WESTMORELAND COUNTY TIDAL MARSH INVENTORY

Special Report No. 59 in Applied Marine Science and Ocean Engineering

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My warmest thanks go to the fine people of Westmoreland County, many of whom provided the field expedition with boating access and docking facilities. I also received great support and cooperation from the Westmoreland County Wetlands Boards, chaired by Col. Preston Hodges. Many of my activities throughout the County were coordinated by Mr. Howard Woodhead, Zoning Administrator for Westmoreland County.

Finally, I thank Mrs. Carole Knox and Miss Nancy Hudgins for typing the various drafts and the final manuscript.

WESTMORELAND COUNTY

Tidal Marsh Inventory

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Cover: The "Coles Point Tavern" built in 1954 has become a familiar landmark on the Potomac River shoreline, Westmoreland County. Photograph by J. L. Mercer.

INTRODUCTION

This publication is the fifteenth in a series of marsh inventory reports compiled by the Department of Wetlands Research, Virginia Institute of Marine Science. The fourteen previous reports that have been published are:

Lancaster County	Stafford County	Gloucester County
Northumberland County	Prince William County	City of Virginia Beach Vol. 1
Mathews County	King George County	City of Newport News and Fort Eustis
York County and the Town of Poquoson	City of Hampton	Accomac County
	Fairfax County	Northampton County

This report is presented in much the same format as the preceeding reports. It can be used in conjuction with the Westmoreland County Shoreline Situation Report, Morgan, Owen and Peoples, 1978, VIMS Special Report in Applied Marine Science and Ocean Engineering No. 162, which presents an inventory and discussion of many shoreline parameters and characteristics.

Under Section 62.1-13.4 of the Virginia Wetlands Act, the Virginia Institute of Marine Science is obligated to inventory the tidal wetlands of the Commonwealth. The inventory program is designed to assist wetlands boards, cities, counties, planning districts and other local, state and federal agencies as well as the general public and private industry.

A previously published study, Guidelines for Activities Affecting Virginia Wetlands, Silberhorn, Dawes and Barnard, 1974, VIMS SRAMSOE No. 46, will be helpful in the utilization of this report. Excerpts from the above document are included in the following text, explaining marsh vegetation types and their evaluation. The reader is also referred to Tidal Wetlands Plants of Virginia, Silberhorn, 1976 VIMS Educational Series No. 19, a recently published manual describing each of the plants listed in the Act. All documents mentioned above are available upon request from the library at the Virginia Institute of Marine Science (VIMS).

Westmoreland County is blessed with miles of beautiful shoreline and relatively unpolluted waterways, as well as an abundance of fish, shellfish, crabs and waterfowl. This abundance is due in no small part to a still largely undisturbed but irreplaceable resource, its tidal marshes. These marshes reduce pollutants, serve as natural habitats for wildlife and fish and support, through their interactions with the tidal waters, much of what makes Westmoreland's waterways clean and productive. Rapid and unplanned growth as well as shortsighted waterfront property owners and developers are a constant threat to the continued vitality of this resource. Only through careful planning and strict controls can needless destruction of these marshlands be avoided. It is our desire that this inventory will be useful to those concerned with conserving this valuable resource.

This report is organized into seven sections, each of which attempts to describe the marshes along a significant length of Westmoreland County shoreline. The first six sections cover the Potomac River shoreline while Section VII describes the marshes along the Rappahannock River within the County. There are approximately 2,600 acres of tidal marshes found in Westmoreland County. Of those, the majority (1,849 acres) occur along the Potomac side of the County. The remaining 740 acres are found along the Rappahannock. Generally, brackish and saltwater marshes characterize the Potomac shoreline where the salinity is much higher than compared to the upper reaches of the Rappahannock River which harbors only tidal freshwater marshes.

METHODS

Aerial photographs and topographic maps (U.S.G.S.) were utilized to obtain wetland locations, wetland boundaries and patterns of marsh vegetation. Acreages and wetland boundaries were substantiated by observations on foot, by boat and by low level overflights. Individual plant species percentages are quantitative estimates of coverage based on visual field inspections of every marsh. In some instances, especially in tidal freshwater areas, these percentages are subject to seasonal bias.

Marshes one quarter of an acre or larger are designated by number. Many marshes smaller than one quarter acre (usually narrow fringing marshes) are designated by the same symbol (shaded) as the larger marshes on the section maps but assigned no number. Small marshes (less than one acre) are exaggerated and are not indicated to scale. Information such as individual marsh acreage, plant species percentage and acreage, marsh types, and other observations are recorded in tabular form. Plant species percentages are recorded to the nearest percent, and acreages to the nearest tenth of an acre. In marshes of less than one acre, the species are recorded to the nearest hundredth of an acre. In those instances where an individual plant species is estimated to amount to less than 0.5 percent, the symbol (-) is used to indicate a trace amount. In unusual situations where an individual marsh is estimated to contain 50 percent or more of a species that is not listed as a marsh type, the closest applicable marsh type is used. For example, a marsh which is judged to contain 60 percent wild rice would be listed as Type XI (Freshwater Mixed).

Marsh Types and Evaluation

For a better understanding of what is meant by marsh types, some background information is required. The personnel of the Department of Wetlands have classified twelve different common marsh types in Virginia, based on vegetational composition. These marsh types have been evaluated according to certain values and are recorded in the Guidelines report. The following is a brief outline of the wetland types and their evaluation as found in that publication:

"It is recognized that most wetlands areas, with the exception of the relatively monospecific cordgrass marshes of the Eastern Shore, are not homogenously vegetated. Most marshes are, however, dominated by a major plant. By providing the manager with the primary values of each community type and the means of identification he then has a useful and convenient tool for weighing the relative importance of each marsh parcel. In Virginia, many wetlands management problems involve only a few acres or a fraction of an acre. The identification of plant communities permits the manager to evaluate both complete marshes and subareas within a marsh.

"Each marsh type may be evaluated in accordance with five general values. These are:

"1. Production and detritus availability. Previous VIMS reports have discussed the details of marsh production and the role of detritus which results when the plant material is washed into the water column. The term "detritus" refers to plant material which decays in the aquatic system and forms the basis of a major marine food web. The term "production" refers to the amount of plant material which is produced by the various types of marsh plants. Vegetative production of the major species has been measured and marshes have been rated in accordance with their average levels of productivity. If the production is readily available to the marine food web as detritus, a wetlands system is even more important than one of equal productivity where little detritus results. Availability of detritus is generally a function of marsh elevation and total flushing, with detritus more available to the aquatic environment in the lower, well-flushed marshes. [Example: Section V. Part 1. Marsh #206 Cherry Grove Creek, Type I, 90% Saltmarsh Cordgrass, pages 75 and 76.]

"2. Waterfowl and wildlife utilization. Long before marshes were discovered to be detritus producers, they were known as habitats for various mammals and marsh birds and as food sources for migratory waterfowl. Some marsh types, especially mixed freshwater marshes, are more valuable because of diversity of the vegetation found there. [Example: Section II. Marsh #47 and #48, Bridges Creek, Type XII and XI, pages 36 and 39.]

"3. Erosion buffer. Erosion is a common coastal problem. Marshes can be eroded, but some, particularly the more saline types, are eroded much more slowly than adjacent shores which are unprotected by marsh. This buffering quality is derived from the ability of the vegetation to absorb or dissipate wave energy by establishing a dense root system which stabilizes the substrate. Generally, freshwater species are less effective than saltwater plants in this regard. [Example: Section III. Part 1. Marsh #59, Hollis Marsh Island, Type XII, pages 43 and 45]

"4. Water quality control. The dense growth of some marshes acts as a filter, trapping upland sediment before it reaches waterways and thus protecting shellfish beds and navigation channels from siltation. Marshes can also filter out sediments that are already in the water column. The ability of marshes to filter sediments and maintain water clarity is of particular importance to the maintenance of clam and oyster production. Excessive sedimentation can reduce the basic food supply of shellfish through reduction of the photic zone where algae grows. It can also kill shellfish by clogging their gills. Additionally marshes can assimilate and degrade pollutants through complex chemical processes, a discussion of which is beyond the scope of this paper...." [Example: Section I. Part 3. March #31 Mattox Creek, Type XII, pages 30 and 32]

"5. Flood buffer. The peat substratum of some marshes acts as a giant sponge in receiving and releasing water. This characteristic is an effective buffer against coastal flooding, the effectiveness of which is a function of marsh type and size. [Example: Section VII. Part 2. Marsh #289, Drakes Marsh, Type XI, pages 99 and 101.]

Marsh Types and Their Environmental Contributions

"Research and marsh inventory work accomplished by VIMS personnel indicate that 10 species of marsh vegetation tend to dominate many marshes, the dominant plant depending on water salinity, marsh elevation, soil type and other factors. The term "dominant" is construed to mean that at least 50% of the vegetated surface of a marsh is covered by a single species. Brackish and freshwater marshes often have no clearly dominant species of vegetation. These marshes are considered to be highly valuable in environmental terms."

(Edited from Guidelines for Activities Affecting Virginia Wetlands)

Type I   Saltmarsh Cordgrass Community (Example: Marsh #27)

a. Average yield 4 tons per acre per annum. (Optimum growth up to 10 tons per acre).
b. Optimum availability of detritus to the marine environment.
c. Roots and rhizomes eaten by waterfowl and stems used in muskrat lodge construction. Also serves as nesting material for various birds.
d. Deterrent to shoreline erosion.
e. Serves as sediment trap and assimilates flood waters.

Type II   Saltmeadow Community (Example: Marsh #155)

a. 1-3 tons per acre per annum.
b. Food (seeds) and nesting areas for birds.
c. Effective erosion deterrent.
d. Assimilates flood waters.
e. Filters sediments and waste material.

Type III <u>Black Needlerush Community</u> (Example: Marsh #244 (30%)

a. 3-5 tons per acre per annum.
b. Highly resistant to erosion.
c. Traps suspended sediments but not as effective as Type II.
d. Somewhat effective in absorbing flood waters.

Type IV <u>Saltbush Community</u> (Example: Marsh #49)

a. 2 tons per acre per annum or less.
b. Nesting area for small birds and habitat for a variety of wildlife.
c. Effective trap for flotsam.

Type V <u>Big Cordgrass Community</u> (Example: Marsh #37)

a. 3-6 tons per acre per annum.
b. Detritus less available than from Type I.
c. Habitat for small animals and used for muskrat lodges.
d. Effective erosion buffer.
e. Flood water assimilation.

Type VI <u>Cattail Community</u> (Example: Marsh #238)

a. 2-4 tons per acre per annum.
b. Habitat for birds and utilized by muskrats.
c. Traps upland sediments.

Type VII <u>Arrow Arum-Pickerelweed Community</u> (Example: Marsh #279 (40%)

a. 2-4 tons per acre per annum.
b. Detritus readily available to marine environment.
c. Seeds eaten by wood ducks.
d. Susceptible to erosion from wave action and boat wakes, particularly in winter months.

Type VIII Reed Grass Community (Example: Marsh #239)

a. 4-6 tons per acre per annum.
b. Little value to wildlife except for cover.
c. Invades marshes and competes with more desirable species.
d. Deters erosion on disturbed sites.

Type IX Yellow Pond Lily Community (Example: Marsh #291)

a. Less than 1 ton per acre per annum.
b. Cover and attachment site for aquatic animals and algae.
c. Feeding territory for fish.

Type X Saltwort Community (Example: (Not observed in Westmoreland County)

a. Less than 0.5 tons per acre per annum.
b. Little value to aquatic or marsh animals.

Type XI Freshwater Mixed Community (Example: Marsh #280)

a. 3-5 tons per acre per annum.
b. High diversity of wildlife.
c. High diversity of wildlife foods.
d. Often associated with fish spawning and nursery grounds.
e. Ranks high as a sediment trap and nursery grounds.

Type XII Brackish Water Mixed Community (Example: Marsh #137)

a. 3-4 tons per acre per annum.
b. Wide variety of wildlife foods and habitat.
c. Deterrent to shoreline erosion.
d. Serves as sediment trap and assimilates flood waters.
e. Known spawning and nursery grounds for fish.

Evaluation of Wetland Types

(From Guidelines for Activities Affecting Virginia Wetlands)

For management purposes, the twelve types of wetlands identified above are grouped into five classifications based on the estimated total environmental value of an acre of each type.

Group One:	Saltmarsh Cordgrass (Type I) Arrow Arum-Pickerel Weed (Type VII) Freshwater Mixed (Type XI) Brackish Water Mixed (Type XII)

Group One marshes have the highest values in productivity and wildfowl and wildlife utility and are closely associated with fish spawning and nursery areas. They also have high value as erosion inhibitors, are important to the shellfish industry and valued as natural shoreline stabilizers. Group One marshes should be preserved.

Group Two:	Big Cordgrass (Type V) Saltmeadow (Type II) Cattail (Type VI)

Group Two marshes are of only slightly lesser value than Group One marshes. The major difference is that detritus produced in these marshes is less readily available to the marine environment due to higher elevations and consequently less tidal action to flush the detritus into adjacent waterways. Group Two marshes have very high values in protecting water quality and acting as buffers against coastal flooding. These marshes should also be preserved, but if development in wetlands is considered to be justified it would be better to alter Group Two marshes than Group One marshes.

Group Three: Yellow Pond Lily (Type IX)
Black Needlerush (Type III)

The two marshes in the Group Three category are quite dissimilar in properties. The yellow pond lily marsh is not a significant contributor to the food web but it does have high values to wildlife and waterfowl. Black needlerush has little wildlife value but it ranks high as an erosion flood buffer. Group Three marshes are important though their total values are less than Group One and Two marshes. If development in wetlands is considered necessary, it would be better to alter Group Three marshes than Groups One of Two.

Group Four: Saltbush (Type IV)

The saltbush community is valued primarily for the diversity and bird nesting area it adds to the marsh ecosystem. To a lesser extent it acts as an erosion buffer. Group Four marshes should not be unnecessarily disturbed but it would be better to concentrate necessary development in these marshes rather than disturb any of the marshes in the preceding groups.

Group Five: Saltwort (Type X)
Reedgrass (Type VIII)

Based on present information Group Five marshes have few values of any significance. While Group Five marshes should not be unreasonably disturbed, it is preferable to develop in these marshes than in any other types.

For a better understanding of Virginia's Wetlands the following publications are recommended:

<u>Coastal Wetlands of Virginia</u>
<u>Interim Report No. 3</u>
<u>Guidelines for Activities Affecting Virginia's Wetlands</u>
Special Report In Applied Marine Science and Ocean Engineering No. 46
Gene M. Silberhorn, George M. Dawes, Thomas A. Barnard, Jr., June 1974
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

<u>Local Management of Wetlands</u>
<u>Environmental Considerations</u>
Special Report in Applied Marine Science and Ocean Engineering No. 35
Kenneth Marcellus, George M. Dawes, Gene Silberhorn, June 1973
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

<u>Coastal Wetlands of Virginia</u>
Interim Report No. 2
Special Report in Applied Marine Science and Ocean Engineering No. 27
Kenneth Marcellus, July 1972
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

<u>Coastal Wetlands of Virginia Interim Report</u>
Special Report in Applied Marine
Science and Ocean Engineering No. 10
Marvin Wass and Thomas Wright, December 1969
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

<u>Laws of Virginia Relating to Wetlands and Subaqueous Waters</u>
Virginia Marine Resources Commission
2401 West Avenue
Newport News, Virginia 23607

<u>Wetlands Guidelines</u>
Virginia Marine Resources Commission
2401 West Avenue
Newport News, Virginia 23607

<u>Tidal Wetlands Plants of Virginia</u>
Educational Series Number 19
Gene M. Silberhorn, April 1976
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

<u>Wetlands Plants of the Eastern United States</u>
North Atlantic Division, Army Corps of Enginners
Robert J. Pierce, February 1977
North Atlantic Division, Army Corps of Engineers
90 Church Street
New York, N.Y. 10007

MARSH PLANTS

Common and Scientific Names as found in the Data Tables

Arrow Arum	Peltandra virginica (L.) Kunth
Arrowhead	Sagittaria spp.
Beggar Ticks	Bidens spp.
Big Cordgrass	Spartina cynosuroides (L.) Roth.
Black Needlerush	Juncus roemerianus Scheele
*Cardinal Flower	Lobelia cardinalis L.
Cattails	
Common	Typha latifolia L.
Narrow-leaved	Typha angustifolia L.
Common Threesquare	Scirpus americanus Persoon.
Ferns	
*Marsh Fern	Thelypteris palustris Schott
Royal Fern	Osmunda regalis L. var. spectabilis (Willd.) Gray
Giant Bulrush	Scirpus validus Vahl
*Jewelweed	Impatiens capensis Meerb.
Marsh Hibiscus	Hibiscus moscheutos L.
*Marsh Mallow	Kosteletskya virginica (L.) Presl
Olney Threesquare	Scirpus olneyi Gray

*Marsh species not included in Virginia's Wetlands Act of 1972.

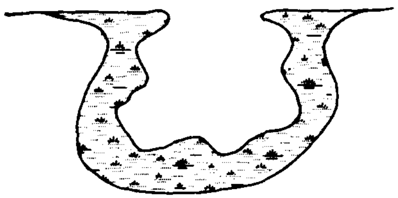
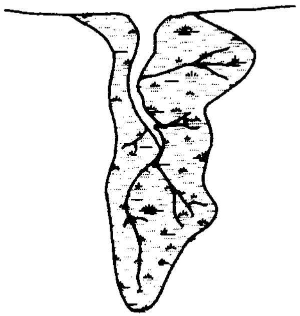
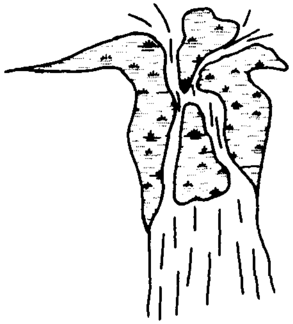
*Orach	_Atriplex patula_ L.
Pickerelweed	_Pontederia cordata_ L.
Reed Grass	_Phragmites australis_ (Cav.) Trin ex Steud.
Saltbushes	
Groundsel Tree	_Baccharis halimifolia_ L.
Marsh Elder	_Iva frutescens_ L.
Saltgrass	_Distichlis spicata_ (L.) Greene
*Saltmarsh Aster	_Aster tenuifolius_ L.
Saltmarsh Bulrush	_Scirpus robustus_ Pursh
Saltmarsh Cordgrass	_Spartina alterniflora_ Loisel.
Saltmarsh Fleabane	_Pluchea purpurascens_ (Sw.) DC.
Saltmeadow Hay	_Spartina patens_ (Aiton) Muhl.
Smartweeds	_Polygonum_ spp.
Soft Rush	_Juncus effusus_ L.
*Swamp Loosestrife	_Decodon verticillatus_ (L.) Ell.
Swamp Milkweed	_Asclepias incarnata_ L.
*Swamp Rose	_Rosa palustris_ Marsh.
Sweet Flag	_Acorus calamus_ L.

*Marsh species not included in Virginia's Wetlands Act of 1972.

Switch Grass	_Panicum_ _virgatum_ L.
Tearthumb	_Polygonum_ _arifolium_ L.
*Walter's Millet	_Echinochloa_ _walteri_ (Pursh.) Nash
Water Dock	_Rumex_ _verticillatus_ L.
Water Hemp	_Amaranthus_ _cannabinus_ (L.) J.D. Sauer
*Water Willow	_Justicia_ _americana_ (L.) Vahl
Wax Myrtle	_Myrica_ _cerifera_ L.
Wild Rice	_Zizania_ _aquatica_ L.
Yellow Pond Lily	_Nuphar_ _luteum_ (L.) Sibthorp and Smith

*Marsh species not included in Virginia's Wetlands Act of 1972.

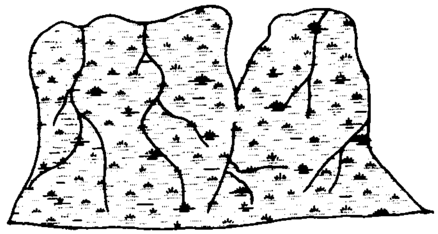
Glossary of Descriptive Terms

cove marsh	a marsh contained within a concavity or recessed area on a shoreline; the marsh vegetation is usually found surrounding a central, open-water pond, and tidal flushing is permitted through an inlet.	
creek or embayed marsh	a marsh occupying a drowned creek valley; in many large creek marshes the salinity decreases headward; this type of marsh may be divided for inventory purposes into sections if significant changes in the plant community occur along its length.	
delta marsh	a marsh found growing on sediment deposited at the mouth of a tidal creek; tidal exchange through the creek mouth is usually restricted to narrow channels by the marsh.	

Glossary of Descriptive Terms

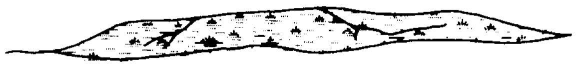
extensive marsh

a large marsh where the length and depth or width are roughly comparable; most extensive marshes are drained by many tidal channels and creeks which have little freshwater input.



fringe marsh

a marsh which borders along a section of shoreline and generally has a much greater length than width or depth.



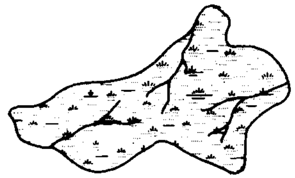
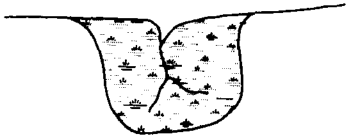
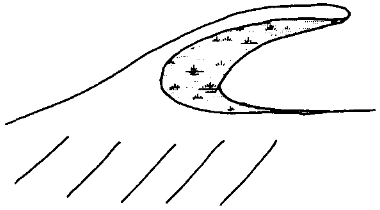
high marsh

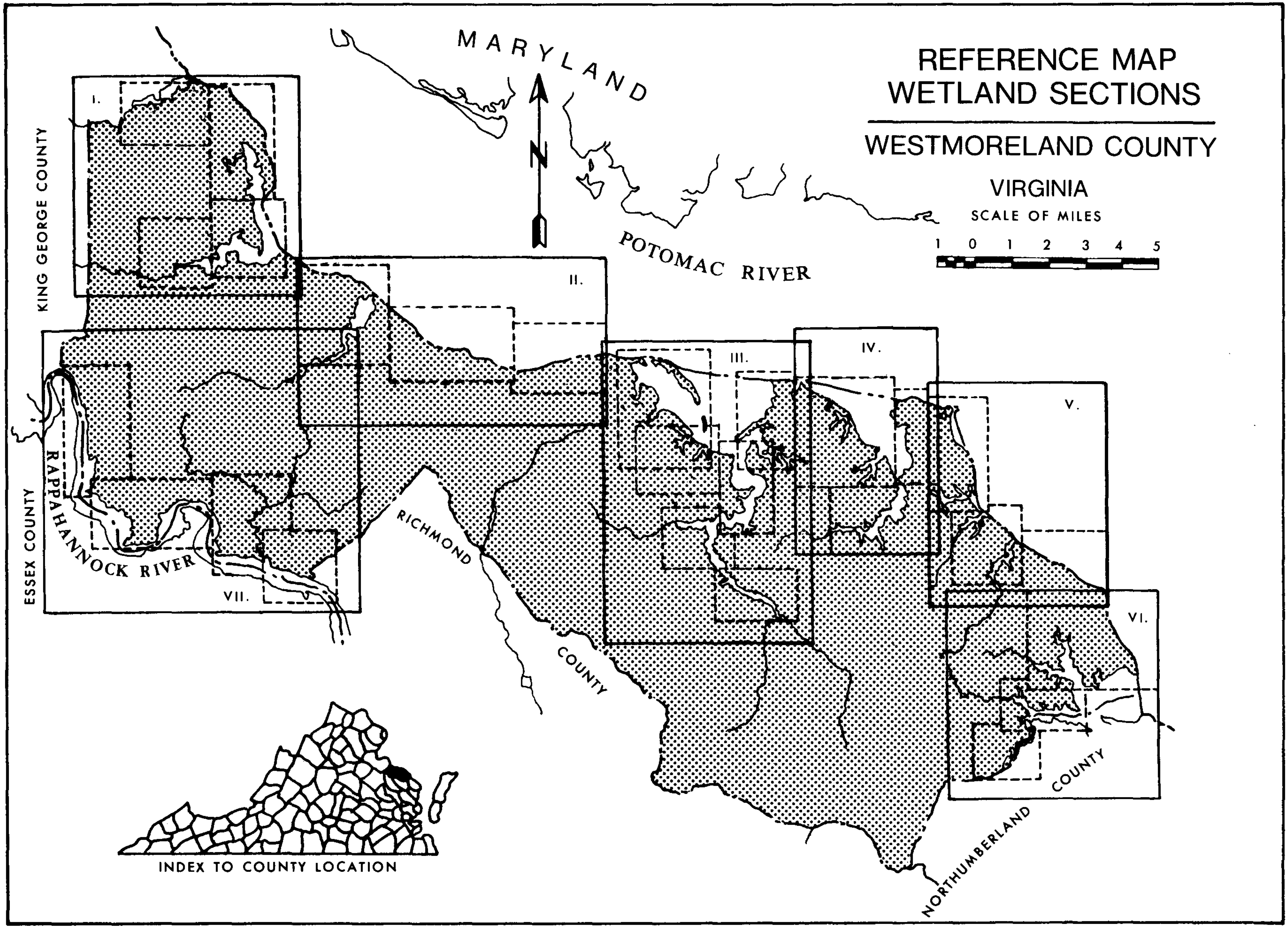
the marsh surface is at an elevation of mean high water or above; it is usually inundated less than twice daily by tidal action.

low marsh

the marsh surface is at an elevation below mean high water; it is usually inundated twice daily by tidal action.

Glossary of Descriptive Terms

marsh island	an isolated marsh surrounded on all sides by open water; interior portions of the marsh may contain trees scattered at highest elevations.	
pocket marsh	a marsh contained within a small, essentially semi-circular area on a shoreline.	
point or spit marsh	a marsh which extends from the uplands in the form of a point or spit; its development is usually influenced by tidal currents that form a sand berm behind which the marsh forms.	


