Q03	4,493			Q02	2,650
R04	11,341			R02	45,049
S03	745			S02	4,692
T04	4,147			T01	33,424
				U04	12,979
				V03	51,901
				W03	26,946
				X02	277,149
				Y03	10,587
				Z02	4,723
				AA3	9,074
				BA2	556
				CA1	2,785
				DA1	2,939
				EA2	3,058
				FA2	12,792
				GA1	749
				HA3	3,742
				IA1	7,272,167
				JA1	484

TOTAL AREA

DENSITY 1 =	0	11,830,423	7,614,688
DENSITY 2 =	4,673	6,577	350,669
DENSITY 3 =	148,133	1,186	303,373
DENSITY 4 =	174,232	0	50,455
TOTAL =	327,038	11,838,186	8,319,185

## HONGA, MD.-NE (073)

A02	30,785
B01	8,258
C03	9,173
D03	24,106
E02	3,517
F03	8,423
G02	17,464
H03	16,735
I03	15,369
J02	42,875
K03	3,736
L02	2,656
M02	35,958
N01	37,796
O02	13,082
P04	534
Q02	2,242
R04	12,753
S01	1,861
T04	32,682
U02	40,449
V04	2,213
W01	9,476
X01	11,580
Y02	22,001

## HONGA, MD.-NW (073)

A01	3,000
B03	1,732
C03	6,312
D03	4,546
E02	4,267
F03	396
G03	255
H02	2,506
I03	7,335
J02	27,408
K02	5,683
L03	418
M02	3,992
N04	4,145
O02	11,594
P02	836
Q03	5,594
R02	95,935
S03	60,598
T03	476
U02	5,061
V03	2,325
W02	1,023
X01	518
Y03	7,263
Z01	53,541
AA2	1,771
BA1	1,229
CA3	10,189
DA4	42,056
EA3	30,117
FA1	23,340
GA3	5,386
HA3	2,722
IA1	12,497
JA3	10,850
KA3	19,545
LA1	12,437
MA3	655
NA3	1,386
OA4	13,279
PA3	867
QA4	1,904
RA4	1,274
SA3	19,634
TA1	22,757
UA3	2,012
VA3	26,551
WA4	2,350
XA2	3,533
YA2	1,791

## HONGA, MD.-SE (073)

A04	29,227
B02	41,480
C04	11,968
D01	1,186
E01	15,972
F01	18,791
G04	56,653
H03	22,904
I02	94,923
J04	10,664
K04	4,311
L02	3,157
M02	911
N02	6,452
O03	19,934
P01	52,394
Q03	13,085
R03	669
S03	993
T02	5,515
U04	5,396
V03	33,470
W03	828
X03	636
Y04	4,487
Z03	2,833
AA4	8,564
BA2	11,153
CA4	10,500
DA4	44,306
EA2	80,033
FA2	1,038
GA3	10,125
HA3	19,868
IA2	7,344
JA2	48,329
KA4	23,276
LA4	1,694
MA2	2,969
NA4	3,686
OA2	5,616
PA3	6,676
QA3	9,026
RA4	1,596
SA3	504
TA4	5,661
UA2	1,982
VA3	2,962
WA2	611
XA3	1,650
YA3	460

HONGA - NE (cont'd)

HONGA - NW (cont'd)

HONGA - SE (cont'd)

ZA3 14,637  
 AB3 37,307  
 BB3 457

ZA2 1,781  
 AB4 19,950  
 BB4 15,193

TOTAL AREA

DENSITY 1 =	68,971	129,319	88,343
DENSITY 2 =	211,029	165,400	313,294
DENSITY 3 =	77,542	279,565	146,578
DENSITY 4 =	48,182	65,008	257,132
TOTAL =	405,724	639,292	805,347

HONGA, MD.-SW (073)

INDIAN HEAD, VA.-MD.-NE (048)

IRVINGTON, VA, (111)

A3 353  
 B3 28,140  
 C1 1,425  
 D2 2,022  
 E3 2,561  
 F2 13,401  
 G4 30,520

A02 2,054

A01 82,576

TOTAL AREA

DENSITY 1 =	1,425	0	
DENSITY 2 =	15,423	2,054	82,576
DENSITY 3 =	31,054	0	0
DENSITY 4 =	30,520	0	0
TOTAL =	78,422	2,054	82,576



JAMESVILLE, VA. (119)

A02	44,336
B02	40,791
C03	12,935
D02	351,511
E03	465,695
F04	81,573
G03	126,140
H02	598,146
I04	148,113
J02	23,815
K02	236,011
L04	197,032
M04	124,841
N03	17,286
O03	109,589
P02	90,564
Q03	40,597
R03	129,032
S02	35,873
T03	265,764
U03	95,546
V02	28,270
W02	8,517

KEDGES STRAITS, MD. (091)

A04	2,404,197
B01	57,419
C03	150,410
D02	136,237
E04	164,534
F02	139,740
G02	68,468
H03	183,360
I03	296,115
J04	206,034
K04	71,396
L02	328,933
M02	6,096
N02	7,088
O02	2,875
P03	2,029
Q02	32,218
R03	308,831
S03	970
T03	1,223
U03	51,957
V03	66,265
W02	7,289
X03	8,489
Y02	3,540
Z02	4,290
AA2	19,584
BA2	19,502

KENT IS., MD.-NE (032)

A03	23,017
B03	11,485
C02	1,038
D03	1,725
E02	1,774
F02	15,289
G02	5,852
H02	3,537
I02	4,346
K02	2,466
L02	10,174
M02	10,169
N02	423
O01	322
P03	570
Q03	671
R02	6,500
S02	7,869
T03	5,791
U03	959
V02	6,620
W03	3,199
X03	4,218
Y02	2,807
Z03	9,083
AA3	11,322
BA4	52,451
CA2	9,183
DA2	5,858
EA3	3,912
FA2	713
GA2	1,545

TOTAL AREA

DENSITY 1 =	0		
DENSITY 2 =	1,457,837	57,419	322
DENSITY 3 =	1,262,591	775,865	96,163
DENSITY 4 =	551,560	1,069,656	75,952
		2,846,162	52,451
TOTAL =	3,271,989	4,749,103	224,888

## KENT IS., MD.-NW (032)

A04	21,538
B03	19,051
C01	16,926
D01	15,632
E02	6,375
F02	9,990
G03	2,913
H03	13,011
I03	1,924
J03	7,402
K02	787
L02	1,302
M03	12,723
N02	5,902
O03	4,052

## KENT IS., MD.-SE (032)

A01	2,285
B01	6,566
C02	9,499
D03	10,927
E02	17,517
F03	6,786
G03	11,148
H03	15,201
I01	2,106
J02	7,393

## KENT IS., MD.-SW (032)

A03	1,944
B03	7,127
C02	795
D02	1,365
E02	5,948
F03	3,743
G03	8,699
H03	270
I02	845
J03	13,423
K04	11,127
L03	6,207
M04	1,459
N03	1,025
O02	1,446
P03	10,328
Q03	1,659
R02	1,434
S02	2,528
T02	12,187
U02	964
V03	4,147

TOTAL AREA

DENSITY 1 =	32,558	10,957	0
DENSITY 2 =	24,356	34,409	27,512
DENSITY 3 =	61,076	44,062	58,572
DENSITY 4 =	21,538	0	12,586
TOTAL =	139,528	89,428	98,670

## KING GEORGE, VA.-MD.-NE (065) KING GEORGE, VA.-MD.-NW (065)

A03	18,027	A02	11,866
B04	53,526	B02	7,148
C03	26,176	C03	14,319
D03	39,303	D04	35,106
		E03	51,838
		F03	4,573
		G02	3,504

TOTAL AREA

DENSITY 1 =	0	0
DENSITY 2 =	0	22,518
DENSITY 3 =	83,506	70,730
DENSITY 4 =	53,526	35,106
TOTAL =	137,032	128,354

## LANGFORD CR., MD.-NE (026)

A03	4,414
B02	5,459
C04	11,969
D02	2,084
E03	4,683
F04	874
G04	4,778
H03	22,993
I03	8,275
J02	33,118
K03	33,384
L02	20,865
M03	16,678
N02	24,938
004	6,668
P01	15,539
Q03	20,622
R04	9,076
S02	12,314
T03	4,013
U02	47,891
V04	5,489
W03	47,924
X02	4,760
Y02	5,145
Z01	175,903
AA3	3,034
BA2	1,469
CA2	11,901
DA2	5,700
EA4	63,911
FA2	5,591
GA4	34,369

## LANGFORD CR., MD.-NW (026)

A02	111,953
B04	9,884
C04	26,116
D03	3,329
E03	86,048
F04	12,471
G03	1,990
H03	1,049
I04	8,165
J04	587
K04	6,773
L03	42,257
M04	41,227
N03	3,445
004	222
P04	729
Q04	5,006
R04	4,099
S03	15,193
T02	10,272
U03	8,066
V04	12,244
W03	7,317
X04	25,934
Y04	90,515
Z03	36,340
AA3	3,591
BA4	830
CA4	4,347
DA3	21,180
EA3	7,473
FA2	1,225
GA3	17,576
HA2	20,370
IA3	14,080
JA2	23,175
KA4	6,763
LA1	15,792
MA2	5,198
NA1	178,899
OA4	56,749
PA2	24,026
QA3	21,004
RA3	83,652
SA4	45,017
TA3	184,110
UA4	16,924
VA2	17,275
WA3	12,648
XA4	69,930
YA3	2,046

## LANGFORD CR., MD.-SW (026)

A04	3,290
B02	15,247
C03	82,373
D04	29,131
E04	57,478
F04	1,292,411
G02	434,802
H03	97,749
I04	48,793
J03	11,338
K01	9,901
L03	6,772
M02	14,201
004	15,774
P03	430,197
Q04	44,397
R03	19,987
S01	20,956
T03	32,105
U01	63,897
V04	104,141
W04	44,269
X04	24,690
Y01	101,798
Z03	10,615
AA3	39,291
BA3	2,512
CA3	4,165
DA2	7,974
EA2	7,892
FA3	3,573
GA4	3,162
HA4	4,613
IA3	2,784
KA4	8,279
LA2	1,193
MA3	11,126
NA3	5,175
OA4	28,713
PA2	18,812
QA4	11,752
RA2	6,837
SA3	18,346
TA2	14,351
UA3	21,225
VA3	74,727
WA2	6,417
XA3	24,360

LANGFORD CR., - NE (cont'd)

LANGFORD CR., - NW (cont'd)

LANGFORD CR., - SW (cont'd)

ZA4	1,933
AB4	1,062
BB4	864
CB4	1,883
DB3	21,518
EB4	2,212
FB3	28,620
GB3	17,549
HB2	191,487
IB3	83,582
JB2	345,247
KB4	155,887
LB4	58,971

TOTAL AREA

DENSITY 1 =	191,442	194,691	196,552
DENSITY 2 =	181,235	750,228	527,726
DENSITY 3 =	166,020	723,663	898,420
DENSITY 4 =	137,134	667,344	1,720,893
TOTAL =	675,831	2,335,926	3,343,591

LANGFORD CR., MD.-SE (026)

LOVE PT., MD.-SE (025)

MARION, MD.-NE (093)

A04	45,909
B03	1,296
C03	2,735
D03	3,104
E02	5,949
F03	16,617
G02	8,954
H04	4,013
I04	79,175

A03	37,300
B03	2,055

A04	4,617
B03	17,218
C02	1,971
D04	24,257
E03	2,504
F03	5,236
G03	19,972

TOTAL AREA

DENSITY 1 =	0	0	0
DENSITY 2 =	14,903	0	1,971
DENSITY 3 =	23,752	39,355	44,930
DENSITY 4 =	129,097	0	28,874
TOTAL =	167,752	39,355	75,775

## MARION, MD.-NW (093)

A02	47,408
B02	4,325
C02	1,892
D03	53,018
E02	19,711
F03	69,333
G02	4,835
H03	40,087
I02	4,605
J02	1,144
K02	9,756
L02	16,448
M02	3,078
N02	9,026
P03	10,950
Q03	871
R03	2,894
S02	3,534
T02	49,369
U03	3,081
V04	85,389
W03	7,377
X03	29,746
Y03	1,600
Z02	23,516
AA3	25,853
BA4	21,371
CA3	15,358
DA4	30,931
EA2	7,184
FA3	5,634
GA3	5,792
HA2	10,140
IA3	20,811
JA4	10,234
KA3	2,001
LA3	4,870
MA3	17,368
NA3	494
OA3	142,797
PA2	36,453
QA4	34,598
RA3	5,935
SA3	114,868
TA2	5,587

TOTAL AREA

DENSITY 1 =	0
DENSITY 2 =	258,011
DENSITY 3 =	580,738
DENSITY 4 =	182,523
TOTAL =	1,021,272

## MARION, MD.-SW (093)

A02	36,738
B03	49,029
C04	34,513
D03	22,349
E03	2,133
F03	4,938
G02	1,843
H02	2,346
I03	474,356
J02	14,920
L02	2,373
M04	24,204
N02	5,629
O02	1,061
P03	37,660
Q03	2,941
R02	11,613
S03	6,913
T04	12,807
U03	12,011
V02	2,115
W03	42,047
X03	2,074
Z03	19,478
AA2	16,559
BA3	3,421
CA3	12,717
EA2	29,455
FA1	59,925
GA3	7,618
HA2	902
IA2	1,042
JA1	2,868
KA3	57,893
LA1	8,975
MA2	5,217
NA4	2,132
OA2	10,498
PA4	529
QA3	2,495
RA4	21,995
SA3	10,231

## MARION, MD.-SE (093)

A03	3,040
B03	5,502
C02	1,891
D03	22,988
E04	7,731
F04	8,833
G04	1,189
H03	1,359
I02	2,998

	71,768	0
	142,311	4,889
	770,304	32,889
	96,180	17,753
TOTAL =	1,080,563	55,531

MATHEWS, VA. (123)

A04	6,695
B04	9,523
C04	7,833
D04	42,072
E04	40,411
F02	14,186
G03	16,678
H03	21,857
I03	152,022
J03	62,632

MATHIAS PT., MD.-VA.-NE (057)

A02	68,550
B03	11,878
C04	2,997
D03	7,459
E04	52,289
F03	3,819
G02	20,889
H03	28,656
I03	14,386
J04	60,949
K04	7,254
L04	6,376
M03	3,320
N03	1,024
O03	20,928
P04	13,526
Q04	196,974
R03	75,871
S03	74,343
T03	74,675
U01	23,902
V03	122,777
W01	4,110
X01	23,804
Y02	3,388
Z03	324

MATHIAS PT., MD.-VA.-NW (057)