REFERENCE MAP
WETLAND SECTIONS
WESTMORELAND COUNTY
VIRGINIA
SCALE OF MILES
1 0 1 2 3 4 5
MARYLAND
POTOMAC RIVER
N
KING GEORGE COUNTY
ESSEX COUNTY
RAPPAHANNOCK RIVER
RICHMOND COUNTY
NORTHUMBERLAND COUNTY
I.
II.
III.
IV.
V.
VI.
VII.
INDEX TO COUNTY LOCATION

Topographic Maps Utilized

U. S. Geological Survey

7.5 minute series

Dahlgren	1968
Colonial Beach North	1968
Colonial Beach South	1968
Rollins Fork	1968
Stratford Hall	1968 photorevised 1973
Machodoc	1968
Montross	1968
St. Clements Island	1968 photorevised 1973
Piney Point	1968
Kinsale	1968
Champlain	1968 photorevised 1973
Loretto	1968 photorevised 1972
Rollins Fork	1968

SECTION I

ROSIER CREEK TO MATTOX CREEK

Rosier Creek marks the northern boundary of Westmoreland County and the starting point of this inventory. Although the neighboring marshes of King George County are similar, only those wetlands of Westmoreland are described here. This Section is divided into three parts:

Part 1: Rosier Creek to Goldman Creek
Part 2: Monroe Bay and Monroe Creek
Part 3: Mattox Creek

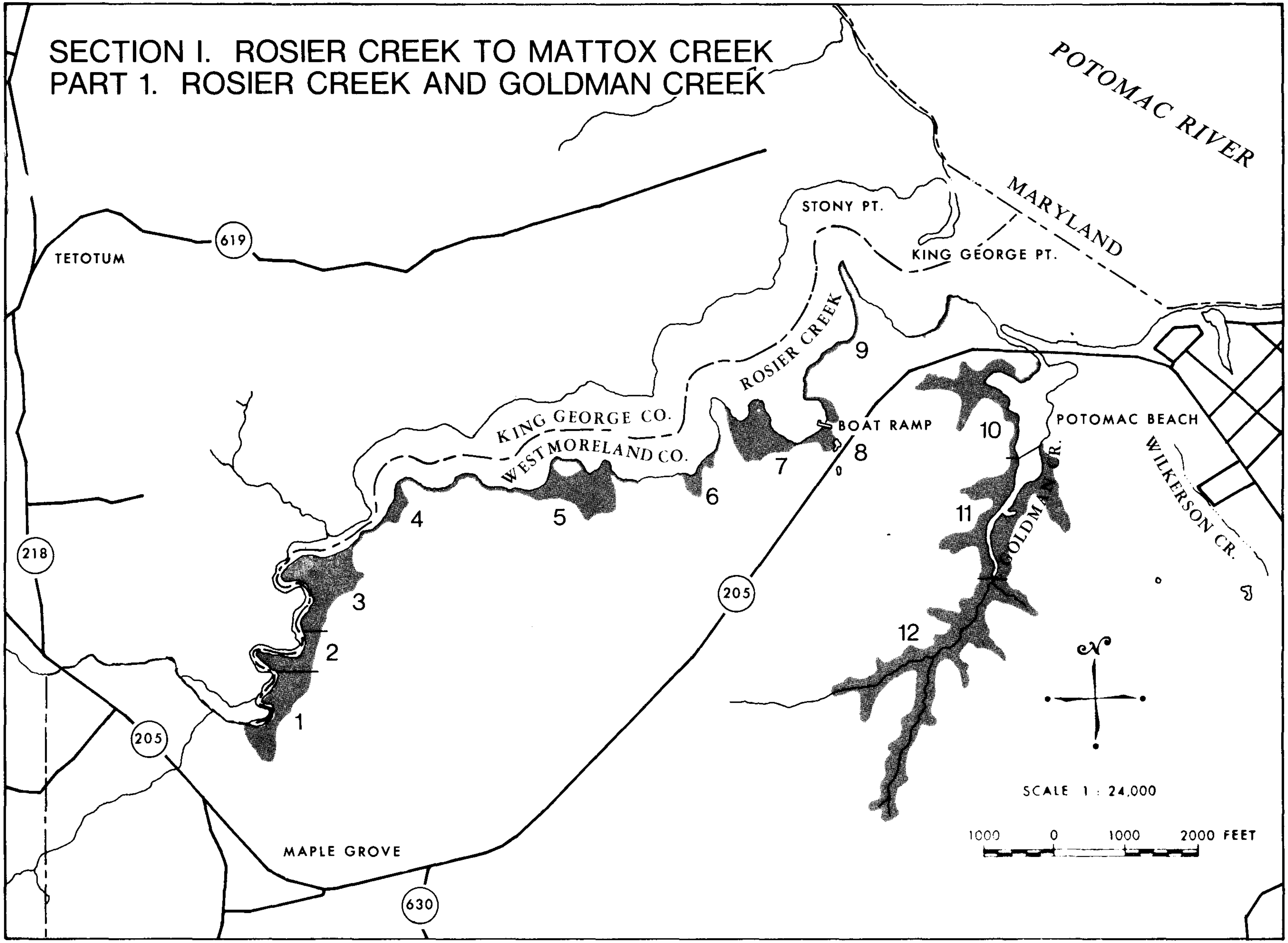
The 44 marshes listed in this Section comprise 486 acres of tidal wetlands. Community types range from Saltmarsh Cordgrass (Type I) to Freshwater Mixed (Type XI). Other key community designations include Big Cordgrass (Type V), Saltbush (Type IV), and Brackish Water Mixed (Type XII). Significant amounts of cattails, pickerelweed, arrow arrum and wild rice are found in the upper ends of Rosier, Monroe and Mattox Creeks. In the lower reaches where the salinity is higher, the associated species include saltmeadow hay, saltgrass, saltmarsh aster and saltmarsh bulrush.

The vegetation found in marsh #12, Goldman Creek, is particularly noteworthy, as marsh hibiscus dominates this marsh. Although this plant can grow in tidal freshwater marshes, it is more commonly identified with brackish water vegetation. Therefore, the most appropriate designation becomes Type XII, the Brackish Water Mixed Community. Like all Type XII marshes, this large stand of marsh hibiscus is highly valued particularly as a wildlife habitat.

In general, the waterways and marshes of this Section provide excellent food and habitat for finfish. Trawl surveys conducted by the Virginia Institute of Marine Science have confirmed Rosier Creek and Mattox Creek as spawning and nursery grounds for such commercially important fish as striped bass, white perch, blueback herring, yellow perch, alewife, American shad and menhaden. In addition, these marshes provide valuable habitat to wildlife and waterfowl. These values are enhanced by large wooded swamps which adjoin such marshes as #1, #39, and #42.

The values attributed to the waterways and marshes in Monroe Bay are, however, being stressed, as evidenced by the seasonal occurrence of milfoil. This stress is probably related to the high population density, runoff drainage from farm and livestock fields, and other effluents.

Mattox Creek has an abundance of recreational waterfront developments where seepage from septic tanks located close to the shoreline compounds water quality problems. Expansion of these activities and facilities often increases shellfish ground closures. A good indicator of stressed water quality is the seasonal occurrence of Eurasian Water Milfoil (*Myriophyllum spicatum*) L. This pest species thrives on nutrient-rich water and suppressed tidal exchange. During the hot summer months it tends to choke the creeks with its dense growth, leading to low levels of dissolved oxygen and fish kills. Recreational activities on the water become greatly curtailed. These problems are not restricted to just Mattox, Monroe and Goldman Creeks but are found elsewhere in Westmoreland County.


SECTION I. ROSIER CREEK TO MATTOX CREEK
PART 1. ROSIER CREEK AND GOLDMAN CREEK
POTOMAC RIVER
MARYLAND
STONY PT.
KING GEORGE PT.
TETOTUM
619
ROSIER CREEK
KING GEORGE CO.
WESTMORELAND CO.
BOAT RAMP
POTOMAC BEACH
WILKERSON CR.
GOLDMAN CR.
1
2
3
4
5
6
7
8
9
10
11
12
218
205
205
630
MAPLE GROVE
SCALE 1 : 24,000
1000 0 1000 2000 FEET

SECTION I. PART 1. ROSIER CREEK AND GOLDMAN CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
1	Rosier Creek	15	%	-	5		-				-	-	40	15	5	-	-	25	5	5			h,- j,-	Upper reach of creek is transitional zone from tidal to non-tidal tree covered swamp. Water milfoil & water celery cover creek bottom.	XI
			acres	-	0.8		-				-	-	6.0	2.2	0.8	-	-	3.8	0.8	0.8			h,- j,-		
2	Rosier Creek	4	%	10	60	-	-			-			10	10		-		5	5					Tree covered fastlands slope sharply from marsh. Muskrat lodges in marsh. Marsh dominated by big cordgrass.	V
			acres	0.4	2.4	-	-			-			0.4	0.4		-		0.2	0.2						
3	Rosier Creek	7	%	10	40	-						-	20	5		-		20	5					A pair of bald eagles sighted. Wide creek-type marsh with large amounts of cattails and wild rice.	XI
			acres	0.7	2.8	-						-	1.4	0.4		-		1.4	0.4						
4	Rosier Creek	2.6	%	45	50	-	-		5					-		-	-							Fringe-type marsh, dominated by big cordgrass.	V
			acres	1.2	1.3	-	-		0.1					-		-	-								
5	Rosier Creek	10	%	15	40	-	5					-	40	-		-	-							Large pocket marsh with tree covered grove in the middle. Upland runoff sustains growth of cattails.	XII
			acres	1.5	4.0	-	0.5					-	4.0	-		-	-								
6	Rosier Creek	1.2	%	45	40	-							15											Fringing marsh. Yellow water iris occurs near fresh-water spring.	XII
			acres	0.5	0.5	-							0.2												
7	Rosier Creek	9	%	20	10	60	-		10														n,-	Large pocket marsh with tree covered spit. High marsh dominates area.	IV
			acres	1.8	0.9	5.4	-		0.9														n,-		
8	Rosier Creek	0.25	%	60	-	30	-		5							5	-						n,-	Boat ramp area, marsh may have been disturbed in the past by oyster shell fill.	I
			acres	0.15	-	0.08	-		0.01							0.01	-						n,-		

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SECTION I. PART 1. ROSIER CREEK AND GOLDMAN CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
9	Rosier Creek	2	%	90	5	5	-		-				-			-	-					-	n,-	Fringing marsh with occasional small pockets.	I
			acres	1.8	0.1	0.1	-		-				-			-	-					-	n,-		
10	Goldman Creek	9.5	%	70		15							5	-		10	-							Pocket-type marsh with adjoining fringe.	I
			acres	6.6		1.4							0.5	-		1.0	-								
11	Goldman Creek	21.5	%	60		10	20				-		10			-							f,-	Creek marsh. Giant spike rush associated. Yellow water iris also present.	I
			acres	12.9		2.2	4.3				-		2.2			-							f,-		
12	Goldman Creek	25	%				90										10							Extensive creek marsh dominated by marsh hibiscus.	XII
			acres				22.5										2.5								
	Total Section I. Part 1.	107	%	26	12	9	26		1	-	-	-	14	3	1	1	2	5	1	1		-	f,- j,- h,- n,-		
			acres	27.6	12.8	9.2	27.3		1.0	-	-	-	14.7	3.0	0.8	1.0	2.5	5.4	1.4	0.8		-	f,- j,- h,- n,-		

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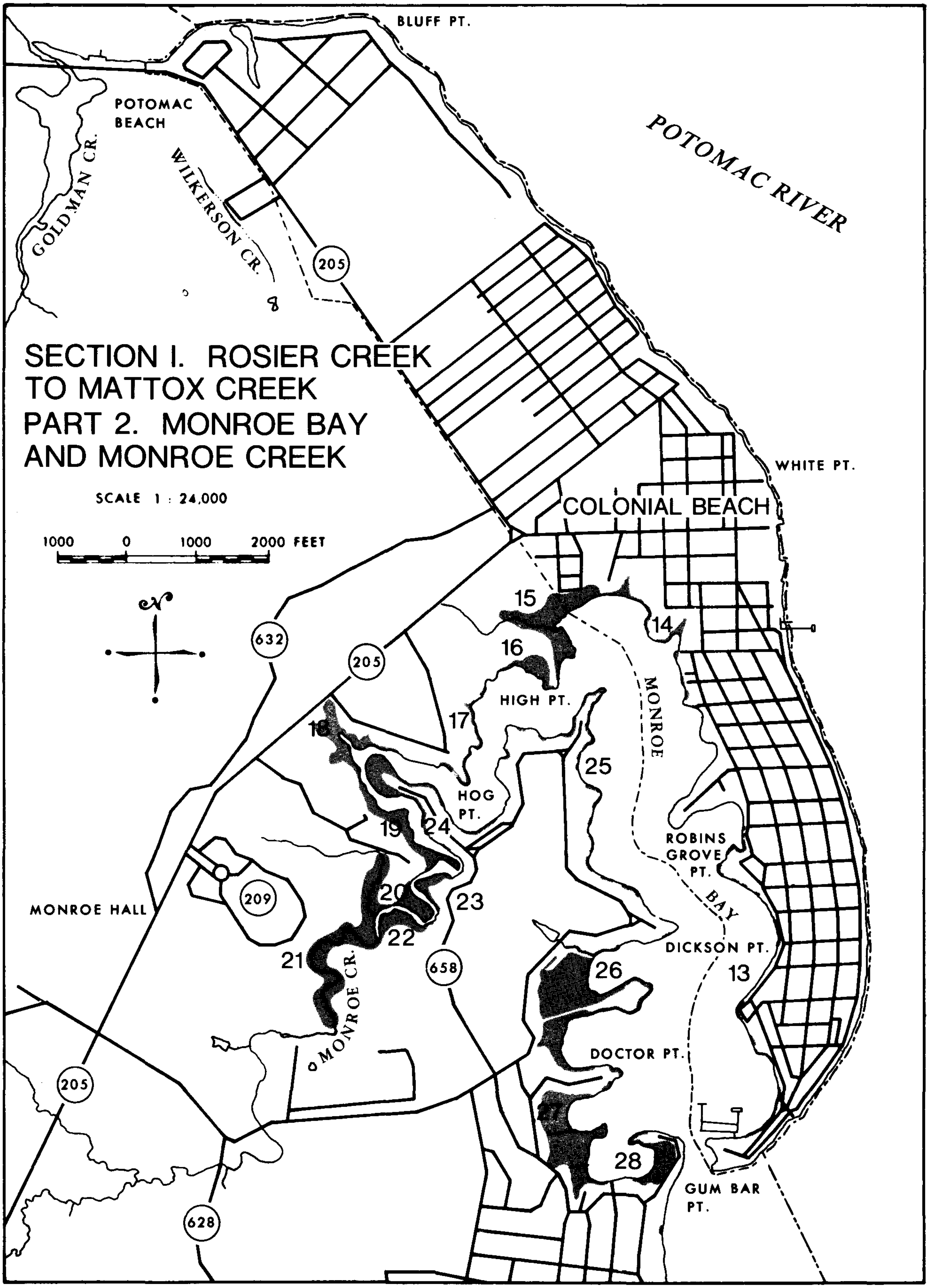

SECTION I. ROSIER CREEK
TO MATTOX CREEK
PART 2. MONROE BAY
AND MONROE CREEK
SCALE 1 : 24,000
1000 0 1000 2000 FEET
BLUFF PT.
POTOMAC
BEACH
GOLDMAN CR.
WILKERSON CR.
POTOMAC RIVER
205
632
COLONIAL BEACH
WHITE PT.
15
14
16
HIGH PT.
MONROE
17
18
25
HOG
PT.
19
24
ROBINS
GROVE
PT.
MONROE HALL
209
20
23
BAY
22
DICKSON PT.
21
MONROE CR.
658
26
13
DOCTOR PT.
27
28
GUM BAR
PT.
628

SECTION I. PART 2. MONROE BAY AND MONROE CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
13	Monroe Bay	1	%	40	60	-						-					-							Intermittant fringe-type marsh 5 to 25 feet wide. Highly developed shoreline.	V
			acres	0.4	0.6	-						-					-								
14	Monroe Bay	0.25	%	55	-	30			10		-					5			-				n,- p,-	Vegetation influenced by upland drainage. Some marsh displacement by newly installed bulkhead.	I
			acres	0.14	-	0.08			0.02		-					0.01			-				n,- p,-		
15	Monroe Bay	13	%	80	-	15	-						-			-	5		-				n,- p,-	Vigorous plant growth may be due to sewage plant effluent.	I
			acres	10.4	-	2.0	-						-			-	0.6		-				n,- p,-		
16	Monroe Creek	1.5	%	15	15	60	-		5							-						5	n,- p,-	Pocket-type marsh with adjoining fringe.	IV
			acres	0.2	0.2	0.9	-		0.1							-						0.1	n,- p,-		
17	Monroe Creek	0.50	%	60	10	30																-		Fringe marshes.	I
			acres	.30	.05	.15																-			
18	Monroe Creek	5	%	80	10	5				-						5	-					-	k,- n,-	Pocket marsh.	I
			acres	4.0	0.5	0.2				-						0.2	-					-	k,- n,-		
19	Monroe Creek	1.8	%	75	15	-	-			-			-			5	5					-	e,- i,- n,-	Reedgrass present, suggests some disturbance to marsh. Marsh extends onto spit.	I
			acres	1.4	0.3	-	-			-			-			0.1	0.1					-	e,- i,- n,-		
20	Monroe Creek	2	%	70	20	-				5						5	-					-	n,-	Creek-type marsh.	I
			acres	1.4	0.4	-				0.1						0.1	-					-	n,-		

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SECTION I. PART 2. MONROE BAY AND MONROE CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
21	Monroe Creek	25	%	30	60	-	-		5	5			-				-		-			-	n,-	Upper end of creek marsh extends to deep pocket marsh. Vegetation influenced by upland runoff water.	V
			acres	7.5	15.0	-	-		1.2	1.2			-				-		-			-	n,-		
22	Monroe Creek	4	%	70	15				5				10			-			-				n,-	Ducks observed feeding in marsh. Muskrat lodges found amoung cattails and big cordgrass.	I
			acres	2.8	0.6				0.2				0.4			-			-				n,-		
23	Monroe Creek	3	%	90	-	-							5			5							n,-	Low profile creek-type marsh; saltmarsh cordgrass well flushed by tides. High value marsh.	I
			acres	2.7	-	-							0.2			0.2							n,-		
24	Monroe Creek	5	%	80	-	-			5				-			5	10						n,-	Marsh recently disturbed by upland fill activities.	I
			acres	4.0	-	-			0.2				-			0.2	0.5						n,-		
25	Monroe Bay	0.36	%	60	10	10		-									-					20		Intermittant fringes. Spit marsh with some upland fill activity.	I
			acres	0.21	0.04	0.04		-									-					0.07			
26	Monroe Bay	18	%	30	50	5	-		10				5			-	-					-	n,-	Large pocket marsh. Dredged canal through marsh.	V
			acres	5.4	9.0	0.9	-		1.8				0.9			-	-					-	n,-		
27	Monroe Bay	12	%	50	30	10	-		10							-	-					-	n,-	Extensive pocket marsh. Good example of open-pile pier traversing marsh.	I
			acres	6.0	3.6	1.2	-		1.2							-	-					-	n,-		
28	Monroe Bay	5	%	45	-	35	-		5							10	5		-				e,-	Ducks observed in marsh.	XII
			acres	2.2	-	1.8	-		0.2				-			0.5	0.2		-				e,-		

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SECTION I. PART 2. MONROE BAY AND MONROE CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
	Total Section I. Part 2.	97.4	%	50	31	7	-	-	5	1	-	-	2			1	2		-			-	e,- n,- k,- p,-		
			acres	49.0	30.3	7.2	-	-	5.0	1.4	-	-	1.4			1.4	1.5		-			0.2	e,- n,- k,- p,-		

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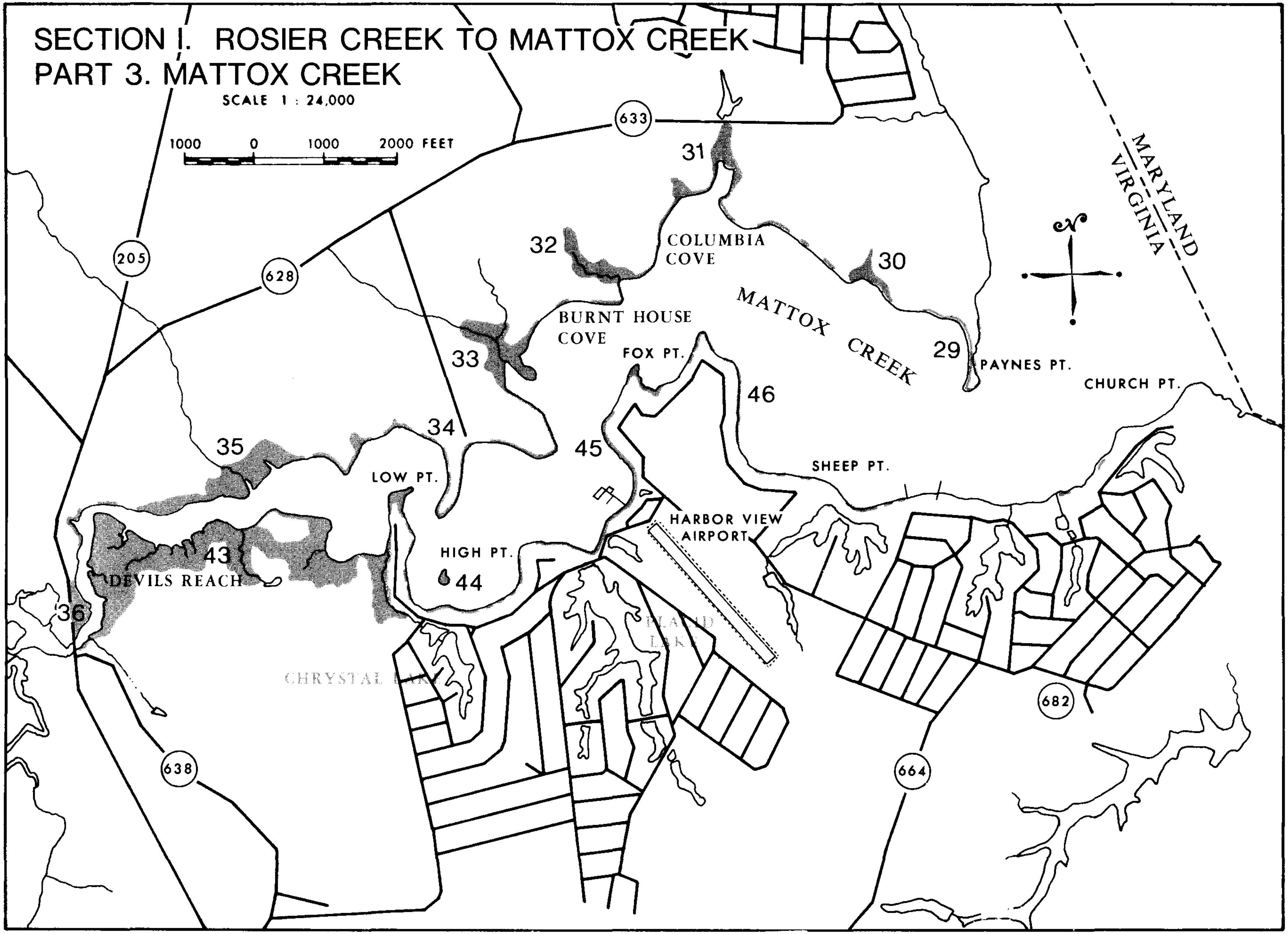
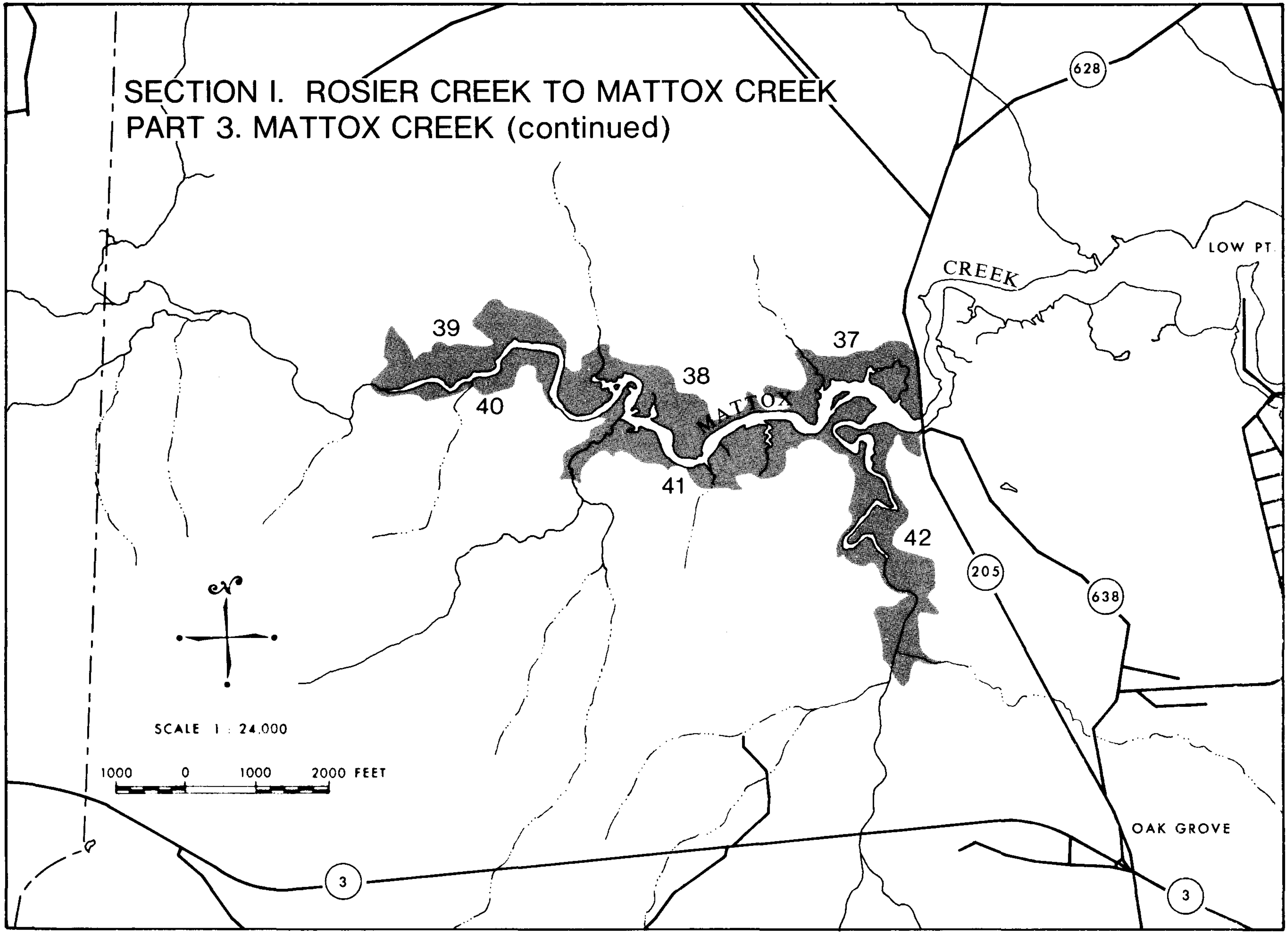

SECTION I. ROSIER CREEK TO MATTOX CREEK
PART 3. MATTOX CREEK
SCALE 1 : 24,000
1000 0 1000 2000 FEET
MARYLAND
VIRGINIA
633
205
628
638
664
682
31
32
30
29
33
34
35
36
43
44
45
46
COLUMBIA COVE
BURNT HOUSE COVE
MATTOX CREEK
FOX PT.
PAYNES PT.
CHURCH PT.
SHEEP PT.
LOW PT.
HIGH PT.
HARBOR VIEW AIRPORT
DEVILS REACH
CHRYSTAL LAKE


SECTION I. ROSIER CREEK TO MATTOX CREEK
PART 3. MATTOX CREEK (continued)
628
LOW PT.
CREEK
39
37
38
MATTOX
40
41
42
205
638
SCALE 1 : 24,000
1000 0 1000 2000 FEET
OAK GROVE
3
3

SECTION I. PART 3. MATTOX CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
29	Mattox Creek	0.27	%	50	25	20			5										-			-	n,-	Long fringing marsh on Paynes Point. Water milfoil present in the creek.	I
			acres	0.14	0.07	0.05			0.01										-			-	n,-		
30	Mattox Creek	2.5	%	50	20	5	5						-			15			5				n,-	Small pocket marsh with associated fringes.	I
			acres	1.2	0.5	0.1	0.1						-			0.4			0.1				n,-		
31	Mattox Creek	5.5	%	40	30	10	-	-	-			15	5											Pocket marshes with connecting fringe along Columbia Cove area.	XII
			acres	2.2	1.6	0.6	-	-	-			0.8	0.3												
32	Mattox Creek	5.2	%	75	20	5							-				-						n,-	Deep pocket marsh with fringe.	I
			acres	3.9	1.0	0.3							-				-						n,-		
33	Mattox Creek	8	%	40	50	5	-		-				-				5		-					Extensive pocket marsh near Burnt House Cove.	V
			acres	3.2	4.0	0.4	-		-				-				0.4		-						
34	Mattox Creek	3	%	45	25	5	-	-					5	-		20	-							Long continuous fringe with small pocket marshes.	XII
			acres	1.4	0.8	0.2	-	-					0.2	-		0.6	-								
35	Mattox Creek	14.5	%	15	80	-			-			-	-	-		5	-					-		Extensive creek-type marsh. Large amounts of big cordgrass along Devils Reach.	V
			acres	2.2	11.6	-			-			-	-	-		0.7	-					-			
36	Mattox Creek	4.2	%	15	80	-							5			-			-			-	n,-	Located just below the bridge and route 205.	V
			acres	0.6	3.4	-							0.2			-			-			-	n,-		