A03	45,906
B03	6,810
C04	32,783
D03	14,849
E03	35,411
I03	10,026
J02	41,395
K04	20,577
L02	4,489
M03	1,083
N02	2,852
P02	17,606
Q03	11,935
R02	5,744
S02	4,448
T04	19,928
U01	13,941
W03	1,185
X03	8,252
Y03	1,205
Z03	2,066
AA2	7,699
BA2	708
CA4	6,302

TOTAL AREA

DENSITY 1 =	0	51,818	13,941
DENSITY 2 =	14,186	93,352	84,941
DENSITY 3 =	253,190	496,491	138,728
DENSITY 4 =	106,536	340,365	79,590
TOTAL =	373,913	982,026	317,200

MATHIAS PT., MD.-VA.-SW (057)

A03	151,732
B02	20,314
C03	171,347
D04	58,616
E03	19,418
F04	242,396
G03	39,583
H01	2,047
I03	2,444
J03	2,011
K02	463
L03	8,118
M02	2,393
N04	395
O02	911
P03	8,263
Q03	28,337
R02	1,791
S04	12,532

TOTAL AREA

DENSITY 1 =	2,047
DENSITY 2 =	25,872
DENSITY 3 =	431,253
DENSITY 4 =	313,939

TOTAL = 773,111

MATHIAS PT., MD.-VA.-SE (057)

A03	36,744
C03	99,693
D03	12,626
E02	77,684
F02	1,985
G02	4,883

0
84,552
149,063
0

233,615

MIDDLE RIVER, MD.-NE (013)

A02	3,633
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MIDDLE RIVER, MD.-SE (013)

A03	68,659
B02	36,005
C02	43,239
D01	15,382
E01	53,256
F01	17,377
G01	49,638
H02	26,795
I01	206,176
J02	17,271
K01	210,612

MONIE, MD.-SW (085)

A04	1,137
B04	4,974
C03	1,649
D02	3,882
E04	4,864
F02	2,747

TOTAL AREA

DENSITY 1 =	0
DENSITY 2 =	3,633
DENSITY 3 =	0
DENSITY 4 =	0

552,441
123,310
68,659
0

0
6,629
1,649
10,975

TOTAL = 3,633

744,410

19,253

MT. VERNON, MD.-VA.-  
NE (040)

MT. VERNON, MD.-VA.-  
NW (040)

MT. VERNON, MD.-VA.-  
SW (040)

A04 887,004  
 B03 326,376  
 C04 1,369,194  
 D03 84,019  
 E02 49,686  
 F03 23,559  
 G02 44,368  
 H03 114,724  
 I02 479,020  
 J01 19,899  
 K03 48,310  
 L03 17,302  
 M04 86,272  
 N04 60,671  
 O03 2,320  
 P01 9,504  
 Q03 4,114  
 R03 8,200  
 S03 1,055  
 T02 69,098  
 U02 26,816  
 V03 17,252  
 W04 81,882  
 X03 21,895  
 Y02 24,654  
 Z03 2,350  
 AA3 18,102  
 BA3 7,109  
 CA4 259,637  
 DA2 47,953  
 EA3 8,617  
 FA4 1,902  
 GA4 66,754  
 HA3 27,227  
 IA2 529,574  
 JA3 129,536  
 KA3 69,690  
 LA4 842,275  
 MA3 26,385  
 NA3 23,760  
 QA3 31,526  
 PA4 191,344  
 RA2 23,268  
 SA3 5,095  
 TA3 310,232  
 UA4 246,228  
 VA3 17,126

A02 3,848  
 B02 2,774  
 C02 4,998  
 D03 29,093  
 E04 50,488  
 F04 146,063  
 G03 22,494  
 H02 24,287  
 I03 112,142  
 J02 33,356  
 K02 19,617  
 L02 9,641  
 M02 10,724  
 N03 90,769  
 O02 57,385  
 P03 17,089  
 Q02 20,826  
 R03 14,779  
 S01 65,528  
 T03 91,967  
 U02 140,814  
 V01 18,316  
 W02 2,523  
 X01 121,282  
 Y03 120,997  
 Z04 22,790  
 AA2 7,464  
 BA1 7,335  
 CA3 29,107  
 DA1 19,018  
 EA4 76,084  
 FA3 51,526  
 GA4 136,591  
 HA4 227,998  
 IA2 50,972  
 JA2 22,954  
 KA3 31,924  
 LA3 111,212

A01 4,788  
 B04 71,832  
 C03 33,082  
 D03 20,660  
 E02 7,576  
 F01 8,118  
 G02 12,613  
 H02 3,939

TOTAL AREA

DENSITY 1 = 29,403  
 DENSITY 2 = 1,294,437  
 DENSITY 3 = 1,345,881  
 DENSITY 4 = 4,093,163  
 TOTAL = 6,762,884

231,479  
 412,183  
 723,099  
 660,014  
 2,026,775

12,906  
 24,128  
 53,742  
 71,832  
 162,608



NANDA CREEK, VA. (113)

A02	34,179
B03	10,843
C02	10,951
D03	85,462
E04	167,927
F02	1,119,995
G03	134,561
H03	89,979
I02	74,070
J03	197,698
K01	1,579,470

NANJEMOY, MD.-NE (056)

A04	68,105
B03	16,949
C03	28,088
D04	145,300
E03	75,719
F02	86,528
G01	41,576
H02	29,343
I03	23,443
J03	1,030
K03	444
L02	25,644
M03	582
N03	256
O01	1,369
P01	1,123
Q03	319
R03	127,796
S04	11,173
T03	6,650
U02	4,996
V04	1,774
W04	17,356
X03	8,978

NANJEMOY, MD.-SE (056)

A02	805
B02	2,052
C01	933
D02	973
E02	4,168
F02	1,210
G02	8,289
H03	6,036
I04	27,814
J03	225,744
K04	57,622
L03	6,620

TOTAL AREA

DENSITY 1 =	1,579,471
DENSITY 2 =	1,239,197
DENSITY 3 =	518,545
DENSITY 4 =	167,928

44,068
146,511
290,254
243,708

933
17,497
238,400
85,436

TOTAL = 3,505,141

724,541

342,266

## NEW POINT COMFORT, VA. (132)

## NORTHEAST, MD.-SE (004)

## NORTH BEACH, MD.-NE (042)

A02 68,623  
 B04 492,868  
 C01 352,375  
 D01 150,637  
 E03 305,273  
 F04 1,785,328  
 G04 657,458  
 H02 634,540  
 I04 193,674  
 J02 425,636  
 K04 102,955  
 L03 59,809  
 M03 45,240  
 N02 535,307  
 O03 617,646  
 P03 106,514  
 Q03 330,946  
 R01 264,834  
 S01 102,495  
 T03 996,464  
 U04 10,003  
 V02 29,722  
 W03 738,340  
 X04 516,256  
 Y02 153,068  
 Z03 453,443  
 AA3 20,562  
 BA3 1,306,125  
 CA3 89,329

A02 98,422  
 B02 16,285  
 C02 16,403  
 D02 54,339  
 E01 4,433  
 F01 20,219  
 G02 17,402  
 H02 5,770  
 I02 3,188  
 J02 35,131  
 K02 3,068  
 M01 13,711  
 N02 6,180

A02 3,470  
 B03 119,530  
 C04 65,828

TOTAL AREA

DENSITY 1 = 870,343  
 DENSITY 2 = 1,846,898  
 DENSITY 3 = 5,069,697  
 DENSITY 4 = 3,758,545

38,363  
 256,188  
 0  
 0

0  
 3,470  
 119,530  
 65,828

TOTAL = 11,545,480

294,551

188,828

OXFORD, MD.-NE (044)