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SECTION I. PART 3. MATTOX CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
37	Mattox Creek	25	%	10	80	-	-						10			-						-		Extensive creek-type marsh, dominated by big cordgrass.	V
			acres	2.5	20.0	-	-						2.5			-						-			
38	Mattox Creek	30	%	5	70		10					-	10	5			-			-		-		Extensive creek-type marsh with small island included.	V
			acres	1.5	21.0		3.0					-	3.0	1.5			-			-		-			
39	Mattox Creek	30	%		20		5				-	-	30	35	-			10	-	-		-	i,- n,- j,- o,- l,-	Extensive creek-type marsh. Upper end changes to non-tidal swamp.	XI
			acres		6.0		1.5				-	-	9.0	10.5	-			3.0	-	-		-	i,- n,- j,- o,- l,-		
40	Mattox Creek	12	%	5	40		5					-	30	20					-	-			i,- o,-	Marsh is bounded by high tree covered uplands.	XI
			acres	0.6	4.8		0.6					-	3.6	2.4					-	-			i,- o,-		
41	Mattox Creek	35	%		90		-						10	-					-				n,-	Extensive creek marsh with small pocket areas.	V
			acres		31.5		-						3.5	-					-				n,-		
42	Mattox Creek	50	%		90		-						10	-					-				n,-	Extensive creek marsh extends to large pocket. Upper reaches change to freshwater tree covered swamp.	V
			acres		45.0		-						5.0	-					-				n,-		
43	Mattox Creek	50	%	15	80	-							5			-	-		-			-	n,-	Extensive creek marsh with deep pockets. Two bald eagles sighted.	V
			acres	7.5	40	-							2.5			-	-		-			-	n,-		
44	Mattox Creek	4	%	50	10	-				-		20										20	e,- n,-	Spit-type marsh and fringe with offshore marsh island included.	I
			acres	2.0	0.4	-				-		0.8										0.8	e,- n,-		

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SECTION I. PART 3. MATTOX CREEK

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45	Mattox Creek	1	%	60	15	5							5			10						5		Long fringing marsh with small pockets. Saltmarsh cordgrass dominates low shoreline.	I
			acres	0.60	0.15	0.05							0.05			0.10						0.05			
46	Mattox Creek	1	%	30	20	50	-		-							-	-					-		Intermittant fringe with small pocket. High profile marsh.	IV
			acres	0.30	0.20	0.50	-		-							-	-					-			
	Total Section I. Part 3.	281.2	%	11	68	1	2	-	-		-	1	11	5	-	1	-	1	-	-		-	e,- n,- i,- o,-		
			acres	29.8	192.0	2.2	5.2	-	-		-	1.6	29.8	14.4	-	1.8	0.4	3.0	0.1	-		0.8	e,- n,- i,- o,-		
	Total Section I.	485.6	%	22	48	4	7	-	1	-	-	-	9	3.6	-	1	1	2	-	-		-	e,- i,- o,- f,- k,- p,- h,- n,-		
			acres	106.4	235.1	18.6	32.5	-	6.0	1.4	-	1.6	45.9	17.4	0.8	4.2	4.4	8.4	1.4	0.8		1.0	e,- i,- o,- f,- k,- p,- h,- n,-		

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SECTION II

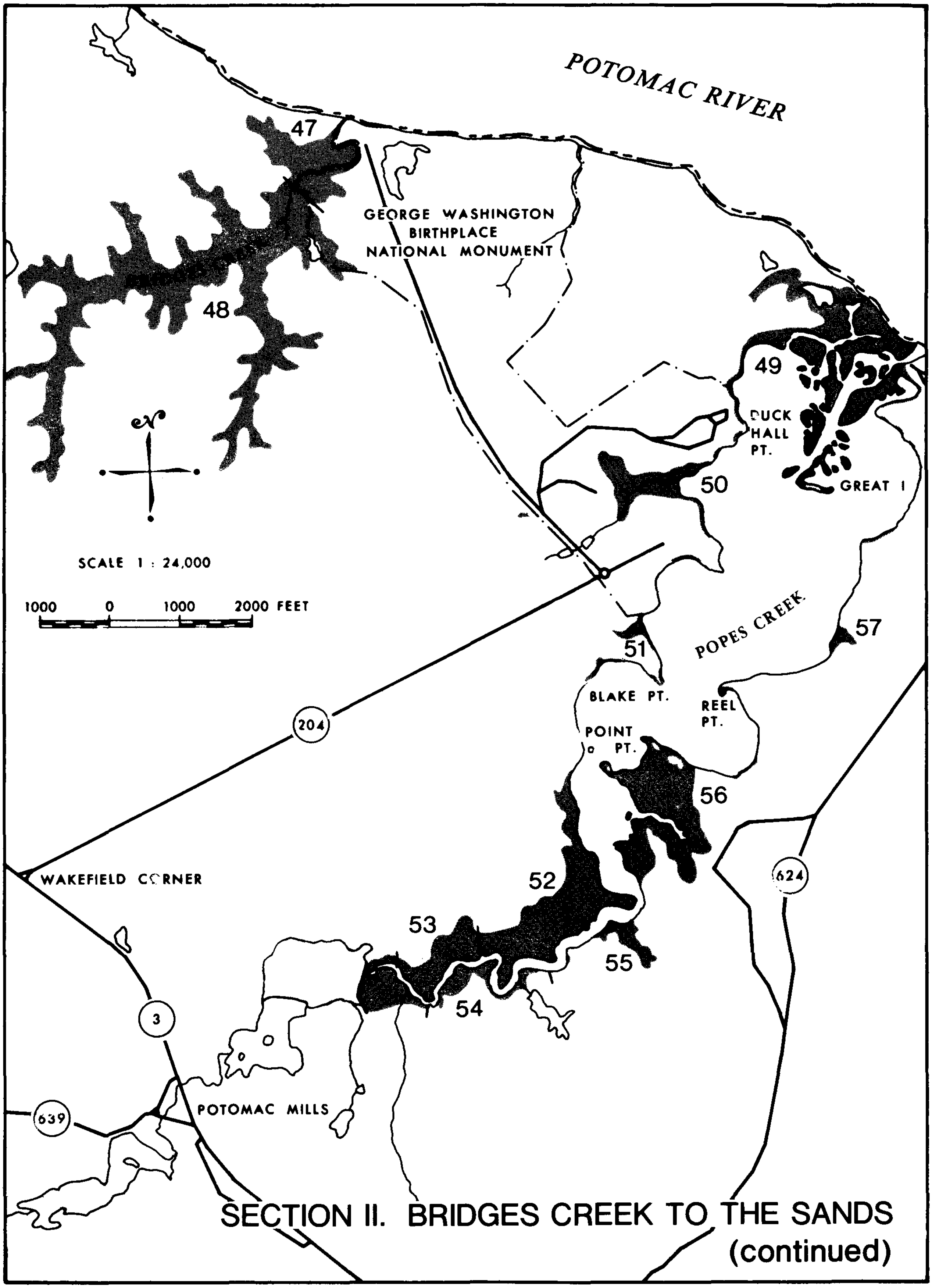
BRIDGES CREEK TO THE SANDS

This Section of the Westmoreland County wetlands inventory covers about 10 miles of the Potomac River shoreline from Mattox Creek downstream to Currioman Bay. The vast majority of wetlands in this Section are found in Bridges Creek and Popes Creek with 284 acres inventoried. The remaining acreage occurs at The Sands beach, marsh #58.

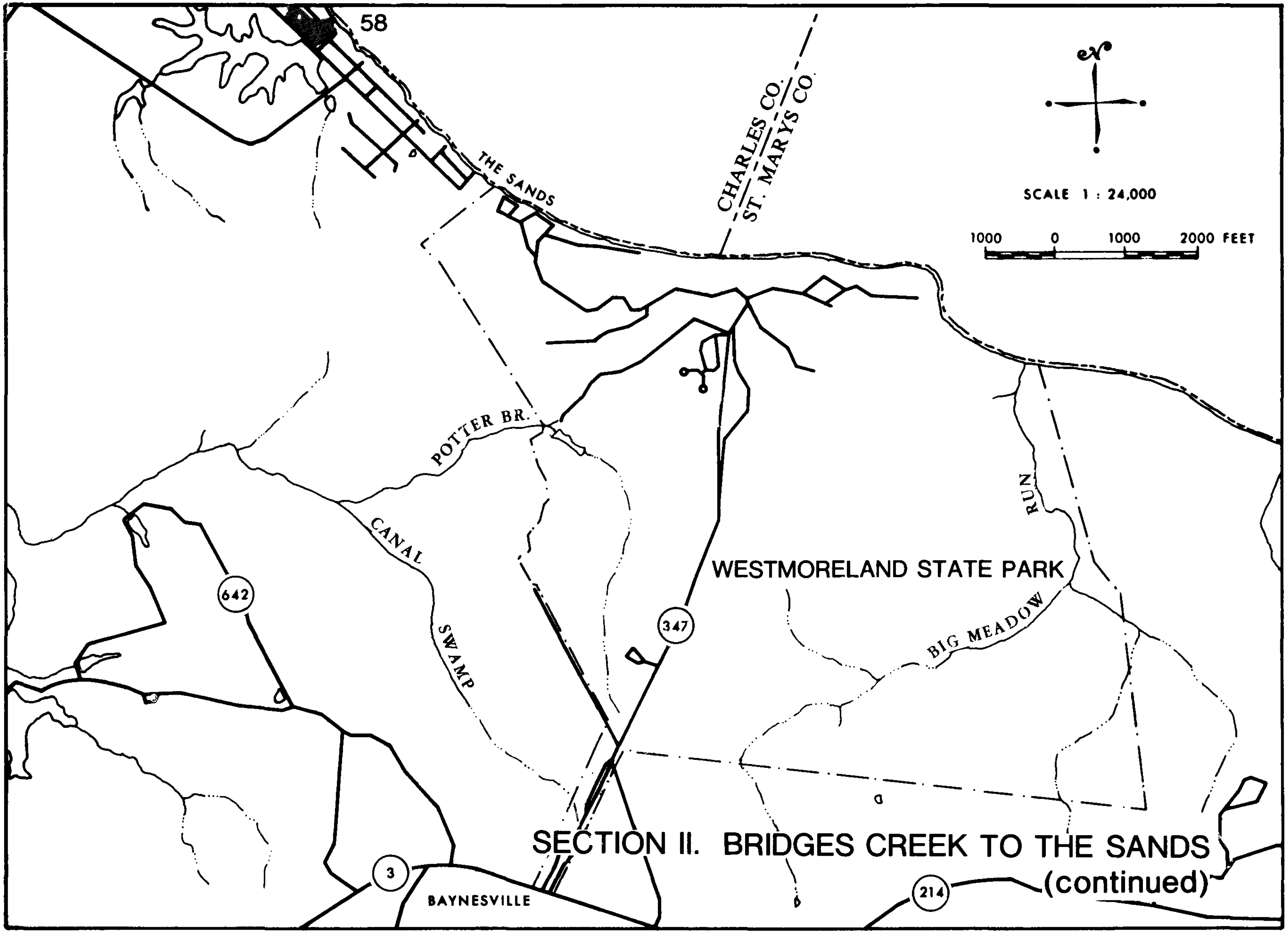
The third map plat in Section II shows the Potomac shoreline from an area along Westmoreland State Park to Mt. Aity. Although there are no tidal wetlands present, the nontidal swamps of Big Meadow Run, Little Meadow Run, and Mill Run are noteworthy. These creeks provide a pristine habitat for wildlife such as a pair of bald eagles which were observed during the field survey. Certainly, as these great birds forage for fish in the Potomac, they demonstrate the bond between both environments. One environment cannot be managed without the other and both are deserving of protection.

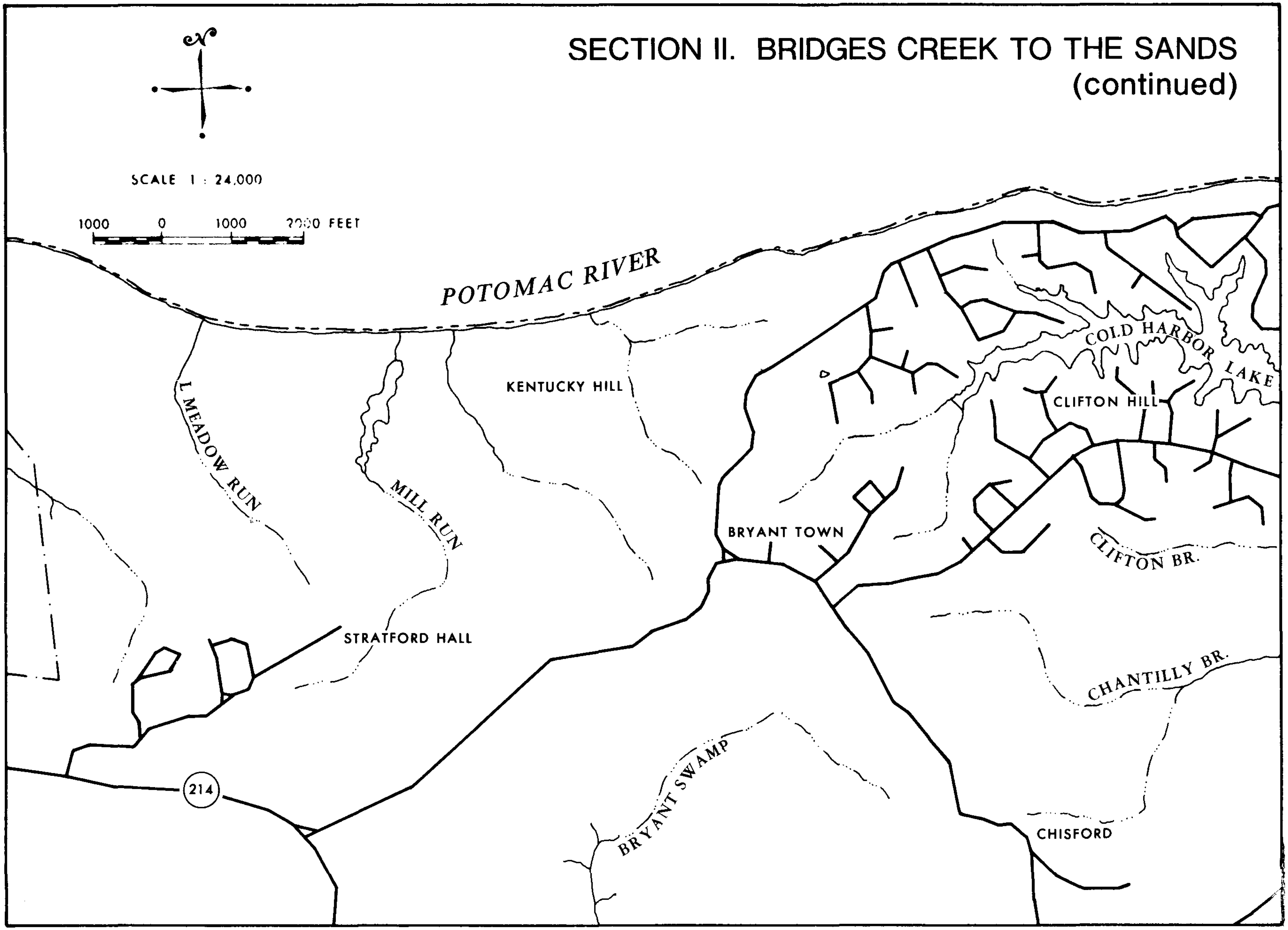
Bridges Creek and Popes Creek are interesting examples of old creek and marsh systems fronting on the Potomac River. Their tidal entrances have been periodically closed or restricted as severe storms change the outer beach profile. In Popes Creek, shallow, undefined channels are flanked by extensive Saltbush Marshes (Type IV). These delta-type marshes, like #49, are formed over the years from accumulated sediments. In Bridges Creek, marsh vegetation has taken over what was probably once an open waterway.

The Freshwater Mixed Marshes (Type XI) found at the upper ends of these creeks are dominated by cattails, pickerelweed, arrow arum, yellow pond lily and marsh hibiscus. Farther down the creeks, where higher salinity influences the vegetation, significant amounts of big cordgrass, saltbush and saltmarsh cordgrass are found in Brackish Water Mixed (Type XII) marshes.



SECTION II. BRIDGES CREEK TO THE SANDS (continued)


58
THE SANDS
CHARLES CO.
ST. MARYS CO.
SCALE 1 : 24,000
1000 0 1000 2000 FEET
POTTER BR.
CANAL
SWAMP
RUN
WESTMORELAND STATE PARK
BIG MEADOW
642
347
3
214
BAYNESVILLE
SECTION II. BRIDGES CREEK TO THE SANDS (continued)


SECTION II. BRIDGES CREEK TO THE SANDS
(continued)
SCALE 1 : 24,000
1000
0
1000
2000 FEET
POTOMAC RIVER
L MEADOW RUN
MILL RUN
KENTUCKY HILL
STRATFORD HALL
BRYANT TOWN
COLD HARBOR LAKE
CLIFTON HILL
CLIFTON BR.
CHANTILLY BR.
BRYANT SWAMP
CHISFORD
214

SECTION II. BRIDGES CREEK TO THE SANDS

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
47	Bridges Creek	17	%	5	40	10	-		35		-	5	5	-		-	-		-	-	-	-	f,- n,- g,- o,- j,- p,-	Lower reaches of extensive creek marsh. Narrow entrance channel. Marsh has high diversity of vegetation.	XII
			acres	0.8	6.8	1.7	-		6.0		-	0.8	0.8	-		-	-		-	-	-	-	f,- n,- g,- o,- j,- p,-		
48	Bridges Creek	95	%			40	40						10	10	-	-	-						g,-	Upper reaches of marsh form extensive pockets. Beaver activity is evident. Duck on the pond. Other signs of waterfowl and wildlife.	XI
			acres			38.0	38.0						9.5	9.5	-	-	-						g,-		
49	Popes Creek	52	%	5	-	90	-		-				-			5	-						a,- f,-	Extensive delta-type marshes includes many islands. Interior of Longwood Swamp altered by dredging.	IV
			acres	2.6	-	46.8	-		-				-			2.6	-						a,- f,-		
50	Popes Creek	11	%	65	10	15	-		-				5			-	5					-	n,-	Pocket marsh; interior dominated by saltmarsh cordgrass.	I
			acres	7.2	1.1	1.6	-		-				0.6			-	0.6					-	n,-		
51	Popes Creek	2.8	%	45	-	10	15		-				-			20	-					10	n,-	Two pocket marshes with fringe. Saltmarsh cordgrass dominates the front portion of the marsh.	XII
			acres	1.2	-	0.3	0.4		-				-			0.6	-					0.3	n,-		
52	Popes Creek	38	%	10	40	5	10						5	10		10	-					10	n,-	Lower section of extensive creek marsh.	XII
			acres	3.8	15.2	1.9	3.8						1.9	3.8		3.8	-					3.8	n,-		
53	Popes Creek	13	%		-		5				-	-	65	20	-	-	-	-	10				n,-	Middle section of extensive creek marsh dominated by cattails.	VI
			acres		-		.6				-	-	8.4	2.6	-	-	-	-	1.3				n,-		
54	Popes Creek	6	%		-		5						80	15		-							j,-	Wide marsh fringe.	VI
			acres		-		0.3						4.8	0.9		-							j,-		

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n=SALTMARSH ASTER
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p=SALTMARSH FLEABANE

SECTION II. BRIDGES CREEK TO THE SANDS

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
55	Popes Creek	3	%	25	45		10						15			5	-		-				n,-	Pocket marsh, saltmarsh cordgrass dominates lower reaches of marsh.	XII
			acres	0.8	1.4		0.3						0.4			0.2	-		-				n,-		
56	Popes Creek	34	%	30	40	5	5		-	-			15	-		5	-		-			-	n,- p,-	Extensive creek marsh; cattails cover apper end. Saltbushes and trees occur along downstream shoreline.	XII
			acres	10.2	13.6	1.7	1.7		-	-			5.1	-		1.7	-		-			-	n,- p,-		
57	Popes Creek	2	%	10	-	15	30		-			-	30			15	-					-	n,-	Pocket marsh.	XII
			acres	0.2	-	0.3	0.6		-			-	0.6			0.3	-					-	n,-		
58	The Sands	2	%	-		5	80		-			-	15									-	f,-	Small pocket marsh. Marsh disturbed by road fill. Shoreline and tidal gut is subject to change due to storms.	XII
			acres	-		0.1	1.6		-			-	0.3									-	f,-		
	Total Section II.	275.8	%	10	14	34	17		2		-	-	12	6		3	-	-	-	-	-	1	a,- g,- o,- b,- j,- p,- f,- n,-		
			acres	26.8	38.1	92.4	47.3		6.0		-	0.8	32.4	16.8		9.2	0.6	-	1.3	-	-	4.1	a,- g,- o,- b,- j,- p,- f,- n,-		

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SECTION III

CURRIOMAN BAY TO NOMINI BAY

Section III contains the largest creek and marsh system within the county. Nomini Creek accounts for most of the 634 acres of tidal wetlands in this section. The Section is divided into three parts:

Part 1: Currioman Bay to Smarts Creek
Part 2: Nomini Creek to Pierce Creek
Part 3: Buckner Creek and Nomini Bay

The marshes along the Currioman and its lower tributaries are dominated by equal portions of big cordgrass, saltbushes, saltmarsh cordgrass, salt-meadow hay and saltgrass. Thus, the Brackish Water Mixed (Type XII) designation prevails over most other community types. Vegetation found in the upper tributaries is influenced by vast upland drainage basins and lower salinity. These tidal freshwater marshes and the adjoining wooded swamps provide excellent wildlife and waterfowl habitat while acting as sediment traps for upland runoff. In Cold Harbor Creek, a portion of tidal wetlands and wooded swamp was destroyed in creating a large dam and freshwater lake for a residential development. In doing so, a mud wave was created destroying several acres of marsh. This type of activity not only produced a direct loss of wetlands, but may also cause further vegetation changes in those downstream marshes like #63.

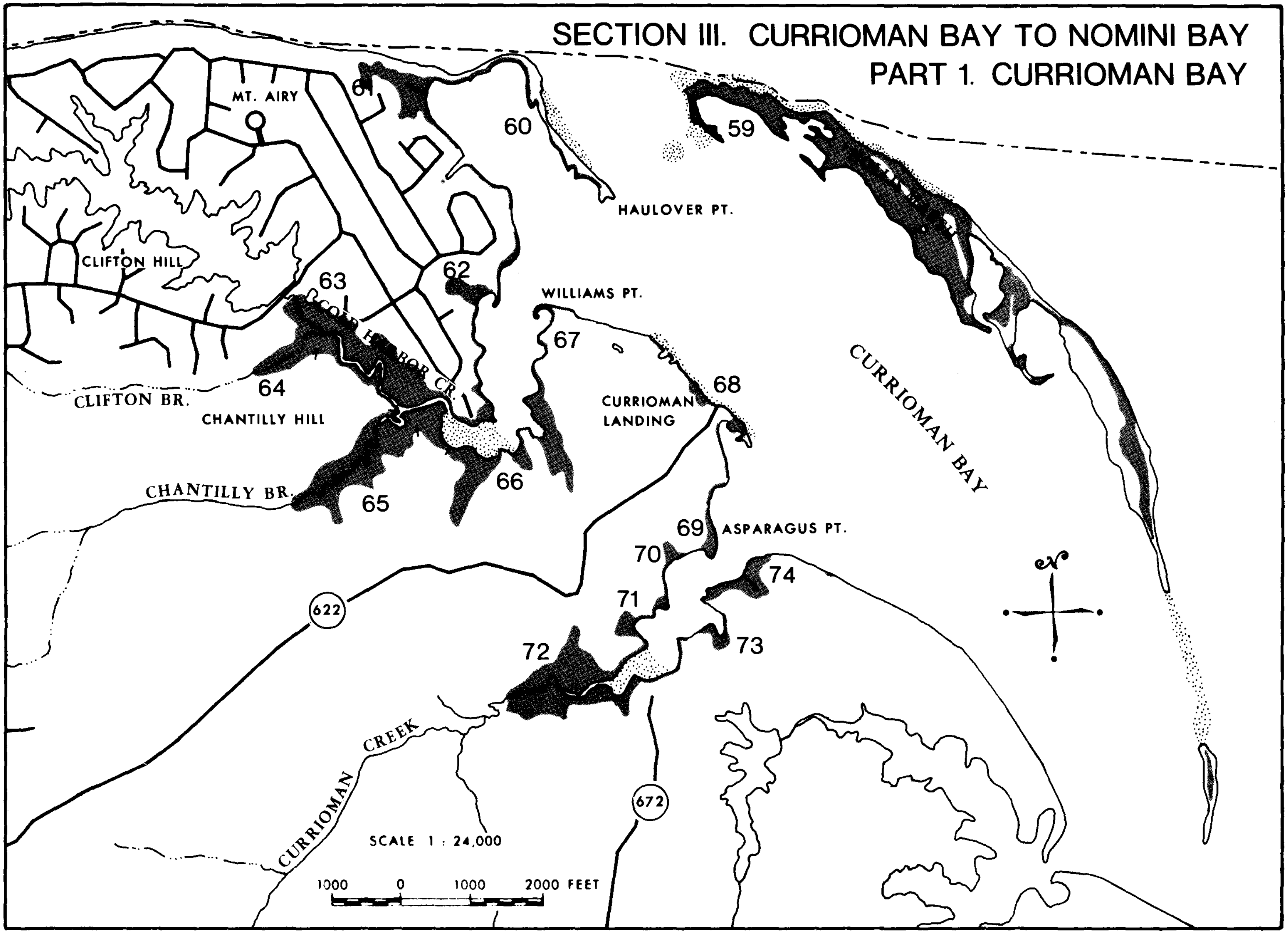
Erosion plays an important role along the open waters and marshes of Currioman and Nomini Bays. The unvegetated portions of Hollis Marsh Island (marsh #59), Haulover Point (marsh #60), and Cedar Island (marsh #89) are eroding at relatively high rates. At the same time, overwash sediments and sand accretions enable the leeward marshes to expand in size. Over the years, these natural changes help maintain a balance in the island systems. The barrier-type marsh islands also protect the inshore coastline during storm conditions.

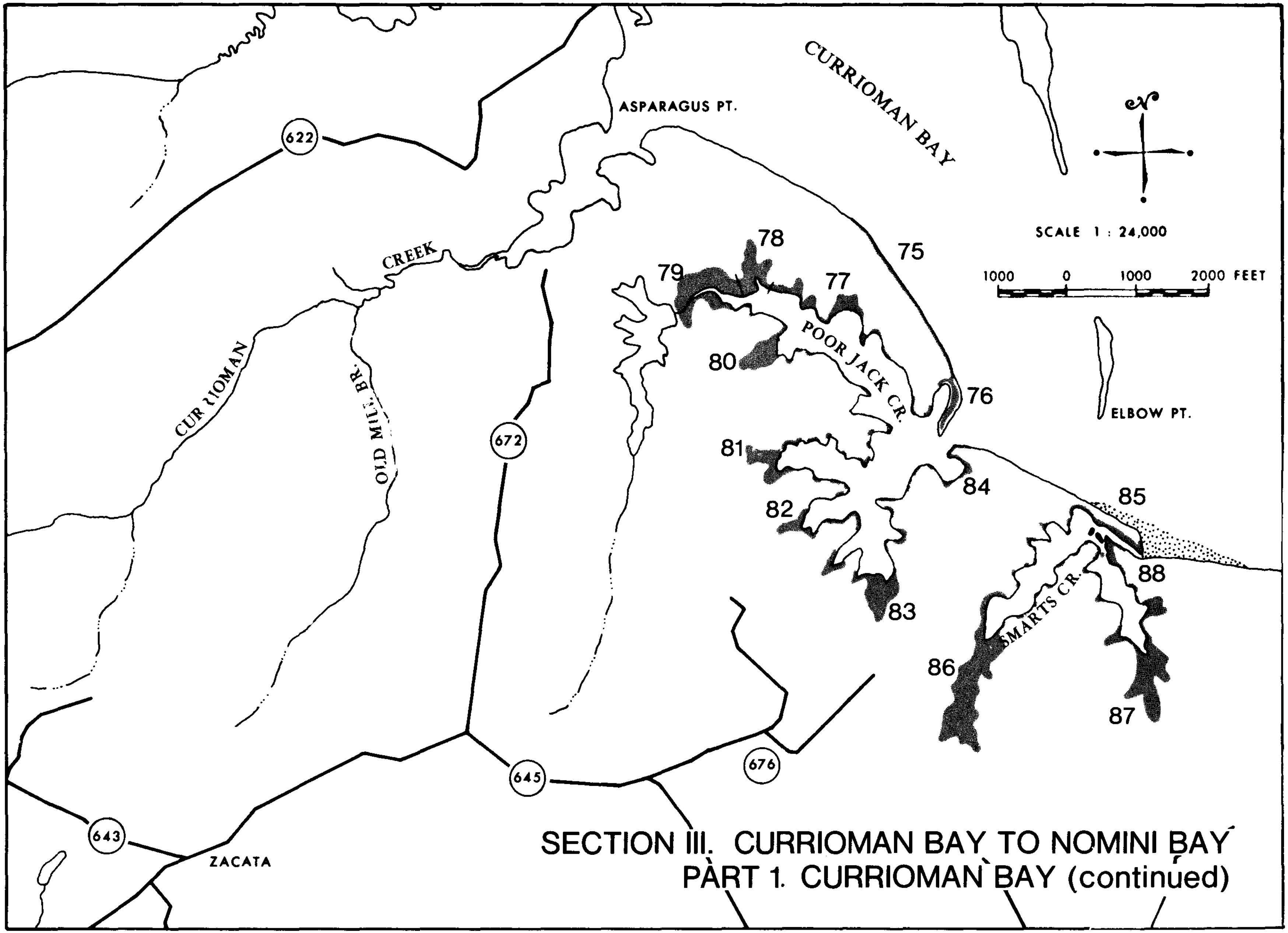
The majority of marshes along Nomini Creek, Part 2, is found in numerous embayed creeks and coves. Shallow water and extensive mudflats are usually associated with these wetlands areas. The marshes of Barns, Jules, Davis

Pierce and Templeman Creeks exemplify these productive habitats. Saltmarsh Cordgrass (Type I) and Big Cordgrass (Type IV) vegetation typifies the lower reaches of Nomini Creek, while extensive Cattail (Type VI) marshes are found in the upper reaches of the Creek. Significant amounts of pickerelweed and arrow arum also occur in the tidal freshwater marshes of the upper Nomini.

Buckner Creek, Part 3 of this Section, is a rather large creek system located near the mouth of Nomini Creek. Saltmarsh Cordgrass (Type I) dominates most of these marshes, which form continuous fringes connecting a series of pocket marshes in the upper reaches. Along the North Prong, these fringe marshes widen and increase in elevation. Significant amounts of saltbushes and meadowgrass occur there. Also typical of these higher sandy marshes is black needlerush and big cordgrass.

Throughout this Section, the waters and marshes abound with both fish and wildlife. These resources provide recreational opportunities as well as a livelihood for many people in the area. For instance, the Kingcopsico area is known for its striped bass fishing and Hollis Island for its waterfowl shooting. Elsewhere along the Nomini, commercial watermen land their products at numerous seafood plants, including one of Virginia's largest eel factories.


SECTION III. CURRIOMAN BAY TO NOMINI BAY
PART 1. CURRIOMAN BAY
MT. AIRY
61
60
59
HAULOVER PT.
CLIFTON HILL
63
62
WILLIAMS PT.
67
COLD HARBOR CR.
68
CURRIOMAN LANDING
CURRIOMAN BAY
CLIFTON BR.
64
CHANTILLY HILL
CHANTILLY BR.
65
66
69
ASPARAGUS PT.
70
74
71
622
72
73
CURRIOMAN CREEK
672
SCALE 1 : 24,000
1000 0 1000 2000 FEET



SECTION III. CURRIOMAN BAY TO NOMINI BAY
PART 1. CURRIOMAN BAY (continued)

SECTION III. PART 1. CURRIOMAN BAY

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
59	Hollis Marsh Island	55.8	%	25	10	40	-		20	-							-		-			5	n,- p,-	East side of island badly eroding. West side dominated by saltmarsh cordgrass. Interior patches of cedar trees. Excellant waterfowl habitat.	XII
			acres	14.0	5.6	22.3	-		11.2	-							-		-			2.8	n,- p,-		
60	Haulover Point	0.82	%	20	10	40			5	-			10				-					15	n,-	Sand spit. Switch grass and saltbushes dominate this high fringe marsh.	XII
			acres	0.16	0.08	0.34			0.04	-			0.08				-					0.12	n,-		
61	Stratford Harbor	9	%	25	10	35			5	-			10				-					15	n,-	High profile, pocket-type marsh.	XII
			acres	2.2	0.9	3.2			0.4	-			0.9				-					1.4	n,-		
62	Cold Harbor Creek	3.9	%	25	20	5	-			5			25	10		10						-	e,-	Pocket marsh with wide fringes. Pocket has been disturbed by community boat ramp. Vegetation also influenced by runoff.	XII
			acres	1.0	0.8	0.2	-			0.2			1.0	0.4		0.4						-	e,-		
63	Cold Harbor Creek	24	%	15	60	15	-			5			5	-		-	-		-	-			n,- p,-	Extensive creek-type marsh causeway-dam cuts off upper end of marsh. Mud wave has uplifted adjacent marsh.	V
			acres	3.6	14.4	3.6	-			1.2			1.2	-		-	-		-	-			n,- p,-		
64	Clifton Branch	12	%	5	60	10	-						15	5		-	5		-					Small pocket marsh.	V
			acres	0.6	7.2	1.2	-						1.8	0.6		-	0.6		-						
65	Chantilly Branch	26	%		5		3				10		50	30		2	-							Extensive creek marsh. Vegetation influenced by upland runoff. Evidence of a beaver dam upstream.	VI
			acres		1.3		0.8				2.6		13.0	7.8		0.5	-								
66	Cold Harbor Creek	18	%	10	15	40	-		25	-			10	-						-			o,-	Three pocket marshes with basically the same vegetation found in each.	XII
			acres	1.8	2.7	7.2	-		4.5	-			1.8	-						-			o.-		

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SECTION III. PART 1. CURRIOMAN BAY

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
67	Williams Point	0.68	%	60	20	-			5	10												5		Long continuous fringe marsh about 15 feet wide.	I
			acres	0.41	0.14	-			0.03	0.07												.03			
68	Currioman Landing	2	%	5	5	-							50	40								-		High pocket marsh with sandy berm along the shoreline front. Fringe marsh disturbed by dredged boat slip.	VI
			acres	0.1	0.1	-							1.0	0.8								-			
69	Asparagus Point	1.5	%	20	60	20																		Marsh spit.	V
			acres	0.3	0.9	0.3																			
70	Currioman Creek	0.50	%	40	10	-	-						30			20							n,-	Cattails dominate back end of pocket marsh.	XII
			acres	0.20	0.05	-	-						0.15			0.10							n,-		
71	Currioman Creek	1.8	%	40	5	15	5		30							5								Two small pocket marshes with connecting fringe.	XII
			acres	0.7	0.1	0.3	0.1		0.5							0.1									
72	Currioman Creek	24	%	10	60	-	-		20	-		-	5			5	-		-				n,- p,-	Upper creek marsh. Extensive mudflats adjacent to marsh.	V
			acres	2.4	14.4	-	-		4.8	-		-	1.2			1.2	-		-				n,- p,-		
73	Currioman Creek	1	%	30	15		3		20				30			2								Small pocket marsh. Saltmarsh cordgrass dominates front of marsh.	XII
			acres	0.30	0.15		0.03		0.20				0.30			0.02									
74	Currioman Creek	2.5	%	40	30	15	-		10				5			-	-							Wide fringe with small pocket marsh.	XII
			acres	1.0	0.8	0.4	-		0.2				0.1			-	-								

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SECTION III. PART 1. CURRIOMAN BAY

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
75	Currioman Bay	1	%	40	25	25	-		10													-		Long, intermittant fringe marsh about 30 feet wide.	XII
			acres	0.40	0.25	0.25	-		0.10													-			
76	Poor Jack Creek	2	%	30	40	15		-	-							-						15	n,-	Sand spit with wide marsh fringe.	XII
			acres	0.6	0.8	0.3		-	-							-						0.3	n,-		
77	Poor Jack Creek	1.3	%	10	5	50	-		25			10											n,-	Small pocket marshes. Duck blinds located along shore-line.	IV
			acres	0.1	0.1	0.6	-		0.3			0.1											n,-		
78	Poor Jack Creek	3.6	%	-	-	10	-		80		10												n,- p,-	Pocket marsh.	II
			acres	-	-	0.4	-		2.9		0.4												n,- p,-		
79	Poor Jack Creek	11	%	30	15	30	-		20			5											n,-	Upper end of creek, marsh influenced by dam and fresh-water.	XII
			acres	3.3	1.6	3.3	-		2.2			0.6											n,-		
80	Poor Jack Creek	3	%	10	-	10	10		60			-				10							n,-	Pocket marsh.	II
			acres	0.3	-	0.3	0.3		1.8			-				0.3							n,-		
81	Poor Jack Creek	3.5	%	25	15	30						30					-		-					Double pocket marsh.	XII
			acres	0.9	0.5	1.0						1.0					-		-						
82	Poor Jack Creek	1	%	70	15							10				5							n,-	Small pocket marsh. Cattails found near the back end of pocket.	I
			acres	0.70	0.15							0.10				0.05							n,-		

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83	Poor Jack Creek	4	%	20	-	40	-		20				15			5	-							Pocket marsh.	XII
			acres	0.8	-	1.6	-		0.8				0.6			0.2	-								
84	Poor Jack Creek	0.50	%	80	-	10	-						10									-	n,-	Small pocket with fringe marsh near the fish dock.	I
			acres	0.40	-	0.05	-						0.05									-	n,-		
85	Smart Creek	1	%	20	30	30			10													10	n,-	Sandy spit-type marsh. Long, narrow entrance makes navigation difficult.	XII
			acres	0.20	0.30	0.30			0.10													0.10	n,-		
86	Smart Creek	10.5	%	40	5	40			-				-			-	10		-			-	b,5 i,- n,-	Extensive pocket marsh. Large school of juvenile menhaden, suggests that this creek provides finfish habitat.	XII
			acres	4.2	0.5	4.2			-				-			-	1.1		-			-	b,0.5 i,- n,-		
87	Smart Creek	8	%	60	5	10			10			-	5			-	5	-	-				f,- i,- n,-	Large pocket marsh with two small pockets.	I
			acres	4.8	0.4	0.8			0.8			-	0.4			-	0.4	-	-				f,- i,- n,0.4		
88	Smart Creek	3	%	30		30			40							-	-						n,-	Marsh spit with three marsh islands.	XII
			acres	0.9		0.9			1.2							-	-						n,-		
	Total Section III. Part 1.	236.9	%	20	23	22	-	-	14	1	1	-	11	4		1	1	-	-	-		2	b,- i,- p,- e,- n,- f,- o,-		
			acres	46.4	54.2	53.0	1.1	-	32.2	1.5	2.6	0.4	25.4	9.6		3.0	2.1	-	-	-		4.7	b,0.5 e,- i,- o,- f,- n,- p,-		

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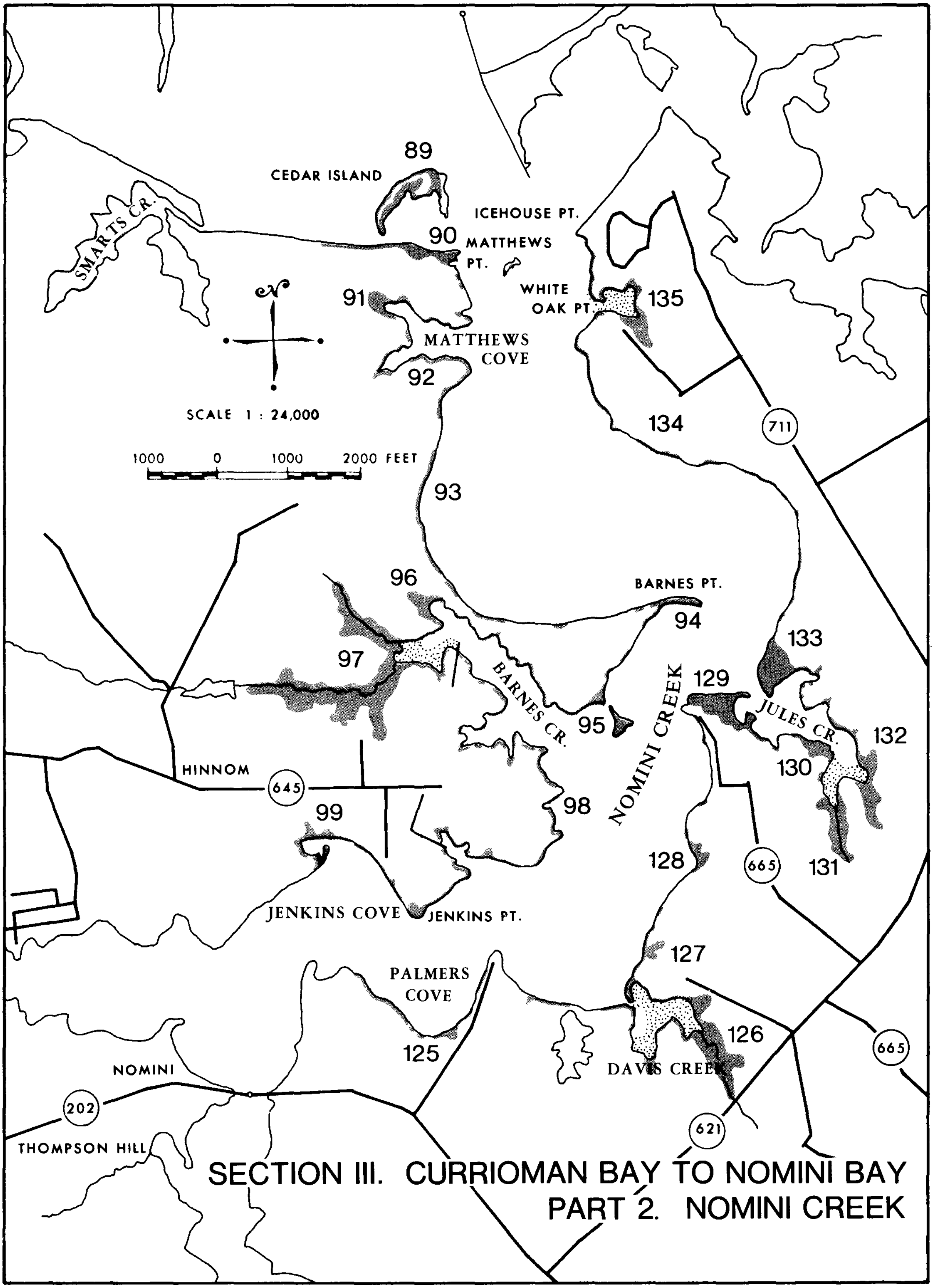
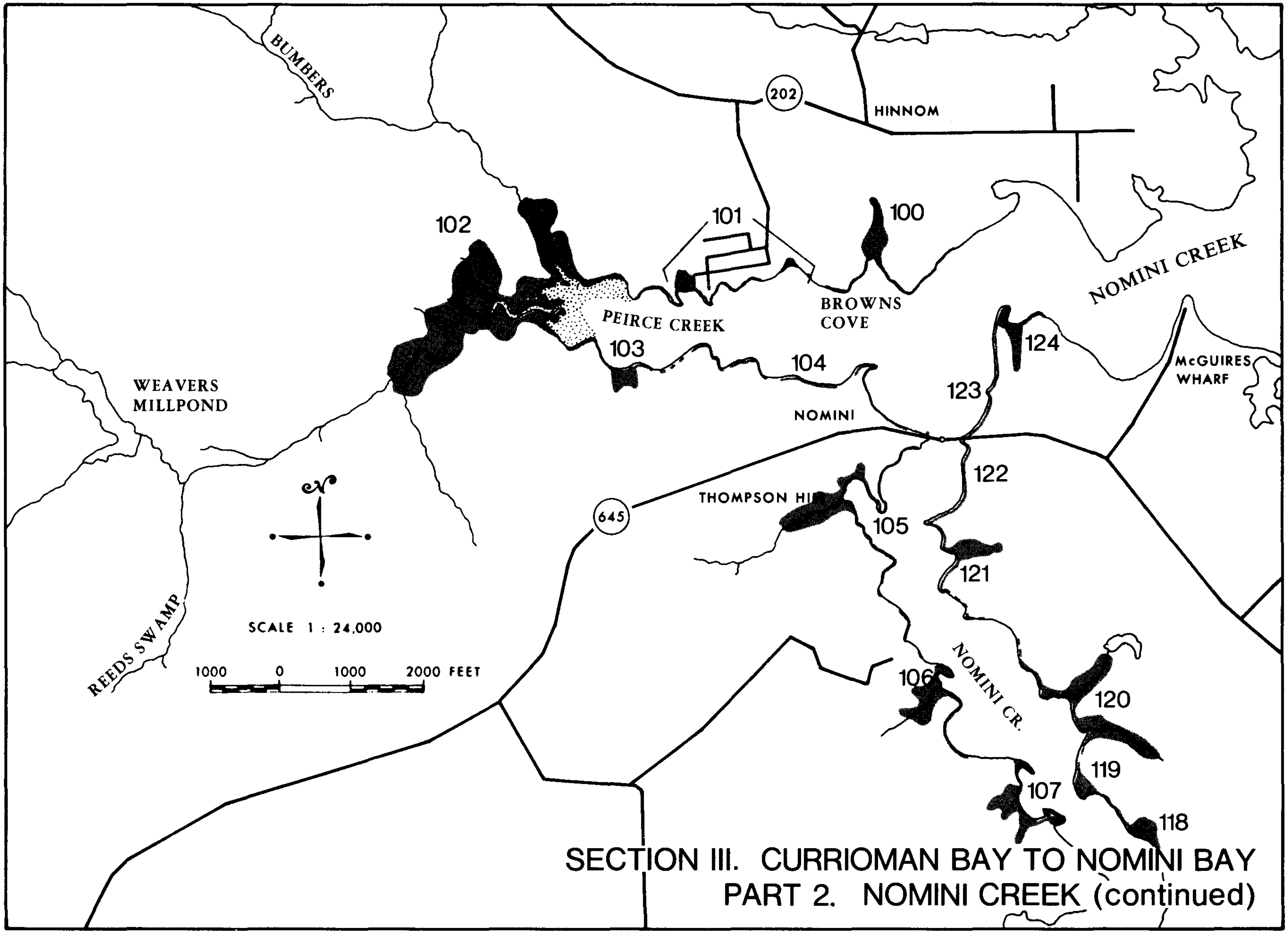
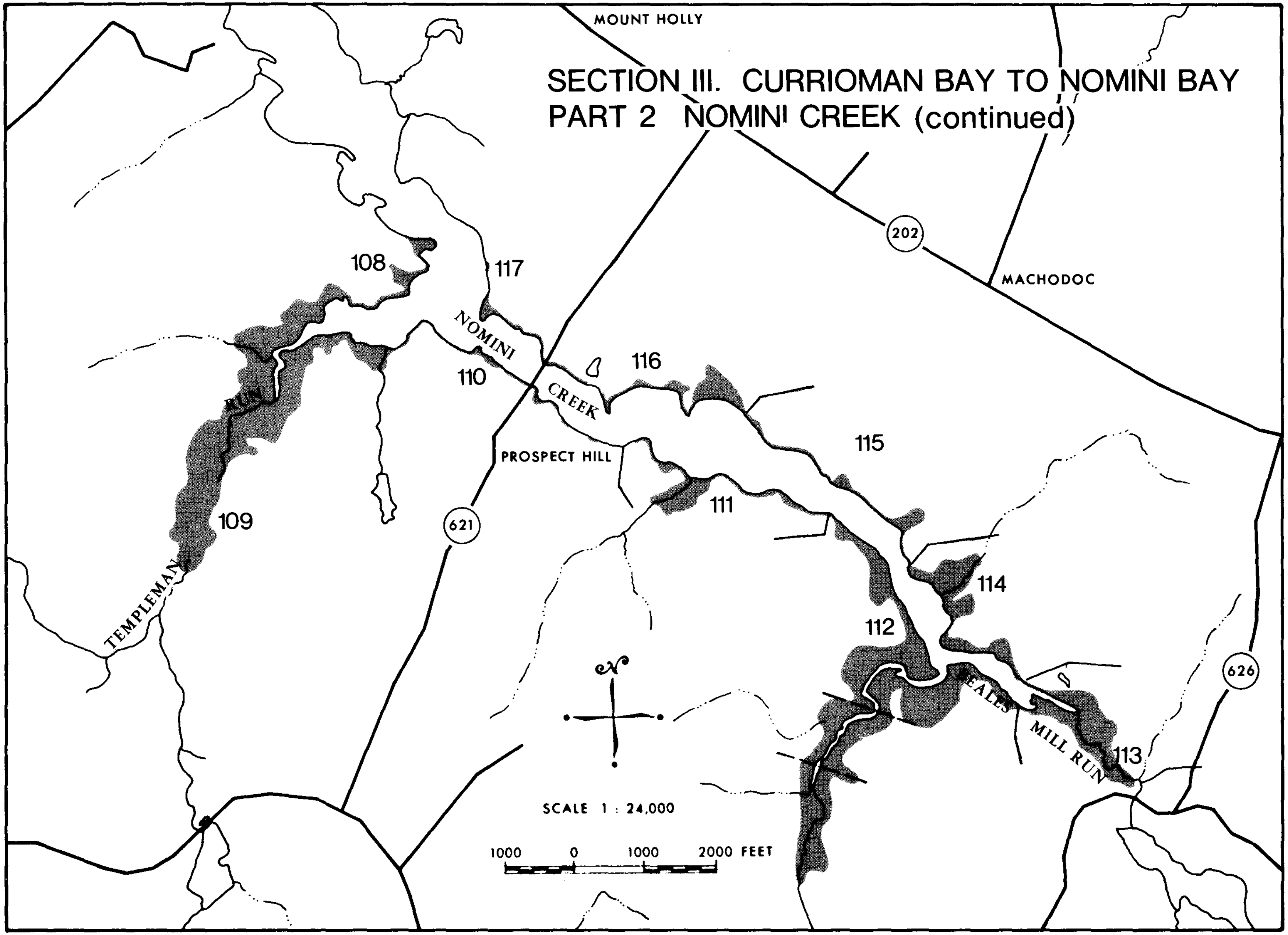


SECTION III. CURRIOMAN BAY TO NOMINI BAY
PART 2. NOMINI CREEK



SECTION III. CURRIOMAN BAY TO NOMINI BAY
PART 2. NOMINI CREEK (continued)


MOUNT HOLLY
SECTION III. CURRIOMAN BAY TO NOMINI BAY
PART 2 NOMINI CREEK (continued)
202
MACHODOC
108
117
NOMINI
CREEK
110
116
115
RUN
TEMPLEMAN
109
PROSPECT HILL
621
111
114
112
BEALES
MILL RUN
113
626
SCALE 1 : 24,000
1000 0 1000 2000 FEET

SECTION III. PART 2. NOMINI CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
89	Cedar Island	0.84	%	15	5	30		20	30														n,-	Interior of island covered with trees and sandy beach vegetation. North face of island badly eroding.	XII
			acres	0.13	0.04	0.25		0.17	0.25														n,-		
90	Matthews Point	0.70	%	70	5	20	-	-	5														e,- n,-	Wide fringe marsh approximately 15 feet wide. Marsh spit disturbed by old dredge site.	I
			acres	0.49	0.04	0.14	-	-	0.03														e,- n,-		
91	Matthews Cove	1	%	80		5	5					10											i,-	Small pocket marsh. Quiet cove with great blue heron and white egrets observed.	I
			acres	0.80		0.05	0.05					0.10											i,-		
92	Nomini Creek	1	%	60	5	5	-	-				30										-		Small pocket with intermittant fringe marshes.	I
			acres	0.60	0.05	0.05	-	-				0.30										-			
93	Nomini Creek	1	%	65	20	5		5	5		-											-	i,-	Fringe marshes. Erosion along the high bluffs.	I
			acres	0.65	0.20	0.05		0.05	0.05		-											-	i,-		
94	Barnes Point	1	%	65	15	20																-	i,-	Spit-type marsh.	I
			acres	0.65	0.15	0.20																-	i,-		
95	Nomini Creek	1.5	%	60	-	20		15	5															Marsh island used by local watermen to store pond net stakes.	I
			acres	0.9	-	0.3		0.2	0.1																
96	Barnes Creek	2.5	%	50	-	30	-	20				-												Small pocket with fringe.	I
			acres	1.2	-	0.8	-	0.5				-													

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SECTION III. PART 2. NOMINI CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
97	Barnes Creek	22.2	%	60	5		5		5				20			5							i,-	Extensive double pocket with connecting fringe. Tidal mudflats located offshore.	I
			acres	13.4	1.1		1.1		1.1				4.4			1.1							i,-		
98	Nomini Creek	0.69	%	80	10	5	-		5				-	-								-		Small pocket with fringing marshes.	I
			acres	0.56	0.07	0.03	-		0.03				-	-								-			
99	Jenkins Cove	3	%	70	15	10	-	-	5			-	-			-								Wide fringe around Jenkins Cove includes small pocket marshes. Cattails located in rear of pocket.	I
			acres	2.1	0.4	0.3	-	-	0.2			-	-			-									
100	Browns Cove	4	%	50	15	-	-		5			-	20			10								Pocket marsh with connecting fringe. Several ducks observed in vicinity.	I
			acres	2.0	0.6	-	-		0.2			-	0.8			0.4									
101	Peirce Creek	2.8	%	40	15	5	5		15		-	10		5		5								Pocket marsh and fringe. Freshwater source permits growth of pickerelweed.	XII
			acres	1.1	0.4	0.1	0.1		0.4		-	0.3		0.1		0.1									
102	Peirce Creek	53	%	30	50	-	-		10		-	10				-	-							Two extensive creek-type marshes. Remote, pristine area. Excellent habitat for wildlife and waterfowl.	V
			acres	15.9	26.5	-	-		5.3		-	5.3				-	-								
103	Peirce Creek	2.4	%	30	40		5		10			10				5								Small pocket marsh with connecting fringe. Saltmarsh cordgrass dominates fringing marsh.	XII
			acres	0.7	1.0		0.1		0.2			0.2				0.1									
104	Peirce Creek	1.2	%	40	50	10	-	-								-								Intermittent fringes, 5-20 feet wide around Stratter Point to Nomini Bridge.	V
			acres	0.5	0.6	0.1	-	-								-									

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SECTION III. PART 2. NOMINI CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
105	Nomini Creek	6	%	40	50	-	-						10			-								Large creek-type marsh with wide connecting fringe. Upper end of marsh grades into tree covered swamp.	V
			acres	2.4	3.0	-	-						0.6			-									
106	Nomini Creek	3.5	%	40	10	5							40			5								Small pocket with fringe marsh. Cattails dominate back of pocket.	XII
			acres	1.4	0.4	0.2							1.4			0.2									
107	Nomini Creek	4	%	45	20	-	-						30			5							e,-	Three small pockets with connecting fringe. Reedgrass indicates the area has been previously disturbed.	XII
			acres	1.8	0.8	-	-						1.2			0.2							e,-		
108	Nomini Creek	2.5	%	40	20	-	-						40			-								Pocket marsh with connecting fringe from marsh spit. Cattails dominate back of pocket.	XII
			acres	1.0	0.5	-	-						1.0			-									
109	Templeman Run	67	%	10	10	-							80	-										Extensive creek-type marsh. Upper portion of marsh grades into wooded swamp. Vegetation influenced by upland runoff and old beaver dam.	VI
			acres	6.7	6.7	-							53.6	-											
110	Nomini Creek	0.75	%	40	40	-							20			-								Long fringe about 10 feet wide with small pockets.	XII
			acres	0.30	0.30	-							0.15			-									
111	Nomini Creek	5.5	%	-	10	-	-						90	-										Pocket marsh with narrow creek and adjoining fringe.	VI
			acres	-	0.6	-	-						5.0	-											
112	Nomini Creek	54	%				-						50	40	10								g,-	Extensive creek marsh. Adjacent mixed hardwood forests. Cattails dominate lower marshes, pickerelweed & pond lily dominate upper end.	VI
			acres				-						27.0	21.6	5.4								g,-		