A02	2,734
B02	3,656
C03	1,142
D03	15,774
E03	1,018
F03	1,497
G02	1,388
H02	2,412
I03	603
J03	5,180
K04	4,888
L03	5,193
M02	7,322
N03	12,531
O03	12,065
P03	11,894
Q02	9,384
R03	2,225
S02	28,968
T04	29,892
U03	7,606
V04	13,368
W03	8,502
X03	17,271
Y02	23,860
Z03	5,148
AA2	3,078
BA2	7,179
CA3	1,395
DA2	1,345
EA2	26,785
FA2	6,886
GA3	3,875
HA3	6,321
IA3	5,470
JA3	7,266
KA4	2,236
LA3	6,453
MA4	9,626
NA3	3,304
OA2	3,220
PA2	2,099
QA2	2,133
RA3	22,995
SA2	1,514
TA3	6,453
UA2	3,536
VA3	14,682
WA3	19,183
XA3	44,883
YA2	2,821

OXFORD, MD.-NW (044)

A04	605
B02	1,558
C02	7,884
D02	4,210
E03	5,622
F03	5,564
G01	23,250
H03	2,564
I02	55,246
J03	610
K03	6,504
L02	14,090
M03	4,385
N02	44,859
O02	14,182
P02	11,186
Q02	55,163
R04	4,938
S02	25,813
T04	1,813
U04	28,909
V02	21,857
W03	195,350
X01	40,127
Y01	36,431
Z03	98,325
AA2	18,721
BA2	88,026
CA2	127,929
DA3	21,659
EA4	27,817
FA4	3,516
GA3	7,591
HA3	46,617
IA3	4,531
JA3	27,324
KA3	3,980
LA4	2,997
MA3	2,025
NA2	3,650
OA3	400
PA3	942
QA4	23,665
RA3	3,275
SA2	1,578
TA3	11,827
UA1	4,426
VA4	29,966
WA4	23,097
XA3	31,898
YA3	46,875

OXFORD, MD.-SE (044)

A02	1,413
B02	6,164
C03	422
D02	2,573
E02	2,332
F02	3,033
G03	3,433
H03	6,831
I04	755
J03	2,606
K02	2,610
L02	652
M03	3,445
N03	2,121
O03	547
P02	15,593
Q03	6,766
R04	15,962
S03	8,133
T02	2,850
U03	2,725
V04	2,163
W03	17,272
X02	30,813
Y03	31,573
Z02	5,980
AA3	4,571

OXFORD - NE (cont'd)

ZA4	23,498
AB3	5,399
BB4	23,061
CB3	9,881
DB3	32,797
EB2	362
FB2	6,469
GB2	32,699
HB1	1,039
IB3	17,128
JB2	9,505
KB4	12,593
LB1	9,935
MB3	80,049
NB2	1,973
OB2	15,238
PB2	5,150
QB3	4,176
RB1	1,072
SB2	1,604
TB2	4,462
UB3	2,630
VB2	35,337
WB2	3,290
XB3	37,678
YB3	7,343
ZB3	75,421
AC2	30,759
BC3	32,206
CC2	3,057
DC2	11,787
EC3	7,944
FC2	4,732
GC2	4,860
HC2	1,208
IC2	966

OXFORD - NW (cont'd)

ZA4	110,843
AB2	90,636
BB2	2,143
CB4	8,446
DB1	20,239
EB3	1,428
FB3	3,971
GB2	10,692
HB4	9,403
IB4	2,953
JB3	4,227
KB3	110,271
LB3	23,214
MB3	22,184
NB2	1,012
OB3	14,233
PB4	84
QB3	1,127
RB2	1,007
SB4	3,757
TB3	1,479
UB3	1,313
VB2	2,144
WB3	25,724
XB3	2,148
YB2	3,077
ZB2	1,516
AC2	3,330
BC3	304
CC2	37,996
DC3	6,703
EC3	75,672
FC2	29,522
GC3	27,516
HC4	65,955
IC2	62,964
JC4	3,948
KC2	39,125
LC4	45,153
MC2	5,494
NC3	47,639
OC2	9,873
PC2	89,365
QC2	3,828
RC2	3,535
SC3	1,480
TC2	4,324
UC3	997

OXFORD - SE (cont'd)

OXFORD - NE (cont'd)

OXFORD - NW (cont'd)

OXFORD - SE (cont'd)

VC2 2,668  
 WC3 3,847  
 XC3 4,051

TOTAL AREA

DENSITY 1 =	12,046	124,473	0
DENSITY 2 =	351,456	900,203	74,013
DENSITY 3 =	524,903	907,396	90,445
DENSITY 4 =	119,163	397,865	18,880
TOTAL =	1,007,568	2,329,937	183,338

OXFORD, MD.-SW (044)

PARKSLEY, VA. (109)

PERRYMAN, MD.-SW (008)

A03 24,939  
 B02 29,527  
 C03 32,181  
 D02 5,607  
 E03 8,139  
 F02 3,326  
 G03 1,339  
 H03 3,363  
 I02 13,699  
 J03 6,534  
 K03 7,334  
 L02 16,084  
 M02 1,796  
 N01 1,476

A03 16,792  
 B03 12,828  
 C03 8,279  
 CA3 4,753  
 D03 16,999  
 E03 187,084  
 F03 749,181  
 G02 82,813  
 H03 720,188  
 I03 28,323  
 J03 111,086  
 K03 11,344  
 L02 63,651  
 M03 17,134  
 N03 10,689  
 O02 159,150  
 P02 24,505  
 Q02 2,895  
 R02 89,258  
 S02 22,961  
 T02 5,087  
 U03 12,751  
 V02 10,163  
 W02 8,749  
 X03 34,945

A02 1,538  
 B02 1,979  
 C02 8,729  
 D02 3,900  
 E02 5,915  
 F02 1,248  
 G02 1,685  
 H02 6,195  
 I02 4,377  
 J02 1,491  
 K02 1,112  
 L02 519  
 M02 1,338  
 N02 2,142  
 O02 2,431  
 P02 1,753

TOTAL AREA

DENSITY 1 =	1,476	0	0
DENSITY 2 =	70,039	469,237	46,352
DENSITY 3 =	83,829	1,942,383	0
DENSITY 4 =	0	0	0
TOTAL =	155,344	2,411,621	46,352

PINEY PT., MD.-SE (079)		POINT LOOKOUT, MD.-NW (090)		POINT LOOKOUT, MD.-SW (090)	
A02	3,919	A01	7,206	A01	1,729
B02	959	B04	13,033	B01	4,419
C01	201	C02	9,803	C01	11,557
		D02	7,497		
		E03	1,106		
		F02	1,221		

TOTAL AREA

DENSITY 1 =	201	7,206	17,705
DENSITY 2 =	4,878	18,521	0
DENSITY 3 =	0	1,106	0
DENSITY 4 =	0	13,033	0
TOTAL =	5,079	39,866	17,705

POINT NO PT., MD.-NW (081)		POINT NO PT., MD.-SW (081)		POQUOSON EAST, VA. (141)	
A04	4,853	A04	49,634	A02	48,156
B04	26,901	B04	24,850	B03	902,735
C03	20,520	C02	9,139	C04	492,475
		D04	20,746	D04	3,182,763
		E01	1,547	E03	1,568,865
		F02	1,727	F02	1,042,996
		G01	5,106	G02	11,976
				H04	5,164
				I04	2,737
				J04	8,398
				K02	468,641
				L02	23,659
				M01	86,749