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113	Beales Mill Run	10	%				-						70	20	-			10					h,- o,-	Large creek-type marsh extends to large wooded swamp. This marsh tends to filter upland runoff sediments from above Route 612.	VI
			acres				-						7.0	2.0	-			1.0					h,- o,-		
114	Nomini Creek	13.8	%				-						70	30	-								m,-	A series of small pocket marshes with wide connecting fringe. One bald eagle sighted.	VI
			acres				-						9.7	4.1	-								m,-		
115	Nomini Creek	3.7	%	-	35	-	-						30	35								-	h,-	Two small pockets with fringe 10-20 feet wide.	XI
			acres	-	1.3	-	-						1.1	1.3								-	h,-		
116	Nomini Creek	5.6	%	30	10	-	-						45	15		-							o,-	Pocket marsh with fringe extends to bridge. Smaller pockets dominated by cattails.	XI
			acres	1.7	0.6	-	-						2.5	0.8		-							o,-		
117	Nomini Creek	1.5	%	40	50	5		-					5	-								-		Spit marsh with fringe.	V
			acres	0.6	0.8	0.1		-					0.1	-								-			
118	Nomini Creek	1	%	30	60	5						-	5	-					-					Pocket marsh with fringe.	V
			acres	0.30	0.60	0.05						-	0.05	-					-						
119	Nomini Creek	1	%	40	50	10		-				-	-									-		Point or spit-type marsh.	V
			acres	0.40	0.50	0.10		-				-	-									-			
120	Nomini Creek	9.5	%	55	10	5	5	-	-			5	20			-						-		Large, double pocket marsh with fringe.	I
			acres	5.2	1.0	0.5	0.5	-	-			0.5	1.9			-						-			

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121	Nomini Creek	1.5	%	70	10	5	-						15			-								Pocket marsh.	I
			acres	1.0	0.2	0.1	-						0.2			-									
122	Nomini Creek	0.49	%	50	30	15	-	-	-			-	5			-						-		Long fringe marsh, 5-10 feet wide.	I
			acres	0.25	0.15	0.07	-	-	-			-	0.02			-						-			
123	Nomini Creek	0.33	%	80	20	-		-														-		Fringe marsh.	I
			acres	0.26	0.07	-		-														-			
124	Palmers Point	1.50	%	65	10	10	-	5	-				10			-						-	i,-	Long, narrow pocket marsh with spit.	I
			acres	1.0	0.2	0.2	-	0.1	-				0.2			-						-	i,-		
125	Palmers Cove	0.50	%	70	20	5	-						5											Intermittent fringes with small pocket.	I
			acres	0.35	0.10	0.02	-						0.03												
126	Davis Creek	4	%	60	30	5	-	-	-			-	5			-								Creek type marsh. Entrance to creek has been dredged with some disturbance to the marsh.	I
			acres	2.4	1.2	0.2	-	-	-			-	0.2			-									
127	Nomini Creek	0.50	%	20	5	20	5		30			-	20										h,- i,-	Small pocket with fringe.	XII
			acres	0.10	0.03	0.10	0.02		0.15			-	0.10										h,- i,-		
128	Nomini Creek	0.75	%	40	20	30	5	-					5			-								Small pocket marsh.	XII
			acres	0.30	0.15	0.22	0.04	-					0.04			-									

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#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
129	Beales Wharf	3	%	15	10	30		-	40													5		High marsh with upper portion dominated by the meadow grasses. Much of this area is mowed.	XII
			acres	0.4	0.3	0.9		-	1.2													0.2			
130	Jules Creek	1	%	80	5	5			10			-										-		Long pocket marsh.	I
			acres	0.80	0.05	0.05			0.10			-										-			
131	Jules Creek	3	%	90	-	10			-			-												Upper end of creek-type marsh.	I
			acres	2.7	-	0.3			-			-													
132	Jules Creek	5	%	40	-	10	10		40													-		Pocket marsh with connecting fringe.	XII
			acres	2.0	-	0.5	0.5		2.0													-			
133	Nomini Creek	6	%	20	20	60	-	-	-			-	-											Spit-type marsh.	IV
			acres	1.2	1.2	3.6	-	-	-			-	-												
134	Nomini Creek	.50	%	60	20	10		-					10									-		Intermittent fringes with small pockets. Catails dominate the pocket.	
			acres	.30	.10	.05		-					.05									-			
135	White Oak Point	3.3	%	40	10	40	5						5									-		Cove-type marsh with small pockets. Fringe areas dominated by saltmarsh cordgrass.	XII
			acres	1.3	0.3	1.3	0.2						0.2									-			
	Total Section III. Part 2.	319.6	%	24	16	3	1	-	4			2	37	9	2	1	-	-	-			-	e,- i,- g,- m,- h,- n,-	o,-	
			acres	78.0	52.0	10.8	2.6	1.0	11.3			6.2	118.9	29.9	5.4	2.2	-	1.0	-			0.2	e,- i,- g,- m,- h,- n,-	o,-	

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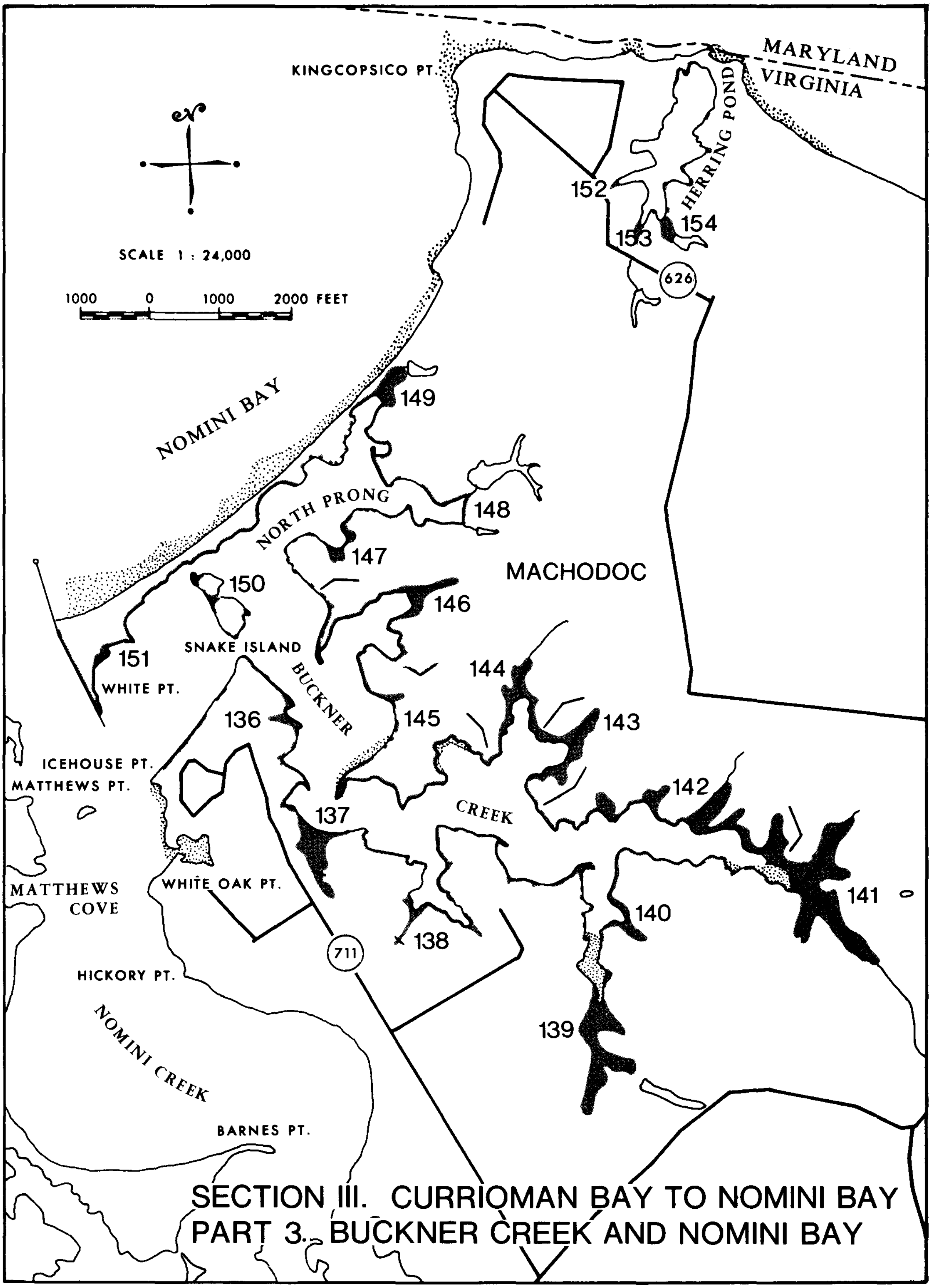

SECTION III. CURRIOMAN BAY TO NOMINI BAY
PART 3. BUCKNER CREEK AND NOMINI BAY

SECTION III. PART 3. BUCKNER CREEK AND NOMINI BAY

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
136	Buckner Creek	2	%	60	15	15		-	10				-									-		Small pocket marsh with connecting fringe. Big Cordgrass dominates pocket area.	I
			acres	1.2	0.3	0.3		-	0.2				-									-			
137	Buckner Creek	3.8	%	40	10	5		-	40							5								Pocket marsh with fringe. Marsh extends beyond open-pile catwalk.	XII
			acres	1.5	0.4	0.2		-	1.5							0.2									
138	Buckner Creek	3.2	%	60	-	-	-	15	20				5									-		Small pockets with wide fringe. A portion of pocket marsh disturbed by new road in adjacent development.	I
			acres	1.9	-	-	-	0.5	0.6				0.2									-			
139	Buckner Creek	10	%	80		5	10	-					5			-								Extensive mudflats along creek type marsh with connecting fringes.	I
			acres	8.0		0.5	1.0	-					0.5			-									
140	Buckner Creek	2.1	%	70	-	15	15	-	-			-				-						-	i,-	Small pocket marsh with long continuous fringe.	I
			acres	1.5	-	0.3	0.3	-	-			-				-						-	i,-		
141	Buckner Creek	20	%	90	-	-	-	-	10			-	-			-							i,-	Extensive double pocket-type marsh. Upper ends influenced by runoff. Possible fill on back of marsh.	I
			acres	18.0	-	-	-	-	2.0			-	-			-							i,-		
142	Buckner Creek	10	%	55	-	30	-	-	10				5									-		A series of 5 pocket marshes with wide connecting fringes.	I
			acres	5.5	-	3.0	-	-	1.0				0.5									-			
143	Buckner Creek	5	%	60	-	20		15	-			-	5			-							i,-	Pocket marsh with fringe. Black needlerush found along the fringe. Sandy substrate.	I
			acres	3.0	-	1.0		0.8	-			-	0.2			-							i,-		

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SECTION III. PART 3. BUCKNER CREEK AND NOMINI BAY

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
144	Buckner Creek	4	%	20		25	10	10	30				5			-							i,-	Pocket marsh.	XII
			acres	0.8		1.0	0.4	0.4	1.2				0.2			-							i,-		
145	Buckner Creek	1.8	%	70	15	15	-	-																Long, wide fringe.	I
			acres	1.2	0.3	0.3	-	-																	
146	Buckner Creek	5	%	30		50		10	10															High, pocket marsh with fringe.	IV
			acres	1.5		2.5		0.5	0.5																
147	North Prong	0.75	%	50		30		10	5				5											Small, double pocket.	I
			acres	0.37		0.22		0.08	0.04				0.04												
148	North Prong	0.75	%	15		80			5													-		Small, pocket marsh with wide fringe.	IV
			acres	0.11		0.60			0.04													-			
149	North Prong	3.5	%	15		80							5									-	e,-	Upper end of pocket has been disturbed.	IV
			acres	0.5		2.8							0.2									-	e,-		
150	Snake Island	0.50	%	80	5	15																-		Fringe marsh around eroding island.	I
			acres	0.40	0.03	0.07																-			
151	Buckner Creek	3.5	%	55	-	40		5	-	-													i,-	Long, continuous fringe marsh. High marsh 10-20 feet wide.	I
			acres	1.9	-	1.4		0.2	-	-													i,-		

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SECTION III. PART 3. BUCKNER CREEK AND NOMINI BAY

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
152	Herring Pond	0.25	%			-	5		90										5				b,-	Small pocket dominated by high tidal marsh grasses.	II
			acres			-	0.01		0.23										0.01				b,-		
153	Herring Pond	0.50	%	-	-		70		20										10				a,- b,-	Small pocket.	XII
			acres	-	-		0.35		0.10										0.05				a,- b,-		
154	Herring Pond	1	%	20	-		5		10				60										a,- h,- b,5 n,-	Small pocket. Excellent waterfowl habitat.	VI
			acres	0.20	-		0.05		0.10				0.60										a,- h,- b,.05 n,-		
	Total Section III. Part 3.	77.6	%	61	1	18	3	3	10	-		-	3			-			-			-	a,- h,- b,- i,- e,- n,-		
			acres	47.6	1.0	14.2	2.1	2.5	7.6	-		-	2.4			0.2			0.1			-	a,- h,- b,- i,- e,- n,-		
	Total Section III.	634.1	%	27	17	12	1	1	8	-	-	1	23	6	1	1	-	-	-	-		-	a,- f,- b,- g,- e,- h,- i,- m,- n,-		
			acres	172.0	107.2	78.0	5.8	3.5	51.1	1.5	2.6	6.6	146.7	39.5	5.4	5.4	2.0	1.0	0.1	-		4.9	a,- f,- b,0.6 g,- e,- h,- i,- m,0.4 n,-		

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SECTION IV

LOWER MACHODOC CREEK

The 218 acres of tidal marshes in this Section are arranged in three parts:

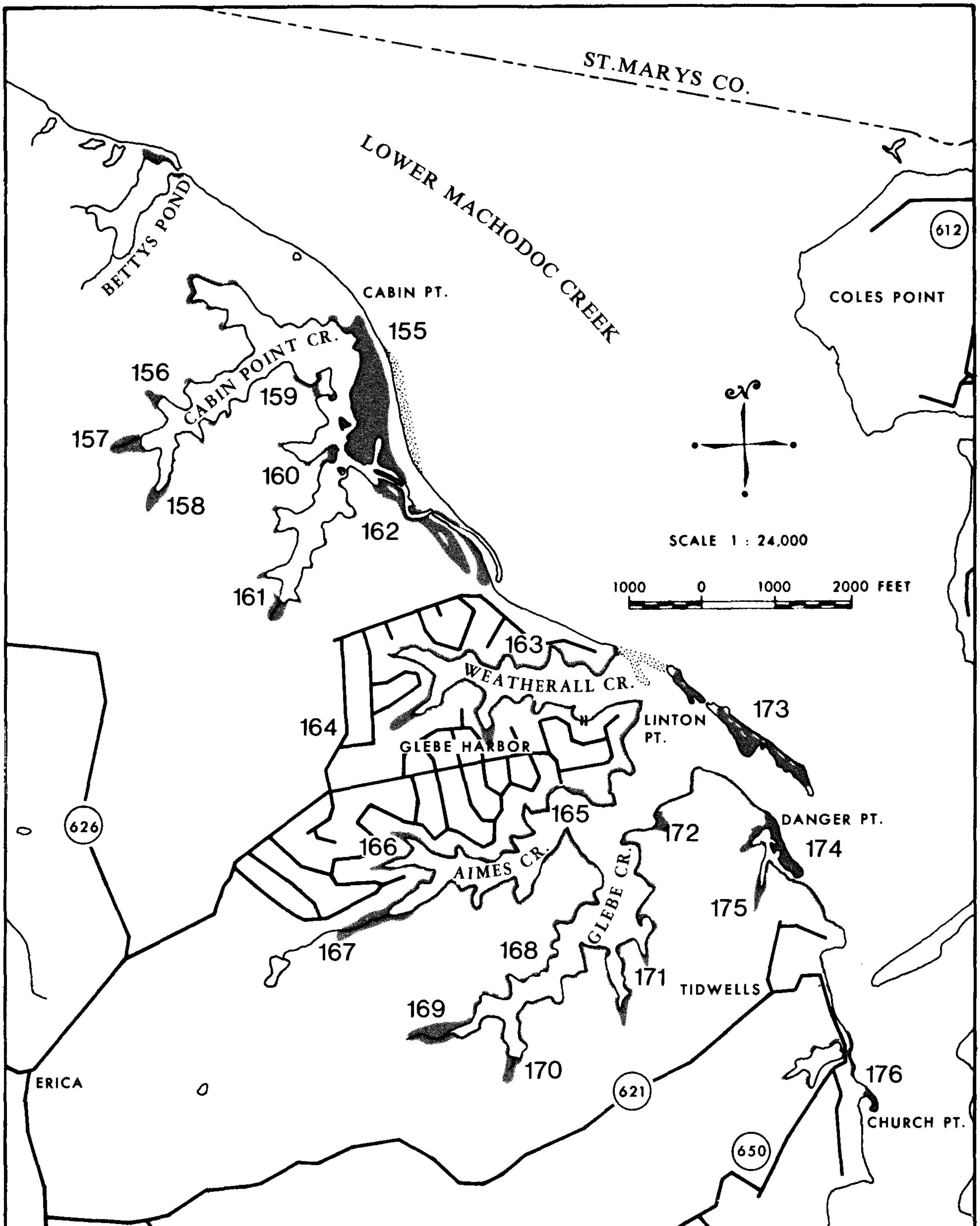
Part 1: Cabin Point Creek to Tidwells
Part 2: Lower Machodoc Creek
Part 3: Narrow Beach to Coles Point

As in the previous Section of this inventory, a high percentage of the wetlands along Lower Machodoc Creek is dominated by four plant species: saltmarsh cordgrass, 20%, saltmeadow hay, 21%, saltbushes, 26%, and big cordgrass, 15%. Although many of the individual marshes are designated as Type I, II, IV, and V, the Brackish Water Mixed(Type XII)designation occurs most often. Other species found in lesser amounts throughout the Section are: marsh hibiscus, saltmarsh aster, marsh mallow, saltmarsh bulrush, threesquare, black needlerush and switch grass. In the upper reaches of Thompson Branch and Mount Pleasant Creek, there are cattails, pickerelweed, arrow arum, and water hemp.

Generally, the marshes of the Lower Machodoc and its tributaries (Weatherall Creek, Aimes Creek and Glebe Creek) form continuous fringes along the shoreline. Occasionally these fringing marshes are interrupted by bulkheads supposedly protecting areas of critical erosion. Elsewhere these fringe marshes, even those 2 feet wide, provide the uplands with erosion protection.

Only a few extensive marshes occur in this Section. Marsh #156 is one of these large wetlands areas. Located near the mouth of Cabin Point Creek, this marsh constitutes the single largest Saltmeadow (Type II) community in the County. Because the marsh elevation is above the mean high tideline, it acts as a giant sponge when storm waters over wash the outer beach. This type of marsh offers an excellent feeding and nesting ground for all types of birds.

Emerging housing developments with associated uses of the waterways and wetlands may give rise to competing usage of this area. This subject is addressed in the coastal resources management program.



SECTION IV. LOWER MACHODOC CREEK
PART 1. CABIN POINT CREEK TO TIDWELLS

SECTION IV. PART 1. CABIN POINT CREEK TO TIDWELLS

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
155	Cabin Point Creek	18	%	-		10	-	10	80	-		-	-			-	-		-			-	i,- p,- n,-	Extensive marsh adjoining long sandy beach and tree covered area. Beach is badly eroding.	II
			acres	-		1.8	-	1.8	14.4	-		-	-			-	-		-			-	i,- p,- n,-		
156	Cabin Point Creek	0.25	%	10		5	30		35				20			-			-				a,- p,-	Small, pocket marsh.	XII
			acres	0.02		0.01	0.08		0.09				0.05			-			-				a,- p,-		
157	Cabin Point Creek	1.5	%	5		5			70		10	-	10									-	n,- p,-	Pocket marsh.	II
			acres	0.1		0.1			1.0		0.2	-	0.2									-	n,- p,-		
158	Cabin Point Creek	1.5	%	10		-	-	5	35	-		40	10			-	-						p,-	Pocket marsh.	XII
			acres	0.2		-	-	0.1	0.5	-		0.6	0.2			-	-						p,-		
159	Cabin Point Creek	1	%	10		30	-	10	50	-							-		-				p,-	Pocket marsh with fringe and tree covered point.	II
			acres	0.10		0.30	-	0.10	0.50	-							-		-				p,-		
160	Cabin Point Creek	1	%	30		30	-	10	30							-								Point-type marsh.	XII
			acres	0.30		0.30	-	0.10	0.30							-									
161	Cabin Point Creek	1.5	%	40	5	-	5		25	10			5			-			-				e,10	Pocket marsh. Disturbed area from upland development.	XII
			acres	0.6	0.1	-	0.1		0.4	0.2			0.1			-			-				e,0.2		
162	Cabin Point Creek	5.9	%	40		15	2	-	40							2	-							High marsh along creek entrance. Marsh adjoins low lying trees and small pond.	XII
			acres	2.4		0.9	0.1	-	2.4							0.1	-								

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SECTION IV. PART 1. CABIN POINT CREEK TO TIDWELLS

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
163	Weatherall Creek	1.9	%	60	5	20	-	10	5													-		Fringe marshes, 5-15 feet wide characterizes this shoreline. Big Cordgrass located near boat ramp.	I
			acres	1.1	0.1	0.4	-	0.2	0.1													-			
164	Weatherall Creek	1	%	30			5			5			20			-							i,40	Pocket marsh.	XII
			acres	0.30			0.05			0.05			0.20			-							i,.40		
165	Aimes Creek	1.5	%	75	-	10	-	10	5	-		-	-			-						-	i,-	Fringe marshes from Linton Point to Glebe Creek.	I
			acres	1.1	-	0.2	-	0.2	0.1	-		-	-			-						-	i,-		
166	Aimes Creek	0.75	%	70	10		-	15			-		5			-							i,-	Two small pockets. Head waters of creek suggest good spawning for finfish.	I
			acres	0.53	0.07		-	0.11			-		0.04			-							i,-		
167	Glebe Creek	2.2	%	50		-			-				40			5						-	e,5	Pocket marsh. Reed grass suggests the marsh was disturbed by fill.	I
			acres	1.1		-			-				0.9			0.1						-	e,0.1		
168	Glebe Creek	1.1	%	90	5	5	-	-	-			-										-	i,-	Intermittent fringe marsh entire creek.	I
			acres	1.0	0.1	0.1	-	-	-			-										-	i,-		
169	Glebe Creek	2	%	70			10		10				-			-	10	-						Pocket marsh which provides habitat for young fish.	I
			acres	1.4			0.2		0.2				-			-	0.2	-							
170	Glebe Creek	1	%	20		5	10		30	5		-	5	-		5	10	-				-	i,10	Pocket marsh with a diversity of vegetation. Excellent waterfowl area.	XII
			acres	0.20		0.05	0.10		0.30	0.05		-	0.05	-		0.05	0.10	-				-	i,.10		

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#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
171	Glebe Creek	0.75	%	30		-	5		25	5						-	5						i,30	Two small pockets with fringe.	XII
			acres	0.23		-	0.03		0.19	0.03						-	0.04						i,.23		
172	Glebe Creek	1	%	80	-	10		-	-			-				-							i,10	Pocket marsh with connecting fringe. A pair of osprey sighted near nest.	I
			acres	0.80	-	0.10		-	-			-				-							i,.10		
173	Glebe Island	4.5	%	15	10	30	-	15	-				-									30	n,-	Eroding marsh island, with large pine and cedar trees along shoreline.	XII
			acres	0.7	0.4	1.4	-	0.7	-				-									1.4	n,-		
174	Danger Point	4	%	10	5	65	-	-	20							-	-		-			-	n,-	Spit-type marsh. High marsh with sandy beach forms narrow entrance channel.	IV
			acres	0.4	0.2	2.6	-	-	0.8							-	-		-			-	n,-		
175	Danger Point Creek	1	%	30		40			10								20						n,-	Pocket marsh.	XII
			acres	0.30		0.40			0.10								.20						n,-		
176	Church Point	0.50	%	50	5	30	-	5	-	10			-											Point marsh with fringe.	I
			acres	0.25	0.02	0.15	-	0.03	-	0.05			-												
	Total Section IV Part 1.	53.9	%	24	2	16	1	6	40	1	-	1	3	-		1	1	-	-			2	a,- n,- e,- p,- i,2		
			acres	13.1	1.0	8.8	0.7	3.3	21.4	0.4	0.2	0.6	1.7	-		0.3	0.5	-	-			1.4	a,- n,- e,0.3 p,- i,0.8		

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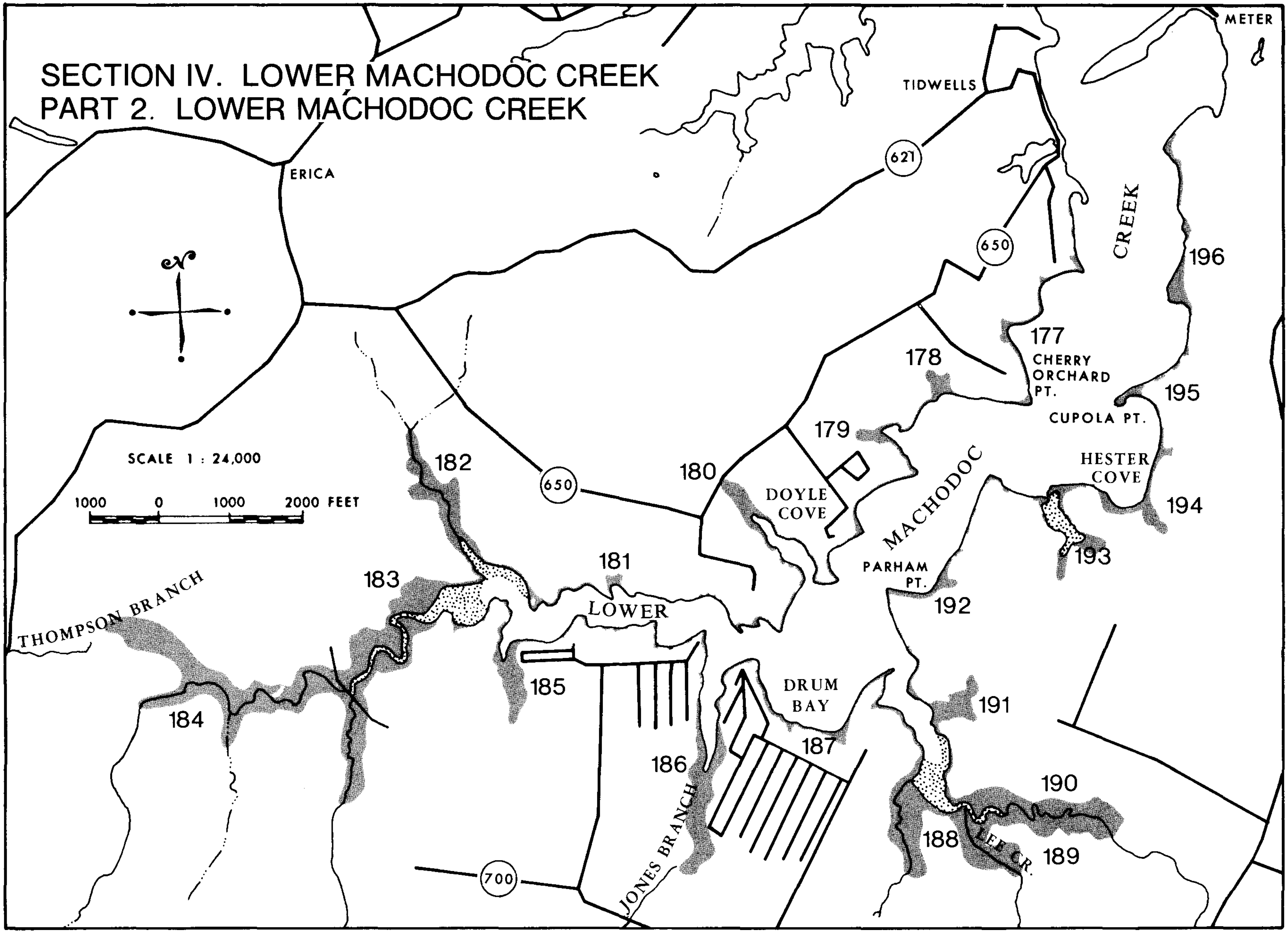
SECTION IV. LOWER MACHODOC CREEK
PART 2. LOWER MACHODOC CREEK
ERICA
TIDWELLS
METER
621
650
CREEK
196
177
178
CHERRY ORCHARD PT.
195
CUPOLA PT.
179
HESTER COVE
182
180
DOYLE COVE
MACHODOC
194
193
SCALE 1 : 24,000
1000 0 1000 2000 FEET
181
PARHAM PT.
183
LOWER
192
THOMPSON BRANCH
185
DRUM BAY
191
184
187
186
190
JONES BRANCH
188
LEE CR.
189
700

SECTION IV. PART 2. LOWER MACHODOC CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
177	Cherry Orchard Point	1.2	%	25	5	50	-	-	20	-			-									-		Point-type marsh with fringe and small pockets.	IV
			acres	0.3	0.1	0.6	-	-	0.2	-			-									-			
178	Lower Machodoc Creek	2.2	%	10	5	60			-	10			5										i,10	Pocket marsh with fringe.	IV
			acres	0.2	0.1	1.4			-	0.2			0.1										i,0.2		
179	Lower Machodoc Creek	1.4	%	60	-	25	-		5				10			-	-							Pocket marsh with fringe extending to Doyle Cove.	I
			acres	0.8	-	0.4	-		0.1				0.1			-	-								
180	Doyle Cove	2.2	%	50	20	10	5			5			5										i,5	Pocket marsh with fringe.	I
			acres	1.1	0.4	0.2	0.1			0.1			0.1										i,0.1		
181	Lower Machodoc Creek	1.5	%	30	30	15	5	20		-		-	-			-						-	i,-	Small pocket with fringe. Big cordgrass and cattail found in pocket marsh.	XII
			acres	0.4	0.4	0.2	0.1	0.3		-		-	-			-						-	i,-		
182	Lower Machodoc Creek	12	%	50	30					5			10				-						i,5	Large pocket marsh. Upper areas not observed.	I
			acres	6.0	3.6					0.6			1.2				-						i,0.6		
183	Lower Machodoc Creek	21	%	10	5	50	-	-	20	-		-	5	-		-	5		-			-	i,5	Extensive creek marsh.	IV
			acres	2.1	1.0	10.5	-	-	4.2	-		-	1.0	-		-	1.0		-			-	i,1.0		
184	Thompson Branch	39	%	-	40	15			15			-	5				10					15		Extensive pocket marsh.	XII
			acres	-	15.6	5.8			5.8			-	2.0				3.9					5.8			

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SECTION IV. PART 2. LOWER MACHODOC CREEK

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185	Lower Machodoc Creek	4	%	30	20	-	5		20	10			15										i,-	Pocket marsh with intermittent fringes.	XII
			acres	1.2	0.8	-	0.2		0.8	0.4			0.6										i,-		
186	Jones Branch	10	%	45	15	-	-		30	-		-	5	-		-	-					-	i,5 m,- j,-	Large pocket marsh with connecting fringes.	XII
			acres	4.5	1.5	-	-		3.0	-		-	0.5	-		-	-					-	i,0.5 j,- m,-		
187	Drum Bay	0.62	%	40	10	20	-		15	-			15				-							Wide fringe with small pocket.	XII
			acres	0.26	0.06	0.12	-		0.09	-			0.09				-								
188	Lower Machodoc Creek	10	%	20	10	60			5				-	-		-	-						i,5	Pocket marsh with fringe.	IV
			acres	2.0	1.0	6.0			0.5				-	-		-	-						i,0.5		
189	Lee Creek	9.2	%	10	20	60	-						-	-		10							i,-	Pocket marsh with extensive mudflats in creek.	IV
			acres	0.9	1.8	5.5	-						-	-		0.9							i,-		
190	Mount Pleasant Creek	19.3	%	10	15	40	-		20		-	-	15	-		-	-						e,-	Large pocket marsh with interior creeklets.	XII
			acres	1.9	2.9	7.7	-		3.9		-	-	2.9	-		-	-						e,-		
191	Lower Machodoc Creek	4.2	%	20	10	30	30		10															Pocket type marsh.	XII
			acres	0.8	0.4	1.3	1.3		0.4																
192	Parham Point	2	%	20	20	15	-	-	40				5			-								Wide fringe with pocket marsh.	XII
			acres	0.4	0.4	0.3	-	-	0.8				0.1			-									

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SECTION IV. PART 2. LOWER MACHODOC CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
193	Lower Machodoc Creek	1.8	%	40	-	60	-						-				-						i,-	Double pocket marsh. Beautiful, undeveloped cove.	IV
			acres	0.7	-	1.1	-						-				-						i,-		
194	Hester Cove	1.5	%	25	5	40	-		20				10											Pocket marsh with wide fringe.	XII
			acres	0.4	0.1	0.6	-		0.3				0.2												
195	Cupola Point	1.5	%	75	5	10			10															Small pocket with fringe. High marsh, saltbushes dominate pocket.	I
			acres	1.1	0.1	0.2			0.2																
196	Lower Machodoc Creek	2.5	%	60	5	25	-	5	5				-									-		Wide fringing marshes extend to Bransons Point.	I
			acres	1.5	0.1	0.6	-	0.1	0.1				-									-			
	Total Section IV. Part 2.	147.1	%	18	21	29	1	-	14	1	-	-	6	-		1	3		-			4	e,- j,- i,2 m,-		
			acres	26.8	30.5	42.5	1.7	0.4	20.4	1.3	-	-	8.9	-		0.9	5.0		-			5.8	e,- j,- i,3.0 m,-		

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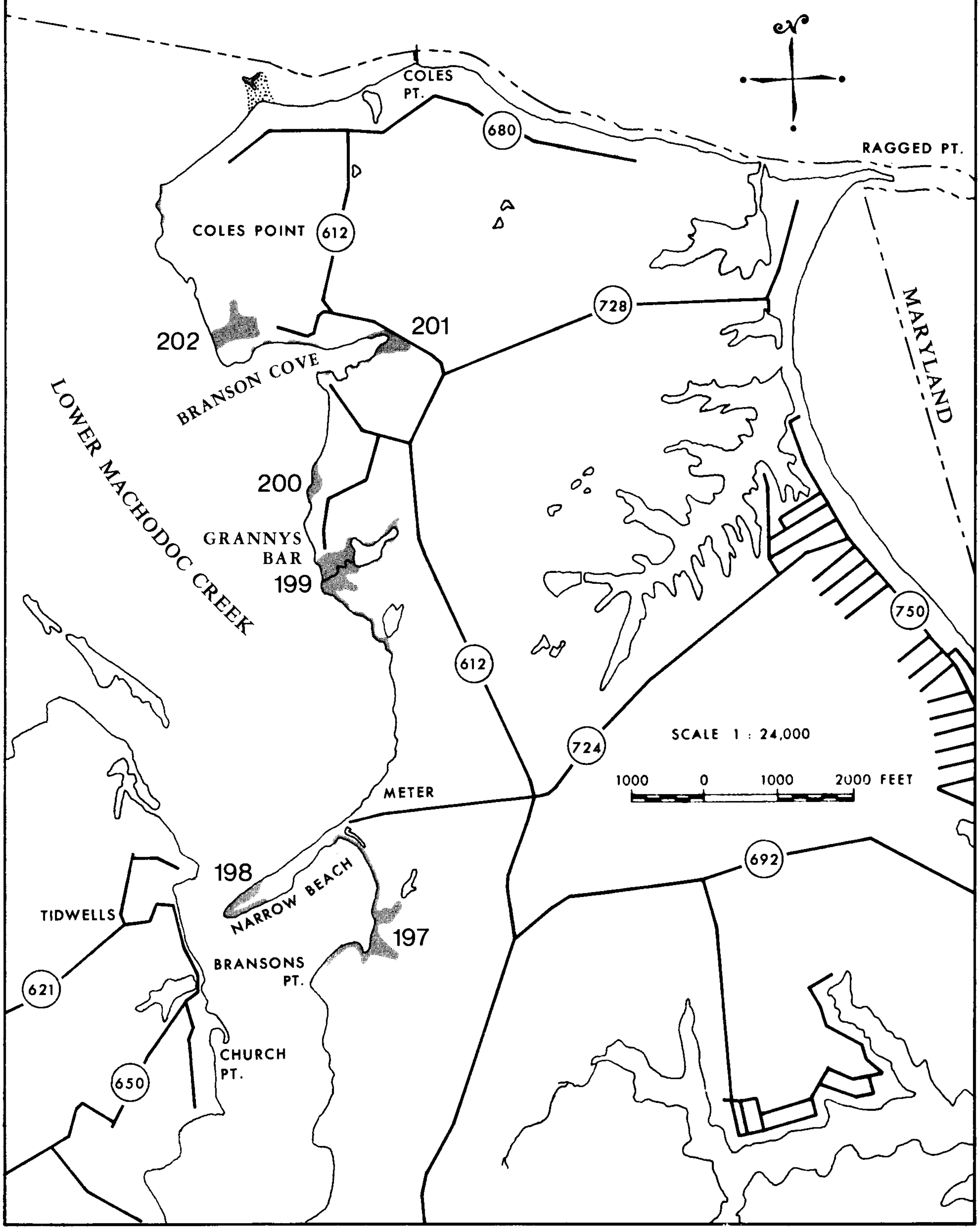
SECTION IV. LOWER MACHODOC CREEK
PART 3. NARROW BEACH TO COLES POINT



SECTION IV. PART 3. NARROW BEACH TO COLES POINT

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
197	Bransons Point	3.5	%	20		40	-	-	10				30											Double pocket with fringes dominated by saltmarsh cordgrass.	XII
			acres	0.7		1.4	-	-	0.4				1.0												
198	Narrow Beach	1.5	%	50	10	30	-	-	10															Spit-type marsh with cedar trees along interior ridge.	I
			acres	0.8	0.2	0.4	-	-	0.2																
199	Grannys Bar	6	%	10	5	40	5		40	-						-	-		-			-	b,-	High marsh. Long inlet connects creek to large tidal pond area.	XII
			acres	0.6	0.3	2.4	0.3		2.4	-						-	-		-			-	b,-		
200	Lower Machodoc Creek	0.75	%	30		20	-		50														i,-	High marsh.	II
			acres	0.23		0.15	-		0.37														i,-		
201	Bransons Point	2	%	40		15			30				15						-			-	e,- o,-	Road construction and fill have disturbed in this pocket marsh.	XII
			acres	0.8		0.3			0.6				0.3						-			-	e,- o,-		
202	Coles Point	3	%	5	15	30			30													20	e,-	Fill material has disturbed portions of this marsh.	XII
			acres	0.2	0.4	0.9			0.9													0.6	e,-		
	Total Section IV. Part 3.	16.8	%	19	5	33	2	-	29	-			8			-	-		-			4	b,- i,- e,- o,-		
			acres	3.2	0.9	5.6	0.3	-	4.8	-			1.4			-	-		-			0.6	b,- i,- e,- o,-		
	Total Section IV.	217.8	%	20	15	26	1	2	21	1	-	-	5	-		-	3		-			4	a,- i,2 b,- j,- e,- o,-	m,- n,-	
			acres	43.1	32.4	56.7	2.6	3.6	46.5	1.7	0.2	0.6	11.9	-		1.2	5.5		-			7.8	a,- i,3.8 b,- j,- e,0.3 o,-	m,- n,-	

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d=ARROWHEAD

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g=SWAMP LOOSESTRIFE
h=SOFT RUSH

i=ORACH
j=SWAMP ROSE
k=BEGGAR TICKS
l=FERNS

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p=SALTMARSH FLEABANE

SECTION V

RAGGED POINT TO SANDY POINT

There are 155 acres of tidal wetlands between Ragged Point and Sandy Point. They constitute the three parts of Section V along the Potomac River.

Part 1: Blackbeards Pond to Gardner Creek
Part 2: Jackson Creek and Bonum Creek
Part 3: Sandy Point

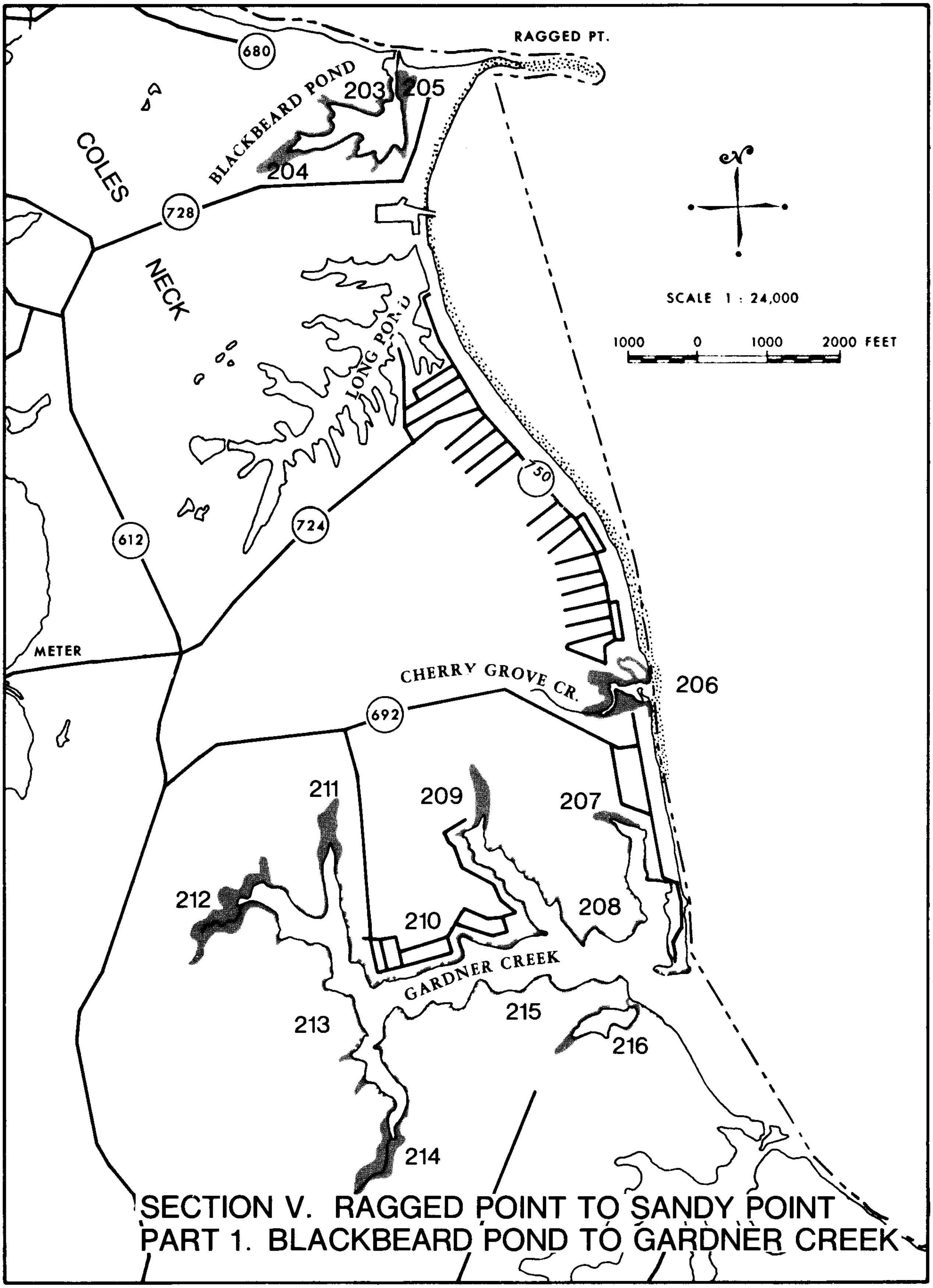
The Potomac River shoreline in this Section is constantly changing, eroding in some places while accreting in others. This situation often affects the existing wetlands. In Blackbeards Pond and Bonum Creek, the natural deposition of sand and sediment has been the cause of large dredge and fill projects to maintain the waterways. These activities have completely destroyed some marshes while changing the vegetation in others. Cherry Grove Creek, marsh #206, is another interesting example of the changing shoreline along the Potomac. In recent years, storms have opened the creek to the tides. Now, saltmarsh cordgrass occupies the former non-tidal area and is spreading into the adjacent mudflats. Farther down the shoreline, the tidal status of marshes near Sandy Point continues to oscillate as storms change the beach profile.

The marshes found in Part 1 of this section are dominated by Saltmarsh Cordgrass (Type I) and Saltbushes (Type IV). In Blackbeards Pond, the marshes form shoreline fringes which expand into pocket marshes in the upper reaches. Gardner Creek is also fringed with wetlands. These fringes become narrow and segmented at times. The vegetation is similar to that found in Blackbeards Pond, except that saltbushes dominate the pocket marshes.

The majority of marshes found in Jackson Creek and Bonum Creek are dominated by Type I vegetation, saltmarsh cordgrass. Concentrations of saltbushes and meadow-grass also occur in other marshes designated as Brackish Water Mixed (Type XII). Both creeks have long shallow inlets that are difficult to navigate. This may be related to the low population of the surrounding uplands. Nevertheless, the waters and marsh of Part 2 support commercial crabbing by pot and pound.

The beach widens near Sandy Point, forming a continuous berm in front of three extensive cattail marshes (Type VI). Two of these tidal marshes (#237 and #238) are over-washed only occasionally. Most of the wetlands adjoining marsh #239 are considered non-tidal. The tidal marshes and their non-tidal counterparts offer excellent habitat for wildlife, including a pair of bald eagles.

In general, the wetlands of Section V provide numerous values to the estuarine environment and warrant careful management as existing marinas, campgrounds and waterfront developments expand.



SECTION V. RAGGED POINT TO SANDY POINT
PART 1. BLACKBEARD POND TO GARDNER CREEK

SECTION V. PART 1. BLACKBEARDS POND TO GARDNER CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
203	Blackbeards Pond	0.75	%	80	-	10	-		-	-			-				10		-			-	n,-	Two small pocket marshes with connecting fringe.	I
			acres	0 .60	-	0 .07	-		-	-			-				0.08		-			-	n,-		
204	Blackbeards Pond	4	%	40		5			15				40			-	-		-					Pocket marsh.	XII
			acres	1.6		0.2			.60				1.6			-	-		-						
205	Blackbeards Pond	3.5	%	60		25	-	5	10															Wide fringe with small pocket marshes. Some areas disturbed by recent dredge and fill work.	I
			acres	2.1		0.9	-	0.2	0.4																
206	Cherry Grove Creek	7	%	90	-	-			5	-		-	-									-	e,5	Saltmarsh cordgrass has spread into former mudflat areas. Cove recently opened to tidal exchange. Detritus well flushed from the marsh.	I
			acres	6.3	-	-			0.4	-		-	-									-	e,0.4		
207	Gardner Creek	1.5	%	15		40			20								-						e,25	Pocket marsh with some disturbance.	XII
			acres	0.2		0.6			0.3								-						e,0.4		
208	Gardner Creek	0.25	%	40	-	50		5	5	-			-				-							Intermittent fringe marshes.	IV
			acres	0.10	-	0.13		0.01	0.01	-			-				-								
209	Gardner Creek	3	%	5		70			20	-			-				-						i,5	Pocket marsh.	IV
			acres	0.2		2.1			0.6	-			-				-						i,0.2		
210	Gardner Creek	0.25	%	90	-	10		-		-							-							Intermittent fringe marshes. Some development of shoreline with several bulkheads constructed.	I
			acres	0.23	-	0.02		-		-							-								

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SECTION V. PART 1. BLACKBEARDS POND TO GARDNER CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
211	Gardner Creek	3.2	%	15		60	-	-	20	-		-	-										i,5	Pocket marsh with fringe.	IV
			acres	0.5		1.9	-	-	0.6	-		-	-										i,0.2		
212	Gardner Creek	12	%	20	-	60		-	15			-	-										i,5	Large, pocket marsh.	IV
			acres	2.4	-	7.2		-	1.8			-	-										i,0.6		
213	Gardner Creek	0.75	%	75	-	5		-	10	-			5				-					-	i,5	Fringe marsh with several small pocket areas.	I
			acres	0.56	-	0.04		-	0.08	-			0.04				-					-	i,.03		
214	Gardner Creek	3.5	%	20		50	-		5	-	-	-	15				-						i,10	Pocket marsh.	IV
			acres	0.7		1.8	-		0.2	-	-	-	0.5				-						i,0.4		
215	Gardner Creek	0.50	%	80		10	-	-	10	-			-				-					-		Intermittent fringe marsh with small pocket areas.	I
			acres	0.40		0.05	-	-	0.05	-			-				-					-			
216	Gardner Creek	0.75	%	60	-	40	-	-	-							-						-		Cove-type marsh with small pocket areas. Narrow inlet channel with delta marsh.	I
			acres	0.45	-	0.30	-	-	-							-						-			
	Total Section V. Part 1.	41.0	%	40	-	37	-	-	12	-	-	-	5			-	-		-			-	e,2 n,- i,3		
			acres	16.3	-	15.2	-	0.2	5.0	-	-	-	2.2			-	0.1		-			-	e,0.7 n,- i,1.3		

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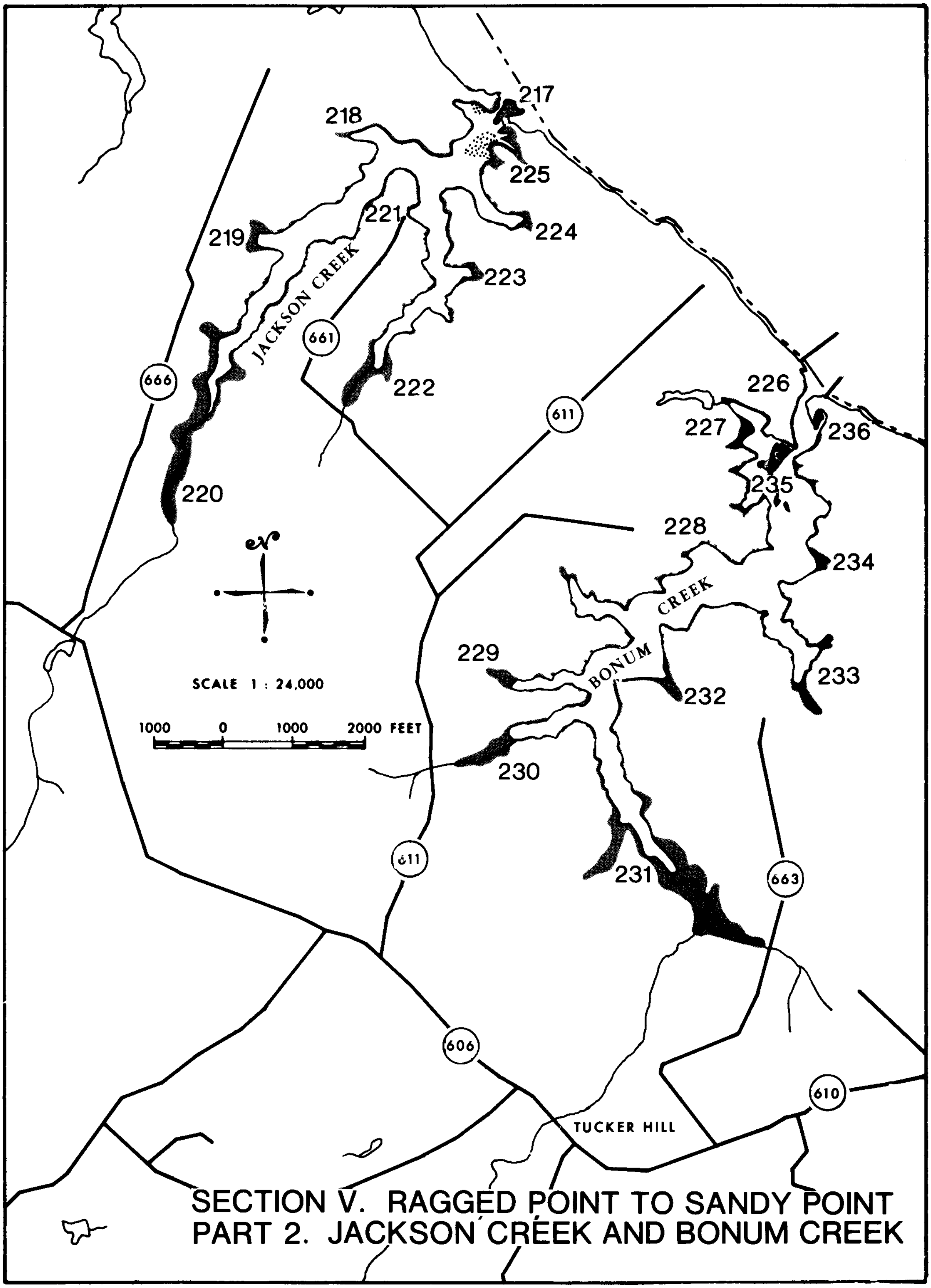

SECTION V. RAGGED POINT TO SANDY POINT
PART 2. JACKSON CREEK AND BONUM CREEK

SECTION V. PART 2. JACKSON CREEK AND BONUM CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
217	Jackson Creek	2	%	60	10	30																		Delta-type marsh formerly an island.	I
			acres	1.2	0.2	0.6																			
218	Jackson Creek	0.67	%	40		40	-		15	-			-			-	-						i,5	Long fringe with small pocket.	XII
			acres	0.27		0.27	-		0.10	-			-			-	-						i,.03		
219	Jackson Creek	1	%	30	-	60							-										i,10	Double pocket marsh with fringe.	IV
			acres	.30	-	.60							-										i,.10		
220	Jackson Creek	12	%	20	-	10	5		40	-	-		10	-		5	-		-			-	e,- i,10 h,-	Extensive creek marsh. Saltmarsh cordgrass dominates lower portion of creek with cattails and big cordgrass found in upper end.	XII
			acres	2.4	-	1.2	0.6		4.8	-	-		1.2	-		0.6	-		-			-	e,- i,1.2 h,-		
221	Jackson Creek	0.50	%	60	-	20	-		10	-	-		-				-					-	i,10	Intermittent fringe marshes.	I
			acres	0.30	-	0.10	-		0.05	-	-		-				-					-	i,.05		
222	Jackson Creek	5	%	20	-	40	-		20	-			10										e,- i,10	Pocket marsh.	XII
			acres	1.0	-	2.0	-		1.0	-			0.5										e,- i,0.5		
223	Jackson Creek	0.50	%	40		50	-		5	-		-	5											Small pocket marsh.	IV
			acres	0.20		0.25	-		0.03	-		-	0.02												
224	Jackson Creek	0.75	%	30		25	-		40				-										i,5	Small pocket with connecting fringe.	XII
			acres	0.22		0.19	-		0.30				-										i,.04		

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SECTION V. PART 2. JACKSON CREEK AND BONUM CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
225	Jackson Creek	3.8	%	20	-	50	-	10	15		-	-	-			-							i,5	Two pocket marshes with connecting fringe.	IV
			acres	0.7	-	1.9	-	0.4	0.6		-	-	-			-							i,0.2		
226	Bonum Creek	0.46	%	60		30				-													e,10	Fringe marsh remains along shoreline after extensive dredge and fill project.	I
			acres	0.28		0.14				-													e,.04		
227	Bonum Creek	2.2	%	90		10				-														Embayed pocket-type marsh.	I
			acres	2.0		0.2				-															
228	Bonum Creek	2	%	20		20	5		50	-		-	5									-	i,-	A series of small pocket marshes with fringes. Saltmarsh cordgrass dominates fringe areas.	II
			acres	0.4		0.4	0.1		1.0	-		-	0.1									-	i,-		
229	Bonum Creek	1	%	60		5	5		20				-			-							i,10	Pocket marsh.	I
			acres	0.60		0.05	0.05		0.20				-			-							i,.10		
230	Bonum Creek	5	%	50		-	-		10	-	-		40			-								Large pocket with leading fringe marsh. Upper end of pocket dominated by cattail.	I
			acres	2.5		-	-		0.5	-	-		2.0			-									
231	Bonum Creek	21.2	%	50		10	-		20	5			5			5	-					-	i,5	Extensive pocket marshes with interior tidal guts.	I
			acres	10.6		2.1	-		4.2	1.1			1.1			1.1	-					-	i,1.1		
232	Bonum Creek	2.2	%	40			-	-	20	-	-	-	5			5						-	i,30	Pocket marsh with connecting fringe.	XII
			acres	0.9			-	-	0.4	-	-	-	0.1			0.1						-	i,0.7		