TOTAL AREA

DENSITY 1 =	0	6,653	86,749
DENSITY 2 =	0	10,866	1,595,430
DENSITY 3 =	20,520	0	2,471,601
DENSITY 4 =	31,754	95,230	3,691,541
TOTAL =	52,274	112,749	7,845,321

POQUOSON WEST, VA. (140)

A04 8,238  
 B04 16,628  
 C04 19,914  
 D02 42,114  
 E01 256,493  
 F03 295,571  
 G03 3,367  
 H04 41,565  
 I03 79,549  
 J01 164,667  
 K01 41,588  
 L03 305,951  
 M03 78,746  
 N04 504,212  
 O02 150,455  
 P01 56,190  
 Q02 151,766  
 R02 130,851  
 S02 24,042  
 T03 5,129

PUNGOTEAGUE, VA. (114)

A03 39,898  
 B02 27,256  
 C03 20,455  
 D02 138,975  
 E02 188,261  
 F04 498,280  
 G04 487,178  
 H01 115,218  
 I03 296,200  
 J04 177,459  
 K01 539,118  
 L02 2,163,548  
 M03 766,537  
 N02 103,796  
 O03 29,938  
 P01 77,453  
 Q03 206,373  
 R01 154,084  
 S02 16,562  
 T02 15,542  
 U01 85,208  
 V02 5,041  
 W02 27,793  
 X03 11,015  
 Y02 30,611  
 Z02 98,712  
 AA3 27,753  
 BA3 57,583  
 CA2 196,808  
 DA1 96,955  
 EA2 9,356  
 FA3 93,342  
 GA3 9,495  
 HA2 101,187  
 IA4 6,406

QUANTICO, VA.-MD.-SE (047)

A03 3,413  
 B03 5,074  
 C03 2,689  
 D02 18,866  
 E03 36,645

TOTAL AREA

DENSITY 1 =	518,940	1,068,039	0
DENSITY 2 =	499,230	3,123,455	18,866
DENSITY 3 =	768,316	1,558,594	47,821
DENSITY 4 =	590,558	1,169,325	0
TOTAL =	2,377,044	6,919,414	66,687

QUEENSTOWN, MD.-NW (033)

A03	4,553
B02	60,269
C03	4,266
D04	13,006
E04	10,606
F01	30,341
G02	6,983
H03	5,538
I03	5,006
J03	2,031
K02	1,251
L04	885
M04	434
N03	379
O04	596
P04	7,938
Q03	28,053
R02	7,342
S04	4,555
T04	16,466
U03	17,537
V04	4,458
W04	1,463

QUEENSTOWN, MD.-NE (033)

A04	38,660
C03	18,119
E03	24,994
F04	33,314
G02	149,430
H03	12,036
I03	5,024
J04	13,499
K04	12,366
L03	17,804
M04	4,239
N02	718
O03	3,255
P02	5,624
Q01	3,441
R02	1,070
S02	1,626
T03	3,469

QUEENSTOWN, MD.-SW (033)

A04	3,045
B03	9,471

TOTAL AREA

DENSITY 1 =	30,341
DENSITY 2 =	75,845
DENSITY 3 =	67,424
DENSITY 4 =	60,407
TOTAL =	234,017

	3,441
	158,468
	84,701
	102,078
	348,688

	0
	0
	9,471
	3,045
	12,516



QUEENSTOWN, MD.-SE (033)

A01 3,512  
 B02 1,069  
 C02 1,638  
 D03 26,932  
 E03 1,636  
 F03 1,857  
 G03 6,687  
 H03 3,238  
 I03 10,929  
 J04 7,180  
 K03 11,342  
 L02 883  
 M03 6,544  
 N03 14,795  
 O01 1,179  
 P02 6,212  
 Q02 2,323  
 R03 9,227  
 S03 9,698  
 T04 10,724  
 U03 2,905  
 V03 8,172  
 W03 2,208  
 X04 26,973  
 Y03 8,287  
 Z03 3,585  
 AA4 7,176  
 BA3 1,591  
 CA3 1,047  
 DA2 1,924  
 EA3 3,658  
 FA3 1,398  
 GA3 3,895  
 HA3 1,125  
 IA3 5,348  
 JA3 33,864  
 KA4 26,718  
 LA3 42,272  
 MA1 7,684  
 NA3 1,686  
 OA3 3,409  
 PA3 56,249  
 QA3 5,280  
 RA3 19,396  
 SA4 14,913  
 TA2 656  
 UA3 1,442  
 VA3 5,973  
 WA3 5,155  
 XA2 1,245  
 YA2 1,086

QUEENSTOWN - SE (cont'd)

ZA2 13,172  
 AB3 13,286  
 BB3 4,909  
 DB2 5,600

TOTAL AREA

DENSITY 1 = 12,375  
 DENSITY 2 = 35,808  
 DENSITY 3 = 339,025  
 DENSITY 4 = 93,684  
 TOTAL = 480,892

RICHLAND PT., MD.-NE (082)

A3 3,703  
 B4 1,277  
 C4 1,677  
 D3 2,323  
 E2 30,518  
 F1 5,742  
 G4 7,069  
 H2 2,213  
 I4 97,768  
 J2 90,489

5,742  
 123,220  
 6,026  
 107,791

242,779

REEDVILLE, VA. (106)

A02 19,936  
 B02 24,484  
 C03 335,759  
 D03 18,019  
 E03 4,339  
 F03 59,878  
 G02 49,290

TOTAL AREA

DENSITY 1 = 0  
 DENSITY 2 = 93,711  
 DENSITY 3 = 417,966  
 DENSITY 4 = 0

TOTAL = 511,707

ROCK HALL, MD.-NW (021)		ROCK HALL, MD.-SE (021)		ROCK HALL, MD.-SW (021)	
A03	1,917	A03	1,298	A03	1,999
B03	2,507	B04	2,414	B03	3,373
C03	1,083			C02	2,989
D04	4,262			D01	1,929
E02	4,815			E03	2,585
F04	2,079			F03	3,199
G04	2,512			G04	23,425
				H03	498
				I02	84,194
<u>TOTAL AREA</u>					
DENSITY 1 =	0		0		1,929
DENSITY 2 =	4,815		0		87,183
DENSITY 3 =	5,507		1,298		11,654
DENSITY 4 =	8,853		2,414		23,425
TOTAL =	19,175		3,712		124,191

ROCK PT., MD.-SW (068)		ST GEORGES IS., VA.-MD. -NE (089)		ST. GEORGE IS., VA.-MD.-NW (089)	
A01	2,709	A01	5,126	A01	15,752
		B02	5,826	B02	1,502
		C02	1,613	C02	4,934
		D02	44,463	D02	854
		E01	7,161	E01	951
<u>TOTAL AREA</u>					
DENSITY 1 =	2,709		12,287		16,703
DENSITY 2 =	0		51,902		7,290
DENSITY 3 =	0		0		0
DENSITY 4 =	0		0		0
TOTAL =	2,709		64,189		23,993

ST. MARY'S CITY, MD.-NE (080) ST. MARY'S CITY, MD.-NW (080)

A03	8,200	A01	5,514
B02	3,336	B02	18,413
C02	4,408	C01	2,435
D02	9,966	D01	7,706
E02	5,989	E02	5,936
F02	5,715	F02	10,345