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SECTION V. PART 2. JACKSON CREEK AND BONUM CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
233	Bonum Creek	2.8	%	40		10	5		20	10		-	10	-		-						-	i,5	Double pocket marsh with connecting fringe.	XII
			acres	1.1		0.3	0.1		0.6	0.3		-	0.3	-		-						-	i,0.1		
234	Bonum Creek	0.33	%	30		15	-	-	50		-	-	5											Pocket marsh.	II
			acres	0.10		0.05	-	-	0.16		-	-	0.02												
235	Bonum Creek	2.2	%	30		60				-													i,10	Several marsh islands form a delta marsh complex. Area altered by dredge project.	IV
			acres	0.7		1.3				-													i,0.2		
236	Bonum Creek	0.75	%	70	-	15		-	5	-													e,10	Delta type marsh.	I
			acres	0.53	-	0.11		-	0.04	-													e,.07		
	Total Section V. Part 2.	66.4	%	40	-	18	1	1	21	2	-	-	8	-		3	-		-			-	e,- h,- i,6		
			acres	26.4	0.2	11.8	0.9	0.4	14.0	1.3	-	-	5.3	-		1.8	-		-			-	e,0.1 h,- i,4.3		

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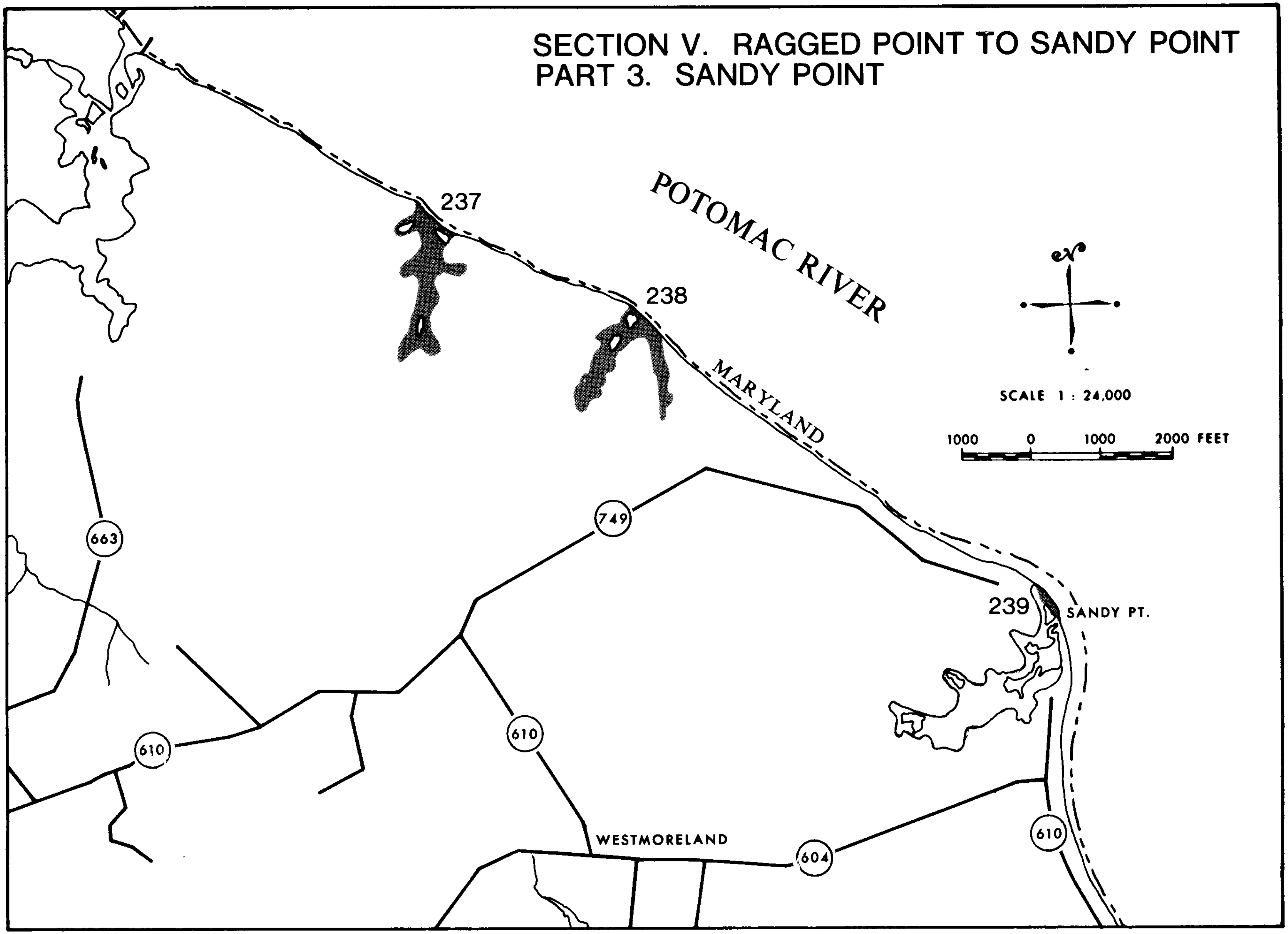
SECTION V. RAGGED POINT TO SANDY POINT
PART 3. SANDY POINT
POTOMAC RIVER
MARYLAND
237
238
239
SANDY PT.
SCALE 1 : 24,000
1000 0 1000 2000 FEET
663
749
610
610
610
604
WESTMORELAND

SECTION V. PART 3. SANDY POINT

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
237	Sandy Point	22	%			5			5				50										g,40	Extensive pocket marsh with interior ponds. High, sandy, berm protects shore-line.	VI
			acres			1.1			1.1				11.0										g,8.8		
238	Sandy Point	25	%			-							80										g,20	Extensive pocket marsh with interior ponds. Sandy berm protects shoreline.	VI
			acres			-							20.0										g,5.0		
239	Sandy Point	0.25	%	-	-	-	-		-														e,100 n,-	Reed grass covers old spoil site. Interior pond and wetlands are nontidal.	XII
			acres	-	-	-	-		-														e,.25 n,-		
	Total Section V. Part 3.	47.2	%	-	-	2	-		2				66										e,- i,- g,29 n,- h,-		
			acres	-	-	1.1	-		1.1				31.0										e,0.2 g,13.8 i,- h,- n,-		
	Total Section V.	154.6	%	27	-	18	-		13	1	-	-	25	-		1	-		-			-	e,1 i,4 g,9 n,- h,-		
			acres	42.7	0.2	28.2	0.1		20.0	1.3	-	-	38.4	-		1.8	0.1		-			-	e,1.1 i,5.6 g,13.8 h,- n,-		

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SECTION VI

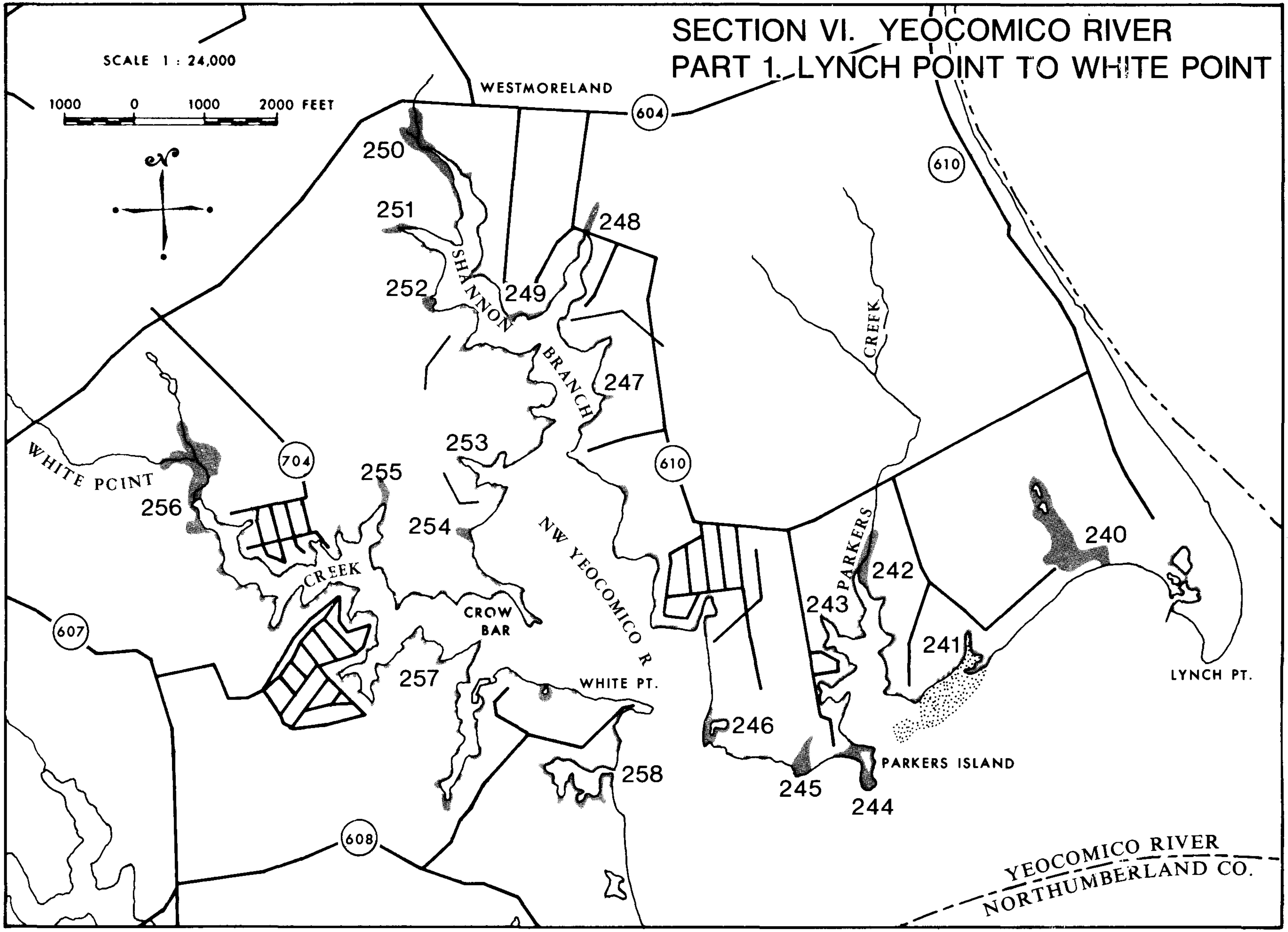
YEOCOMICO RIVER

The Yeocomico River Section of this inventory is divided into three parts:

Part 1: Lynch Point to White Point
Part 2: Horn Point to Kinsale Branch
Part 3: Hampton Hall Branch

The natural boundary between Westmoreland and Northumberland Counties is the Yeocomico River, which divides into the West Yeocomico and the Hampton Hall Branch. The wetlands of the Yeocomico within Northumberland County are recorded in that county's tidal marsh inventory. Within this Section there are 34 significant marshes along the Westmoreland County shoreline totaling over 71 acres. In general, significant amounts of Saltmarsh Cordgrass (Type I) occur throughout all three Parts of Section VI. Cattails dominate the upper reaches of Hampton Hall Branch. Wild rice, smartweeds, and water hemp are also found in marshes #271, #272 and #273. They rank high as a food source for wildlife and waterfowl and their included waters provide protective habitat for young fish such as menhaden.

Most of the marshes in this Section form small, discontinuous fringes along the shoreline. Therefore, an effort has been made to combine several of them into one marsh unit of at least one quarter of an acre. Marsh #247 is an example of this technique used only when the vegetation in each component fringe is similar. The largest marshes (#240, #256, #272, and #273) occur in the upper ends of the creeks. These few pocket-type marshes remain relatively undisturbed primarily because of the shoal, muddy bottoms which restrict boat traffic.


SECTION VI. YEOCOMICO RIVER
PART 1. LYNCH POINT TO WHITE POINT
SCALE 1 : 24,000
1000 0 1000 2000 FEET
WESTMORELAND
604
610
250
251
248
252
249
SHANNON
BRANCH
247
CREEK
253
704
255
WHITE POINT
256
254
610
NW YEOCOMICO R
CREEK
CROW BAR
PARKERS
242
240
243
607
241
257
WHITE PT.
LYNCH PT.
246
258
PARKERS ISLAND
245
244
608
YEOCOMICO RIVER
NORTHUMBERLAND CO.

SECTION VI. PART 1. LYNCH POINT TO WHITE POINT

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
240	Yeocomico River	9	%	-	-	40	20	-	40													-	n,-	Pocket marsh with two narrow tidal openings to the river. High marsh, sandy berm eroding along shoreline.	XII
			acres	-	-	3.6	1.8	-	3.6													-	n,-		
241	Yeocomico River	0.50	%	90		10		-	-													-		Shallow cove-type marsh with spit.	I
			acres	0.45		0.05		-	-													-			
242	Parkers Creek	2.5	%	25		50		5	15	-													i,5	Pocket marsh with intermittent fringe areas.	IV
			acres	0.6		1.2		0.1	0.4	-													i,0.1		
243	Parkers Creek	0.50	%	40		10		40	10													-	i,-	Small pocket areas with connecting fringe marshes.	XII
			acres	0.20		0.05		0.20	0.05													-	i,-		
244	Parkers Island	2	%	30	5	30		30	5								-					-	i,-	Shoreline and marsh have joined with adjacent mainland. Erosion occurs along eastern shoreline.	XII
			acres	0.6	0.1	0.6		0.6	0.1								-					-	i,-		
245	Yeocomico River	1	%	35	-	40		20	5								-					-	e,-	High pocket marsh with some fill disturbance.	XII
			acres	0.35	-	0.40		0.20	0.05								-					-	e,-		
246	NW Yeocomico River	0.75	%	50		35	-	-	15														e,-	High, point-type marsh with overwash pond.	I
			acres	0.38		0.26	-	-	0.11														e,-		
247	NW Yeocomico River	1	%	65		10		10	15				-				-							A series of small pocket marshes and intermittent fringes.	I
			acres	0.65		0.10		0.10	0.15				-				-								

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k=BEGGAR TICKS
l=FERNS
m=SWEET FLAG
n=SALTMARSH ASTER
o=JEWELWEED
p=SALTMARSH FLEABANE

SECTION VI. PART 1. LYNCH POINT TO WHITE POINT

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH-GRASS	OTHER	OBSERVATIONS	MARSH TYPE
248	Shannon Branch	0.75	%	40		50			5								5							Pocket marsh. Culvert pipe connects marsh above Route 610.	IV
			acres	0.30		0.37			0.04								.04								
249	Shannon Branch	0.30	%	65		10	10	15					-				-							Fringe type marshes varying in width.	I
			acres	0.20		0.03	0.03	0.04					-				-								
250	Shannon Branch	3.8	%	15		40		-	40			-	-				5						i,-	Large pocket marsh with wide connecting fringe.	XII
			acres	0.6		1.5		-	1.5			-	-				0.2						i,-		
251	Shannon Branch	2	%	15		40			35	-		-	-			-	10					-	h,-	Pocket marsh.	XII
			acres	0.3		0.8			0.7	-		-	-			-	0.2					-	h,-		
252	Shannon Branch	0.25	%	10		45		5	20				10				10					-	h,- i,-	Small pocket marsh.	XII
			acres	0.03		0.11		0.01	0.05				0.03				0.02					-	h,- i,-		
253	Shannon Branch	0.25	%	50		30		5	15				-				-					-		Intermittent fringe marshes.	I
			acres	0.13		0.07		0.01	0.04				-				-					-			
254	Shannon Branch	0.33	%	60		15	5	10	10				-				-							Small pocket marsh with tidal pond.	I
			acres	0.20		0.05	0.02	0.03	0.03				-				-								
255	White Point Creek	0.50	%	80		5		-	10				-				-						i,5	Small pocket marsh with connecting fringe from Crow Bar.	I
			acres	0.40		0.03		-	0.05				-				-						i,.02		

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SECTION VI. PART 1. LYNCH POINT TO WHITE POINT

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
256	White Point Creek	10	%	60		5	-	-	-	-		-	5			-	30							Large pocket with small adjoining pocket. Area includes intermittent fringes.	I
			acres	6.0		0.5	-	-	-	-		-	0.5			-	3.0								
257	White Point Creek	1.5	%	80		10	-	-	10				-				-					-		A series of small pocket areas with intermittent fringe marsh.	I
			acres	1.2		0.2	-	-	0.2				-				-					-			
258	NW Yeocomico River	1.2	%	60		5		10	10								-		-			-	n,15 p,-	Several small pocket marshes with fringed shoreline. Large school of menhaden fish using protected cove.	I
			acres	0.7		0.1		0.1	0.1								-		-			-	n,0.2 p,-		
	Total Section VI. Part 1.	38.1	%	35	-	26	5	4	19	-		-	1			-	9		-			-	e,- n,- h,- p,- i,-		
			acres	13.2	0.1	10.0	1.8	1.4	7.1	-		-	0.5			-	3.4		-			-	e,- n,0.2 h,- p,- i,0.1		

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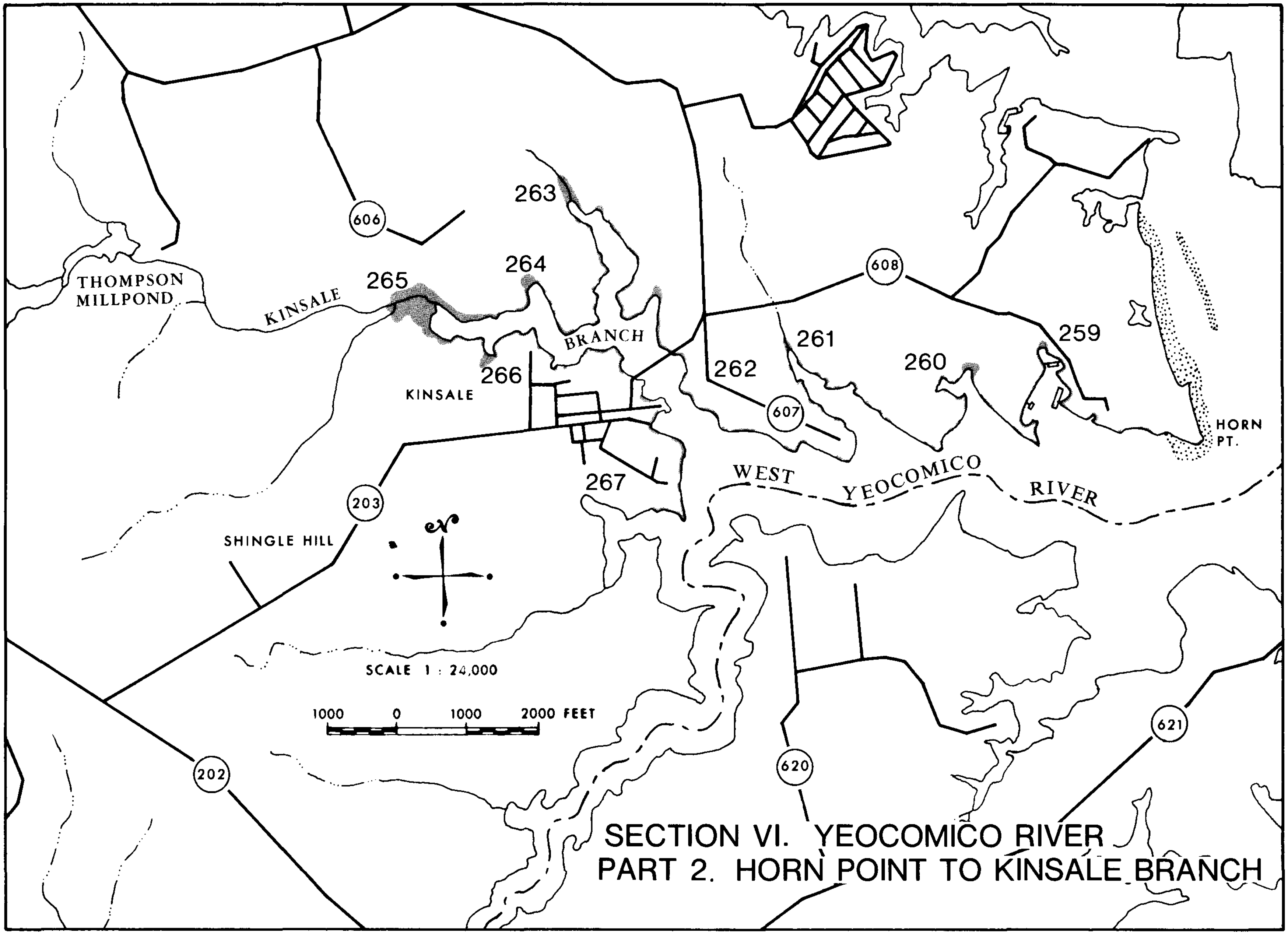
THOMPSON MILLPOND
KINSALE
BRANCH
KINSALE
SHINGLE HILL
WEST YEOCOMICO RIVER
HORN PT.
606
608
607
203
202
620
621
259
260
261
262
263
264
265
266
267
SCALE 1 : 24,000
1000 0 1000 2000 FEET
SECTION VI. YEOCOMICO RIVER
PART 2. HORN POINT TO KINSALE BRANCH

SECTION VI. PART 2. HORN POINT AND KINSAL BRANCH

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
259	West Yeocomico River	0.75	%	30		5	-	25	-				40									-		Wide fringe with small pocket at head of cove. Cattail found in pocket marsh.	XII
			acres	0.22		0.04	-	0.19	-				0.30									-			
260	West Yeocomico River	0.50	%	10		30		30	-			-	30											Intermittent fringe marshes with small pocket area.	XII
			acres	0.05		0.15		0.15	-			-	0.15												
261	Long Cove	0.75	%	30		40	-	5	20				-	-								5	e,-	Small pocket at head of cove with intermittent fringes.	XII
			acres	0.22		0.30	-	0.04	0.15				-	-								.04	e,-		
262	Kinsale Branch	1	%	45		40	-	15		-												-	i,-	Wide fringe marshes with small pocket areas.	XII
			acres	0.45		0.40	-	0.15		-												-	i,-		
263	Kinsale Branch	1.5	%	75	-	5	5			-			15			-	-						i,-	Pocket marsh. Abundant carp spawning in shallow waters of Kinsale Branch.	I
			acres	1.1	-	0.1	0.1			-			0.2			-	-						i,-		
264	Kinsale Branch	0.30	%	75	-	10	10	-	5			-					-					-	i,-	Small pocket marsh with intermittent fringes.	I
			acres	0.22	-	0.03	0.03	-	0.02			-					-					-	i,-		
265	Kinsale Branch	8	%	30		-			-	10			40			-	20						i,-	Large pocket marsh. Upper end of marsh changes to wooded covered swamp.	XII
			acres	2.4		-			-	0.8			3.2			-	1.6						i,-		
266	Kinsale Branch	1	%	60		-	5						20			5	10					-	e,-	Small pocket marsh with fringe.	I
			acres	0.60		-	0.05						0.20			0.05	0.10					-	e,-		

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SECTION VI. PART 2. HORN POINT AND KINSAL BRANCH

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
267	Kinsale Branch	0.25	%	90		10						-	-				-						e,-	Fringe marshes extend to Great House Point.	I
			acres	0.23		0.02						-	-				-						e,-		
	Total Section VI. Part 2.	14.0	%	39	-	7	1	4	1	6		-	29	-		-	12				-		e,- i,-		
			acres	5.5	-	1.0	0.2	0.5	0.2	0.8		-	4.1	-		-	1.7				-		e,- i,-		

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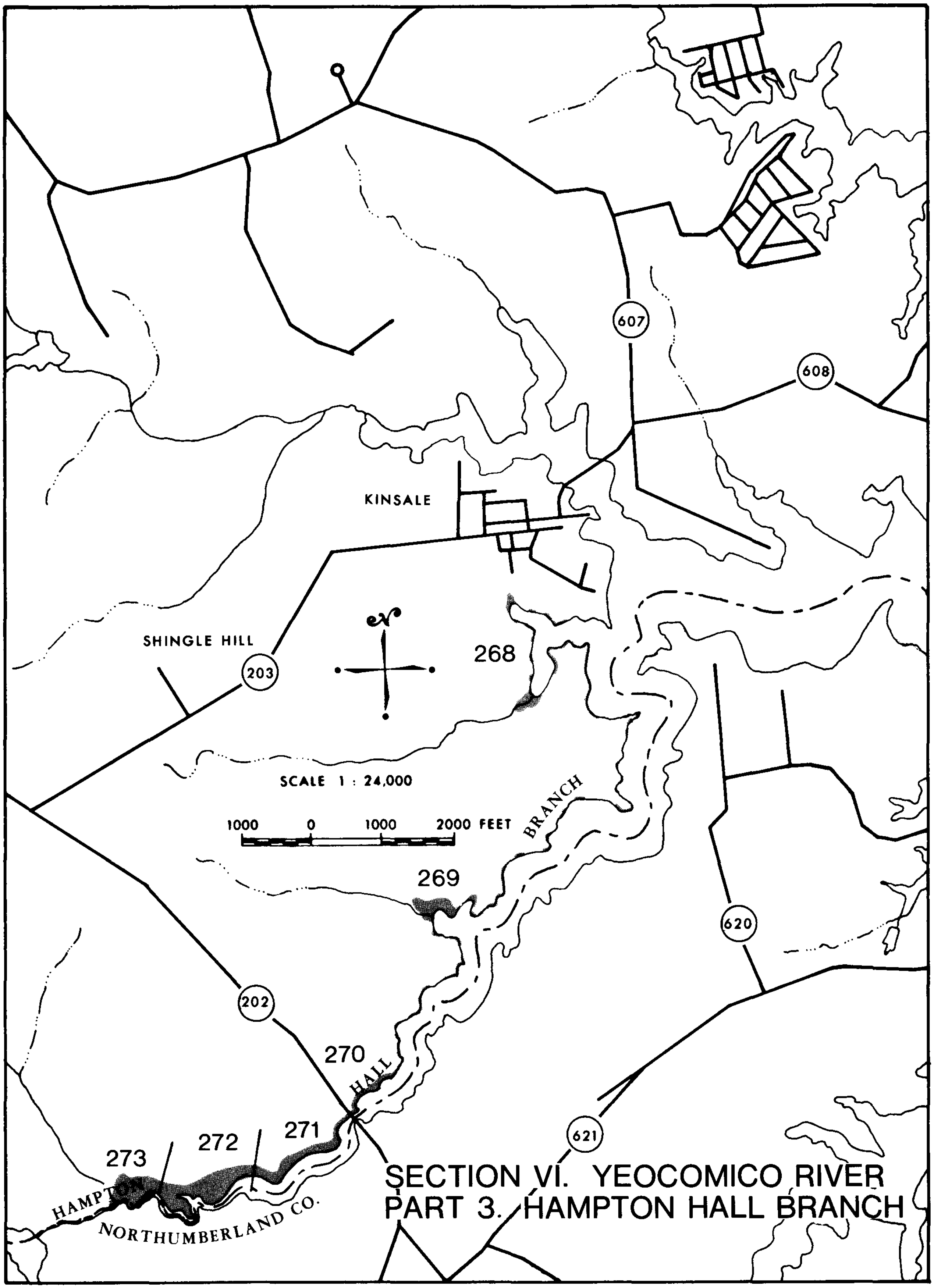

SECTION VI. YEOCOMICO RIVER
PART 3. HAMPTON HALL BRANCH

SECTION VI. PART 3. HAMPTON HALL BRANCH

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
268	Hampton Hall Branch	1.4	%	60		-	5					-	20			5	10					-		Small pocket marsh with intermittent fringes. Saltmarsh cordgrass dominates fringe marshes.	I
			acres	0.8		-	0.1					-	0.3			0.1	0.1					-			
269	Hampton Hall Branch	1.5	%	30		-	-	-		-		-	30				40	-				-		Small pocket marsh with fringe areas.	XII
			acres	0.4		-	-	-		-		-	0.4				0.6	-				-			
270	Hampton Hall Branch	0.55	%	30		5	30				-		20			-	15							Wide fringe marsh. Large fish kill observed in this section of river.	XII
			acres	0.17		0.03	0.16				-		0.11			-	0.08								
271	Hampton Hall Branch	2.8	%	60		-	-				-		30				10		-				a,- n,-	Wide fringe marsh which forms the lower portion of the extensive creek-type marsh.	I
			acres	1.7		-					-		0.8				0.3		-				a,- n,-		
272	Hampton Hall Branch	8	%			-	-						85	-			-	15	-					Extensive creek-type marsh. Excellant waterfowl habitat.	VI
			acres			-	-						6.8	-			-	1.2	-						
273	Hampton Hall Branch	5	%				5				-		10	30	-		-	-	40				a,5 o,10 n,-	Upper end of extensive creek-type marsh which grades into wooded swamp.	XI
			acres				0.2				-		0.5	1.5	-		-	-	2.0				a,0.2 n,- o,0.5		
	Total Section VI. Part 3.	19.2	%	16		-	2	-		-	-	-	47	8	-	-	6	6	10				a,1 o,3 n,-		
			acres	3.1		-	0.5	-		-	-	-	9.0	1.5	-	0.1	1.1	1.2	2.0				a,0.2 n,- o,0.5		
	Total Section VI.	71.4	%	31	-	15	4	3	10	1	-	-	19	2	-	-	9	2	3			-	a,- i,- e,- n,- h,- o,1	p,-	
			acres	22.0	0.1	11.0	2.5	2.0	7.3	0.8	-	-	13.7	1.5	-	0.1	6.2	1.2	2.0			-	a,0.2 i,0.2 e,- n,0.2 h,- o,0.5	p,-	