	0		15,655
	29,414		34,694
	8,200		0
	0		0
	37,614		50,349

ST. MARY'S CITY, MD.-SE (080) ST. MARY'S CITY, MD.-SW (080)

A03	27,706	A03	29,199
B03	10,750	B03	11,532
C02	2,172	C02	2,036
D02	9,088	D02	9,468
E02	7,811	E02	7,020
F02	8,367	F02	8,302
G02	1,047	G02	1,341
H02	15,309	H01	1,666
		I02	11,830
		J02	5,311
		K02	17,207
		L01	3,487
		M04	1,154
		N02	1,698
		O02	1,303
		P01	661
		Q02	1,430
		R02	998
		S02	3,432

TOTAL AREA

DENSITY 1 =	0		5,814
DENSITY 2 =	43,794		71,376
DENSITY 3 =	38,456		40,731
DENSITY 4 =	0		1,154
TOTAL =	82,250		119,075

## ST. MICHAELS, MD.-NW (037)

A02	2,464
B04	16,071
C02	1,481
D02	10,291
E04	1,145
F03	5,156
G02	886
H02	472
I02	8,722
J01	16,600
K03	359
L03	5,655

## ST. MICHAELS, MD.-SE (037)

A04	3,459
B03	291
C03	8,359
D01	3,381
E03	1,196
F03	2,412
G02	2,829
H03	378
I02	9,178
J03	3,614
K02	4,879
L03	6,436
M04	12,180
N03	8,599
004	8,751
P04	10,140
Q02	4,941
R04	27,293
S04	328
T03	3,340
U02	12,555
V01	3,641
W02	396
X02	5,605
Y02	519
Z02	6,248
AA3	11,178
BA2	3,170
CA4	11,428
DA2	2,432
EA4	10,861
FA2	2,350
GA3	9,828
HA3	3,079
IA2	2,355
JA2	2,475
KA3	4,814
LA3	3,475
MA3	1,844
NA3	2,497
OA3	1,293
PA3	547
QA2	1,607
RA3	2,067
SA2	937
TA4	11,275
UA4	2,294
VA2	1,477
WA1	2,790
XA2	1,829
YA3	4,013

## ST. MICHAELS, MD.-SW (037)

A02	8,883
B03	329
C03	2,699
D03	5,609
E04	9,677
F02	466
G02	538
H04	23,327
I04	9,136
J03	9,684
K04	12,616
L04	379
M01	3,878
N03	3,701
002	12,472
P02	6,231
Q03	5,233
R03	21,468
S01	1,181
T02	2,288
U03	1,402
V03	353
W03	603
X02	3,113
Y03	2,226
Z02	2,252
AA4	93,437
BA4	10,806
CA3	50,574
DA2	3,242
EA2	7,745
FA3	11,673
GA4	1,550
HA4	4,582
IA4	4,308
JA4	24,364
KA4	21,051
LA3	27,216
MA3	975
NA3	4,117
OA4	4,124
PA4	13,240
QA4	6,423
RA4	7,960
SA4	11,436
TA4	39,231
UA3	7,448
VA3	115,986
WA4	6,235
XA4	12,049
YA4	58,954

## ST. MICHAELS - NW (cont'd)

## ST. MICHAELS - SE (cont'd)

## ST. MICHAELS - SW (cont'd)

ZA2	7,033	ZA3	6,437
AB4	8,443	AB3	2,967
BB4	28,526	BB3	2,128
CB3	13,418	CB3	27,072
DB4	12,098	DB2	942
EB3	4,597	EB2	109,898
FB3	1,381	FB3	40,651
GB2	2,232	GB2	2,492
HB3	3,501	HB2	8,807
IB4	4,023	IB2	4,684
JB2	12,158	JB2	2,631
KB1	4,608	KB2	17,383
LB1	681	LB2	5,954
MB2	1,445	MB2	2,983
NB4	3,255	NB3	43,967
OB2	458	OB2	12,687
PB1	1,313	PB3	5,972
QB3	22,821	QB3	4,496
RB3	3,330	RB3	26,120
SB2	1,077	SB2	25,798
TB1	2,842	TB3	8,073
UB3	4,333	UB2	37,391
VB4	169,651	VB4	15,967
WB3	2,823	WB2	64,123
XB3	2,774	XB2	41,542
YB3	5,000	YB3	2,583
ZB2	4,704	ZB4	6,854
AC2	2,488	AC4	24,555
BC2	5,877	BC2	29,843
CC2	17,607	CC2	4,925
DC2	13,652	DC3	1,526
EC3	8,179	EC3	12,212
FC3	6,100	FC2	4,254
GC2	1,243	GC3	61,962
HC2	2,724	IC2	1,590
IC2	3,300	JC2	3,951
JC4	138,944	KC3	2,697
KC2	5,618	LC2	6,711
LC3	4,520		
MC2	1,157		

TOTAL AREA

DENSITY 1 =	16,600	19,256	5,059
DENSITY 2 =	24,316	148,555	435,819
DENSITY 3 =	11,170	162,037	520,159
DENSITY 4 =	17,216	462,949	422,261
TOTAL =	69,302	792,797	1,383,298

## ST. MICHAELS, MD.-NE (037)

A03	10,503
B03	1,727
C02	2,088
D02	1,523
E02	3,932
F04	4,278
G04	2,221
H03	3,304
I01	13,802
J04	3,442
K03	44,421
L03	635
M03	8,273
N02	1,390
O03	3,027
P02	973
Q02	769
R02	9,064
S04	2,755
T04	9,874
U03	803
V04	10,956
W02	2,714
X04	360
Y04	578
Z03	1,648
AA2	12,862
BA2	1,137
CA2	1,665
DA3	1,598
EA3	5,618
FA1	1,515
GA3	4,573
HA3	1,845
IA2	1,433
JA3	1,450
KA3	370
LA2	635
MA4	3,210
NA2	693
OA2	2,667
PA3	2,088
QA3	921
RA1	3,014
SA2	8,583
TA3	214
UA4	2,881
VA2	2,406

## SHARPS IS., MD.-NE (051)

A02	6,411
B03	63,204
C04	63,066
D02	98,134
E03	55,019
F03	5,233
G01	43,647
H03	9,272
I03	20,584
J02	89,584
K01	142,140
L02	32,498
M03	67,481
N01	12,805
O03	51,928
P03	125,986
Q02	84,713
R04	2,472
S04	19,295
T03	157,385
U02	24,389
V02	9,141
W03	3,361
X03	674
Y02	18,303
Z04	4,380
AA2	6,212
BA4	2,058
CA4	2,045
DA3	9,039
EA3	1,520
FA2	2,006
GA4	6,108
HA2	1,618
IA3	2,799
JA3	1,972
KA2	5,335
LA3	3,979
MA2	3,541
NA3	1,083
OA3	988
PA3	4,508
QA2	9,327
RA2	87,820
SA4	1,089
TA3	1,875
UA2	2,250
VA2	17,284
WA2	57,302
XA3	75,622
YA3	18,805

## SHARPS IS., MD.-SE (051)

A02	5,610
B03	909
C01	20,270
D01	1,829
E03	6,453
F03	11,350
G02	12,179
H03	22,331
I03	5,342
J04	8,714
K02	3,959
L03	1,149
M03	13,761
N03	12,748
O04	5,612
P02	14,715
Q03	3,967
R03	24,691
S03	3,049
T02	2,341
U01	3,141
V02	3,333
W04	1,525
X03	270
Y03	329
Z03	1,290
AA3	8,827
BA3	3,926
CA3	8,614
DA3	10,248
EA2	1,291
FA3	7,617
GA3	4,234
HA2	3,631
IA3	15,374
JA3	14,878
KA2	255
LA2	6,865
MA1	1,497
NA2	4,006
OA3	1,685
PA3	16,015
QA3	3,682
RA1	1,308
SA2	6,334
TA3	4,851
UA2	4,535
VA3	2,345
WA2	11,916
XA4	15,741
YA4	15,188

ST. MICHAELS, ~ NE (cont'd)		SHARPS IS., ~ NE (cont'd)		SHARPS IS., ~ SE (cont'd)	
WA3	7,188	ZA1	732	ZA3	36,825
XA3	200	AB2	3,219	AB2	26,648
YA3	1,993	BB4	675	BB3	22,175
ZA3	1,395	CB3	9,918	CB2	1,901
		DB2	5,127	DB1	2,643
		EB2	671	EB3	6,010
		FB3	365	FB2	6,216
		GB3	22,115	GB1	2,390
		HB3	5,274	HB3	29,663
		IB1	3,156	IB1	31,580
		JB3	14,730	JB2	1,638
		KB3	1,081	KB3	11,263
		LB3	1,673	LB2	2,839
		MB3	7,297	MB3	6,055
		NB2	1,846	NB3	6,800
		OB4	8,407	OB3	2,239
		PB2	7,852	PB2	2,056
		QB3	7,270	QB2	480
		RB2	3,816	RB3	8,285
		SB3	7,992	SB2	9,625
		TB2	5,226		
		UB3	835		
		VB1	1,745		
		WB3	6,132		
		XB1	22,918		
		YB2	12,254		
		ZB3	50,852		
		AC3	5,343		
		BC4	8,844		
		CC2	4,372		
		DC3	1,021		
		EC3	2,149		
		GC3	28,668		
		HC2	2,015		
		IC3	3,364		
		JC2	1,330		

TOTAL AREA

DENSITY 1 =	18,331	227,143	64,659
DENSITY 2 =	54,534	603,596	130,373
DENSITY 3 =	103,794	870,504	339,250
DENSITY 4 =	40,159	118,439	46,780
TOTAL =	216,818	1,819,682	581,062

SOLOMONS IS., MD.-NW (071)

A01	4,023
B02	1,296
C02	13,000
D02	5,166
E02	2,004
F02	5,951
G01	10,159
H02	51,947
I02	1,156
J01	1,397
K01	3,134
L02	5,139
M03	2,559
N04	779
001	7,541
P01	973
Q02	6,807
R01	4,201
S01	4,217
T01	2,132
U02	10,986
V02	6,334

TOTAL AREA

DENSITY 1 =	37,780
DENSITY 2 =	109,786
DENSITY 3 =	2,559
DENSITY 4 =	779
TOTAL =	150,904

SOLOMONS IS., MD.-SW (071)

A01	1,385
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SOLOMONS IS., MD.-SE (071)

A02	2,873
-----	-------

	1,385	0
	0	2,873
	0	0
	0	0
	1,385	2,873

SPARROWS PT., MD.-NE (019)

A01	47,755
B01	4,484
C02	2,017
D02	1,306

TOTAL AREA

DENSITY 1 =	52,239
DENSITY 2 =	3,323
DENSITY 3 =	0
DENSITY 4 =	0
TOTAL =	55,562



## SPESUTIE, MD.-NW (009)

A01	2,851,976
B02	3,145
C02	5,701
D02	5,807
E02	1,356
F02	2,118

TCTAL AREA

DENSITY 1 =	2,851,976
DENSITY 2 =	18,127
DENSITY 3 =	0
DENSITY 4 =	0

TCTAL =	2,870,103
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## SPESUTIE, MD.-NE (009)

A01	2,970,679
-----	-----------

2,970,679
0
0
0

2,970,679
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## SPESUTIE, MD.-SE (009)

A02	3,290
B01	2,704
C03	918
D04	1,210
E02	5,048
F02	5,253
G02	4,815
H01	71,142
I03	4,735
J02	74,461
K02	41,300
L03	42,102
M02	11,068
N04	114,754

TOTAL AREA

DENSITY 1 =	73,846
DENSITY 2 =	145,235
DENSITY 3 =	47,755
DENSITY 4 =	115,964

TOTAL =	382,800
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## SPESUTIE, MD.-SW (009)

A02	12,040
B02	1,584

0
13,624
0
0

13,624
--------

SWAN PT., MD.-SE (020)

A01 883  
 B04 966  
 C03 1,017  
 D03 553  
 E04 879  
 F02 1,962  
 G02 1,296  
 H04 3,844  
 I03 566  
 J03 4,842  
 K02 2,856  
 L03 3,629  
 M03 10,915  
 N02 5,205  
 O02 1,743  
 P03 2,407  
 Q03 10,686  
 R03 5,292  
 S02 760  
 T03 7,612  
 U02 7,881  
 V02 12,747  
 W03 13,921

TOTAL AREA

DENSITY 1 = 883  
 DENSITY 2 = 34,450  
 DENSITY 3 = 61,430  
 DENSITY 4 = 5,689  
 TOTAL = 102,452

TANGIER ISLAND, VA. (107)

A01 233,722  
 B03 161,040  
 C02 193,930  
 D04 797,851  
 E02 350,184  
 F02 160,400  
 G02 24,150  
 H02 84,937  
 I04 329,233  
 J02 192,173  
 K02 62,084  
 L03 1,313,208  
 M02 305,408  
 N04 496,371  
 O04 395,050  
 P03 256,787  
 Q04 506,736  
 R02 272,211

TERRAPIN SAND POINT, MD. (092)

A03 1,162,251  
 B01 182,442  
 C02 146,412  
 D02 280,543  
 E02 4,202  
 F03 28,946

	233,722	182,442
	1,645,481	431,159
	1,731,035	1,191,198
	2,525,242	0
	6,135,481	1,804,799

TAYLORS IS. MD.-NE (062)

A03	15,363
B03	11,715
C01	935
D03	531
E02	835
F02	300
G01	909
H04	1,205
I02	3,377
J03	662
K01	931
L01	1,541
M01	570
N01	1,102
001	484
P03	1,142
Q04	3,382
R03	16,807
S02	6,497
T03	3,485
U03	6,306
V02	5,799
W01	33,202
X02	26,211
Y03	75,507

TAYLORS IS., MD.-NW (062)

A3	5,484
B2	5,817
C3	76,155
D2	25,920
E1	32,067
F4	33,967
G3	1,492
H3	7,667
I4	15,225
J3	9,728
K1	6,109
L3	3,816

TAYLORS IS., MD.-SE (062)

A04	35,106
B03	15,295
C03	1,721
D04	14,211
E03	16,756
F02	555
G03	1,138
H02	21,963
I03	6,099
J03	331
K03	1,836
L02	14,649
M03	39,219
N04	9,627

TOTAL AREA

DENSITY 1 =	39,674	38,176	0
DENSITY 2 =	43,019	31,737	37,167
DENSITY 3 =	131,518	104,342	82,395
DENSITY 4 =	4,587	49,192	58,944
TOTAL =	218,798	223,447	178,506