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SECTION VII

RAPPAHANNOCK RIVER

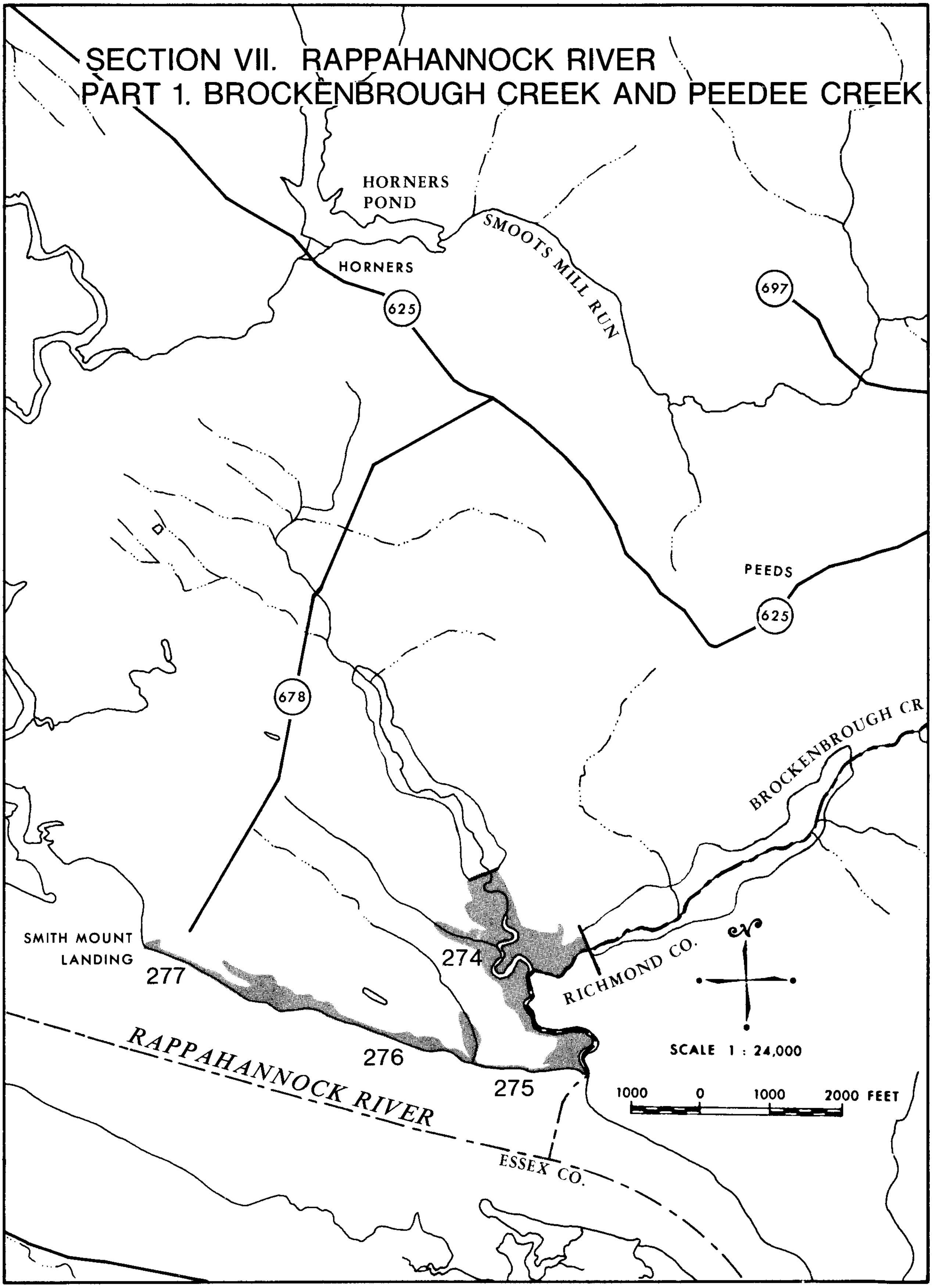
Along the Rappahannock River, the tidal marsh inventory begins with Brockenbrough Creek. The wetlands of this Section have been arranged in two parts.

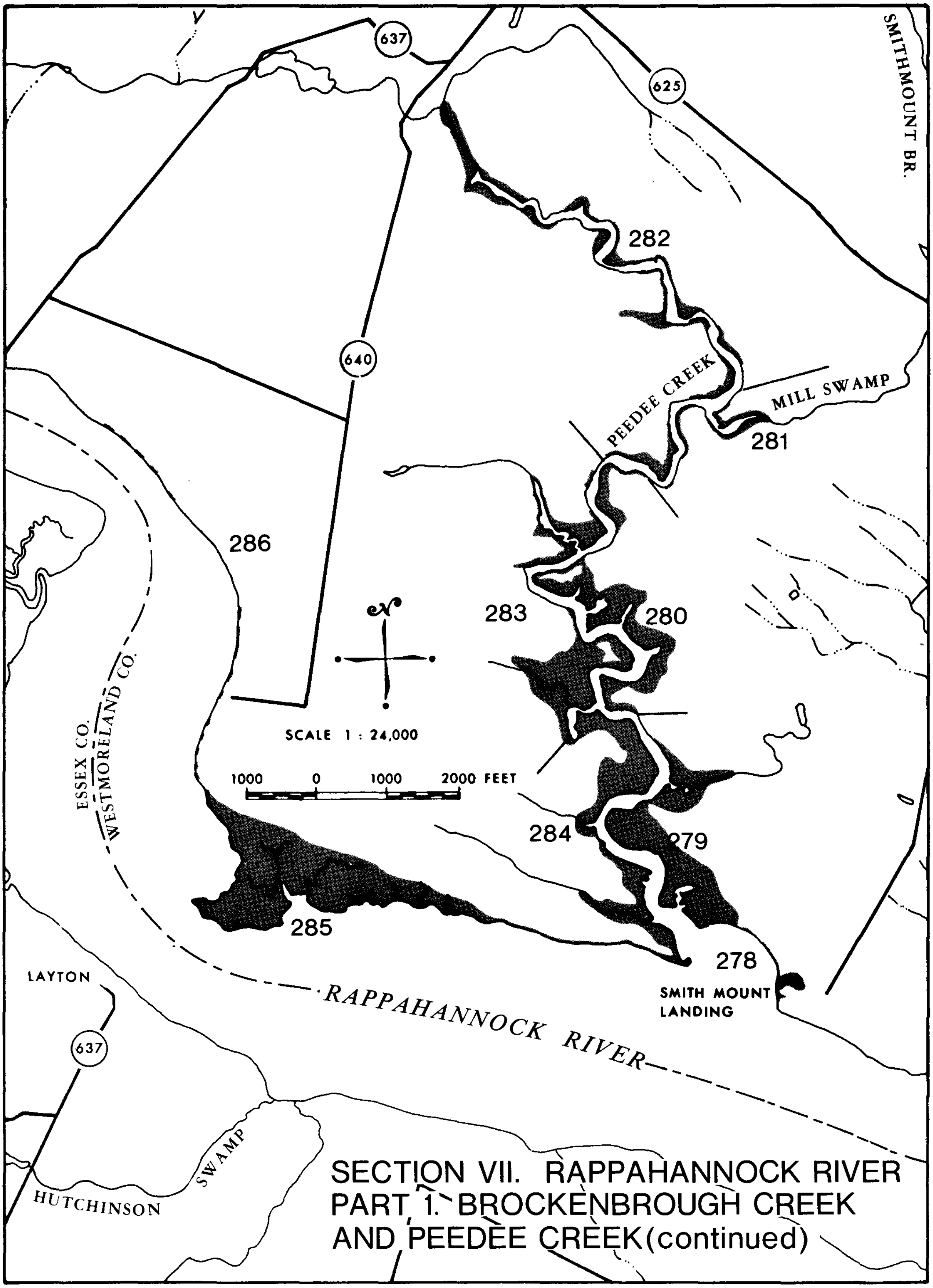
Part 1: Brockenbrough Creek and Peedee Creek
Part 2: Drakes Marsh to Bristol Mine Run

As a whole, the vegetation found in Section VII is totally different than that found elsewhere in Westmoreland County. There are no Type I or Type XII marshes in this Section. Saltmarsh Cordgrass, so common to the Potomac River marshes, is not found along this reach of the Rappahannock River. Instead Water willow (Justica americana) is found fringing the shoreline in many areas. A few brackish water species occur here, but in lesser amounts than in the other six sections of this report. Wax myrtle, which normally associates with saltbushes elsewhere in the county, is the dominant plant found along the upland borders of the marshes recorded here.

The most common community designation used in this Section is Type XI. The largest of these freshwater mixed wetlands is Drakes Marsh #289. In addition to the large percentages of cattails, pickerelweed and arrow arum, a significant amount of cutgrass, big cordgrass and wild rice are found throughout this Section. Other associated species include water hemp, yellow pond lily, smartweeds and giant bulrush.

There is currently no high density waterfront developments in this part of the County as farming is the leading commercial activity. The extensive creek-type marshes help to maintain water quality by acting as sediment traps for agricultural runoff. This attribute is quite important since the major creek and marsh systems, such as Brockenbrough and Peedee Creeks, have been confirmed as spawning grounds for commercially important finfish. Their habitat is not only important to the local fisheries but also to the fishing industry of Chesapeake Bay. In addition, these freshwater habitats provide excellent duck hunting and sport fishing.


SECTION VII. RAPPAHANNOCK RIVER
PART 1. BROCKENBROUGH CREEK AND PEEDEE CREEK
HORNERS POND
HORNERS
SMOOTS MILL RUN
697
625
PEEDS
625
678
BROCKENBROUGH CR
SMITH MOUNT LANDING
277
274
276
275
RICHMOND CO.
RAPPAHANNOCK RIVER
ESSEX CO.
N
SCALE 1 : 24,000
1000 0 1000 2000 FEET



SECTION VII. RAPPAHANNOCK RIVER
PART 1. BROCKENBROUGH CREEK
AND PEEDEE CREEK (continued)

SECTION VII. PART 1. BROCKENBROUGH CREEK AND PEEDEE CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
274	Brokenbrough Creek	44	%		15	-	-		-		5		10	30	5		5	5	5	5	10		a,5 g,- b,- o,- p,-	Extensive creek-type marsh Earthen dams impound the heads of each branch. Big Cordgrass dominates lower reaches of creek.	XI
			acres		6.6	-	-		-		2.2		4.4	13.2	2.2		2.2	2.2	2.2	2.2	4.4		a,2.2 b,- o,- g,- p,-		
275	Rappahannock River	1.3	%			-	20				-	-	60	-								-	c,20 o,-	Pocket marsh with shoreline fringe dominated by water willow.	VI
			acres			-	0.2				-	-	0.8	-								-	c,0.3 o,-		
276	Rappahannock River	0.95	%		40	-	-					-	40									-	c,20	Pocket marsh with connecting fringe. High profile marsh.	XI
			acres		0.38	-	-					-	0.38									-	c,.19		
277	Rappahannock River	11	%		10	-	40				-	-	50									-	c,-	Shoreline pocket marsh with connecting fringe.	VI
			acres		1.1	-	4.4				-	-	5.5									-	c,-		
278	Peedee Creek	1	%			-	90				-	-	-	10								-		Pocket marsh with connecting fringe.	XI
			acres			-	0.90				-	-	-	0.10								-			
279	Peedee Creek	40	%		5	-	5				5	-	15	40	5		-	-	5	5	15		a,- g,- b,- k,- e,- o,-	Extensive creek-type marsh.	XI
			acres		2.0	-	2.0				2.0	-	6.0	16.0	2.0		-	-	2.0	2.0	6.0		a,- g,- b,- k,- e,- o,-		
280	Peedee Creek	30	%		10	-	10				5		20	30	20			5	-	-			k	Extensive creek-type marsh with wooded swamps near marsh. Excellent duck habitat.	XI
			acres		3.0	-	3.0				1.5		6.0	9.0	6.0			1.5	-	-			k		
281	Peedee Creek	2	%				-							15	20		15	-	20	-	30		a,-	Creek-type marsh with channel obscured by yellow pond lily. Area grades to wooded swamp.	XI
			acres				-							0.3	0.4		0.3	-	0.4	-	0.6		a,-		

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SECTION VII. PART 1. BROCKENBROUGH CREEK AND PEEDEE CREEK

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
282	Peedee Creek	23	%											-	40		-		30		30			Extensive creek marsh. Upper end grades to wooded swamp.	XI
			acres											-	9.2		-		6.9		6.9				
283	Peedee Creek	32	%		10	-	10				5		20	30	20			5	-	-				Extensive creek marsh.	XI
			acres		3.2	-	3.2				1.6		6.4	9.6	6.4			1.6	-	-					
284	Peedee Creek	30	%		5	-	5				5	-	15	40	5		-	-	5	5	15		a,- g,- b,- k,- e,- l,-	Extensive creek marsh. High diversity in vegetation.	XI
			acres		1.5	-	1.5				1.5	-	4.5	12.0	1.5		-	-	1.5	1.5	4.5		a,- g,- b,- k,- e,- l,-		
285	Rappahannock River	52	%		40	-	10				-	10	20	10				5	-	-			b,- c,5 o,-	Extensive marsh with connecting fringes.	XI
			acres		20.8	-	5.2				-	5.2	10.4	5.2				2.6	-	-			b,- c,2.6 o,-		
286	Leedstown	0.25	%			10						50										5	c,35	Intermittent fringe marshes.	XI
			acres			0.02						0.13										0.01	c,.09		
	Total Section VII. Part 1.	267.5	%		14	-	8		-		3	2	17	24	10		1	3	5	2	8	-	a,1 e,- b,- g,- c,1 o,-		
			acres		38.6	-	20.4		-		8.8	5.3	44.4	65.4	27.7		2.5	7.9	13.0	5.7	22.4	-	a,2.2 e,- b,- g,- c,3.2 o,-		

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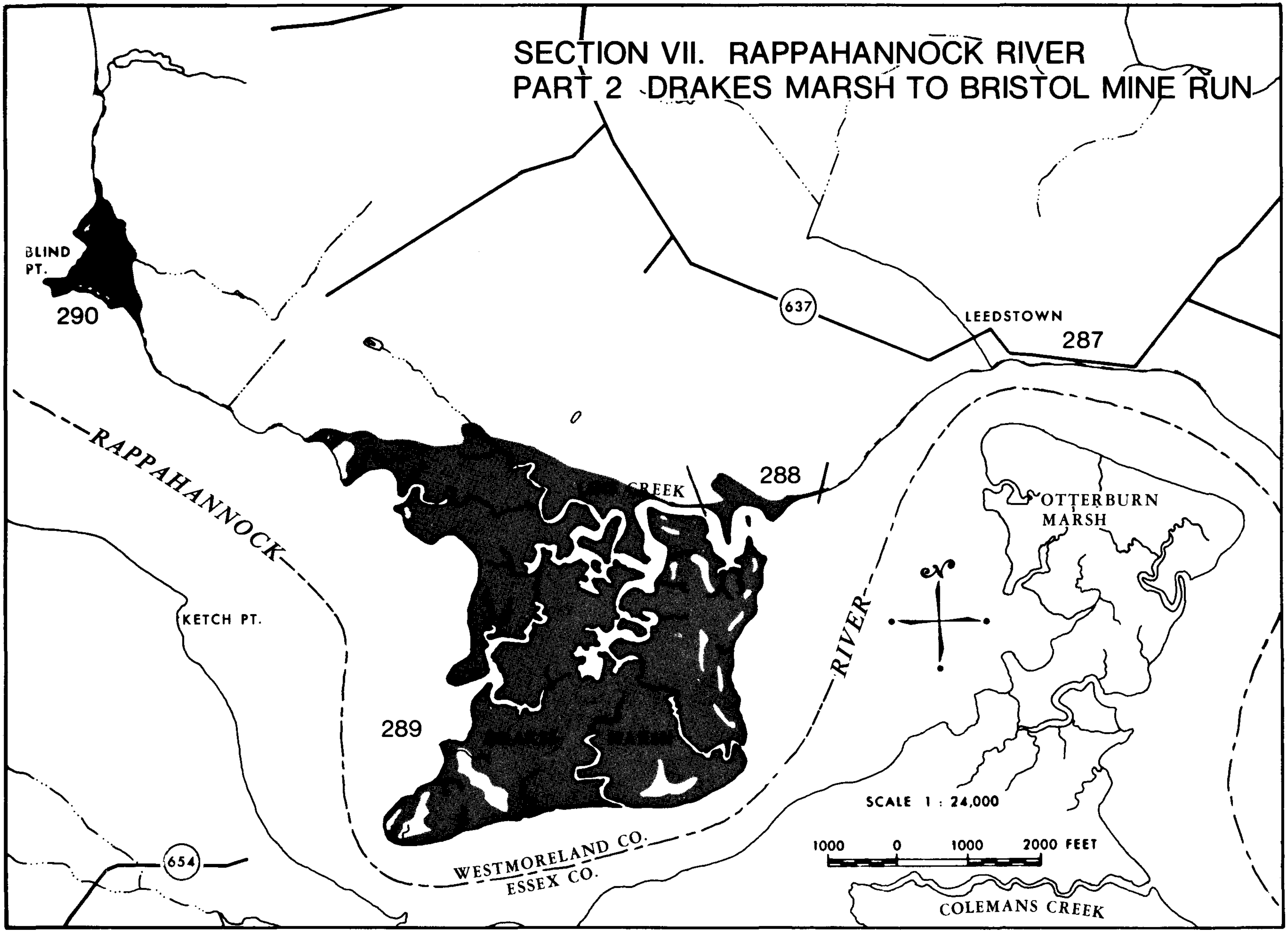
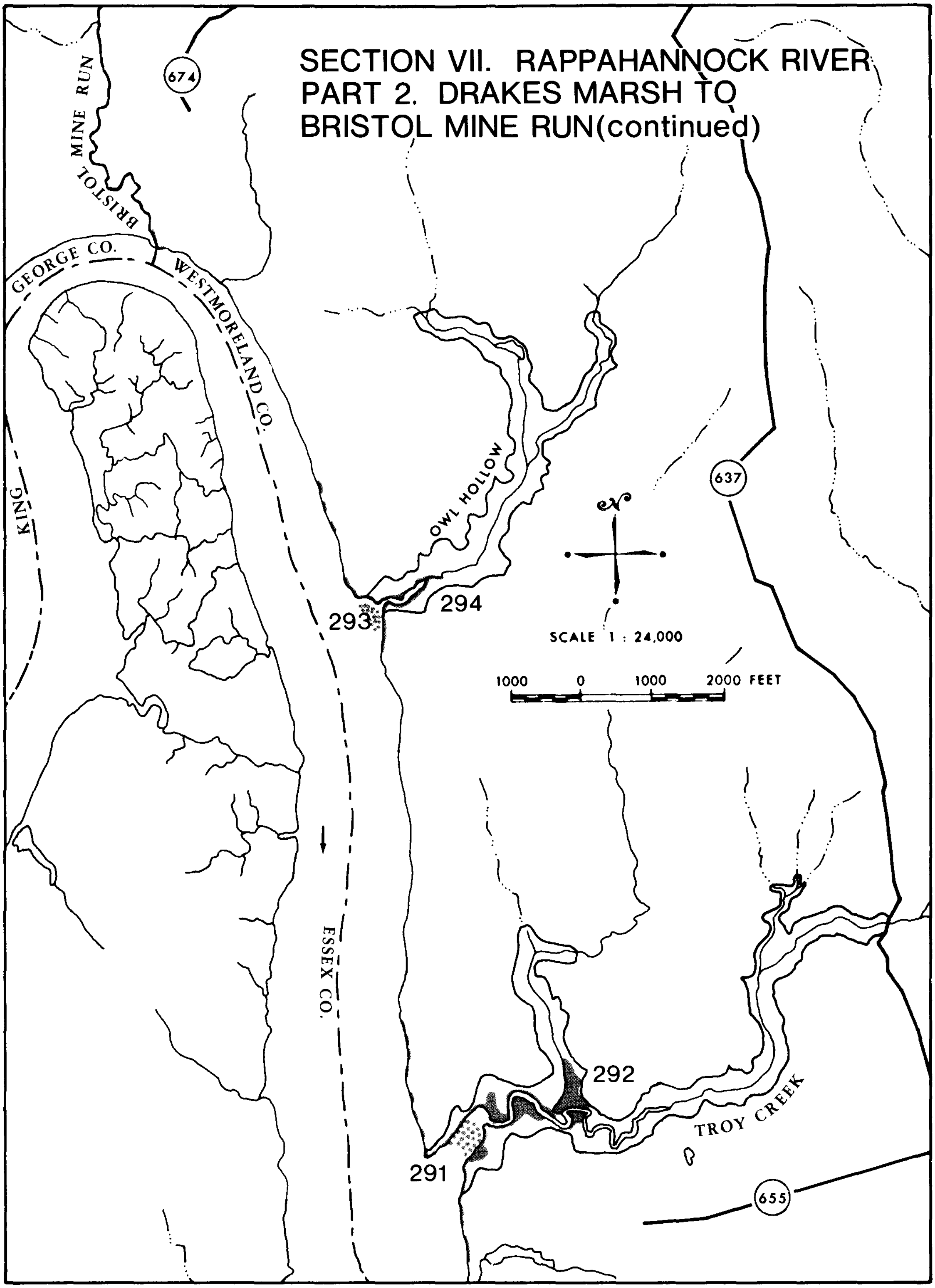


SECTION VII. RAPPAHANNOCK RIVER
PART 2 DRAKES MARSH TO BRISTOL MINE RUN
BLIND PT.
290
637
LEEDSTOWN
287
RAPPAHANNOCK
288
CREEK
OTTERBURN MARSH
KETCH PT.
RIVER
289
SCALE 1 : 24,000
1000 0 1000 2000 FEET
654
WESTMORELAND CO.
ESSEX CO.
COLEMANS CREEK


SECTION VII. RAPPAHANNOCK RIVER
PART 2. DRAKES MARSH TO
BRISTOL MINE RUN(continued)
674
BRISTOL MINE RUN
GEORGE CO.
WESTMORELAND CO.
KING
OWL HOLLOW
293
294
637
SCALE 1 : 24,000
1000 0 1000 2000 FEET
ESSEX CO.
292
TROY CREEK
291
655

SECTION VII. PART 2. DRAKES MARSH TO BRISTOL MINE RUN

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
287	Leedstown	.55	%									50					-					-	c,50	Intermittent fringe marshes.	XI
			acres									.27					-					-	c,.27		
288	Line Creek	10	%		15		-						10	10		-	-	60	-	-			c,5 o,- b,- p,-	Creek-type marsh with pocket area.	XI
			acres		1.5		-						1.0	1.0		-	-	6.0	-	-			c,0.5 o,- b,- p,-		
289	Drakes Marsh	427	%		10		-				-	-	15	20	-		5	20	-	-	30		a,- k,- b,- l,- c,- o,-	Extensive marsh with some patches of trees covering oldest portions of marsh.	XI
			acres		42.7		-				-	-	64.0	85.4	-		21.4	85.4	-	-	128.1		a,- k,- b,- l,- c,- o,-		
290	Blind Point	24.2	%		-		-				-	-	90	10			-	-	-			-	b,- o,- c,- p,- e,-	Extensive point-type marsh with connecting fringes.	VI
			acres		-		-				-	-	21.7	2.4			-	-	-			-	b,- e,- c,-		
291	Troy Creek	3	%												100									Mudflat and creek-type marsh area.	IX
			acres												3.0										
292	Troy Creek	5	%				-						-	10	40		-	40	-	-	5		g,- o,5	Creek-type marsh which grades into extensive wooded swamp area.	XI
			acres				-						-	0.5	2.0		-	2.0	-	-	0.2		g,- o,0.2		
293	Owl Hollow	1.5	%												100									Mudflat marsh associated with expansion of creek type marsh.	IX
			acres												1.5										
294	Owl Hollow	2	%				-					-		30	30		-		10		20		g,-	Wide fringe along pocket marsh.	XI
			acres				-					-		0.6	0.6		-		0.2		0.4		g,-		

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SECTION VII. PART 2. DRAKES MARSH TO BRISTOL MINE RUN

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
	Total Section VII. Part 2.	473.2	%		9		-				-	-	18	19	2	-	4	20	-	-	27	-	a,- e,- l,- b,- g,- o,10 c,- k,- p,-		
			acres		44.2		-				-	-	86.8	89.9	7.1	-	21.4	93.4	0.2	-	128.8	-	a,- e,- l,- b,- g,- o,0.4 c,0.7 k,- p,-		
	Total Section VII.	740.7	%		11	-	3		-		1	1	18	21	5	-	3	14	2	1	20	-	a,- e,- k,- p,- b,- f,- l,- c,- g,- o,-		
			acres		82.8	-	20.4		-		8.8	5.6	131.1	155.3	34.8	-	23.8	101.3	13.2	5.7	151.2	-	a,2.2 e,- k,- p,- b,- f,- l,- c,3.9 g,- o,0.4		

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GRAND TOTALS

#	MARSH LOCATION	TOTAL ACRES		SALTMARSH CORDGRASS	BIG CORDGRASS	SALTBUSHES WAX MYRTLE	MARSH HIBISCUS	BLACK NEEDLERUSH	SALTMEADOW HAY SALTGRASS	SALTMARSH BULRUSH	GIANT BULRUSH	COMMON-OLNEY THREESQUARE	CATTAILS	PICKERELWEED-ARROW ARUM	YELLOW POND LILY	MARSH MALLOW	WATER HEMP	WILD RICE	SMARTWEEDS	TEARTHUMB	RICE CUTGRASS	SWITCH GRASS	OTHER	OBSERVATIONS	MARSH TYPE
	Total Potomac River Shoreline																								
	1,849.5 acres		%	22	22	15	5	1	7	-	-	1	16	4		1	1	1	-	-	-	1	a,- e,- h,- m,- p,- b,- f,- i,- n,- d,- g,1 j,- o,-		
			acres	413.1	413.0	284.8	93.7	9.6	136.9	6.6	2.8	9.7	289.4	79.8	7.6	21.7	18.8	10.6	5.8	0.8	-	17.8	a,0.2 e,1.4 h,- m,- p,- b,0.6 f,- i,9.6 n,0.6 d,- g,13.8 j,- o,0.5		
	Total Rappahannock River Shoreline																								
	740.7 acres		%		11	-	3		-		1	1	18	21	5	-	3	14	2	1	20	-	a,- e,- k,- p,- b,- f,- l,- c,- g,- o,-		
			acres		82.8	-	20.4		-		8.8	5.6	131.1	155.3	34.8	-	23.8	101.3	13.2	5.7	151.2	-	a,2.2 e,- k,- p,- b,- f,- l,- c,3.9 g,- o,0.4		
	Grand Total Westmoreland County																								
	2,590.2 acres		%	16	19	11	4	-	5	-	-	1	16	9	2	1	2	4	1	-	6	1	a,- d,- g,1 j,- o,- b,- e,- h,- m,- p,- c,- f,- i,- n,-		
			acres	413.1	495.8	284.8	114.2	9.6	136.9	6.6	11.6	15.3	420.5	235.1	42.4	21.7	42.7	111.8	19.0	6.4	151.2	17.8	a,2.4 d,- g,13.8 j,0.5 o,1.0 b,0.6 e,1.4 h,- m,- p,- c,3.9 f,- i,9.6 n,0.6		

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INDEX TO MARSH LOCATIONS

DO-IT-YOURSELF INVENTORY

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			%																						
			acres																						
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