## TILGHMAN, MD.-SW (043)

A04	5,382
B04	5,042
C04	3,236
D03	59,353
E03	6,164
F02	2,572
G02	409
H03	1,015
I03	7,932
J03	10,616
K03	14,599
L02	1,106
M01	7,422
N02	10,934
O04	23,183
P01	51,921
Q03	16,851

## TILGHMAN, MD.-NW (043)

A03	4,428
B04	9,435
C02	28,824
D02	9,927
E02	1,444
F02	2,234
G04	634
H02	1,740
I03	1,162
J03	1,046
K02	1,021
L02	5,032
M02	4,586
N04	5,904
O03	2,089
P02	716
Q03	1,082
R04	771
S04	2,134
T03	1,000
U02	2,899
V04	4,478
W03	6,173
X04	3,404
Y03	468
Z03	1,397
AA3	49,303
BA4	58,427
CA3	33,584
DA3	2,513
EA3	21,147
FA4	9,052
GA2	9,209
HA3	1,711
IA3	21,921
JA3	1,367
KA3	1,577
LA4	9,366
MA3	4,101
NA4	960
OA2	3,674
PA4	8,913
QA3	7,938
RA3	15,489
SA3	50,156
TA4	5,495
UA4	3,378
VA4	5,235
WA3	3,138

## TILGHMAN, MD.-NE (043)

A03	4,274
B04	8,615
C02	31,143
D03	53,145
E03	5,193
F03	827
G04	639
H03	137
I03	4,526
J04	927
K03	2,604
L03	479
M02	4,872
N04	4,433
O03	2,130
P03	4,951
Q04	5,719
R03	5,562
S02	1,836
T03	18,805
U03	1,826
V03	31,344
W02	70,956
X03	25,014
Y03	11,345
Z02	19,998
AA2	7,102
BA2	1,472
CA3	35,697
DA3	28,973
EA3	40,123
FA2	4,806
GA2	14,511
HA2	7,771
IA3	13,209
JA1	9,630
KA2	9,315
LA2	878
MA2	4,569
NA2	1,826
OA2	1,739
PA4	2,213
QA4	4,551
RA2	2,849
SA3	49,368
TA2	100,587
UA3	9,718
VA1	2,681
WA2	75,666
XA3	5,852
YA3	73,942

TILGHMAN - SW (cont'd)

TILGHMAN - NW (cont'd)

TILGHMAN - NE (cont'd)

ZA2	12,934
AB3	13,901
BB4	25,344
CB3	72,942
DB2	63,598
EB3	17,198
FB2	29,899
GB3	7,019
HB2	6,518
IB3	86,810
JB4	19,068
KB2	3,006
LB2	5,377
MB3	15,327
NB2	14,927
OB3	51,414
PB3	28,743
QB4	46,132
RB4	1,464
SB4	14,731
TB4	10,873
UB4	737
VB3	3,365
WB4	7,798
XB1	25,386
YB2	4,800
ZB2	7,447
AC3	38,432
BC4	15,980
CC2	19,854
DC2	680
EC1	212
FC4	9,589
GC3	57,229
HC4	25,259
IC2	135,507
JC1	31,911
KC3	72,025
LC4	83,374
MC3	12,522
NC1	10,754
OC4	3,410
PC3	8,326
QC3	61,046
RC2	37,561
SC2	7,669
TC3	33,743
UC4	57,603

TOTAL AREA

DENSITY 1 =	59,343
DENSITY 2 =	15,021
DENSITY 3 =	116,530
DENSITY 4 =	36,843
TOTAL =	227,737

0	80,511
71,306	711,673
232,790	1,009,086
127,586	348,459
431,682	2,149,729

TOWNSEND, VA. (143)

A03 74,924  
 B03 12,497  
 C03 68,182  
 D03 15,423  
 E03 6,172

TRAPPE, MD.-NW (045)

A03 6,731  
 B03 5,747  
 C03 5,086  
 D04 26,280  
 E03 3,002  
 F03 23,627  
 G02 2,206  
 H03 1,503  
 I02 1,708  
 J04 2,359  
 K03 28,265  
 L03 20,741  
 M03 6,409  
 N03 3,508  
 O03 4,446  
 P02 2,449  
 Q02 4,530  
 R03 696  
 S03 2,138  
 T03 1,336  
 U03 3,537  
 V02 6,559  
 W04 9,271  
 X02 1,828  
 Y03 2,692  
 Z03 5,082  
 AA3 1,253  
 BA3 4,669  
 CA3 5,335  
 DA4 20,027  
 EA2 21,197  
 FA3 18,749  
 GA3 8,238  
 HA2 2,380  
 IA3 58,847  
 JA3 1,933  
 KA2 2,398  
 LA2 4,864

WARE NECK, VA. (122)

A02 9,141  
 B02 186,472  
 C01 6,587  
 D03 43,708  
 E04 63,839  
 F04 42,802  
 G02 20,057  
 H03 84,180  
 I02 180,176  
 J02 75,556  
 K01 7,575  
 L03 27,626  
 M02 188,357  
 N03 313,652  
 O02 420,412  
 P03 48,910

TOTAL AREA

DENSITY 1 = 0  
 DENSITY 2 = 0  
 DENSITY 3 = 177,200  
 DENSITY 4 = 0  
 TOTAL = 177,200

0  
 50,119  
 223,570  
 57,937  
 331,626

14,162  
 1,080,175  
 518,078  
 106,642  
 1,719,058

## WIDEWATER, VA.-MD.-NW (055)

A02	10,716
B03	51,193

## WIDEWATER, VA.-MD.-SE (055)

A04	67,891
B03	28,644
C03	5,503
D04	245
E02	1,741

## WIDEWATER, VA.-MD.-NE (055)

A03	28,833
B02	7,362
C03	3,719
D03	884
E02	1,507
F02	10,497
G02	871
H02	13,029
I02	6,222
J02	7,694
K02	4,531
L03	974
M04	329
N02	3,793
004	1,598
P03	1,902
Q03	912
R04	34,538
S03	12,457
T02	6,596
U02	13,645
V04	49,763
W03	5,082
X04	1,397
Y01	3,076

TOTAL AREA

DENSITY 1 =	0	0	3,076
DENSITY 2 =	10,716	1,741	75,747
DENSITY 3 =	51,193	34,147	54,763
DENSITY 4 =	0	68,136	87,625
TOTAL =	61,909	104,024	221,211

## WINGATE, MD.-SW (074)

A01	20,278
B02	5,692
C02	10,380
D03	86,112
E02	5,885
F02	25,057
G01	6,252
H03	26,952
I02	5,618
J02	992
K04	48,968
L02	78,969
M04	10,327
N04	27,529
004	2,347
P02	1,106
Q03	565
R03	1,506
S03	30,021
T01	13,153
U03	3,945
V03	58,859
W02	1,624
X02	10,277
Y01	9,841
Z03	26,193
AA3	7,295
BA4	150,865
CA2	24,364
DA1	103,510
EA4	90,382
FA3	15,860
GA3	11,119
HA3	44,334
IA2	13,702

## WYE MILLS, MD.-SW (158)

A03	3,748
B03	3,109
C03	898
D02	1,224
E01	2,040

## YORKTOWN, VA. (139)

A01	2,134
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TOTAL AREA

DENSITY 1 =	153,034	2,040	2,134
DENSITY 2 =	183,666	1,224	0
DENSITY 3 =	312,761	7,755	0
DENSITY 4 =	330,418	0	0
TOTAL =	979,879	11,019	2,134